Thank you for purchasing the Futaba 3VCS.
Prior to operating your 3VCS, please read this manual thoroughly and use your system in a safe manner.
After reading this manual store it in a safe place.

See the glossary on page (P110-112) for the definition's of the special terms used in this manual.

Application, Export and Reconstruction

1. Use this product in surface models only.
The product described in this manual 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 Japan, its use is to be approved by the Radio Law of the country of the destination.
(b) Use of this product with other than models may be restricted by Export and Trade Control Regulations. An application for export approval must be submitted.

---

3. Modification, adjustment and replacement of parts.
Futaba is not responsible for unauthorized modification, adjustment and replacement of parts of this product.

THE FOLLOWING STATEMENT APPLIES TO THE RECEIVER (FOR U.S.A.)

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions.
(1) This devise may not cause harmful interference, and
(2) This devise must accept any interference received, including interference that may cause undesired operation.

THE RBRC™ SEAL (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 which is illegal in some areas.

Futaba Corporation of America's payments to RBRC™ makes it easy for you to return the spent battery to Futaba for recycling purposes. You may also 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.

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

3VCS Super

Table Of Contents

Reference 101

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

Mandatory Procedures

❗ In case of the High Response System (H.R.S) receiver R203HF, always use only the following conditions:

Servo; 6V type Digital Servo only
Power supply; 6V Nicd battery
Transmitter setting; "HRS" mode

If the conditions are different, control is impossible.

And **Fail Safe Unit (FSU1)** is not available.

Operation Precautions

⚠ Warning

Prohibited Procedures

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 opreation 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 rowboats 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.

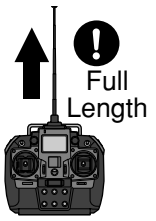
Do not operate this R/C system when you are tired, not feeling well or under the influence of alcohol or drugs.

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

Mandatory Procedures

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..

⚠ Caution

Prohibited Procedures

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.

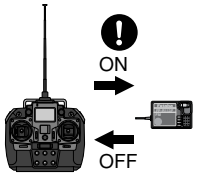
These parts may be very hot and can cause serious burns.

Mandatory Procedures

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.

When adjusting the transmitter on land while preparing to run (cruise), take measures so that the wind will not knock over the transmitter.

If the transmitter is knocked over, the throttle stick may be accidentally set to the operating position and you may lose control.

(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

Mandatory Procedures

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.

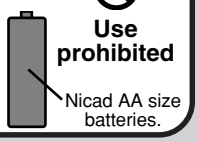
Overcharging could cause the Nicad battery to overheat, leak or explode. This may lead to fire, burns, loss of sight and many other type's of injuries.

⚠ Caution

Prohibited Items

Do not use commercial AA size Nicad batteries.

Quick charging may cause the battery contacts to overheat and damage the battery holder.



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.

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.

Mandatory Procedures

Always keep the charger disconnected from the outlet while it is not in use.

It is important to prevent from unexpected accidents such as abnormal heat generation.

Storage and Disposal Precautions

⚠ Warning

— Prohibited Procedures —

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.

— Mandatory Procedures —

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.

⚠ Caution

— Prohibited Procedures —

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 opreation.

— Mandatory Procedure —

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

— Prohibited Procedures —

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.

— Mandatory Procedures —

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.

⚠ Caution

Prohibited Procedures

Never use any RF module other than the RF module specially designed for the 3VCS.

Futaba will not be responsible for any problems caused by the use of non-Futaba parts or equipment in conjunction with this radio system. Please use parts and equipment that are listed in this instruction manual alone. There is no compatibility between module TZ-FM module for T3VCS and TU-FM module for T3VC. Even if those modules were used mistakenly, the performance would be very poor and the control area would become narrow, causing out-of-control.

Features

- High Response System (H.R.S. system)
When used with the H.R.S. system, a speed of triple that of an FM system at average response is realized. (Comparison with other Futaba products) The T3VCS transmitter is compatible with the H.R.S. system, PCM1024 system, and PPM (FM) system.

- 110x64 dot large graphic LCD/with backlighting
EXP curve, throttle curve, servo view, and other graph display and function selection can batch display simple menus and function setup items, and data setup is easy.
Backlighting that can be turned ON/OFF also improves recognition at indoor circuits,
etc.

- 10 models memory/+ 10 models by using a data pack
Model names can use up to 10 letters, numbers, and symbols so that easily understood
names can be set. Model copy function simplifies creation of a model memory with different fine setups. An additional 10 models memory can be added by using the optional CAMPac-16K.

- Two function selection modes: Menu selection and direct call
Setup screens are called from a menu screen. The menu screen can be selected from among 3 levels (LV1/LV2/LV3) to match the level of use.
Frequently used (high urgency) functions can be quickly called by assigning them to direct call buttons. (6 functions)

- Brake mixing for large cars (BRAKE-MIX)
Brake mixing of the front and rear wheels of 1/5GP cars, etc. has delay and balance adjustment functions.

- Second dual rate (2ND D/R)
Steering angle can be switched with one touch while running.

- 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 (TH-ACCEL)
Gasoline engine cars have a time lag before the clutch and brakes are connected. The TH-ACCEL function minimizes this time lag.

- Throttle speed (TH-SPEED)
Sudden trigger operation on slippery roads only spins the wheels unreasonably and does not accelerate smoothly. Setup the throttle speed function allows smooth and enjoyable operation while at the same time reducing battery consumption.

- Start function (AT-START)
When the throttle trigger is set to full throttle simultaneously with starting on slippery roads, the wheels spin and the vehicle does not accelerate (start). Setup the start function allows smooth starting.

- Steering speed (ST-SPEED)
"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)
A lap timer can record 99 lap times and the total time. The timer can also be started automatically by trigger operation. The race time and an audible alarm can be set. A navigation timer effective during training runs is provided. Target lap and refueling time can be indicated by audible alarm. Other timers are an up timer and a down timer.

- Digital trim
The trim position is constantly displayed on an LCD screen. The operation amount of 1 step can also be adjusted. Steering and throttle trim operations have no effect on the maximum steering position.

- Function select dial function (FUNC-DIAL)
This function assigns a function to trimmers (digital trim, button trim, knob). The step size 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 (FUNC-SW)
This function assigns functions to the two installed switches. The operating direction can also be set.

- Black antenna

- Tension adjustment function
Stick tension can be adjusted from the outside.

- Adjustable Throttle Stick Travel (Mechanical ATL)

- Display switch
Functions can be set without emitting radio waves.

- Receiver w/DSC is standard equipment (Connection cord is option.)
HRS system: R203HF, PCMN type: R113iP

- 7-color LED pilot lamp
You can select your favorite color.

Set Contents

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

Transmitter	**T3VCS**
RF module	**TZ-FM** *Installed in transmitter.
Receiver	**R203HF(HRS-FM) or R113iP(PCM)**
Miscellaneous	**Transmitter Ni-cad battery pack NT8F700B or Battery box** *Installed in transmitter. **Receiver switch** **Instruction manual**

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

⚠ Caution

Prohibited Procedures

Never use any RF module other than the RF module specially designed for the 3VCS.

Futaba will not be responsible for any problems caused by the use of non-Futaba parts or equipment in conjunction with this radio system. Please use parts and equipment that are listed in this instruction manual alone. There is no compatibility between module TZ-FM module for T3VCS and TU-FM module for T3VC. Even if those modules were used mistakenly, the performance would be very poor and the control area would become narrow, causing out-of-control.

⚠ Caution

In case of the High Response System (H.R.S) receiver R203HF, always use only under the following conditions:

Servo; 6V type Digital Servo only
Power supply; 6V Nicd battery
Transmitter setting; "HRS" mode

If the conditions are different, control is impossible.

And **Fail Safe Unit (FSU1)** is not available.

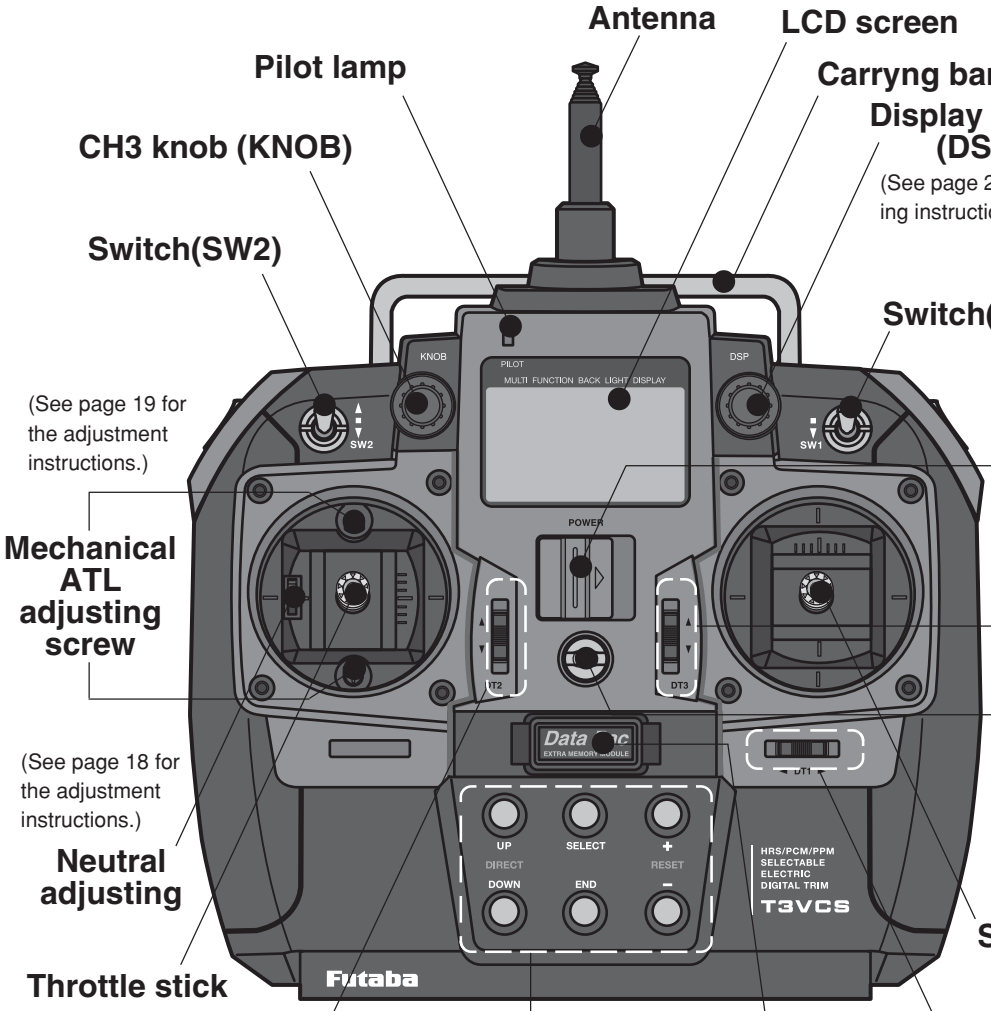
⚠ Caution

Always use only genuine Futaba transmitter, receiver, FET amp, Ni-cad battery and other optional parts.

Futaba will not be responsible for damage caused by other than genuine Futaba parts and components. Use only the genuine Futaba parts and components listed in the instruction manual and catalog.

Transmitter T3VCS

Nomenclature



*The switches, knobs, 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.

Stick lever head the precautions

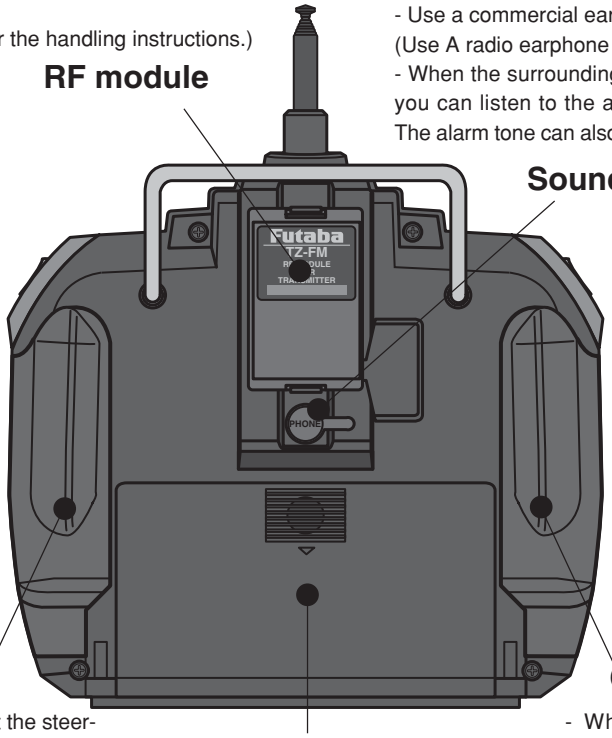
There is a small projection at the tip of the lever heads to prevent slipping. When carrying the transmitter, be careful these projections do not damage your skin, clothes, or other objects.

(See page 22 for the handling instructions.)

RF module

- Use a commercial earphone.
(Use A radio earphone with a 3.5mm diameter plug.)
- When the surroundings are noisy during races, etc., you can listen to the alarm tone using an earphone. The alarm tone can also be heard from the transmitter.,

Sound port



Grip

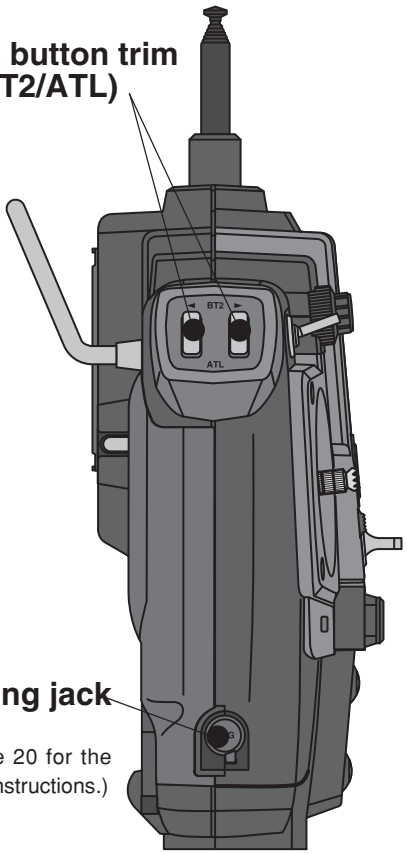
- When you want to adjust the steering stick spring tension, remove this grip. (See page 19 for the adjustment instructions.)

Battery cover

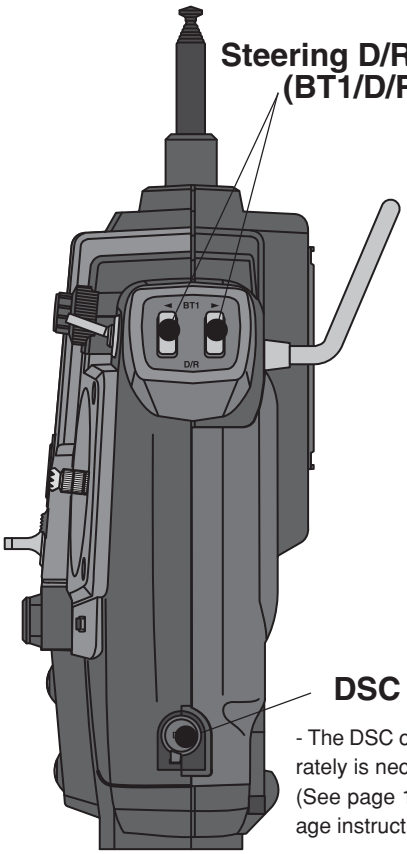
Grip

- When you want to adjust the throttle stick spring tension, remove this grip. (See page 19 for the adjustment instructions.)

ATL button trim (BT2/ATL)



Steering D/R button (BT1/D/R)



Charging jack

(See page 20 for the charging instructions.)

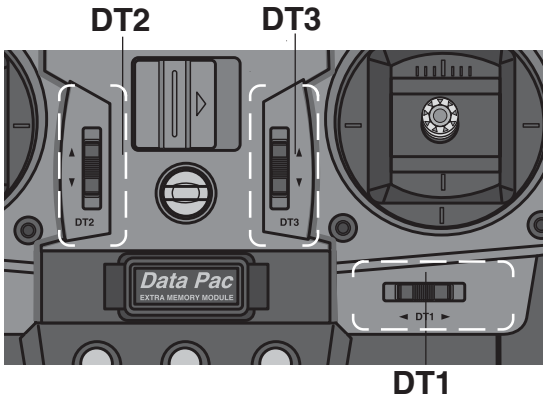
DSC jack

- The DSC cord sold separately is necessary.
(See page 104 for the usage instructions.)

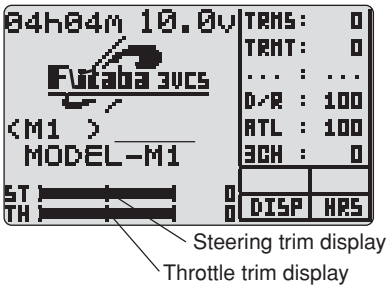
Digital Trim Operation

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

Push the lever in the arrow direction (up/down or right/left). The current position is displayed on the LCD screen.



- 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.



(*1) For a description of how to display steering EXP on the LCD screen, see page 99.

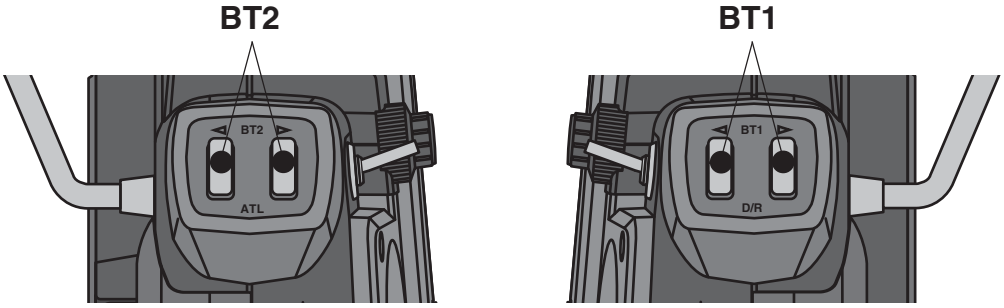
Trim Operation

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.

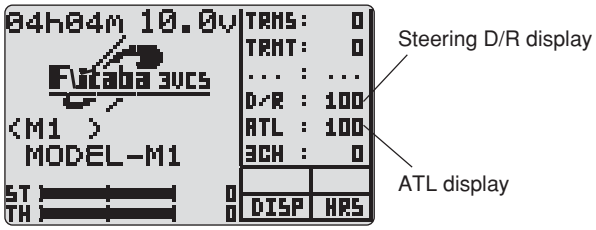
Button Trim Operation

(Initial state: BT1; Steering D/R, BT2; ATL)

Operate by pressing the button of the direction you want to set. The current set value is displayed on the LCD screen.



- Each step is indicated by a tone.
- When the dial reaches the maximum or minimum adjustment range, the tone will change pitch and the dial cannot turn farther.
- When both buttons are pressed simultaneously for about one second, the set value returns to the initial value.



Neutral Adjuster Operation

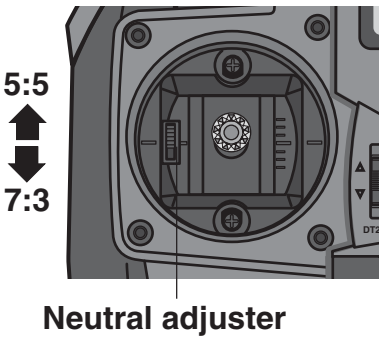
The neutral adjuster selects the throttle stick neutral position.

- (High side):(brake/back side): 5:5 or 7:3 can be selected.

Setting

Switch to the side that uses the neutral adjuster lever.

-This function only changes the throttle stick neutral position; it has no effect on the servo neutral position.

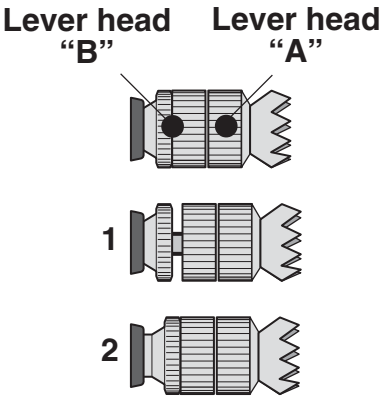


Stick Lever Head Adjustment

The length of the lever head of the steering and throttle sticks can be adjusted.

Adjustment

1. Unlock lever head “A” by turning it counterclockwise.
2. Adjust the head to the length best for you, then lock the heads by turning lever head “A” clockwise and lever head “B” counterclockwise.



- When you want a long lever head, use the stick adapter (sold separately).

Stick Mounting Angle Adjustment

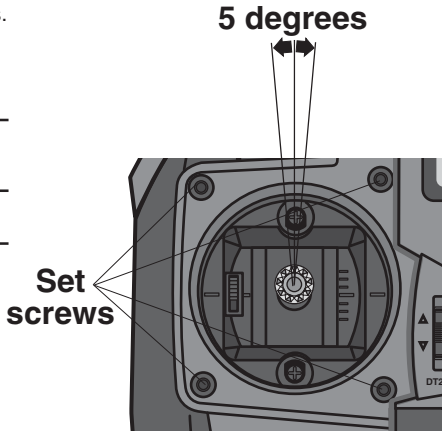
The mounting angle of the throttle and steering sticks can be adjusted.

- The mounting angle can be adjusted approximately 5 degrees.

Setting

1. Loosen the four set screws.
2. Change the stick angle.
3. Retighten the four set screws.

- The figure at the right shows the throttle stick. The steering stick can be adjusted similarly.



Mechanical ATL Adjustment

Make this adjustment when you want to make the throttle stick brake (back) or high side stroke narrower.

Adjustment

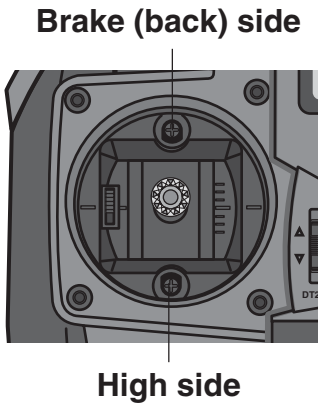
Brake (back) side adjustment

Make this adjustment by turning the adjusting screw above the stick with a Phillips screwdriver.

High side adjustment

Make this adjustment by turning the adjusting screw below the stick with a Phillips screwdriver.

- When the adjusting screw is turned counter clockwise, the stroke becomes narrower.



Caution

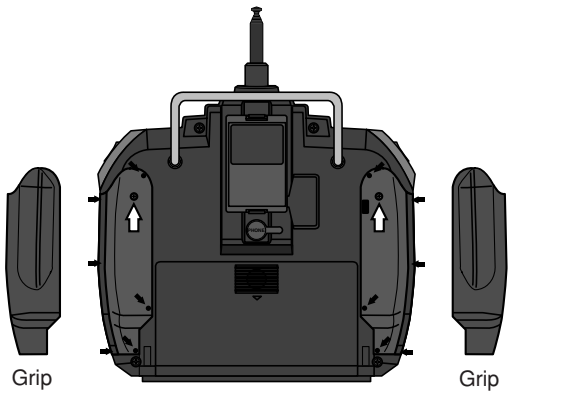
When the stroke was adjusted, the throttle servo travel must be adjusted by data setting. If the stroke is made too narrow, the adjusting screw may fall out.

Stick Tension Adjustment

Make this adjustment when you want to change the steering stick or throttle stick spring tension.

Adjustment

1. Remove the grip on the back of the transmitter.
2. Turn the screw inside the adjusting hole using a small Phillips screwdriver such as a watchmaker's screwdriver.
   - Turning the adjusting screw clockwise, increases the spring tension.
   - The adjustment range is about five turns in both directions, from the initial position.



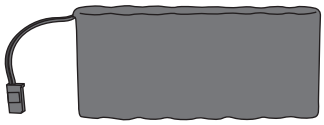
Caution

If turned too far counterclockwise, 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.

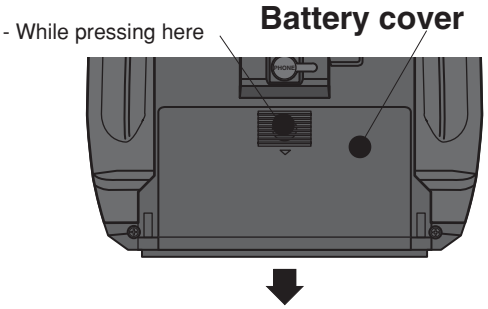
- Always use an NT8F7000B Ni-cad battery.



Ni-cad battery NT8F700B

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.



⚠ Caution

Mandatory Procedures

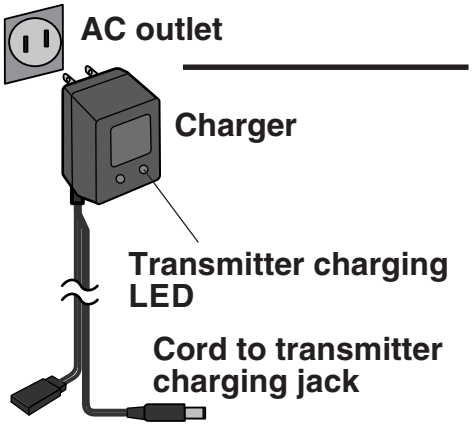
Pay full attention so that the battery cover wouldn't pinch the cable of the Ni-cad battery.

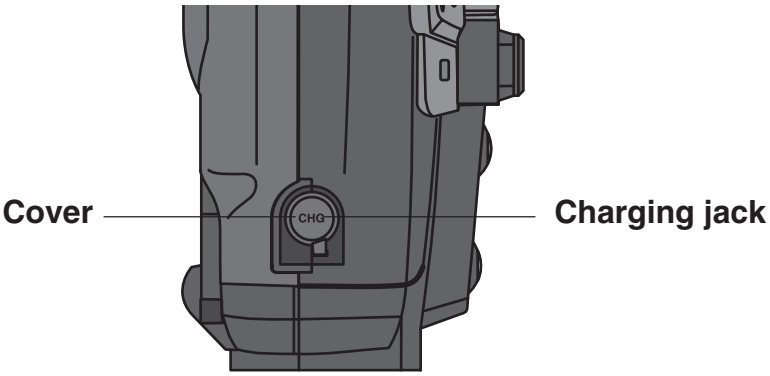
Pinching the cable by the battery cover can lead to an electrical shortage, fire and abnormal heat generation, which may cause burns and fire disaster.

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.

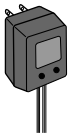
Plugging the charger into the wrong outlet may result in an explosion, sparking, or fire.

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.



Use the special charger.

⚠ 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.

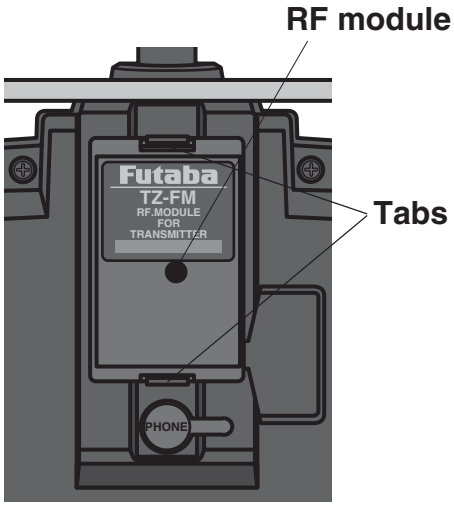
RF Module

Removal

1. Pull the RF module forward while pressing the tabs at the top and bottom inward.

Insertion

1. Insert the RF module while being careful not to bend the transmitter side connector pins.
2. Insert the RF module until the tabs at the top and bottom snap in place with a “click”.



RF Module Temperature Rise

The temperature of the RF module will rise slightly during operation.

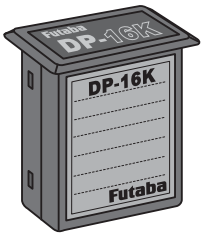
Data Backup

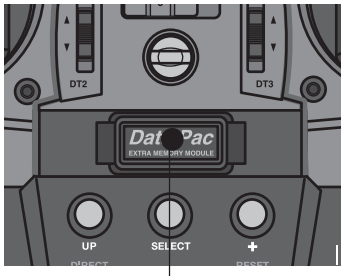
The data (transmitter and Data Pac) of each function of the 3VCS transmitter is stored in a memory element that does not require backup battery. Therefore, the transmitter can be used without paying attention to the life of the backup battery. The set data is not lost even when the transmitter battery is changed.

Handling the CAMPac-16K / Data Pac DP-16K

The data for ten models can be stored in the transmitter memory and the data for ten more models can be stored in the removable CAMPac-16K (optional).
Do not use any removable memories other than CAMPac-16K

CAMPac-16K (Optional)





CAMPac slot

Removal Precautions

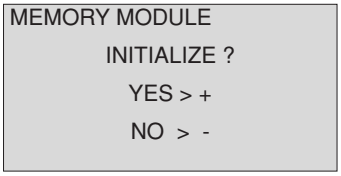
Always turn off the transmitter power before installing and removing the CAMPac-16K.

When inserting and removing the data pack

Always turn off the transmitter power before removing or inserting the data pack.

Data pack initialization

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



When a data pack 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 data pack can be used with the 3VCS.

Data interchangeability with other models

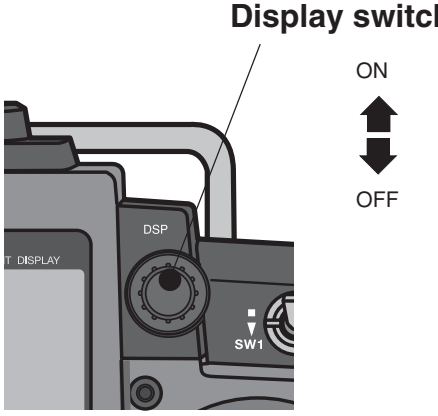
Data is not interchangeable with 3PK, 3VC, and other transmitters other than the 3VCS.

Set data backup

The set data of each function (transmitter body and data pack) of the 3VCS transmitter is stored in a memory element that does not require a backup battery. Therefore, the 3VCS 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.



⚠ Warning

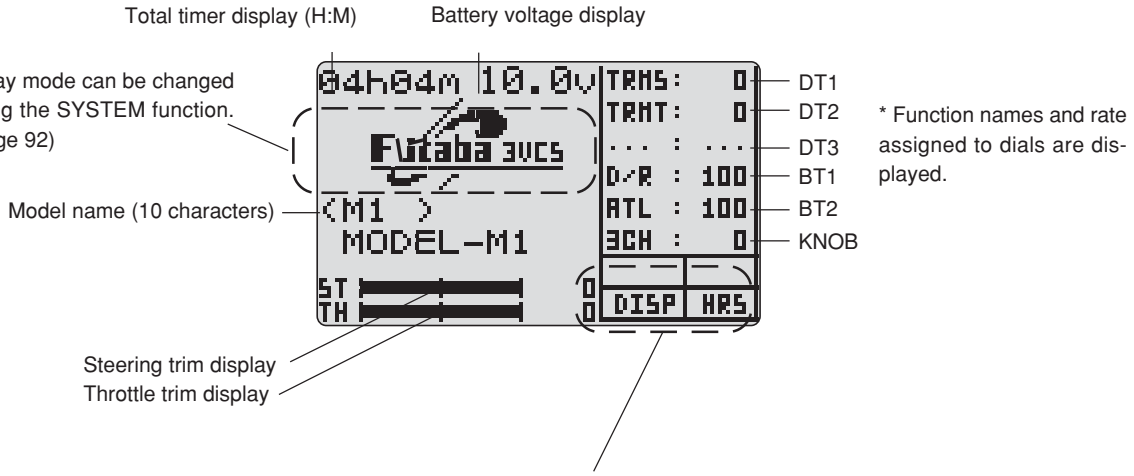
Never turn on the power switch while this function is in use.

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.

Display when power switch turned on

Power switch turned on

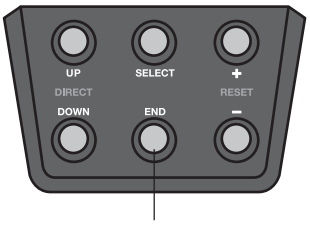
Beep confirmation sound is generated and the initial screen shown below appears.



* Displays whether or not a data pack is inserted. When a data pack 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.	* The current operation mode is displayed. ("PPM"/"PCM"/"HRS")

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.



(END) button

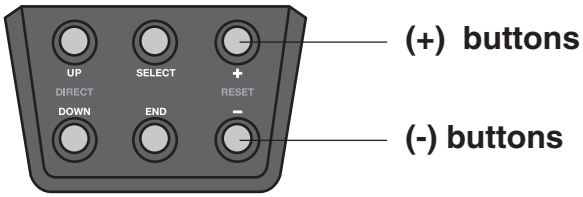
Total timer

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 page .)

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.

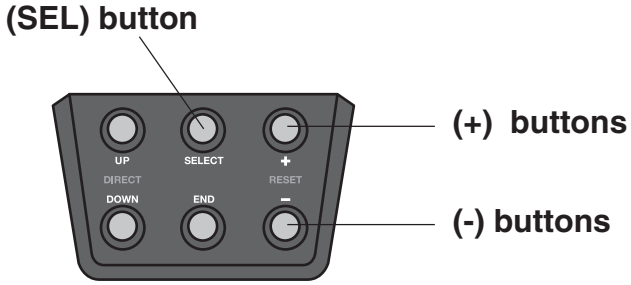
LCD Screen Temperature Change

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.

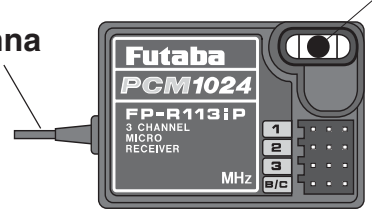
Contrast adjustment when not called

1 Turn on the transmitter power again.
2 When the screen is too dark or too bright, adjust to a suitable contrast by pressing the (-) or (+) button, respectively, while pressing the (SEL) button.



Receiver

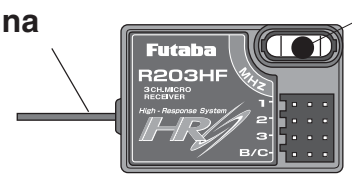
Nomenclature



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

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

For the receiver, servos, and other connections, see page 27. For the DSC cord (option) connections, see page 104.

⚠ Caution

Mandatory Procedures

In case of the High Response System (H.R.S) receiver R203HF, always use only the following conditions:

Servo; 6V type Digital Servo only
Power supply; 6V Nicd battery
Transmitter setting; "HRS" mode

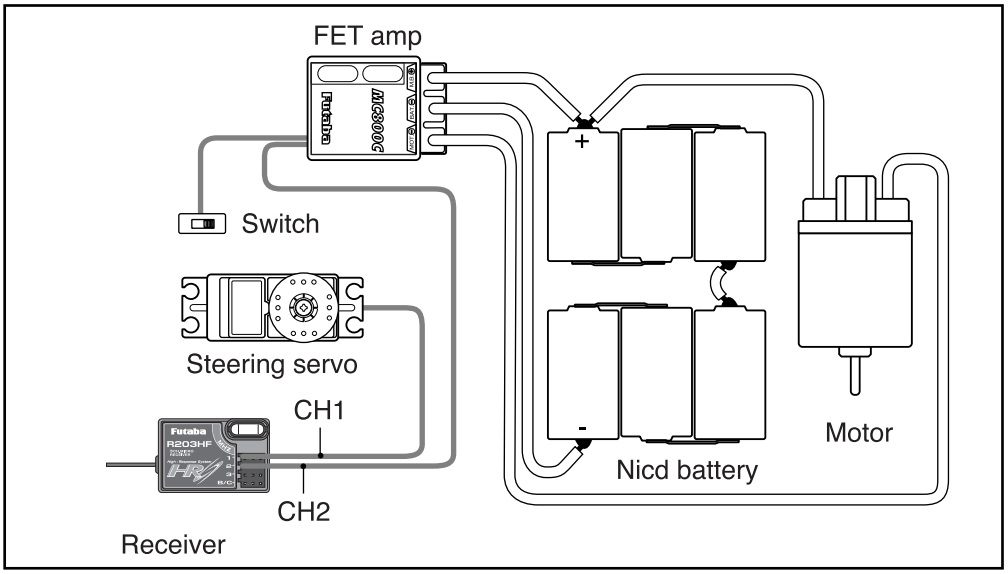
If the conditions are different, control is impossible.

And **Fail Safe Unit (FSU1)** is not available.

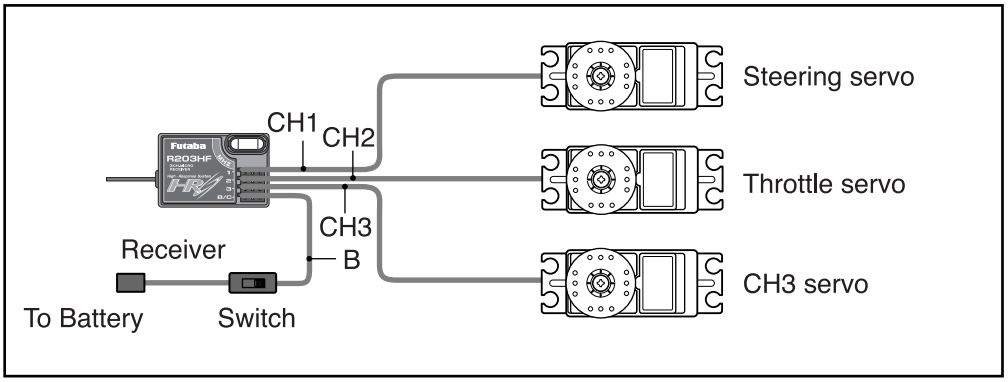
Receiver and Servo Connections

When connecting and installing the receiver and servos, read the "Installation Safety Precautions" on the next page.

Installation When An FET Amp Is Used (MC800CFET Amp)



Installation For Gas Powered Models



Installation Safety Precautions

⚠ Warning

Connector Connections

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 .

Receiver Vibration Damping and Waterproofing

(Car)

Dampen the vibration to the receiver by mounting to the chassis or mounting plate with thick double sided tape in electric powered models. In gas powered models wrap the receiver in foam and mount it where the vibration is the least prevalent.

(Boat)

Dampen the vibration to the receiver by wrapping it in foam. Waterproof by placing it in plastic bag or watertight radio box in model.

If the receiver is subjected to strong vibration or shock erratic or loss of control may occur. If any moisture comes in contact the receiver and servos you may expertise the same result as well as damage to the system.

Receiver Antenna

Do not cut or bundle the receiver antenna

Do not bundle the receiver antenna together with the servo lead wires

Keep the receiver antenna at least 1 inch away from the motor and battery and wires that handle heavy current loads..

Cutting, bundling or routing the receiver antenna near any devise that produce noise will reduce the operating range of the system and result in loss of control.

*Also route the receiver antenna away from metal, carbon fiber and other parts that conduct electricity. These parts can transmit high frequency noise.

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.

Servo Throw

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.

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.

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.

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.

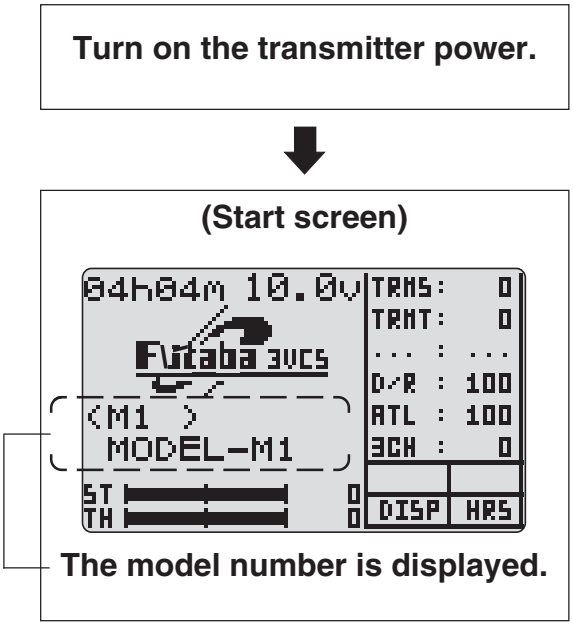
Metal to metal contacts under vibration will omit a high frequency noise that will effect the receivers performance. You could experience erratic operation and reduced range as well as loss of control.

Preparations (Transmitter)

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

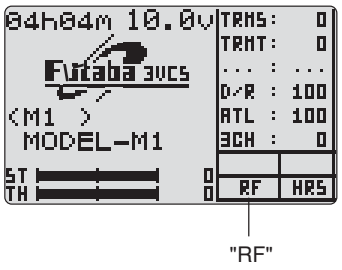
(Display when power switch turned on)

When the power seitch is turned on, the currently selected model number is displayed. Check of this number is model number you want to set-up. To change the model number, use the Model Select function (See page75).



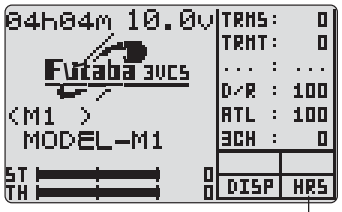
1.RF Output Check

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.



2. Modulation Mode Check

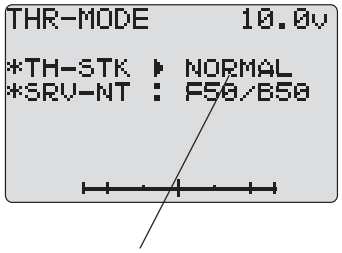
The T3VCS transmitter output signal format can be changed to match the type of receiver. Check if the modulation mode is set to match the receiver used.
When using an FM receiver (e.g., R133F), the modulation mode must be set to "PPM". When using a PCM receiver (e.g., R113iP), the modulation mode must be set to "PCM". When using a H.R.S receiver (e.g., R203HF), the modulation mode must be set to "HRS". If this setting is incorrect, change it with the HRS/PCM/PPM Select (See page 88) function.



"H.R.S"

3. Throttle Mode check

The T3VCS transmitter will automatically stop its braking function of the throttle operation when the throttle stick is replaced with the ratchet type for boat or other purposes. In this case, set "BOAT" for "TH-STK" in the Throttle Mode (See page 100). In case of using a ratchet type stick for a car, it is possible to set the servo travel at 5:5 or 7:3 upon your needs.

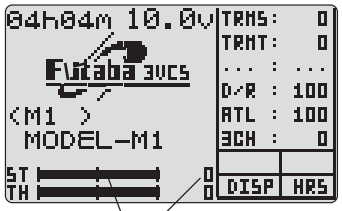


Set "BOAT" in case of the ratchet type.

4. Trims Initial Set-Up

- Steering trim (DT1) check

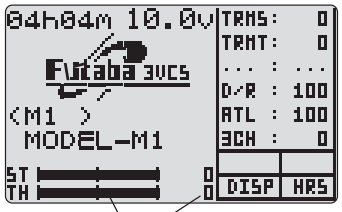
At initial set-up, steering trim (Trim 1) is assigned to digital trim DT1 below the stick at the right side of the transmitter. Operate the DT1 lever and check if the steering trim display on the screen changes. After checking the trim, set the trim display to the center (N) position.



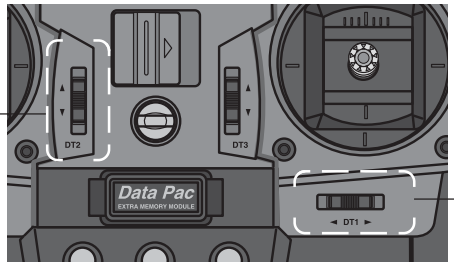
Steering trim

- Throttle trim (DT2) check

At initial set-up, throttle trim (Trim 2) is assigned to digital trim DT2 at the right side of the stick at the left side of the transmitter. Operate the DT2 lever and check if the throttle trim display on the screen changes. After checking the trim, set the trim display to the center (N) position.

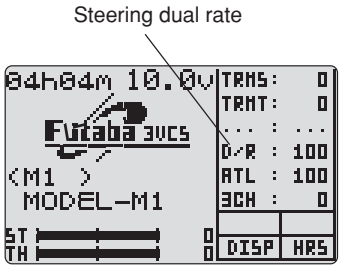


Throttle trim



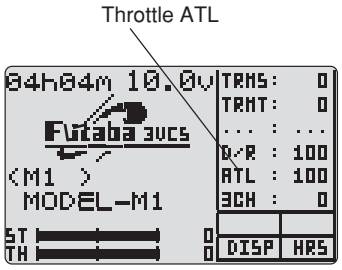
- Steering dual rate (BT1) check

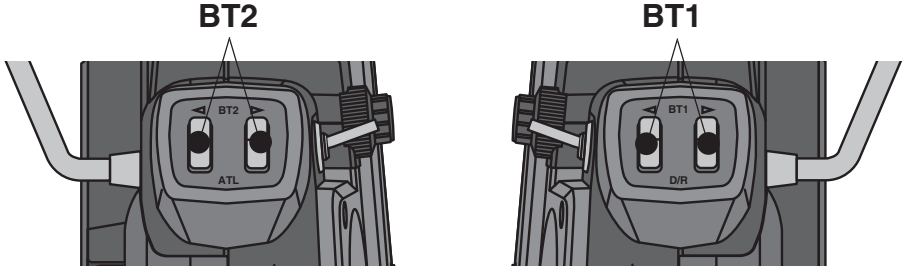
At initial set-up, steering dual rate (D/R) is assigned to button trim BT1 at the right side of the transmitter. Operate the BT1 button and check if the D/R value displayed on the screen changes. After checking ST.D/R, set the steering dual rate to 100%. (Return to the initial value (100%) by pressing both buttons simultaneously for about one second.)



- Throttle ATL (BT2) check

At initial setting, throttle ATL (ATL) is assigned to button trim BT2 at the left side of the transmitter. Operate the BT2 button and check if the ATL value displayed on the screen changes. After checking TH.ATL, set throttle ATL to 100%. (Return to the initial value (100%) by pressing both buttons simultaneously for about one second.)





(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 72)
   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 71)
4. Set the trigger travel by adjusting the throttle trigger mechanical ATL to you liking.(See page 18)
5. Set EPA of each channel and adjust the servo throw (travel). (See page 34)

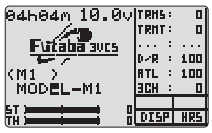
Function Map

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 3 levels to match the level of use. To select the level, use the Level Select function (See page 89).
-Level 3 (LV3): All functions can be selected. (For expert driver)
-Level 2 (LV2): For middle class driver
-Level 1 (LV1): Basic functions only

Function Menu Screen

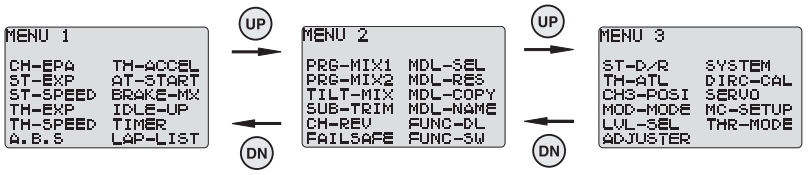
(Start Screen)



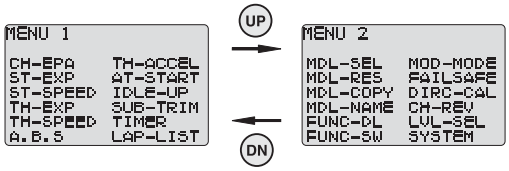
Click (UP) or (DN) button to call the Function Menu Screen.

Click (END) button to return to the Start Screen.

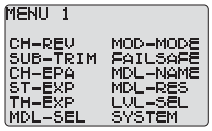
In case of the LV3



In case of the LV2



In case of the LV1

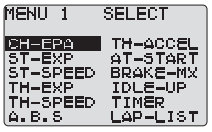


Click (END) button to return to the Function Menu Screen.

Click (SEL) button to go to the Function Select Screen.

(Function Select Screen)

The screen on the right shows an example of MENU1 of LV3.



Clic (UP) or (DN) button to select a function.

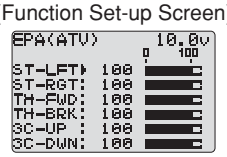
The reversely displayed item shows the function currently selected.

Click (END) button to return to the Function Select Screen.

Click (SEL) to go to the Function Set-up Screen.

(Function Set-up Screen)

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

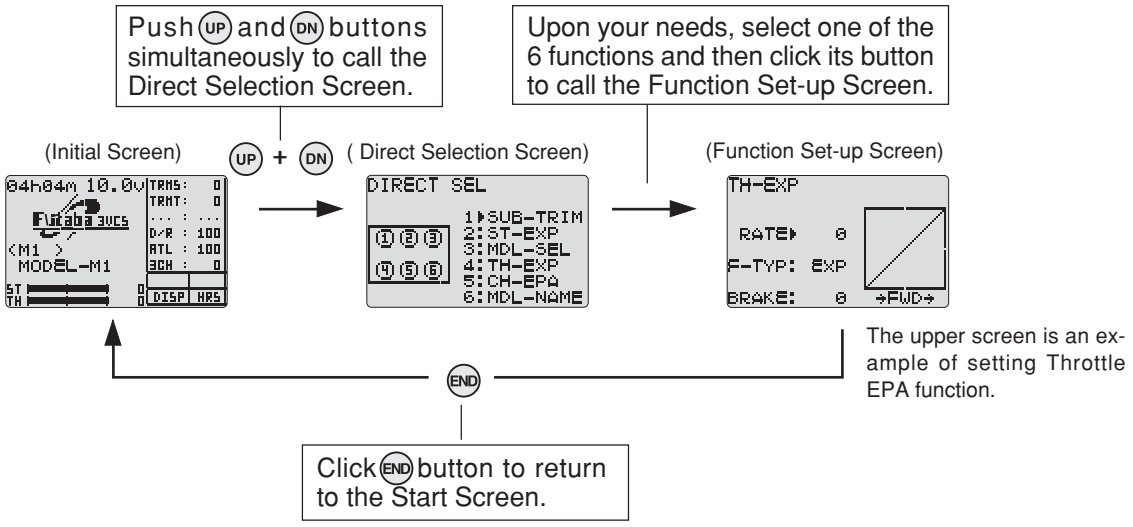


Direct Selection

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 function of the six functions, they can be freely selected as the Direct Selection Button function.

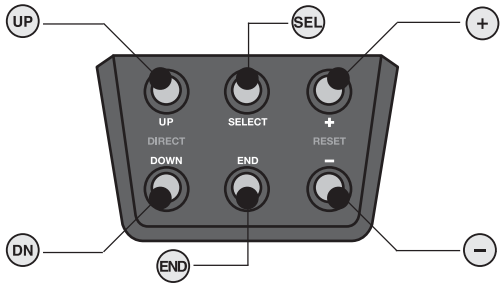
INITIAL SETTING

		Function	
1.	UP	SUB-TRIM	Subtrim
2.	SEL	ST-EXP	Steering EXP
3.	+	MDL-SEL	Model Serect
4.	DN	TH-EXP	Throttle EXP
5.	END	CHEPA	Chanel End Point Adjuster
6.	−	MDL-NAME	Model Name



Edit Buttons

In this instruction manual, Edit Buttons are represented by the symbols shown below.



End point adjuster/EPA (All channels)

Use this when performing steering 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)
- Throttle preset (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.

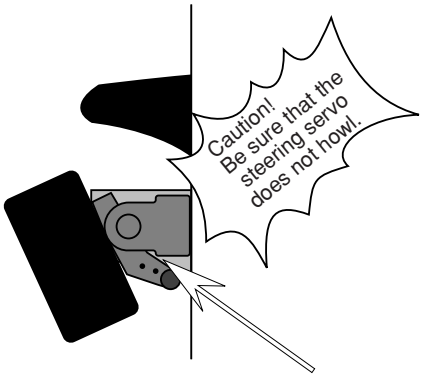
Remark

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 68.)

⚠Warning

! Make sure that the knuckle stopper is not contacted during steering operation and that unreasonable force is not applied to the servo during other channel operation.

If unreasonable force is applied to the servo horn at the knuckle stopper during steering operation, the servo may malfunction and the model may run out of control.

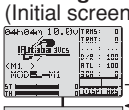


Decide the EPA value at the contact point.

Calling the setup screen

*** Calling from menu screen**

(Initial screen)



Use the (UP) or (DN) button to select the menu screen.

MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.

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

(Initial screen)

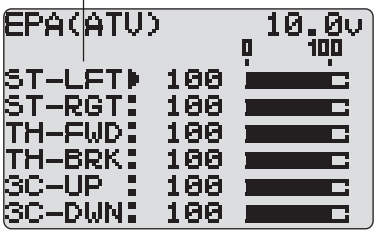
Press the (UP) and (DN) button simulataneously.

DIRECT SEL

Press the button set at this function.

Use the (UP) or (DN) button to select the setup item.

* ▸ blinks at the current setup item.



Setup items

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

Adjustment range

0~120% (each channel, each direction)

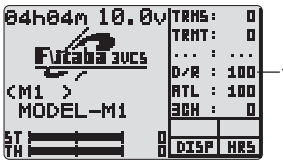
Adjustment buttons

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

Steering (EPA) adjustment

(Preparation)

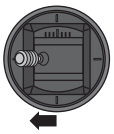
- Before setup the steering wheel steering angle, set the steering D/R dial (initial setup: BT1) to the maximum steering angle position 100%.
- Select setup item "ST-LFT" and make the following adjustments:



100%

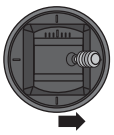
1 Steering (left side) adjustment

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



2 Steering (right side) adjustment

Turn the steering stick 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 adjustment, return to the initial screen by pressing the (END) button three times.

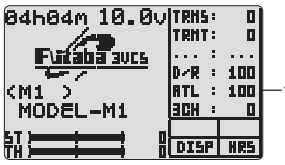
Setup item switching

- Use the (DN) or (UP) buttons to switch the setup item
- Others switch the setup item (direction) linked to the steering wheel.

Throttle (EPA) adjustment

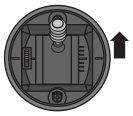
(Preparation)

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



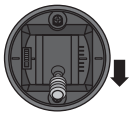
1 Throttle (forward side) adjustment

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



3 When adjusting the throttle angle of another channel immediately after this, see the adjustment method for that channel. When ending adjustment, return to the initial screen by pressing the (END) button three times.

Setup item switching

- Use the (DN) or (UP) buttons to switch the setup item.
- Others switch the setup item (direction) linked with the throttle trigger.

3rd channel servo (EPA) adjustment

(Preparation)

- Select setup item "3C-UP" 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.

Setup item switching

- Use the (DN) or (UP) button to switch the setup item.

2 3rd channel servo (down side) adjustment

Press the (DN) button and select setup item "3C-DWN" 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 adjustment, return to the initial screen by pressing the (END) button 3 times.

End point adjuster/EPA (All channels)

Steering EXP/ST-EXP (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.

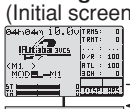
Racers Tip

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**

(Initial screen)



Use the (UP) or (DN) button to select the menu screen.

MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.

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

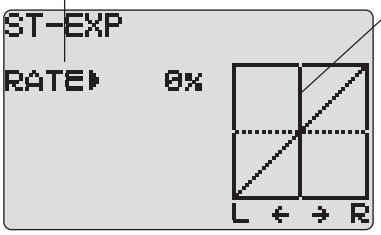
(Initial screen)

Press the (UP) and (DN) button simulataneously.

DIRECT SEL

Press the button set at this function.

Setup item
RATE: Steering EXP rate



Vertical cursor moves in step with steering wheel operation.

Adjustment range
-100~0~+100%

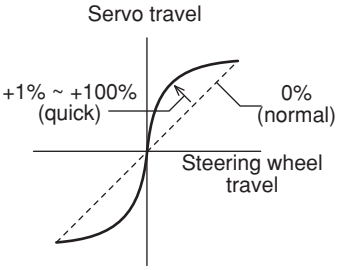
Adjustment buttons
- Use the (+) or (-) buttons to make adjustments.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).

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 adjustment, return to the initial screen by pressing the (END) button 3 times.

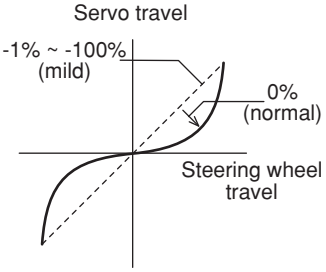
(Quick)



Dial / Trim Setting

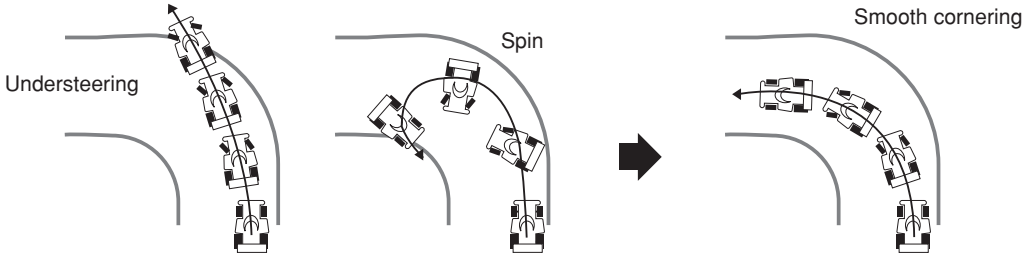
The steering EXP adujustment (RATE) can be controlled with button trim BT1, BT2 or digital trim DT3 etc. with the function select dial function. (See page 80)

(Mild)



Steering Speed/ST-SPEED (Steering system)

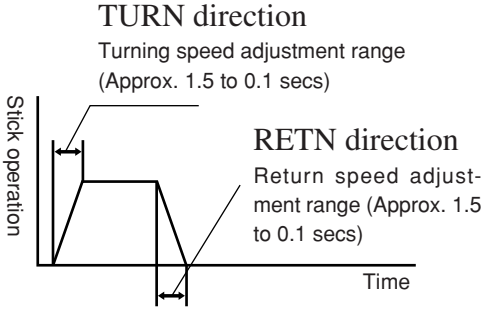
Quick steering operation will cause momentary understeering, loss of speed, or spinning. This function is effective in such cases.



Steering speed not set **Steering speed set**

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.



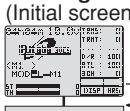
Setting example (Steering servo: S9451 / S9351) . . . (Setting criteria)

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

Calling the setup screen

*** Calling from menu screen**

(Initial screen)



Use the (UP) or (DN) button to select the menu screen.

MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.

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

(Initial screen)

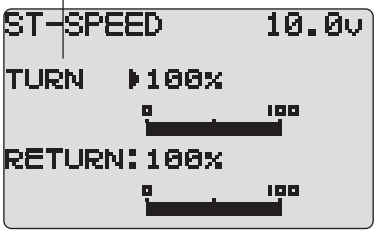
Press the (UP) and (DN) button simulataneously.

DIRECT SEL

Press the button set at this function.

Use the (UP) or (DN) button to select the setup item.

* ▸ blinks at the current setup item.



Setup item

TURN : TURN direction

RETURN : RETURN direction

Adjustment range

1~100% (each direction)

Adjustment buttons

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

Steering Speed (ST-SPEED) adjustment

(Preparation)
- Select setup item "TURN" and make the following adjustments:

1 "TURN" direction adjustment

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

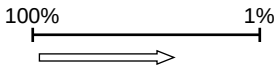
2 "RETN" direction adjustment

Press the (DN) button and select setup item "RETN" and use the (+) or (-) buttons to adjust the delay amount.

3 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

Setup item switching
- Use the (DN) or (UP) button to switch the setup item.

Setting range
1~100%
At 100%, there is no delay.
At 1%, the delay is approximately 1.5 seconds.



Servo operation is delayed.

Dial / Trim Setting

The steering speed adujustment (RATE) and (RETN) can be controlled with button trim BT1, BT2 or digital trim DT3 etc. with the function select dial function. (See page 80)

Throttle EXP/TH-EXP (Throttle system)

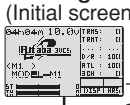
This function makes throttle stick high side and brake side direction servo operation quicker or milder. It has no effect on the servo maximum operation amount.
For the high side, selection from among three kinds of curves (EXP/VTR/CRV) is also possible.

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.

Calling the setup screen

*** Calling from menu screen**
(Initial screen)



Use the (UP) or (DN) button to select the menu screen.

MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.

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

(Initial screen)

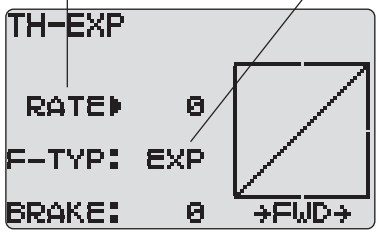
DIRECT SEL

Press the (UP) and (DN) button simulataneously.

Press the button set at this function.

Use the (UP) or (DN) button to select the setup item.

* ▸ blinks at the current setup item.



Curve selection
First, select the type of forward side curve at the "F-TYP" item. The setup item (screen) varies with the type of curve. The figure at the bottom left is the EXP curve setup screen.

Setup items
RATE : Forward side rate
F-TYP : Forward side curve selection
BRAKE : Brake side rate

Adjustment range
RATE : -100 ~ 0 ~ +100%
F-TYP : EXP, VTR, CRV
BRAKE : -100 ~ 0 ~ +100%

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

Setup item switching
0 Use the (DN) or (UP) button to switch the setup item.

Adjustment method for EXP curve

(Preparation)
- Select "EXP" at setup item "F-TYP".
- Select setup item "RATE" and make the following adjustments:

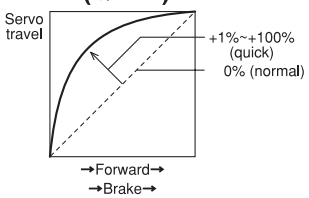
1 Forward side adjustment

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.

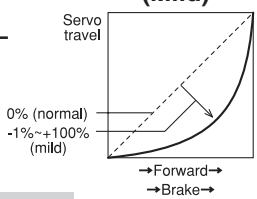
2 Brake side adjustment

Select "BRAKE" by pressing the (DN) button twice, and use the (+) button to adjust the + side

(Quick)



(Mild)



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 adjustment, return to the initial screen by pressing the (END) button 3 times.

Adjustment method for VTR curve

(Preparation)

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

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

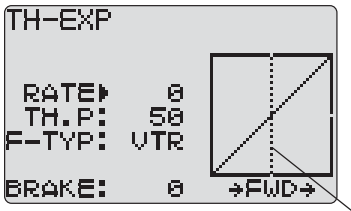
Setup items

RATE : Forward rate

TH.P : Curve switching point

F-TYP : Forward curve selection

BRAKE : Brake side rate



Setup item switching

- Use the (DN) or (UP) button to switch the setup item.

Adjustment range

RATE : -100 ~ 0 ~ +100%

TH.P : 20 ~ 100%

F-TYP : EXP, VTR, CRV

BRAKE : -100 ~ 0 ~ +100%

Adjustment buttons

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

Switching point

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

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.

2 Curve switching point adjustment

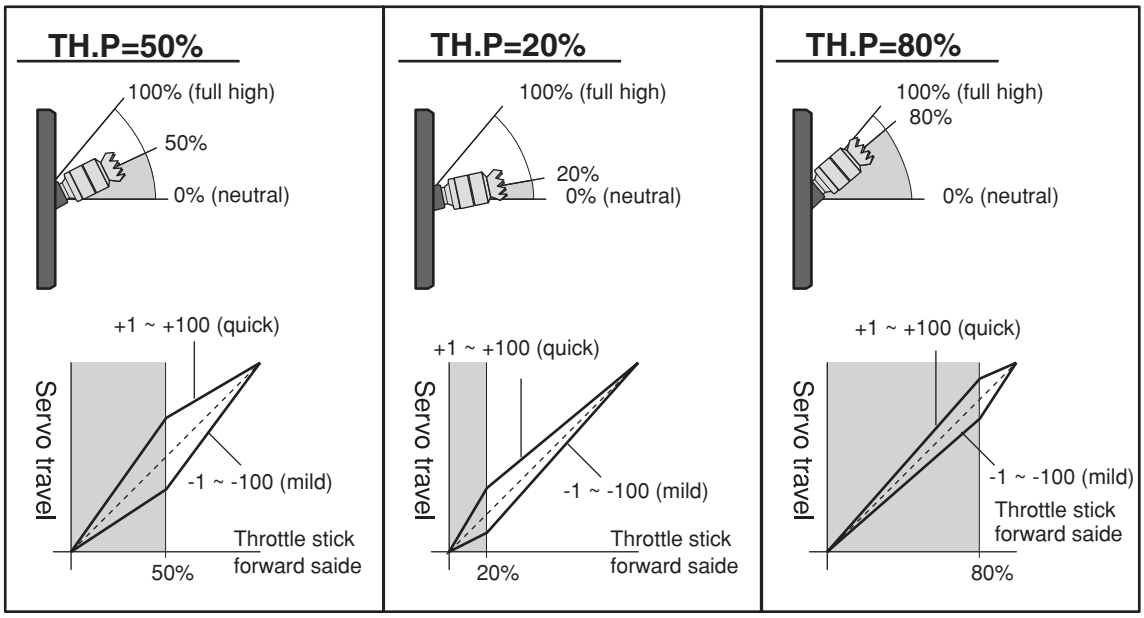
When you want to change the curve switching point relative to the throttle stick, select setup item "TH.P" by pressing the (DN) button and use the (+) and (-) buttons to move to the point you want to set.

3 Brake side adjustment

Select setup item "BRAKE" by pressing the (DN) button. 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.

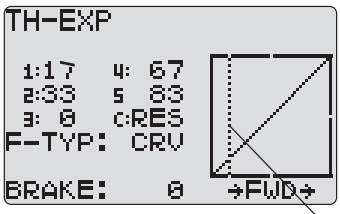
4 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.



Adjustment method for CRV curve

(Preparation)

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



Setup items

1:~5 : Curve points 1~5
C:RES : Curve reset
F-TYP : Forward side curve selection
BRAKE : Brake side rate

Setup item switching

- Use the (DN) or (UP) button to switch the setup item.

1 Curve setup

Use the (DN) or (UP) button to select "1:" (1st point), 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 adjustment

Select setup item "BRAKE" by pressing the (DN) button. 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 adjustment, return to the initial screen by pressing the (END) button 3 times.

Adjustment range

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

Adjustment buttons

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

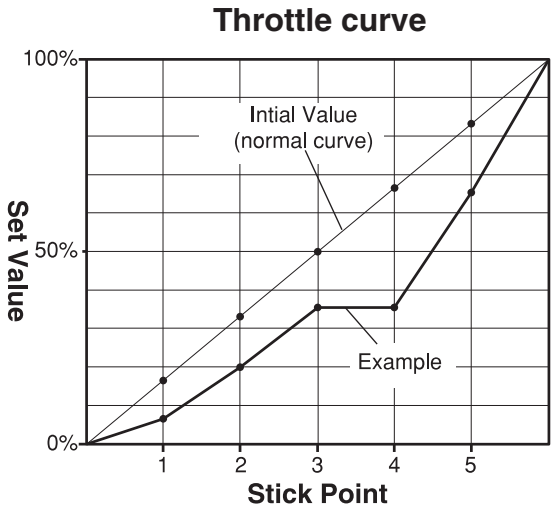
Point in current setup

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

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.

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



Initial values
P1 : 17%
P2 : 33%
P3 : 50%
P4 : 67%
P5 : 83%

Dial / Trim Setting

The throttle EXP carve and VTR carve adujustment (Foward side RATE) and(Brake side RATE) can be controlled with button trim BT1, BT2 or digital trim DT3 etc. with the function select dial function. (See page 80)

Throttle speed/TH-SPEED (Throttle system)

Sudden trottle stick 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.

TH-SPEED/Smooth, quick starts possible

No TH-SPEED/Tires slip and vehicle does not move

Operation

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

- Low side throttle speed (See [Operation range setup].)

Use when adjusting the speed from the neutral position to the set point.

- High side throttle speed (See [Operation range setup].)

Use when adjusting the high side speed from the set point.

Remark: Regarding the throttle speed set value; the actual delay value varies depending on the system (HRS, PCM, PPM). The delay when the HRS system is used is approximately 1/3 that of the PCM and PPM systems.

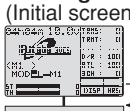
Operation display

The LED blinks while the throttle speed function is on.

Calling the setup screen

*** Calling from menu screen**

(Initial screen)



Use the (UP) or (DN) button to select the menu screen.

MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.

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

(Initial screen)

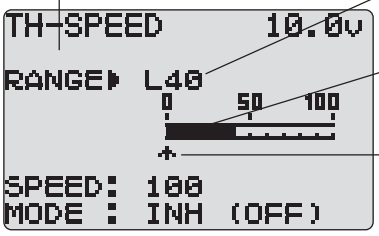
Press the (UP) and (DN) button simulataneously.

DIRECT SEL

Press the button set at this function.

Use the (UP) or (DN) button to select the setup item.

* ▸ blinks at the current setup item.



Setup items

RA NGE : Operation range
SPEED : Speed amount
MODE : Function ON/OFF

* The LED blinks while the throttle speed function is on.

* "L40" indicates operation below 40%.

* The black part of the bar graph is the operation range.

* Throttle trigger position

Adjustment buttons

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

Throttle speed adjustment

(Preparation)
- Select setup item "MODE" and make the following adjustments:

1 (Function ON/OFF)

Set the throttle speed function to the "ACT" state by pressing the (+) or (-) button.

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

Function ON/OFF
INH(OFF), ACT(ON), ACT(OFF)

2 (Operation range setup)

Select setup item "RANGE" by pressing the (UP) button twice and use the (+) or (-) buttons to set the operation range.

"L**" : Operate within a range lower than **% (Low side throttle speed)
"H**" : Operation within a range higher than **% (High side throttle speed)
"ALL" : Operate in entire region
"OFF" : Function OFF

Operation range
L1 ~ L40 ~ L99, H1 ~ H99, OFF, ALL
Initial value; L40

3 (Speed amount setup)

Select setup item "SPEED" by pressing the (DN) button twice and use the (+) or (-) buttons to adjust the speed amount.

"100" : Maximum speed (no delay)
"0" : Maximum delay
Setup example:
Adjust at the entire (0~100%) range according to conditions.

Speed amount
0 ~ 100
Initial value;100

4 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

Switch setting

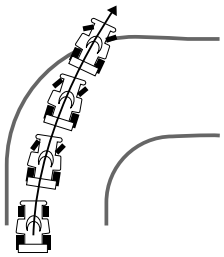
Use SW1 or SW2 to switch the throttle speed function ON/OFF.
See the function select switch function (See page 82).

Dial / Trim Setting

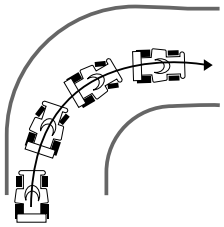
The throttle speed adujustment (RATE) can be controlled with button trim BT1, BT2 or digital trim DT3 etc. with the function select dial function. (See page80)

A.B.S. Function

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, pumping 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)

Switch Setting

The A.B.S. function ON/OFF switch can be set with the function select switch function. (See page 82) SW1 or SW2 can be selected.

Dial / Trim Setting

The brake return amount (ABP), delay amount (DLY) and cycle (CYC) can be controlled with button trim BT1, BT2 or digital trim DT3, etc. with the function select dial function. (See page 80)

Operation Display

When the A.B.S. function is activated, the LED flashes.

Fail Safe Unit

When the 3VCS 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.

Boat Mode

If "BOAT" is set in the Throttle Mode Function (See page 99), the A.B.S Function will not work even if you set the A.B.S Function.

Calling the setup screen

*** Calling from menu screen**

(Initial screen)

Use the (UP) or (DN) button to select the menu screen.

MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.

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

(Initial screen)

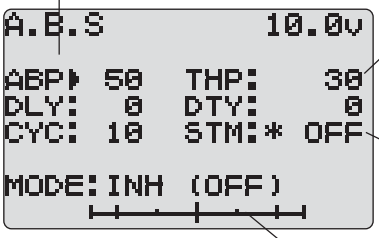
Press the (UP) and (DN) button simulataneously.

DIRECT SEL

Press the button set at this function.

Use the (UP) or (DN) button to select the setup item.

* ▸ blinks at the current setup item.



Setup items

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

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

* 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.

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

A.B.S function adjustment

(Preparation)

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

1 (Function ON/OFF)

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

Adjustment buttons

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

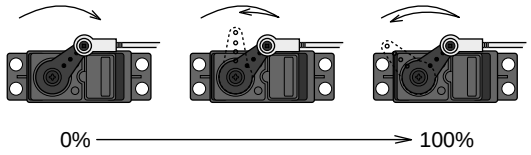
Function ON/OFF

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

2 (Brake return amount adjustment)

Select setup item "ABP" by pressing the (UP) button 3 times and use the (+) and (-) buttons 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.



Brake return amount

0 ~ 50 ~ 100
Initial value; 50

3 (Delay amount setup)

Select setup item "DLY" by pressing the (DN) button once and use the (+) and (-) buttons 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.

Delay amount

0 ~ 100
Initial value; 0

4 (Cycle speed adjustment)

Select setup item "CYC" by pressing the (DN) button once and use the (+) and (-) buttons to adjust the speed.

- The lower the set value, the faster the cycle speed.

Cycle speed
1 ~ 30
Initial value; 10

5 (Operation point setup)

Select set item "THP" by pressing the (DN) button twice, and use the (+) and (-) buttons to set the operation point.

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

Operation point
10 ~ 100
Initial value; 30

6 (Cycle duty ratio setup)

Select setup item "DTY" by pressing the (DN) button once, and use the (+) and (-) buttons to adjust the duty ratio.

"-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.

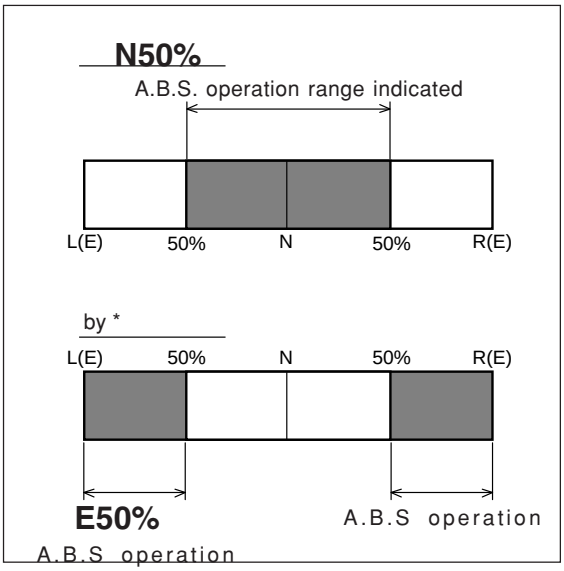
Duty ratio
-3 ~ 0 ~ +3
Initial value; 0

7 (Steering mixing setup)

Select setup item "STM" by pressing the (DN) button once, and use the (+) and (-) buttons to set the steering mixing range.

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

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



8 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

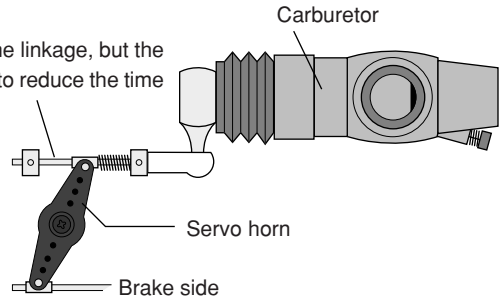
Example of A.B.S. function setting when S9451 / S9351 used (There will be a slight difference depending on the state of the linkage.)

- 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)
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)
DLY: Increase the delay

Throttle acceleration (TH-ACCEL (Throttle system)

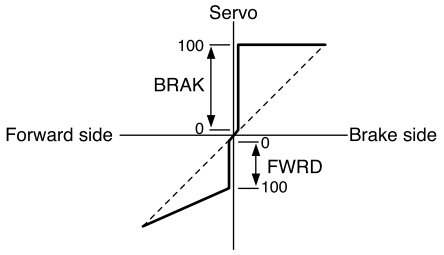
Gasoline engine cars have a small time lag at both the forward side and brake side because a certain clearance is necessary at the linkage. Reducing this time lag at the transmitter side provides the same sharp response as electric motor cars.

A slight clearance is required at the linkage, but the throttle acceleration function acts to reduce the time lag caused by this clearance.



Operation

- Operation near the throttle stick neutral position becomes a sharp rise.
- The forward and brake sides can be set separately.



Set value

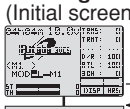
The standard value (100% point) of this setup effects the operation amount set by throttle EPA function.

Functions

Calling the setup screen

*** Calling from menu screen**

(Initial screen)



Use the UP or DN button to select the menu screen.

MENU

Press the SEL button.

MENU SELECT

Use the UP or DN button to select the function.

Press the SEL button.

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

(Initial screen)

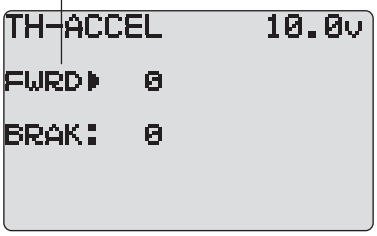
Press the UP and DN button simulataneously.

DIRECT SEL

Press the button set at this function.

Use the UP or DN button to select the setup item.

* ▸ blinks at the current setup item.



Setup items

FWRD : Forward side acceleration amount

BRAK : Brake side acceleration amount

Adjustment buttons

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

Throttle acceleration adjustment

(Preparation)
- Select setup item "FWRD" 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)

Forward acceleration amount
0~100
Initial value: 0

2 (Brake side acceleration amount adjustment)

Select setup item "BRAK" by pressing the (DN) button once and use the (+) and (-) buttons to adjust the acceleration amount.

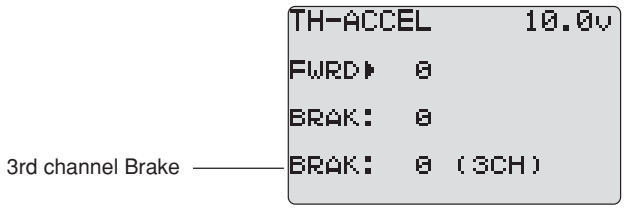
"0" : No acceleration
"100" : Maximum acceleration (Brake side maximum steering angle)

Brake side acceleration amount
0~100
Initial value: 0

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 "BRAK (3CH)" by (UP) or (DN) button and adjust acceleration amount by (+) or (-) button.

3rd channel brake side acceleration amount
0~100
Initial value: 0



4 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

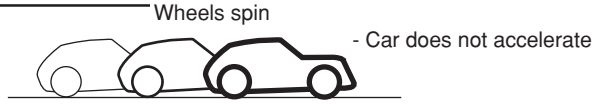
Dial / Trim Setting

The throttle acceleration adujustment amount (FOWRD) , (BRAKE) and 3rd channel (BRAKE) can be controlled with button trim BT1, BT2 or digital trim DT3 etc. with the function select dial function. (See page 80)

Start Function, Engine Cut/AT-START(Throttle system)

When the throttle stick 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 stick slowly causes the throttle servo to automatically switch from the set throttle position to a preset point so that the tires do no loose their grip and the car accelerates smoothly.

Without Start function



With Start function

Start Function Operation

- When the throttle stick is moved to the preset position (throttle position: TH.P), the throttle servo moves to the preset position.
- When the throttle stick 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 stick operation at starting. This function has to be activated before every start.
- When the throttle stick is returned slightly, the Start function is automatically deactivated and the set returns to normal throttle stick operation.

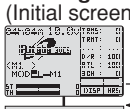
Engine Cut Function

When the switch is pressed, the throttle servo will move to the preset position without regard to the throttle stick position. This is convenient when used to cut the engine of boats, etc. (The function select switch function. See page 82)

Calling the setup screen

*** Calling from menu screen**

(Initial screen)



Use the (UP) or (DN) button to select the menu screen.

MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.

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

(Initial screen)

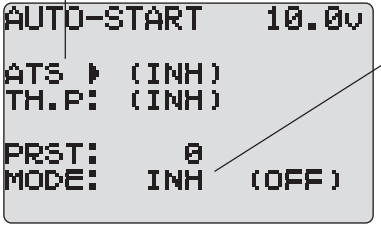
Press the (UP) and (DN) button simulataneously.

DIRECT SEL

Press the button set at this function.

Use the (UP) or (DN) button to select the setup item.

* ▸ blinks at the current setup item.



Function selection

First, select the function at the "MODE" item.

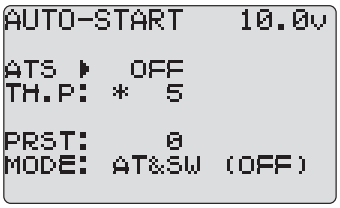
"AT&SW" : Strart function

"SW" : Engine Cut function

Start function adjustment

(Preparation)

- Select function "AT&SW" at setup item "MODE".
- Select setup item "TH.P" and make the following adjustments.



Setup items
ATS : READY setting
TH.P : Throttle position
PRST : Preset position
MODE : Function selection

Setup item switching
- Use the (DN) or (UP) button to switch the setup item.

1 (Trottle position setup)

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

Throttle position
5 ~ 95
Initial value: 5

2 (Preset position setup)

Select setup item "PRST" by pressing the (DN) button and use the (+) and (-) buttons to set the preset position of the throttlle servo.

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

Setting Example: (When amp used with an electric car)
Set the preset position to F75% at EPA100%.

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

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

3 ("READY" setting)

Select setup item "ATS" by pressing the (UP) button twice, and press the (+) and (-) buttons simultaneously for about 1 second. "READY" blinks on the screen and the system enters the READY state. Trottle stick operation starts the function.

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

4 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

-If the throttle stick 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 stick is returned.

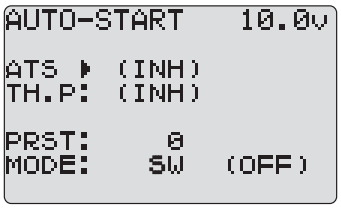
-When using the Start function, always set the function by performing step 3 above each time.

Engine Cut function adjustment

(Preparation)
- Use the function select switch function (page) to select the switch.
- Select function "SW" at setup item "MODE".
- Select setup item "PRST" and make the following adjustments.

Setup item switching
- Use the (DN) or (UP) button to switch the setup item.

Setup items
PRST : Preset position
MODE : Function selection



1 (Preset position setup)

Use the (+) and (-) buttons to set the preset position of the throttlle servo.

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

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

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

2 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

Engine Cut by Boat Mode

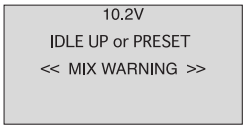
In case of using Engine Cut Function for boats and the alike, the preset position you set here will be the base point. Set the linkage so that the carburetor will completely close and stop the engine within the adjustable range of the preset. And then adjust the Full Throttle Position by the End Point Adjuster Function at "TH-FWD" side (See page 36). The Idling Position is adjustable by the 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. How-

Operation Display

When this function is activated, the LED flashes.
If the power switch is turned on while the idle-up switch is on, an audible alarm will be heard. Immediately set the Preset switch to OFF.



(Warning display)

Brake mixing/BRAKE MIXING (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.

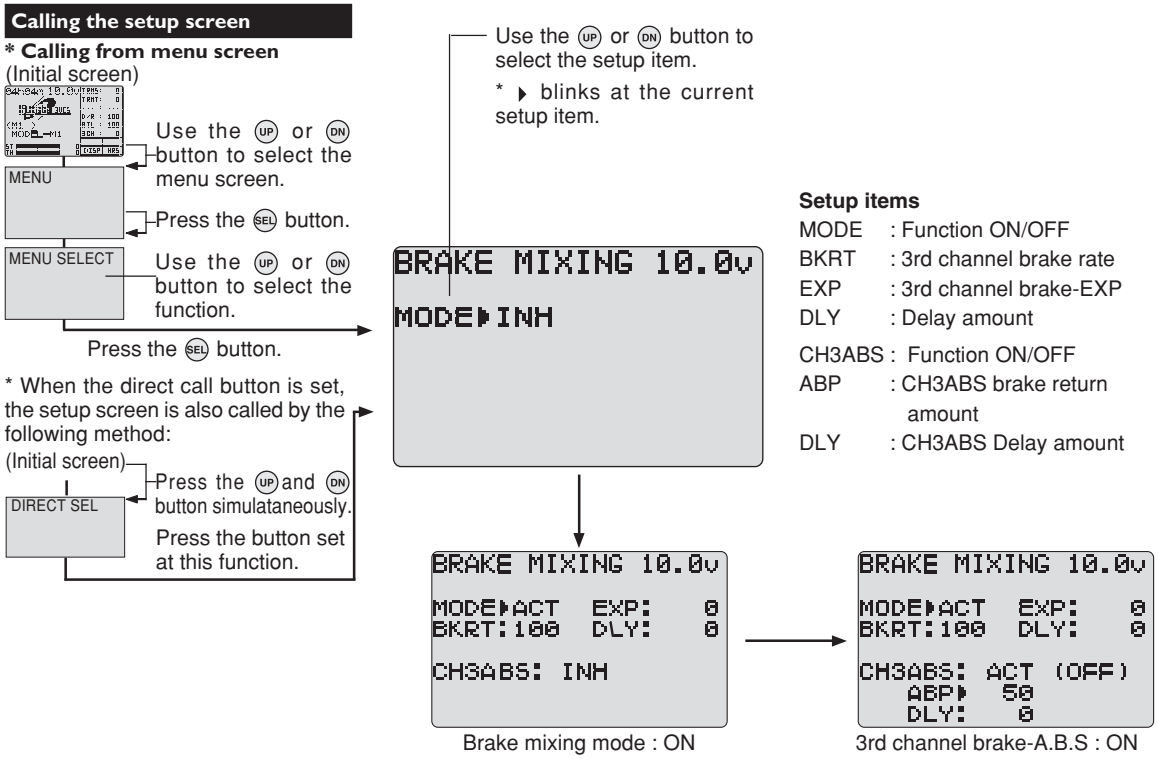
It is possible to adjust the Brake Return Amount (ABP), Delay Amount (DLY) and Cycle period (CYC) exclusively for the front brake (the 3rd CH). In doing so, you can use the A.B.S. Function at the front side even if the A.B.S Function is off for the rear brake (2nd CH). You can use the same procedure as the 2nd CH " A.B.S Function for setting the Cycle Period (CYC), Duty Ratio (DTY) and Steering Mixing (STM). When the ON/OFF switch of the A.B.S Function is set by the Function Select Switch, the A.B.S. Function will turn on or turn off both the front and rear brakes simultaneously.

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.

Button trim setup

The function select trim 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 BT1 and BT2 and dial trim DL3. (See page 80)



Brake mixing adjustment

(Preparation)

- Select setup item "MODE" and make the following adjustments.

1 (Function ON/OFF)

Set the function to the "ACT" state by pressing the (+) or (-) button.

2 (3rd channel brake rate)

Select setup item "RATE" by pressing the (DN) button five times, and use the (+) and (-) buttons to adjust the 3rd channel brake rate amount.

3 (3rd channel brake-EXP)

Select setup item "EXP" by pressing the (DN) button. 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 pressing the (DN) button once, 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 pressing the (DN) button once.Set the function to the "ACT" state by pressing the (+) or (-) button.

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

Select setup item "ABP" by pressing the (UP) button 3 times 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 pressing the (DN) button once and use the (+) and (-) buttons to adjust the delay amount.

8 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

Adjustment buttons

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

Function ON/OFF

INH, ACT

"INH" : Function OFF

"ACT" : Function ON

Brake rate

0 ~ 100

Initial value: 100

3rd channel brake rate

100 ~ 0 ~ +100%

Initial value: 0

Delay amount (DLY)

F100~F1, 0 ,R1~R100

However, at least one must be "0".

Initial value: 0

Function ON/OFF

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

Brake return amount

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 posi tion.

Delay amount

0 ~ 100

Initial value; 0

"0" : A.B.S. function performed with out 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.

Idle-Up/IDLE-UP 1/2(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

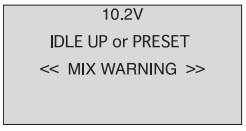
Offsets the throttle neutral position to the forward side or brake side.

Switch Setting

Select the idle-up function ON/OFF switch with the function select switch function. (See page 82)

Operation Display

When this function is activated, the LED flashes.
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.

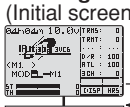


(Warning display)

Calling the setup screen

*** Calling from menu screen**

(Initial screen)



Use the (UP) or (DN) button to select the menu screen.

MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.

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

(Initial screen)

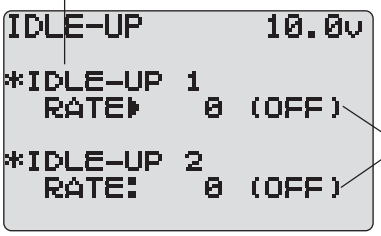
Press the (UP) and (DN) button simulataneously.

DIRECT SEL

Press the button set at this function.

Use the (UP) or (DN) button to select the setup item.

* ▸ blinks at the current setup item.



* Idle-Up 1/2 on/off state.

Adjustment buttons

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

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

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 adjustment, return to the initial screen by pressing the (END) button 3 times.

Idle-Up rate

D50% ~ D1%, 0%, U1% ~ U50%
Initial value: 0%
"D": Brake side
"U": Forward side

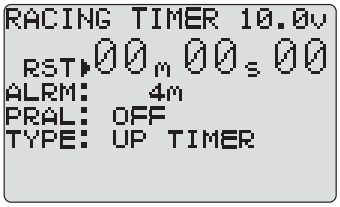
Timer/TIMER

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

UP 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 stick.
- An alarm sound can be set. The passage of time is announced by sounding of a buzzer ([pee] sound) each minute after starting.



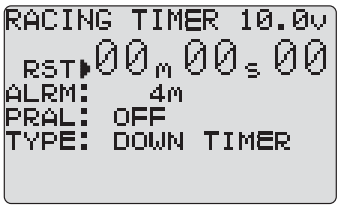
Alarm: Generates a [pee] sound at the set time (minutes).
Prealarm: Alarm advance announcement sound. Sounding starts the set time (seconds) before the alarm. (PeePeePee, PeePeePee, -----)

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

DOWN TIMER

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 stick.
- An alarm sound can be set. The passage of time is announced by sounding of a buzzer ([pee] sound) each minute after starting.



Alarm: Generates a [pee] sound at the set time (minute).
Prealarm: Alarm advance announcement sound. Sounding starts the set time (seconds) before the alarm. (PeePeePee, PeePeePee, -----)

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

LAP TIMER

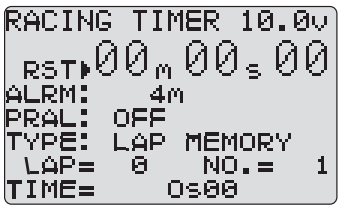
LAP TIMER function

- The LAP TIMER can memorize each lap time of each switch operation. (99 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 ([Pee] sound) each minute after starting.

Alarm: Generates a [Pee] sound at the set time.

Prealarm: Starts sounding the set time (second) before the alarm. (PeePeePee, PeePeePee, -----)

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



(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 page 65)

screen.

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

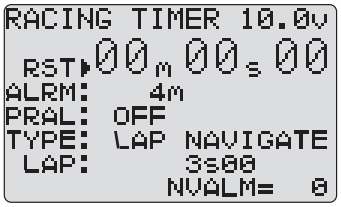
LAP NAVIGATE timer

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 ([Pee] sound) every minute after starting.
- The first start operation can be linked with the throttle stick.
- The alarm sounds (alarm/prealarm) can be set separately from the fixed interval buzzer.

Alarm: Generates a [Pee] sound at the set time (minutes).

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

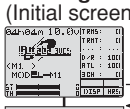


- After starting, the timer is enabled and can be stopped by switch even when the display switches to another screen.

Calling the setup screen

*** Calling from menu screen**

(Initial screen)



Use the (UP) or (DN) button to select the menu screen.

MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.

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

(Initial screen)

Press the (UP) and (DN) button simulataneously.

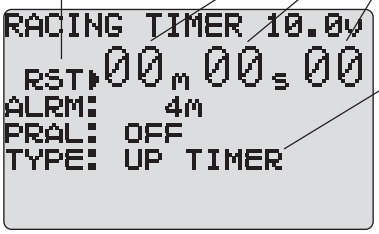
DIRECT SEL

Press the button set at this function.

Use the (UP) or (DN) button to select the setup item.

* ▸ blinks at the current setup item.

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



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.

Timer selection (TYPE)

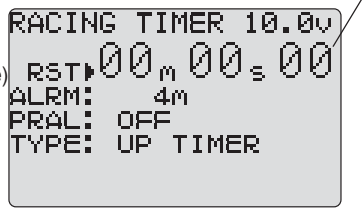
UP TIMER	: Up timer
DOWN TIMER	: Down timer
LAP MEMORY	: Lap timer
LAP NAVIGATE	: Navigation timer

Functions

Up timer setup

(Preparation)

- Use the function select switch function (See page 82) to select the switch.
- Select "UP TIMER" at setup item "TYPE".



Setup items
RST : (Indicates the reset state)
ALRM : Alarm setup
PRAL : Prealarm setup
TYPE : Timer selection

Setup item switching
- Use the (DN) or (UP) button to switch the setup item.

Switches
LAP STA : Start/stop
LAP RES : Lap reset

* Timer display

Status display
RST : Reset state
RDY : Throttle stick operation wait
RUN : Timer running
STP : Timer stopped

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

1 (Alarm time setup)

Select setup item "ALRM" by pressing the (UP) button twice, and use the (+) and (-) buttons to set the alarm time.

Alarm time
OFF, 1 ~ 99 m
Initial value: 4 m

2 (Prealarm time setup)

Select setup item "PRAL" by pressing the (DN) button once, and use the (+) and (-) buttons to set the prealarm time.

Prealarm time
OFF, 1 ~ 30 s
Initial value: 5 s

3 (Linking start with the throttle stick)

Select setup item "RST" by pressing the (UP) button twice, and press the (+) and (-) buttons simultaneously for about 1 second. A PeePee sound is generated and "RST" > "RDY" blinks at the timer display and the system enters the RDY state. Throttle stick operation starts the timer.

4 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

(Timer start/stop operation)

The switch (LAP STA) preset by function select switch function (See page 82) starts the timer. Only starting can be linked with the throttle stick.

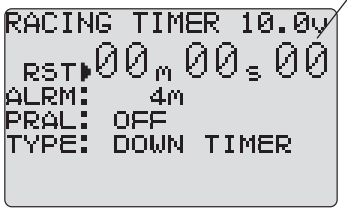
(Timer reset operation)

In the timer-stopped state, the switch (LAP RES) preset by function select switch function (See page 82) resets the timer.

DOWN TIMER setup

(Preparation)

- Use the function select switch function (See page 82) to select the switch.
- Select "DOWN TIMER" at setup item "TYPE".



Setup items
RST : (Indicates the reset state.)
ALRM : Alarm setup
PRAL : Prealarm setup
TYPE : Timer selection

Setup item switch
- Use the (DN) and (UP) buttons to switch the setup item.

* Timer display

Status display
RST : Reset state
RDY : Throttle stick operation wait
RUN : Timer running
STP : Timer stopped

Switches
LAP STA : Start/stop
LAP RES : Reset

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

1 (Alarm time setup)

Select setup item "ALRM" by pressing the (UP) button twice, and use the (+) and (-) buttons to set the alarm time.

Alarm time
OFF, 1 ~ 99 m
Initial value: 4 m

2 (Prealarm time setup)

Select setup item "PRAL" by pressing the (DN) button once, and use the (+) and (-) buttons to set the prealarm time.

Prealarm time
OFF, 1 ~ 30 s
Initial value: 5 s

3 (Linking start with the throttle stick)

Select setup item "RST" by pressing the (UP) button twice, and press the (+) and (-) buttons simultaneously for about 1 second. A PeePee sound is generated and "RST" > "RDY" blinks at the timer display and the system enters the RDY state. Throttle stick operation starts the timer.

4 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

(Timer start/stop operation)

The switch (LAP STA) preset by function select switch function (See page 82) starts the timer. Only start can be linked with the throttle stick.

(Timer reset operation)

In the timer-stopped state, the switch (LAP RES) preset by function select switch function (See page 82) resets the timer.

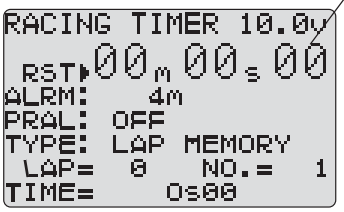
Lap timer setup

(Preparation)

- Use the function select switch function (See page 82) to select the switch.
- Select "LAP MEMORY" at setup item "TYPE".

Setup items
RST : (Indicates the reset state.)
ALRM : Alarm setup
PRAL : Prealarm setup
TYPE : Timer selection

Setup item switching
- Use the (DN) or (UP) button to switch the setup item.



LAP : Number of laps display
No. : Lamp memory No. display
TIME : Lap time display

Switches
LAP STA : Start/stop
LAP RES : Stop/reset

* Timer display

Status display
RST : Reset state
RDY : Throttle stick operation wait
RUN : Timer running
STP : Timer stopped

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

1 (Alarm time setup)

Select setup item "ALRM" by pressing the (UP) button twice, and use the (+) and (-) buttons to set the alarm time.

Alarm time
OFF, 1 ~ 99 m
Initial value: 4 m

2 (Prealarm time setup)

Select setup item "PRAL" by pressing the (DN) button once., and use the (+) and (-) buttons to set the prealarm time.

Prealarm time
OFF, 1 ~ 30 s
Initial value: 5 s

3 (Linking start with the throttle stick)

Select setup item "RST" by pressing the (UP) button twice, and press the (+) and (-) buttons simultaneously for about 1 second. A PeePee sound is generated and "RST" > "RDY" blinks at the timer display and the system enters the RDY state. Throttle stick operation starts the timer.

4 When ending adjustment, return to the initial screen by pressing the (END) button three times.

(Timer start/lap counting operation)

The switch (LAP STA) preset by function select switch function (See page 82) performs the timer and lap counting operation. Only start can be linked with the throttle stick.

(Timer stop/reset operation)

The switch (LAP RES) preset by function select switch function (See page 82) performs the timer stop/reset operation. It resets the timer when operated in the timer-stopped state.

Navigation timer setup

(Preparation)

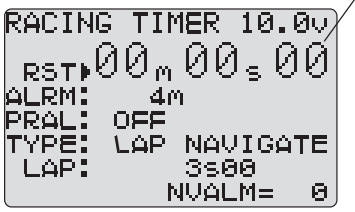
- Use the function select switch function (See page 82) to select the switch.
- Select "LAP NAVIGATE" at setup item "TYPE".

Setup items

RST : (Indicates the reset state.)
ALRM: Alarm setup
PRAL : Prealarm setup
TYPE : Timer selection
LAP : Navigation alarm setup

Setup item switching

- Use the (DN) and (UP) buttons to switch the setup item.



* Timer display

Status display

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

Switches

LAP STA: Start/navigation alarm re start
LAP RES: Stop/reset

Adjustment buttons

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

1 (Alarm time setup)

Select setup item "ALRM" by pressing the (UP) button twice, and use the (+) and (-) buttons to set the alarm time.

Alarm time

OFF, 1 ~ 99 m
Initial value: 4 m

2 (Prealarm time setup)

Select setup item "PRAL" by pressing the (DN) button once, and use the (+) and (-) buttons to set the prealarm time.

Prealarm time

OFF, 1 ~ 30 s
Initial value: 5 s

3 (Lap navigation alarm time setup)

Select setup item "LAP" by pressing the (DN) button twice, and use the (+) and (-) buttons to set the lap navigation alarm time.

Lap NAVI alarm time

3 s ~ 30 m
Initial value: 3 s

4(Linking start with the throttle stick)

Select setup item "RST" by pressing the (UP) button twice, and press the (+) and (-) buttons simultaneously for about 1 second. A PeePee sound is generated and "RST" > "RDY" blinks at the timer display and the system enters the RDY state. Throttle stick operation starts the timer.

5 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

(Timer start/lap navigation alarm restart operation)

The switch (LAP STA) preset by function select switch function performs the timer start/lap navigation alarm restart operation. Only start is linked with the throttle stick.

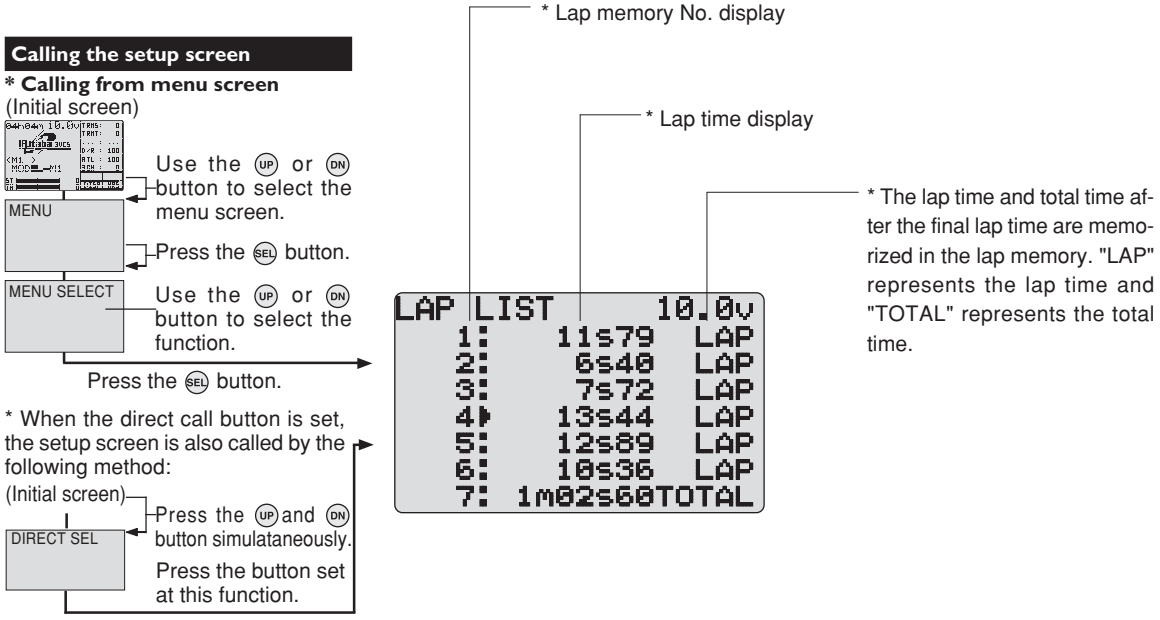
(Timer stop/reset operation)

The switch (LAP RES) preset by function select switch function performs the timer stop/reset operation. It resets the timer when operated in the timer-stopped

Lap list/LAP-LIST

Call LAP-LIST when checking the lap memory data (each lap time) memorized by lap timer (page 59) operation.

- After the lap timer is started, the lamp time is sequentially memorized at each switch operation.
- When the timer is stopped, the final lap is memorized and the total time is automatically written to the next memory after the final lap.
-The next lap time data will be written on the line number indicated by"▶"mark. If you want to keep all the previous lap times and total lap time, move the"▶"mark to the line number following the line number for the total lap time.



(Lap memory reset)

Use the (DN) or (UP) button to select lamp memory No., and reset the lamp memory by pressing the (+) and (-) buttons simultaneously for about 1 second.

(Lap memory entire data reset)

Pressing the (+) and (-) buttons simultaneously for about 1 second while pressing the (SEL) button, resets all the data.

Program Mixing 1,2/PRG-MIX1,2

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 fanction)

Movement of the slave channel side

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

Switch Setting

The programmable mixing 1,2 function ON/OFF switch can be set with the function select switch function. (Page 82) SW1 or SW2 can be selected.

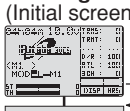
Dial / Trim Setting

The mixing rate amount can be controlled with button trim BT1, BT2 or digital trim DT3, etc. with the function select dial function. (Page80)

If the throttle channel is used as the "MST" while "BOAT" is selected as the throttle-stick mode (TH-STK) in the THR-MODE function, the rate of the "BRK" side is not adjustable. Only "FWD" side is operative.

Calling the setup screen

*** Calling from menu screen**
(Initial screen)



Use the (UP) or (DN) button to select the menu screen.

MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.

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

(Initial screen)

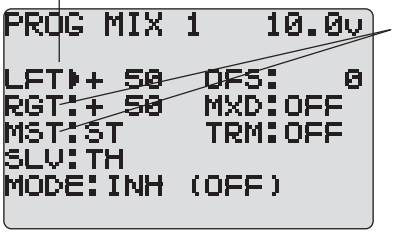
Press the (UP) and (DN) button simulataneously.

DIRECT SEL

Press the button set at this function.

Use the (UP) or (DN) button to select the setup item.

* ▸ 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

Adjustment buttons

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

Program mixing adjustment

(Preparation)

- Use the function select switch function (page) to select the switch. (as desired)
- Select setup item "MODE" and make the following adjustments.

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

1 (Function ON/OFF)

Set the function to the "ACT" state by pressing the (+) or (-) button.
"INH": Function OFF, "ACT": Function ON

Function ON/OFF
INH, ACT

2 (Master channel)

Select setup item "MST" by pressing the (UP) button twice, and select the master channel by pressing the (+) or (-) button.

Channel selection
ST, TH, CH3
Initial value: ST

3 (Slave channel)

Select setup item "SLV" by pressing the (DN) button once, and select the slave channel by pressing the (+) or (-) button.

Channel selection
ST, TH, CH3
Initial value: TH

4 (Mixing amount adjustment)---upper item

Select setup item "LFT" etc. by pressing the (UP) button three times, and use the (+) and (-) buttons to adjust the mixing amount.

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

5 (Mixing amount adjustment)---lower item

Select setup item "RGT" etc. by pressing the (DN) button once, and use the (+) and (-) buttons to adjust the mixing amount.

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

6 (Offset amount setup)

Select setup item "OFS" by pressing the (DN) button twice, and use the (+) and (-) button to adjust the offset amount.

Offset amount
-100~0~+100
Initial value: 0

7 (Mixing mode setup)

Select setup item "MXD" by pressing the (DN) button once, 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.

Mixing mode
OFF, MIX
Initial value: OFF

7 (Trim mode setup)

Select setup item "TRM" by pressing the (DN) button once, and use the (+) or (-) button to select the mixing mode.

"OFF" : Trim is added.
"ON" : Trim is removed.

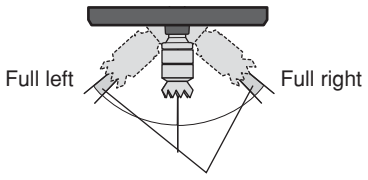
Trim mode
OFF, ON
Initial value: OFF

9 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

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.
- RGH -> 10% [When subtrim is centered (0%)]
- LFT -> 10% [When subtrim is centered (0%)]
- TRM -> OFF
- OFS -> 0%
- MXMD -> MIX

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.

Tilt mixing/TILT-MIX (Steering system/throttle system)

Tilt mixing

This mixing uses an outboard engine with a boat, etc. and applies mixing of both directions from rudder (steering) to 3rd channel and from 3rd channel to rudder and allows rudder operation and tilt mixing using 2 servos. Rudder operation by steering wheel and tilt mixing by 3rd channel knob are possible.

Effect of set value of other functions

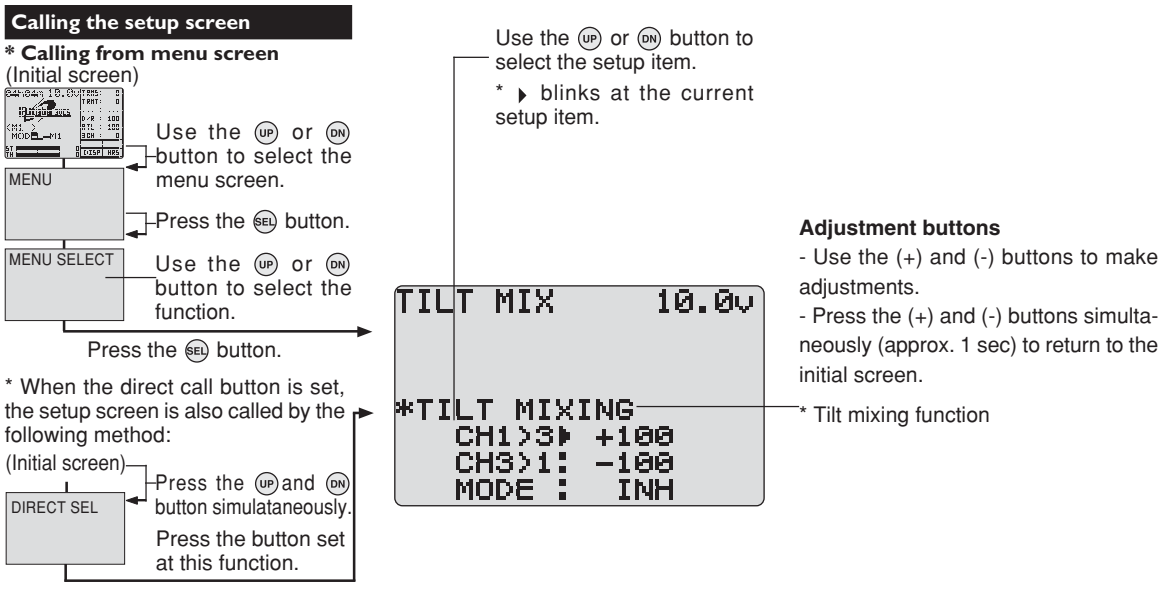
The steering side EPA function, ST-EXP function, ST-SPEED function, or ST-D/R function setting are effective even at 3rd channel side operation. However, the 3rd channel is not reversed even if the reverse function is set at the steering side.

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 button trim BT1, BT2 or digital trim DT3, etc. with the function select dial function. (Page80)



Tilt mixing adjustment

(Preparation)
- Select setup item "MODE" and make the following adjustments.

1 (Function ON/OFF)

Set the function to the "ON" state by pressing the (+) or (-) button.

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

Function ON/OFF
INH, ON

2 (CH1>CH3 mixing amount adjustment)

Select setup item "CH1>3" by pressing the (UP) button twice, and use the (+) and (-) buttons to adjust the mixing amount.

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

Mixing amount
-100~+100
Initial value: +100

3 (CH1>CH1 mixing amount adjustment)

Select setup item "CH3>1" by pressing the (DN) button once, and use the (+) and (-) buttons to adjust the mixing amount.

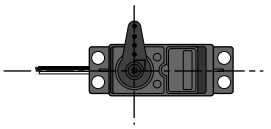
"+" : Operate in same direction as channel 3
"-" : Operate in opposite direction of channel 3

Mixing amount
-100~+100
Initial value: -100

4 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

Subtrim/SUB-TRIM(All channel)

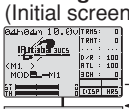
Use this function to adjust the neutral position of the steering, throttle and channel 3 servos.
Subtrim shifts the entire servo travel range in the set direction.



Use to adjust the neutral position

Calling the setup screen

*** Calling from menu screen**
(Initial screen)



Use the (UP) or (DN) button to select the menu screen.

MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.

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

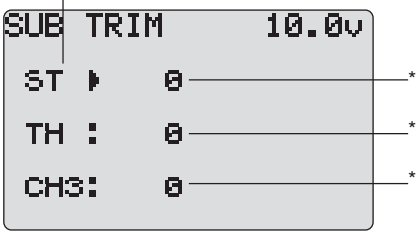
DIRECT SEL

Press the (UP) and (DN) button simulataneously.

Press the button set at this function.

Use the (UP) or (DN) button to select the setup item.

* ▸ blinks at the current setup item.



* Steering subtrim

* Throttle subtrim

* Channel 3 subtrim

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.
- Preselect setup channel "ST", "TH", or "CH3".

1 (Subtrim adjustment)

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

(Each channel can be set similarly.)

2 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

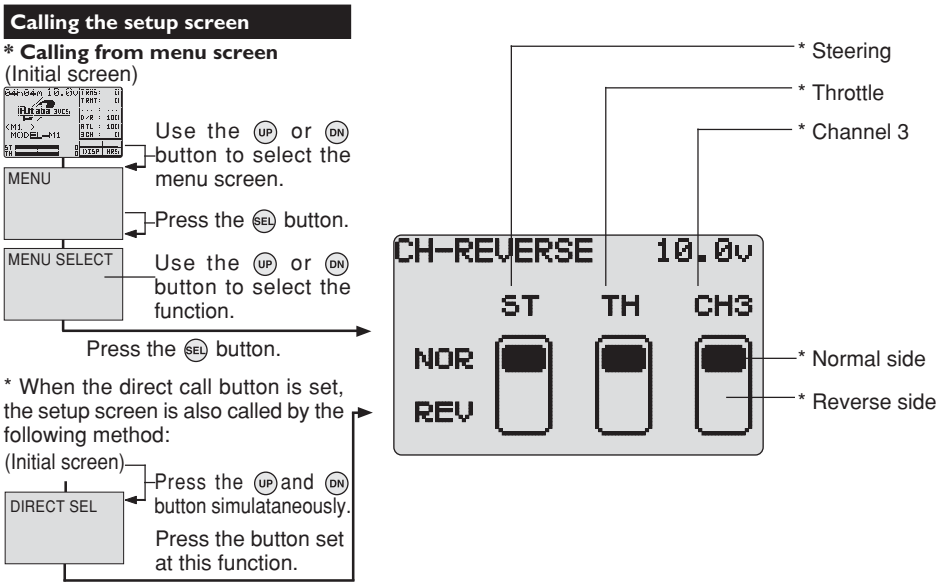
Subtrim
ST : L100~R100
TH : B100~F100
CH3 : -100~+100
Initial value : 0

Functions

Servo Reverse/CH-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.



Sevo Reverse Function Setting

(Preparation)

- Preselect setup channel "ST", "TH", or "CH3".

1 (Servo reverse setting)

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

(Each channel can be set similarly.)

2 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

Fail safe function/FAIL SAFE

(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..

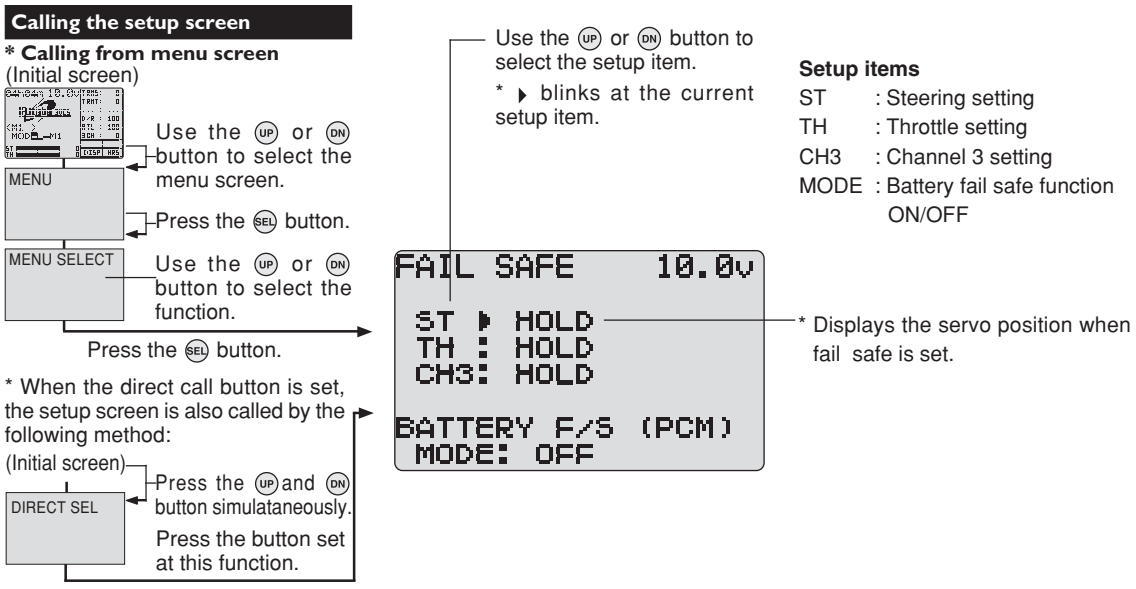
- For gasoline engine cars, it is recommended that the throttle channel be set to the direction that applies the brakes.
- When the transmitter power is turned on, the transmitter transfers the fail safe data to the receiver and continues to transfer the data every minute thereafter. Note that data for 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 safe function ON/OFF can be set by transmitter side setting.
Also, with an HRS system, the battery fail safe function cannot be turned OFF.



Fail safe function setup

(Preparation)

- Select the channel to be set.

1 (Servo position setup)

When the fail safe function operates, the steering stick, the throttle stick or channel 3 knob 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.)

Fail safe function
ST : Steering setting
TH : Throttle setting
CH3 : Channel 3 setting

2 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

Battery fail safe function ON/OFF (PCM only)

(Preparation)

- Select setup item "MODE".

1 (Battery fail safe function ON/OFF)

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

Function ON/OFF
OFF, ON
Initial value: OFF

2 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

Model Select/MDL-SEL

Use this function to call a new model number, or to change a set model number, to set new model data.
The T3VCS transmitter can store the model data for ten R/C cars. The CAMPac-16K (Option) can store model data for ten more models.
The model numbers are 01 to 10 at the transmitter and 11 to 20 at the CAMPac-16K.
When the CAMPac-16K is not installed, model numbers 11 to 20 are not displayed.

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

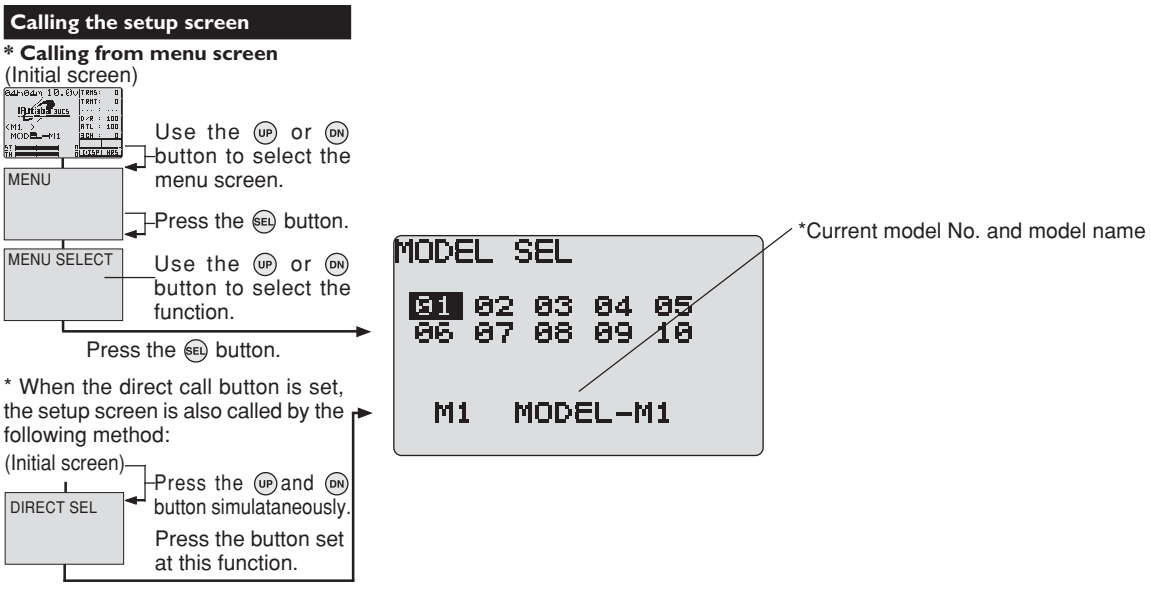
After the new model is called, signals are still output in the old model modulation mode until the transmitter power is turned off. Before using the new modulation mode, turn the power off and on.

CAMPac -16K (Option)

For the transmitter to use the CAMPac-16K, it must be initialized when the power is turned on for the first time. If "INITIALIZE" is displayed on the screen when the power is turned on, press the (+) button. This automatically initializes the transmitter. This operation is unnecessary thereafter.

Inserting and removing the Data Pac

Before inserting and removing the CAMPac-16K, turn off the power switch. If the power is turned off when a model number (11 to 20) in the Data Pac is selected and is turned back on after the CAMPac-16K has been removed, "SELECT ERROR" will be displayed and model 01 will be forcibly selected.

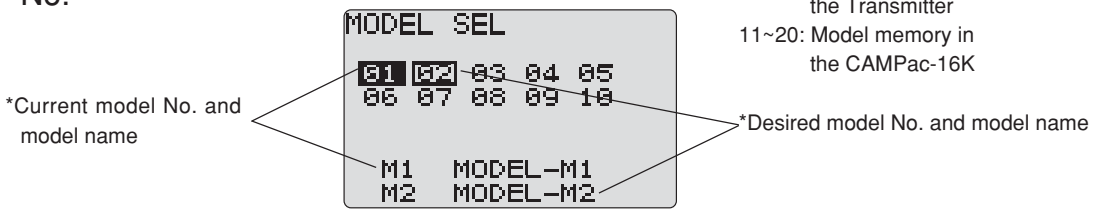


Model Select

1 (Model No. selection)

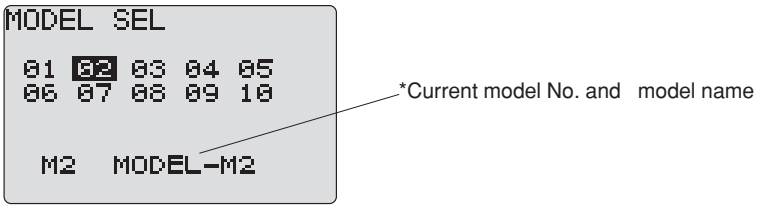
Use the (DN) or (UP) button to select the model No.

Model No.
01~10: Model memory in the Transmitter
11~20: Model memory in the CAMPac-16K



2 (Select execution)

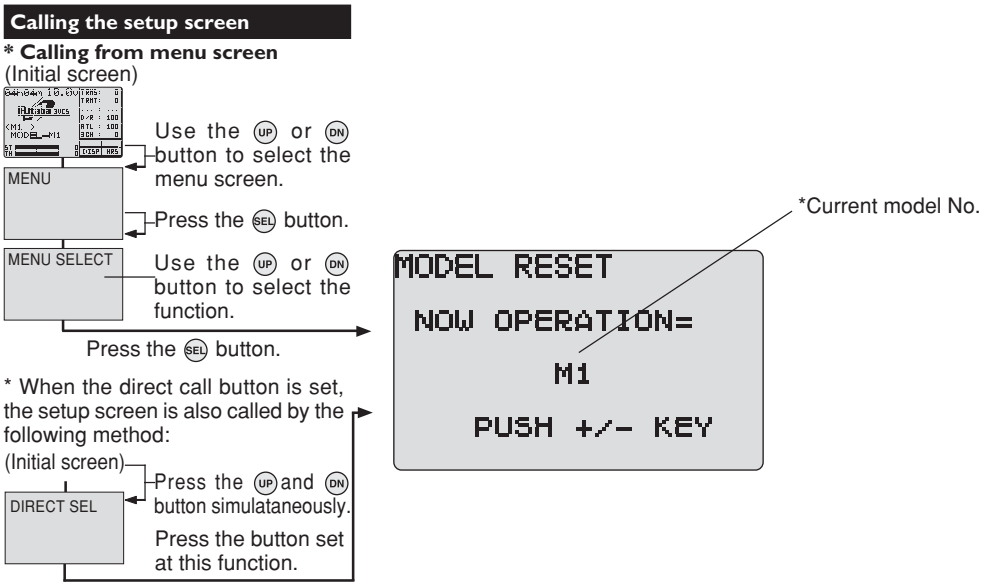
Press the (+) and (-) buttons simultaneously for about 1 second.



3 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

Model Reset/MDL-RES

This functions resets the contents of the currently called model memory to the initial value. However, it does not reset the Adjuster function (ADJUSTER), System function (SYSTEM), Lap list (LAP-LIST), User name (USR-NAME), Direct selection button (DIRECT CUSTOMIZE), and HRS/PCM/PCM select (MOD-MODE).



Model Reset

1 (Reset execution)

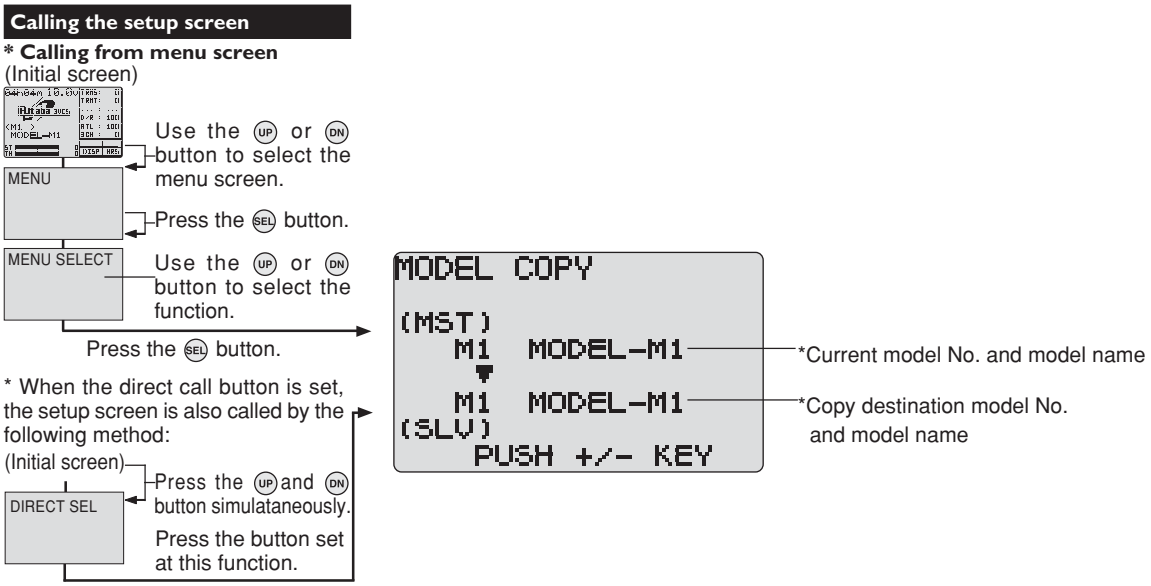
Press the (+) and (-) buttons simultaneously for about 1 second. ("COMPLETE!" blinks)

2 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

Model No.
01~10: Model memory in the Transmitter
11~20: Model memory in the CAMPac-16K

Model Copy/MDL-COPY

This function copies the entire contents of the currently called model memory to another model memory.



Model Copy

1 (Copy destination selection)

Use the (DN) or (UP) button to select the model No.

Model No.
01~10: Model memory in the Transmitter
11~20: Model memory in the CAMPac-16K

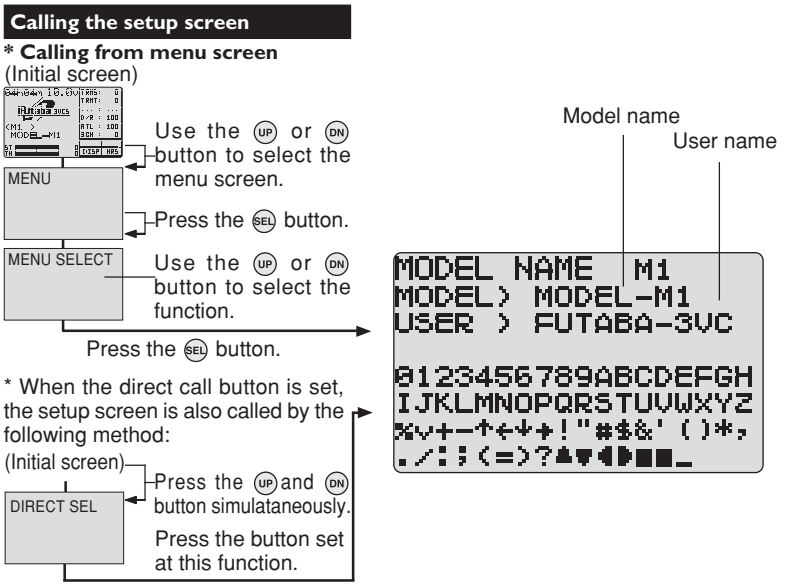
2 (Copy execution)

Press the (+) and (-) buttons simultaneously for about 1 second. ("COMPLETE!" blinks)

3 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

Model Name/MDL-NAME

This function allows you to assign a ten character name to each model memory and an user name (ten character).



Model Name and User Name

1 Move the cursor (blinking) to the column you want to change using the (DN) or (UP) button.

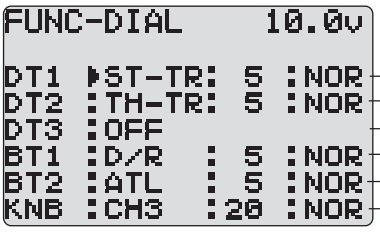
2 Change the character using the (+) or (-) button.

(Set the model name or user name by repeating steps 1 and 2 above.)

3 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

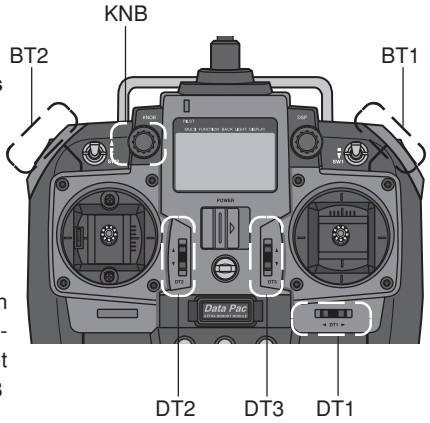
Function select dial/FUNC-DIAL

This function allows selection of the function performed by the trim (BT1/BT2), knob (KNB), and digital trimmers (DT1/DT2/DT3), step amount adjustment, and operating direction reversal.



Initially set functions

- DT1: Steering trim
- DT2: Throttle trim
- DT3: (Not set)
- BT1: Dual rate function
- BT2: ATL function
- KNB: Channel 3



- The table below lists the functions that can be assigned to each dial, knob, and digital trimmer. The assigned function is also displayed on the initial screen together with the current adjustment value. They are displayed in DT1, DT2, DT3, BT1, BT2, and KNB 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

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 (Brake mixing fanction-ON)
SPD-T	(SPDT)	: Steering speed (Turn side)
SPD-R	(SPDR)	: Steering speed (Return side)
AB.P	(AB.P)	: A.B.S. function (Return amount)
ABS.D	(ABSD)	: A.B.S. function (Delay)
ACC-F	(ACCF)	: Throttle acceleration (Forward side)
ACC-B	(ACCB)	: Throttle acceleration (Brake side)
ACC-3	(ACC3)	: 3rd Channel brake acceration (Brake mixing fanction-ON)
THSPD	(THSP)	: Throttle speed
ST-TR	(TRMS)	: Steering trim
TH-TR	(TRMT)	: Throttle trim
CH3	(3CH)	: Channel 3
D/R2	(D/R2)	: 2nd dual rate function
IDL-1	(IDL1)	: Idle up 1 function
IDL-2	(IDL2)	: Idle up 2 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 (rate)
BK-DL	(BKDL)	: Brake mixing (delay)
B-ABP	(BABP)	: 3rd Channel brake function -Return amount (Brake mixing fanction-ON)
B-ABD	(BABD)	: 3rd Channel brake function -Delay (Brake mixing fanction-ON)
CYCLE	(CYCL)	: A.B.S. function (cycle speed)
OFF	(...)	: OFF (not used)

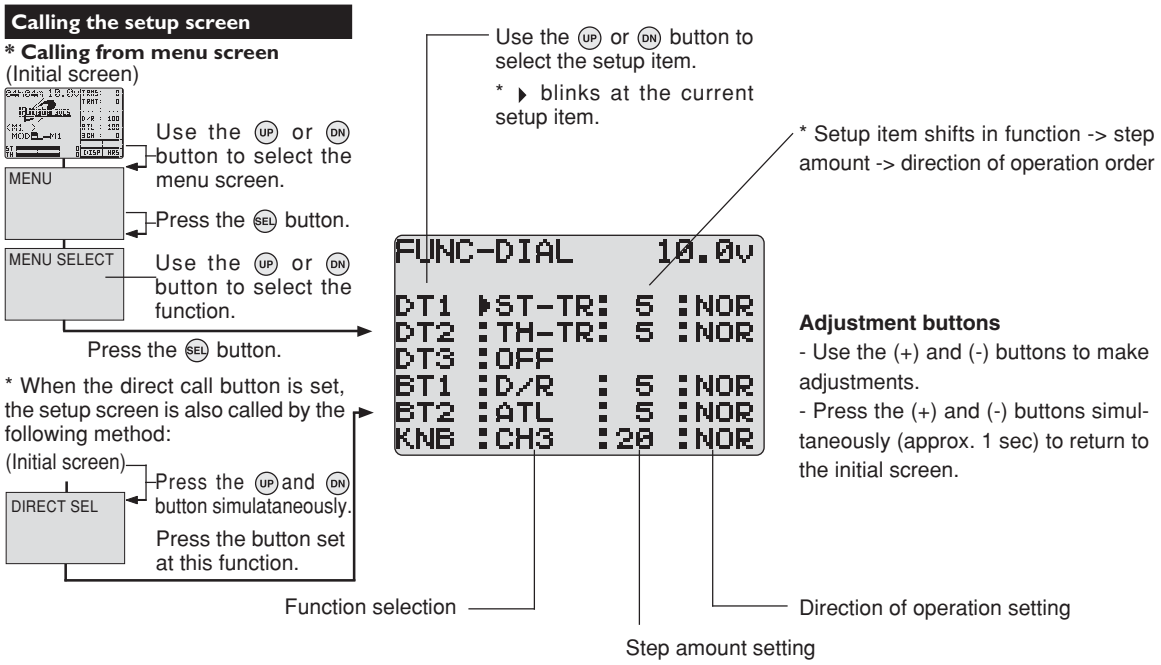
Function name, etc.
Abbreviation displayed on initial screen
Abbreviation used on setup screen

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.



Function select dial setup

1 (Setup item selection)

Use the (DN) or (UP) button to select the item to be set.

2 (When changing function)

Use the (DN) or (UP) button to select the function.

- See the preceding page for the function abbreviations.

(When setting the step amount)

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

- See the preceding page for the relationship between set value and step amount.

(When changing the direction of operation)

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

3 When ending setup, return to the initial screen by pressing the (END) button 3 times.

Function select switch/FUNC-SW

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

- The table below shows the functions that can be assigned to each push switch.
- SW1: The function of operation can be changed. (NOR/ALT)
- SW2:

ARRANGE-1

SW2 ▲ **No Function Select**
SW2 ■ Function Selectable
SW2 ▼ Function Selectable

ARRANGE-2

SW2 ▲ Function Selectable
SW2 ■ **No Function Select**
SW2 ▼ Function Selectable

ARRANGE-3

SW2 ▲ Function Selectable
SW2 ■ Function Selectable
SW2 ▼ **No Function Select**

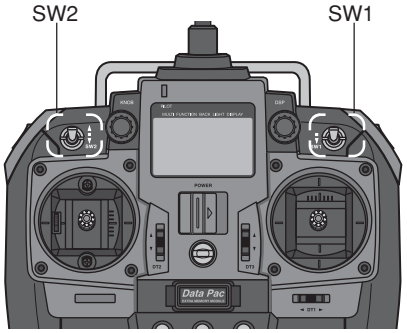
CH3 allocation

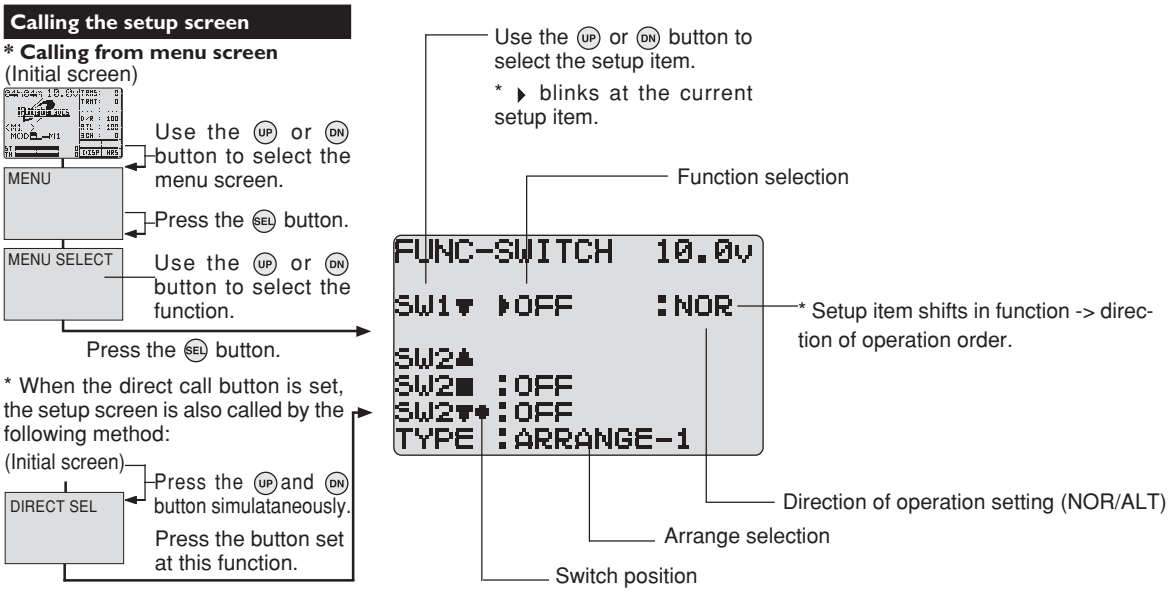
Although being the three-position switch, SW2 does not work as a three-position switch in the case that CH3 function is allocated to the SW2. Suppose that CH3 is allocated to one of the positions that are "Function Selectable". The output would swing from the extreme upside to the extreme downside or to the opposite direction when the switch position is moved from "No Function Select" position to another position. The "Servo Reverse" (see page 72) and "End Point Adjuster" (see page 36) functions can set the direction and amount of the movement respectively. However, never allocate CH3 to two positions.

Settable functions (SW1/SW2)

CH3	: Channel 3
TH-SPD	: Throttle speed
AB.S.	: A.B.S. function
D/R 2ND	: 2nd dual rate
IDLE-UP1	: Idle up 1
IDLE-UP1	: Idle up 2
PRG MIX1	: Program mixing 1
PRG MIX2	: Program mixing 2
AT-STA	: Start fanction / Engine cut
LAP START	: Timer function start (SW2 not possible)
LAP RESET	: Timer function reset (SW2 not possible)
OFF	: (Not used)

Function name, etc.
Abbreviation used on setup screen





Function select switch setup

1 (To select a function for SW1)

Press (UP) button or (DN) button to select "SW1". Then, select one of the functions for SW1 by pressing (+) or (-) button.

- Refer to the previous page for abbreviations of functions.

2 (To change the operation mode of SW1)

Press (DN) button once to move the cursor to the "NOR" or "ALT" message. Now, press (+) or (-) button to select either "NOR" or "ALT".

3 (To select an arrange type for SW2)

Press (UP) button or (DN) button to select "ARRANGE". Then, select one of the three, "ARRANGE-1", "ARRANGE-2" and "ARRANGE-3" by pressing (+) or (-) button.

- Refer to the previous page for ARRANGE types.

4 (To select a function for SW2)

Press (UP) button or (DN) button to select "SW2". Then, select one of the functions for SW2 by pressing (+) or (-) button.

- Refer to the previous page for abbreviations of functions.

5 (To end setting)

Press (END) button three times to return to the Initial Screen. (Press once in case of Direct Mode.)

Dual rate/ST-D/R (Steering system)

Dual rate

When the steering angle is too small at under steering at corners while running, adjust at the "+" side and when the steering angle is too large at over steering , adjust at the "-" side. The setup here is linked with transmitter grip dial BT1. Adjustments can be made at this screen even if BT2 is assigned to another function.

Second dual rate

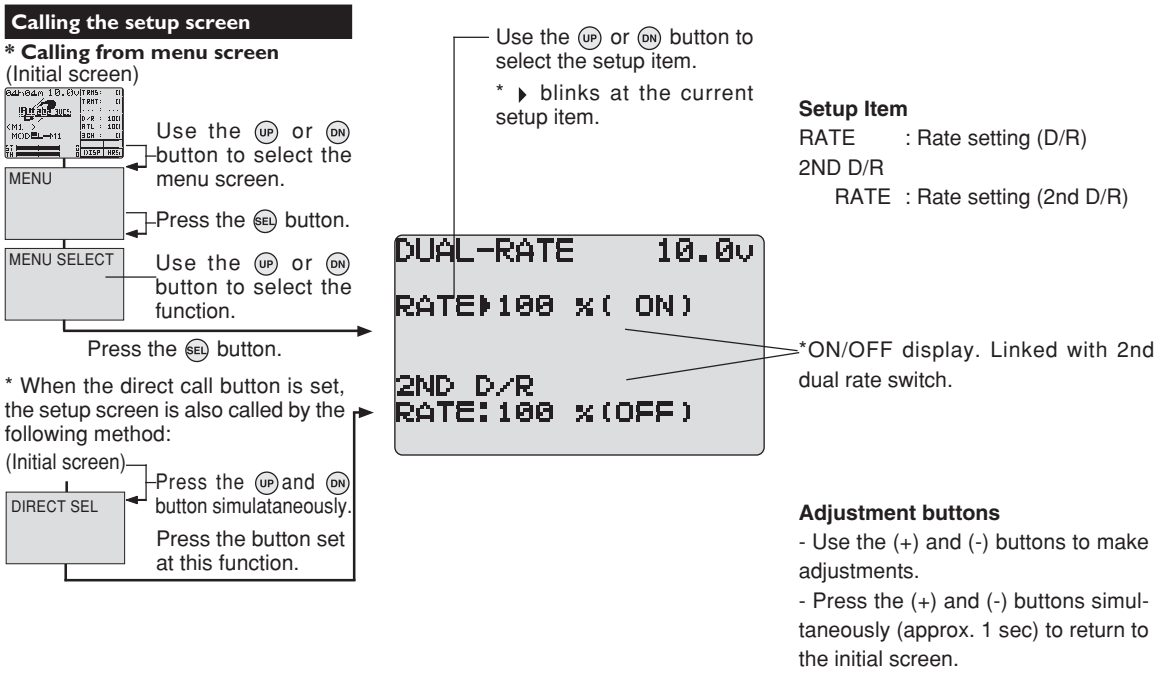
Use when facing a fence and escape is difficult at a crash and similar cases.

Switch setup

When using second dual rate, the function select switch function must be used to preselect the switching switch. (See page 82)

Operation

- The steering servo left and right steering angles are adjusted simultaneously.
- Dual rate and second dual rate steering angle switching is performed by switch.



Dual rate adjustment

(Preparation)
- When using the 2nd dual rate function, use the function select switch function
(See page 82) to preselect the switch.

1 (Dual rate adjustment)

Use the (+) and (-) buttons to adjust the steering angle.
- This dual rate steering angle is linked with the grip dial.

D/R rate
0~100%
Initial value: 100

2 (2nd dual rate adjustment)

Select setup item "2ND D/R RATE" by pressing the (DN) button once, and use the (+) and (-) buttons to adjust the steering angle.
- When the switch is switched, the rate display right ON/OFF display changes. The "ON" display side becomes the steering angle during the current operation.

2ND D/R rate
0~100%
Initial value: 100

3 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

ATL Function/TH-ATL(Throttle system)

This function adjusts the "-" side when the braking effect is strong and the "+" side when the braking effect is weak. This setting is linked to transmitter grip dial BT2. When BT2 is assigned to another function, set the ATL function with this screen.

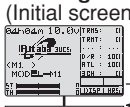
Operation

The throttle brake side (when the throttle stick is pushed forward) brake amount can be adjusted.

Calling the setup screen

*** Calling from menu screen**

(Initial screen)



Use the (UP) or (DN) button to select the menu screen.

MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.

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

(Initial screen)

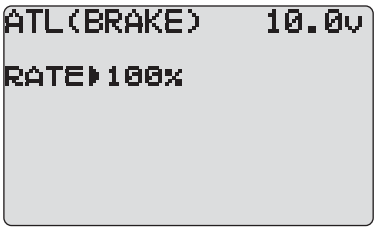
Press the (UP) and (DN) button simulataneously.

DIRECT SEL

Press the button set at this function.

Setup Item

RATE: Brake amount



Adjustment buttons

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

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.

Brake amount

0~100%

Initial value: 100%

2 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

Functions

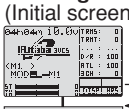
Channel 3 Position/CH3-POSI(Channel 3 system)

Use this function to set the servo position of the channel 3.
This setting is linked to transmitter knob (KNB). When the knob is assigned to another function, set the channel 3 position with this screen.

Calling the setup screen

*** Calling from menu screen**

(Initial screen)



Use the (UP) or (DN) button to select the menu screen.

MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.

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

(Initial screen)

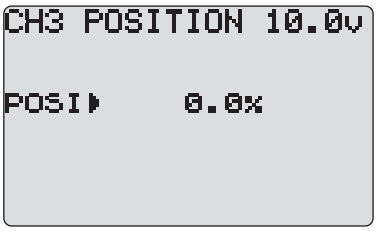
Press the (UP) and (DN) button simulataneously.

DIRECT SEL

Press the button set at this function.

Setup Item

RATE: Channel 3 posiion



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 adjustment

1 (Position adjustment)

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

- This position is linked with the knob (KNB).

Channel 3 position

-100~0~+100%

Initial value: 0%

2 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

HRS/PCM/PPM select/MOD-MODE

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

Receiver

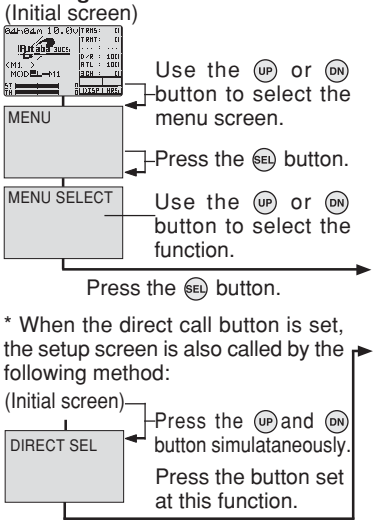
When using an FM receiver set to the PPM side, when using a PCM receiver, set to the PCM side and when using an HRS receiver, set to the HRS side.

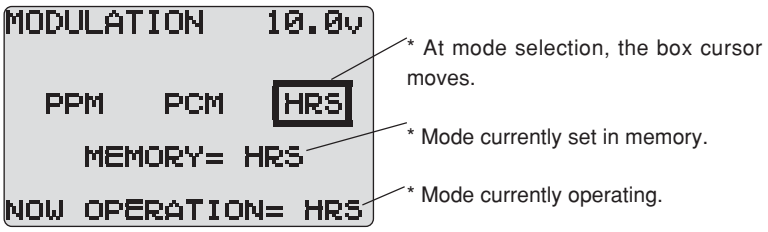
- When the mode was changed and when a model of a different mode was selected, signals are output in the mode set at the point at which the transmitter power was turned back on.

Calling the setup screen

*** Calling from menu screen**

(Initial screen)





HRS/PCM/PPM mode selection

1 (Mode selection)

Use the (DN) or (UP) button to select the mode.

- Selected by moving the box cursor.

Modes
PPM, PCM, HRS

2 (Writing to memory)

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

- The "MEMORY" display is switched.

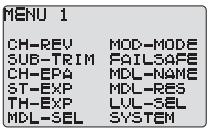
3. When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

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

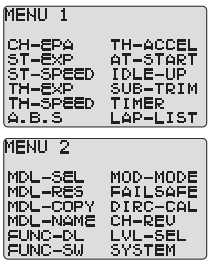
Level Select/LEVEL-SEL

This function lets you select the function selection menu from among the following 3 levels to match the level of use.

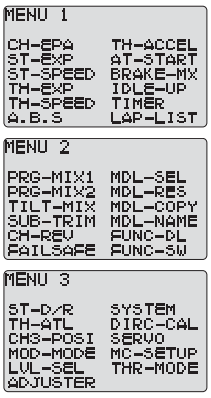
(LV-1)



(LV-2)



(LV-3)



- The level can be set for each model.

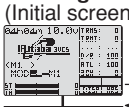
Caution when lowering the level

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**

(Initial screen)



Use the (UP) or (DN) button to select the menu screen.

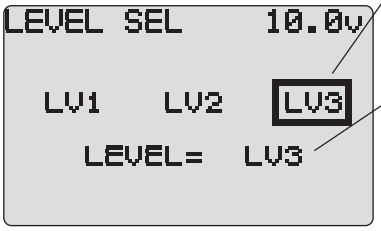
MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.



* At level selection, the box cursor moves.

* Currently set level

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

(Initial screen)

DIRECT SEL

Press the (UP) and (DN) button simulataneously.

Press the button set at this function.

Level selection

1 (Level selection)

Use the (DN) or (UP) button to select the level.

- The box cursor moves and the level is selected.

Level selection
LV1, LV2, LV3

2 (Execution)

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

- The "LEVEL" display switches.

3 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

Adjuster/ADJUSTER

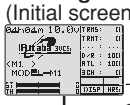
Steering stick and throttle stick correction can be applied. Use this function when a mechanical offset has occurred for some reason.

However, when correction was executed, it may be necessary to recheck the set values of all the setup functions.

Calling the setup screen

*** Calling from menu screen**

(Initial screen)



Use the (UP) or (DN) button to select the menu screen.

MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.

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

(Initial screen)

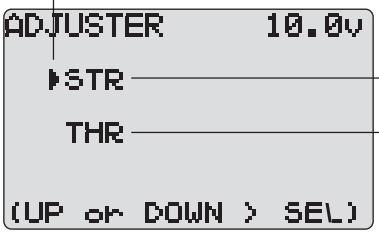
DIRECT SEL

Press the (UP) and (DN) button simulataneously.

Press the button set at this function.

Use the (UP) or (DN) button to select the setup item.

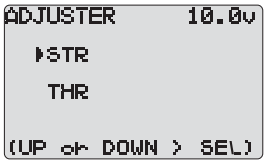
* ▸ blinks at the current setup item.



Steering adjustment

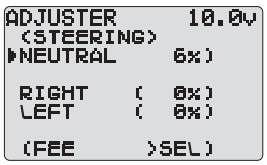
(Preparation)

- In the steering side selected state, select the adjustment screen by pressing the (SEL) button.



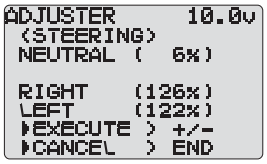
1 (Steering neutral adjustment)

In the neutral setup screen (figure at the right) state, lightly pull the steering stick and then press the (SEL) button in the state in which the stick is not being touched.



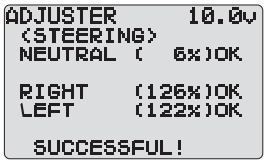
2 (Steering throw adjustment)

In the throw setup screen (figure at the right) state, lightly turn the stick fully to the left and right and press the (SEL) button.



3 (Correction execution)

At the check screen (figure at the right), check if neutral is near "0%) and that the left and right throws are near "130%" and press the (+) and (-) buttons simultaneously. 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.

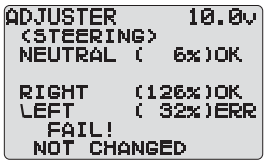


If an adjustment point is not within a fixed range, an error

is displayed (figure at the right) and the correction data is not updated.

4 (To terminate execution, press the (END) button.)

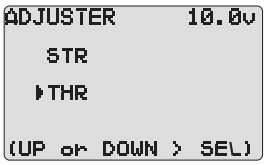
When ending adjustment, return to the initial screen by pressing the (END) button 3 times.



Throttle adjustment

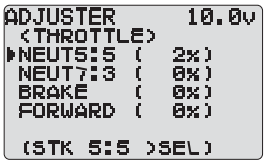
(Preparation)

- In the state in which the throttle side is selected, select the adjustment screen by pressing the (SEL) button.



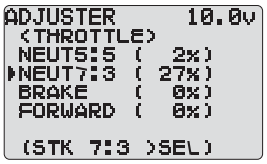
1 (Throttle neutral 5:5 adjustment)

Confirm that the cursor is pointing to the "NEUT5:5". Set the neutral adjuster, which is located to the left of the stick, to the upper side (5:5). Slightly tilt and release the throttle stick, and then press the (SEL) button while keeping away from the stick. If the neutral adjuster is not properly positioned, the cursor does not move to the next step.



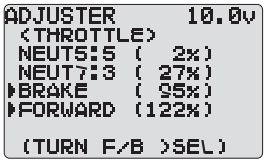
2 (Throttle neutral 7:3 adjustment)

Confirm that the cursor is pointing to the "NEUT7:3". Set the neutral adjuster, which is located to the left of the stick, to the lower side (7:3). Slightly tilt and release the throttle stick, and then press the (SEL) button while keeping away from the stick. If the neutral adjuster is not properly positioned, the cursor does not move to the next step.



3 (Throttle throw adjustment)

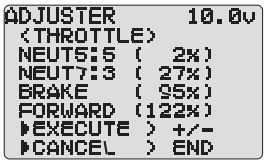
In the throw setup screen (figure at the right) state, lightly operate the stick fully to the brake side and forward side and press the (SEL) button.



4 (Correction execution)

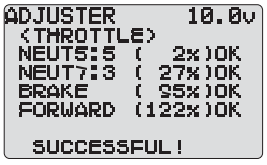
At the check screen (figure at the right), check if neutral is near "0%" and the brake side and forward side throw are near "100%" and press the (+) and (-) buttons simultaneously. Internal checks are performed automatically, and when each adjustment point is within a fixed range, correction is performed and "SUCCESSFUL!" (figure at the right) is displayed.

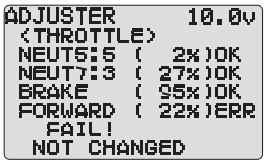
If an adjustment point is not within a fixed range, an error is displayed (figure at the right) and the correction data are not updated.



5 (To abort execution, press the (END) button.)

When ending adjustment, return to the initial screen by pressing the (END) button 3 times.





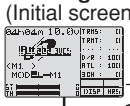
System function/SYSTEM

The graphic liquid crystal screen display mode, buzzer sound, pilot lamp 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)
- Pilot lamp display color setup (OFF, 7 colors)
- Initial screen display mode setting ("Futaba" display, timer display, servo display, Users name)

Calling the setup screen

*** Calling from menu screen**
(Initial screen)



Use the (UP) or (DN) button to select the menu screen.

MENU

Press the (SEL) button.

MENU SELECT

Use the (UP) or (DN) button to select the function.

Press the (SEL) button.

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

(Initial screen)

Press the (UP) and (DN) button simulataneously.

DIRECT SEL

Press the button set at this function.

Use the (UP) or (DN) button to select the setup item.

* ▸ blinks at the current setup item.

```
SYSTEM MENU  10.0v
LHT-MODE▸ KEY-ON
LHT-TIME: 10 (ACT)
CONTRAST: -  5
BUZ-TONE:   75
LED-MODE: GREEN
DISP-SEL: TIMER
```

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

*When "KEY-ON" was selected at backlighting mode, "ACT" is displayed and the backlighting time setting becomes effective.

Adjustment buttons

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

Functions

System function setup

1 (Setting the liquid crystal backlighting mode)

Use the (UP) or (DN) button to select setup item "LHT-MODE", 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

Backlight mode
KEY-ON, ALWAYS, OFF

(Setting liquid crystal backlighting time)

Use the (UP) or (DN) button to select setup item "LHT-TIME", and use the (+) and (-) buttons to set the ON time.

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

Backlighting time
1~30
Initial value: 10

(Adjusting the liquid crystal contrast)

Use the (UP) or (DN) button to select setup item "CONTRAST" and use the (+) and (-) buttons to adjust the screen contrast.

- Adjust to an easy-to-see contrast.

Contrast
-10~0~+10
Initial value: 0

(Adjusting the buzzer tone)

Use the (UP) or (DN) button to select setup item "BUZ-TONE" and use the (+) and (-) buttons to adjust the tone.

- Decide by referring to the tone at adjustment.

Buzzer tone
OFF, 1~75~100
Initial value: 75

(Changing the LED display color)

Use the (UP) or (DN) button to select setup item "LED-MODE" and use the (+) and (-) buttons to select the color.

- Select your favorite color while viewing the LED color.

LED color
(OFF), BLUE, RED, PURPLE, GREEN, SKY BULUE, ORANGE, PINK
After reset : ORANGE
Initial value : SKY BLUE

(Changing the initial screen display mode)

Use the (UP) or (DN) button to select setup item "DISP-SEL) 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

Initial screen mode
Futaba, TIMER,SRV-VIEW,USR-NAME

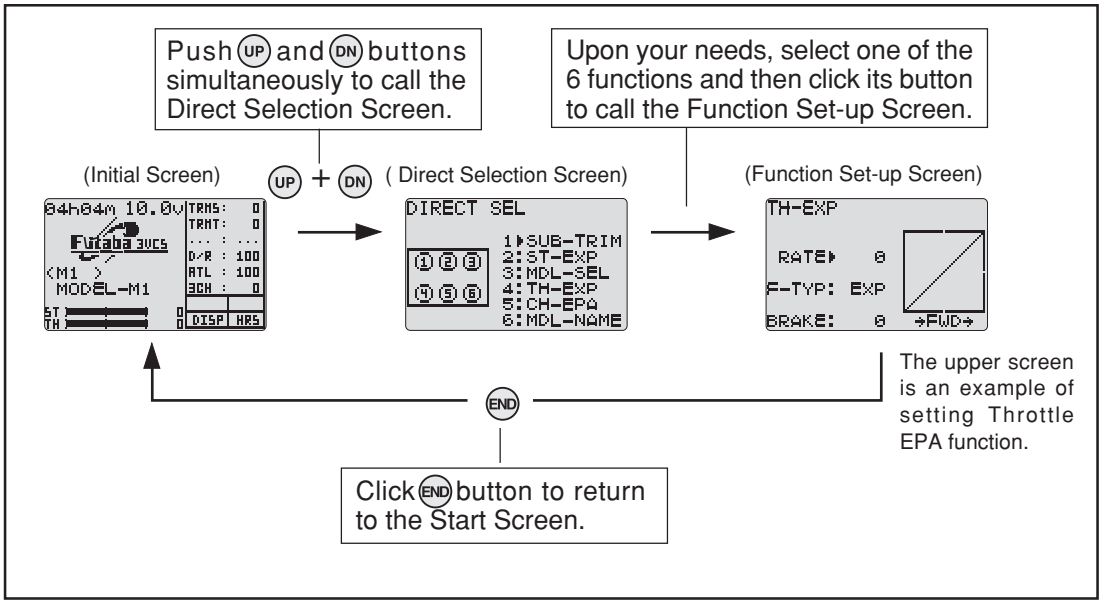
2 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

Direct call/DIRC-CALL

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.

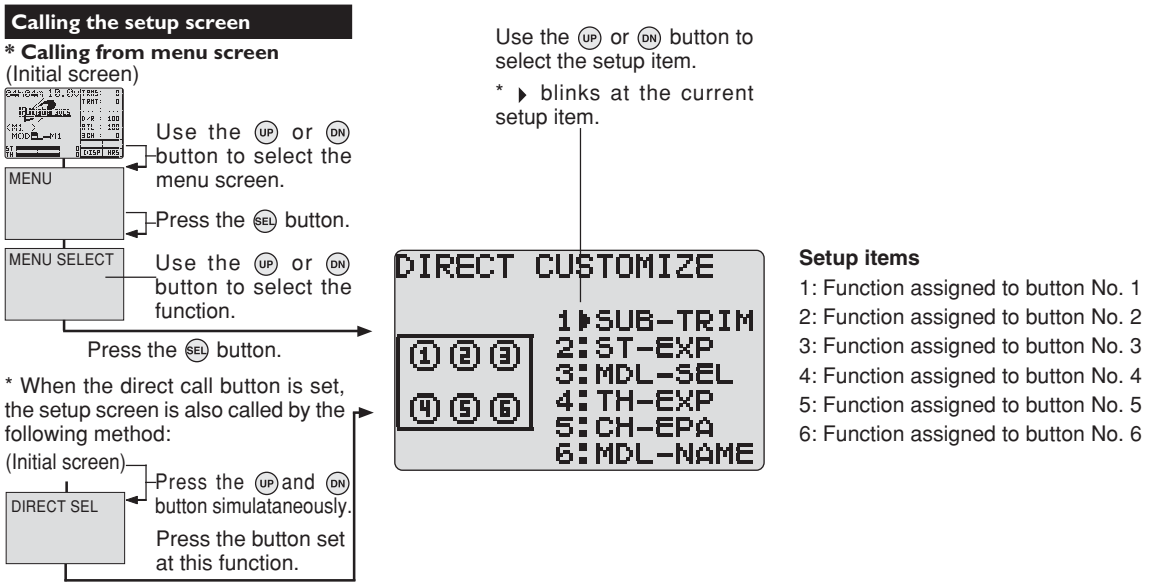
- Functions can be freely assigned to buttons 1~6 of the screen shown below.
- In the initial screen state, after the (UP) and (DN) buttons being pressed, the setup screen is called by simply pressing the assigned button.

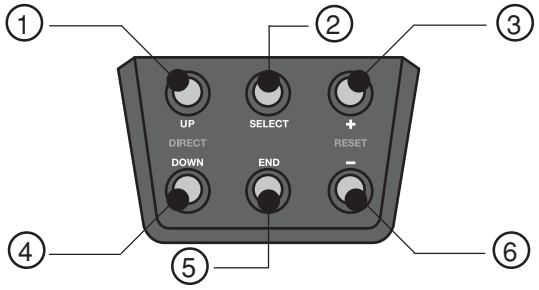
-Assignable functions (All functions)



INITIAL SETTING

		Function	
1.	UP	SUB-TRIM	Subtrim
2.	SEL	ST-EXP	Steering EXP
3.	+	MDL-SEL	Model Serect
4.	DN	TH-EXP	Throttle EXP
5.	END	CHEPA	Chanel End Point Adjuster
6.	−	MDL-NAME	Model Name





* 1~6 are buttons used at direct call.

Direct call function assignment

1 (Function assignment)

Use the (DN) or (UP) button to select the button to be assigned and use the (+) or (-) button to select the assigned function.

(Repeatedly set for buttons you want to assign at item 1 above.)

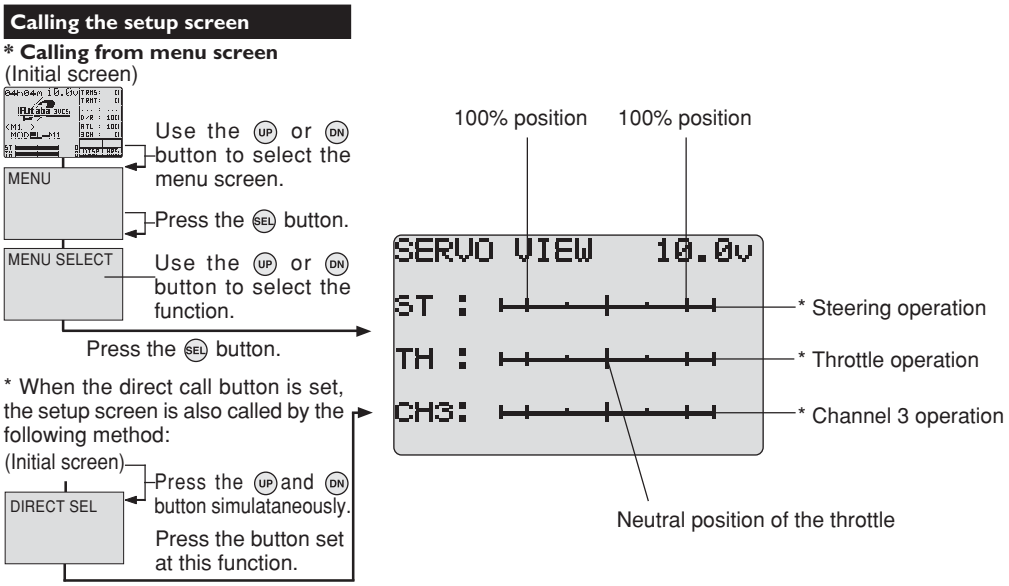
2 When ending adjustment, return to the initial screen by pressing the (END) button 3 times.

You can directly call the "DIRECT CUSTOMIZE" screen by pressing the (UP) button and (DN) button at the same time for more than 3 seconds. In order to return to the Initial screen, press (END) button once.

Servo view/SERVO

Servo operation of each channel can be checked. Operation at 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 92).

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 setup screen

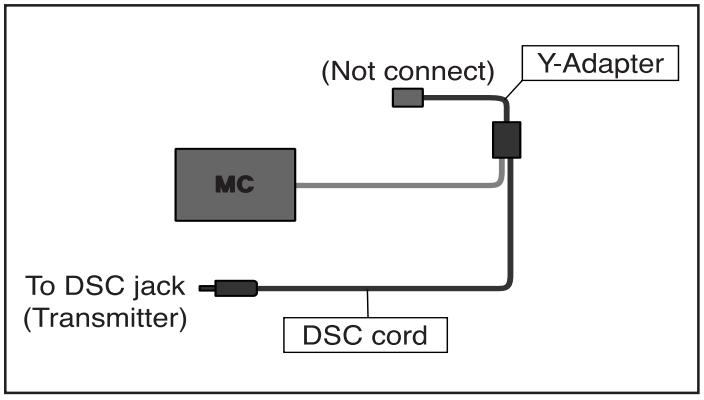
1 When ending servo operation checks, return to the initial screen by pressing the (END) button 3 times.

HRS ECS setup/MC-SETUP

This function is used only when using an FET amp like that shown below with a high response system (HRS System). This function is not used when using a Futaba amp.

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 FET amp. If such an FET amp is used with the high response system, the setup time will be substantially shortened and FET amp setup may become difficult. When you have an FM receiver or PCM receive, only amp setup is possible in the PPM or PCM mode.

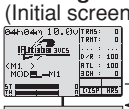
When using this function to make adjustments, the FET amp must be directly connected to the transmitter. Also, the following connection cords are necessary.
- Two-way cord (Must be bought separately.)
- DSC cord (Supplied with set.)



Calling the setup screen

*** Calling from menu screen**

(Initial screen)



Use the UP or DN button to select the menu screen.

MENU

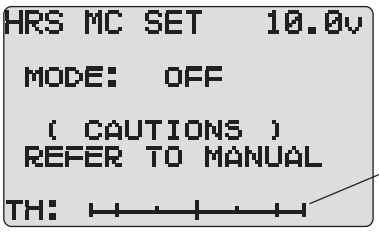
Press the SEL button.

MENU SELECT

Use the UP or DN button to select the function.

Press the SEL button.

This screen does not appear except when the DSC cord is connected or set to ON by display switch.



*A bar graph linked with throttle operation is displayed

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

(Initial screen)

DIRECT SEL

Press the UP and DN button simulataneously.

Press the button set at this function.

FET amp adjustment

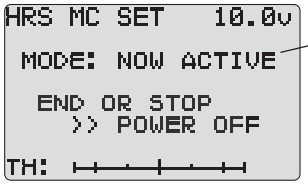
1 (Transmitter and amp connection)

Connect the transmitter and amp in accordance with the connection diagram on the preceding page.

2 (Amp setup)

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

- "NOW ACTIVE" appears on the screen, and a special signal for amp adjustment is output from the transmitter OSC terminal. In this state, the amp can be adjusted.



* At setup, "NOW ACTIVE" blinks and a signal is output in the setup mode.

Execute amp setup in accordance with the instruction manual supplied with the amp.

3 When ending adjustment, turn off the transmitter power switch.

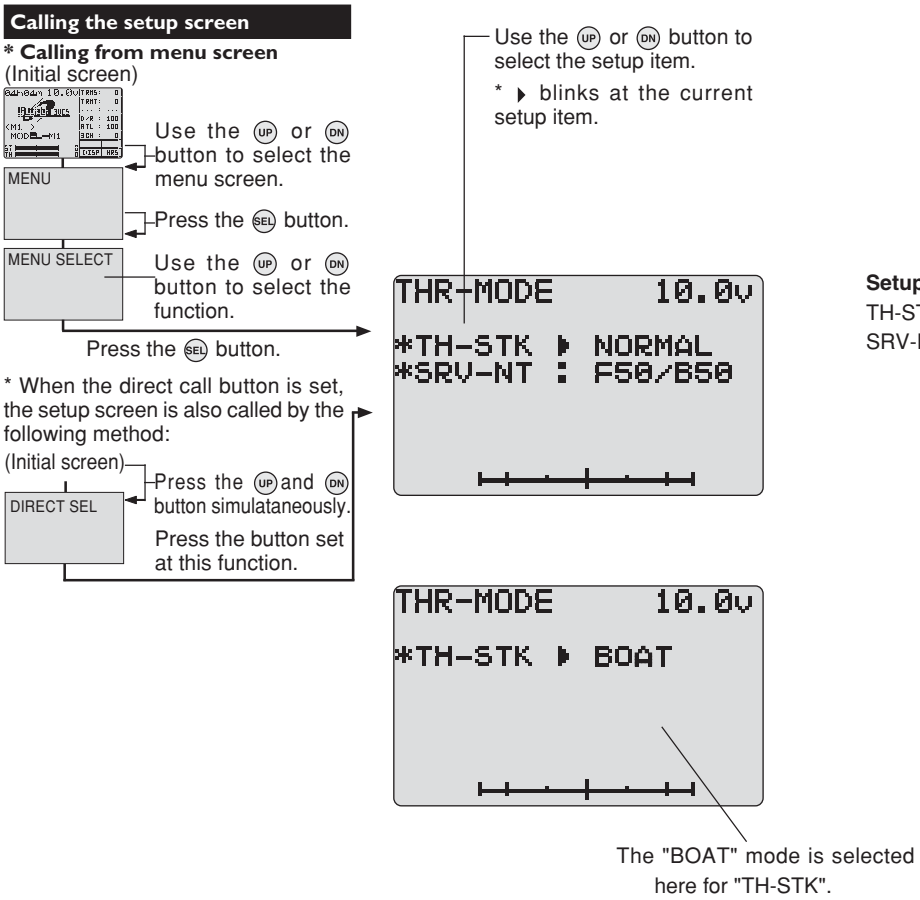
If the power switch is not turned off, this setup amp mode cannot be reset. If returned to the initial screen in this setup mode, a blinking message like that shown below will appear.

CAUTION!
NOW MOD OFF

Trottle mode/THR-MODE

This THR-MODE is convenient for setting conditions; such as changing the movement ratio of a servo regardless of the neutral adjuster position and setting the whole throw of a throttle stick for a boat to the forward movement.

-In case of "F50/B50" at the "NORMAL" mode, the ratio between the forward and backward movements is held at 50:50 from the balanced position of the stick, regardless of the neutral adjuster position. (Only when all the other throttle-related functions are at initial states.)
-In case of "F70/B30" at the "NORMAL" mode, the ratio between the forward and backward movements is held at 70:30 from the balanced position of the stick, regardless of the neutral adjuster position. (Only when all the other throttle-related functions are at initial states.) -In case of the "BOAT" mode, the neutral position of the throttle stick is set at the lowest point of the stick throw. And the whole movement of



Throttle mode function assignment

1 (To select a throttle stick mode)

Select "TH-STK" by (UP) or (DN) button.

Then select one of the throttle stick modes by (+) or (-) button.

Throttle stick modes

Normal : Forward and backward (brake side) movement

Boat : Forward movement only.

2 (To select a neutral position)

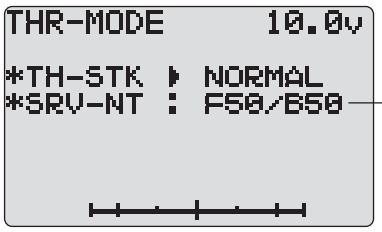
When "NORMAL" is selected for the throttle stick mode, "SRV-NT" will be shown on the screen. (It will not be shown when "BOAT" is selected.)

Move the cursor to "SRV-NT" by (UP) or (DN) button. Then select one of the neutral positions by (+) or (-) button.

Neutral positions

F50/B50: Forward : Back=50% : 50%

F70/B30: Forward : Back=70% : 30%



3 (To end)

To end this procedure and to return to the initial screen, press the (END) button three times.

Ratings

*Specifications and ratings are subject to change without prior notice.

Transmitter T3VCS

(2 sticks system, 3 channels)
- Transmitting frequencies 27, 29, 40, or 41MHz band (TZ-FM 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 300mA or less

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
- Weight 17g

⚠ Caution

In case of the High Response System (H.R.S) receiver R203HF, always use only the following conditions:

Servo; 6V type Digital Servo only
Power supply; 6V Nicd battery
Transmitter setting; "HRS" mode

If the conditions are different, control is impossible.
And **Fail Safe Unit (FSU1)** is not available.

Optional Parts

The following parts are available as 3PK 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.

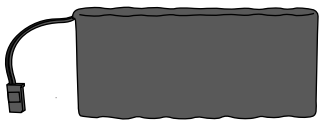
The use of other than Futaba crystal will result in decrease of range as well as loss of control.

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**

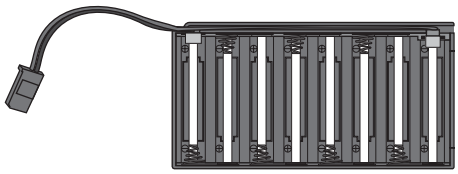


Battery Holder (Transmitter)

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 .

Part name

3VC transmitter battery holder



(Penlight cell x 8)

⚠ Caution

- Insert the batteries in the correct polarity.
  If the polarity is incorrect, the transmitter may be damaged.
- When the transmitter is not in use, remove the batteries.
  If the battery electrolyte leaks, wipe off the case and contacts.

<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>

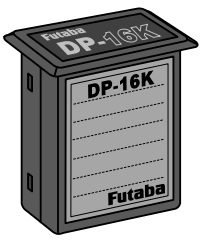
The method of processing used dry cell batteries depends on the area in which you reside. Process the batteries in accordance with the processing method for your area.

CAMPac-16K / Data Pac DR-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 3VCS transmitters. Do not use any removable memories other than CAMPac-16K.

Part Name

CAMPac-16K

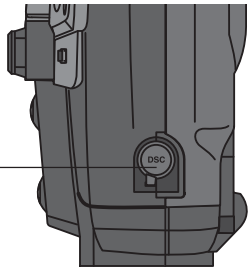


DSC cord

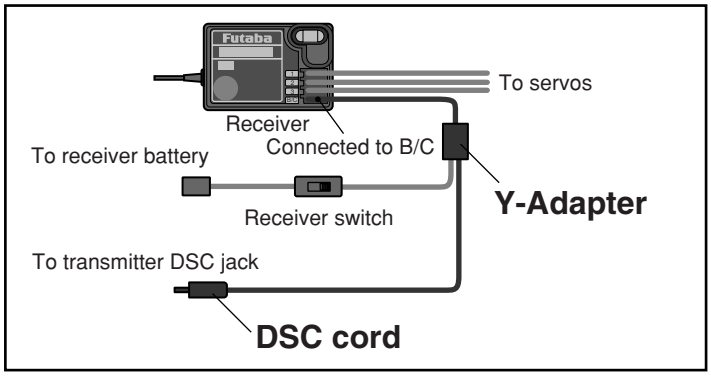
When the T3PK transmitter and R113iP or R203HF receiver are connected with the DSC cord, the servos can be operated without transmitting a signal. (DSC function)

Part name

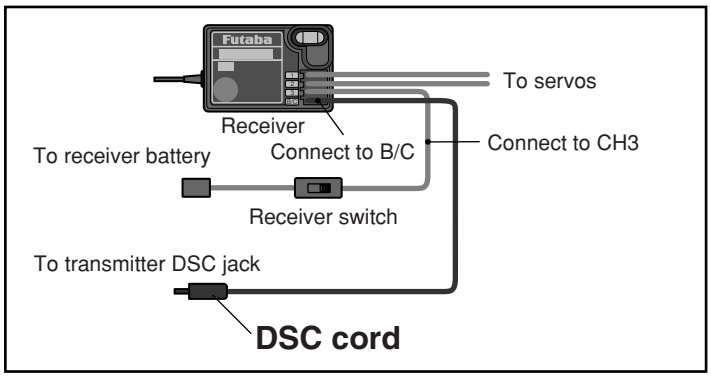
DSC cord for 3VC



Connection



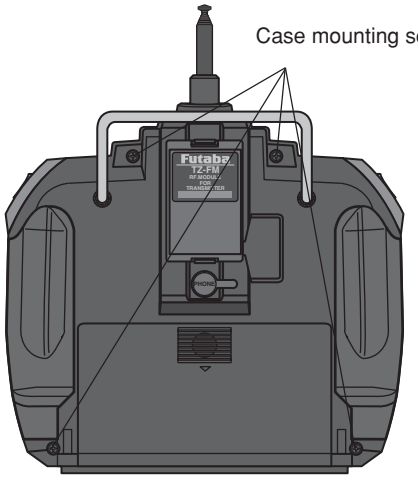
- When used fully up to channel 3, the Y-Adapter must be purchased separately.



- When channel 3 is not used, connect the receiver switch to CH3 and connect the DSC cord to the B/C terminal.

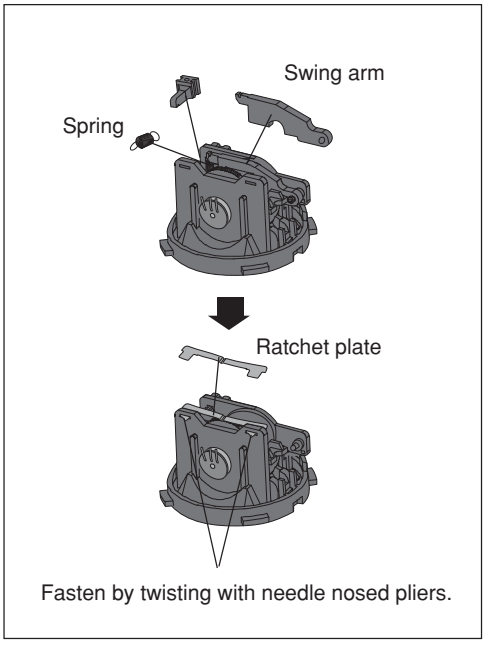
Changing to Ratchet Type Throttle Stick

Changing the throttle stick from the self-return type to ratchet type that stops at an arbitrary position (To make this modification, the optional ratchet plate must be purchased.)



1. Remove the RF module and Ni-Cd battery from the transmitter
2. Remove the four case mounting screws.
3. Remove the rear case.
4. Remove the swing arm and spring from the throttle stick as shown in the figure.
5. Install the ratchet plate to the throttle stick.

Throttle Stick



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 (Electric powered)

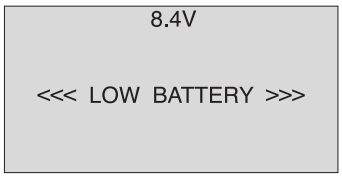
Noise problems -> Install capacitors on motor

Error 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:



Audible alarm:
Continuous tone.

⚠ Warning

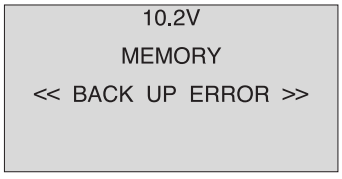
When a low battery alarm is generated, cease operation immediately and retrieve the model.

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:



Audible alarm:
Tone will sound (9 times), then repeat.

⚠ Warning

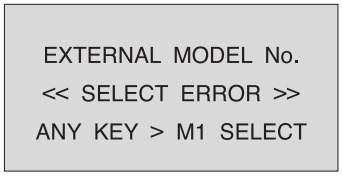
When a backup error is generated, immediately stop using the system and request repair from the Futaba Service Center.

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:



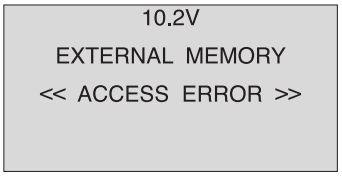
Audible alarm:
Tone sounds (7 times) and stops (repeated)

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:



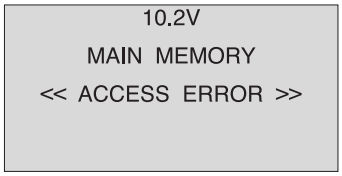
Audible alarm:
Tone sounds (7 times) and stops (repeated)

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:

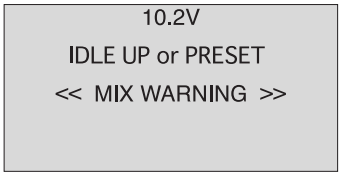


Audible alarm:
Tone sounds (7 times) and stops (repeated)

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:



Audible 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.

Glossary

The following defines the symbols and terms used in this instruction manual

Band
Frequency that receiver and transmitter operate on.

Channel
Represents the number of functions the transmitter will control.

Kit
A set of parts manufactured for building a model.

Modulation method
Two modulation methods are used with R/C systems: AM (Amplitude Modulation) and FM (Frequency Modulation). Another method that encodes and transmits the modulated signals is called "PCM".

Neutral
The center position. It is the point where the steering stick and throttle stick return to when they are not being operated

Proportional
Because today's R/C systems control servos in proportion to the transmitter operation they are called proportional.

Servo Horn
The part that is installed on the output shaft on the servo to convert to rotating motion of the servo to transmit the linear to a control rod., Servo horns come in various shapes.

Servo Mount
Advise used to secure the servo in the model. (Most often supplied in the model kit)

Steering (ST)
System to make the model turn left or right using the front wheels.

Steering Stick
A devise for controlling the steering from the transmitter.

Throttle
Devise that controls the air mixture at the engine intake. When opened a large air mixture is sucked in and the engine speed increases. When closed the engine speed decreases.

Throttle Stick
Devise provided on the transmitter to control the throttle.

Trim
Devise that fine adjusts the neutral point of each servo.

Glossary (LCD Display)

The Glossary gives the definition and number of the page that describes the related function for the symbols displayed on the LCD screen.

1:~5: Point 1 through 5 in the throttle curve
2ND Dual rate function
2PS 2-posion movement for 3CH
3C-DWN 3CH (Down side)
3C-UP 3CH (Up side)
3CH 3rd channel
3PS 3-posion movement for 3CH

A

A.B.S A.B.S. function
AB.P, ABP A.B.S. function (Brake position)
ABS.D, ABSD A.B.S. function (Delay)
ACC-3, ACC3 3CH brake acceleration
ACC-B, ACCB Throttle acceleration (Brake side)
ACC-F, ACCF Throttle acceleration (Forward side)
ACCESS ERROR Access error
ACT(OFF) Function is ready to be activated.
ACT, ACT(ON) Function is on active.
ADJUSTER Adjuster
ALRM Alarm setting
ALT Repetition of ON/OFF of the Return SW
ALWAYS Backlight is always on.
ARRANGE-1,2,3 Function assignment to the 3-position SW
AT-START Start function, engine cut function
ATL Throttle ATL function
ATS Condition setting for the stick-triggered AT-START
AUTO-START Start function, engine cut function

B

BABD, B-ABD 3CH brake A.B.S. function (Delay)
BABP, B-ABP 3CH brake A.B.S. function (Brake position)
BACK UP ERROR Back up error
BK-DL, BKDL, BRKDLY Brake mixing (Delay)
BK-RT, BKRT Brake mixing (Rate)
BLHT Backlight ON
BLUE LED: Blue
BOAT Boat mode throttle stick
BRK, BRAK, BRAKE Parameter setting for the brake side.
BRAKE-MIX Brake mixing function
BRK-EXP, BRKEXP TH-EXP rate at brake side
BT-1,2 Button trim
BUZ-TONE Buzzer tone change

C

C:RES Curve reset
CANCEL Cancellation of the adjuster function
CH-EPA EPA Function
CH-REVERSE Servo reverse function
CH1 > 3 Mixing direction (From 1CH to 3CH)
CH3 3rd channel
CH3 > 1 Mixing direction (From 3CH to 1CH)
CH3ABS 3CH brake A.B.S. function
CH3 POSITION,CH-POSI 3CH position
CONTRAST Screen contrast adjustment
CRV A kind of the TH-EXP curves
CYC, CYCLE, CYCL A.B.S. function (Cycle speed)

D

D/R Steering dual rate
D/R 2ND, D/R2 2nd dual rate function
DIRC-CALL Direct-call function
DISP Display switch ON
DISP-SEL Select the initial screen
DLY Amount of delay
DWN Direction (Down side)
DPAC CAMPac
DT1,2,3 Digital trim
DTY A.B.S. duty ratio

E

E11~E20 Model numbers in the CAMPac
EPA(ATV) EPA function
EXECUTE Execution of Stick adjustment
EXP TH-EXP curve type
EXP3, EXP-3 EXP for 3CH brake
EXP-B, EXPB Throttle EXP (Brake side)
EXP-F, EXPF Throttle EXP (Forward side)
EXP-S, EXPS Steering EXP

F

F50/R50 Throttle mode, Servo movement 5:5
F70/R30 Throttle mode, Servo movement 7:3
F Throttle forward
FAIL SAFE, FAIL-SAFE,F/S Failsafe function
FUNC-DIAL, FUNC-DL Function select, dial function
F-TYP, FUNC-S Function select switch
FWD-TYP Selection of a curve for TH-EXP forward
FWD, FWRD, FORWARD Forward side setting

G

GREEN LED: Green

H

HOLD Function to hold “FAIL SAFE”
HRS HRS (High response) mode
HRS MC SET HRS MC set up function

I

IDL1, IDL-1, IDLE-1 Idle-up function 1
IDL2, IDL-2, IDLE-2 Idle-up function 2
IDLE-UP Idle-up function
INH(OFF) Function is suspended.
INITIALIZE? Initialize?

K

KEY-ON Backlight ON during the button operation
KNB Knob dial

L

LAP RES Timer reset switch
LAP STA Timer start/stop switch

LED-MODE Change LED color
LEFT, LFT Direction (Left)
LEVEL SEL Level select function
LHT-MODE Backlight mode setting
LHT-TIME Backlight time setting
LOW BATTERY Warning of the low battery

M

M1~M10 Main model number
MC-SETUP HRS MC set-up function
MDL-NAME Model name function
MEMORY MODULE This means CAMPac
MDL-COPY, MDL COPY Model copy function
MDL-NAME, MODEL NAME Model name function
MDL-RES Model reset function
MDL-SEL, MODEL SEL Model select function
MIX WARNING Mixing warning
MOD-MODE HRS/PCM/PPM select function
MODE Set “Activate” or “Inhibit”
MODULATION HRS/PCM/PPM select function
MST Master channel
MXD Mixed mode in Program MIX

N

NEUT5:5 Adjuster function throttle 5:5
NEUT7:3 Adjuster function throttle 7:3
NEUTRAL Neutral
NOR, NORMAL Normal side
NOT CHANGED No change in the adjuster function
NVALM TIMER Number of navigation alarms

O

OFS PRG-MIX offset function
ORANGE LED: Orange

P

PCM PCM mode
PINK LED: Pink
PM1-A, PM1A Program mixing 1 (LEFT/FWRD/UP side)
PM1-B, PM1B Program mixing 1 (RIGHT/BRAK/DOWN side)
PM2-A, PM2A Program mixing 2 (LEFT/FWRD/UP side)
PM2-B, PM2B Program mixing 2 (RIGHT/BRAK/DOWN side)
PPM PPM mode
PRAL Number of pre-alarms of TIMER
PRG-MIX, PROG MIX Program mixing function
PRST Servo movement position setting
PURPLE LED: Purple

R

RACING TIMER Timer function
RANGE Operation range setting
RATE Rate adjustment
RDY, READY Ready to operate
RED LED: Red
RETURN Operational direction of the ST-SPEED (when returning)
REV Reverse side
RF High frequency output
RGT, RGHT Direction (right)
RST TIMER is reset.
RUN TIMER is on duty.

S

SBT-1, SBT1 Sub-trim (CH1)
SBT-2, SBT2 Sub-trim (CH2)
SBT-3, SBT3 Sub-trim (CH3)
SELECT ERROR Select error
SERVO, SERVO VIEW Servo view
SKY BLUE LED: sky blue
SLV Slave channel
SPD-R, SPDR Steering speed (Return side)
SPD-T, SPDT Steering speed (Turn side)
SPEED Speed adjustment (Delay)
SRV-NT Neutral position selection
SRV-VIEW Servo view
ST, STR Steering channel
ST-D/R Dual rate function
ST-EXP Steering EXP function
ST-LFT Steering (Left)
ST-RGT Steering (Right)
ST-SPEED Steering speed function
ST-TR Steering trim
STK5:5 Adjuster function 5:5
STK7:3 Adjuster function 7:3
STM A.B.S. steering mixing
STP Temporary stop of the TIMER
SUB-TRIM Sub-trim function
SUCCESSFUL Adjustment is completed.
SW1,2 Switch 1 through 2
SYSTEM System function

T

TH Throttle channel
TH.P Threshold point, operation point
TH-ACCEL Throttle acceleration function
TH-ATL ATL function
TH-BRK Throttle (Brake side)
TH-EXP Throttle EXP function
TH-FWD Throttle (Forward)
TH-SPEED Throttle speed function
TH-TR Throttle trim
THSPD, THSP, TH SPD Throttle speed
TIMER Timer function
TL13, TLT13 Tilt mixing (1>3)
TL31, TLT31 Tilt mixing (3>1)
TRM Trim mode for PRG-MIX
TRMS Steering trim
TRMT Throttle trim
TURN Operational direction of ST-SPEED (during operation)
TYPE Type selection

U

UP Direction (Up side)
USR-NAME, USER NAME User’s name

V

VTR A kind of curve in TH-EXP

FUTABA CORPORATION
Makuhari Techno Garden Bldg., B6F 1-3 Nakase, Mihama-ku, Chiba 261-8555, Japan
Phone: (043) 296-5119 Facsimile: (043) 296-5124