

● Pairing (For MHS Mini-Z)

Case without the Xpansion unit

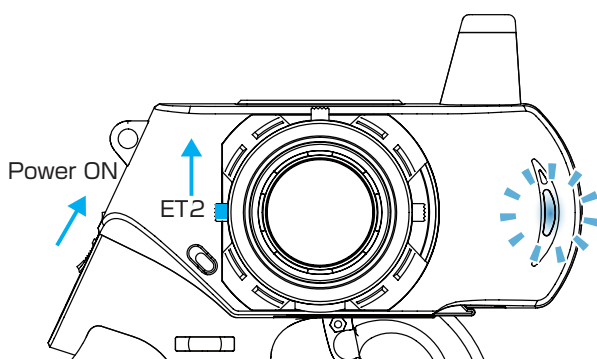
※ Refer to p.26 pairing Operation in the case of using the Xpansion unit.

In order for the Mini-Z to operate, it must store the transmitter's unique ID in its memory in a process called "pairing." Mini-Z must go through the pairing process with the transmitter before being used for the first time.

※ **Please adjust the Modulation mode before pairing.(p.10) A receiver does not work normally in different mode.**

1. Preparing the Transmitter

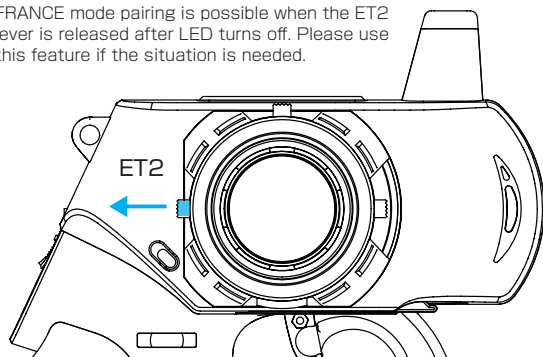
- ① While pushing the ET2 lever up, power on.



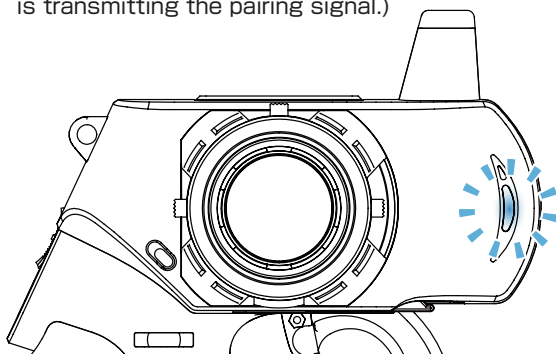
- ② When the ET2 lever is released, the LED turns off

<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.

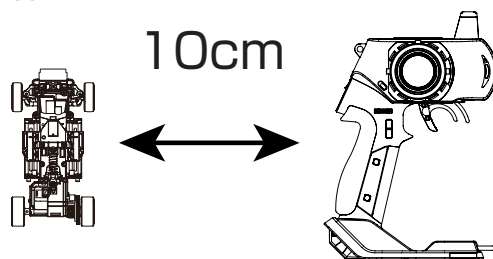


EX-2 LED lights up again (indicating transmitter is transmitting the pairing signal.)



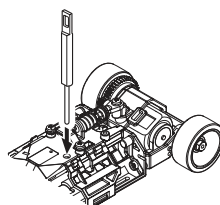
2. Preparing the Mini-Z

- ① Bring distance of EX-2 and MiniZ close to about 10cm.



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

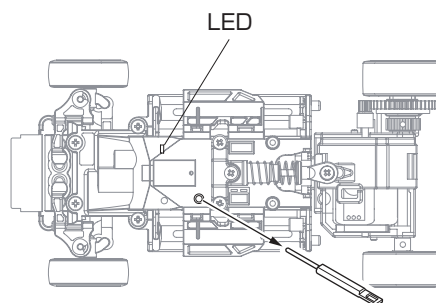
Pushing setup button



Switch on



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



3. Preparations for Operation

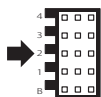
- ① Switch off MiniZ.
② Switch off the EX-2 main power, then switch on EX-2 again.
③ Bring distance of EX-2 and MiniZ close to about 30cm. Switch on the Mini-Z and check that the receiver LED is lit. If the LED flashes, the Mini-Z is not getting the EX-2 signal and the pairing procedure should be repeated.

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

● 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.

1



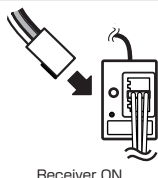
This function works for only 2nd channel.

2



Turn on the transmitter.

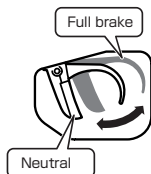
3



Turn on the receiver and verify operation.

4

Recommended positions are the following :



Full Brake

● GP car

● EP car

(forward / Brake)

Neutral

● EP car

(forward / Back)

(forward / Brake / Back)

Hold the throttle to the position On the transmitter, hold the throttle to the position you would like it to be set to.

5



Press for 3 seconds

While holding the position, press the setup button on the receiver for 3 seconds.

6



LED light goes off

Hold the setup button on the receiver until the LED light goes off and release the button. Fail-safe setting is complete.

7



Transmitter OFF

Turn off the transmitter. And the device that connected into 2nd Channel will move to the position that you set up.



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.

■ Procedures Prior to Operation

1. Switching On

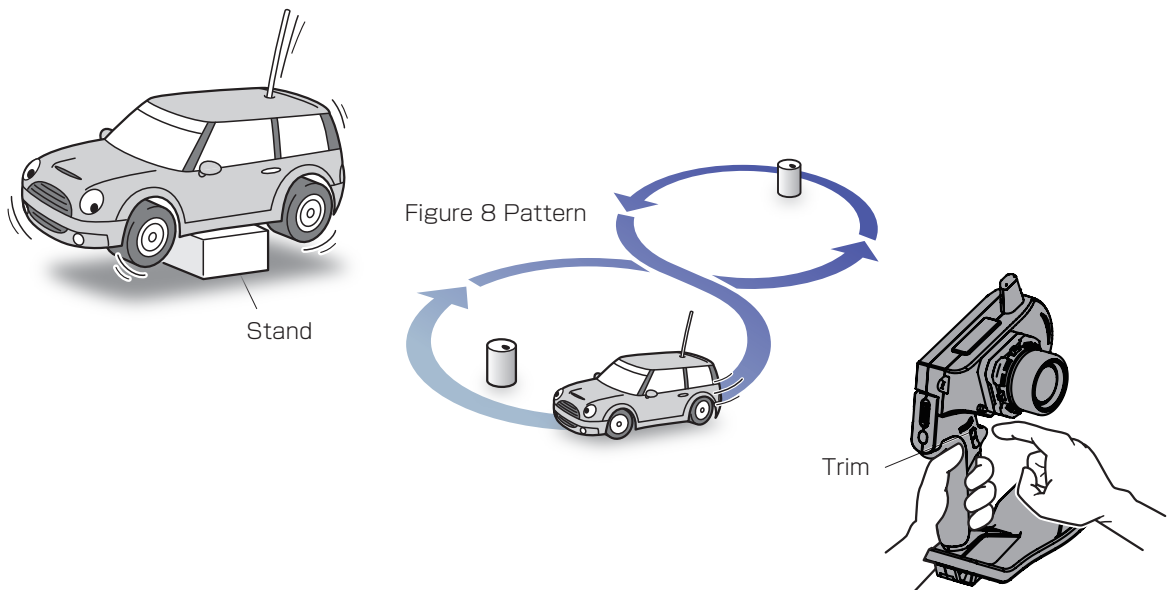
After ensuring that it is safe to do so, switch on the transmitter followed by the receiver or Mini-Z.

2. Model Confirmation

Confirm the model which will be used.

3. Checking Movements

With the model's wheels lifted off the ground, operate transmitter to check for proper movement. While driving, use steering and throttle trims to make fine adjustments. Drive in a figure 8 pattern to check steering balance.



4. Switching Off

After a driving session, switch off the receiver (or Mini-Z), 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.

● Trim and Sub Trim Operation

The sub trim is a convenient feature but it could also complicate the setting process if used incorrectly. Use the sub trim in the correct manner while also referring to the sub trim operation instructions on p.44 and p.49.

《Purpose of the Sub 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 readjusted. 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 designated as "center trims" that only adjust the neutral position, while a new function called sub trim is used in conjunction to enable the most optimal settings.

《Purpose of the 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.

《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.20) so that the left and right wheels have the same turning radius and use steering travel (p.19) 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.

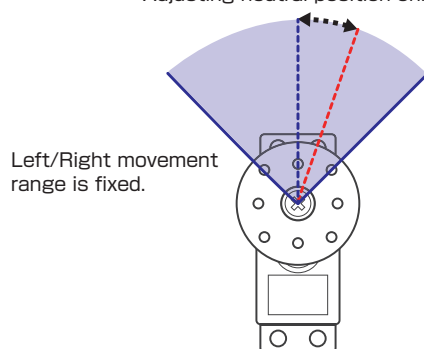
P Use the sub trim to adjust settings prior to driving instead of the center trim.

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.

● Trim (Center Trim)

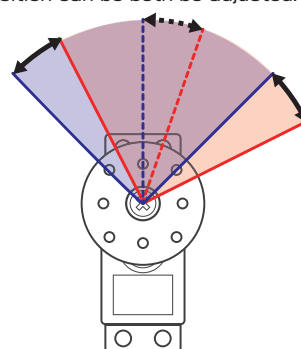
Adjusting neutral position only.



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

● Sub Trim

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



P Only at the time of expansion setting, the sub trim is accessed via the steering menu, but the steering trim can be assigned to one of the ET keys in SETUP.

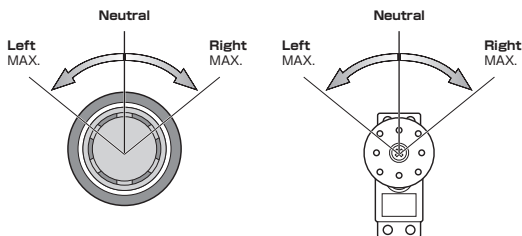
operating procedure

STEERING

※ Other than the operation explanation of the steering wheel, the following function explanation is in the case of not using the Xpansion unit. Refer to p.43 operation in the case of using the Xpansion unit.

Steering wheel

Turn steering in right and left, the servo (steering) connected to 1CH of the receiver works.

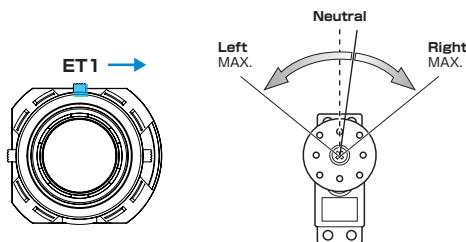


Steering trim

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.

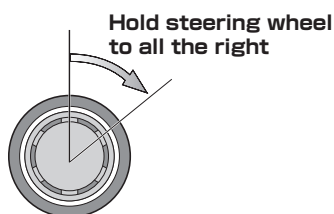
< ex. Right >



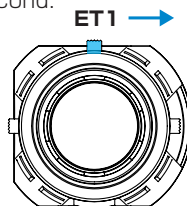
Steering reverse

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.)

- ① Hold the steering wheel all the way to the right.



- ② Press and hold the ET1 lever to right, wait about 1 second.



- ③ A single buzzer sounds and the steering directional movement is reversed.

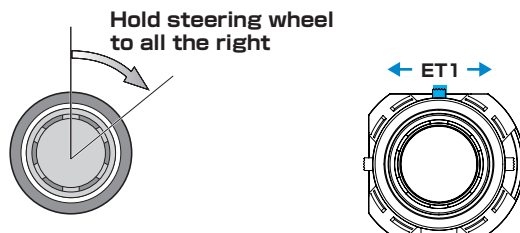
※ Return reverse setting, perform operation to ① ~ ③ again.

Steering travel

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

Travel R

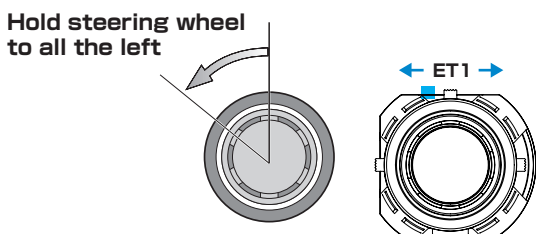
- ① Hold steering wheel to all the right
- ② Push ET1 lever by 1 click, adjust the range of Steering angle.



⚠ Do not hold the ET1 lever, or the steering reverse will be set.

Travel L

- ① Hold steering wheel to all the Left
- ② Push ET1 lever by 1 click, adjust the range of Steering angle.

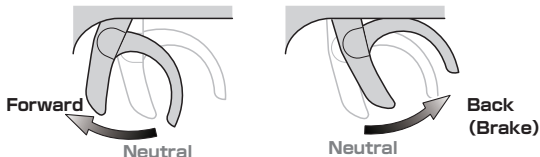


● THROTTLE

※ Other than the operation explanation of the trigger movement, the following function explanation in case of not using the Xpansion unit. Refer to p.48 operation in the case of using the Xpansion unit.

■ Throttle trigger

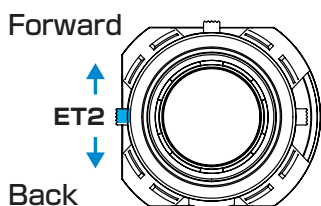
Operating trigger, the servo (ESC) connected to 2CH of the receiver works forward and reverse function.



■ 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.

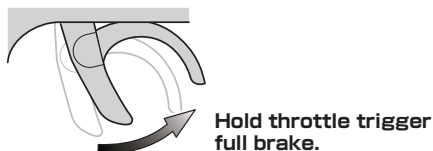
- A buzzer sound with a single beep sound when operated up or down.
- A buzzer sound "Piro" is made when the center trim is adjusted.
- When exceeding the setting range a "Pi-" sound can be heard. Please look over your installation and linkage of the servo horn.



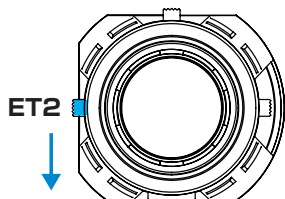
■ Throttle reverse

Changing the output directional movement of the servo when it is moving in the opposite direction. (when the brake is moving the forward throttle.)

- ① Hold throttle trigger full brake.



- ② Press and hold the ET2 lever down, wait about 1 second.



- ③ A single buzzer sounds and the throttle directional movement is reversed.

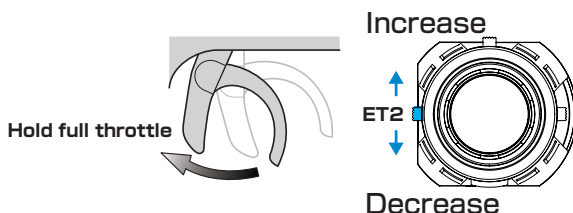
※ Return reverse setting, perform operation to ①~③ again.

■ Throttle travel

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

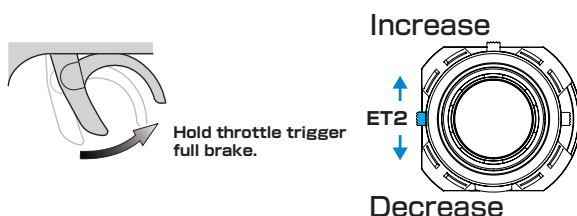
● Travel F(Forward)

- ① Hold throttle trigger full throttle.
- ② Push ET2 lever by 1 click, adjust the range of throttle movement angle. Quantity of the movement increases and decreases when operating the ET2 lever up or down respectively.



● Travel B(Brake)

- ① Hold throttle trigger full brake.
- ② Push ET2 lever by 1 click, adjust the range of throttle movement angle. Quantity of the movement increases and decreases when operating the ET2 lever up or down respectively.

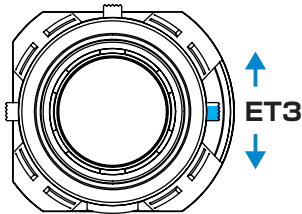


⚠ Do not hold the ET2 lever, or the steering reverse will be set.

● 3CH operation

Operating the ET3 lever, controls the 3ch servo.

※ The funtion explanation is in the case when not using the Xpansion unit. Refer to p.33 operation in the case of assembled Xpansion unit.



Example

- ① using KR-241FH receiver, a servo connected to 3CH can operate 5WAY .
 - ※ Cannot change setting value.
 - ※ The set point fixed -100, -50, 0, 50, 100.
- ② Use it for steering gyro gain (effect) control as MiniZ MR-03VE PRO for MHS.

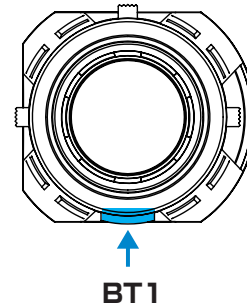


It is possible to do the gyro gain configuration of KR-212FHG, but because entry value is large, normal operation is not possible, you cannot use it.

● 4CH operation

When the button of BT1 is operated, it is possible to operate the signal of 4CH.

※ The funtion explanation is in the case when not using the Xpansion unit. Refer to p.33 operation in the case of assembled Xpansion unit.



Example

- ① using KR-241FH receiver, a servo connected to 4CH can operate 2WAY .
 - ※ Cannot change setting value.
 - ※ The set point fixed 0, 100.
- ② Use it for steering gyro gain (effect) control as MiniZ MR-03VE PRO for MHS.



It is possible to do the gyro gain configuration of KR-212FHG, but because entry value is large, normal operation is not possible, you cannot use it.

Display and Control Method for attaching the Xpansion unit

● Basic Operations to Change Settings

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 menu choices and to change a setting value.

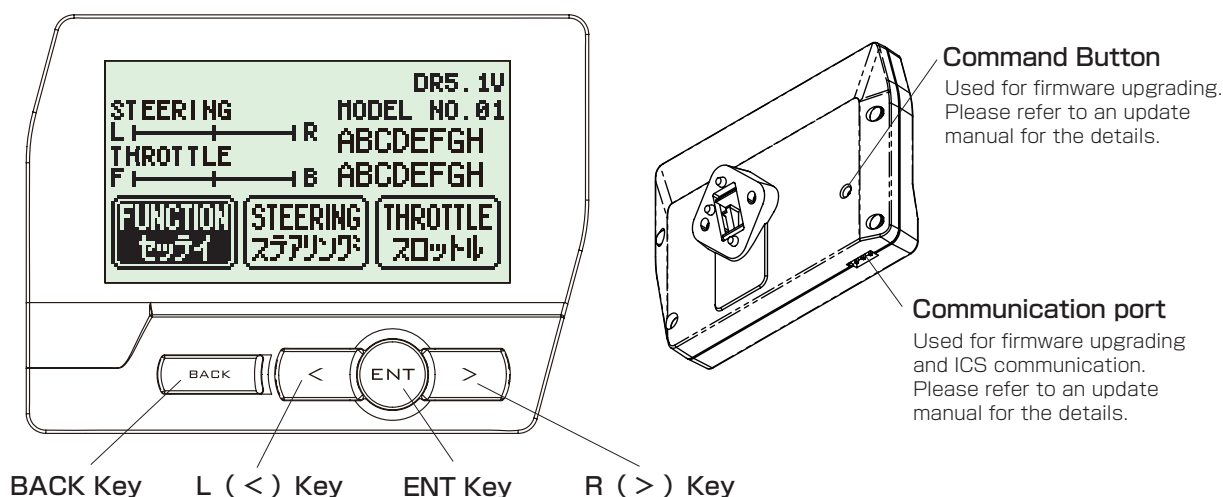
Lowering a value (for L/R cases: raising toward L); Return to a previous menu item.

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

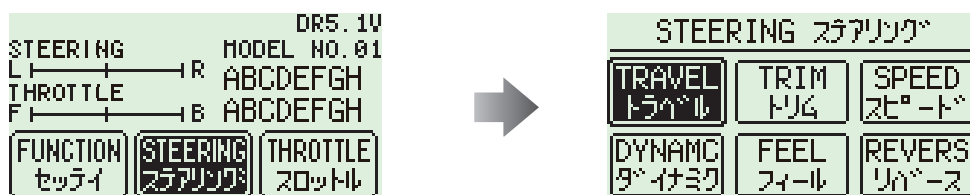
L(<) key + R(>) key Pressing simultaneously: Resets the value to default setting.



【 Basic Operation 1: Selecting from a Menu 】

This explanation uses [Steering] as an example.

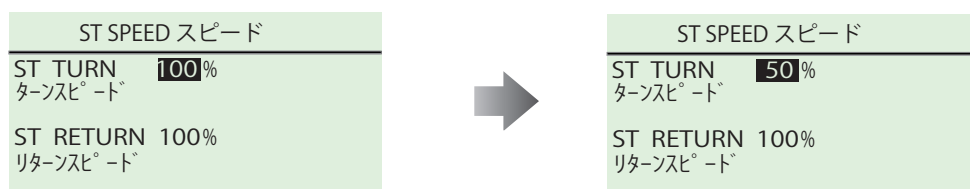
- ① Use the R(>) key to move the cursor over [Steering].
- ② Press the ENTER key to change to the Steering Menu screen.



【 Basic Operation 2: Changing a Setting Value 】

This explanation uses [TURN 1] on the Steering Speed screen as an example.

- ① Use R(>) key to move the cursor over the 100% value next to [ST TURN].
- ② Press ENTER key to select it for modification.
- ③ Once selected, the cursor will blink. Now use the L(<)key+R(>)key to change the value.
- ④ After changing the value, press the ENTER key again to confirm the change.



● Installation of expansion unit

※ Not included with No.10555 EX-2 BASIC set.

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

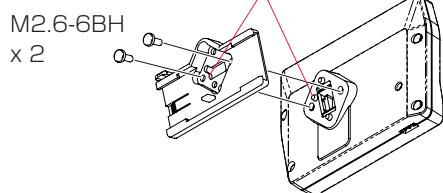
! Be careful to not misuse the M2.6-6BH and TP2.6-8BH screws.

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

A ▼ : setting to the front

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

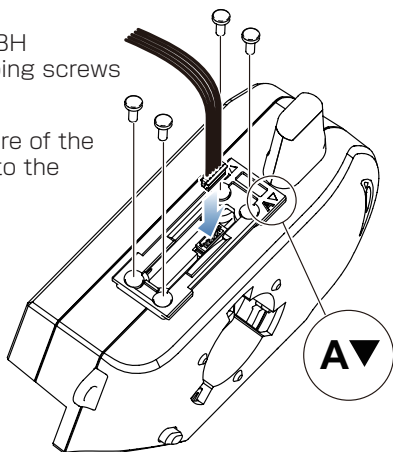
Attention to the marker.



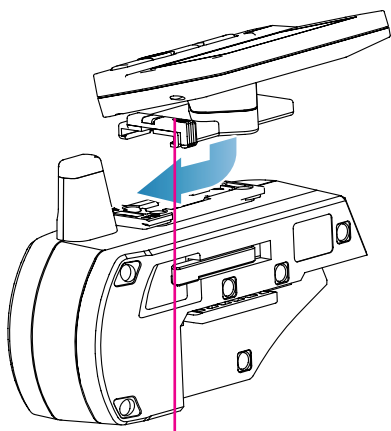
- ② Attach the monitor bracket to the master unit. ※ [A ▼] mark to the steering side

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.



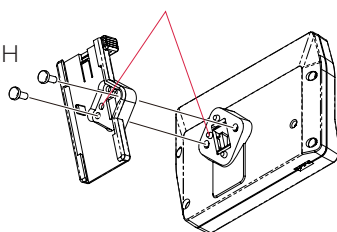
While matching the edge of the base with the dent of the bracket, slide it until the Xpansion unit locks.

▼ B : when mounting sideways

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

Attention to the marker.

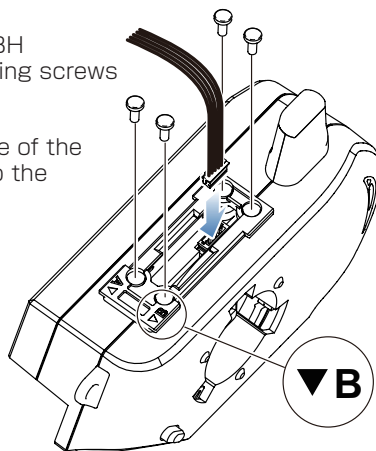
M2.6-6BH
x 2



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

TP2.6-8BH
Self tapping screws
x 4

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

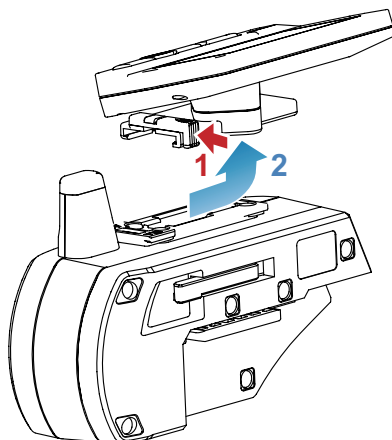


- ③ Attach the Xpansion unit to the master unit.
※ Attach the monitor base and bracket as shown in figure A ③ .

How to disassemble the Xpansion unit.

- 1.While pushing the monitor-based apart.
- 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.

● 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.

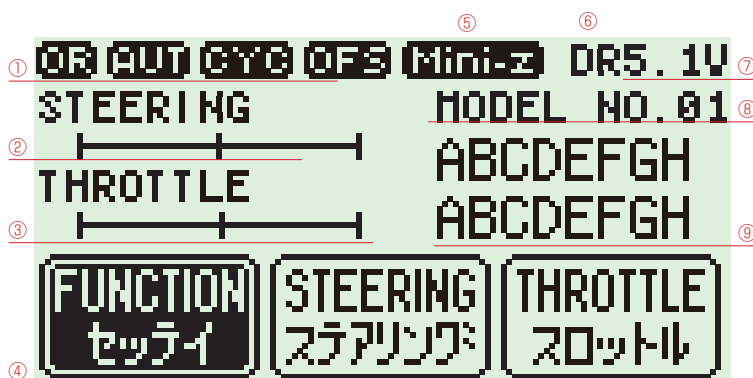
[Startup Screen]



① Version Information :

Displays the version of the program that is installed in the Master 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.
(<http://www.kopropo.co.jp>)

[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)

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.

⑤ Mini-Z MODE : Functions that are in Mini-Z will be lit up.

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

LP : Li-po DR : RO3/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.

● VR information setting

Adjust the steering and throttle resistance information. ※ Please perform the VR information configuration to calibrate your system.

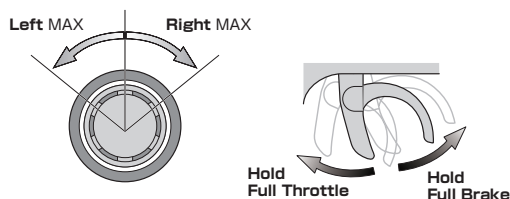
- When using EX-2 for the first time.
- When changing a steering unit for a different product or when putting it back together.
- When changing a grip unit for a different product or when putting it back together.
- When using and confusion has occurred in the positional information.

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 INFORMATION		VRインフォメーション	OK? YES
ST- LEFT	ヒタリ	2204	
NUT	センター	2198	
RIGHT	ミギ	2194	
TH- HI	ゼンシン	2078	
NUT	センター	2075	
LOW	ブレーキ	2072	

4,5, Move slowly to full stroke, then release.



6, Small window [Yes] comes active.

VR INFORMATION		VRインフォメーション	OK? YES
ST- LEFT	ヒタリ	3949	
NUT	センター	2198	
RIGHT	ミギ	487	
TH- HI	ゼンシン	3313	
NUT	センター	2075	
LOW	ブレーキ	1463	

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

● How to change the Modulation mode

EX-2 has two Modulation modes.

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

《Functions》

- General RC models FHSS mode : LED Solid
Operating the general receivers such as KR-211FH/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)

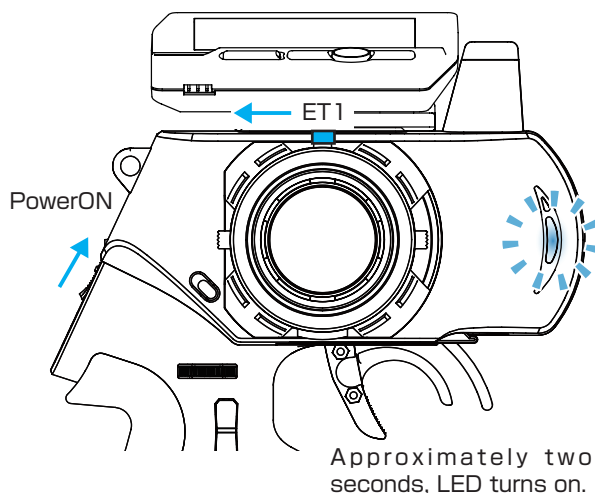
※ Functions that are in Mini-Z will be lit up at initial screen.

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

① Turn off EX-2 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-2 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.

⚠ Model selection changes and modulation mode changes are not linked.

● Pairing (For general receiver)

Case of using the Xpansion unit

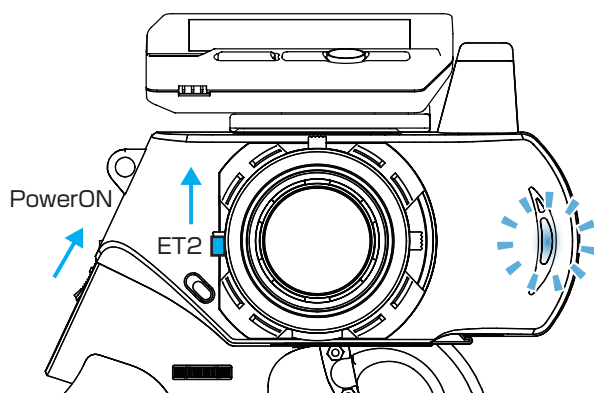
※ Refer to p.13 pairing Operation when not using the Xpansion unit.

In order for the receiver to operate, it must store the transmitter's unique ID in its memory in a process called "pairing." Even if a single transmitter is used to control multiple receivers, each receiver must go through the pairing process with the transmitter before being used for the first time.

※ Please adjust the modulation mode before pairing. (p.24) A receiver does not work normally in a different mode.

1. Preparing the Transmitter

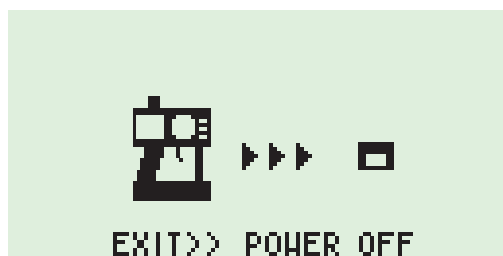
- ① While pushing the ET2 lever up, power on.
The pilot LED lights up, release ET2 lever.



- ② Displays the initial screen, then pairing display is shown. (indicating transmitter is transmitting the pairing signal.)

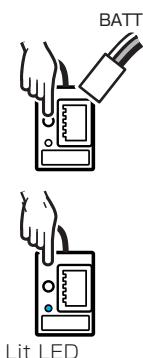
<France mode pairing >

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



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)



3. Preparations for Operation

- ① Switch off the receiver.
- ② Switch off the EX-2 main power, then switch on EX-2 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-2 signal and the pairing procedure should be repeated.



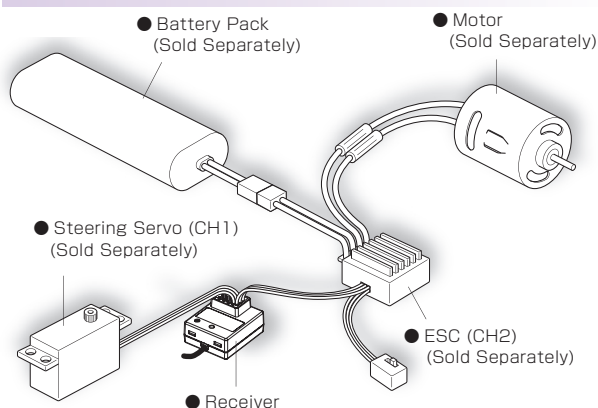
⚠ During this process, your car may become uncontrollable if the ESC has not been adjusted. As a precaution, set your car so that its wheels do not touch the ground.

⚠ 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.

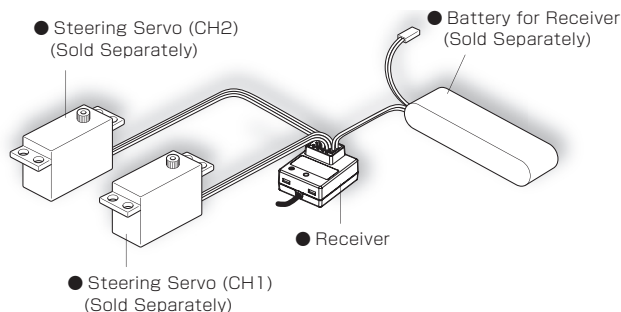
⚠ If the mode is changed (General or France), please conduct pairing procedures with the receiver you are using again.

- ④ Set the Fail-Safe Function (p.15) .

● For an Electric Car



● For a Glow Engine Car



⚠ This transmitter is only compatible with digital servos. Correct operation is not possible when used with analog servos.

⚠ For items which are not included in this product, please refer to the KO Propo website for a list of compatible products. (<http://www.kopropo.co.jp>)

● Pairing (For MiniZ MHS)

Case of using the Xpansion unit

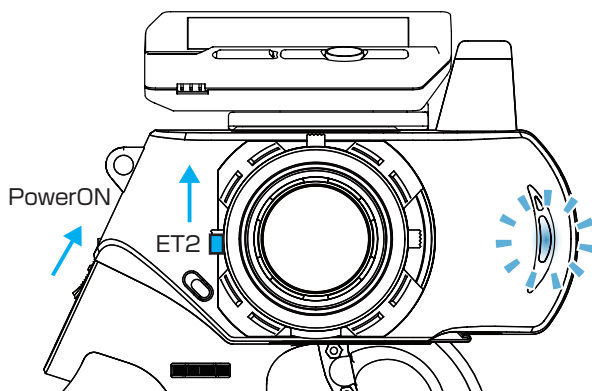
※ Refer to p.13 pairing Operation when not using the Xpansion unit.

In order for the receiver to operate, it must store the transmitter's unique ID in its memory in a process called "pairing." Even if a single transmitter is used to control multiple receivers, each receiver must go through the pairing process with the transmitter before being used for the first time.

※ Please adjust the modulation mode before pairing. (p.24) A receiver does not work normally in a different mode.

1. Preparing the Transmitter

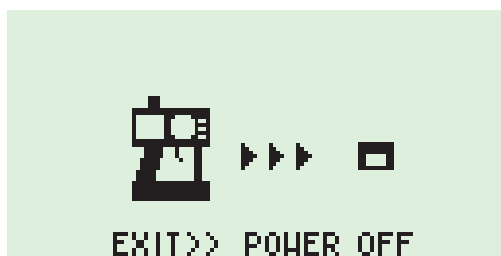
- ① While pushing the ET2 lever up, power on.
The pilot LED lights up, release ET2 lever.



- ② Displays the initial screen, then pairing display is shown. (indicating transmitter is transmitting the pairing signal.)

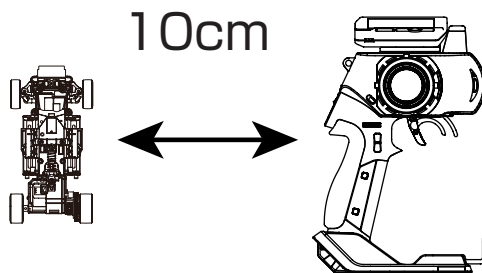
<France mode pairing >

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



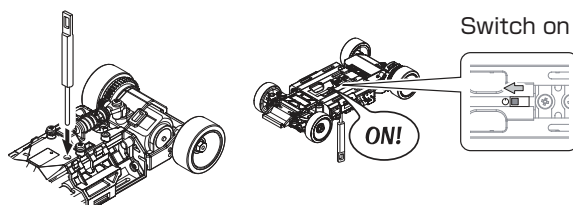
2. Preparing the Mini-Z

- ① Bring distance of EX-2 and MiniZ close to about 10cm.

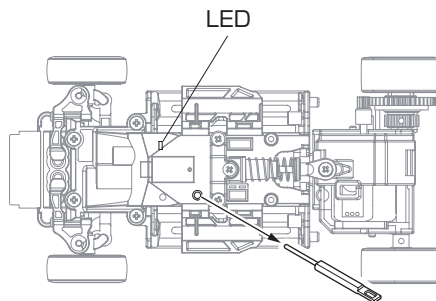


- ② Switch on MiniZ while pushing the setup button of Mini-Z.

Pushing setup button



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



3. Preparations for Operation

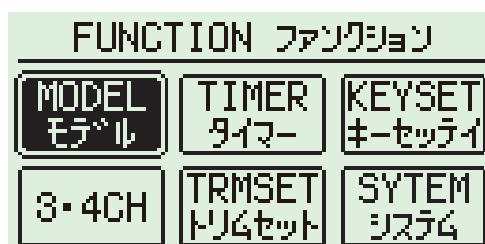
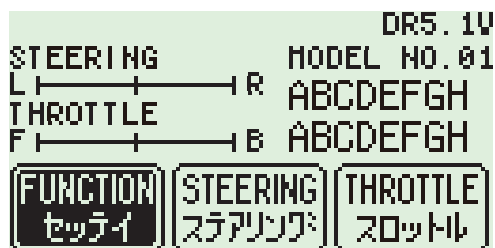
- ① Switch off MiniZ.
- ② Switch off the EX-2 main power, then switch on EX-2 again.
- ④ Bring distance of EX-2 and MiniZ close to about 30cm. Switch on the Mini-Z and check that the receiver LED is lit. If the LED flashes, the Mini-Z is not getting the EX-2 signal and the pairing procedure should be repeated.

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

TOP MENU

FUNCTION

This is an index which displays the 6 different function menus.



Model Menu (MODEL)

Operations such as selecting or copying a model.

Timer Menu (TIMER)

Operating timer-related functions.

Key set Menu (KEY SET)

Modify system-related functions such as key assignment.

3CH/4CH Menu (3/4ch)

Modify settings related to 3CH and 4CH.

Trim set Menu (TRIM SET)

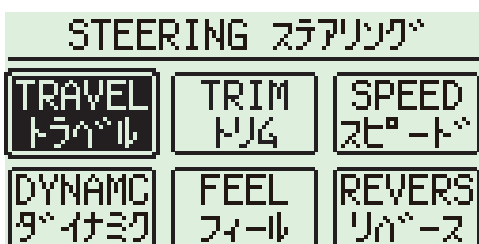
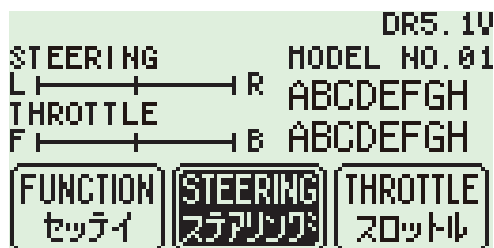
Easy adjust function for steering trim and balance.

System Menu (System)

Modify system-related functions such as VR information or calculator.

STEERING

This is an index which displays the 6 different function menus.



Steering Travel

Modify the overall amount of steering movement.

Steering Trim

Modify the neutral position of the steering angle.

Steering Turn Speed

Modify the speed of the steering's movement.

Steering Dynamics

Modify the movement speed ratio which corresponds to steering angle and Modify how much the steering initially turns from neutral position.

Steering Feel

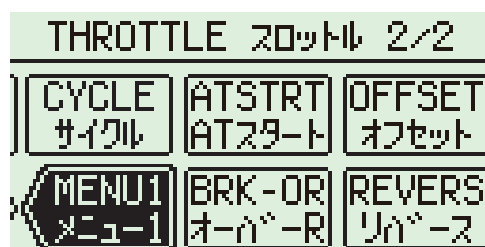
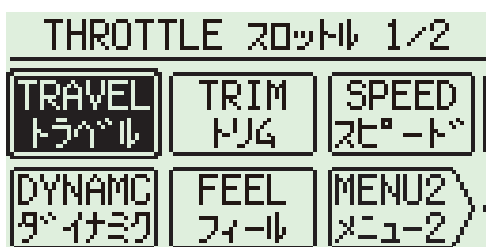
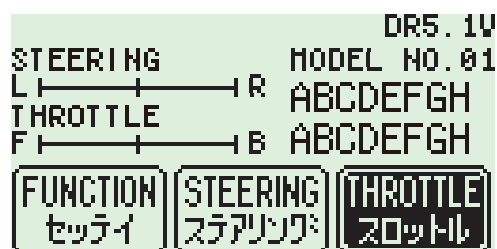
Modify the feeling of the steering's movement.

Steering Reverse

Modify the steering direction.

THROTTLE

This an index which displays the 10 different function menus.(Separeted 2 pages.)



Throttle Travel

Modify the maximum throttle movement.

Throttle Trim

Modify the neutral position of the throttle.

Throttle Turn Speed

Modify the speed of the throttle's movement.

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 Feel

Modify the feeling of the throttle movement.

MENU2

Jump menu to throttle menu2.

MENU1

Jump menu to throttle menu1.

Brake Override

Modify the maximum amount of braking and steering travel assigned to a switch.

Throttle Reverse

Modify the throttle direction.

Throttle Cycle

Modify the amount of brake pumping and acceleration.

Throttle Auto-Start

Set the amount of automatic startup for the throttle.

Idle Up

Modify the neutral position of the throttle trigger or neutral braking.