

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.



Caution

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 pushrod 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.
- 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-RR) 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.



Caution

Enforcement matters

- 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 40°C) or cold (below 10°C) 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 an automatic cutoff function.
- 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.



Danger

Prohibited matters

- 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.

Explanation of product warranties

KondoKagakuco. Ltd guarantee after-sale service and others about this product. However, please understand that it cannot guarantee about the following points on the character of this product.

- 1) Breakage of the part by assembly.
- 2) Damage judged to be based on the operation after assembling.
- 3) When reconstruction of this product and analysis are conducted.

Explanation of Licensing

The company name or the brand name for each reference in the text is a registered trademark. Downloading the software from the attachment or from our homepage for this product and being used for the sole purpose of this product is accepted. Please do not use this for any other use. This product, software and the intellectual property rights are the legal rights of Kondo Kagaku Co. Ltd. The act of which breaks the law, can result in penal regulations and other applicable laws in the region that the violation takes place.

Contact information for repairing goods

* **KONDO KAGAKU CO., LTD.**
Service department

ADDRESS : 4-17-7 Higashi-Nippori, Arakawa-ku Tokyo
Japan 116-0014 Japan
TEL : **03-3807-7648** (service)
9:00-12:00 & 13:00-17:00 M-F except
national holidays Saturday and Sunday
closed

Latest information can be accessed here.

>> <http://www.kopropro.co.jp>

KO PROPO

www.kopropro.co.jp

EX-RR/EX-2 Series KIY Option Unit

Startup Guide Ver.2.12

KONDO KAGAKU Co., Ltd.

Thank you for purchasing the "EX-RR/EX-2 Optional parts unit". Please read this Startup Guide before using it and read the Instruction manual downloaded from KO PROPO site (refer below URL).

Website:

<https://www.kopropro.co.jp/en/supports/view/242>

This startup guide is applicable to EX-RR/EX-2 with Xpansion Ver.2.12.
(Name of Products in explanation is unified with EX-RR.)

Parts List : No.80557 **Master Unit EX-2**
Master Unit EX-2 _____ x1
Startup Guide (this guide) _____ x1

Parts List : No.10580 **LCD Xpansion Unit EXP-104S**
LCD Xpansion Unit EXP-104S _____ x1
Monitor Bracket/Nut Holder _____ x1
M2.6-8BH Self tapping screws _____ x4
M2-6 Cap screws _____ x1
Startup Guide (this guide) _____ x1

Parts List : No.10564 **Basic Grip Unit with Stand**
Basic Grip Unit _____ x1
Startup Guide (this guide) _____ x1

Items that you should especially should pay attention to.

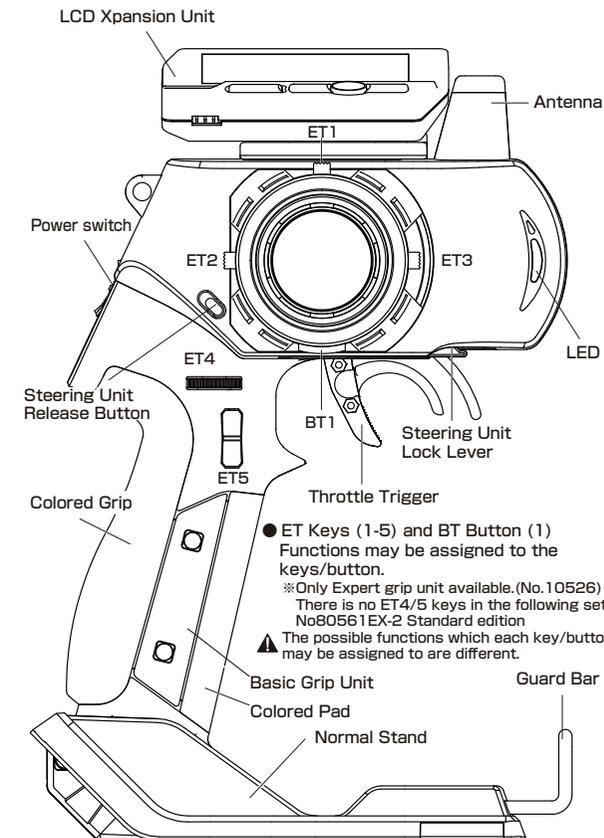
- 1) When the installation of each unit (Sterring unit / Xpansion unit / Grip unit) or disassembling, please make sure that the power is switched off.
- 2) If the Xpansion unit is not assembled or used, do not use a LiFe/LiPo battery.
 - When using Xpansion unit
 - No.10546 Battery Stand Unit can be used along with a LiFe/LiPo battery.

<For overdischarge protection, please be sure to configurate "the battery" >

 - ①Move the cursor to [SYSTEM] > [BATTERY] on the Function Menu screen, then press the ENTER key.
 - ②Use LR key to move cursor over using battery type, then press the ENTER key.

* When setting the battery type by mistake, cancel the warning message by pressing and holding the BACK key. The initial display screen will be shown and please set it to the correct battery type again.
- 3) Operation alarm acts when leaving EX-RR unattended for three minutes when assembling Xpansion unit. When an operation key is pressed the sound will stop.
- 4) When installing the Xpansion Unit and changing the model selection, the modulation mode changes are not linked. Refer to changing the modulation mode.
- 5) EX-RR cannot use analog servos (old product such as PS-401). There is a possibility of the servo breaking.

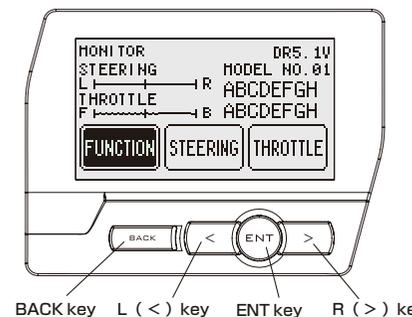
Names of Parts



- ET Keys (1-5) and BT Button (1)
Functions may be assigned to the keys/button.
- ※Only Expert grip unit available. (No.10526)
There is no ET4/5 keys in the following sets.
No80561EX-2 Standard edition
- ▲ The possible functions which each key/button may be assigned to are different.

Basic Operations to Change Settings

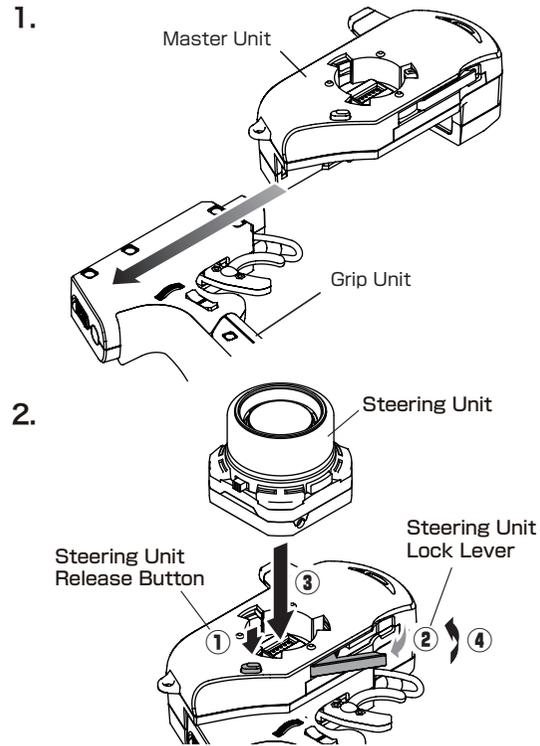
Controlling of the setting adjustments is done via the L(<) key, R(>)key, ENTER(ENT) key, and BACK key.



- ENT Key :
Selecting item to be modified; Confirming a change after a setting change.
- L (<) Key :
Used to move cursor between menu 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 :
Resets the value to default setting.
- ※Please refer to an instruction manual for the detailed function and operation.

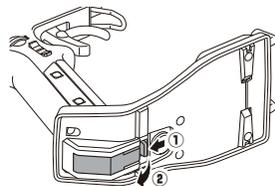
1 Attach the Steering Unit.

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

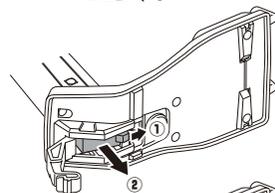


2 Battery Installation

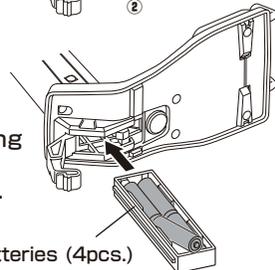
1. Press the tab ① on the bottom of the transmitter to open battery box cover.②



2. Remove the lock ① to pull out battery box②.



3. Install four R03/AAA/UM4 alkaline batteries while noting their polarity, then replace battery box.



Battery Box
R03/AAA/UM4 Batteries (4pcs.)

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

⚠ Do not install Ni-Cd or Ni-MH batteries in the battery box. (These may cause the battery connectors to corrode.)

3 Installation of Xpansion unit

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

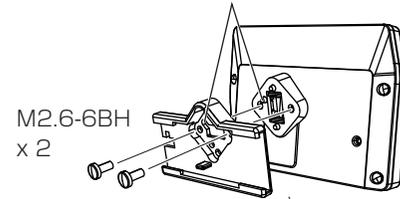
⚠ Be careful to not misuse the M2.6-6BH and TP2.6-8BH screws.

P directions using the monitor base and bracket..

A ▼ : setting to the front

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

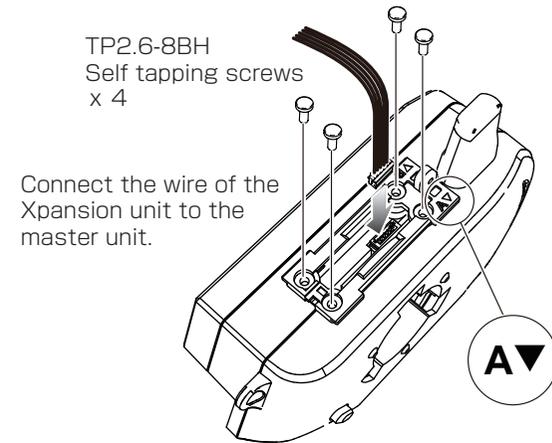
Attention to the marker.



② Attach the monitor bracket to the master unit. ※ [A ▼] mark to the steering side

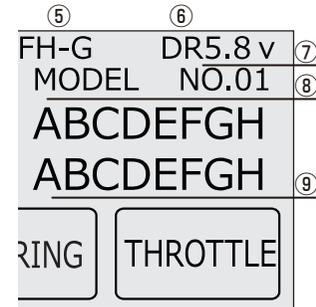
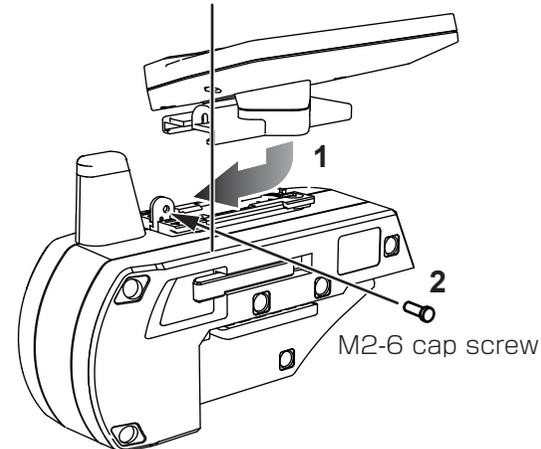
TP2.6-8BH
Self tapping screws
x 4

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



③ Attach expansion unit to a master unit.

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



⑤ Mini-Z MODE : Displays the modulation mode which is selected.

FH-G : FHSS General mode MzMHS G : Mini-Z MHS General mode
FH-F : FHSS France mode MzMHS F : Mini-Z MHS France mode

⑥ Power Source Type : Displays the type of battery being used.

LP : Li-po DR : R03/AAA/UM4 Alkaline Batteries
LF : Li-Fe NI : Ni-MH

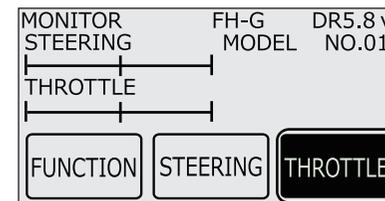
(Notice) If you switch battery types, make sure to also change the [Battery Management] setting.

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.

THROTTLE



Throttle Travel

Modify the maximum throttle movement.
▶Throttle travel

Throttle Trim

Modify the neutral position of the throttle.
▶Throttle trim, Subtrim, Trimrate

Throttle Turn Speed

Modify the speed of the throttle's movement.
▶Throttle speed, Return speed

Throttle Dynamics

Modify the movement speed ratio which corresponds to throttle angle and Modify how much the throttle initially moves from the neutral position.
▶Throttle curve F/B, Throttle punch F/B

Throttle Feel

Modify the feeling of the throttle movement.
▶Steering feel, Throttle feel F/B.

Throttle Push

Set the amount of throttle push acceleration.
▶KEY, Pushtime, Forward

Throttle Cycle

Modify the amount of brake pumping and acceleration.
▶Acceleration, ABS

Throttle Auto-Start

Set the amount of automatic startup for the throttle.
▶On/off, Trigger position, Forward

Throttle Offset

Modify the neutral position of the throttle trigger or neutral braking.
▶Brake on/off, Trigger position, Forward

Brake Override

Modify the maximum amount of braking and steering travel assigned to a switch.
▶Key, brake, Steering travel

Break In

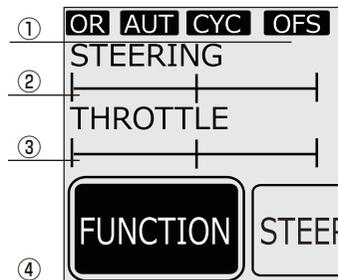
You can set BRH-IN function Setting.
▶Key, Run time, Forward

Hand Brake

You can set H-BRK function Setting.
▶Key, Brake

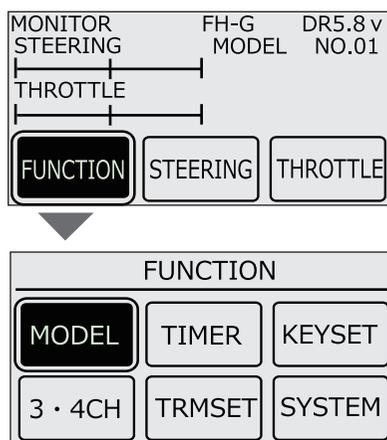
Initial screen

- 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)
 ▲ When the above-mentioned function is null, "MONITOR" it is displayed.
- ② Steering Trim Monitor : Displays the position of the steering trim. :
- 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.

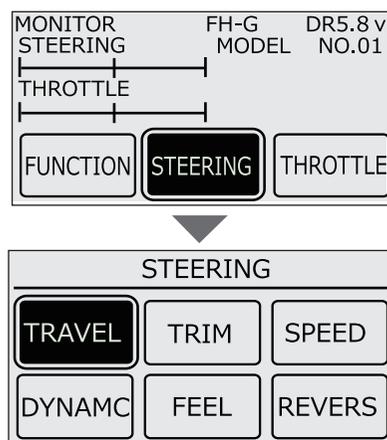


MENU

FUNCTION



STEERING



Model menu (MODEL)

Operations such as selecting or copying a model
 ▶Model select, Model name, Model copy, Model reset

Timer menu (TIMER)

Operating timer-related functions
 ▶Trigger start, Lap history, Alarm

Key set menu (KEY SET)

Modify system-related functions such as key assignment.
 ▶ET1~5, BT1

3CH/4CH menu (3·4CH)

Modify settings related to 3CH and 4CH.
 ▶MODE : OFF, 2WAY, 3WAY, 5WAY, ANALOG
 GYRO, TWIN, 4WS, AMP, T-MIX

Trim set menu (TRIMSET)

Easy adjust function for steering trim and balance.
 ▶Steering auto trim, Steering auto balance

System menu (SYSTEM)

Modify system-related functions such as VR information or calculator.
 ▶Display, Battery, Calculator, VR information, Config

Steering Travel

Modify the overall amount of steering movement.
 ▶Steering travel, Steering balance

Steering Trim

Modify the neutral position of the steering angle.
 ▶Steering trim, Steering subtrim, Steering trimrate

Steering Speed

Modify the speed of the steering's movement.
 ▶Turn speed, Return speed

Steering Dynamics

Modify the movement speed ratio which corresponds to steering angle and Modify how much the steering initially turns from neutral position.
 ▶Steering curve, Steering punch

Steering Feel

Modify the feeling of the steering's movement.
 ▶Steering Feel, Throttle Feel F / B

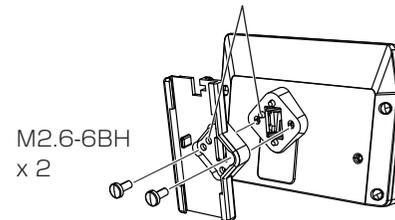
Steering Reverse

Modify the steering direction.
 ▶Steering Reverse

▼ B : when mounting sideways

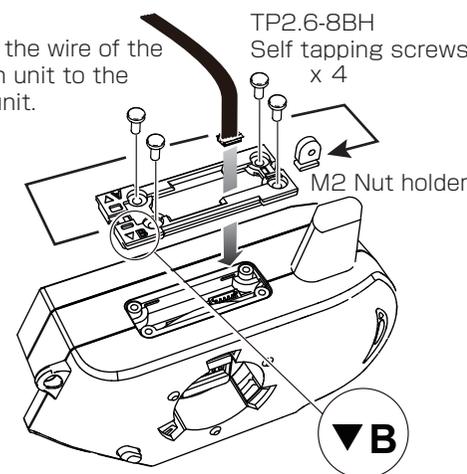
- ① Attach the monitor base at a right angle to Xpansion Unit. ※ Different Factory setting.

Attention to the marker.



- ② Attach the monitor bracket to the master unit. ※ Apply [B ▼] mark to the steering side

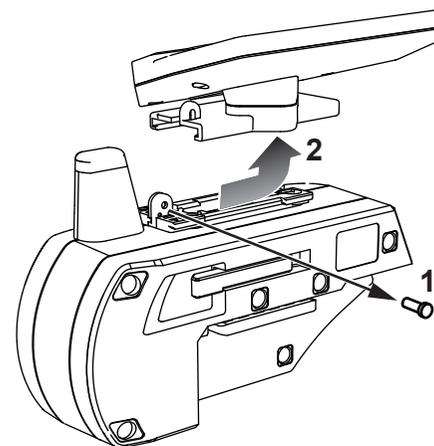
Connect the wire of the Xpansion unit to the master unit.



- ③ Attach the Xpansion unit to the master unit.
 ※ Attach the monitor base and bracket as shown in figure A ③.

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.



▲ When assembling or disassembling the Xpansion unit to EX-2, please switch off the EX-2.

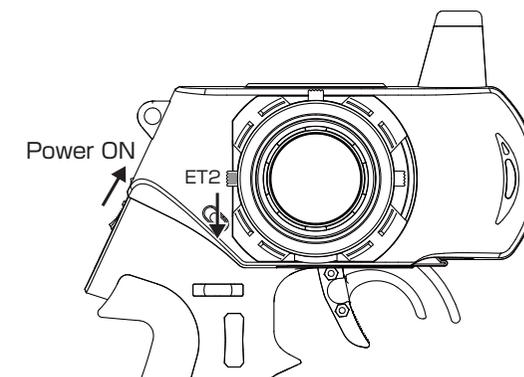
4 Initializing EX-RR

※This is an operation method in the case of not using the Xpansion unit.

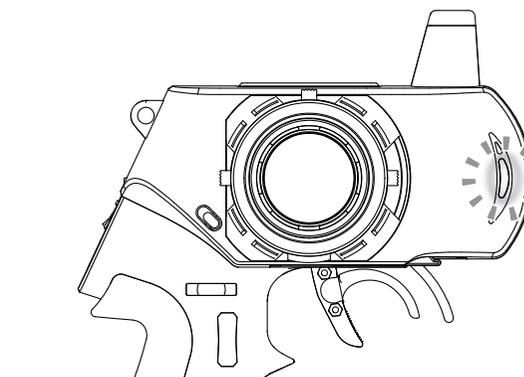
When using the EX-RR for the first time, please carry out the following settings.

※ EX-RR does will not work normally if the initial configuration is not set.

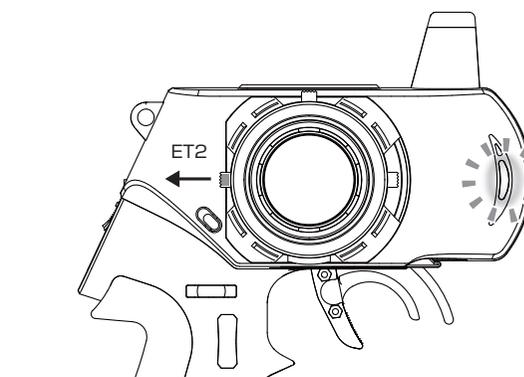
- 1. Power on while operating ET2 lever below.



- 2. Hold the ETRR lever until the LED of EX-RR turns on (approximately two seconds).



- 3. After the LED turns on, release ET2 lever. Buzzer sounds, and reset is completed.



5 VR information setting

※This is an operation method in the case of using the Xpansion unit.

Adjust the steering and throttle resistance information.

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

- When using EX-RR 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.

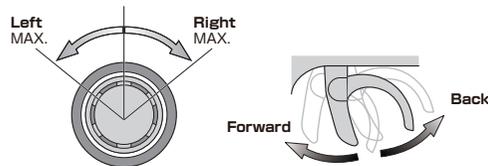
3. Example before setting

VR INFORMATION	
ST- LEFT	2204
NUT	2198
RIGHT	2194
TH- HI	2078
NUT	2075
LOW	2072

OK?
YES

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.

4.5. Move slowly to full stroke, then release.



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

6. Small window [Yes] comes active.

VR INFORMATION	
ST- LEFT	3949
NUT	2198
RIGHT	487
TH- HI	3313
NUT	2075
LOW	1463

OK?
YES

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

6 How to change the Modulation mode

※When attaching the Xpansion unit, this operation is the same.

EX-RR has two Modulation modes.

《Functions》

- General RC models FHSS mode :
LED Solid Operating the general receivers such as KR-415FHD/KR-241FH Only receivers using FHSS will work.

⚠ The receiver of other methods (DSSS/27/40MHz) do not work.

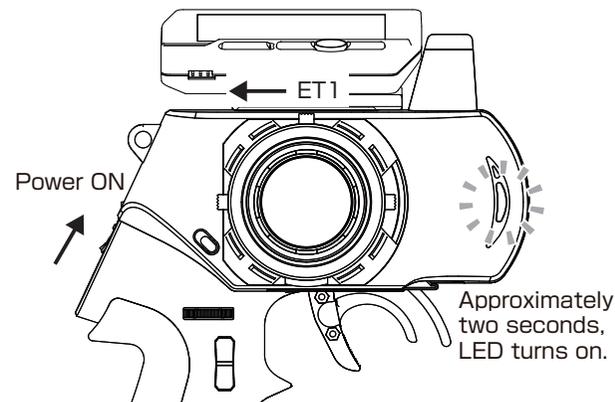
- Mini-Z MHS mode :
LED Flashing slowly Operating Kyosho Mini-Z MHS mode. (MR-03 VE PRO)

*Functions that are in Mini-Z will be lit up at initial screen.

⚠ Only MiniZ using MHS will work. Does not work with ASF, FHS, general RC cars.

《Operation》

- ① Turn off EX-RR switch.
- ② Push the ET1 lever to the left and power on.
- ③ Hold ET1 lever until the buzzer sounds and the LED of EX-RR turns on (approximately two seconds).



⚠ If the pilot LED is blinking fast, this is a warning that the battery voltage is low. Please change to new batteries or for a battery pack which has been charged.

7 Gyro control setting for Mini-Z MHS

Using the signal of 3ch of EX-RR, the Mini-Z MHS (MR-03VE PRO) gyro control function is available.

《Setting》

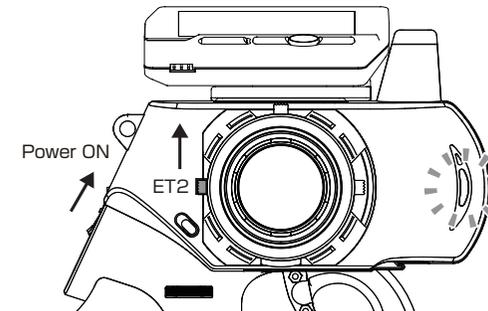
- Case without the Xpansion unit
Using the signal of 3ch of EX-RR, the Mini-Z MHS (MR-03VE PRO) gyro control function is available.
- Case of using the Xpansion unit
 - ①Enter [Function]>[3, 4CH]> [3CH MODE] item then push the ENT key in [SET].
 - ②In [3CH MODE: 5WAY] menu, set the KEY to ET3.
 - ③The effect of the steering gyro becomes strong when operating ET3 lever up.

7 Pairing

※These operations are same when using or not using the Xpansion unit.

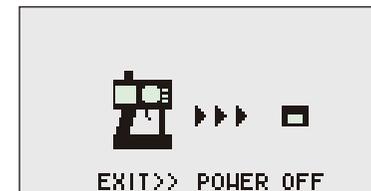
1. Preparing the Transmitter

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



< France mode pairing >
FRANCE mode pairing is possible when the ET2 lever is released after LED turns off. Please use this feature if the situation is needed.

- ②When the ET2 lever is released, the LED turns off.
※Attaching the Xpansion unit : Displays the initial screen, then pairing display is shown.



EX-RR LED lights up again (indicating transmitter is transmitting the pairing signal.)

For general receiver

2. Preparing the Receiver

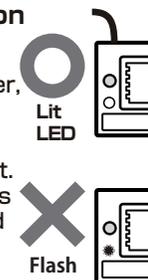
- ① Connect the receiver power source while pressing the setup button.
- ② Check that the receiver's LED has lit up, then release the setup button.
- ③ Check that the receiver's LED lights up again (indicating pairing completion)



※The receiver is switched off once and enters a normal mode when switched on again.

3. Preparations for Operation

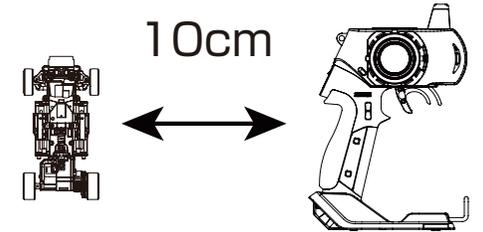
- ① Switch off the receiver.
- ② Switch off the EX-RR main power, then switch on EX-RR again.
- ③ Switch on the receiver and check that the receiver LED is lit. If the LED flashes, the receiver is not getting the EX-RR signal and the pairing procedure should be repeated.



For MiniZ MHS

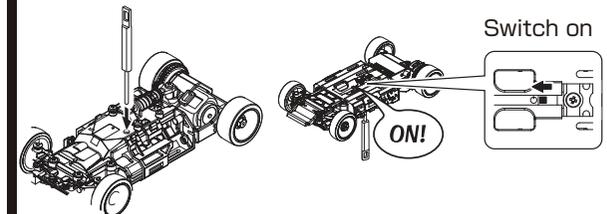
2. Preparing the MiniZ

- ① Bring distance of EX-RR and MiniZ close to about 10cm.

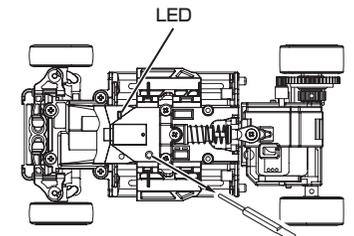


- ② Switch on MiniZ while pushing the setup button of MiniZ.

Pushing setup button



- ③ After the MiniZ's LED has lit up, release the setup button. Then check that the MiniZ's LED lights up again (indicating pairing completion)



3. Preparations for Operation

- ① Switch off MiniZ.
- ② Switch off the EX-RR main power, then switch on EX-RR again.
- ③ Bring distance of EX-RR and MiniZ close to about 30cm. Switch on the MiniZ and check that the receiver LED is lit. If the LED flashes, the MiniZ is not getting the EX-RR signal and the pairing procedure should be repeated.

⚠ During this process, your car may become uncontrollable if the ESC has not been adjusted. As a precaution, set your car so that its wheels do not touch the ground.

⚠ Pairing procedures may not go smoothly if there are wireless LAN, microwave ovens, or other users conducting pairing procedures nearby. In this case, move some distance away or wait a while before attempting the pairing procedure again.

⚠ If the mode is changed (General or France), please conduct pairing procedures with the MiniZ you are using again.