EX NEXT

EX-NEXT
Ver.2.01.00 -

INSTRUCTION MANUAL

*Please refer barcode label for content.
*Please refer included manual for LDT grip unit.

KO PROPO®

KONDO KAGAKU Co., Ltd. 2021 Ver.2.01

■ Table of Contents

■ For Safe Operation

Due to the nature of radio controlled models, improper handling may lead to dangerous situations. Therefore please read the following information carefully in order to ensure safe operation. Please also understand that KO Propo is not responsible for any injuries or damage which result from noncompliance of these cautions and notices.

> ⚠ **Warning!** Improper handling/
> usage may lead to a high probability of material damage as well as a possibility of
> serious personal injury or even death.
> ⚠ **Notice!** Improper handling/
> usage may lead to personal injury or material damage.

●When Installing Components

⚠ **Warning!** Prohibited matters	●Make sure metal parts on the model (car chassis/ship hull) do not come into contact with each other. *Contact between metal parts may result in noise, which could cause the receiver to malfunction and lead to an uncontrollable model. ●Do not cut or bundle the antenna cable. *This may lower the receiver's sensitivity and lead to an uncontrollable model. ●Ensure correct polarity when installing transmitter and receiver batteries. *Incorrect polarity may damage the product.
⚠ **Warning!** Enforcement matters	●Within Japan, this product is limited to usage with models which operate on the ground or in the water. *Do not use for other non-designated purposes. ●Ensure that all connectors (receiver, servo, switch, etc.) are connected securely. *If connections become loose due to vibrations, it may lead to an uncontrollable model. ●Securely attach receiver with thick double-sided tape and ensure that it does not make contact with other parts. *Strong shocks or contact with other parts due to vibrations may lead to an uncontrollable model. ●Check servo operation to ensure the push rod is not subject to excessive loads. *Excessive loads may damage the servo or increase battery power consumption. ●Make sure to use the rubber grommet when attaching the servo and that the servo does not contact the R/C equipment tray. *If vibrations affect the servo, it may lead to damage or an uncontrollable model. ●Use in conjunction with genuine official KO Propo products. *KO Propo is not responsible for any damages or injuries which result from use of this product in combination with other manufacturer's products.

●Notes for Usage

⚠ **Warning!** Prohibited matters	●Do not use when there is thunder. *It is possible for lightning to strike the antenna. ●Do not use in the rain or in areas where water has accumulated. *If water enters the product it may lead to an uncontrollable model. ●Do not use in the following locations: 1. Near R/C circuits (within 3km) 2. Near crowds, on streets, or near actual vehicles or ships. 3. Near high-voltage power lines or communication facilities. *If signal interference, etc. causes an uncontrollable model, a serious accident may result. ●Do not use when your concentration levels are compromised by tiredness, alcohol, medication, etc. *Mistakes in judgment may result in serious accidents. ●Do not allow glow engine fuel or engine exhaust to contact the product. *These may attack the plastic and damage the product.
⚠ **Warning!** Enforcement matters	●Check to ensure that the selected model memory matches the model to be controlled. *Using an incorrect memory may lead to an uncontrollable model. ●Make sure to stop the engine (disconnect motor cables) before changing transmitter settings.

⚠ Caution! Prohibited matters	●Do not touch engine, motor, ESC, etc. immediately after use as they may be hot. *Doing so may lead to burns.
⚠ Caution! Enforcement matters	●When switching on, always turn on the transmitter first, followed by the receiver. Follow the reverse order when switching off. *If the wrong order is followed, it may lead to an uncontrollable model. ●Dismantling or modifying the RF Module (internalized in the case of the EX-NEXT) is prohibited and is punishable by law. *Doing so may lead to accidents such as short circuits and KO Propo Customer Service Department may not accept dismantled/modified products for repair. ●Do not use this product in aircraft, hospitals, or near fire alarms or medical equipment. *This may lead to malfunctions and result in serious accidents. Also, by law you must cease operation if the product affects other wireless or electrical devices. ●2.4GHz transmitters must be registered with the Japan Radio Control Safety Association. *The transmitter which you have purchases is already registered. Products which do not have proof of registration are illegal.

●Notes After Usage

⚠ Warning! Enforcement matters	●In the case of an R/C car, make sure to remove the battery pack after driving. *If the car is switched on accidentally, it may lead to a fire or an uncontrollable model. ●Keep transmitters, batteries, and models away from small children. *Chemical agents and the items themselves may cause personal injury.
⚠ Caution! Enforcement matters	●Remove batteries from transmitter if it will not be used for a considerable time. *If batteries are left in the transmitter, battery leakage may result in damage. ●Do not store transmitter/receiver in the following conditions: 1. Extremely hot (over 40ºC) or cold (below 10ºC) temperatures. 2. Locations in direct sunlight. 3. Locations with high humidity. 4. Locations subject to vibrations. 5. Locations with lots of dust. *These conditions may cause the case to deform and damage the product.

●Transmitter Battery Handling and Charging (separately available option)

⚠ Danger! Enforcement matters	●Never short-circuit the battery connector. *This may lead to a fire or explosion. ●Do not dispose batteries in fires. *This is very dangerous and may lead to an explosion. ●Use KO Propo chargers to charge the battery and use the correct current (under 1A). *Incorrect current may lead to battery damage, overheating, or leakage. *Other manufacturer's chargers may not have a automatic cutoff function.
⚠ Danger! Enforcement matters	●Do not subject the battery to strong shocks. *This may damage the battery and cause leakage or a short circuit. ●Do not dismantle or modify the battery. *This may cause dangerous leakage of battery fluids. ●Keep away from water. Do not charge a wet battery. *This may cause overheating and damage. ●Do not charge alkaline batteries. *Alkaline and other single-use batteries cannot be recharged. Doing so may lead to fire and damage. ●Do not use wet hands when plugging in the charger's AC Adapter. *This may result in electrical shocks.

*If there is battery fluid leakage, avoid contact with eyes as it may result in blindness. If contact with eyes occur, flush with large amounts of water and seek medical attention immediately.
*When disposing batteries, Ni-Cd, Ni-MH, Li-Po, and Li-Fe batteries should be recycled in order to help protect the environment.

■ **Getting Started**

●**Transmitter Assembly**

Insert the Grip Unit into the Master Unit, then attach the Steering Unit.

⚠ Remove the connector cover before use.

1.   Master Unit

Grip Unit

2.   Steering Unit

Steering Unit
release button

① ② ③

Steering Unit
Lock lever

3.
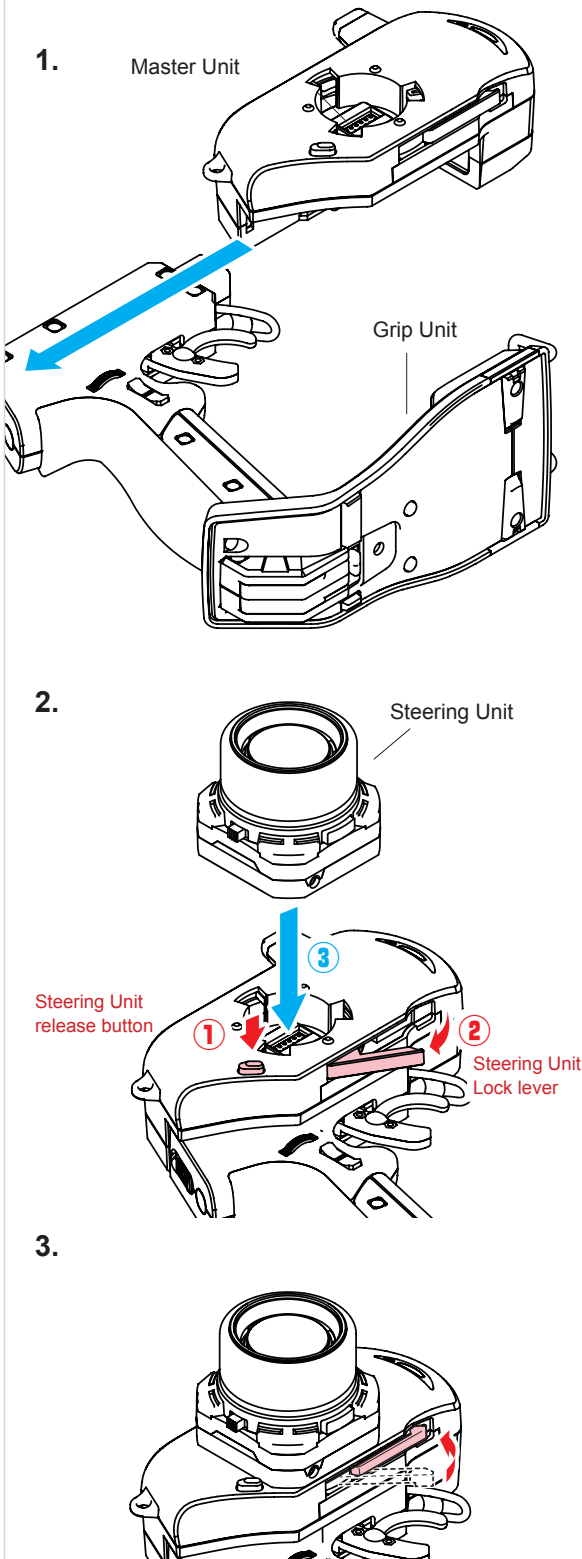
●**Transmitter Dismantling**

Detach the Steering Unit, then detach the Master Unit.

1.   Steering Unit

Steering Unit
Release button   ① ③   ②

Steering Unit
Lock lever

2.   Grip unit Lock lever

3.   Master Unit

Grip Unit
Release button   ①

②
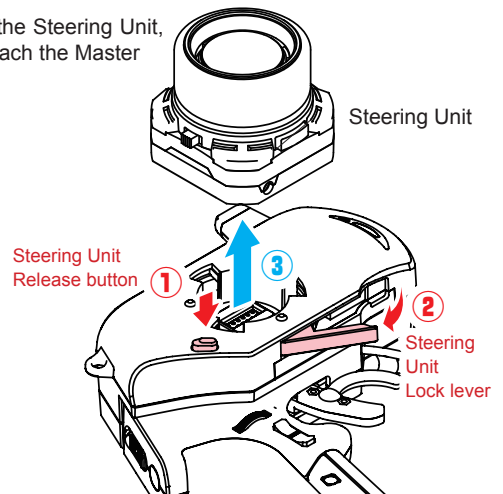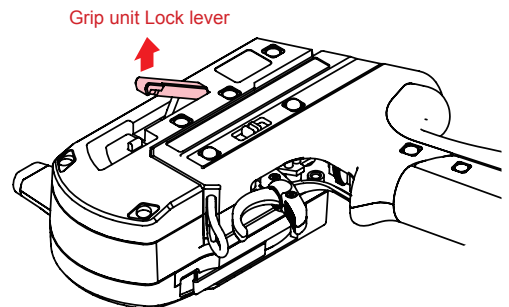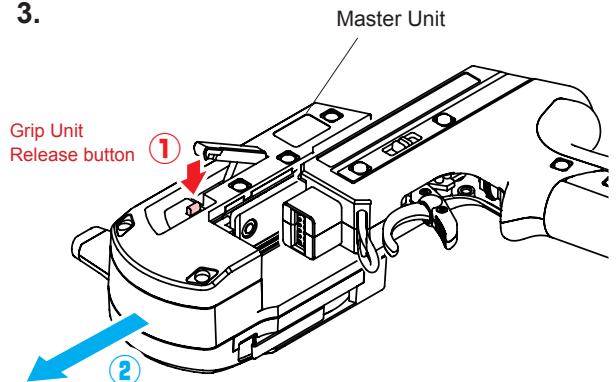
⚠ If storing the transmitter in dismantled form, please remember to attach the connector covers.

⚠ In the explanation drawing, the standard steering wheel unit is used.
The drop extension unit is attached to EX-NEXT.

⚠ Assembly may differ with the included set contents.

⚠ Please refer included manual for LDT unit. about LDT.

*Please be sure to do configuration.

⚠ When a unit is exchanged, or when you use it for the first time, please perform the VR information configuration function (p.17).

●Installation of Xpansion unit

Xpansion unit can be mounted facing the front or the side. The factory setting is mounted to the front.

⚠️ Be careful to not misuse the M2.6-6BH and 2.6-8BH tapping screws.

⚠️ Remove the connector cover before use.

🅟 Xpansion unit can be mounted in two different directions using the monitor base and bracket.

A▼ : Setting to the front

①Attach a monitor base parallel to Xpansion unit.
*Factory setting.

Attention to the marker.

screw used.

M2.6-6BH
x 2
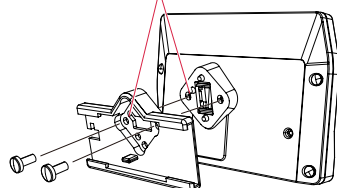
②Attach the monitor bracket to the master unit.
　*[A▼]mark to the steering side.

Connect the wire of the Xpansion unit to the master unit.

screw used.

2.6-8BH
Tapping
x 4

A▼
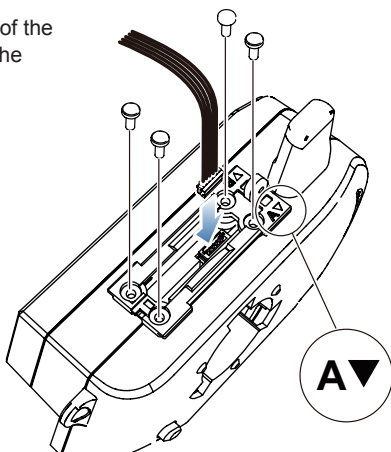
③ Attach expansion unit to a master unit.

1 While matching the edge of the base with the dent of the bracket, slide it until the Xpansion unit locks.

screw used.

M2-6
Cap screw
x 1

1

2
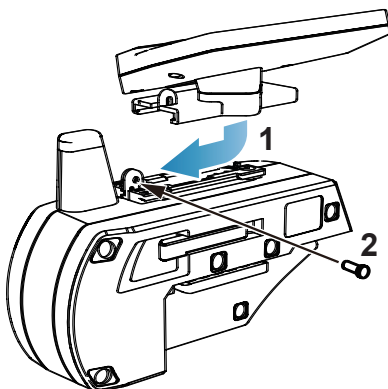
2 Set M2-6 Cap Screw for fixed.

▼B : When mounting sideways

①Attach the monitor base at a right angle to Xpansion Unit. *Different Factory setting.

Attention to the marker.

screw used

M2.6-6BH
x 2
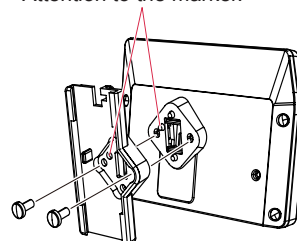
②Attach the monitor bracket to the master unit.
*Apply [▼**B**] mark to the steering side.

Connect the wire of the Xpansion unit to the master unit.

screw used

Nut Holder

2.6-8BH
Self tapping
screw　x 4

▼B
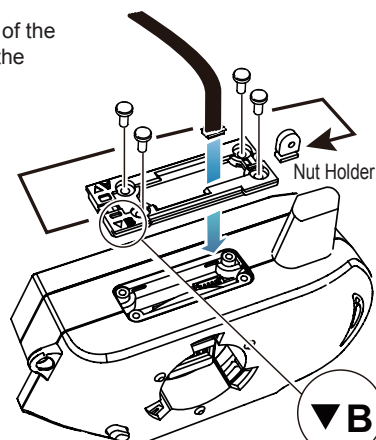
③Attach the Xpansion unit to the master unit.
*Attach the monitor base and bracket as shown in figure.

How to disassemble the Xpansion unit.

1. Remove M2-6 Cap Screw.

2. Slide the Xpansion like shown in the figure below and take off.
　*The disassembly method is the same as side and front positions

screw used.

M2-6
cap screw
x 1

2

1
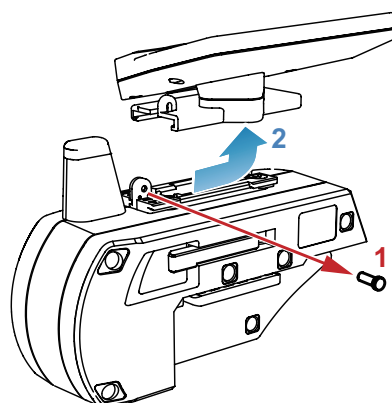
⚠️ When assembling or disassembling the Xpansion unit to EX-NEX, please turn off the EX-NEXT.

■ Names of Parts

<Side View>   <Front View>

EXP Connector Cover

ET1
(p.11)

Antenna

ET2
(p.11)

ET3
(p.11)

LED

Power switch (p.12)

ET4
(p.11)

BT1
(p.11)

Steering Unit
Release Button (p.5)

ET5 (p.11)

Steering Unit
Lock lever

Throttle Trigger(p.11)

Charging Jack(p.12)
*Open the cover

Colored Grip
(p.12)

●ET Keys (1-5) and BT Button (1)
Functions may be assigned to the keys/button.

⚠ The possible functions which each key/
button may be assigned to are different.

Colored Pad (p.12)

Guard Bar

<Rear View>

Grip Unit
Release buttom
(p.5)

Grip Unit
Lock lever
(p5)

Throttle Trigger
Position Adjuster(p.11)

7

■ Preparations

●Battery Installations

1. Press the tab on the bottom of the transmitter to open battery box cover.

Battery Box Cover
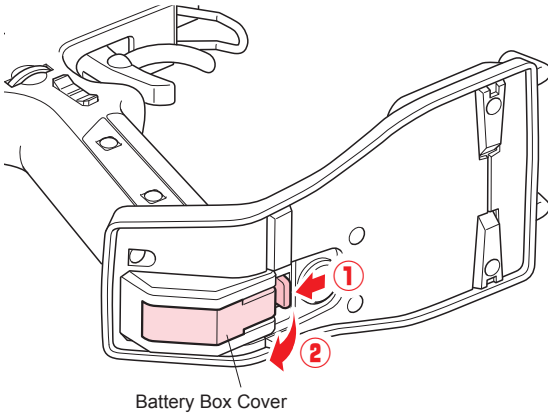
2. Remove the lock to pull out battery box.
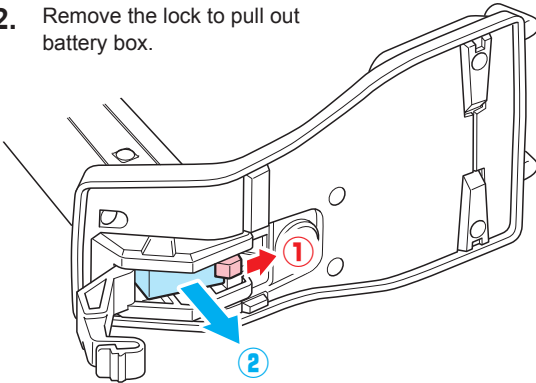
3. Install four R03/AAA/UM4 alkaline batteries while noting their polarity, then replace battery box.

R03/AAA/UM4 Batteries (4pcs.) *Sold separately

Battery Box
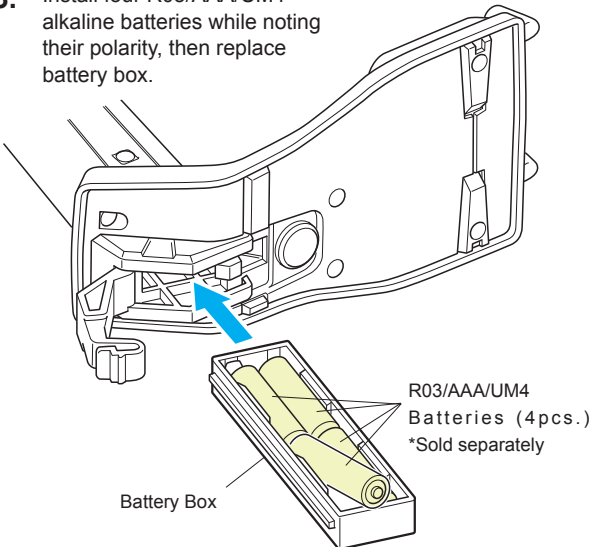
⚠ Use batteries which have adequate remaining capacity. Weak batteries mean lower transmitting power and may result in malfunctions.

●Battery Level Warning

A warning will be displayed with the LED flashing and an alarm will sound when battery voltage is less 4v. When you see this warning, stop your model in a safe area, turn it off and install new transmitter batteries.
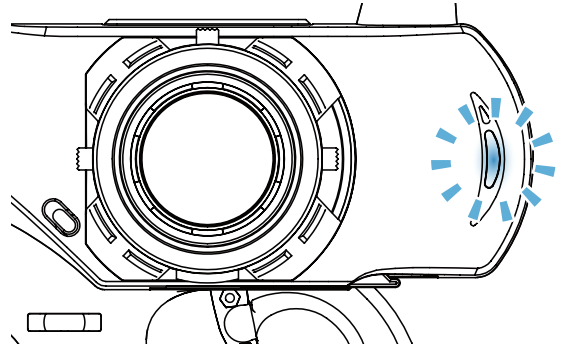
⚠ When using a Li-Po / Li-Fe battery, be sure to change the expansion battery setting (p.41) because it is necessary to warn before the voltage drops to 4V.

■ Basic operation

●STEERING

The following function explanation is the case of factory default settings. When changing KEYSET (key setting); the following opinions change.

■Steering Wheel

Turn the steering wheel in the right and left directions to verify the servo (steering) connected to 1CH of the receiver is operating.
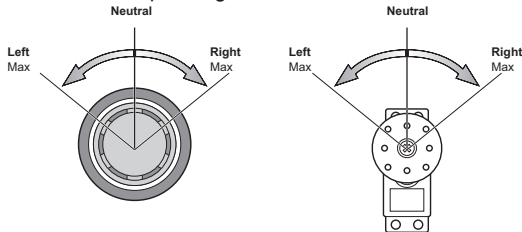
■Steering Trim

Adjusts the neutral/center position of the steering angle range. The function to make a fine adjustment so that a car goes straight, operate the ET1 lever in the right and left directions.

● A buzzer sound with a single beep sound when operated to the right and left.

● A buzzer sound "Piro" is made when the center trim is adjusted.

●When exceeding the setting range a "Pi-" sound can be heard. Please look over your installation and linkage of the servo horn.

<ex: Right>
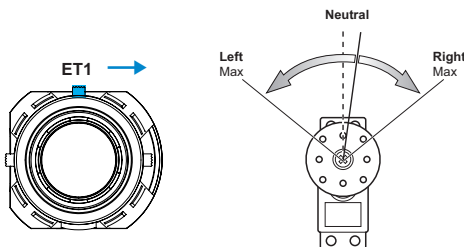
■Steering Reverse

Changing the output directional movement of the servo when it is moving in the opposite direction.
(when a steering moves to the left while turning the steering wheel to the right.)

①Select [STEERING] on the initial screen and push ENTER key.
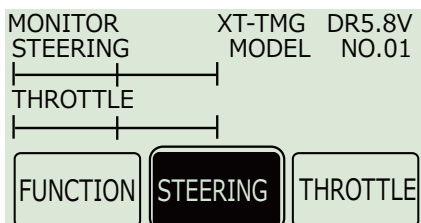
② Select [REVERSE] on the STEERING menu, and push ENTER key.
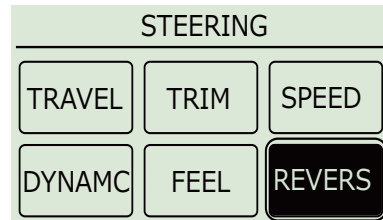
③ Change setting from NORM to REVS.
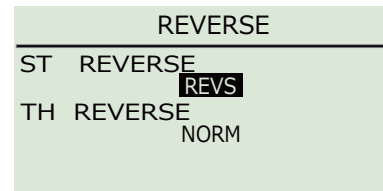
* Return reverse setting, perform operation to ① to ③ again.

■Steering Balance

Adjust the left/right steering angles independently.
This enables the turning radii to match up during cornering.

● Balance R(Right)
① Hold steering wheel to all the right.
② Push ET1 lever by 1 click, adjust the range of Steering angle.
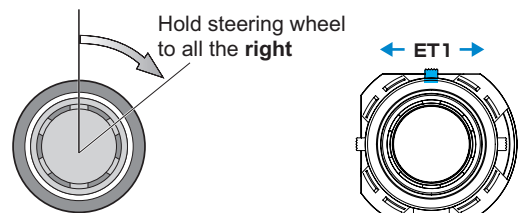
● Balance L(Left)
① Hold steering wheel to all the Left.
② Push ET1 lever by 1 click, adjust the range of Steering angle.
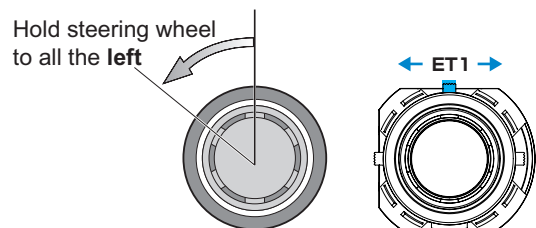
🅿 To adjust the amount of steering for right and left at one time, change steering travel (p.48) with ET4 dial.

🅿 The above function can be invalidated by turning "OFF" direct balance (p.48).

●THROTTLE

The following function explanation is the case of factory default settings. When changing KEYSET (key setting); the following opinions change

■Trigger

Operating trigger, the servo (ESC) connected to 2CH of the receiver works forward and reverse function.

Forward **Neutral** **Neutral** **Reverse (Brake)**
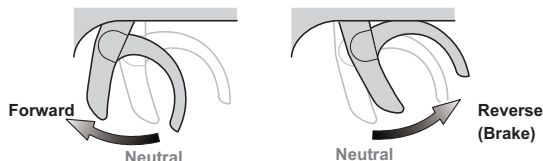
■Throttle Trim

Adjusts the neutral/center position of the throttle stroke range.The function to make a fine adjustment, operate ET2 lever in up and down.

● A buzzer sound with a single beep sound when operated up or down.

● A buzzer sound "Piro" is made when the center trim is adjusted.

● When exceeding the setting range a "Pi-" sound can be heard. Please look over your installation and linkage of the servo horn.

Forward

ET2
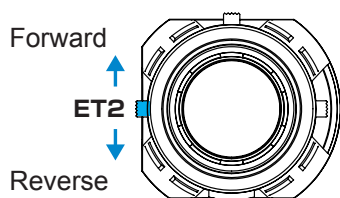
Reverse

■Throttle Reverse

Changing the output directional movement of the servo when it is moving in the opposite direction. (when the brake is moving the forward throttle.)
*This function setting "REVERSE" is accessed in the Steering menu.
① Select Steering menu in the initial screen and push Enter.
② Select [REVERSE] on the STEERING menu, and push ENTER key.

```
        THROTTLE 1/3
  ┌────────┬────────┬────────┐
  │ TRAVEL │  TRIM  │ SPEED  │
  ├────────┼────────┼────────┤
  │ DYNAMC │  FEEL  │ REVERS │
  └────────┴────────┴────────┘
```

③ Change setting from NORM to REVS.

```
           REVERSE
  ─────────────────────────────
  ST   REVERSE
                    NORM
  TH   REVERSE
                    REVS
```

* Return reverse setting, perform operation to ① to ③again.

■Throttle Travel

Modify the maximum amount of throttle brake movement and forward acceleration movement.

● Travel F(Forward)

① From initial screen select [THROTTLE] throttle and press the ENTER key.

```
        THROTTLE 1/3
  ┌────────┬────────┬────────┐
  │ TRAVEL │  TRIM  │ SPEED  │
  ├────────┼────────┼────────┤
  │ DYNAMC │  FEEL  │ REVERS │
  └────────┴────────┴────────┘
```
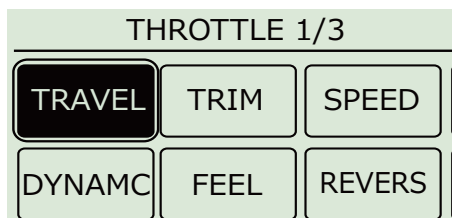
② Select [TRAVEL] on the THROTTLE menu, and push ENTER key.

```
          TH TRAVEL
  ─────────────────────────────
  TH  TRAVEL

  F 100%        N        B100%
```
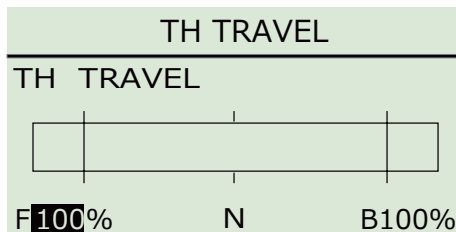
● Travel B(Brake)

① Select [THROTTLE] throttle and press the ENTER key.

② Select [TRAVEL B] on the THROTTLE menu, and push ENTER key to adjust

P The setting of [TRAVEL B] can be changed by operating the ET3 lever.

Increase

ET3

Decrease
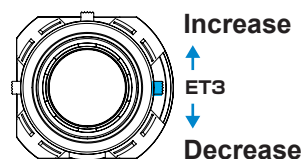
⚠ For GP cars, a strong setting for the brake can damage the servo.

●ET Keys (1-5) and BT Button (1)

Functions may be assigned to the keys/button. For key allocation, please refer to KEYSET key configuration (p.33).

⚠ The possible functions which each key/button may be assigned to are different.

●Steering Wheel Adjustment

Adjust the tension of the steering wheel spring.

<How to Adjust>

Insert a 1.5mm hex wrench referring to the image below. Rotate clockwise to increase tension and counterclockwise to decrease it.

Hex Wrench
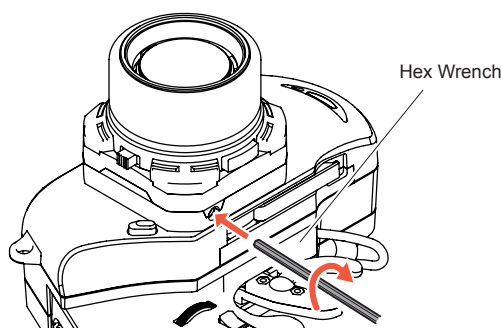
⚠ Excessive counterclockwise rotation will result in the wheel being unable to return to neutral position. In this case, rotate clockwise until the wheel returns to neutral

● Adjustment of the decrease angle adjuster

① The steering sponge is removed.

② Using a 2mm hexagonal wrench, insert into the two holes of the steering wheel to adjust the angle you prefer.

③ Perform the VR information configuration (p.17).

④ Replace the steering wheel sponge.

●Throttle Trigger Adjustment

Adjust the position and angle of the brake trigger to your preferences.

<How to Adjust>

① Loosen the hex screws on the throttle trigger with a 1.5mm hex wrench.

② Freely adjust the brake trigger position.

③ Tighten the hex screws to secure.

【Throttle trigger】

Throttle lever

Brake lever

Hex screws

Ball Joint
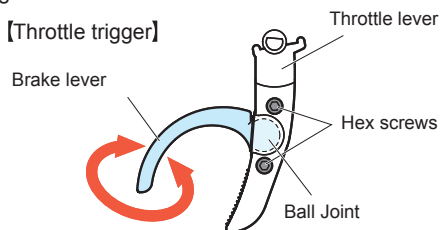
⚠ The trigger may loosen over time due to temperature, usage, strong impacts, etc., we recommend you glue it in place. When there are times that it is still loosens, please inquire to our service department.

●Throttle Trigger Position Adjustment

The position of the throttle trigger may be adjusted to match the user's hands.

<How to Adjust>

① Loosen two screws on the rear side of the transmitter.

② Slide the Throttle Trigger Position Adjuster as desired.

③ Tighten the loosened screws to secure.

Screws

Throttle Trigger Position Adjuster
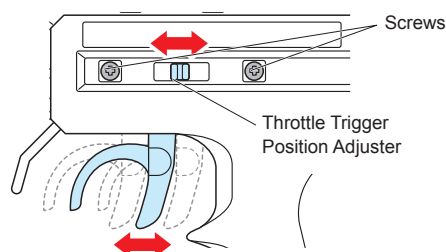
●Adjustment of Trigger Tension

Strength (tension) of the spring for the throttle trigger is adjustable.
* Only Expert grip unit available.

<How to Adjust>

Using a 1.5mm hexagonal wrench (not included) insert into the lower part of the grip section. When turned clockwise (right) the tension becomes stronger, counter-clockwise (left) it becomes less.
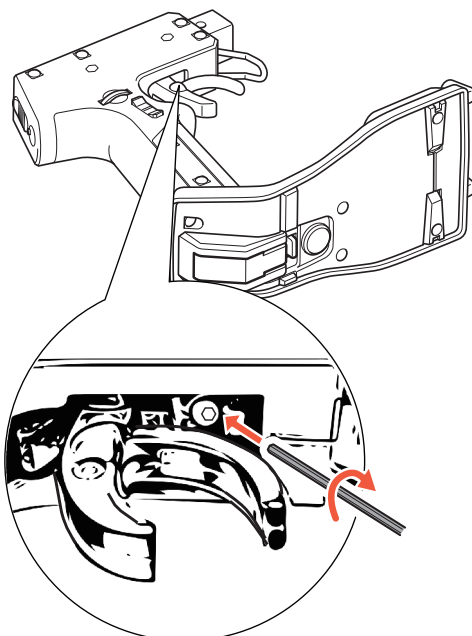
⚠ Hold the trigger lightly, insert the hexagonal wrench.

●Colored Grip and Pad Replacement

Colored grip pad (optional) and Large/small grip pad options are available.(LDT requires a another product)

<How to Adjust>

Remove the two screws on each side of the grip to detach the grip plates, then attach the colored grip and pad.

⚠ **Insert the color pad / grip claws into the holes in the following order. Note direction of these parts.**
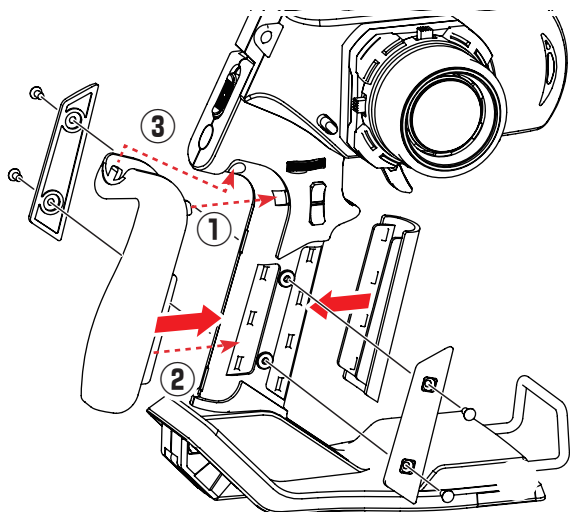
⚠ Make sure the battery box or battery pack is removed before replacing the colored grip and pad.
Be sure to attach it with the color pad to be replaced and the screw of the length that matches the grip. If you make a mistake, the battery or battery may be damaged.

⚠ Be careful not to overtighten the aluminum screws, as the screws may be damaged if they are overtightened.

⚠ Note direction of the grip plate.

●Unit Connector

This product may be dismantled and therefore each unit features their respective connectors. Dirty or damaged connectors may result in malfunctions, so please handle them carefully.
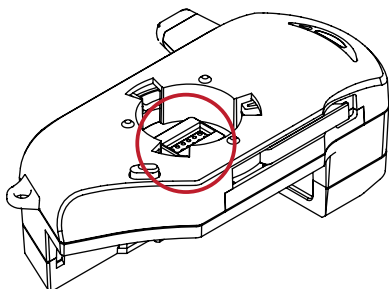
⚠ Do not touch the unit connectors with your fingers. If connectors become corroded due to grime, they may become inoperable. If storing the transmitter in dismantled form. After prolonged use, a black residue may build up on the connectors. Use cotton swabs dipped in cleaning alcohol to remove. KO Propo's Customer Service Department also handles transmitter maintenance.

●Power Switch

This product features a safety lock. The Master Unit and Grip Unit cannot be detached when the Power Switch is in the ON position. Turn off the transmitter before dismantling.

⚠ Disassembly is not possible when the power is switch ON. Forcefully trying to remove the Grip Unit while on will result in damaging the locking mechanism.

Power Switch
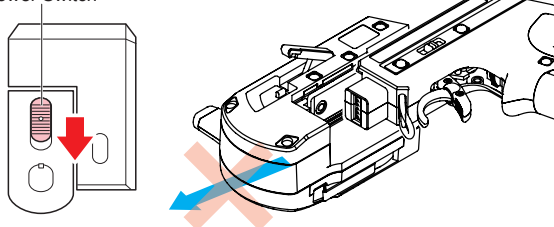
●Charging Jack

Using the charging jack, you can charge different batteries. When using the Xpansion and an expert grip unit,A battery stand, a rechargeable battery, a battery charger are necessary.

<How to Recharge>

□.Confirm that the power switch is in the OFF position. If only using the Grip Unit, make sure that the connector cover is in place.

□.Make sure the battery is securely connected. If the connection is loose, the battery may not charge completely. Securely connect the charger plug to the charger jack.

□.Begin charging using a current of less than 1A.

Quick charger(Sold Separately)
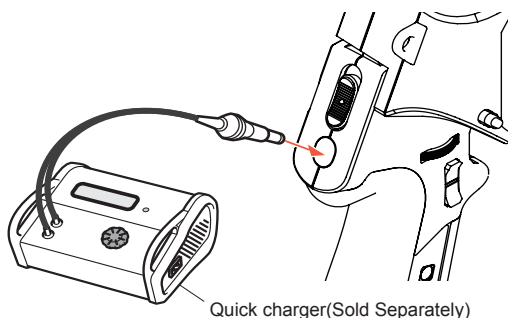
Ⓟ Please use charger which can set current less 1A and it must correspondent your kind of battery. You can use No.55055 TX charging jack2 as chaging plug.(sold separately)

⚠ Make sure the power switch is in the OFF position when charging.

⚠ A short circuit may occur if the connector makes contact with metal and lead to a serious accident.

⚠ Use a current of less than 1A to charge.

⚠ Take note of the charger plug's polarity in order to avoid damage.

⚠ Do not attempt to charge if using alkaline batteries.
Doing so may result in battery leakage or cracking which will damage the transmitter.

⚠ You can not charge the battery through the charging jack when using a battery pack.

⚠ If using a battery pack, please note that it cannot be discharged via the charger jack. Remove the battery pack from the transmitter to discharge it.

⚠ After reading the battery pack manual, please use your battery. discharged via the charger jack. Remove the battery pack from the transmitter to discharge it.

■ Procedures Prior to Operation

1. Switching On
After ensuring that it is safe to do so, switch on the transmitter followed by the receiver.

2.Model Confirmation
Confirm the model which will be used.

3.Checking Movements
With the model's wheels lifted off the ground, operate transmitt er to check for proper movement. While driving, use steering and throttle trims to make fine adjustments. Drive in a figure 8 pattern t o check steering balance.

Stand

Figure 8 Pattern

Trim lever
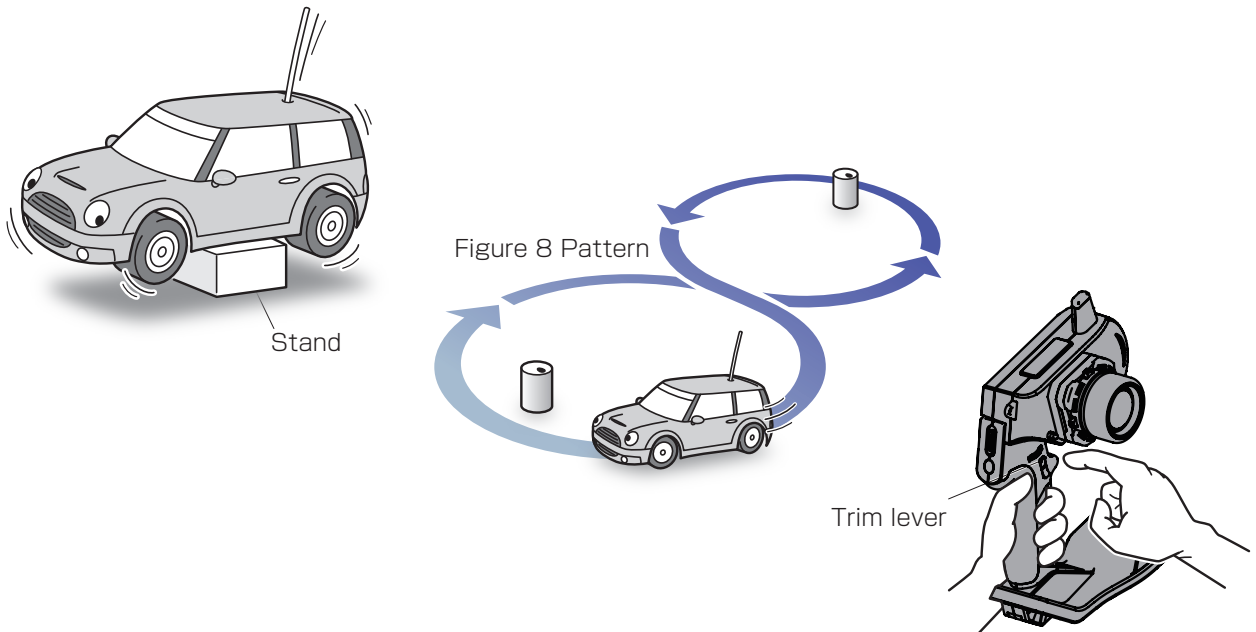
4.Switching Off
After a driving session, **switch off the receiver,followed by the transmitter**. Remove the battery pack from the model.

⚠ After switching off, wait at least 5 seconds before switching on again to ensure proper operation.

■ Display and Control Method for attaching the Xpansion unit

● Name of each parts and Basic operation.

Operation Controlling of the setting adjustments is done via the L(<) key, R(>)key, ENTER(ENT) key, and BACK key.

ENT Key : Selecting item to be modified; Confirming a change after a setting change.

L(<)Key : Used to move cursor between m enu choices and to change a setting value.
Lowering a value (for L/R cases: raising toward L); Return to a previous menu item.

R(>)Key : Used to move cursor between menu choices and to change a setting value. Raising value (for L/R cases: raising toward R); Proceed to next menu item.

BACK Key : Returning to previous screen; Canceling change.

L(<)Key+R(>)Key Pressing simultaneously : Reset value to factory setting.

MONITOR XT-TMG DR5.8V
STEERING MODEL NO.01

THROTTLE

FUNCTION | STEERING | THROTTLE

BACK < ENT >

BACK Key   L(<) Key   ENTKey   R(>) Key

Command button
Used for firmware upgrading.
Please refer to an update manual for the details.

Communication Port
Used for firmware upgrading and ICS communication.
Please refer to an update manual for the details.
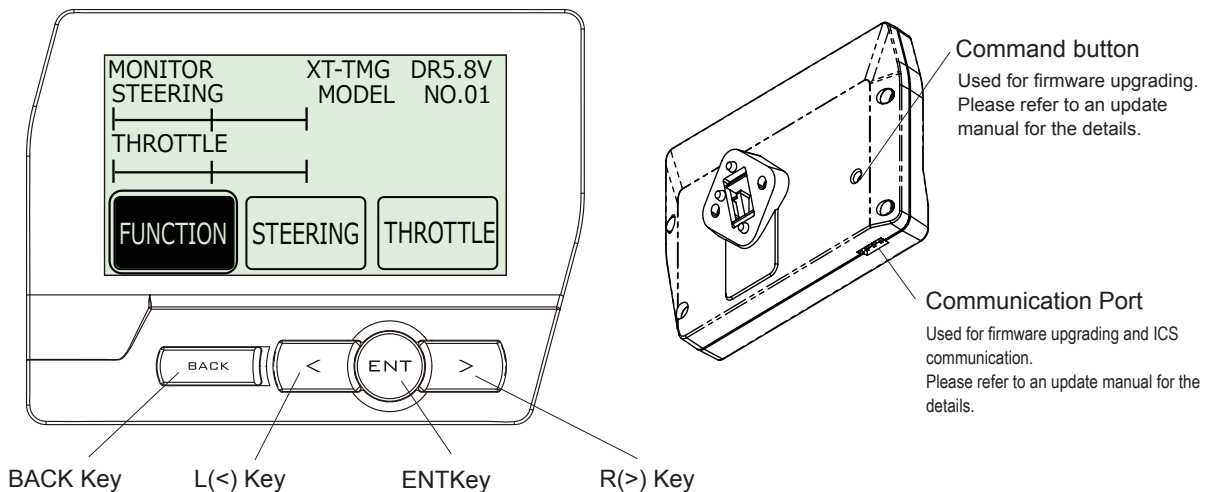
【Basic Operation 1: Selecting from a Menu 】

This explanation uses [Steering] as an example.
① Use the R(>) key to move the cursor over [Steering].
② Press the ENTER key to change to the Steering Menu screen

MONITOR XT-TMG DR5.8V
STEERING MODEL NO.01

THROTTLE

FUNCTION | STEERING | THROTTLE

➡

STEERING

TRAVEL | TRIM | SPEED

DYNAMC | FEEL | REVERS
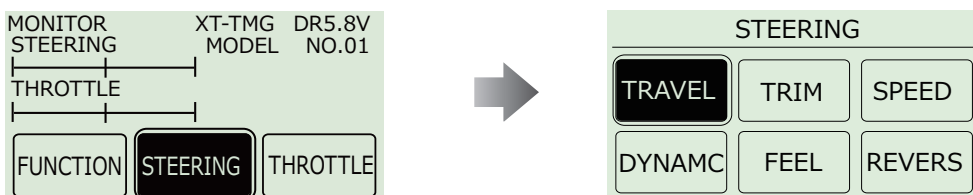
【 Basic Operation 2: Changing a Setting Value 】

This explanation uses [TURN 1] on the Steering Speed screen as an example.
① Operate the R (>) key to set to [SPEED] (ST SPEED), and then press the ENT key to switch to the setting menu.
② Operate the R (>) key for move the cursol to the value (100%) of [TURN1] (ST SPEED turn speed 1). (Figure left)
③ Press ENTER key to select it for modification.
④ The cursor starts flashing. Please change the value by operating R(>) and L(<) Key. (Figure right Changed to 50%)
⑤ Press ENT key when change value is finished.

ST SPEED			
TURN		RETURN	
POS	50%	POS	50%
TURN1	**100**%	RTRN1	100%
TURN2	100%	RTRN2	100%

➡

ST SPEED			
TURN		RETURN	
POS	50%	POS	50%
TURN1	**50**%	RTRN1	100%
TURN2	100%	RTRN2	100%

●English and Japanese display language

The menu lettering of the transmitter can be changed from English to Japanese by configuring
FUNCTION>SYSTEM>CONFIG>LANGUAGE.
* In this instruction manual, English is used for displaying functions

Operation 】How to change to Japanese 】

①From the initial screen select FUNCTION and press the ENTER key.

```
MONITOR        XT-TMG  DR5.8V
STEERING         MODEL   NO.01
THROTTLE
```
| FUNCTION | STEERING | THROTTLE |
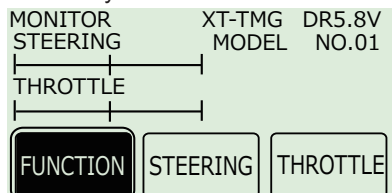
②From the FUNCTION menu, select SYSTEM and press the ENTER key.

FUNCTION
| MODEL | TIMER | KEYSET |
| 3 - 8CH | TLMY | SYSTEM |
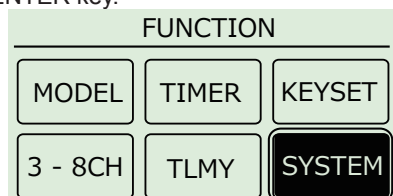
③From the SYSTEM menu, select CONFIG and press the ENTER key.

SYSTEM 1/2
| DISPLAY | BATTRY | CALC. |
| SOUND | VRINFO | CONFIG |
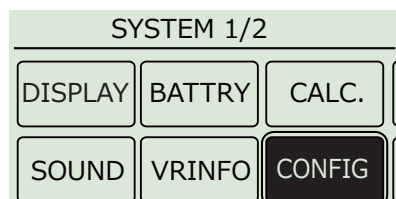
④From the CONFIG menu, select JAPANESE to change the language setting.

CONFIG
KEYSPEED 3	OPERATIONTIME 3M
MENUSPEED 3	USERTIMER 0H53M
LANGUAGE JAPANESE	ELPASSEDTIME 0H53M
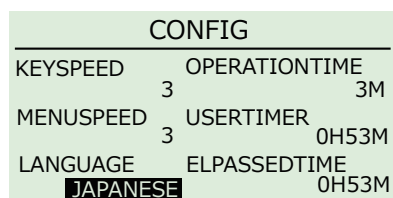
⑤When the BACK key is pressed, the language changes to Japanese.

システム 1/2
| ディスプレイ | バッテリー | ケイサンキ |
| サウンド | VRインフォ | カンキョウ |
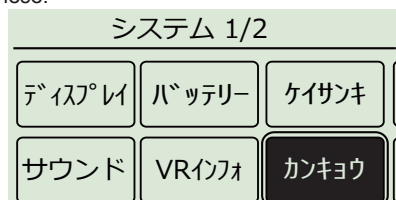
If you want to change to English menu, change value in the セッテイ > システム > カンキョウ > ゲンゴ to ENGLISH from Japanese.

英語表記	カタカナ表記	
FUNCTION	セッテイ	
MODEL	モデル	
TIMER	タイマー	
KEYSET	キーセッテイ	
3-8CH	3-8CH	
TLMY	テレメトリ	
RFMODE	RFモード	
RESP	レスポンス	
RELICS	リアルICS	
BT F/S	BT F/S	
SYSTEM	システム	
DISPLAY	ディスプレイ	
BATTRY	バッテリー	
CALC.	ケイサンキ	
SOUND	サウンド	
VRINFO	VRインフォ	
CONFIG	カンキョウ	
DATA	データ	
RESET	リセット	
STEERING	ステアリング	
TRAVEL	トラベル	
TRIM	トリム	
SPEED	スピード	
DYNAMC	ダイナミク（ス）	Note1)
FEEL	フィール	
REVERS	リバース	
THROTTLE	スロットル	
TRAVEL	トラベル	
TRIM	トリム	
SPEED	スピード	
DYNAMC	ダイナミク（ス）	Note1)
FEEL	フィール	
REVERS	リバース	
CYCLE	サイクル	
ATSTRT	ATスタート	
OFFSET	オフセット	
BRK-OR	オーバーR	
BRK-IN	ブレークイン	
H-BRK	ハンドBK	
PUSH	プッシュ	

Note1) ダイナミクス is displayed as ダイナミク couse by limt of chractor count.

●Startup Screen and Initial Screen

When the transmitter is switched on, the startup screen will display, followed by the initial screen.

* Pressing the ENTER key during the startup screen will allow you to proceed to the initial screen.

【Startup Screen】

EX NEXT
XPANSION   V2.01.00
           V2.00.00 ①

① Version Information :

Displays the version of the program that is installed in the Msater Unit's CPU.
This product's performance may be upgraded via paid or free upgrades.
Check the KO Propo website for information regarding such upgrades
.(https://www.kopropo.co.jp)

* The upper row is the expansion version, and the lower row is the master unit version.
  Please check the version upgrade guide to see which one to refer to.

【Initial Screen】

⑤ ⑥
① OR AUT CYC OFS   XT-TMG DR5.8V ⑦
  STEERING   MODEL   NO.01 ⑧
②
  THROTTLE PUSH   ABCDEFGH
③   IJKLMNOP ⑨
  FUNCTION STEERING THROTTLE
④
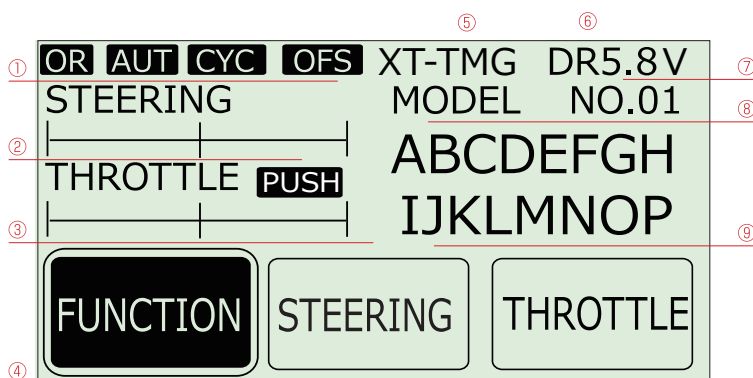
① Function Monitor: Functions that are active will be lit up.

OR Steering and Brake travel Override
AUT Throttle Auto Start
CYC Cycle Throttle Acceleration/Throttle ABS)
OFS Offset Drag Brake/Idle Up
PUSH : Push

⚠ When left side functions are not active, "MONITOR" is displayed.

② Steering Monitor: Displays the position of the steering operation.

③ Throttle Trim Monitor: Displays the position of the throttle trim.

④ Top menu: Display three kinds of setting items

FUNCTION : Modify settings related to functions.
STEERING : Modify settings related to the steering.
THROTTLE : Modify settings related to the throttle.

⑤ RF Mode : RF mode which is being used is displayed.

XT-ADG : ADV (Highest speed, one way communication)   XT-ADF : ADV (Highest speed, one way communication and France mode)
XT-TMG : TLMY (Middle speed, two way communication)   XT-TMF : TLMY (Middle speed, two way communication and France mode)
MX-FG : MX-F (Slowest speed, one way communication)   MX-FF : MX-F (Slowest speed, one way communication and France mode)
MINIZ : MINIZ (One way communication)

⑥ Power Source Type : Selected battery mode is displayed.

LP : Lipo Battery   DR : R03/AAA/UM4 Alkaline Batteries
LF : LiFe Battery   NI : Ni-MH Battery
(Notice) If you switch battery types, make sure to also change the [Battery] setting.

⑦ Voltage: Displays the current power source voltage.

⑧ Model Number: Displays the currently selected model number.

⑨ Model Name: Displays the name of the currently selected model number.

●VR information setting

Adjust the steering and throttle resistance information.

*Please perform the VR information configuration to calibrate your system.

○ When using EX-NEXT for the first time.
○ When changing a steering unit for a different product or when putting it back together.
○ When changing a grip unit for a different product or when putting it back together.
○ When using and confusion has occurred in the positional information.

1.Select [FUNCTION] on the initial screen and push the ENTER key.

2.Select [SYSTEM] on the function screen and push the ENTER key.

3.Select [VR INFO] on the system screen and push the ENTER key.

4.Move the wheel slowly to the full left and right lock (numbers will change as the steering is moved) and release the wheel back to neutral.

5.Move the trigger slowly to the full throttle and full brake positions (numbers will change as the throttle is moved) and release the trigger back to neutral.

6.Then select YES (press ENTER) to adjust and save the settings.

3.Example before setting

VR INFOMATION

ST- LEFT	X X X X
NUT	X X X X
RIGHT	X X X X	OK?
TH- HI	X X X X	YES
NUT	X X X X
LOW	X X X X

4.5.Move slowly to full stroke, then release

Left Max   Right Max

Foward Max
Reverse Max
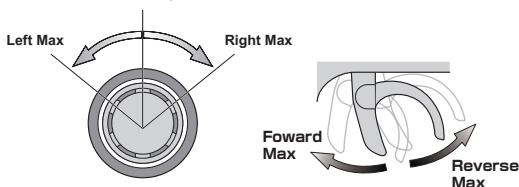
6.Small window [Yes] comes active.

VR INFOMATION

ST- LEFT	1765
NUT	◇
RIGHT	-1749	OK?
TH- HI	1204	YES
NUT	◇
LOW	-565

*When operating the VR INFORMATION and pressing the BACK key will cancel the operation.

⚠ For a detailed configuration procedure, please refer to "VR Information" (p.45).

●RFMode(Radio waves mode)

EX-NEXT has 3 mode of radio method.

Communication Specifications	XT Advance Highest speed one way communication		XT Telemetry Middle speed two way communication		MX-F Slowest speed one way communication		MINIZ one way communication
RF Mode	ADV		TLMY		MX-F		MINIZ
Width of Frequency	GENERAL	FRANCE	GENERAL	FRANCE	GENERAL	FRANCE	GENERAL
Initial Screen Display	XT-ADG	XT-ADF	XT-TMG	XT-TMF	MX-FG	MX-FF	MINIZ
Compatible Receivers	KR-420XT		KR-420XT		MR-8		MINI-Z EVO Receiver Unit
LED	Green	Green Flashing	Blue	Blue Flashing	Yellow	Yellow Flashing	Light Blue/Blue Alternating blinking
Telemetry	Do not Correspond		Correspond		Do not Correspond		Do not Correspond

P **Please do pairing function when the RF MODE is changed. (p.19-21)**

P **When using EX-NEXT in MINI-Z, be sure to change the RF mode to MINIZ.**

●RF mode

ADV: This is highest speed response in same category device. This give absolute advantage when using in the race.(*1)

TLMY: In the this mode, you can use telemetry/REAL TIME ICS.(*2)
You can know value of the each sensor from the receiver. You can adjust ICS settings of the servo through the transmitter.

MX-F: This mode is for using MR-8 receiver.
Please return RF mode to "MX-F" after change RF mode to "TLMY" and change response to the"MILD"(p.37-38)

      *1: As of January 2021
      *2:The telemetry function is able to use serial communication corresponded servo or device only.

MINIZ: This mode is for use with the MINI-Z EVO receiver unit EX-NEXT MC-8.

P The MINI-Z EVO receiver unit that can communicate with EX-NEXT is

  [MINI-Z EVO Receiver Unit EX-NEXT MC-8] **(Green antenna)**.

  [MINI-Z EVO receiver unit 82040] **(Red antenna)** cannot be used.

    *1: The MINI-Z EVO receiver unit is exclusively for the MINI-Z EVO series manufactured by Kyosho Corporation.

P **What is France (France mode) width setting?**

> This parameter can change value of the communication pattern of the EX-NEXT and receivers. If you have direction by administrator of the track etc, please use France mode. Usually, please use the General mode.

P How to use KR-420XT with MC-8.
  Please set "TLMY" for the RF mode and set "MILD" for response function when using with EX-NEXT.
  Then pair this receiver with MC-8.

●**Pairing**(for general RC car)

This operation allows the receiver to memorize the transmitter information. You must perform this when using a receiver for the first time or when changing the EX-NEXT RF mode.
*There are two ways of pairing a receiver. Please use which ever method you feel is an easier operation.

<Pairing method 1>
A case of pairing method without changed RF mode.

1. Preparing the transmitter.

① While pushing the ET2 lever up, power on. The pilot LED lights up, release ET2 lever.

Power ON
ET2

② Please release the ET-2 lever when the initial screen is displayed.

③Change to pairing screen and start transmit power with paring signal.

Change to pairing screen and start transmit power with paring signal.

ADV: Green / White TLMY: Blue / White

2. Preparing the receiver

① Connect the receiver power source while pressing the setup button.

BATT

② Check that the receiver's LED has lit up, then release the setup button.

③ Check that the receiver's LED lights up again (indicating pairing completion).

④ Receiver's LED lights up again (about 3sec) and light off and start flashing.It means searching for transmitter signal.

Lit LED
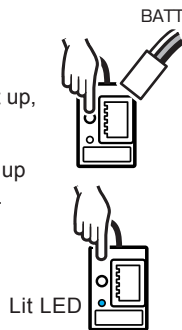
3. Preparations for Operation

① Turn off the transmitter and turn on again.

② Check that the receiver's LED lights up again (indicating pairing completion).

<Pairing method 1 and 2 comon.>

If the LED flashes, the receiver is not getting the EX-NEXT signal and the pairingprocedure should be repeated.

Lit LED   **Flash**

<Pairing Method 2>
A case of pairing method with changed RF mode.

1. Preparing the transmitter.

① Press ENT key when FUNCTION is selected at the Initial screen.

```
MONITOR              XT-TMG   DR5.8V
STEERING             MODEL    NO.01
THROTTLE
```
| FUNCTION | STEERING | THROTTLE |

② Press ENT key when TLMY is selected at the FUNCTION menu.

```
          FUNCTION
```
| MODEL | TIMER | KEYSET |
| 3 - 8CH | TLMY | SYSTEM |

③ Press ENT key when RFMODE is selected at the Telemetry menu.

```
          TELEMETRY
```
| RFMODE | RESP | RELICS |
| BT F/S |
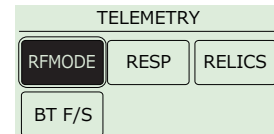
④ Please set the RF MODE and ⑤WIDTH in the RF MODE menu for you needs.

```
          RF MODE
RF MODE:     TLMY    ④
WIDTH  :   GENERAL   ⑤
           PAIRING   ⑥
```
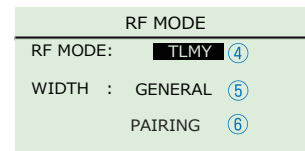
⑥ Move the cursor to PAIRING and press and hold ENT key.

⑦ Screen is change to the PARING and start sending the pairing signal.

The EX-NEXT LED lights alternately in two colors corresponding to

ADV: Green / White TLMY: Blue / White

2. Preparing the receiver

① Turn on the receiver. And thereceiver's LED will be start flashing.

BATT

② Check that the receiver's LED has lit up, then release the setup button.

③ Check that the receiver's LED lights up again (indicating pairing completion).

④ Receiver's LED lights up again (about 3sec) and light off and start flashing. It means searching for transmitter signal.

Lit LED
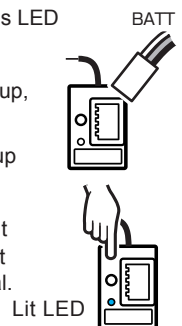
3. Preparations for Operation

① Press the Back key in the EX-NEXT.

② Check that the receiver's LED lights up again (indicating pairing completion)

●Pairing(for MINI-Z)

This operation allows the receiver to memorize the transmitter information. You must perform this when using a receiver for the first time or when changing the EX-NEXT RF mode.
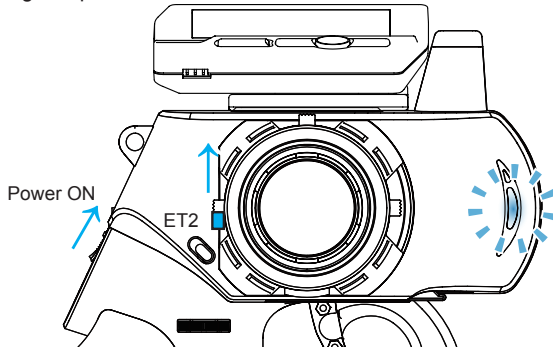*There are two ways of pairing a receiver. Please use which ever method you feel is an easier operation.

<Pairing method 1>

A case of pairing method with changed RF mode.

1. Preparing the transmitter.

① Press ENT key when FUNCTION is selected at the Initial screen.

```
MONITOR          XT-TMG  DR5.8V
STEERING         MODEL   NO.01
THROTTLE

FUNCTION   STEERING   THROTTLE
```

② Press ENT key when TLMY is selected at the FUNCTION menu.

```
              FUNCTION

MODEL     TIMER     KEYSET

3 - 8CH    TLMY     SYSTEM
```

③ Press ENT key when RF MODE is selected at the Telemetry menu.

```
              TELEMETRY

RFMODE     RESP     RELICS

BT F/S
```
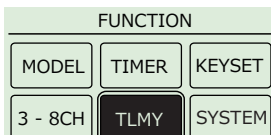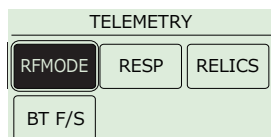
④ Please set the RF MODE and WIDTH in the RF MODE menu for you needs.

```
              RF MODE
RF MODE:      MINIZ

WIDTH  :   GENERAL

           PAIRING
```

⑤ Move the cursor to PAIRING and press and hold ENT key.

```
              RF MODE
RF MODE:      MINIZ

WIDTH  :   GENERAL

           PAIRING
```
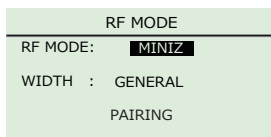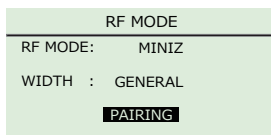
⑥ Screen is change to the PARING and start sending the pairing signal.

```
       ▷▷▷ ▭

   EXIT>>  BACK KEY!
```

The EX-NEXT LED lights alternately in three colors corresponding to
Blue / Light Blue / White

2. Preparing the receiver

① Prepare the pairing stick and locate the LED indicator and pairing button.

Pairing Button

LED Indicator
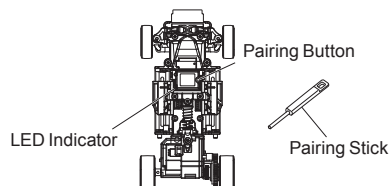
Pairing Stick

② Use the pairing stick to Press and hold the pairing button.
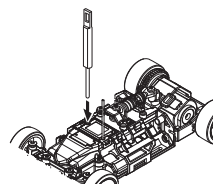
③ Chassis (Switch ON)

ON!
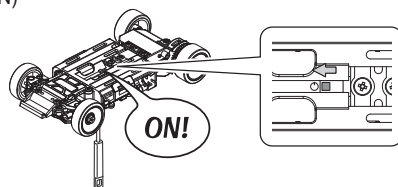
④ When the LED indicator lights up, release the pairing button.
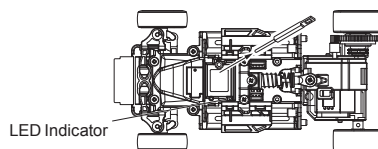
LED Indicator

⑤ LED Indicator will show the following.

Light is ON   : Pairing has been successful.
Light is flashing : Pairing has not be completed.
                   Switch the transmitter and chassis
                   power off and do pairing again.

⑥ Chassis (Switch OFF)

OFF!
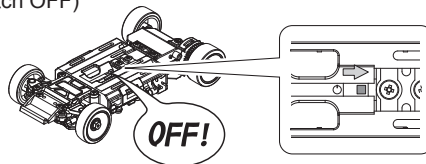
3. Preparations for Operation

① Press the BACK button on the EX-NEXT and turn on the power as usual to operate the MINI-Z.

*In rare cases, pairing data may be lost, but this is not a malfunction. Please set up the pairing again.

<Pairing Method 2>
A case of pairing method without changed RF mode.

1. Preparing the transmitter.

① While pushing the ET2 lever up, power on. The pilot LED lights up, release ET2 lever.

Power ON

ET2

② Please release the ET-2 lever when the initial screen is displayed.

③ Change to pairing screen and start transmit power with paring signal.

EXIT>>　POWER OFF
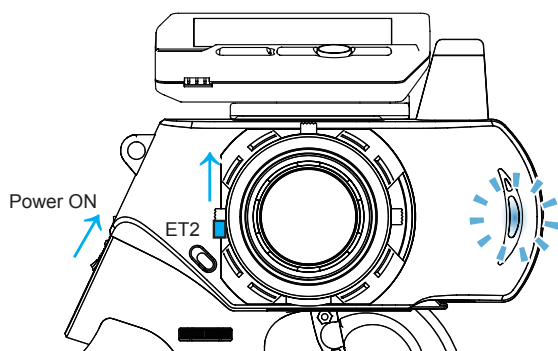
The EX-NEXT LED lights alternately in three colors corresponding to
Blue / Light Blue / White

2. Preparing the receiver

① When the vehicle is turned on, the LED indicator will be in a flashing state.

ON!
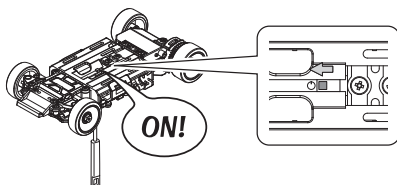
② Press the pairing button to turn on the LED indicator, and then speak the button to turn off the LED; when the LED turns on again, pairing is complete.

LED Indicator
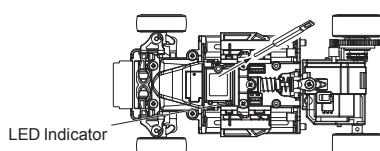
3. Preparations for Operation

① Turn off the power of EX-NEXT. The settings will take effect the next time you turn on the power.

*In rare cases, pairing data may be lost, but this is not a malfunction. Please set up the pairing again.

<Pairing method 1 and 2 comon.>

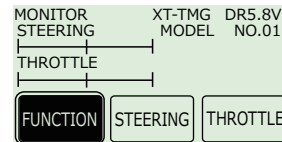**If the LED flashes, the receiver is not getting the EX-NEXT signal and the pairingprocedure should be repeated.**
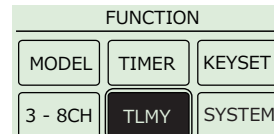
About gyro adjustment

*When using the MZW-405 gyro unit

FUNCTION
> 3-8CH
> GYRO

3 - 8CH		
3 CH MODE	OFF	GYRO
GYRO	2WAY	TWIN
SET	3WAY	4 WS
4 CH MODE	5WAY	AMP
GYRO	ANLOG	T-MIX
SET		>>NEXT

ET3=STEERING
ET5=THROTTLE
Gyroscopic adjustment is possible.

●Countermeasures Against Noise

Keep antenna cable away from all sources of noise!

Noise is generated in any area where a large amount of electric current is flowing. Position the receiver and antenna cable as far away from the motor, battery, ESC,
and their associated cables as possible. (Metal or carbon fiber chassis components will also conduct electricity and generate noise.)
Since R/C models are controlled via radio signals, taking appropriate measures against noise generated by on-board equipment is of utmost importance. Take adequate measures against noise so that your machine can fully realize your driving potential.
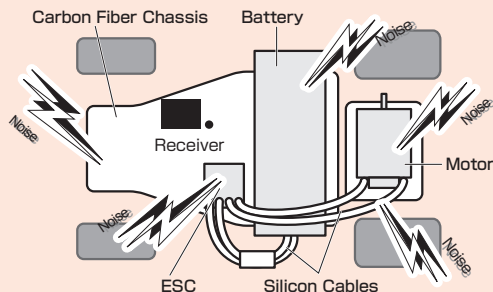
● Receiver Installation on a Carbon Fiber Chassis

When installing the receiver to the chassis or R/C equipment deck/tray, use two or more pieces of thick double-sided tape to raise the receiver off the chassis surface. By increasing the separation between the receiver and the noise-generating carbon-fiber chassis components, the effects of noise can be decreased.

*Install the receiver so that its LEDs are visible.
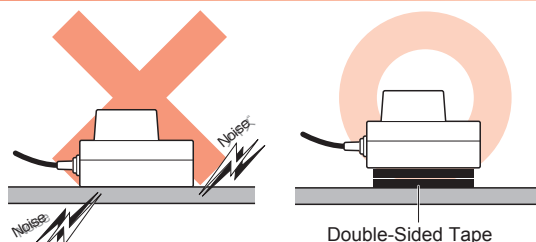
● Antenna Installation

Raise the antenna cable vertically from as high a position as possible. Insert the antenna cable into the antenna pipe so that the tip of the antenna aligns with the end of the pipe. Make the length of cable which runs between the receiver and the pipe as short as possible and position the antenna holder as close to the receiver as possible. Position the antenna cable away from sources of noise such as the chassis and R/C equipment deck/tray. Use an antenna pipe and antenna mount that are made from plastic, since metal parts will conduct noise.
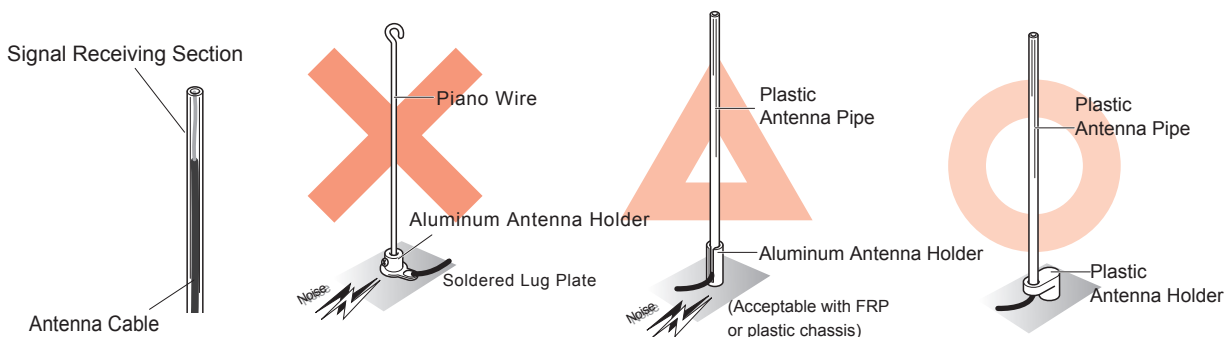
*Do not bend or cut the antenna cable.
(This may break the antenna wire and deteriorate its performance.)

● Installing Onto a Glow Engine Car

Engine vibrations may damage the receiver. Make sure to attach a grommet (receiver holder) to reduce the effects of such vibrations. Do not attach the receiver directly to the chassis or R/C equipment deck/tray with double-sided tape. Also position the receiver so that it does not contact the heat and exhaust of the engine and muffler.

*Install the receiver so that its LEDs are visible
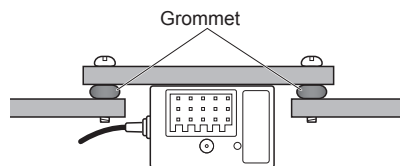
●Fail-Safe Setting

Fail-safe is when the receiver loses the radio signal of the transmitter and the function keeps channel 2 (throttle) in an optional position. The configuration is usually full brake or neutral.
Fail-safe function will be cancelled automatically when the receiver receives the signal from the transmitter.

1

After Pairing

1
2
3
4
B/S

to the 2 channel

Connect a servo or ESC to 2Ch on the receiver which you want to set the fail-safe setting.

⚠ Please be sure to set the fail-safe.

⚠ If you change the position of the fail-safe operation, please set again. We recommend to set it again even. if you modify the car engine brake linkage.

2

ON

Turn on.

Turn on the transmitter.

3
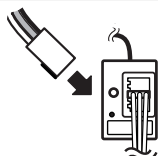
Turn ON

Turn on the receiver and check that each device connected operates correctly.

4
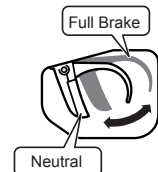
Full Brake

Neutral

Hold the throttle trigger to the position you want to set for Fail-safe.

We recommend setting the throttle position for Fail-safe as listed below.

•When using an ESC with reverse
:Neutral

•Gas powerd car
•ESC only forward
:Neutral or Full brake

5
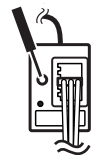
Press hold over 3 sec

Press and hold the setup button longer than 3 seconds while holding the position of the throttle trigger to the desired Fail-safe position at the same time.

6

Release button after light goes off.

Please release the setup button on the receiver after the LED light goes off.
The setting is saved when the LED light comes back on again.

7

OFF

Turn off the transmitter to check the Fail-safe setting is correct and safe.

●Battery fail safe setting

*This can be set when using TLYM mode.
*Also if you change the RF-mode to XT-ADG or XT-ADF after this setting, the setting stays activated.

The battery fail-safe function allows the automatic decelerate or brake when the voltage of the receiver battery falls below the set voltage. When the fail-safe function is activated, the set servo is automatically operated to any position (the position set by the fail-safe function). When the voltage is restored, the battery fail-safe function will automatically cancel.

*The purpose of using the battery fail-safe function is to stop using a damaged or weak battery by mistake.
We do not recommend using this as a safe function to determine a dead battery.
* This function is used for gas powered cars only. Do not use this function for EP cars.

① Select FUNCTION in the initial screen

```
MONITOR          XT-TMG  DR5.8V
STEERING            MODEL    NO.01
├────┼────┤
THROTTLE
├────┼────┤

[FUNCTION] [STEERING] [THROTTLE]
```
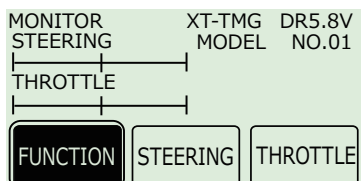
②Select TLMY in the Function menu.

```
           FUNCTION

[MODEL]   [TIMER]   [KEYSET]

[3 - 8CH]  [TLMY]   [SYSTEM]
```
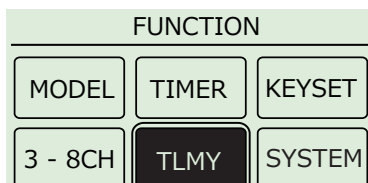
③Select BT F/S in the Telemetry.

```
          TELEMETRY

[RFMODE]  [RESP]  [RELICS]

[BT F/S]
```

④Select ALERT (Voltage)

```
     BATTERY FAIL SAFE

CURRENT  :     8.1V
ALERT     :    5.5V
FAIL SAFE :     OFF
ALERT MODE:   VIBRATOR
MINIMUM  :     7.1V
MAXIMUM  :     8.2V      CLR
```
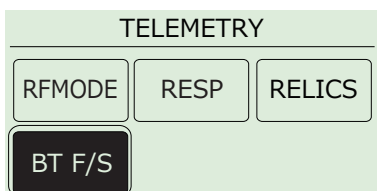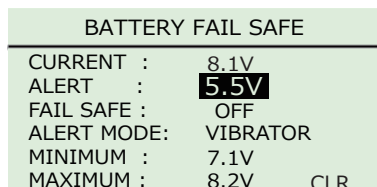
Reference value :   Life 5.2V
              Lipo 6.0V
Will be informed by vibration or buzzer when voltage were lower from setting value.

⑤ FAIL SAFE Voltage

```
     BATTERY FAIL SAFE

CURRENT  :     8.1V
ALERT     :    6.0V
FAIL SAFE :    5.8V
ALERT MODE:   VIBRATOR
MINIMUM  :     7.1V
MAXIMUM  :     8.2V      CLR
```
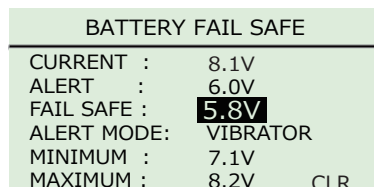
Reference value: Life 5.0V
Lipo 5.8V
Fail-safe function will be active when the voltage is lower then the setting value.

⑥Select VIBRATOR in the ALERT MODE.

```
     BATTERY FAIL SAFE

CURRENT  :     8.1V
ALERT     :    6.0V
FAIL SAFE :    5.8V
ALERT MODE:   VIBRATOR
MINIMUM  :     7.1V
MAXIMUM  :     8.2V      CLR
```
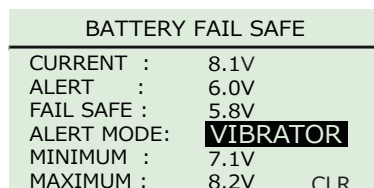
Change to VIBRATOR (recommend setting) or BUZZER in the Alert Mode.
This mode will be active when the ALERT setting is reached.

●Setting changes of ICS correspondence servo -When connecting to Xpansion directly-

ICS setting changes can be performed using telemetry with the radio (p.41) or by connecting directly to the Xpansion. The Xpansion can be used for ICS setting changes only.

① Conecting Xpansion and Servo
  *Please turn off transmitter when using this.

LCDXpansion Unit2 EXP-201
No.10672

② Select the type of servo and change settings.
*There is no operation

<ICS coresspondence servo>
for RSx/RSx2/RSx3/BSx2/BSx3 each series,
select "SERVO MOTOR SET"

SERVO MOTOR SET		SERVO MOTOR SET
SERVO MOTOR SET		MODEL: 1
SERIAL SERVO MOTOR SET		STRCH1: 95 DEADBAND: 0
MASTER UPDATE		STRCH2: 255 DAMPING : 30
** PLEASE TURN ON THE **		SPEED: 110 FREQUENCY: X8
** POWER OF MASTER UNIT **		PUNCH: 0

▶MODEL

1.Select model memory of the servo.

【Setting Range】 MODEL: 1 to 5 (default 1)

2. Change ICS parameters. Each setting value is sent to the servo when each data is changed, characteristics of the servo will be changed.
Please back up the default values by making a memo.

3.Please remove the battery for this function to exit.

<Serial coresspondence servo>
for 4S series,
select "SERIAL SERVO MOTOR SET".

SERVO MOTOR SET		SERIAL SERVO MOTOR SET
SERVO MOTOR SET		ID: 1 MODEL: 1
SERIAL SERVO MOTOR SET		STRCH1: 95 DEADBAND: 0
MASTER UPDATE		STRCH2: 255 DAMPING : 30
** PLEASE TURN ON THE **		SPEED: 110 FREQUENCY: X8
** POWER OF MASTER UNIT **		PUNCH: 0

▶ID

 ID of servo is changed.

【Setting Range】   ID: 1- 4 (default 1)

    **ID5-8 are displayed but can not be used.

Ⓟ Case of connecting to B/S port of the KR-420XT, please use the below settings.
   ID1: Steering operation
   ID2: Throttle operation
   ID3: 3CH control
   ID4: 4CH control
   *ID5-8 can not be used. (As of Jan 2021)

▶MODEL

1.Select model memory of the servo.

【Setting Range】   MODEL: 1-5(default : 1)

 2. Change ICS parameters. Each setting value is sent to the servo when each data is changed, characteristics of the servo will be changed. Please back up the default values by making a memo.

 *Please refer to P39 for parameters of the servo.

 3. Please remove the battery for this function to exit.

⚠ Be sure to select the menu that corresponds to the servo you are using. If you select the wrong menu, the servo will malfunction or you will not be able to change the settings.

⚠ The initial value of the ICS setting differs depending on the servo model and is not retained.It is recommended that you keep a memo if necessary.

⚠ When data is not displayed normally and each parameter becomes 0
  1) <ICS compatible servo> <Serial compatible servo> Check if there is any mistake in the type.
  2) Check the connection between the expansion and the servo (such as the orientation of the connector when the tab is cut).

②

Extension Wire Black(High current) 200mm
No.36520

*This length is convenient as it will be long enough to connect to the transmitter.

②

Servo Twin Extension Wire II w/new plug
No.36509

Or

Serial Branch adapter
No.36522

① Connecting First

ICS Correspondence servo RSx/BSx series

Serial Correspondence servo 4S series

③ Connecting last
Battery

Connecting receiver battery, ESC, etc for power supply (Voltage 4.8 to 7.4v)

●Master unit Update

EX-NEXT is able to update software by our supplied files on our website.
Also, details of the procedure will be released on the website.
Please check our site.

https://www.kopropo.co.jp

●ERROR Status

When using the battery fail-safe or when there is a system problem, you can check this error using this screen.
Press and hold the BACK key from the initial screen and the display is change to Error status display. This screen will return to the initial screen automatically after a few seconds.

```
            ERROR STATUS
 COMMUNICATION: RECV ERROR
 EEPROM        :
 BODY UNIT     :
 STEERING UNIT :
```

Error display1
 <Case when can not receive signal from receiver.>

COMMUNICATION: Can not communicate to the receiver.
EEPROM: Memory has been corrupted.
BODY UNIT: Contact failure with Master Unit.
STEERING UNIT: Steering unit is not connected.

⚠ In telemetry mode, when the receiver signal is received, the LED lights up alternately between red and blue.

⚠ When the Steering unit is not connected properly the LED lights up Red.

```
            ERROR STATUS
 RECEIVER VOLTAGE  : LOW
 RECEIVER FAIL SAFE : ACTIVE
```

Error display2
<Case when signal is received from receiver.>

RECEIVER VOLTAGE: Voltage is under the set voltage.
RECEIVER FAIL-SAFE: Battery fail safe is working.

■ TOP MENU

■□□ FUNCTION

Display index for 6 kind of Function menu.

```
MONITOR          XT-TMG  DR5.8V
STEERING         MODEL    NO.01
├───────┼───────┤
THROTTLE
├───────┼───────┤

FUNCTION   STEERING   THROTTLE
```

▼

```
           FUNCTION

MODEL    TIMER    KEYSET

3 - 8CH   TLMY    SYSTEM
```
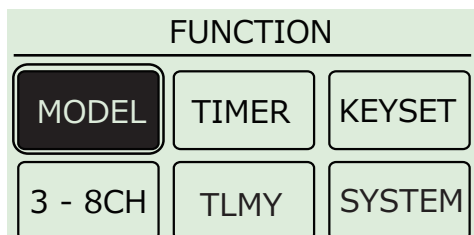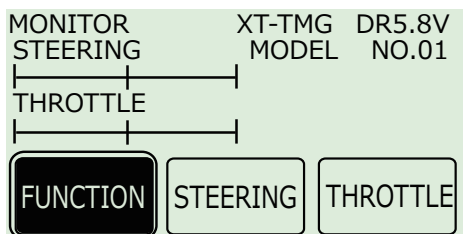
MODEL
Can operate model select , copy etc.

TIMER
Can use function about timer.

KEY SET
Various functions can be assigned to the ET and BT keys.

3-8CH
Can change setting for 3-8 channel function.

TLMY(telemetry)
Can change RF mode, pairing, take data from receiver,fail safe, servo setting.

SYSTEM
Convenient Gear ratio calculator, volume information , etc can change system setting.

□■□ STEERING

Display index for 6 kind of Steering menu.

```
MONITOR          XT-TMG  DR5.8V
STEERING         MODEL    NO.01
├───────┼───────┤
THROTTLE
├───────┼───────┤

FUNCTION   STEERING   THROTTLE
```

▼

```
           STEERING

TRAVEL    TRIM    SPEED

DYNAMC    FEEL    REVERS
```
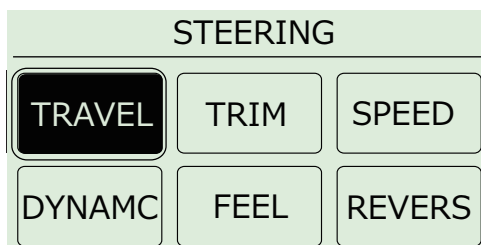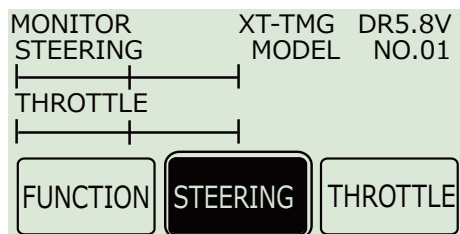
TRAVEL
Can change total or each left and right of steering movement amount.

TRIM
Can change center position or total position of steering movement degrees.

SPEED
Can change rate speed of steering operation.

DYNAMIC
Can change setting for curve and punch.

FEEL
Can adjustment feeling of steering operation.

REVERS
You can change the direction of the steering signal with respect to the operation.

⬜⬜⬛ THROTTLE

Display index of 13 kinds of Throttle menus. (These are divided into 3 screens.)

MONITOR	XT-ADG DR5.8 v
STEERING	MODEL NO.01

THROTTLE

FUNCTION   STEERING   **THROTTLE**

THROTTLE 3/3

PUSH

▼

THROTTLE 1/3

TRAVEL   TRIM   SPEED

DYNAMC   FEEL   REVERS

▶◀

THROTTLE 2/3

CYCLE   ATSTART   OFFSET

BRK-OR   BRK-IN   H-BRK
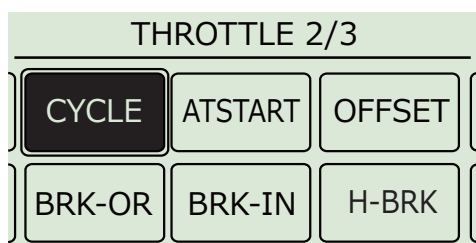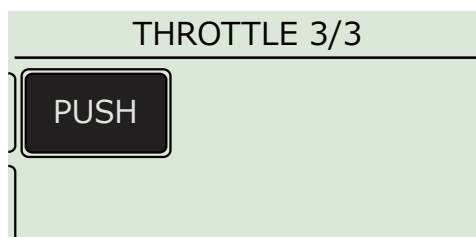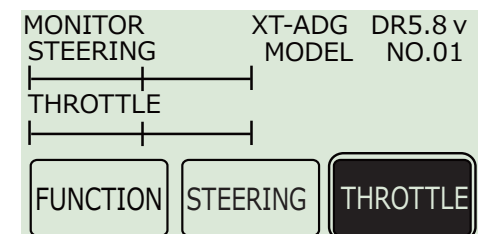
TRAVEL
Can change total value of throttle movement.

TRIM
Can change center position or total position of throttle movement degrees.

SPEED
Can change rate speed of throttle operation.

DYNAMIC
Can change setting for curve and punch.

FEEL
Can adjustment feeling of throttle operation.

REVERS
You can change the direction of the steering signal with respect to the operation.

CYCLE
Can change setting of acceleration,ABS.

ATSTART
Can change setting of autostart.

OFFSET
Can change setting of neutral brake and idle up.

BRK-OR
Can change setting of maximum movement of Brake and ST travel.

BRK-IN
Can set Break-in function which is used before driving.

H-BRK
Can set the hand brake function.

PUSH
Can set the Push control function.

▦ MODEL

Save various settings as model memories Up to 50 model memories can be named and stored.

```
              MODEL

MODEL  SELECT            MDL01
MODEL  NAME       ABCDEFGH
                  ABCDEFGH

MODEL COPY  MDL01 TO   MDL02
MODEL RESET
```

▶MODEL SEL (Model Select)
   Switch between different model memories.

▶MODEL NAME
   Names the model memories.

▶MODEL COPY
   Copies model memory.

▶MODEL RESET
   Reset model memory.

▶ALL RESET
   Resets all model memorie

▶MODEL SELECT

Switch between different model memories.

【Example】
If you have multiple cars, it is convenient to have a separate model memory for each one. Even in the case of only one car, you could save specific settings for different courses as different model memories as well.

Select the model to be used.

```
              MODEL

MODEL  SELECT            MDL01
MODEL  NAME       ABCDEFGH
                  ABCDEFGH

MODEL COPY  MDL01 TO   MDL02
MODEL RESET
```

【Setting Range】   MODEL 01- 50

Ⓟ All of the various settings are registered under a model memory.

Ⓟ The settings which will be switched by Model Select are...
   1) Steering setting
   2) Throttle setting
   3) 3-8ch setting
   4) RF,resonse mode setting
   5) Steering and Throttle Response
   6) Steering and Throttle Feel
   7) Key setting
   8) Stop watch setting

⚠ Switching model memory while driving may cause setting mismatches and lead to an uncontrollable model. Please place the car on a stand or switch it off before switching model memories.

Select the model number and press ENT to blink the cursor. After changing the model with the arrow keys, press ENT to confirm.

```
              MODEL

MODEL  SELECT            MDL01
MODEL  NAME       ABCDEFGH
                  ABCDEFGH

MODEL COPY  MDL01 TO   MDL02
MODEL RESET

  BACK      <   ENT   >
```
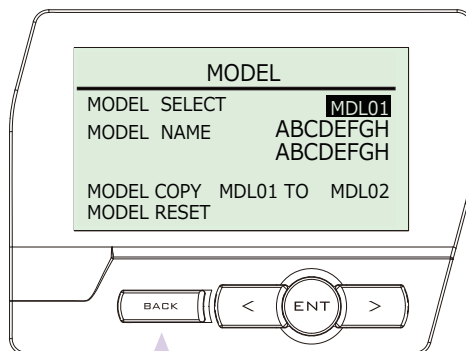
Press Back key

* If the RF mode of the changed model is different, the following screen will be displayed. (It will close automatically after 4 seconds.)

```


      RF MODE HAS CHANGED

        . . . 4S  WAIT . . . .

```

```
            FUNCTION

  MODEL    TIMER    KEYSET

  3 - 8CH   TLMY    SYSTEM
```

Return to the FUNCTION menu to complete the change.

⚠ **When the model memory number was changed, the information such as communication method and trim was not changed. You can use the model by returning to the FUNCTION menu.**

⚠ **If "4S WAIT" is displayed, perform pairing with the receiver.**

Ⓟ **After changing models and the RF mode is different, please perform the pairing with the receiver again.**

▶MODEL NAME

This function is used to name the model memory that is currently in use. Distinguish each model memory with different names, which may also be edited. The set model name will be displayed on the initial screen and model select screen.

```
              MODEL

MODEL  SELECT            MDL01
MODEL  NAME       ABCDEFGH
                  ABCDEFGH

MODEL COPY  MDL01 TO   MDL02
MODEL RESET
```

▦ MODEL

Choose one character at a time from the left side.

```
              MODEL
                               MDL01
  ABCDEFGH       ◉BCDEFGH
  IJKLMNO●P      ABCDEFGH
  QRSTUVWX▾
  YZ             TO      MDL2
```

【Setting Range】　　Maximum 16 characters.

<Available charactors>

　　　ENGLISH　　　　JAPANESE

```
  ABCDEFGH
  IJKLMNOP
  QRSTUVWX          ①
  YZ
①
  abcdefgh      アイウエオカキク
  ijklmnop      ケコサシスセソタ
  qrstuvwx      チツテトナニヌネ
  yz            ノハヒフヘホマ
  !"#$%&'(      ミムメモヤユヨラ
  )*+,-./:      リルレロワヲンァ
  ;<=>・@`∞      ィゥェォャュョッ
②  ÷×÷↑↓        ゛゜。、「」
  01234567
  89ΣΩαβγδ          ②
  εθλμνπρσ
  φω▲▼◀▶♪
```

① To delete a character, overwrite the character to be deleted by using the blank space at the end of each page of characters.

② Characters inside the dotted lines are only available when Japanese language has been selected.

▶MODEL COPY

Copies the current model memory to a different model memory.

【Example】

When changing settings on the same car to match driving conditions, it is convenient to copy the original memory before modifying it. This function also allows you to try out new settings while keeping your original one.

Select the model memory to copy to, then hold the ENT key to copy.

```
              MODEL
  MODEL  SELECT          MDL01
  MODEL  NAME         ABCDEFGH
                      ABCDEFGH

  MODEL COPY   MDL01 TO   MDL02
  MODEL RESET
```

Press the ENTER key to copy memory. Press the BACK key to cancel the copy.

```
              MODEL
                               MDL01
  MODEL01          ABCDEFGH
    ▼              ABCDEFGH
  MODEL02
  COPY OK?         TO   MDL02
```

【Setting range】　MODEL : 01- 50

⊙ The settings which will be switched by Model Copy are...
  1) Steering setting
  2) Throttle setting
  3) 3-8ch setting
  4) RF,resonse mode setting
  5) Steering and Throttle Response
  6) Steering and Throttle Feel
  7) Key setting
  8) Stop watch setting

⚠ The contents of the model memory that is being copied to will be overwritten. Overwritten data cannot be recovered, so be careful to avoid undesired memory overwrites.

▶MODEL RESET

Return the current model memory to default factory setting values.

Select [RESET] (hold ENTER key) to reset.

```
              MODEL
  MODEL  SELECT          MDL01
  MODEL  NAME         ABCDEFGH
                      ABCDEFGH

  MODEL COPY   MDL01 TO   MDL02
  MODEL RESET
```

Small window [RESETOK?] is displayed, then push the ENTER key. Press BACK key to cancel.

```
              MODEL


     MODEL RESET OK?
```

⚠ Deleted data cannot be recovered. Be careful to avoid undesired resets.

⚠ The RF mode is changed to the default value of TLMY. Please operate pairing function with the receiver again.

⚠ If the model reset is executed while communication with the receiver is in progress, communication will be cut off. Turn off the EX-NEXT and then turn it on again.

⊞ TIMER

Operating Timer-related functions.

FUNCTION

MODEL	TIMER	KEYSET
3 - 8CH	TLMY	SYSTEM

<Function over view>

▶TIMER START
  Start the timer

▶TRGSTART
  Prepares the stopwatch for activation via the throttle movement.

▶LAP HISTORY
  Displays the lap times recorded by the stopwatch.

▶START/STOP KEY
  Assigns a key to activate/deactivate the stopwatch.

▶LAP KEY
  Assigns a lap key.

▶>>> The following page is displayed.

▶LAP NAVI
  Adjusts the lap navigation settings.

▶ALARM TIME
  Alarm will sound after the set amount of time has elapsed.

▶P.ALARM
  Sets a warning buzzer to sound at a set time prior to the alarm.

▶ALARM MODE
  Sets an alarm buzzer to the continue sound mode (CONTINUE) or to the sound stop mode(STOP).

▶TIMER MODE
  TIMER-1 (LAP TIMER / DOWN TIMER) or TIMER-2 (FUEL TIMER) can be selected.

▶<<< The front page is displayed

▶TIMER START

When the cursor is highlighting the TIMER START, ENTER key is pressed and held to start the timer.

```
            TIMER
 ─────────────────────────
  TIMER START
  TRG START
  LAP HISTORY
  START/STOP KEY  OFF
  LAP KEY         OFF
                      >>>
```

```
          LAPTIMER
 ─────────────────────────
   00ᴍ 00ꜱ 28
        LAP   STOP

   LAP
```

⚠ While the timer is running and the BACK key is pressed, the timer is halted. While the timer is halted, pressing the BACK key again will return you to the TIMER screen.

▶TRGSTART

Move the cursor to [TRGSTART] and hold the ENTER key. TRGSTART will switch to READY for a brief moment, then push assigned [START/STOP] key or move throttle trigger.

```
            TIMER
 ─────────────────────────
  TIMER START
  TRG START
  LAP HISTORY
  START/STOP KEY  OFF
  LAP KEY         OFF
                      >>>
```

▶LAP HISTORY

Displays the laptime records the stop watch. Scrolldown when the R key is pushed, and scrollup the L key is pushed. When pressing the BACK key, you are returned to the Timerscreen.

```
          LAPHISTORY
 ─────────────────────────
   001       00'02'' 20
   002       00'05'' 51
   003       00'05'' 09
   004       00'04'' 72
   005       00'02'' 70
   TTL       00'20'' 25
```

Ⓟ 100 lap times are memorized.

⚠ **Only the last recorded lap times may be checked and previously recorded results will not be saved. (Even if the transmitter is switched off, the last recorded times will remain in the memory.)**

▶START/STOP KEY

The key which you start and stop the timer is assigned
【Setting Range】: OFF,ET1- 5,BT1(Default: OFF)

▶LAP KEY

The key which will score the lap time is assigned.
【Setting Range】: OFF,ET1- 5,BT1(Default: OFF)

⚠ **If you assign OFF after assigning an ET or BT to START/STOP KEY or LAP KEY, KEY SET will be OFF. So please be aware the assigning keys that are used by other functions.**

▶>>>

>>>Press the ENT key on the mark to display the next page.

```
            TIMER
 ─────────────────────────
  TIMER START
  TRG START
  LAP HISTORY
  START/STOP KEY  OFF
  LAP KEY         OFF
                      >>>
```

▦ TIMER

Operating TIMER-1-related functions.

```
                    TIMER-1
        ┌─────────────────────────────────┐
        │  LAP NAVI       ▮0s00           │
        │  ALARM TIME      5MIN          │
        │  P. ALARM       10SEC          │
        │  ALARM MODE      STOP          │
        │  TIMER MODE      LAP           │
        │  <<<                           │
        └─────────────────────────────────┘
```

【Setting Range】

LAP NAVI: 0 SEC 00 - 99 SEC 99 (Default : 0 SEC 00)
  Adjusts the lap navigation settings.
   *Convenient for setting a target lap.

ALARM TIME: 1 MIN - 99 MIN (Default : 5 MIN)
  Alarm will sound after the set amount of time has elapsed.
   *Convenient for setting the anticipated race completion time.

P.ALARM: 0 - 30 SEC (Default : 10 SEC)
  Sets a warning buzzer to sound at a set time prior to the alarm.
   *Convenient for setting a warning for when a race is about to end.

ALARM MODE: STOP / CONT(Default : STOP)
  Sets an alarm buzzer to the continue sound mode
  (CONTINUE) or to the sound stop mode(STOP).
   *STOP Buzzer sound stops at about 5 seconds.
   *CONT the Buzzer sound will continue until the START/
   STOP key is pressed .

TIMER MODE: LAP / DOWN / FUEL (Default : LAP)
  You can select the type of timer (LAP/DOWN/FUEL).
   *LAP: Displayed time increases when LAP is selected for the
   lap timer.
   *DOWN: Displayed time decreases when DOWN is selected
   for the lap timer.
   *FUEL: Displays a timer to remind you when to refuel.

Press the ENT key at FUEL to make settings related to
TIMER-2 (FUEL).

```
                    TIMER-2
        ┌─────────────────────────────────┐
        │  RACE TIME       ▮0M│00         │
        │  FUEL TIME       0M 0          │
        │  PIT TIME        0SEC          │
        │  VIBRATOR TIME   5SEC          │
        │  TIMER MODE      FUEL          │
        │  <<<                           │
        └─────────────────────────────────┘
```

【Setting Range】

RACE TIME: 0M00 to 99M99 (Default : 0M00)
  Sets the race time.

FUEL TIME: 0M00 to 99M99 (Default : 0M00)
  Sets the time to notify refueling.
  RACE TIME is the upper limit.

PIT TIME: 0 to 99SEC (Default : 0SEC)
  Sets the pit loss time.

VIBRATOR TIME: 0 to 10SEC (Default : 5SEC)
  Sets the vibrator time.

TIMER MODE: LAP / DOWN / FUEL (Default : LAP)
  You can select the type of timer (LAP/DOWN/FUEL).

<<<
   <<< When the ENTER key is pressed on the mark, the front
   page is displayed.

P LAP TIMER About LAP TIMER Display

```
                    LAPTIMER
        ┌─────────────────────────────────┐
        │                                 │
        │     00ₘ 00ₛ 28                  │
        │        ▮LAP   STOP             │
        │    LAP                          │
        └─────────────────────────────────┘
```

【Operation】

When LAP is highlighted and the ENTER key is pressed, the lap
time is stored. When STOP is highlighted and the the ENTER key is
pressed the timer is halted. The displayed STOP will change to START
and if the ENTER key is pressed again the timer will continue. When
the timer is halted and if the BACK key is pressed you will be returned
to the TIMER screen.

P DOWN TIMER About DOWN TIMER Display

```
                   DOWNTIMER
        ┌─────────────────────────────────┐
        │                                 │
        │     04ₘ 59ₛ 28                  │
        │            ▮STOP               │
        │                                 │
        └─────────────────────────────────┘
```

【Operation】

When STOP is highlighted and the the ENTER key is pressed
the timer is halted. The displayed STOP will change to START
and if the ENTER key is pressed again the timer will continue.
When the timer is halted and if the BACK key is pressed you
will be returned to the TIMER screen.

P FUEL TIMER About FUEL TIMER Display

```
                    FUELTIMER
        ┌─────────────────────────────────┐
        │     04ₘ 57ₛ 38                  │
        │            ▮STOP               │
        │    RACE TIMER                   │
        │    44:57:38                     │
        └─────────────────────────────────┘
```

【Configuration example】

Race time: 45min. Refueling time: 4min.50sec Pit loss time: 10sec
Refueling timing is signaled at 4 minutes and 50 seconds, and
10 seconds after the pit loss time (5 minutes and 00 seconds
total), the 4-minute and 50-second countdown resumes again,
and repeats until 45 minutes, the end of the race time.

【Operation】

When STOP is highlighted and the the ENTER key is pressed
the timer is halted. The displayed STOP will change to START
and if the ENTER key is pressed again the timer will continue.
When the timer is halted and if the BACK key is pressed you
will be returned to the TIMER screen.

⚠ During measurement, press the ENT key or BACK key
to stop the timer. Pressing the ENT key while the timer
is stopped will restart the timer. Pressing the BACK key
while the timer is stopped will return to the TIMER screen.

⊞ KEYSET

Assign a key (ET1- ET5, BT1) to a function.

FUNCTION

MODEL	TIMER	**KEYSET**
3 - 8CH	TLMY	SYSTEM

If you select a key, the item is displayed to the right.
It is assigned to a key by choosing an item.

KEYSET

ET 1 : **S : TRIM**	OFF
ET 2 : T : TRIM	S : TR IM
ET 3 : T:BRAKE	S : TR AVEL
ET 4 : S:TRAVEL	S : FEEL
ET 5 : OFF	T : TR IM
BT 1 : OFF	T : H IPO INT

【Setting Range】 ○: Assignment Possible

Function Setting	ET1- 5	BT1
OFF(No Assignment)	○	○
S:TRIM(Steering Trim)	○	X
S:TRAVEL(Steering Travel)	○	X
S:FEEL(Steering Feel)	○	X
T:TRIM(Throttle Trim)	○	X
T:HIPOINT(Throttle High Point)	○	X
T:BRAKE(Throttle Brake)	○	X
T:FEEL F(Throttle Feel F)	○	X
T:FEEL B(Throttle Feel B)	○	X
T:OFFSET(Throttle Offset)	○	○
T:OFSTKY(Throttle Offset Key)	○	X
T:BRAKEOR(Throttle Override)	○	○
T:ACCEL(Throttle Acceleration)	○	○
T:ABS(ABS)	○	○
T:AUTOST(Throttle Auto start)	○	○
TIMER(Timer)	○	○
LAPTIME(Lap time)	○	○

【Default】

ET1 : S:TRIM
ET2 : T:TRIM
ET3 : T:BRAKE
ET4 : S:TRAVEL
ET5 : OFF
BT1 : OFF

Ⓟ About Direct Display
The display screen for a function which is assigned to ET1-5/BT-1 is displayed for 3 seconds when you operated each ET or BT.If there is no operation after the allotted time, the screen returns automatically to the original screen.(Direct Display Function)
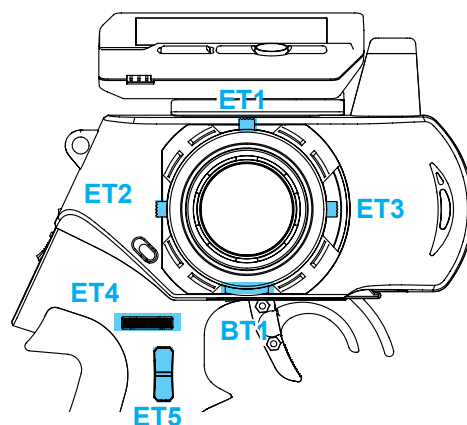
【Example of operation】

If you operate the ET2 in the upper direction from the initial screen display, the screen will change to TH trim screen display and TH trim value will change to "F1". The screen will go back to the previous display after 3 seconds.

The initial screen Display

Operate the ET2 in the upper direction

The TH trim screen display

The screen will go back to the previous display after 3 seconds.
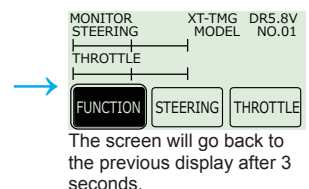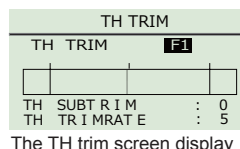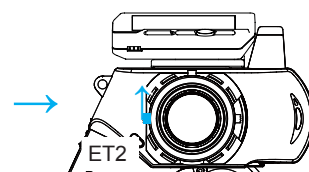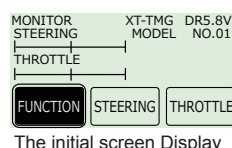
⚠ Direct display function will not work while in the MODEL menu or the SYSTEM menu. Please change the menu screen to another by pressing the back key.

【Non-choice item】

The entry of each function are displayed only when a key is set to each function settings.

3 - 8 : POS (3-8CH/ Control)
3(4) : SMMODE (3-4CH/4WS Mixing Mode)
3(4) : SMCENT (3-4CH/4waMixing Center)
3(4) : SMTRVL (3-4CH/4WS Mixing Travel)
3(4) : AMMODE (3-4CH/ Amp Mixing Mode)
3(4) : AMTH (3-4CH/ Amp Mixing Hold)
3(4) : AMHIPO (3-4CH/ Amp Mixing High point)
3(4) : AMBRAKE (3-4CH/ Amp Mixing Hold)
3(4) : AMRVS(3-4CH/ Amp Mixing Reverse)
3(4) : TMBRAKE(3-4CH/ Throttle Mixing Brake)
3(4) : TMCENT(3-4CH/ Throttle Mixing Center)
3(4) : TMHIPO(3-4CH/ Throttle Mixing High point)
3(4) : TMDELAY(3-4CH/ Throttlr Mixing Delay)
3(4) : TMSTEER(3-4CH/ Throttole Mixing Steer)
3(4) : TMON(3-4CH/ Throttle Mixing on off)
T : PUSH(Throttle Push control)
T : BRK-IN(Throttle Break in)
T : H-BRK(Throttle Hand Brake)
* H-BRK(Hand brake)can not be set to ET-4

🔳 3-8CH

Settings related to 3CH - 8CH operations.

FUNCTION

MODEL	TIMER	KEYSET
3 - 8CH	TLMY	SYSTEM

<Function List>
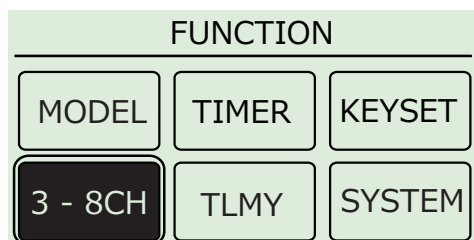
▶MODE

< 3-8CH can use>	<Only 3,4CH can use>
OFF	GYRO
2WAY	TWIN
3WAY **3-8CH**	4WS **3·4CH**
5WAY	AMP
ANLOG	T-MIX

▶**SET**

Set the usage choice for channels 3-8 modes

The MODE of 3-8CH selected from the right.
Change the setting of the item chosen with the SET key.

3 - 8CH

3 CH MODE	OFF	GYRO
5 WAY	2WAY	TWIN
SET	3WAY	4 WS
4 CH MODE	5WAY	AMP
2 WAY	ANLOG	T-MIX
SET		>>NEXT

P The functions which may be set are the same for both 3CH and 4CH. In 5-8CH are able to select limited functions.
However, setting method are same.Set them to match the desired purpose.

【Default】
3CH MODE : 5WAY
4 to 8CH MODE : 2WAY

▶2WAY   **3-8CH**

Modify the 2-interval output settings.

【Example】
May be used to activate/deactivate an engine starter unit or a semi-trailer's support legs.

3 CH MODE : 2WAY

START : POS1   POS1 :   0
KEY : OFF   POS2 :   100
BUTTON TGLE

NOW : 0

— ├————————□————————┤ +
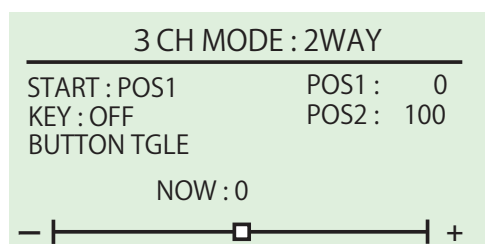
【Setting Range】
START POS1, POS 2(Default:POS 1)
 Sets the starting position.
KEY:OFF, ET1 - 5, BT1 (Default:OFF)
 Assigns a key to use for switching positions.
BUTTON: PUSH, TGLE (Default: TGLE)
 Select PUSH (active while pressed) or TGLE (toggles each time it is pressed).
POS 1:-100 - 100(Default:0)
 Sets Position 1's output position.
POS 2:-100 - 100(Default:100)
 Sets Position 2's output position.

P The current output position is displayed by "NOW" and shown on the bar graph.

▶3WAY   **3-8CH**

Modify the 3-interval output settings.

【Example】
May be used for gear changing operations or when you wish to set a 3-interval control scheme for the servo.

3CH MODE : 3WAY

START : POS1   POS1 : -100
KEY : ET3   POS2 :   0
                     POS3 :   100

NOW : 0

— ├————————├————————□ +
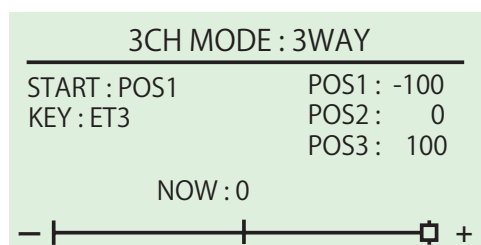
【Setting Range】
START : POS 1, POS 2, POS 3(Default: POS2)
   Initial position is configurated

KEY : OFF, ET1 - 5(Default: OFF)
   Assigns a key to use for switching positions

POS 1 : –100 - 100(Default : –100)
   Sets Position 1's output position.

POS 2 : –100 - 100(Default : 0)
   Sets Position 2's output position.

POS 3 : –100 - 100(Default : 100)
   Sets Position 3's output position.

P The current output position is displayed by "NOW" and shown on the bar graph.

▶5WAY

Modify the 5-interval output settings.

【Example】

May be used for gear changing operations or when you wish to set a 5-interval control scheme for the servo.

```
        3CH MODE : 5WAY
  ─────────────────────────────
  START : POS1        POS1 : -100
  KEY : ET3           POS2 :  -50
                      POS3 :    0
                      POS4 :   50
           NOW : 0    POS5 :  100
  ─────────────────────────────
  + ├────────┼──────□──────┼────┤ ─
```
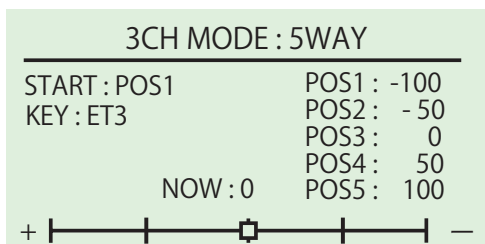
【Setting Range】

START : POS1,POS2,POS3,POS4,POS5 (Default : POS3)
 Sets the starting position.

KEY : OFF, ET1 - 5(Default : OFF)
 Assigns a key to use for switching positions.

POS 1 : -100 - 100(Default : -100)
 Sets Position 1's output position.

POS 2 : -100 - 100(Default : -50)
 Sets Position 2's output position.

POS 3 : -100 - 100(Default : 0)
 Sets Position 3's output position.

POS 4 : -100 - 100(Default : 50)
 Sets Position 4's output position.

POS 5 : -100 - 100(Default : 100)
 Sets Position 5's output position.

P The current output position is displayed by "NOW" and shown on the bar graph.

▶ANALOG

These settings are to enable continuous output for each channnels.

```
        3CH MODE : ANALOG
  ─────────────────────────────
  KEY      : ET3      LOW  : -100
  REVERSE : NORM      CEN  :    0
  STEP     :  5       HIGH :  100

           NOW : 0
  ─────────────────────────────
  + ├■──────────□──────────■─┤ ─
```
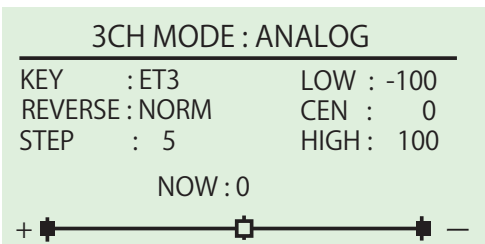
P The current output position is displayed by "NOW" and shown on the bar graph.

【Setting Range】

KEY: OFF,ET1 - 5(Default : OFF)
 Assigns a key to use for switching positions.

REVERSE : NOR(normal), REV(reverse)(Default : NORM)
 Sets operation direction.

STEP : 1 - 25(Default : 5)
 Sets the amount of change for the operation.

LOW (low position) –100 - 0 (Default : –100)
 Sets the lowest value for the operation range.

CEN (center position) LOW - HIGH (Default : 0)
 Sets the neutral position for the operation range.

HIGH (high position) 0 -100 (Default : 100)
 Sets the highest value for the operation range.

【How to Use Analog Settings】

Low Position Side :
Between LOW and CEN are 100 steps within which the intervals can be adjusted.

High Position Side :
Between CEN and HIGH are 100 steps within which the intervals can be adjusted.

Example) When STEP value is 2
 When LOW side is set to 5 intervals.
 When HIGH side is set to 4 intervals.

Movement range
Operation position

High position   Center   Low position
        2 steps   2 steps
HIGH Maximum   100 steps   100 steps   LOW Maximum
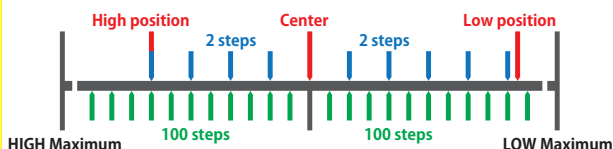
P Center position is the staring position.

P Low/High positions cannot be exceeded. Operations which try to do so will stop just before the Low/High positions.

▶GYRO

This function modifies the setting for gyro control.

【Example】

Used when you want to use a Gyro system which the gain is controlled by 3CH or 4CH.

【Setting range】

This is as same as Analog function.

【How to set Gyro mode】

The setting is forcibly as follows by Gyro mode.

▶KG-X

 Using 3ch or 4ch.

▶KR-212FHG

 ET3 : 3ch control (Steering gyro gain control)
 ET5 : 4ch control (Throttle gyro gain control)
 Adjust it to moderate gyro gain while running.

⚠ If set Gyro mode in the 3ch or 4ch, both channel will be set to the Gyro mode.

⚠ When the 3ch/4ch mode is changed from GYRO mode to another mode or OFF, the ET3 and ET5 will return to the setting for (OFF). Please notice ET3 are not return to the default value(T: BRAKE).

⚠ Please prepare the gyro system (ex. KR-212FHG,KG-X) separately. The gyro effect is not provided only in the main system of transmitter.

▶TWIN SERVO `3·4CH`

This function modifies the setting for using 2 steering servo. Using left steering servo 1ch, and right steering servo 3ch or 4ch.

【Example】
Ackerman control is possible when using for drift cars using twin servos.

```
        3CH MODE : TWIN SERVO
    LEFT — ST          RIGHT — ST
      (1 CH)                  NORM
    L・LEFT    70%    R・LEFT    70%
    L・RIGHT  70%    R・RIGHT  70%
    L・SPEED 100%   R・SPEED 100%
    L・TRIM      0      R・TRIM       0
```

【Setting Value】
LEFT-ST (1CH)

L-LEFT : 30 - 100% (Default : 70%)
 Sets the highest value for the 1CH servo left operation.
L-RIGHT : 30 - 100% (Default : 70%)
 Sets the highest value for the 1CH servo right operation.
L-SPEED : 1 - 100% (Default : 100%)
 Sets the steering speed for the 1CH servo operation.
L-TRIM : 50 - 50 (Default : 0)
 Sets the neutral position for the 1CH servo operation range.

RIGHT-ST
NORM(Normal),REVS(Reverse) (Default : NORM)
 Sets operation direction of 3CH or 4CH servo.
R-LEFT : 30 - 100% (Default : 70%)
 Sets the highest value for the 3(4)CH servo left operation
R-RIGHT : 30 - 100% (Default : 70%)
 Sets the highest value for the 3(4)CH servo right operation.
R-SPEED : 1 - 100% (Default : 100%)
 Sets the steering speed for the 3(4)CH servo operation.
R-TRIM : -50 - 50 (Default : 0)
 Sets the neutral position for the 3(4)CH servo operation range.

▶4WS `3·4CH`

This function is related to an R/C car's 4-wheel steering feature. If 3CH or 4CH is assigned to control the rear axle, it will operate in conjunction with 1CH (steering). The direction of the rear axle steering may also be changed.

```
        3CH MODE : 4 WS
    MODE NORMAL      ->KEY:OFF
    LEFT   70
    CENTER  0         ->KEY:OFF
    RIGHT  70
    TRVL 100          ->KEY:OFF
    REVERSE NORM
```

【Setting Range】
MODE (Default: NORMAL)

NORMAL : front and rear axles turn in the same direction

REVERSE : front and rear axles turn in opposite directions

F STEER : steer front axle only

R STEER : steer rear axle only

LEFT : 0 - 100 (Default: 70)
 Adjusts the rear axle servo movement range when steering is turned to the left.

CENTER : -50 - 50 (Default: 0)
 Adjust the rear axle servo's neutral position.

RIGHT : 0 - 100 (Default: 70)
 Adjusts the rear axle servo movement range when steering is turned to the right.

TRAVEL : 0 - 150 (Default: 100)
 Adjusts the overall amount of movement of the rear axle servo when the steering is at full lock.

REVERSE : NORM,REVS (Default : NORM)
 Sets operation direction of 3CH or 4CH servo.

MODE >> KEY : OFF,ET1 - 5 (Default : OFF)
 Assigns ET keys to be used for 4WS Mixing MODE.

CENTER >> KEY : OFF,ET1 - 5 (Default : OFF)
 Assigns ET keys to be used for 4WS Mixing CENTER.

TRVEL >> KEY : OFF,ET1 - 5 (Default : OFF)
 Assigns ET keys to be used for 4WS Mixing TRAVEL.

▶AMP Mixing MODE   `3·4CH`

Used when the front and rear wheels are controlled by separate ESCs and motors. If 3CH or 4CH is set to the front-wheel drive function, it will operate in conjunction with 2CH's throttle operations.

```
           3CH MODE：AMP

  MODE NORMAL    ->KEY:OFF
  TH HOLD      0  ->KEY:OFF
  HIPOINT    100  ->KEY:OFF
  BRAKE      100  ->KEY:OFF
  TRIM         0
  REVERSE NORM    ->KEY:OFF >>>
```

【Setting range】
MODE Default: NORMAL

NORMAL : drives both front and rear wheels

BURN : drives rear wheels only

DIG : drives front wheels only

F HOLD : drives front wheels at a set speed

R HOLD : drives rear wheels at a set speed

TH HOLD : -100 : 100 (Default: 0)
This function adjusts the set speed used for (F HOLD) and (R HOLD) selected in Amp Mixing Mode. [F HOLD] adjusts the front wheel drive while [R HOLD] adjusts the rear wheel drive.

HIPOINT : 0 - 150 (Default : 100)
Adjusts the maximum amount of throttle to be applied to the front wheels. Equivalent to the [Throttle High Point] function.
*This setting is activated when F HOLD or R HOLD mode is selected.

　　【Example】 Use Rock crawling car etc.

🅟 This makes it easy to adjust the amount of maximum throttle, particularly on a glow engine car.

🅟 If the amp mixing high point is set low and the amp mixing trim is set to a high value toward acceleration, the resulting throttle movement may be extraordinarily small.

⚠ **On glow engine cars, an overly high setting value will increase load on the servo and lead to it being damaged. Check carefully while adjusting.**

⚠ **On electric cars, a setting value that is too small may cause problems with the ESC settings. Make adjustments starting from the default setting (100).**

⚠ **Brake will not operate if the value is set to 0.**

BRAKE : 0 - 150 (Default: 100)
Modify the maximum amount of reverse (brake) to be applied to the front wheels. Equivalent to [Throttle Brake] function.
*This setting is activated when NORMAL, DIG, or R HOLD mode is selected.

⚠ **On glow engine cars, an overly high setting value will increase load on the servo and lead to it being damaged. Check carefully while adjusting.**

⚠ **On electric cars, a setting value that is too small may cause problems with the ESC settings. Make adjustments starting from the default setting (100).**

⚠ **Brake will not operate if the value is set to 0.**

TRIM : -50 - 50 (Default: 0)
Adjusts the neutral position of the front wheels.

🅟 The setting position cannot exceed what is set by [High Point] or [Brake].

REVERSE : NORM,REVS (Default: NORM)
Changes the movement direction of the front wheels.

🅟 For electric cars, the throttle is set by the ESC so there is no need to set this function. However, some older ESCs will not function properly unless reverse is also set.

MODE → KEY : OFF,ET1 - 5 (Default: OFF)
  Assigns ET or BT keys to activate the various front wheel drive modes.

TH HOLD → KEY : OFF, ET1 - 5 (Default: OFF)
  Assigns ET keys to be used for the set speed used for TH HOLD.

HIPOINT → KEY : OFF,ET1 - 5 (Default: OFF)
  Assigns ET or BT keys to adjust HIPOINT value.

BRAKE → KEY : OFF, ET1 - 5 (Default: OFF)
  Assigns ET or BT keys to adjust BRAKE value.

REVERSE → KEY : OFF, ET1 - 5 (Default: OFF)
  Assigns ET or BT keys to changes the movement direction of the front wheels.

【Setting Range】
ET MODE SET
Assigns ET or BT keys to activate the various front wheel drive modes.

```
        3CH  MODE:AMP

  ET MODE SET
      NORMAL  : ON
      BURN    : ON
      DIG     : ON
      F  HOLD : ON
      R  HOLD : ON
  <<<
```

NORMAL : ON, OFF (Default: ON)
BURN : ON, OFF (Default: ON)
DIG : ON, OFF (Default: ON)
F HOLD : ON, OFF (Default: ON)
R HOLD : ON, OFF (Default: ON)

🅟 Assigning these keys may be convenient for rock crawlers or when you need to adjust Amp Mixing settings.

▶T-MIX Throttle Mixing MODE `3·4CH`

Mainly used for 1/5 scale R/C cars where the left/ right front wheels' braking operation is controlled by an independent servo. If 3CH is assigned to front right wheel brake and 4CH is assigned to front left wheel brake, they will operatein conjunction with 2CH (throttle) and 1CH (steering).

【Example】
Simplifies adjustment of the independent brake channel (servo) on 1/5 scale R/C cars.

```
        3CH MODE：T-MIX
  BRAKE      100    ->KEY:OFF
  CENTER       0    ->KEY:OFF
  HIPOINT    100    ->KEY:OFF
  DELAY        0    ->KEY:OFF
  STEER        0    ->KEY:OFF
  ON/OFF      ON    ->KEY:OFF >>>
```

【Setting Range】
BRAKE : 0 - 150(Default: 100)
Modify the maximum amount of front brake servo movement

CENTER : -50 - 50 (Default: 0)
Modify the front brake servo's neutral position.

HIPOINT : 0 - 150 (Default: 100)
Modify the maximum amount of throttle to be applied to the front brake servo.To avoid operating only the brakes, set value to 0.

DELAY : 0 - 100 (Default: 0)
Delays the operation of the front wheel servo brake.

STEER : -100 - 100 (Default: 0)
Modify the amount of brake applied by the front heel brake servo in relation to steering input.

ON/OFF : ON,OFF (Default: ON)
Enables Throttle Mixing to be activated via ET keys.

BRAKE >> KEY : OFF, ET1 - 5 (Default : OFF)
CENTER >> KEY : OFF, ET1 - 5 (Default : OFF)
HIPOINT >> KEY : OFF, ET1 - 5 (Default : OFF)
DELAY >> KEY : OFF, ET1 - 5 (Default : OFF)
STEER >> KEY : OFF, ET1 - 5 (Default : OFF)
ON/OFF >> KEY : OFF, ET1 - 5 (Default : OFF)

⚠ These setting must be set for both front right brake (3CH) and front left brake (4CH).

```
        3CH MODE : T-MIX
  FOWARD CURVE:    0 %
  BRAKE CURVE:      0%

         REVERSE：NORM

  <<<
```

【Setting Range】
FORWARD CURVE : -100% - 100%(Default : 0%)
BRAKE CURVE : -100% - 100%(Default : 0%)

Ⓟ Positive values (+1 to +100) equal high initial response followed by mild response.
Negative values (-1 to -100) equal a mild initial response followed by high response.

REVERSE : NORM,REVE (Default : NORM)
This function reverses the front brake servo's movement direction. It is useful for when servo output movement does not match inputs after the servo has been installed.

⚠ **Use of Throttle Mixing Steering may increase load on the servo and cause increased wear or damage. Check the servo while adjusting.**

▦ TLMY Telemetry

Change RF mode, Pairing, Take data from receiver, Fail safe, Real Time ICS (Servo setting) are able to operated.

FUNCTION

MODEL	TIMER	KEYSET
3 - 8CH	**TLMY**	SYSTEM

▼

TELEMETRY

RFMODE	RESP	RELICS
BT F/S		
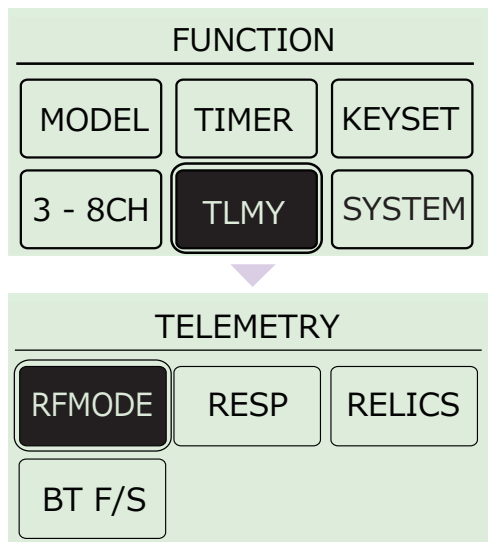
⚠ Except TLMY mode, displayed only RF mode and RESP,RELICS, BT F/S are not displayed.

RF mode

Operate RF mode change and Pairing Setting.

```
          RF MODE
RF MODE:    TLMY
WIDTH  :   GENERAL
           PAIRING
```
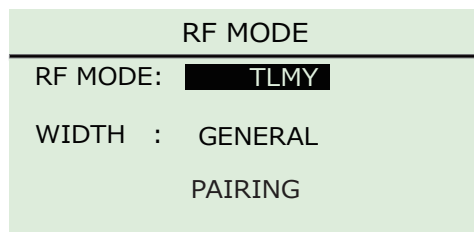
【Setting Range】

RFMODE : ADV/TLMY/MX-F/MINIZ (Default : TLMY)

⚠ Telemetry / REAL TIME ICS functions are available only for devises which are connection to B/S port of the corresponding receiver. Traditional servos/ESC/battery connections to 1-4CH terminals will not work.

▶WIDTH

Switch between general / French mode.

```
          RF MODE
RF MODE:    TLMY
WIDTH  :   GENERAL
           PAIRING
```
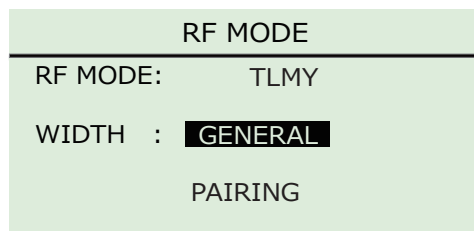
【Setting Range】

WIDTH : GENERAL/FRANCE (Defaulet : GENERAL)

ⓟ **What is France mode in the Width setting.**

> This is a change in the communication pattern between the EX-NEXT and the receiver. When instructed by a track administrator, please use the French mode, otherwise please use the general mode.

▶PAIRING

Pairing with the receiver.

```
          RF MODE
RF MODE:    TLMY
WIDTH  :   GENERAL
           PAIRING
```

▼

EXIT >> BACK KEY!
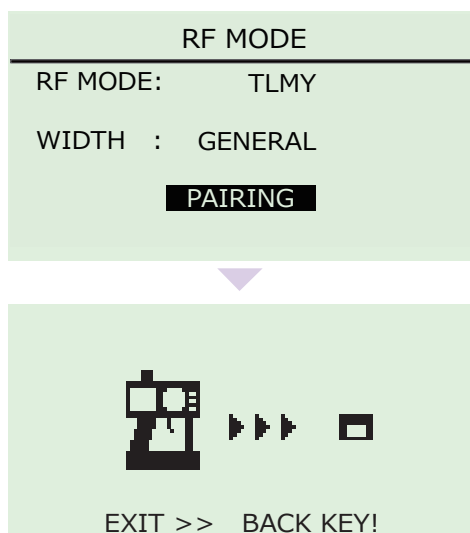
Move the cursor to Pairing and press and hold the ENTER key. The display will change to the Pairing screen and will begin to send the radio wave for Pairing.
Please refer to page 19 for the Pairing operation.

⚠ **Please you must perform the pairing operation (p.19) with the receiver when you change the RF mode.**

▶RESP Response

Sets the servo response mode. *Only radio mode TLMY can use this function.

```
           TELEMETRY                          RESPONSE SET

   RFMODE    RESP    RELICS          CH1:  NORM   CH3:  NORM
                                     CH2:  NORM   CH4:  NORM
     BT F/S
```
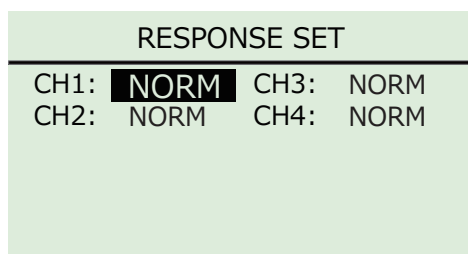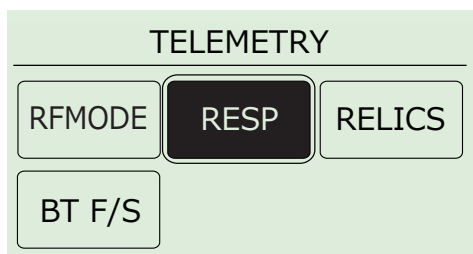
【Setting Range】
  RESP : HCS/NORM/MILD(Default : NORM)

P It can be used to adjust the response speed of Servo (ESC).
  HCS :The most responsive and high-definition maneuvering
  characteristics. *HCS compatible servo is required.
  NORM: Intermediate maneuvering characteristics
  MILD : Steering characteristics with gentle response.

⚠ The response set in TLMY mode is valid even if you switch to
ADV/MX-F.For example, if you set HCS to 1CH, switch to ADV,
and connect a servo that does not support HCS, the servo may be
damaged.Response settings other than TLMY cannot be checked
or changed, so check the settings of each CH carefully.

*When ADV and NORM are combined according to the
specifications, the operating range is limited.
The maximum operating angle is limited to about 42 ° on
one side only. Throttle travel (F or B) only works up to
around 97.
Steering travel (L or R) only works up to around 138.
(When the balance is 70 (default))
The output shaft of some servos may vibrate near the limit
angle. In this case, change the response to MILD or RF
mode to TLMY.

●Response mode setting example

GP Car

ADV		TLMY	
1CH : HCS	2CH : HCS	1CH : HCS	2CH : HCS
1CH : HCS	2CH : NORM	1CH : HCS	2CH : NORM
1CH : MILD	2CH : MILD	1CH : NORM	2CH : NORM

EP Car

ADV		TLMY	
1CH : HCS	2CH : NORM	1CH : HCS	2CH : NORM
1CH : MILD	2CH : NORM	1CH : NORM	2CH : NORM

SERIAL

B/S			
1CH/ID1: Steering		2CH/ID2: Throttle	
B/S	2CH : HCS	B/S	2CH : HCS
1CH/ID1: Steering	2CH : NORM	1CH/ID1: Steering	2CH : NORM

B/S	2CH : NORM	B/S	2CH : NORM
ID1: Steering	ESC	ID1: Steering	ESC

NOR It means incompatible servo for HCS or serial

⚠ When using with ADV, 4S or HCS servo is recommended.
Please use TLMY for non-compatible servos.

⚠ If you connect serially to the B / S port, the response settings will
be invalid.
The response setting is valid only for 1 to 4CH connections.

▶RELICS   REAL TIME ICS

Set the ICS settings for the serial-compatible servo connected to the B/S port.* Only TLMY can be set

```
                TELEMETRY

   RFMODE      RESP        RELICS

   BT F/S
```

▼
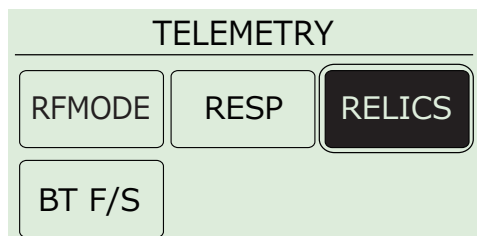
```
              REAL TIME ICS

   READ ID:    1   MODEL:       1

   STRCH1:    95   DEADBAND:    0
   STRCH2:   255   DAMPING  :  30
   SPEED:    110   FREQUENCY: X8
   PUNCH:      0
```

【Setting Range】
·Stretch1
  (Setting of holding characteristics in the range of near neutral)
  0-255

·Stretch2
  (Setting of holding characteristics in the range of except Stretch1)
  0-255

·SPEED
  (Maximum speed setting)
  0-127

·PUNCH
  (Initial response settings)
  0-30

·DEADBAND
  (Neutral width setting)
  0-5

·DAMPING
  (Brake characteristic setting)
  0-255

·FREQUENCY
  (Motor drive frequency setting)
  x1, x2, x4, x8, x16, x32, x64

Ⓟ If the set value is set too large, vibration may occur. Also, if you make it too small, the speed and torque will drop extremely. While checking the feeling, gradually increase or decrease from the factory default settings.

⚠ The initial value of the ICS setting differs depending on the servo model and is not retained. It is recommended that you keep a memo if necessary.

Ⓟ FREQUENCY
The characteristics can be changed by changing the drive frequency. The frequencies increase in the order of x1 >> x2 >> x4 .... Driving at high frequencies will result in smoother operation and better fuel economy, but will reduce speed and torque. Driving at low frequencies will improve speed and torque, but will result in rough operation and poor fuel economy.

▶READ ID

Select the servo ID for which you want to change the setting.

What is ID...
  When using the 4S series servo in serial mode, the set ID corresponds to the following operations.
      ID1 : Steering operation
      ID2 : Throttle operation
      ID3 : 3CH controll
      ID4 : 4CH controll
          *Can not use 5-8CH. (As of December 2020)

【Setting Range】
  READ ID : 1-4((Default : 1)
      *ID5-8 are displayed but can not be selected.

【How to use】
① Connect the serial servo to the "B / S" port of the receiver and turn on the receiver.

② If you set the READ ID to the same ID as the servo ID (factory default ID 1), the servo ICS setting value will be displayed.

③ Each time the set value is changed, a numerical value is sent to the servo and the characteristics change.

⚠ You cannot change the servo ID with READ ID.
(p.23) ● Please refer to ICS compatible servo setting change.

▶MODEL   Servo Model

Select the model saved in the servo.

【Setting Range】
  MODEL ; 1-5 (Default : 1)

Ⓟ Servo model data differs for each model. Please check the initial setting card included when purchasing the servo or the KOPROPO site.

▶**BT F/S Battery fail safe**

Set the battery fail-safe.

```
           TELEMETRY
  ┌──────────┐ ┌────────┐ ┌─────────┐
  │ RFMODE   │ │ RESP   │ │ RELICS  │
  └──────────┘ └────────┘ └─────────┘
  ┌──────────┐
  │  BT F/S  │
  └──────────┘
```

▼

```
        BATTERY FAIL SAFE
  ┌──────────────────────────────┐
  │ CURRENT  :      8.1V          │
  │ ALERT    :      5.5V          │
  │ FAIL SAFE :     OFF           │
  │ ALERT MODE:     VIBRATOR      │
  │ MINIMUM  :      7.1V          │
  │ MAXIMUM  :      8.2V    CLR   │
  └──────────────────────────────┘
```
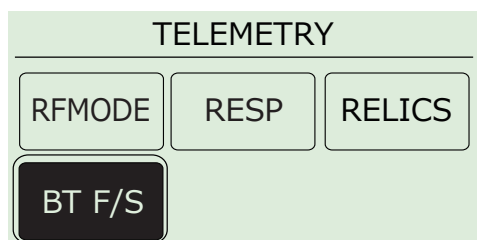
▶CURRENT
  (Current battery voltage of receiver)

▶ALERT
  (Aleart start voltage setting)
  【Setting Range】

 3.0 - 8.5V(Default : 5.5V)

▶FAIL SAFE
  (Battery fail safe start voltage setting)
  【Setting Range】
  3.0 - 8.5V(Default : 5.0V)

▶ALERT MODE
  (Alert mode setting)
  【Setting Range】
  VIBRATOR, BUZZER VIBRATOR + BUZZER
  (Default : VIBRATOR)

▶MINIMUM
  (Minimum voltage of receiver battery)

▶MAXIMUM
  (Maximum voltage of receiver battery)

▶CLR
  (Read data again)

Ⓟ The battery fail-safe function is a function that can be set to automatically decelerate or brake when the voltage of the receiver battery falls below the set voltage.When the fail-safe function is activated, the automatically set servo is operated to an arbitrary position (the position set by the fail-safe function on p.23).
When the voltage is restored, the battery fail-safe function will be automatically canceled.
  * The battery fail-safe function is intended to prevent accidental use of a damaged receiver battery.
    We do not recommend using it as a protective function when the normal receiver battery is exhausted.
  * This is a function exclusively for engine cars. Do not use the battery fail-safe function in an electric car.

```
        BATTERY FAIL SAFE
  ┌──────────────────────────────┐
  │ CURREN  :      0.0V           │
  │ ALERT   :      6.0V           │
  │ FAIL SAFE :    5.8V           │
  │ ALERT MODE:    VIBRATOR       │
  │ MINIMUM :      0.0V           │
  │ MAXIMUM :      0.0V     CLR   │
  └──────────────────────────────┘
```

Reference value : Life 5.2V Lipo 6.0V
VIBRATOR or BUZZER will notify you when the voltage drops below the set voltage.

▼

```
        BATTERY FAIL SAFE
  ┌──────────────────────────────┐
  │ CURRENT  :      8.1V          │
  │ ALERT    :      6.0V          │
  │ FAIL SAFE :     5.8V          │
  │ ALERT MODE:     VIBRATOR      │
  │ MINIMUM  :      7.1V          │
  │ MAXIMUM  :      8.2V    CLR   │
  └──────────────────────────────┘
```

Reference value : Life 5.0V Lipo 5.8V
If the voltage drops below the set voltage, the fail-safe function will operate.

▼

```
        BATTERY FAIL SAFE
  ┌──────────────────────────────┐
  │ CURRENT  :      8.1V          │
  │ ALERT    :      6.0V          │
  │ FAIL SAFE :     5.8V          │
  │ ALERT MODE:     VIBRATOR      │
  │ MINIMUM  :      7.1V          │
  │ MAXIMUM  :      8.2V    CLR   │
  └──────────────────────────────┘
```
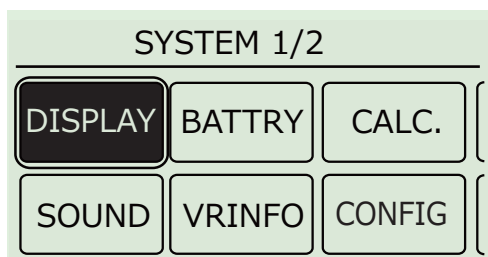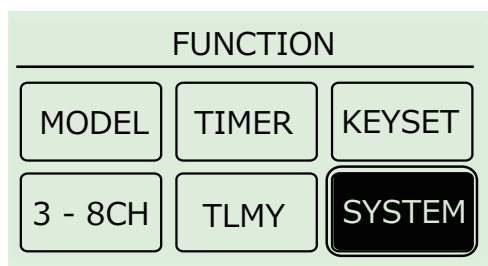
VIBRATOR(recommended)
Or set it to BUZZER.
This setting is reflected in the ALERT operation.

Ⓟ BT F / S can be used to check the ESC voltage.
You can check the minimum voltage and maximum voltage and use it to judge whether the ESC BEC is normal.

⊞ SYSTEM

You can make various settings related to the system.

FUNCTION

MODEL	TIMER	KEYSET
3 - 8CH	TLMY	SYSTEM

▼

SYSTEM 1/2

DISPLAY	BATTRY	CALC.
SOUND	VRINFO	CONFIG

▶DISPLAY

You can set the LCD monitor.

DISPLAY

CONTRAST	4
LIGHTMODE	KEY-ON
LIGHTTIME	5
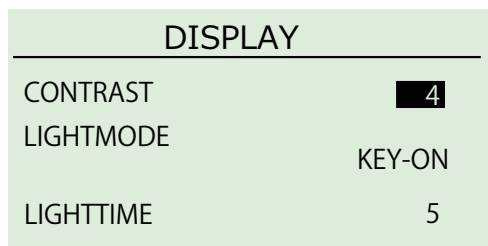
【Setting Range】

CONTRAST : 1 - 5(Default : 4)

Adjust the display density.
Decrease the number to make it lighter, and increase it to make it darker.

🅿 As a characteristic of liquid crystal displays, they tend to appear darker when it gets warmer and lighter when it gets colder. You don't have to adjust it often. If you are concerned about the display density, adjust it.

LIGHTMODE

Back light mode : OFF, ON, KEY-ON
(Default : KEY-ON)
Set the lighting method.
OFF : Always off   ON : Always on
KEY-ON : Lights when a key is operated

LIGHTTIME : 1 - 60 (Default: 5)

When the backlight mode is KEY-ON, specify the time (seconds) for temporarily turning off the backlight after stopping key operations (other than steering and throttle).

⚠ When the backlight is set to KEY-ON, it lights up when the keys (ET, BT) are operated. It does not light when steering or throttle operation.

▶BATTERY

Select the type of battery to use.

BATTERY

DRY	LIFe
NI-MH	LIPO
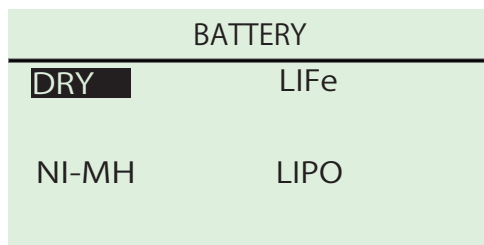
【Setting range】

DRY (alkaline batteries)
Warning buzzer 4.0V or less
Warning buzzer / stop operation 3.8V or less

LIFe (lithium ferrite battery)
Warning buzzer 6.2V or less
Warning buzzer / stop operation 6.0V or less

NI-MH (nickel metal hydride battery)
Warning buzzer 4.0V or less
Warning buzzer / stop operation 3.8V or less

LIPO (lithium polymer battery)
Warning buzzer 7.0V or less
Warning buzzer / stop operation 6.0V or less

🅿 By specifying the power supply (battery type) to be used, a warning message is displayed before the discharge termination voltage. The transmitted signal will not be cut immediately, but it may cause control problems, so charge it immediately or replace the battery.

🅿 **If you accidentally set the battery type, you can press and hold the BACK key to cancel the warning message and display the initial screen. Reset to the correct battery.**
Example)
When using a dry battery, the LIPO mode is selected and the operation stop mode cannot be exited.

⚠ **After changing the battery / battery, be sure to check the battery type. !!**
If the settings are different from the battery you are using, it will over-discharge and damage the battery. Please be careful as it may cause a fire.

BATTERY WARNING

▶Battery warning

Displayed when the power supply voltage is lower than the specified voltage during use and startup, and the buzzer sounds. If you press the ENT, BACK, or L / R key, the buzzer will stop and the initial screen will be displayed, and you can use it normally. However, charge or replace the battery immediately.

* In the case of DRY / Ni-MH setting, the LED (blue) of the EX-NEXT main unit also blinks.

```
      BATTERY WARNING

        LOW VOLTAGE


      EXIT >> KEY ON
```
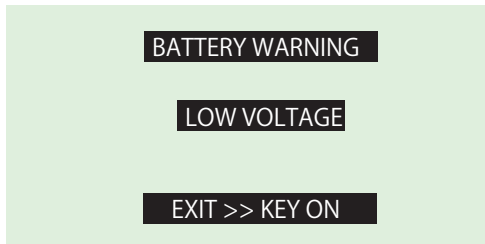
Furthermore, it is displayed when the power supply voltage drops, and key operations cannot be performed. Turn off the power immediately and charge or replace the battery.
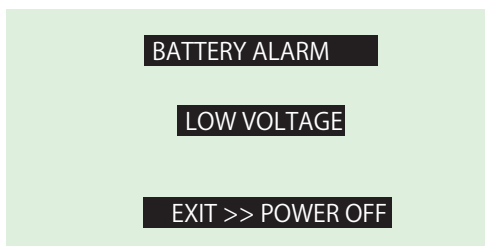
```
      BATTERY ALARM

       LOW VOLTAGE


     EXIT >> POWER OFF
```

Ⓟ If you accidentally set the battery type, you can press and hold the BACK key to cancel the warning message and display the initial screen. Reset to the correct battery.
Example)
When using a dry battery, the LIPO mode is selected and the operation stop mode cannot be exited.

▶CALCULATOR

You can calculate the gear ratio.

```
                 CALCULATOR

   SPUR  GEAR    110
   PINIONGEAR     30     FINAL
   TRANSRATIO    2.00      7.333
   TIRE DIAMETER        ROLLOUT
                 63.00   27.055
                   MM
```

【Setting Range】
SPUR GEAR: 1 to 999 (Default : 110)
PINIONGEAR: 1 to 999 (Default : 30)
TRANSRATIO: 1.00 to 99.99 (Default : 2.00)
TIRE DIAMETER Tire diameter: 0.00 to 200.99 (Default : 63.00)

【How to use】
When you enter the spur, pinion, and the transmission ratio; the calculations are automatic and displayed on the right side of the screen.

▶SOUND

You can make sound-related settings.

```
                 S O U N D

   BUZZER  TONE          2
   BUZZER  PATTERN       1
   BUZZER  VOLUME        5
   VIBRATOR  POWER       5
   POWER ON VIBRATOR    ON
```

【Setting Range】
BUZZER TONE
  (Buzzer pitch setting) 1 to 7 (Default : 2)
BUZZER PATTERN
  (Buzzer pattern setting) 1 to 7 (Default : 1)
BUZZER VOLUME
  (Buzzer volume setting) 0 to 5 (Default : 5)
VIBRATOR POWER
  (Vibrator power setting) OFF ~ 5 (Default : 5)
VIBRATOR TIME
  (Vibrator time setting) 1 to 6 (Default : 5)
VIBRATOR PATTERN
  (Vibrator pattern setting) 0 to 6 (Default : 2)

▶VR INFORMATION

This function sets the position information of the CPU, steering and throttle of this unit.
* Be sure to make the settings.
○ When using this unit for the first time
○ When the steering unit / grip unit is replaced with another product or returned to its original position
○ When the adjustment of the deangle adjustment of the handle is changed
○ When the location information is out of order due to exhaustion during use

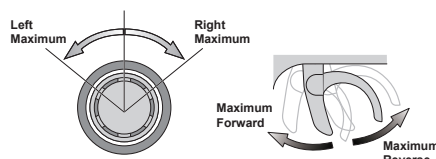1. Select FUNCTION on the initial screen and press the ENT key.
2. Select SYSTEM in the setting and press the ENT key.
3. Select your system's VRINFO and press the ENT key.

```
               VR INFOMATION

   ST- LEFT         x x x x
       NUT          x x x x
       RIGHT        x x x x   OK?
   TH- HI           x x x x   YES
       NUT          x x x x
       LOW          x x x x
```

4. Slowly turn the steering wheel left and right to the end to change the value. Release the wheel to put it in the neutral state.

5. If you slowly move the throttle trigger forward / backward to the end, the value will change, so release the trigger to put it in the neutral state.
6. If the operations of 4 and 5 are normal, "YES" on the right side of the screen will be activated, so confirm with the ENT key.

```
               VR INFOMATION

   ST- LEFT          1 7 6 0
       NUT             ◇
       RIGHT        -1 7 5 2   OK?
   TH- HI            1 2 8 6   YES
       NUT             ◇
       LOW          -  5 9 9
```

* If you press the BACK key during operation, it will be canceled.

Ⓟ When adjusting and changing the deangle adjustment of the handle, set so that the values of ST-LEFT and RIGHT do not differ significantly.

If the values differ significantly, readjust the adjustment screw of the deangle adjustment adjuster, and then set the VR information again.
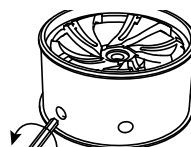
When the number is small…loosen

When the number is large... tighten

⚠ Do not touch the steering wheel or throttle trigger when entering this menu and finally pressing the ENT key. An abnormal value may be entered, which may cause inconvenience in subsequent operations.

⚠ If the brake lever of the throttle trigger is opened too much, the brake lever may interfere with the case and may not complete normally. In this case, readjust the brake lever and then set the VR information again.

⚠ The period during which this operation is required varies greatly depending on the frequency of use and the operation method. If the inconvenience persists even after performing this function, please contact our service department.

▶CONFIG

Change the operating environment settings of the Xpansion unit.

```
                 CONFIG
KEYSPEED           OPERATIONTIME
        3                      3M
MENUSPEED          USERTIMER
           3                7 H23M
LANGUAGE           ELPASSEDTIME
        ENGLISH            7 H23M
```

<Function list>

▶KEYSPEED

Set the interval at which the operation repeats when the L / R keys are held down.

【Setting Range】
KEYSPEED : OFF to 5(Default : 3)

▶MENUSPEED

Set the interval at which the operation is repeated when the L / R keys are held down when moving the menu.

【Setting Range】
MENUSPEED : OFF to 5(Default : 3)

🅟 If the set value is OFF, the operation will not be repeated. The larger the setting, the shorter and faster the repeat interval.

⚠️ It is not reflected in the ET and BT keys, and the set value is fixed.

▶LANGUAGE

Switches the menu display language.

【Setting Range】
LANGUAGE : ENGLISH / JAPANESE
                 (Default : ENGLISH)

🅟 Language switching is applied after moving from the CONFIG screen to the SYSTEM screen with the BACK key.

▶OPERATIONTIME

A warning buzzer sounds when the set time is exceeded for no operation. The alarm is canceled by operating the steering wheel / throttle trigger, ET key, BT key, ENT key, L / R key, and BACK key.

【Setting Range】
OPERATIONTIME : OFF to 3min
(Default : 3)

▶USERTIMER

The time when the power is turned on is integrated and displayed.

🅟 You can reset the timer by moving the cursor to USERTIMER and pressing and holding the ENT key.

▶ELPASSEDTIME

The time when the power is turned on is integrated and displayed.

🅟 The ELPASSED TIME timer cannot be reset.

▶DATA

Reads and writes model data.

```
              SYSTEM 2/2

   ┌───────┐  ┌───────┐
   │ DATA  │  │ RESET │
   └───────┘  └───────┘
```

```
          MODEL DATA EDIT
   PLEASE CONNECT
   ICS-USB ADAPTER TO
   COMMUNICATION PORT
   ON THE FRONT OF
   XPANSION.
                    START
```

```
   READ EX-NEXT>>>PC
   WAIT PC >>>EX-NEXT
   EXIT >> POWER OFF
```
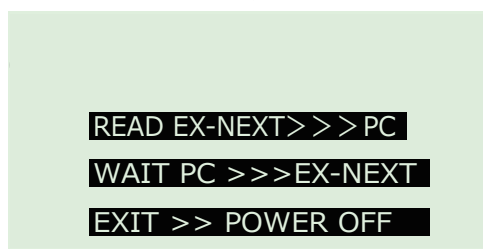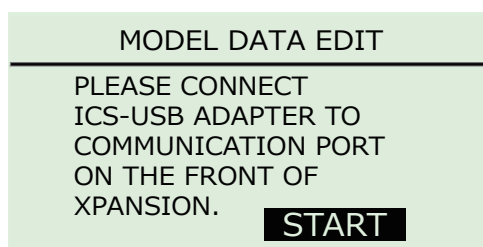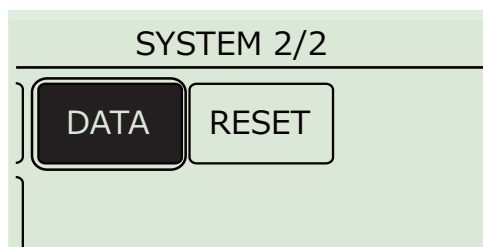
1. Press the ENT button on START to switch to the communication screen and enter the communication standby state.

2. Connect the communication cable of the ICS USB adapter HS to the communication port of the expansion unit.

3. Open "Backup Manager for EX-NEXT Ver 1.xx" on your PC and save and write the model data.

⚠️ Be sure to turn on the power of EX-NEXT before connecting the ICS USB adapter HS and the expansion unit.

▶**ALL RESET**

Initialize all model and system data.

ALL RESET

PLEASE PRESS AND
HOLD ENTER KEY FOR
EXECUTE"ALL RESET".

ALL RESET

Press and hold the ENT button with ALL RESET
to start all reset.

⚠ Please note that once erased data cannot be restored.

🅿 We recommend that you back up before resetting.

⚠ The user timer and elapsed time are not reset.

🅿 When the initialization is completed, it will restart
automatically. After restarting, set the VR information.

□■□ STEERING

▦ TRAVEL

Set the steering movement amount of the steering.

```
        STEERING
┌──────────────────────────┐
│ TRAVEL │  TRIM  │ SPEED  │
│ DYNAMC │  FEEL  │ REVERS │
└──────────────────────────┘

        ST TRAVEL
─────────────────────────────
ST  TRAVEL 100

L 70%        N         R70%
DIRECTBALANCE : ON
```

▶ST TRAVEL
Change total movement of steering.

▶L(BALANCE)
Change the steering movement amount on the left.

▶R(BALANCE)
Change the steering movement amount on the right.

▶DIRECT BALANCE
Enables / disables the direct balance function.

▶ST TRAVEL

Adjust the overall amount of steering servo movement when the steering wheel is at full lock.

【Setting Range】
ST TRAVEL : 0 to150
(Default : 100)

P Since the Balance setting value is a ratio of the Travel setting value, if the latter is modified the actual movement value and the displayed graphic will also change.(the Travel value will not change).

⚠ Steering will not operate if the Travel value is set to 0.

▶ST BALANCE L R

Adjust the left/right steering angles independently.
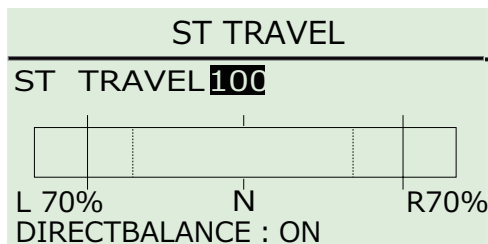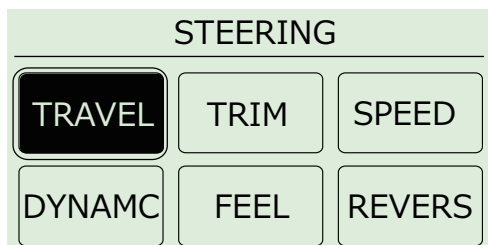This enables the turning radii to match up during cornering.

【Setting Range】
ST BALANCE L : 30 to 100
(Default : 70)
ST BALANCE R : 30 to 100
(Default : 70)

P The set percentage is a ratio of the value set by the Steering Travel.

P **Steering balance can be adjusted by using the steering wheel and ET key!**
ET key that is assigned to steering trim is pressed while the steering is turned over halfway in either direction, the balance of the direction of the turn can be adjusted.

P If the trim is set to a large value, a large left/right value discrepancy may result. If adjusting steering balance for the first time, follow the procedures below.
①Set trim value to 0.
② Adjust sub trim so that the car drives in a straight line when steering is in neutral position.
③ Use steering travel to match the overall steering angle range.
④ Use steering balance to match the left/right turning radii.
⑤ If the car does not drive straight at this point, use trim to correct.

▶DIRECT BALANCE

ET key that is assigned to steering trim is pressed while the steering is turned to full lock in either direction, the balance of the direction of the turn can be adjusted respectively.(Steering Trim: initial setting is ET1)
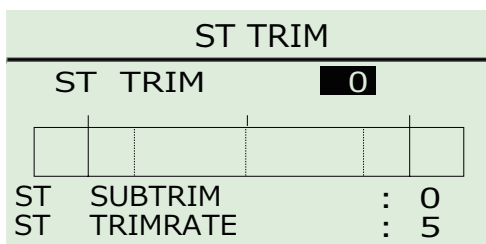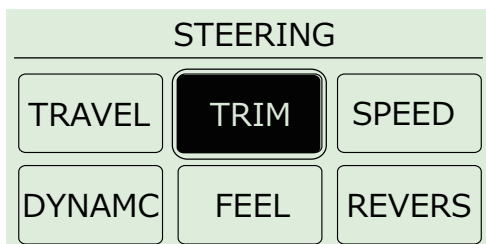
【Setting Range】
DIRECT BALANCE : ON to OFF
(Default : ON)

P You can disable this function by set to "OFF" in the direct balance.

⊞ TRIM

Adjusts the neutral/center position of the steering angle range.

```
          STEERING
┌──────────┐┌──────────┐┌──────────┐
│  TRAVEL  ││   TRIM   ││  SPEED   │
└──────────┘└──────────┘└──────────┘
┌──────────┐┌──────────┐┌──────────┐
│  DYNAMC  ││   FEEL   ││  REVERS  │
└──────────┘└──────────┘└──────────┘
```

```
           ST TRIM
   ST  TRIM           [   0  ]
   ┌────┬────┬────┬────┬────┐
   │    │    │    │    │    │
   └────┴────┴────┴────┴────┘
   ST    SUBTRIM        :  0
   ST    TRIMRATE       :  5
```

▶ ST TRIM
Modify the neutral position of the steering angle.

▶ ST SUBTRIM
Modify the overall steering angle range.

▶ ST TRIMRATE
Modify the amount of movement which corresponds to one click of the Trim button.

▶ ST TRIM

Adjusts the neutral/center position of the steering angle range.

【Setting Range】
ST TRIM : L50 to 0 to R50
(Default : 0)

Ⓟ Setting adjustments prior to driving should be carried out with the sub trim, not the trim.

⚠ The setting range cannot exceed what is set by [Steering Travel] or [Steering Balance].

▶ ST SUBTRIM

Adjust the position of the overall steering angle range. Use this to match the neutral position when installing the steering servo.
*Also refer to Trim and Sub Trim Operation.(p.51)

【Setting Range】
ST SUBTRIM : L80 to 0 to R80
(Default : 0)

【Example】
The servo horn position can be adjusted by the linkages, etc. when the servo is installed onto the model, but in case this does not set the neutral position, this function can be used to set it from the transmitter.

Ⓟ If the sub trim value becomes large, adjust the servo horn position or linkages so that the value becomes closer to 0. If the sub trim value is too large, dead zones could result and the servo may not operate at the extremities of its movement range.

▶ ST TRIMRATE

Adjusts the amount of movement associated with one click of the trim button.

【Setting Range】
ST TRIM RATE : 1 to 10
(Default : 5)

Ⓟ Although the amount of movement of one interval can be adjusted, the lower the number the smaller the amount of movement.

Ⓟ The overall number of intervals does not change, so a change in trim rate will result in a change in the range in which the trim can be used to make corrections.

Ⓟ If the trim rate is changed when the trim is already set, the trim may be thrown off. If the trim setting is 0 then this does not apply.

Ⓟ Lower trim rates enable fine adjustments, but the effects may not be apparent depending on the servo used. If there is a lot of slop in the linkage or servo saver, fine trim adjustments could cause the user to constantly worry about the trim settings. In that case, please reexamine the linkages, etc.

●Trim and Sub Trim Operation

The sub trim is a convenient feature but it could also complicate the setting process if used incorrectly.

<Purpose of the Trim>

When a servo is to be mounted onto a model, it is usually connected to the receiver temporarily to enable the transmitter to check its neutral position before it is installed. However, upon running the model it is often the case that it does not run in a straight line and the steering servo's neutral position has to be readjust. This adjustment function is known as the "trim", but trim adjustment is not only done at the beginning, but it also must be done during model operation to account for factors such as tire wear and chassis warp. However, using the normal trim to make these intermediary adjustments could cause other problems. In the case of the steering trim, it could lead to different turning radii for the left and right wheels. For throttle trims on glow engine cars, the point of maximum braking, the full open position of the carburetor, etc. would be shifted. For this reason, the normal trims are designed as "center trims" that only adjust the neutral position, while a new function called sub trim is used in connjuction to enable the most optimal settings.

●Trim (Center Trim)

Adjusting neutral position only

Left/Right movement range is fixed

P Initially, steering trim and throttle trim are assigned to ET1 and ET2 respectively.

<Purpose of the Sub Trim>

The effect of the sub trim is illustrated in the image on the right. Adjusting the sub trim also moves the left/right angle range. In contrast, the center trim moves the neutral position without changing the angle range position. However, trying to compensate the neutral position while making large sub trim adjustments may throw off the model's left/right balance.

●Sub Trim

Left/Right angle range and neutral position can be both be adjusted.

<Actual Setting Sequence>

① When installing R/C equipment, the servo's neutral position is set first, then final adjustments would be made with the sub trim after installation. However, if the sub trim setting value is high, adjust the neutral position again.

② Test run to confirm neutral position. Adjustments during this time should also be made with the sub trim. After neutral position is fixed, adjust steering balance (p.46) so that the left and right wheels have the same turning radius and use steering travel(p.46) to adjust overall steering angle.

③ During the course of practice or racing, use the center trim to correct slight changes to the neutral position. If the setting value becomes high, correct in conjunction with the sub trim so that the center trim value is zero.

P Use the sub trim to adjust settings prior to driving instead of the center trim.

P Install R/C equipment when the sub trim setting value becomes low.

P If the neutral position becomes slightly off during driving, use center trim to correct.

Modify the speed of the steering servo movement.

STEERING

TRAVEL	TRIM	**SPEED**
DYNAMC	FEEL	REVERS
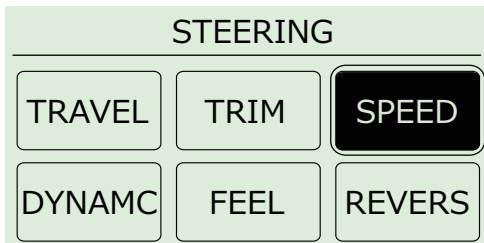
ST SPEED

TURN		RETURN	
POS	**50**%	POS	50%
TURN1	100%	RTRN1	100%
TURN2	100%	RTRN2	100%

▶ **TURN POS** Steering Turn Position

The range of movement of the steering wheel for TURN1 and TURN2 speed settings can be set.

▶ **TURN 1** Steering Turn Speed 1

The speed from neutral to TURN POS range of the steering wheel movement is set.
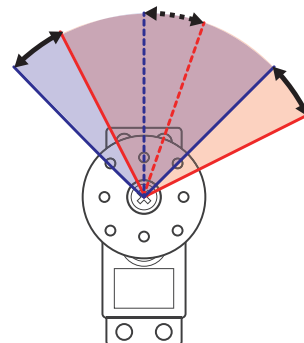
▶ **TURN 2** Steering Turn Speed 2

The speed from TURN POS to end point range of the steering wheel movement is set.

▶ **RETURN POS** Steering Return Position

The range of movement of the steering wheel for returning to neutral for RTRN1 and RTRN2 speed settings can be set.

▶ **RTRN 1** Steering Return Speed 1

The speed of the return from RETURN POS to neutral of the steering is set.

▶ **RTRN 2** Steering Retuen Speed 2

The speed of the return from end point range to RETURN POS of the steering is set.

▶ST TURN

This is the function which restricts the maximum speed of the steering servo. You configure the direction (TURN) of the steering movement.
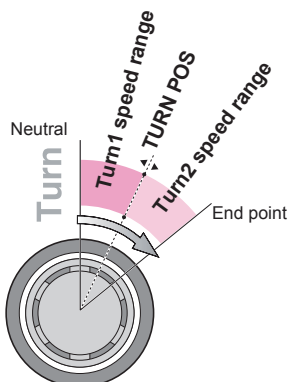
【Setting Range】
TURN POS : 1 to 100% (Default: 50%)
TURN 1 : 1 to 100% (Default: 100%)
TURN 2 : 1 to 100% (Default: 100%)

【Example】
When the behavior of the car steering is hard to handle, reducing the operational speed can allow the operation of steering to become easier.

ⓟ Take into account such factors as the servo used, car, driving surface, etc. when adjusting all settings. Conduct test drives to find the best setting values.

ⓟ Effective speed values are dependent on the speed characteristics of your selected servo.

ⓟ When setting POS=100%, TURN2 cannot be set because POS is now the entire movement range.

▶ST RETURN

This is the function which restricts the maximum speed of the steering servo returning back to neutral.
You configure the direction (RETURN) of the steering movement.
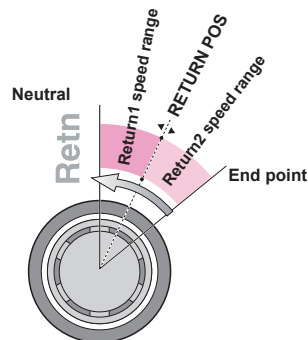
【Setting Range】
RETURN POS : 1 to 100% (Default: 50%)
RETURN1 : 1 to 100% (Default: 100%)
RETURN2 : 1 to 100% (Default: 100%)

ⓟ Take into account such factors as the servo used, car, driving surface, etc. when adjusting all settings. Conduct test drives to find the best setting values.

ⓟ Effective speed values are dependent on the speed characteristics of your selected servo.

ⓟ When setting POS=100%, TURN2 cannot be set because POS is now the entire movement range.

Different values will affect the graph's appearance
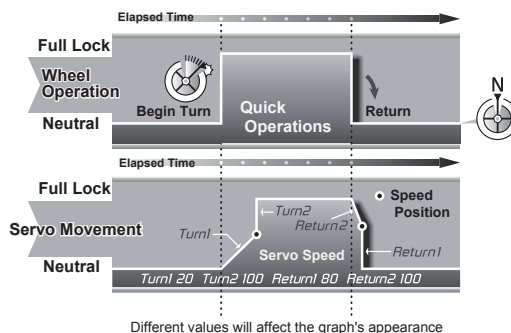
Settings related to steering control.

▶ **CURVE Steering Curve**
Modify the movement speed ratio which corresponds to steering angle.

▶ **PUNCH Steering Punch**
Modify how much the steering initially turns from neutral position.

### ▶**CURVE Steering Curve**

This function adjusts the ratio of the steering angle to servo movement speed (Curve Characteristics). Choose between (+) Quick Curve and (-) Mild Curve.

【Setting Range】
ST CURVE : -100 to 0 to 100%
(Default : 0%)

【Example】
Modify the movement speed ratio which corresponds to steering angle.

P As the graph shows, servo movement speed can be changed according to wheel movement angle.Positive values (+1 to +100) equal high initial response followed by mild response. Negative values (-1 to -100) equal a mild initial response followed by high respons.

P When using this in conjunction with other functions such as [Steering Speed], adjust one at a time to confirm their effects to produce an effective overall setting.

P To adjust only the steering's initial response, use the P [Steering Punch] function.
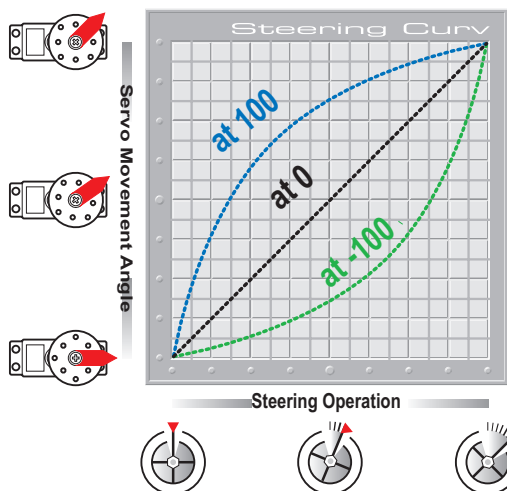
▶**PUNCH Steering Punch**

This function quickens the steering's initial response and can be used to instill a strong turning movement when the steering initially moves from neutral.

【Setting Range】
ST PUNCH : 0 to 50%)
(Default : 0%)

P The larger the value, the stronger the amount of turning movement.

P This could be effective if steering linkages have a lot of slop, but please note that it does not improve straightline performance.

P When using this in conjunction with other functions such as [Steering Speed], adjust one at a time to confirm their effects to produce an effective overall setting.
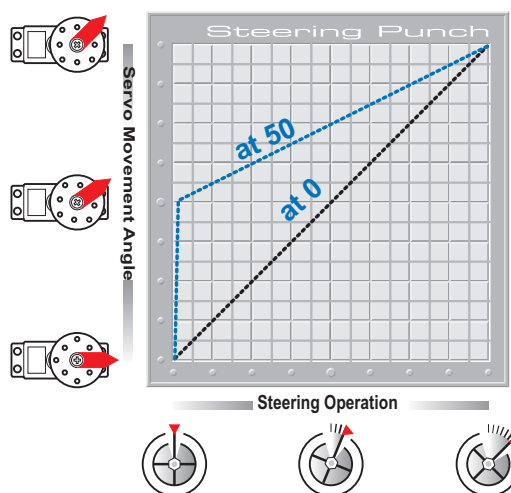
▦ FEEL

FEEL function provides changing the moving peformance of steering servo.

STEERING

TRAVEL	TRIM	SPEED
DYNAMC	**FEEL**	REVERS

FEEL

ST FEEL	TH FEEL F
0	0
	TH FEEL B
	0
ST RESPONSE	TH RESPONSE
ADV	ADV

- ▶ **ST FEEL Steering Feeling**
  Adjust steering feeling.
- ▶ **TH FEEL F Throttle Feel F**
  Refer to "Throttle Feel F" (p.58)
- ▶ **TH FEEL B Throttle Feel B**
  Refer to "Throttle Feel B" (p.58)
- ▶ **ST RESPONSE Steering Response**
  Response speed of the steering is adjusted.
- ▶ **TH RESPONSE Throttle Response**
  Refer to" Throttle Response" (p.58)

▶ST FEEL

FEEL function provides changing the cornering peformance feeling.

【Setting Range】
ST FEEL : -50 to 0 to 50%
(Defaylt : 0%)

🅿 Take into account such factors as the servo used, car, driving surface, etc. when adjusting Steering feel settings.
Conduct test drives to find the best setting values

▶ST Response

You can use this for adjusting the cornering speed of response.

【Setting Range】
ST RESPONSE: NORM / HIGH / ADV
(Default : ADV)

🅿 Function to adjust feeling.
  NORM : Smooth response.
  HIGH : Intermediate response.
  ADV : Quick response.
During a run you can find a good setting.

▦ REVERSE

Modify the steering and the throttle direction.

STEERING

TRAVEL	TRIM	SPEED
DYNAMC	FEEL	**REVERS**
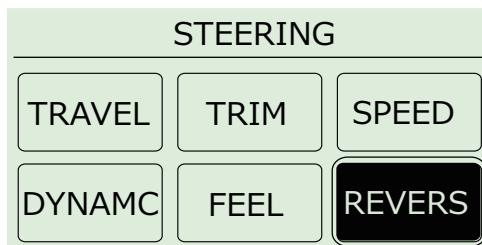
REVERSE

ST   REVERSE
           NORM
TH   REVERSE
           NORM

▶ST REVERSE

【Setting Range】
ST REVERSE :NORM , REVS (Default : NORM)

▶TH REVERSE

【Setting Range】
TH REVERSE :NORM , REVS (Default : NORM)

⚠ Steering and throttle operating directions vary from vehicle to vehicle. Please check when installing the Servo on the vehicle body.

⬚⬚■ THROTTLE

▦ TRAVEL

Set the steering movement amount of the throttle.

```
        THROTTLE 1/3
 ┌────────┬────────┬────────┐
 │ TRAVEL │  TRIM  │ SPEED  │
 ├────────┼────────┼────────┤
 │ DYNAMC │  FEEL  │ REVERS │
 └────────┴────────┴────────┘

        TH TRAVEL
 ────────────────────────────
 TH  TRAVEL

 ┌──────┬──────────┬─────────┐
 │      │          │         │
 └──────┴──────────┴─────────┘

 F 100%        N        B100%
```
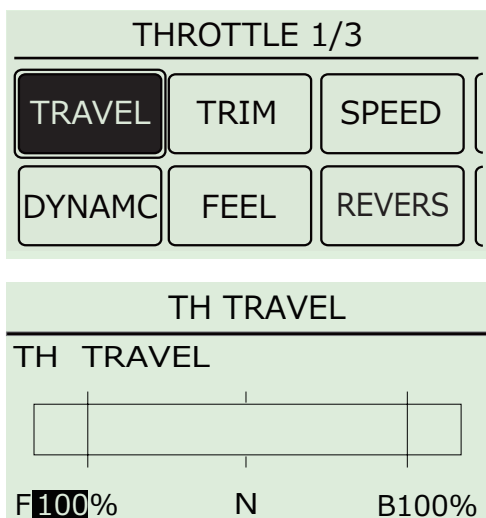
▶TH TRAVEL F
Modify the maximum amount of throttle movement.(towards forward acceleration).

▶TH TRAVEL B
Modify the maximum amount of throttle brake movement.

▶TH TRAVEL F

Adjust the maximum amount of throttle forward acceleration movement.

【Setting Range】
TH TRAVEL F : 0 to 150
(Default : 100)

Ⓟ On glow engine cars, an overly high setting value will increase load on the servo and lead to it being damaged. Check carefully while adjusting.

Ⓟ On electric cars, a setting value that is too small may cause problems with the ESC settings. Make adjustments starting from the default setting (100).

Ⓟ If the throttle travel F is set low and the trim is set to a high value toward acceleration, the resulting throttle movement may be extraordinarily small.

⚠ Throttle will not operate if the High Point value is set to 0.

▶TH TRAVEL B

Adjust the maximum amount of brake movement.

【Setting Range】
TH TRAVEL B : 0 to 150
(Defaulet : 100)

Ⓟ On glow engine cars, an overly high setting value will increase load on the servo and lead to it being damaged. Check carefully while adjusting.

Ⓟ On electric cars, a setting value that is too small may cause problems with the ESC settings. Make adjustments starting from the default setting (100).

Ⓟ If the throttle travel B is set low and the trim is set to a high value braking, the resulting throttle movement may be extraordinarily small.

⚠ Throttle will not operate if the High Point value is set to 0.

⊞ TRIM

You can change the center position or the entire operating range of the throttle.

```
              THROTTLE 1/3
   ┌────────┐ ┌────────┐ ┌────────┐
   │ TRAVEL │ │  TRIM  │ │ SPEED  │
   └────────┘ └────────┘ └────────┘
   ┌────────┐ ┌────────┐ ┌────────┐
   │ DYNAMC │ │  FEEL  │ │ REVERS │
   └────────┘ └────────┘ └────────┘
```

```
              TH TRIM

   TH  TRIM              ▌ 0 ▐

   ┌────┬───────┬─────┬────┐
   │    │       ┊     │    │
   └────┴───────┴─────┴────┘
   TH   SUBT R I M       :   0
   TH   TR I MRAT E      :   5
```
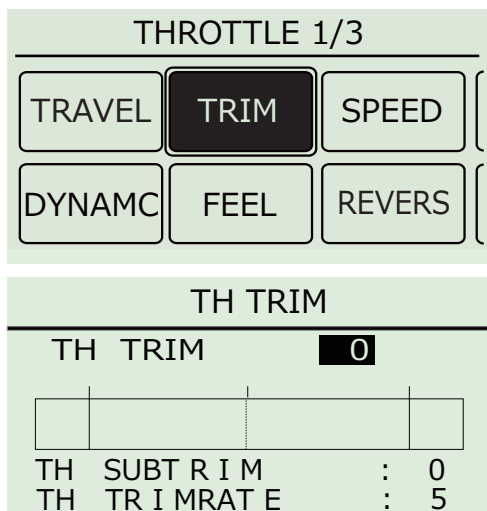
▶TH TRIM
Modify the neutral position of the throttle.

▶TH SUBTRIM
Modify the overall throttle movement range.

▶TH TRIMRATE
Modify the amount of movement which corresponds to one click of the throttle trim button.

▶TH TRIM

Adjusts the neutral/center position of the throttle range.

【Setting Range】
TH TRIM : F50 to 0 to B50
(Default : 0)

P Setting adjustments prior to driving should be carried out with the sub trim, not the trim.

P The setting range cannot exceed what is set by [Throttle Travel F] or [Throttle Travel B].

▶TH SUBTRIM

Adjust the position of the overall throttle movement range. Use this function when the neutral position cannot be centered with only linkage adjustment.Also refer to Trim and Sub Trim Operation. (p.48)

【Setting Range】
TH SUBTRIM : F80 to 0 to B80
(Default : 0)

【Example】
The servo horn horn position can be adjusted by the linkages, etc. when the servo is installed onto the model, but in case the neutral position cannot be centered, this function can be used to set it from the transmitter.

P If the sub trim value becomes large, adjust the servo horn position or linkages so that the value becomes closer to 0. If the sub trim value is too large, dead zones could result and the servo may not operate at the extremities of its movement range.

▶TH TRIMRATE

Adjusts the amount of movement associated with one click of the throttle trim button.

【Setting Range】
TH TRIM RATE : 1 to 10
(Default : 5)

P Although the amount of movement of one interval can be adjusted, the lower the number the smaller the amount of movement.

P The overall number of intervals does not change, so a change in trim rate will result in a change in the range in which the trim can be used to make corrections.

P If the trim rate is changed when the trim is already set, the trim may be thrown off. If the trim setting is 0 then this does not apply.)

P Lower trim rates enable fine adjustments, but the effects may not be apparent depending on the servo used. If there is a lot of slop in the linkage or servo saver, fine trim adjustments could cause the user to constantly worry about the trim settings. In that case, please reexamine the linkages, etc.

⊞ TH SPEED

It give limit to speed in the throttle.

```
        THROTTLE 1/3
  ┌─────────┬─────────┬─────────┐
  │ TRAVEL  │  TRIM   │  SPEED  │
  ├─────────┼─────────┼─────────┤
  │ DYNAMC  │  FEEL   │ REVERS  │
  └─────────┴─────────┴─────────┘

          TH SPEED
  ─────────────────────────────
  TURN              RETURN
    L>M    30 %      H>M    80%
    M>H    80%       M>L    30%
  TURN L 100%  RTRN H  100%
  TURN M 100%  RTRN M  100%
  TURN H 100%  RTRN L  100%
```

▶TURN L>M
The range of movement of the throttle for L and M speed settings can be set.

▶TURN M>H
The range of movement of the throttle for M and H speed settings can be set.

▶TURN L
Speed from neutral ~ TURN L of the throttle can be slowed down.

▶TURN M
Speed from TURN L ~ TURN M of the throttle can be slowed down.

▶TURN H
Speed from TURN M ~ TURN H of the throttle can be slowed down.

▶RETURN H>M
Speed of the return of the throttle from H ~ M can be slowed down in this range.

▶RETURN M>L
Speed of the return of the throttle from M ~ L can be slowed down in this range.

▶RTRN H
The return speed of the range for H ~M can be set.

▶RTRN M
The return speed of the range for M ~L can be set.

▶RTRN L
The return speed of the range for L ~neutral can be set.

▶TH TURN
This function delays the conversion of the throttle control signal to make the car easier to control.

【Setting Range】
TURN L>M : 1 to 100%   (Default : 30%)
TURN M>H : 1 to 100%   (Default : 80%)
TURN L : 1 to 100% (Default : 100%)
TURN M : 1 to 100%   (Default : 100%)
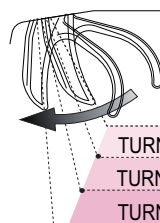TURN H : 1 to 100%   (Default :100%)

【Example】
If the car spins or otherwise does not drive straight when the throttle is applied suddenly, limiting the throttle speed can be effective.

ⓟ Effective speed values are dependent on the speed characteristics of your selected servo.

ⓟ When the setting is set to have TURN L>M and TURN M>H to the same value, TURN M is displayed as OFF and is not available to set. In this case only TURN L and TURN H settings becomes effective

ⓟ When TURN L>M = 100% configuration is set, TURN M and TURN H are displayed as OFF and are not available to be set. In this case only TURN L will be used for the setting since it is the largest value.

Operation of Turn Speed

```
  TURN LSpeed     ⇕ ▶Neutral
  TURN M Spee d   ⇕ TURN L>M
  TURN HSpeed     ⇕ TURN M>H
                  ▶Maximum Throttle
```

▶TH RETURN
This function delays the conversion of the throttle control signal to make the car easier to control.
*Throttle return speed is effective in the range of the throttle going from the high point to neutral.

【Setting Range】
RETURN H>M : 1 to 100%   (Default : 80%)
RETURN M>L : 1 to 100%   (Default : 30%)
RETURN H : 1 to 100%   (Default : 100%)
RETURN M : 1 to 100%   (Default : 100%)
RETURN L : 1 to 100%   (Default : 100%)
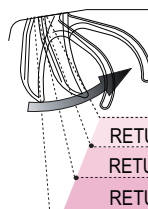
Operation of the Return Speed

```
  RETURN L Speed   ⇕ ▶Neutral
  RETURN M Speed   ⇕ TURN M>L
  RETURN H Speed   ⇕ TURN H>M
                   ▶Maximum Throttle
```

【Example】
If the car spins or otherwise does not drive straight when the throttle is applied suddenly, limiting the throttle speed can be effective.

ⓟ Effective speed values are dependent on the speed characteristics of your selected servo.

ⓟ Return speed is null in the operating range of the brake.
TH FEEL B (p.58) is used t o ad just the brake feeling.

⊞ DYNAMC

Set the operating characteristics of the throttle.

```
        THROTTLE 1/3
┌──────────┬─────────┬──────────┐
│  TRAVEL  │  TRIM   │  SPEED   │
├──────────┼─────────┼──────────┤
│  DYNAMC  │  FEEL   │  REVERS  │
└──────────┴─────────┴──────────┘

        TH DYNAMICS
─────────────────────────────────
  CURVE F          PUNCH F
        ▋0 %              0 %


  CURVE B          PUNCH B
        0 %              0 %
```

▶**CURVE F   Throttle Curve Forward**

Modify the movement speed ratio which corresponds to how much throttle is applied.

▶**CURVE B   Throttle Curve Brake**

Modify the movement speed ratio which corresponds to how much throttle brake is applied.

▶**PUNCH F   Throttle punch Forward**

Modify how much the throttle initially accelerates from neutral position.

▶PUNCH B   Throttle punch Brake

Modify how much the brake initially accelerates from neutral position.

▶CURVE

This function sets the signal conversion rate to a curve to enable quicker or milder response. Likewise, braking can also be set to a braking curve.

【Setting Range】
TH CURVE F : -100 to 0 to 100%
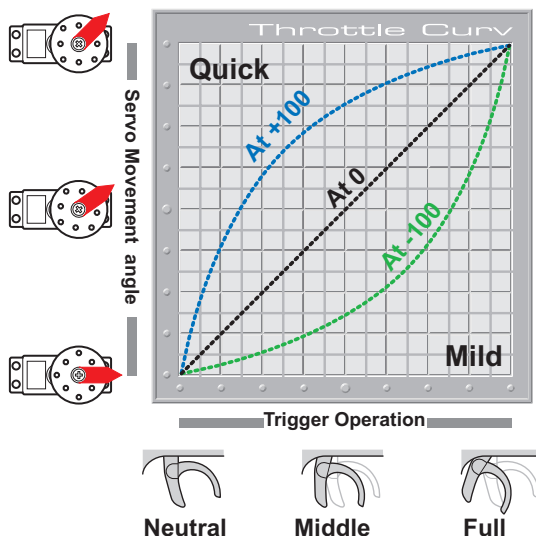(Default : 0%)
TH CURVE B : -100 to 0 to 100%
(Default : 0%)

🅿 When [Throttle Punch] is activated, the characteristics of the throttle curve value is also added to the Throttle Punch value.

🅿 Positive values (+1 to +100) equal high initial response followed by mild response.
Negative values (-1 to -100) equal a mild initial response followed by high response.

🅿 When using this in conjunction with other functions, adjust one at a time to confirm their effects to produce an effective overall setting.

🅿 This function adjusts only the curve. Use the [Throttle Punch] function if you wish to adjust the initial response.

Neutral   **Middle**   **Full**

▶PUNCH

This function quickens the throttle's initial response and can be used to instill a sense of power when the throttle initially moves from neutral.
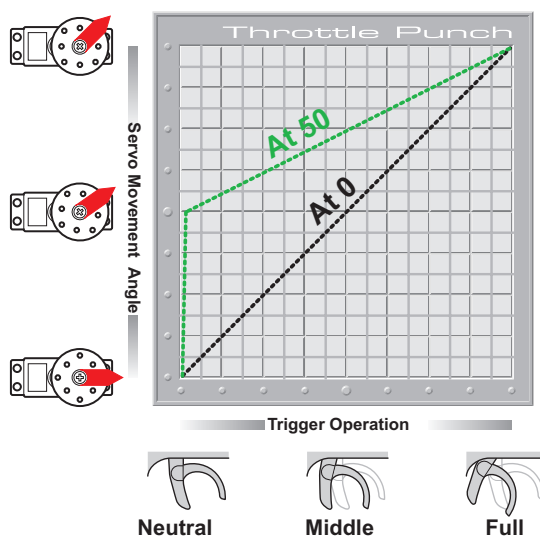
【Setting Range】
TH PUNCH F : 0 to 50%
(Default : 0%)
TH PUNCH B : 0 to 50%
(Default : 0%)

🅿 The larger the value, the larger the amount of throttle movement. However, depending on other settings, the throttle operation may become jagged.

🅿 If using this in conjunction with other functions such as [Throttle ABS], confirm the operation before using.

Neutral   **Middle**   **Full**

▦ FEEL

FEEL function provides changing the throttle feeling.

```
          THROTTLE 1/3
  ┌────────┐┌────────┐┌────────┐
  │ TRAVEL ││  TRIM  ││ SPEED  │
  └────────┘└────────┘└────────┘
  ┌────────┐┌────────┐┌────────┐
  │ DYNAMC ││  FEEL  ││ REVERS │
  └────────┘└────────┘└────────┘
```

```
              FEEL
  ST FEEL        TH FEEL F
         0                  0
                 TH FEEL B
                            0
  ST RESPONSE  TH RESPONSE
         ADV               ADV
```

▶ **ST FEEL Steering Feeling**
  Refer to "Steering Feel" (p.53).

▶ **TH FEEL F Throttle Feel Forward**
  Adjust Throttle feeling F feeling.

▶ **TH FEEL B Throttle Feel Brake**
  Adjust Throttle feeling B feeling.

▶ **ST RESPONSE Steering Response**
  Refer to "Steering Response I" (p.53).

▶ **TH RESPONSE Throttle Response**
  Response speed of the Throttle is adjusted.

▶TH FEEL

FEEL function provides changing the throttle feeling.

【Setting Range】
TH FEEL F : -50 to 0 to 50% (Default : 0%)
TH FEEL B : -50 to 0 to 50% (Default : 0%)

🅟 Take into account such factors as the servo used, car, driving surface, etc. when adjusting throttle feel settings.

▶TH RESPONSE

You can use this for adjusting the cornering speed of response.

【Setting Range】
TH RESPONSE: NORM / HIGH / ADV (Default : ADV)

🅟 Function to adjust feeling.
        NORM : Smooth response.
        HIGH : Intermediate response.
        ADV : Quick response.
    During a run you can find a good setting.

▦ REVERSE

Modify the steering and throttle direction.

```
          THROTTLE 1/3
  ┌────────┐┌────────┐┌────────┐
  │ TRAVEL ││  TRIM  ││ SPEED  │
  └────────┘└────────┘└────────┘
  ┌────────┐┌────────┐┌────────┐
  │ DYNAMC ││  FEEL  ││ REVERS │
  └────────┘└────────┘└────────┘
```

```
            REVERSE
  ST   REVERSE
                  NORM
  TH   REVERSE
                  REVS
```

▶ST REVERSE

【Setting Range】
ST REVERSE
 NORM(Normal direction), REVS(Reverse direction)
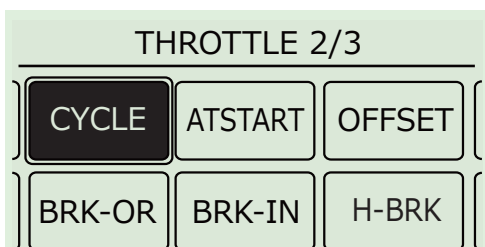(Default : NORM)

▶TH REVERSE

【Setting Range】
TH REVERSE
 NORM(Normal direction), REVS(Reverse direction)
(Default : NORM)

⚠ Throttle and Steering direction varies from car to car and should be checked when the R/C equipment has been installed.

▦ CYCLE

Add a change to the operation of throttle brakes.

```
          THROTTLE 2/3

  CYCLE    ATSTART    OFFSET

  BRK-OR   BRK-IN     H-BRK
```

```
             TH CYCLE
  ACCEL          ABS WID   OFF%
   WIDTH OFF%    TRG.P     60%
   TRG.L   5%    CYCLE     15%
   TRG.H  50%    DELAY    OFF%
   CYCLE  15%    DUTY      50%
   KEY    OFF    KEY       OFF
```

▶ACCEL Acceleration

Modify the amount of acceleration burst of the throttle.

▶ABS

Modify the amount of brake pumping.

▶**ACCEL**

By changing the throttle in small steps, the lack of grip is compensated.

【Setting Range】
WIDTH : OFF to 100%   (Default : OFF)
TRG.L : 1 to 99   (Default : 5)
TRG.H : 5 to 100   (Default: 50)
CYCLE : 1 to 30   (Default : 15)
KEY : OFF, ET1 to 5, BT1   (Default: OFF)

【Example】
By setting the throttle to feather automatically, the car can make grip and corner faster on low grip surfaces.

[CYC] Display on the Function Monitor!

P If [WIDTH] is not set to OFF, [CYC] will be displayed on the initial screen's function monitor. If the key assigned to CYCLE is pressed while at the initial screen, [CYC] will disappear from the function monitor.

P Setting [WIDTH] to 0 will deactivate Acceleration.

P From inside the range of [TRG.L] to [TRG.H] is the operating range.

P If [CYCLE] is set at a large value, the servo's operation frequency will increase.

P Configuring a [KEY] for this operation allows the ACCEL to be turned on and off.

P Take into account such factors as the servo used, car, driving surface, etc. when adjusting all settings. Conduct test drives to find the best setting values.

▶**ABS**

To prevent tires from locking up during sudden braking, brake pumping will be applied.

【Setting Range】
ABS WID : OFF to 100%   (Default: OFF)
TRG.P : 5 to 100%   (Default: 60%)
CYCLE : 1 to 30%   (Default: 15)
DELAY : OFF to 100%   (Default: OFF)
DUTY : 10 to 90%   (Default: 50%)
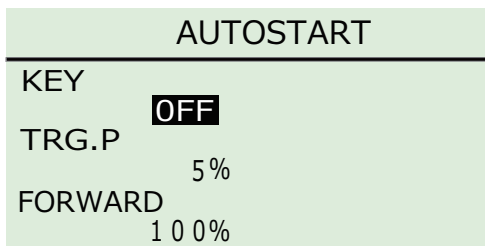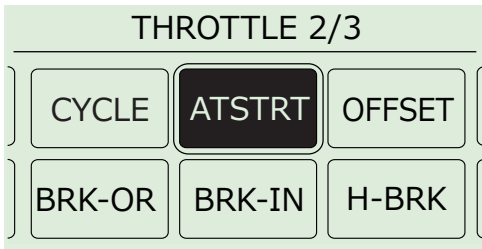KEY : OFF, ET1 to 5, BT1   (Default: OFF)

【Example】
This function is effective when your car's wheels lock up under braking and disturbs the car's balance. It will help enable smooth cornering performance.

P [CYC] Display on the Function Monitor!
If [WIDTH] is not set to OFF, [CYC] will be displayed onvthe initial screen's function monitor. If the key assignedvto CYCLE is pressed while at the initial screen, [CYC] will disappear from the function monitor.

P Setting WIDTH] to 0 will deactivate ABS.

P [TRG.P] setting operates pumping of the brakes at full brakes.

P If [CYCLE] is set at a large value, the servo's operation frequency will increase.

P [DELAY] allows for a delay in the start of the pumping of the brakes to be set.

P [DUTY] setting allows for the ratio of the brake to be ON/OFF.

P [KEY] setting allows the assignment of the function to a key to turn on and off.

P Take into account such factors as the servo used, car, driving surface, etc. when adjusting all settings. Conduct test drives to find the best setting values.

P For electric cars, it may be easier to understand if the throttle channel is connected temporarily to the servo to check ABS operation instead of to the ESC.

P When "ACCEL" and "ABS" either one or both become effective, "CYC" is displayed at the same position of the initial screen.

⚠ Setting a large [CYCLE] or [WIDTH] value may increase the servo power consumption and also shorten it's lifespan.

⊞ ATSTRT　　　Throttle Auto-Start

This function sets the throttle output to a fixed level at startup, regardless of how much the throttle trigger is pulled.

```
              THROTTLE 2/3

    CYCLE    ATSTRT    OFFSET

    BRK-OR   BRK-IN    H-BRK
```

```
              AUTOSTART

   KEY
              OFF
   TRG.P
              5%
   FORWARD
              100%
```

【Setting Range】
KEY : OFF, ET1 to 5, BT1
(Default: OFF)
TRG.P : 5 to 100%
(Default: 5%)
FORWARD : 0 to 100%
(Default: 100%)

【Example】
 Launching from the starting line.

① Assign KEY (ET1 to 5 / BT1).

② Operate an assigned key and validate [autostart]

③ Operate the throttle trigger and the launching starts when throttle trigger reaches [TRG.P].

🅟 The function will not operate until the throttle trigger reaches the set position.

🅟 When the throttle is released, the function is deactivated and the throttle returns to normal operation.

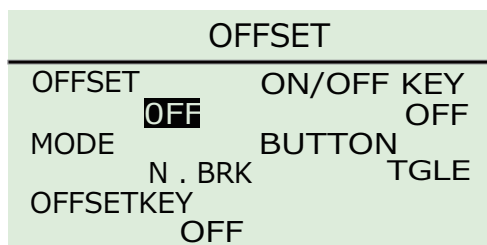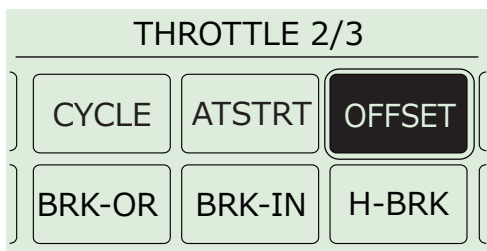🅟 **[AUT] Display on the Function Monitor!**
If the key assigned to Auto-Start is pressed, [AUT] willbe displayed on the initial screen's function monitor. If this key is pressed while at the initial screen, [AUT] will disappear from the function monitor.

⚠ Normally, full throttle is set for launching from the starting line. However, tire and surface conditions may mean full throttle will not be effective. Conduct tests and make adjustments.

⊞ OFFSET

Used to offset the throttle's neutral position.

THROTTLE 2/3

| CYCLE | ATSTRT | **OFFSET** |
| BRK-OR | BRK-IN | H-BRK |

OFFSET

```
OFFSET          ON/OFF KEY
   OFF                  OFF
MODE            BUTTON
    N . BRK              TGLE
OFFSETKEY
         OFF
```

▶**OFFSET**
Sets the amount of neutral offset.

▶**MODE**
Choice of N.BRK (neutral brakes) or I.UP (idle up).
*"Neutral Brake" means "Drag Brake".

▶**OFFSETKEY**
Assigns a key to be used to change the amount of neutral offset.

▶**KEY**
Assigns a key to be used to activate/deactivate the OFFSET Function.

▶**BUTTON**
Select TGLE (switches with each press) or PUSH (enabled while pressed).

【Setting Range】
OFFSET(Neutral Brake) : -100 to OFF
(Default: OFF)
OFFSET (Idle up) : -100 to OFF to 100
(Default: OFF)
MODE : N.BRK, I.UP
(Default: N.BRK)
OFFSETKEY : OFF, ET1 to 5
(Default: OFF)
KEY : OFF, ET1 to 5, BT1
(Default: OFF)
BUTTON : TGLE, PUSH
(Default: TGLE)

【Example (Neutral Brake)】
This function enables a light brake application at the moment when the throttle position changes from acceleration to deceleration.

【Example (Idle up)】
Raising the idling has the effect of improving a glow engine car's launch performance. It is also useful for canceling the neutral brake of a motor with strong cogging and preventing engine stalls when glow engine cars enter the pit for refueling.

🅟 **[OFS] Display on the Function Monitor!**
If the key assigned to OFFSET is pressed, [OFS] will be displayed on the initial screen's function monitor. If this key is pressed while at the initial screen, [OFS] will disappear from the function monitor.

🅟 Throttle can be operated even when Idle Up is activated.
The throttle travel F/B point does not change during this time.

⚠ Cannot use the function of "N.BRK" and "I.UP" both at the same time.

⚠ When the EX-NEXT is turned off in the state of the OFFSET effect and the transmitter is switched back on again, the function of OFFSET becomes invalid due to the safety precautions. Please activate the effect again with the KEY which you assigned it to.

⚠ When setting value of the Neutral brake to a very large value, there may become some mistakes by an ESC that has a reverse funtion and may operate in the reverse mode.
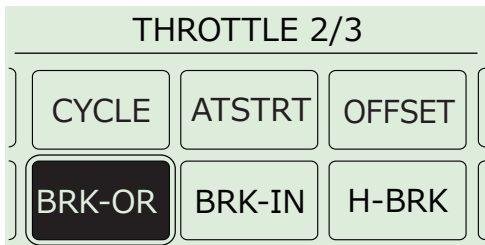
⚠ When setting value of the Neutral brake to a very large value, there may become some mistakes by an ESC that has a reverse funtion and may cannot operate in the reverse mode.

⚠ When setting value of the Idle up to a very large value, there may become some mistakes by an ESC that has a reverse funtion and may cannot operate in the reverse mode.

▦ OVERRIDE

Arrange another maximum brake setting and steering travel setting, which can be activated/deactivated by the ET lever or BT button.

```
            THROTTLE 2/3
   ┌─────────┬─────────┬─────────┐
   │  CYCLE  │ ATSTRT  │ OFFSET  │
   ├─────────┼─────────┼─────────┤
   │ BRK-OR  │ BRK-IN  │  H-BRK  │
   └─────────┴─────────┴─────────┘
```

```
            OVERRIDE
  KEY            ST TRAVEL
          OFF            100%
  BRAKE          ST TRV L
          100%           70%
                 ST TRV R
                        70%
```

▶ **KEY**

Assigns a key to be used to activate/deactivate the override.

▶ **BRAKE**

Sets the brake override's brake setting.

▶ **ST TRAVEL**

▶ **ST TRV L**

▶ **ST TRV R**

Adjust the steering angle according to the driving conditions to make the car easier to control.

【Setting Range】
KEY : OFF, ET1 to 5, BT1   (Default: OFF)
BRAKE : 0 to 150   (Default: 100)
ST TRAVEL : 0 to 150   (Default: 100)

【Example(Brake over ride)】
Switch to the throttle brake value while driving when the road surface conditions are expected to change.

【Example (Steering travel over ride】
This is convenient when you want to stabilize the straight line by reducing the steering amount when driving in a straight line with an oval car.
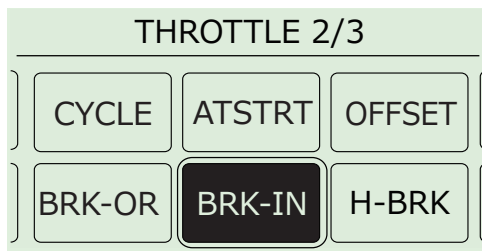
🅟 **[OR] Display on the Function Monitor!**
When the override is enabled by operating the key assigned by [KEY], "OR" is displayed on the function monitor on the initial screen. If [KEY] is turned OFF while "OR" is displayed on the function monitor of the initial screen, the display of "OR" on the function monitor of the initial screen also disappears.

🅟 If you want to switch the setting value only for the brake override, the steering travel override value is also valid at the same time. If you do not want to change the steering travel value, enter the same value for steering travel and steering travel override.

▦ BREAK-IN

Fix the throttle operation for the set time.

```
            THROTTLE 2/3
   ┌─────────┬─────────┬─────────┐
   │  CYCLE  │ ATSTRT  │ OFFSET  │
   ├─────────┼─────────┼─────────┤
   │ BRK-OR  │ BRK-IN  │  H-BRK  │
   └─────────┴─────────┴─────────┘
```

```
            BRAKE IN
  KEY
              OFF
  RUNTIME
              5S
  FORWARD
              10
```

▶ **KEY**

Set the key to operate start / stop break-in function.

▶ **RUNTIME**

Sets the break-in function operation time.

▶ **FORWARD**

Sets the operation amount of the break-in function.

【Setting Range】
KEY : OFF, ET1 to 5, BT1   (Default: OFF)
RUNTIME : 1 to 240   (Default: 5)
FORWARD : 0 to 50   (Default: 10)

🅟 It is a convenient function for agitating the oil of the gear differential and rings of a ball differential before starting to run. Please adjust the set amount of RUNTIME and FORWARD according to your preference.
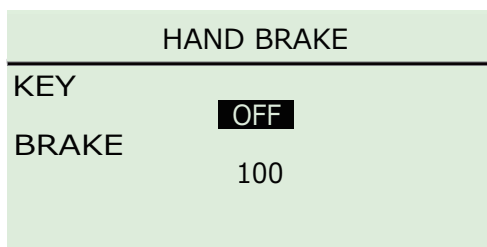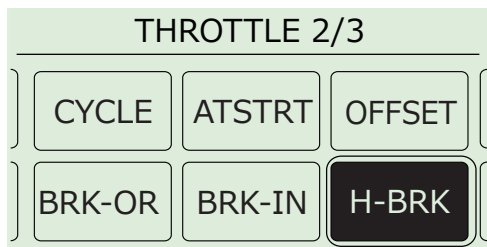
⚠ When the break-in function is activated, the buzzer will continue to ring.

⚠ You can forcibly stop by pressing the KEY set while the break-in function is in operation.

▦ HANDBRAKE

Set the throttle to the brake and apply the brake only while pressing the control button.

```
          THROTTLE 2/3

 ┌      ┐┌      ┐┌      ┐┌
 │CYCLE ││ATSTRT││OFFSET││
 └      ┘└      ┘└      ┘│
 ┌      ┐┌      ┐┌      ┐
 │BRK-OR││BRK-IN││ H-BRK│
 └      ┘└      ┘└      ┘
```

```
         HAND BRAKE

 KEY
             OFF
 BRAKE
              100
```

▶ KEY
Set the key to switch the hand brake function on / off.

▶ BRAKE
Set the hand brake operation amount.

【Setting Range】
KEY : OFF, ET1 to 5, BT1   (Default: OFF)
                    *Excluding ET4
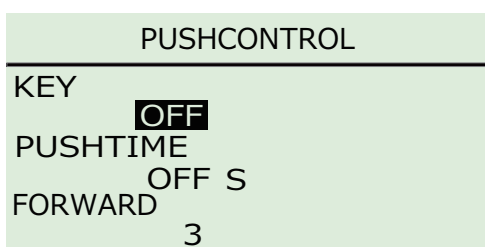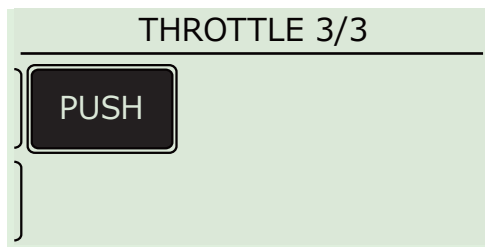BRAKE : 0 to 150   (Default: 100)

Ⓟ The hand brake function performs braking only while pressing the operation key. It is also possible to operate the handbrake while grasping the throttle trigger.

⚠ Creating opportunities for drift cars, spinning tires of rally cars and is also effective for an extremely understeer for grip cars.

⚠ Hand brake operation can not be set to ET 4.

▦ PUSH

As the throttle is returning to neutral, you can set to add a little forward throttle to allow the car to roll forward more.

```
          THROTTLE 3/3

 ┌      ┐
 │ PUSH │
 │      │
 └      ┘
 ┌
 │
 └
```

```
         PUSHCONTROL

 KEY
             OFF
 PUSHTIME
              OFF S
 FORWARD
                3
```

▶ KEY
Key assignment to turn on and off the push control.

▶ PUSHTIME
Once the throttle has returned to neutral, the duration of the forward throttle input is set.

▶ FORWARD
Once the throttle has returned to neutral, the amount of the forward throttle input is set.

【Setting Range】
KEY : OFF, ET1 to 5, BT1   (Default: OFF)
PUSHTIME : OFF, 0.1 to 3.0 S(sec) (Default: OFF)
FORWARD : 1 to 30   (Default: 3)

【Example】
This is useful when a strong magnet motor in an electric car causes the car to slow down. This will help reduce the applied brake feeling.

Ⓟ The amount of forward travel which is set with FORWARD is the same operating quantity as the quantity which you would advance the TH trim. While running, you will find a good setting.

■ Repair Policy

When you need repair service for our products.
First, please contact the shop or distributor which you bought the products from.
If you can not contact these companies, please contact us by email.
Also please write the product name or model number and the situation of the needed repair.

Please visit our web site for further detailed information.

www.kopropo.co.jp

■ FCC statement

This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions: (1)
This device may not cause harmful interference, and (2)
this device must accept any interference received,
including interference that may cause undesired operation.
Modifications not expressly approved by this company could void the user's authority to operate
the equipment.
Interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and the receiver.
• Connect the equipment into an outlet on a circuit different from that to which the
  receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.
- list of external antennas (antenna type, max gain, necessary cable length, connector type, …)
- statement of professional installation
- notification that the amplifier can be used only in a system which it has obtained authorization

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled
environment. The antenna(s) used for this transmitter must not be collocated or operating in
conjunction with any other antenna or transmitter within a host device,
except in accordance with FCC multi-transmitter product procedures.

■ Specifications

EX-NEXT

■ Transmitter : KT-820H
   Control Type : Steering Wheel + Throttle Trigger
   Number of the channnel : 8
   Power souce : R03/AAA/UM4 battery x4
   Current : less 200mA
   Modulation : FHSS-XT
   Frequency : 2.4GHz
   Dimension : 240.5 x 163.0 x 107.2mm (Normal Grip)
          256.0 x 170.0 x 127.5mm (LDT)
      (not include protrusions)
   Weight : 551g (Normal Grip)
             563g (LDT)
      (Not include battery)

■ Receiver : KR– 420XT
   Modulation : FHSS-XT
   Number of the channnel : 8
          (1 to 4 channel : PWM)
          (1 to 8 channel : Serial)
   Frequency : 2.4GHz
   Operation Voltage : 4.8V to 7.4V
   Meutral pulse : 1.5msec(NORMAL/MILD MODE)
                0.375msec(HCS MODE)
    Dimentions : 30.9 x 18.4 x 13.5mm(Not include antenna)
   Weight : 5.8g / 5.4g(Short antenna)

*When use Serial communication or HCS mode,it need using
corresponds equipments. Plesae refer receiver's instrution manual.