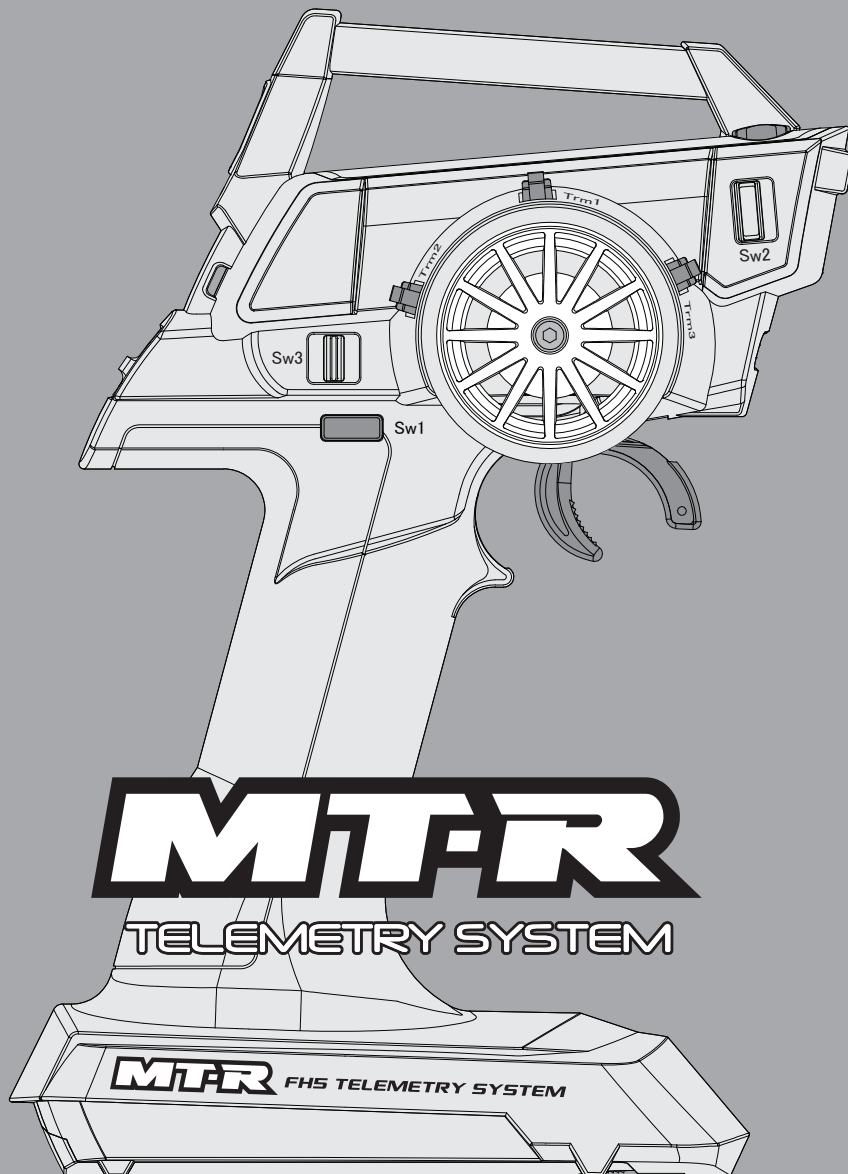


SANWA

USER MANUAL



Safe Handling and Precautions

为了正确和安全地使用您购买的遥控系统，请仔细阅读本说明书并确保遵守预防措施。不正确的使用产品或忽略了忽视安全防范措施，可能会给他人带来麻烦或对用户造成伤害。

■ 为了安全起见，请确保遵循以下每项预防措施。

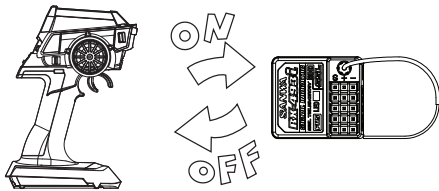


警告

安装和操作的注意事项

- 当打开遥控系统的电源开关时。
请按照1. 发射器→2. 接收器的顺序打开。
而当关闭电源开关时。
请按照1. 接收机→2. 发射机的顺序进行操作。

☆ 如果你颠倒开关的顺序，会导致发动机和电机突然高度旋转这是很危险的。



- 请在你的车身上使用防电噪声的措施。
请在您的车体上使用电噪声对策。

☆ 如果金属相互摩擦，会导致电噪声，可能导致性能不正常。
请确保所有螺丝和螺母没有松动。

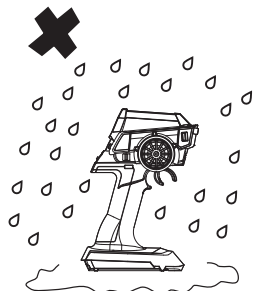
☆ 硝基或气体发动机和电动马达会引起噪音。
请使用噪音对策，如带电阻的插头或噪音消除器。
带电阻的插头或消除噪音的冷凝器。
请务必在使用前进行性能检查

- (遥控系统的性能检查（信号接收测试））。
操作。当它异常移动或不移动时，请不要操作。即使测试结果桌子上的测试结果是正常的，但在第一次操作时，请谨慎对待。特别是第一次操作时，请谨慎，因为无线电波的到达距离会根据因为无线电波的到达距离因接收机的安装方式不同而不同。因为无线电波的到达距离会因接收器的安装方法、天线的设置方式、发射器的方向等因素而有所不同。天线的设置，发射器天线的方向以及地理环境的不同而有所不同。和地理环境而有所不同。

- 切勿在雨天操作。

☆ 发射器的内部是由敏感的电子部件。
如果水在外壳表面流淌并进入内部的表面，并进入内部。
它可能导致性能异常或故障并可能造成危险。

☆ 如果接收器或伺服机沉入水中。
立即将其收集起来并擦干内部。
当内部干燥后。
请将其提交给三和服务进行检查，即使它也能正常运行。



- 接收器是一个精确的仪器。请不要添加强烈的冲击或振动。

☆ 使用厚海绵以防止振动。

尽可能地将接收器安装在离速度控制器、马达和电池较远的地方。尽量远离速度控制器、电机和电池。

- 当把接收器安装在金属底盘或碳纤维底盘上时，请使用三层双胶带以防止接收器接触到底盘。粘胶，以防止接收器接触到底盘。

● 当有无线电干扰时，请改变接收机的安装位置或将接收机的安装位置改为改变接收器的安装位置或从垂直放置改为水平放置，反之亦然。竖直放置改为水平放置，反之亦然。

- 不要把电机线或电池线放在靠近接收器的地方，

因为这可能会导致异常。靠近接收器，因为这可能导致性能异常。

- 尽可能让接收器的天线伸出来。
并保持它的直线和伸展。不要剪掉多余的线的长度或将其弯曲。

☆ 当天线很短时，这是很危险的，因为旅行的范围变得很窄。窄的范围。

☆ 切勿切断天线。



- 不要把天线放在靠近电机线或电池线的地方。蓄电池线。

- 在金属底盘上使用导电的钢琴线或碳纤维底盘上使用导电钢琴线可能会导致电噪声造成的异常性能导致电噪声的异常表现。不要把钢琴线放在靠近靠近底盘。



警告

驾驶时要小心

在操作遥控汽车时，请务必遵循以下注意事项，避免给他人带来麻烦。

- 保持车（船）身处于完美状态 并检查其安全性。
- 不要在人群中或公共道路上操作遥控汽车。
- 请确保断开动力电池的连接器并在操作后从车上取下动力电池。
- 当与其他RC用户同时操作时。确保有一个控制人员并遵循遵循控制人员的指示。
- 尽量不要干扰其他人的操作。
- 一定要申请无线电控制保险。
- 申请办理无线电控制保险，请咨询无线电控制操作员注册机构。
- 一定要安装具有消音效果的“消声器（吸音器）”。
- 发动机的消音效果。
- 不要在清晨启动发动机。
- 在你离开之前，请确保清洁用于操作的位置。
- 在你离开之前，请确保清洁用于操作的地点。



注意

关于使用情况

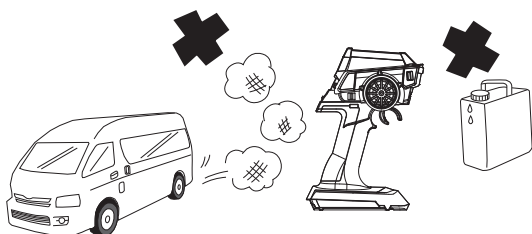
- 请勿将此遥控系统用于模型以外的用途。
- 由于本产品是根据各国的《无线电法》生产的型号，因此不能在您的原购买地以外的国家使用。



注意

日常护理

- 当发动机的废气或燃料沾到时，请用柔软的干布擦拭。当它变得脏时，请用浸过水或中性的干净软布紧紧擦拭。脏时，请用蘸有水或中性洗涤剂的软布紧紧擦拭。洗涤剂。稀释剂、苯、酒精、电机清洗剂、刹车清洗剂等可能会导致稀释剂、苯、酒精、电机清洗剂、刹车清洗剂等可能导致表面稀释剂、酒精、电机清洗剂、刹车清洗剂等，可能会导致表面光洁度下降或变质，所以请不要使用。



注意

处理发射器

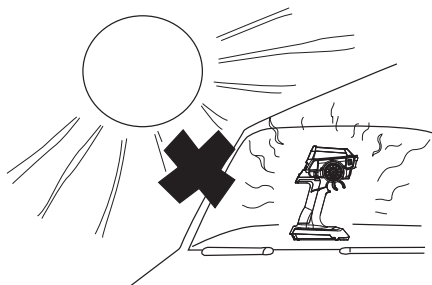
- 请不要撞击、掉落或造成强烈冲击。此外，如果你触摸发射器、接收器、舵机。FET速度控制器等。牵引剂，会导致故障或外壳变形。



注意

关于存储

- 不要存放在以下地方。
 - ☆ 极热的地方或极冷的地方。
 - ☆ 长期暴露在阳光直射下的地方长时间的。特别是如果你把它放在一个阳光直射的地方，如紧闭的车窗内窗口，室内温度会变得80.0℃（176.0°F）或更高，取决于季节。所以请注意，这可能会导致变形或故障。
 - ☆ 湿度大、通风差的地方。
 - ☆ 一个有相当大震动的地方。
 - ☆ 灰尘较多的地方，受到蒸汽或热空气。
 - ☆ 从发动机中获取废气的地方或靠近油箱的地方。



标记的含义



注意

希望你能做的事情是防止事故和伤害。



警告

你应该遵循的事项以防止故障。

Safe Handling and Precautions



Warning Note Precautions for Safe Use

- 2.4 GHz frequency band is not only used for radio control. This frequency band is shared with ISM (Industry, Science and Medical) band. It can be affected by microwave ovens, wireless LAN, digital cordless telephones, audio equipment, Bluetooth of game machines or cell phones and short-range communication such as VICS. Also, be cautious about being affected by amateur radio and premises radio stations for moving body identification since this frequency band is used for them as well. When a harmful radio frequency interference is done to an existing radio station, stop the transmission of the radio frequency immediately and take a measure to avoid the interference.
- For RC circuit, minimize the use of equipment that can affect 2.4 GHz systems and make sure to check the safety beforehand. Also, follow the instruction of the facility manager.
- When operating the models behind a building or a steel tower, blocking the direction of radio wave transmission can cause reduction of operation response or loss of control. Always operate within the range you can visually check.
- Don't grab the transmitter antenna. Doing so can be dangerous since it can weaken the radio signal output and narrow the range of operation.
- Don't attach any metal parts around the antenna of the transmitter.
- If you have the transmitter's antenna extremely close to a servo or speed controller other than the receiver, it can cause malfunction but it is an influence of a strong high frequency output and it is not abnormal.
- The receiver is a precise instrument. Don't subject it to strong impact or vibrations. Use a thick sponge to prevent vibrations.
- Keep the antenna wire of the receiver out as much as possible. And keep it straight and stretched. Don't cut the extra length of the antenna line or bend it.
- Keep the antenna wire of the receiver out as much as possible. And keep it straight and stretched. Don't cut the extra length of the antenna line or bend it.
- Don't place the antenna wire of the receiver close to a electrical noise source like a motor wire or a battery wire.
- When installing the receiver on a metallic chassis or a carbon chassis, use layers of double adhesive tape pieces to keep the receiver from touching the chassis as much as possible.

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Structure and the Standard of the Set

STRUCTURE OF THE SET

	MT-R RX-493i (主要部件)
<A> 发射器	MT-R (TX-4101)
 接收器	RX-493i
<C> 伺服器	—
<D> 配件	刹车触发器+1/+2各1个 接收器防尘罩 x1 绑定插头 x1 天线管 x1 用户手册 x1

●使用前请检查物品

SET SPECIFICATION

<A> 发射器	
产品编号	MT-R (TX-4101)
输出显示	模拟/数字显示 (电源电压显示)
调制	2.4 GHz扩频系统
电源	AA 电池 x4 (对应电压: DC4.8 - 7.4 V)
重量	363 g

 接收器	
产品编号	RX-493i
调制	2.4GHz扩频系统
尺寸	26.0x23.2x14.0mm
电源	DC3.7~7.4V
重量	6.2 g

* 要小心输入电压。
如果输入的电压超过允许的电压，发射器将被损坏。

Before Using

ADJUSTING THE STEERING AND THROTTLE TENSION

MT-R can adjust the tension of the steering/throttle trigger to match operation of the steering/throttle to the user's preference.

Adjusting the Steering Tension

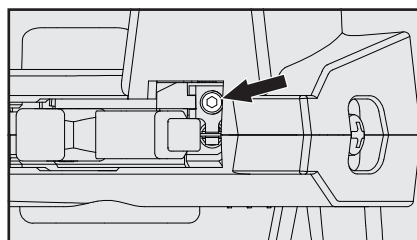
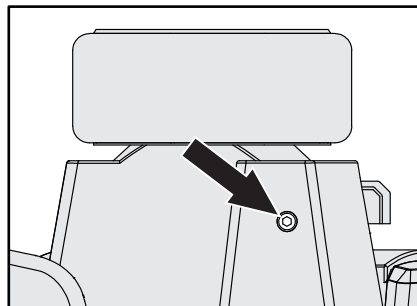
By inserting a hex wrench driver (1.5mm) to the place where the arrow is pointing at in the illustration on the right and turning, you can adjust the tension of the steering spring.

*The spring tension is the softest at the time when the product is shipped out from the factory. As you tighten with a hexagon wrench driver (1.5mm), the spring tension will be hardened.

Adjusting the Throttle Trigger Tension

By inserting a hex wrench driver (1.5mm) to the place where the arrow is pointing at in the illustration on the right and turning, you can adjust the tension of the throttle spring.

*Please do CALIBRATION when changing steering and throttle tension. (p.48)



Before Using

ADJUSTING THE ADJUSTABLE TRIGGER

MT-R can adjust the throttle trigger position fitting to the user's hand size.

Adjusting the trigger position

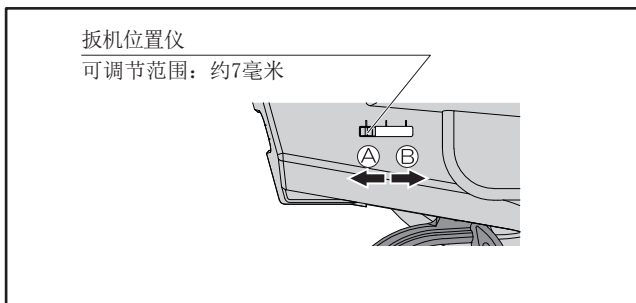
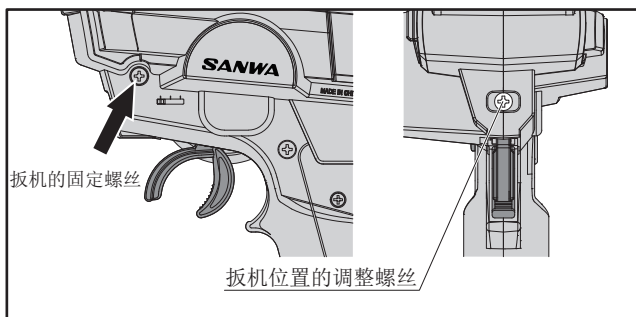
Loosen the fixing screws of the trigger on the back of the transmitter. Then, adjust the adjusting screw of the trigger position on the back of the transmitter to set the trigger at the position of your preference. When you turn the adjusting screw of the trigger position clockwise, the trigger position gauge moves to the direction A. By turning it counter clockwise, the trigger position gauge moves to the direction B.

*The range of the trigger movement is 7mm. If you turn the screw forcefully beyond the range, it can cause malfunction. Once you set the trigger position, tighten the fixing screw and adjusting the trigger is done.

*Be careful with the direction of turning the screw because the trigger position is set at the furthest point of the A side at the factory.

*Setting Advice

Please fit trigger position to your finger naturally. It would be smoother to operate braking.



Before Using

ADJUSTING THE ADJUSTABLE TRIGGER

Adjusting the brake trigger

You can adjust brake trigger position according to your fingers by replacing the included brake trigger.

Standard Size, +1 Size, +2 Size is included.

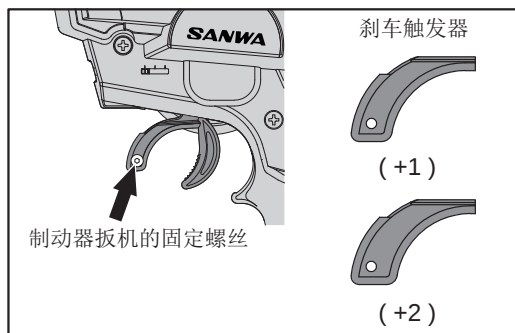
- 1) Remove the brake trigger fixing screw.
- 2) Select Brake Trigger according to your fingers.
- 3) Fix the brake trigger by the screw.

*Setting Advice

If you feel much gaps between a finger with trigger, please change brake trigger to +1 or +2.

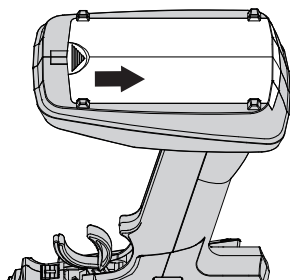
After changing the brake trigger size, please check the differences while driving.

Combination of trigger position and brake trigger adjustment would give optimum operation by fitting to personal hand.

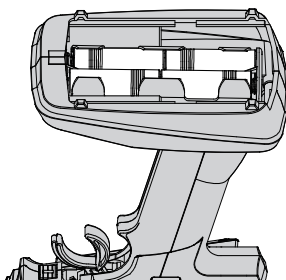


ABOUT THE POWER SOURCE

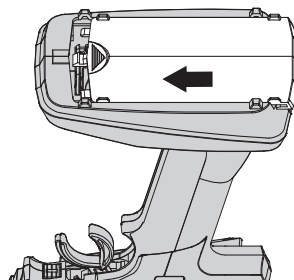
HOW TO PLACE THE TRANSMITTER BATTERIES



<1>Open the battery compartment cover by sliding the cover to the direction of the arrow while pressing it lightly.



<2>Place 4 size AA batteries. Make sure to observe correct polarities.



<3>Align the convex part of the battery compartment cover and the groove of the battery compartment, slide the cover to the direction of the arrow and close tightly.

ABOUT BIND

● About Bind

Each MT-R transmitter has own ID number for transmission. Receiver memorizes the ID number to bind. After binding, the transmitter can work with the receiver. Receiver and the antenna are installed.

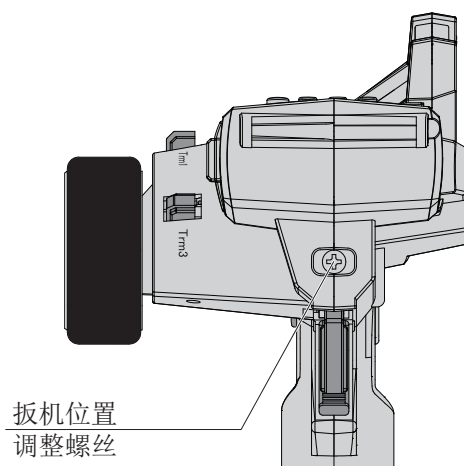
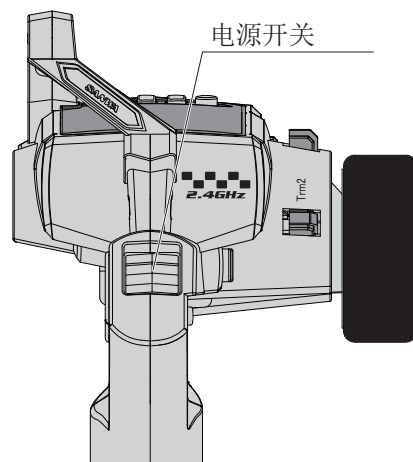
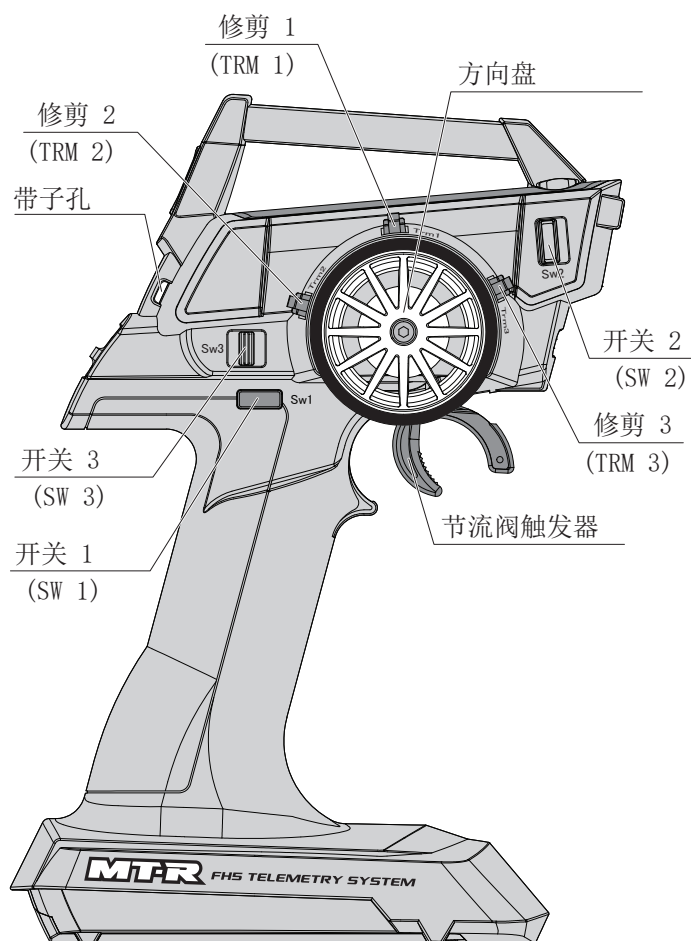
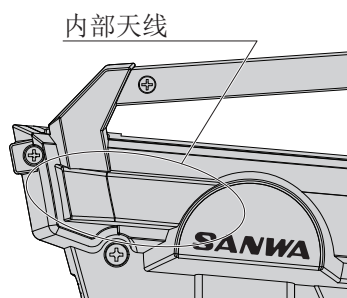
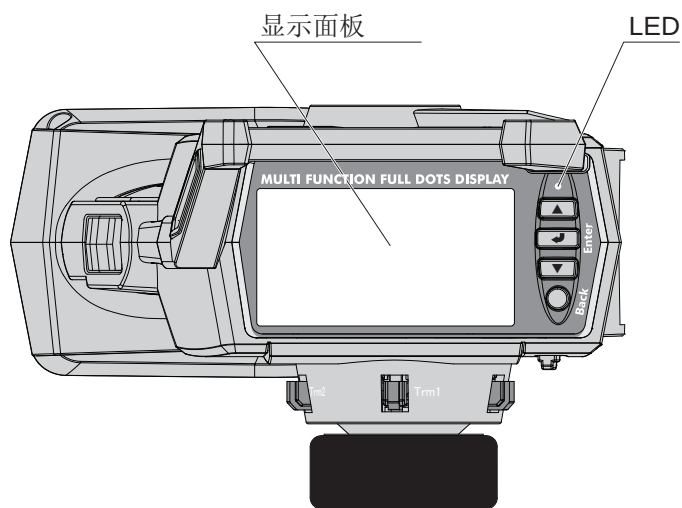
● BINDING is not done at the factory. Please make sure to complete BINDING before use.

● When the receiver is new, make sure to complete BINDING for the transmitter and the new receiver.

● Make sure to use the set of the transmitter and the receiver that completed BINDING.

*About details of bind, please refer p.43-44 in this manual.

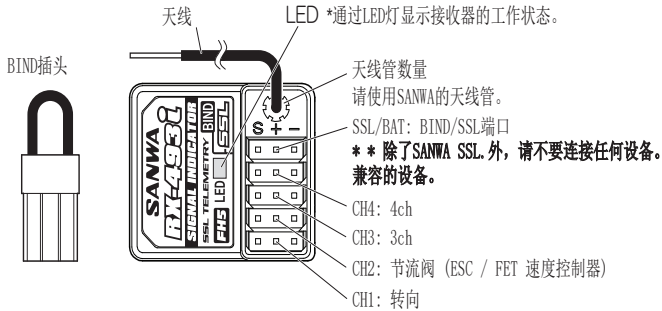
Name of Each Part of Transmitter



Name of Each Part of Transmitter

Connections and Installation of Receiver

ABOUT THE RECEIVER



通过LED灯指示接收器的工作状态

已连接	蓝灯亮起 *当与2个发射器结合时， 蓝灯以2秒的间隔闪烁。
未连接	—
在BIND设置中	蓝光闪烁 蓝光闪烁
电池故障安全工作	蓝色和红色指示灯亮起
接收器未连接 在电池故障安全工作中	红灯亮起

● RX-493i

RX-493i can evaluate received signal strength and packet delivery ratio from transmitter.

*MT-R cannot check received signal strength and packet delivery ratio.

RX-493i can store 2 transmitter ID Number. It is able to combine using individual transmitter which is different setting in endurance race .

If you bind with 2 different transmitter, the receiver store the different transmitter and can operate by transmitters without re-bind.

*CANNOT operate by the 2 different transmitter at the same time. 2 ID store system is only compatible with M17, MT-5, or MT-R.

Throttle neutral position or operation quantities might be different each transmitter. Please adjust each transmitter setting to fit chassis linkage.

When setting SSL compatible devices by MT-R CODE AUX function, please connect SSL compatible device to SSL port.

MUST set fail-safe setting on each transmitter.

Please set same RF mode and response mode as 1st transmitter when you bind 2nd transmitter. If it was different mode, cannot bind with 2 transmitters.

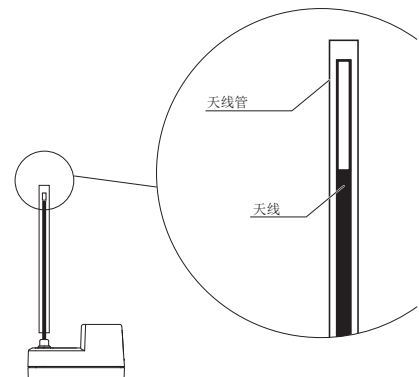
*If 2nd transmitter was different RF node and response mode from 1st transmitter, 1st transmitter ID No. is deleted and only write 2nd transmitter.

*If you bound 3rd transmitter, 1st transmitter ID No. will be deleted.

*When using first time, please bind with receiver. (p.43)

ABOUT HANDLING THE ANTENNA

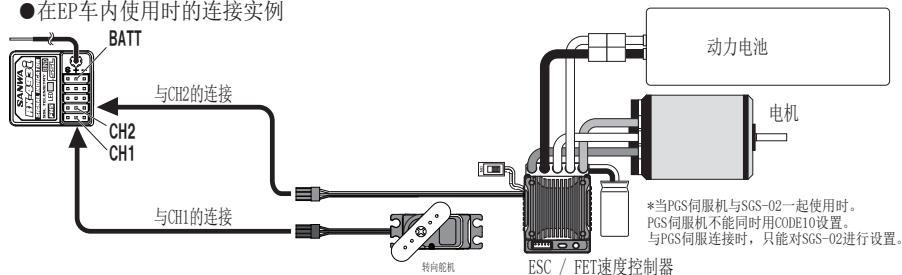
- Reception distance may vary depending on the location where the receiver and the antenna are installed.
- To protect the reception part (3 cm from the top) of the antenna, make sure to place the antenna in the antenna pipe as shown in the right illustration so that the top of the antenna is not exposed outside of the antenna pipe.
- Don't bend the antenna reception part or the antenna coaxial cable because breaking can occur inside.
- Don't pull the coaxial cable forcefully. It may damage the receiver interior.
- Install the antenna on an RC car so that the antenna reception part is in as high place as possible.
- Don't cut or bind the antenna reception part or the antenna coaxial cable since the receiver sensitivity might decrease.
- Keep the receiver antenna away from the motor and the ESC / FET Speed Controller (including cables) and raise it straight.



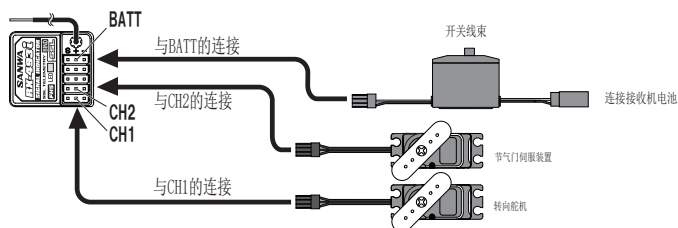
ABOUT CONNECTION SETUP

请参考下图中的接收器和伺服机的连接。

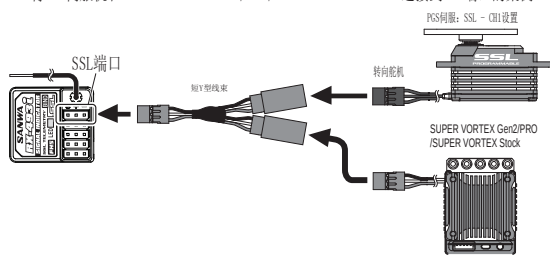
●在EP车内使用时的连接实例



*当PGS伺服机与SGS-02一起使用时。
PGS伺服机不能同时用CODE10设置。
与PGS伺服连接时，只能对SGS-02进行设置。

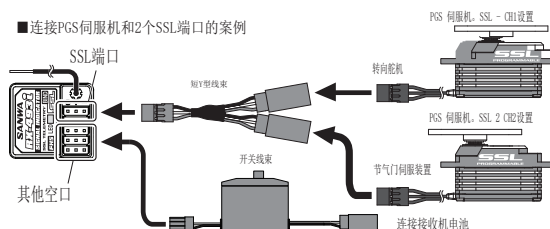


■将PGS伺服机和SUPER VORTEX Gen2/PRO/SUPER VORTEX Stock连接到SSL端口的案例



●将发射器的AUX1、AUX2的AUX类型都设置为CODE10。
AUX1 CODE10：可从发射机设置SUPER VORTEX Gen2/PRO/SUPER VORTEX股票。
AUX2 CODE10：可从发射机设置PGS II伺服的各个参数。
注：在SUPER VORTEX Gen2/PRO中，不要用PROGRAM BOX Gen2的代码对AUX2的CODE10进行功能分配。
注意：在SUPER VORTEX Gen2/PRO中，不要用PROGRAM BOX Gen2的代码为AUX2的CODE10分配功能。
它与PGS伺服机的AUX2代码10相干扰，无法进行适当的设置，不能进行适当的设置。
注：将PGS伺服机的SSL-CH设置为[1]。（PGS伺服机的出厂设置为[1]。）
注：AUX2的代码用于SUPER VORTEX ZERO / SUPER VORTEX TYPE-D / SUPER VORTEX SPORT。
Super Vortex Sport。它与PGS伺服机的AUX2的CODE10相干扰，不能进行适当的设置。
无法进行适当的设置，因此，它不能与PGS伺服机的SSL一起使用。
注：将PGS伺服机与SGS-02连接时，不能同时改变设置。
当使用SGS-02时，增益连接器连接到SSL端口。
*除了SANWA SSL兼容产品外，请不要连接其他设备。
关于设置和连接，请参考SSL兼容产品的手册。

■连接PGS伺服机和2个SSL端口的案例



●将发射器的AUX2的AUX TYPE设置为CODE10。
AUX2 CODE10：PGS伺服的各个参数的设置都可以在发射机上完成。
注：将转向伺服中使用的PGS伺服的SSL-CH设置为[1]。
注：将用于油门伺服的PGS伺服的SSL-CH设置为[2]。
（PGS伺服机的出厂设置为[1]。）
注：如果通过AUX2的CODE10的功能来设置各参数，将PGS伺服的设置改为[1]。
注：在通过AUX2的CODE10功能设置各参数的情况下，通过AUX2的CODE10设置的SSL端口的PGS伺服机可以直接从发射器上改变。
AUX2的CODE10没有指定的PGS伺服机在内部保存的参数上工作。

*请参考我们网站上的任何其他例子。<http://www.sanwa-denshi.co.jp>

! Note

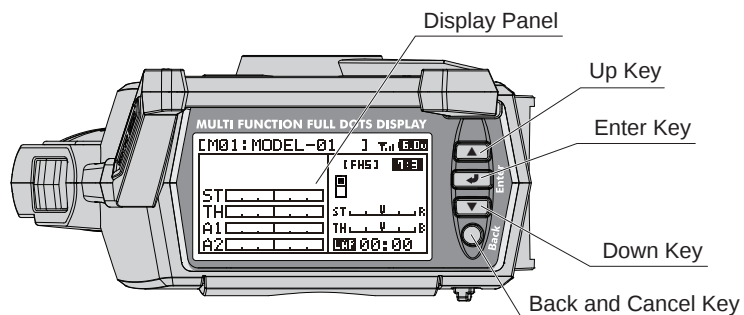
- If the connector is disconnected due to a vibration during operation, it can cause runaway. Connect the connector of the receiver, servos and switches securely.
- Because the receiver is susceptible to vibration, impact and water, make sure to take measures for vibration-proof and waterproof. Negligence of taking these measures can cause runaway.
- When installing the receiver, keep the receiver away from a carbon chassis and metallic chassis.
- If metal parts installed on an RC car touch each other, it can cause noise that affects reception performance and it can cause runaway.
- Make sure to install a noise killer condenser on the brush motor for electric RC cars. Without a noise killer condenser, it can cause noise and runaway.
- For R/C System parts such as the transmitter, receiver, servos, ESC (FET Speed Controller) and transmitter battery, use genuine SANWA products.

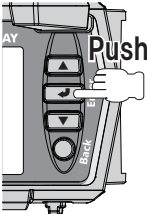
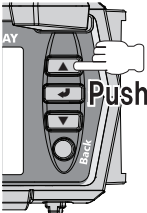
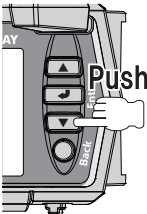
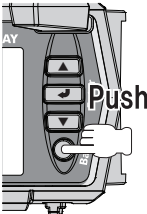
*When combining products other than genuine SANWA products, modifying, adjusting or exchanging parts is done at a place other than SANWA, we do not take any responsibility.

How to Use Each Feature

ABOUT KEY OPERATION

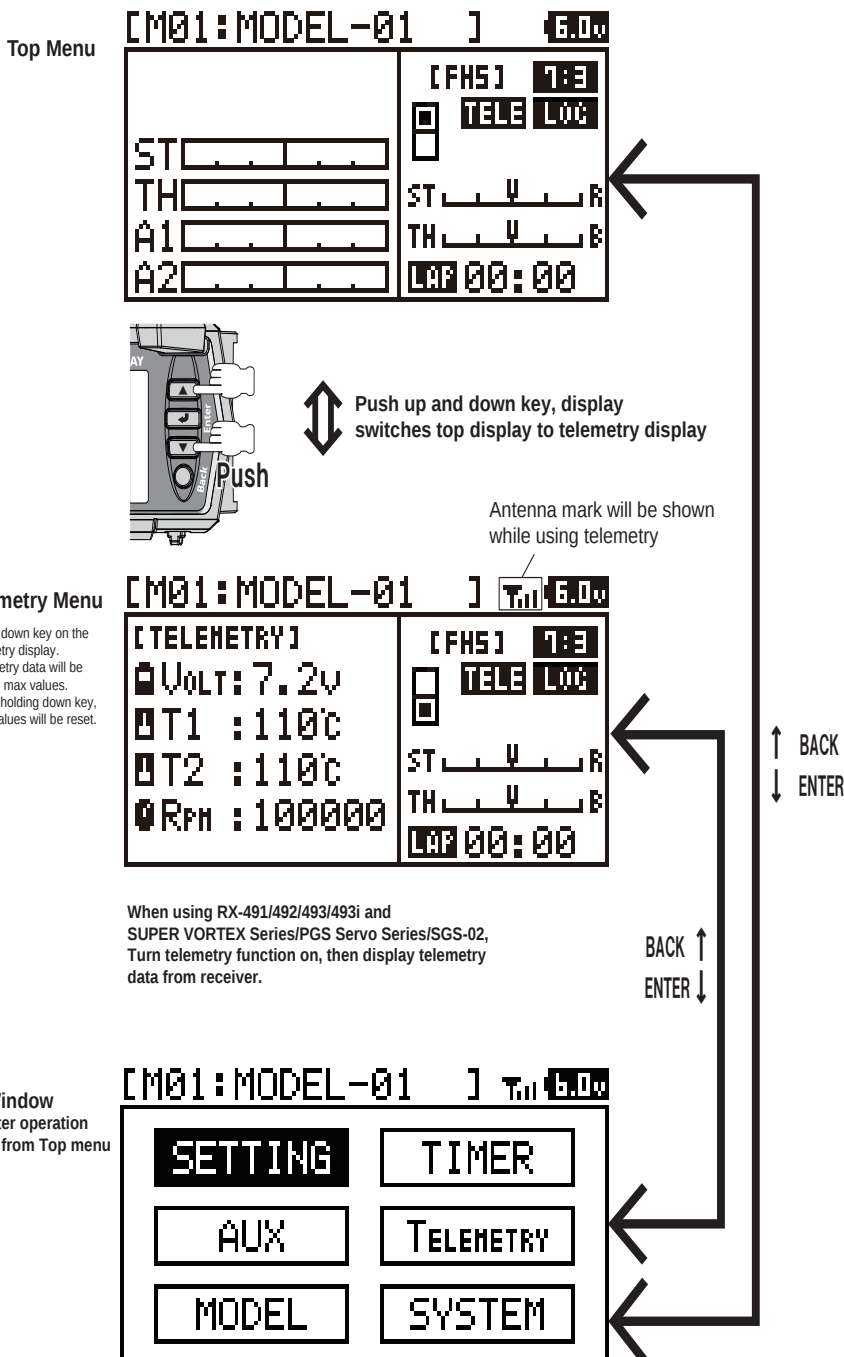
- The user can set up and make a calling easily with each key.



Key Operation	Names	Performance
	Enter	● Moves to the setup screen from the top screen. ● Selects a feature and item to set. *By long pressing the Enter, the setting goes back to default.
	Up	● The cursor moves upward. ● The set value increases.
	Down	● Moves the cursor downward. ● The set value decreases.
	Back / Cancel	● Goes back to one step before. ● Cancels the setting.

ABOUT DISPLAY PANEL

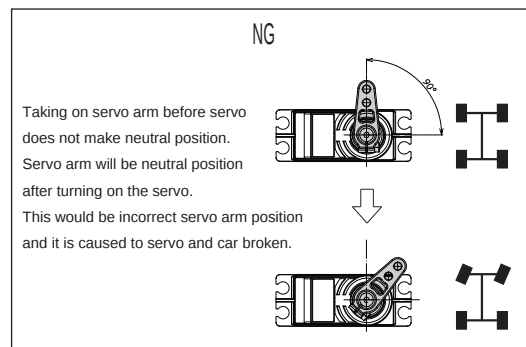
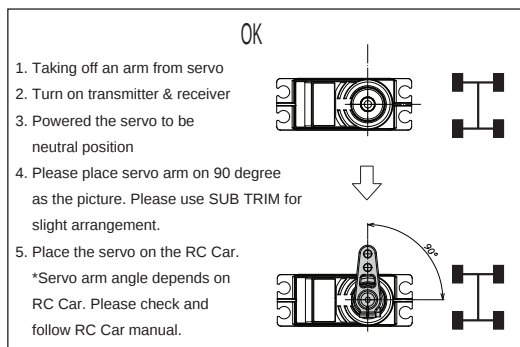
- Each feature of MT-R can be selected directly by each key.
- You can set up each channel feature separately.
- As you turn the power switch on, the top screen launches after the boost screen is displayed(when the boot setting is on). When changing each setting, select the menu by enter operation.



Before Driving A Car

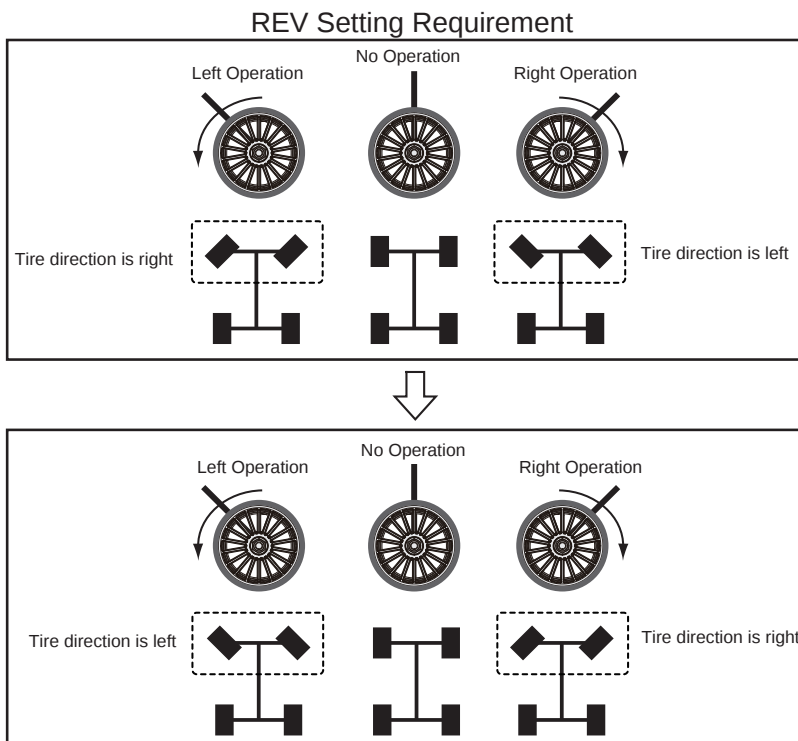
HOW TO PLACE SERVO ARM

- Turn on binded receiver and transmitter before taking on servo arm.
- Power the servo will be returned neutral position.
- Be sure about transmitter Trim and Sub Trim are no setting (value is 0).
In case Trim and Sub Trim did not set 0, please set 0 for these setting.
- Please place servo arm on center position such as the below picture.
*Servo horn angle may not be 90 degree depend on RC car type.
Please place servo arm to follow instruction manual of RC car.



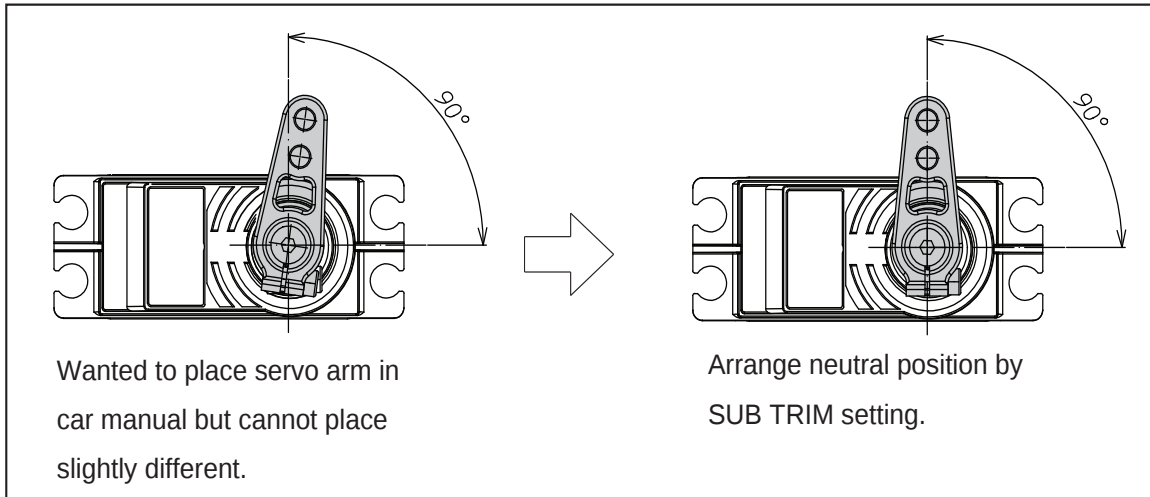
HOW TO SET REVERSE [REV]

- Please check steering operation and tire direction are same after taking on servo arm.
- Please set REVERSE in case steering operation and tire direction are different. About REVERSE setting please refer p.22 in this manual.



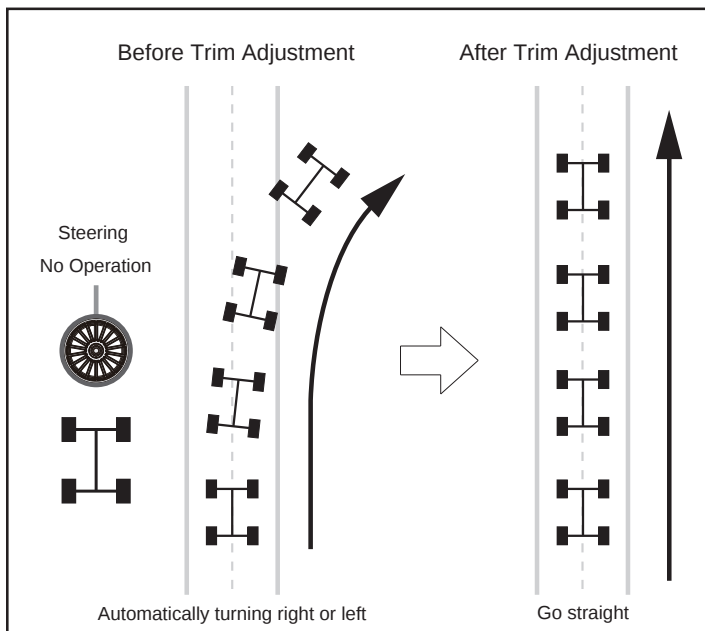
HOW TO SET SUB TRIM [SUB-T]

- In case servo cannot place correctly as 90 degree or RC Car manual instruction, please arrange neutral position by SUB TRIM setting. About SUB TRIM setting, please refer p.22 on this manual.



SUB TRIM AND TRIM DIFFERENCES

- SUB TRIM is for neutral position and mainly used on the pit as taking on servo arm.
TRIM is for driving arrangement and mainly used while driving such as below picture. Please refer p.22 in this manual.



*RC car did not go straight as accident.
TRIM is used for direction alignment.

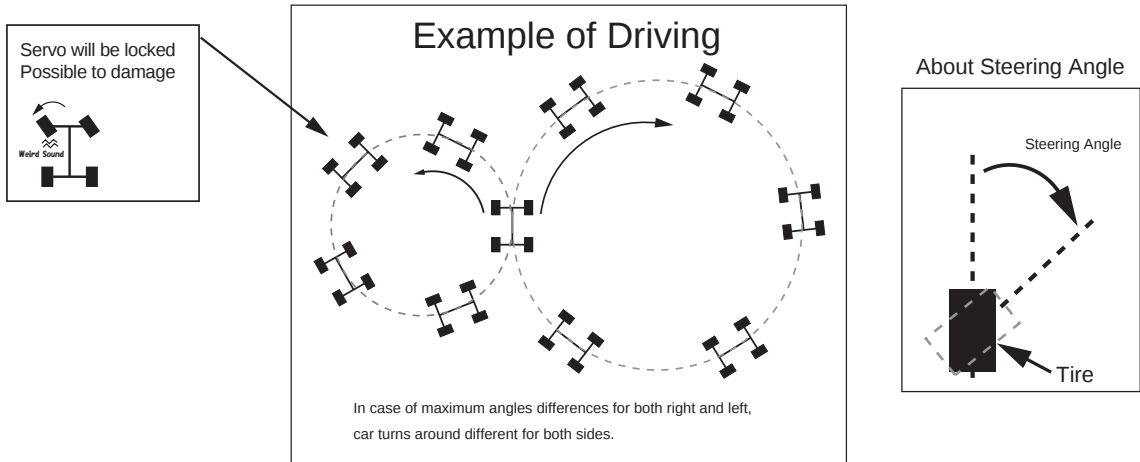
Before Driving A Car

HOW TO SET END POINT ADJUSTMENT [EPA]

● Adjust right and left maximum steering angle are same after setting SUB TRIM.

*In case of not setting EPA, right and left cornering are different as the below picture.

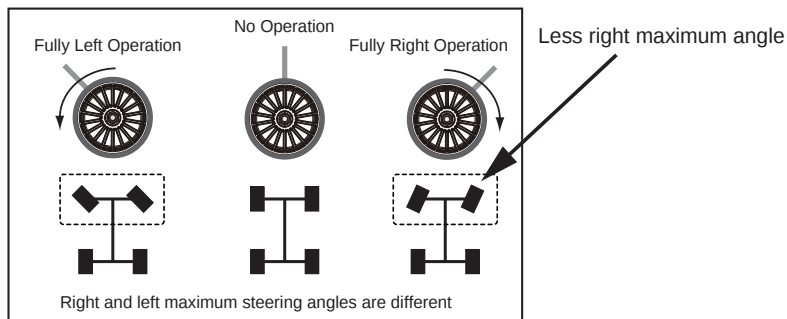
This may be caused to servo broken. Please refer p.23 in this manual.



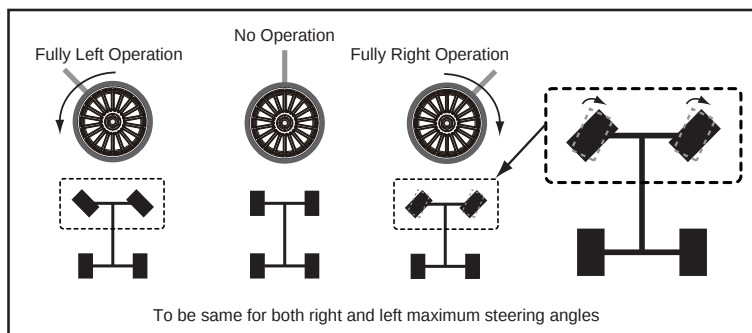
*Please arrange EPA setting as the below picture and make sure same maximum steering angles for both right and left.

Example

Before EPA
Adjustment



After EPA
Adjustment



HOW TO SET DUAL RATE [D/R]

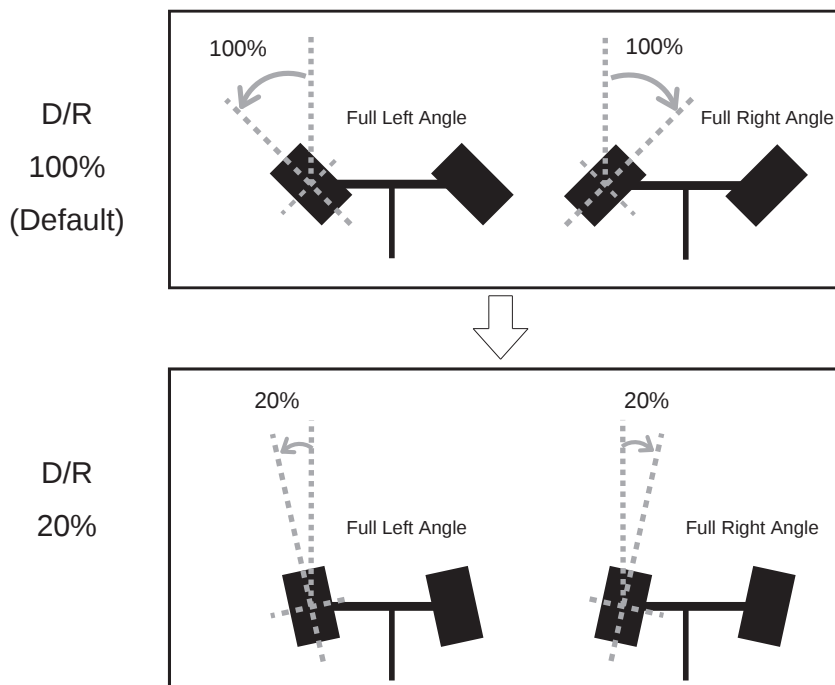
● About Steering Operation

In case RC car is over steering and difficult to drive, DUAL RATE(D/R) adjust maximum steering angle.

EPA adjust each left and right maximum steering angle.

D/R adjust both left and right maximum steering angle at the same time in same ratio.

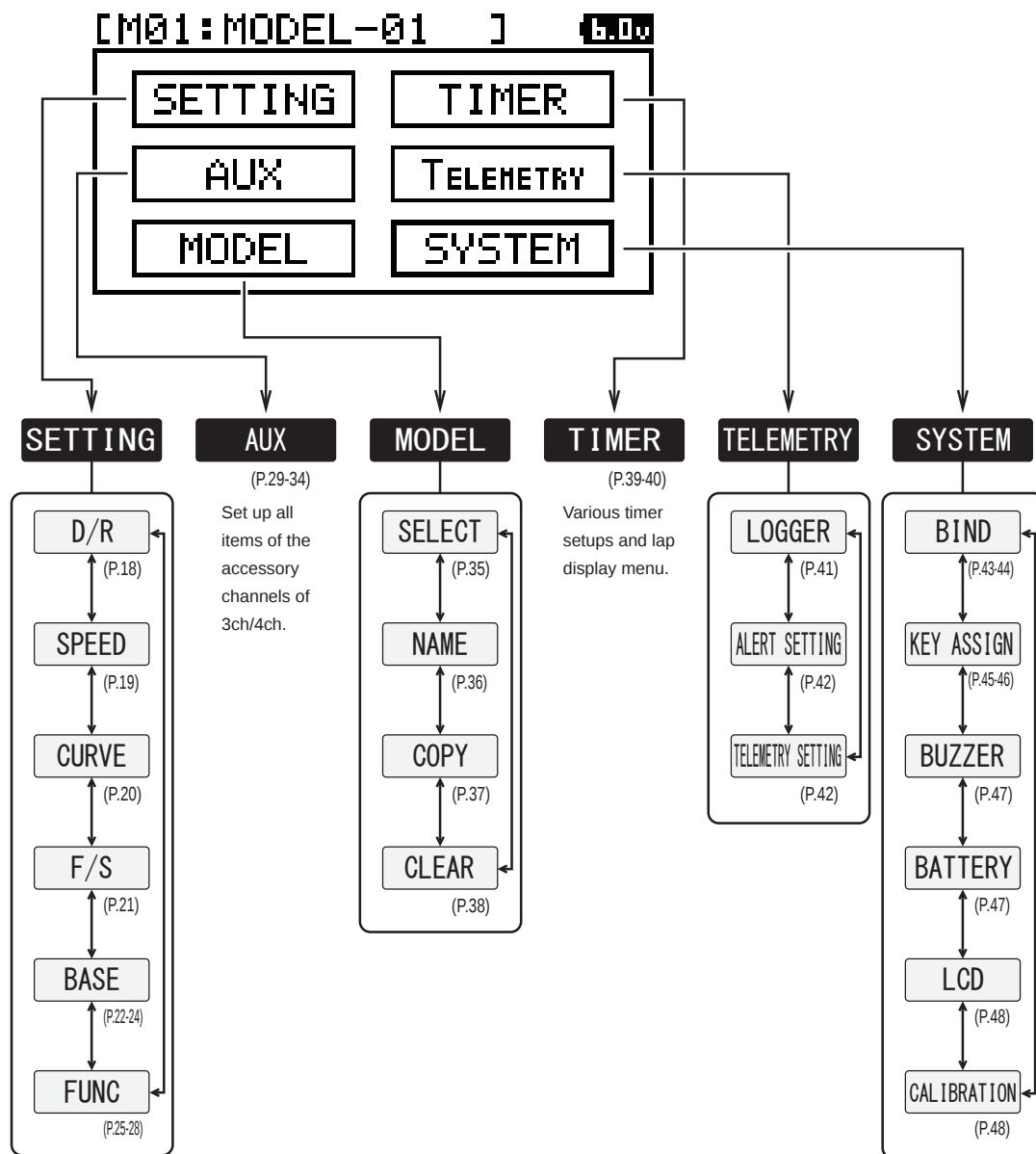
Please refer p.18 in this manual.



How to Use Each Feature

ABOUT THE MENU STRUCTURE

- The user can set up features and do model memory call easily by using each key.
- The Menu consists of Setting, AUX, Model, Timer, Telemetry and System Menu, and related features are included in each menu.



DUAL RATE [D/R]

SETTING

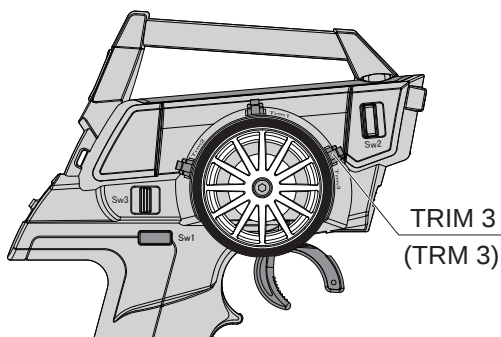
- You can adjust steering angle when operating the steering wheel and throttle trigger to their peak. Please adjust the steering angle to fit RC car and surface condition when driving.
*You can adjust steering for both right and left at the same time and throttle separately for high and brake sides. You can also adjust the brake side more precisely than adjusting with EPA.
- Don't increase the setting rate of dual rates (D/R) from the condition in which the linkage locks by operating the steering wheel and throttle trigger.
- You can also adjust more precisely by adjusting dual rates of the throttle side.
*A1 and A2 cannot be set even moving to D/R on A1 and A2 page.

- 1) Select features [ST/TH/BR] to adjust with the up and down key.
- 2) Determine the feature to adjust with the Enter key. Adjust the value of DUAL RATE by up and down key.
- 3) During operation, the steering dual rates can be adjusted with Trim 3. It's possible to assign other features to Trim 3 with the key assign trim feature (P. 46).

*When cancelling a selected feature, operate the Back key.

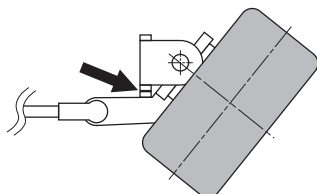
*Depending on car types, dual rate is not assigned to TRIM3.

- Setting Range:
ST/TH: 0%~100%
BR: 0%~120%
- Default:
ST/TH/BR: 100%

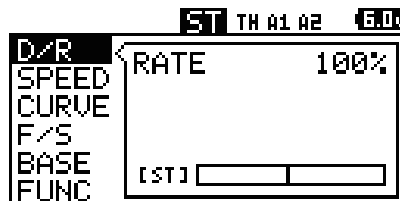


*Make sure that the servos do not lock to make clicking sound!

Note) The same for throttle.

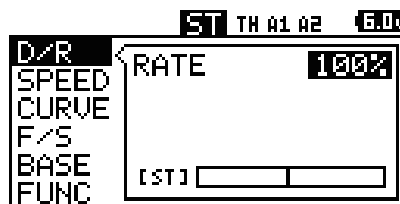


Steering Dual Rate Display



↓ ENTER

Steering Dual Rate Display



Note

- If the linkage is locked for a long period, it can cause the servo motor breakage.

SUPPLEMENT

- Adjust the end point of the steering/throttle linkage before adjusting dual rates (P. 23, 24).

How to Use Each Feature

SPEED

SETTING

- Features to control the speed of the servos used for steering and throttle. By setting, the RC car is not affected even when doing a sudden operation. On the steering side, smooth corner work becomes possible and on the throttle side, stable rising from a corner by throttle work with saved power.

*When setting AUX TYPE to [CODE], adjusting the speed feature of the AUX channel does not affect the performance.

*When setting the speed of the AUX channel, do so using steering/throttle as a reference.

[ST] STEERING SPEED

- A feature to delay the speed of the steering servos against the steering operation. You can set speed for steering forward and returning individually. For steering operation slower than setting, the speed feature does not work.

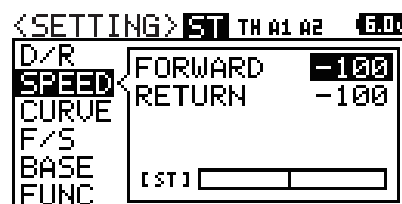
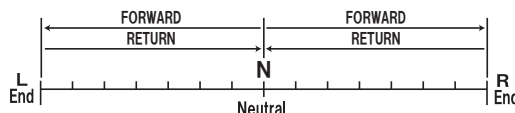
- 1) [ST (Steering)] with up and down key.
- 2) Setting on the forward side [FORWARD]
Select [FORWARD] with the Enter key and adjust the setting value by up and down key.

*When cancelling a selected feature, use the Back key.

- Setting Range: 0~100
- Default: 0

- 3) Setting on the Return side [RETURN]
Select [RETURN] with the Enter key and adjust the setting value with by up and down key.

- Setting Range: 0~100
- Default: 0



*Adjust during actual operation. When not using the features or when a setting value cannot be determined even after adjustment, set the value to 0% (linear).

SUPPLEMENT

- For driving a RC car, steering operation that suits the movement of the RC car is important and excessive operation is not recommended. Steering speed can minimize unnecessary operation and enables smooth cornering.
- When steering speed and steering curve are combined, the effect is doubled.

[TH] THROTTLE SPEED

- A feature to slow down the performance speed of the throttle servos and delay the response of the speed controller against throttle operation. You can set speed for entering throttle (Forward) and returning (Return) individually. The speed feature does not work with throttle operation slower than the setting.

*Setting is only for High side and Brake side cannot be set.

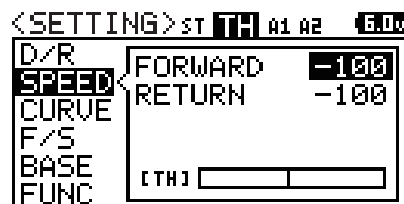
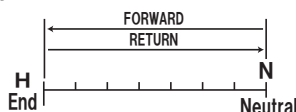
- 1) Select [TH (Throttle)] with up and down key.
- 2) Setting on the forward side [FORWARD]
Select [FORWARD] with the Enter key and adjust the setting value by up and down key.

*When cancelling a selected feature, use the Back key.

- Setting Range: 0~100
- Default: 0

- 3) Setting on the Return side (RETURN)
Select [RETURN] with the Enter key and adjust the setting value by up and down key.

- Setting Range: 0~100
- Default: 0



*Adjust during actual operation. When not using the features or when a setting value cannot be determined even after adjustment, set the value to 0% (linear).

SUPPLEMENT

- For driving an RC car, throttle operation that suits the movement of the RC car is important and excessive operation is not recommended. Throttle SPEED can minimize unnecessary operation and enables smooth performance.
- When throttle SPEED and throttle CURVE are combined, the effect is doubled.

CURVE

SETTING

- Curve changes servo work rate by steering and throttle position. It responds quickly when the set value is on plus (+) side whereas it responds mildly when the set value is on minus (-) side.

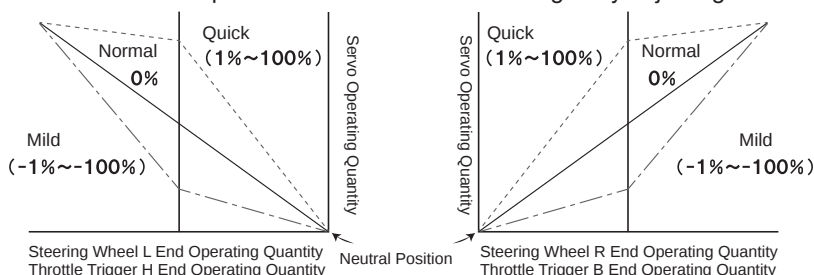
- MT-R has adjustable rate controller (ARC) of linear position.

*If the AUX type is set to [CODE], curve does not work.

*Please adjust curve setting on AUX channel to refer steering and throttle.

Adjustable rate controller (ARC)

Position at where operation is variable can be changed by adjusting the setting of POINT.



[ST]

STEERING CURVE

- You can change the steering feature from Mild to Linear and to Quick.

If you find your RC car oversteering, change the setting to the minus side and if you find understeering, change to the plus side. Steering Adjustable Rate Control is a simultaneous setting for L and R.

- 1) Select ST with up and down key.

- 2) Setting Rate [RATE]

Select [RATE] and adjust the setting value with up and down key.

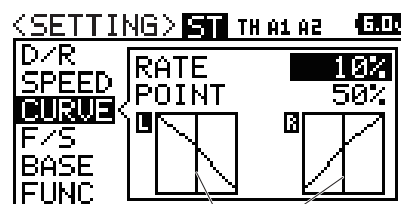
*When cancelling a selected feature, use the Back button.

○Setting Range: -100~100% ○Default: 0%

- 3) Setting Point [POINT]

Select [POINT] and adjust the setting value with up and down key.

○Setting Range: 5~95% ○Default: 50%



Point Setting Position

[TH]

THROTTLE CURVE

- You can change the throttle feature from Mild to Linear and to Quick.

In general, when operating on a slippery road or if you find over powering, change the setting to the minus side. When operating on a high-grip road or if you find lack of power in the power unit, change to the plus side. You can set the High side and the brake side separately.

*Selection of the High side and the brake side is done by trigger operation.

- 1) Select TH with up and down key.

- 2) Setting Rate [RATE]

Select [RATE] with with up and down key.

Adjust the setting value.

○Setting Range: -100~100% ○Default: 0%

- 3) Setting Point [POINT]

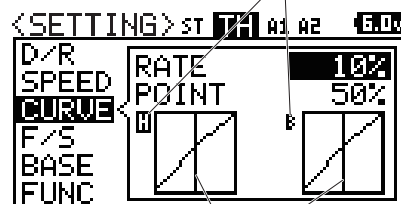
Select [POINT] with up and down key.

Adjust the setting value.

○Setting Range: 5~95% ○Default: 50%

*When cancelling a selected feature, use the Back button.

Select H/B by Throttle Trigger



Point Setting Position

1.If you feel slippy while driving drift car, please set High side point 20 to 30% and Rate -15 to - 30%. It can be more smooth and getting traction easily. *Please arrange ideal point and rate values while driving.

2. In case of using motor of stock class, please set High side point 20 to 30% and Rate 15 to 30%. It would give quick throttle timing and get more car acceleration.

How to Use Each Feature

FAIL SAFE [F/S]

SETTING

- Fail Safe Operation is a feature to keep the servos in a predetermined position for each channel in the event that the receiver cannot receive a signal from the transmitter. A feature to keep the servos in a predetermined position for the servo of the throttle channel (2ch) in the event that the battery voltage on the receiver side of an engine RC car goes below the set voltage is Battery Fail Safe Operation.
- Battery Fail Safe Operation cannot be set when the throttle channel (2ch) is set to FREE/HOLD (*Battery Fail Safe Operation works only for the throttle channel).

*Don't use Battery Fail Safe Operation for electric RC cars.

- 1) Select F/S with up and down key and select a channel to set fail safe operation (ST/TH/A1/A2).

- 2) Enter the set channel and operate by up and down key.

The fail safe mode setting changes in order of
FREE→FS→HOLD.

- Setting Range: FREE/FS(-100~100%)/HOLD
- Default: FREE

FREE (Free Mode)

When the receiver cannot receive the signal from the transmitter, the signal output to the servo stops and the servo will be free.

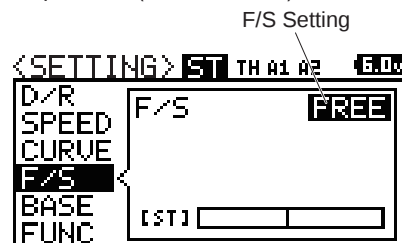
FS (Fail Safe Mode)

When the receiver cannot receive the signal from the transmitter, the servo will be held in the set position.

HOLD(Hold Mode)

The last position before the signal from the transmitter to the receiver is lost will be held.

*When the receiver can receive the signal from the transmitter again, each mode of FREE/HOLD/FS is automatically released.



- 3) Setting the Fail Safe (FS)

Move to the position where the Fail Safe Operation is used. When the position is determined, holding the Enter key to set the position when the Fail Safe Operation works.

*For safety, we recommend setting the throttle channel on the brake side when setting the Fail Safe.

- 4) Setting the Battery Fail Safe Operation

After setting the throttle channel position, move the cursor to [B-F/S] to set the voltage.

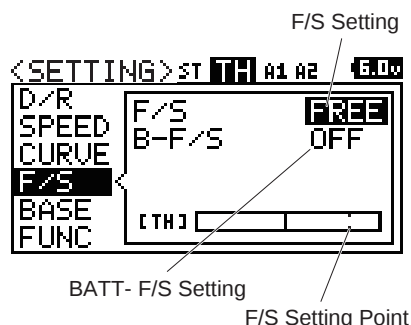
- Setting Range: OFF, 3.5v ~7.4v

*The Battery Fail Safe Operation is a feature to activate Fail Safe Operation when the receiver battery voltage belows to the set voltage on a Nitro car.

Don't use the Battery Fail Safe feature on electric RC cars.

- 5) Checking the Fail Safe Operation

Turn off the power of the transmitter while the Fail Safe Operation is set and check if the servo moves to the position where the Fail Safe Operation is set.



IMPORTANT

- About the Fail Safe Operation
When the Fail Safe feature is on, check the setting of the Fail Safe before operating.
Don't change the setting of the Fail Safe during operation.

BASE

SETTING

- Base sets multiple functions all at once such as the Reverse that determines the direction of the servo of each channel, the speed controller according to a specific RC car, the Sub Trim that adjusts the neutral position, and the End Point Adjustment [EPA].

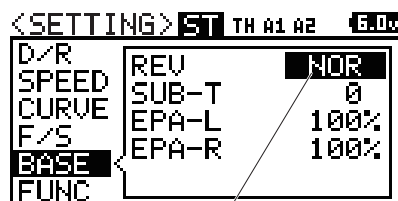
REVERSE [REV]

- This is used when operation and the movement of the servo are reversed while operating Steering/throttle/AUX1/AUX2.

- 1) Select BASE with up and down key
Select a channel to set (ST/TH/A1/A2).
- 2) Enter with the channel to be set by using up and down key.
The Reverse setting will be changed.

*When cancelling a selected feature, use the back key.

- Setting Range: NOR/REV
- Default: NOR



REV Setting

SUB TRIM [SUB-T]

- Using the Sub Trim feature, correct the neutral (center) of Steering/Throttle/A1/A2 so that Trim can be used from the center position. When installing a servo on to an RC car, center the servo with Sub Trim first before adjusting End Point Adjustment.

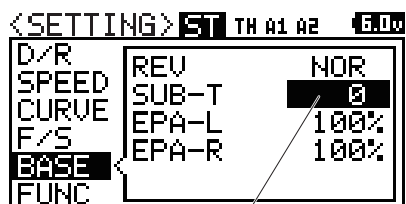
- 1) Before using, center (0) each main trim.
- 2) Select SUB-T with up and down key
Select a channel (ST/TH/A1/A2) to adjust Sub Trim.

- 3) Set the channel by Enter key.
- 4) Install the servo arm (servo saver arm) as close to centered as possible.

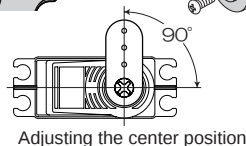
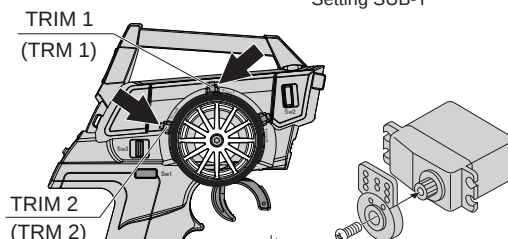
*For installation position of the servo horn, follow a car product instruction.

- 5) Adjust the center by using up and down key.

- Setting Range: L150~R150(ST)
H150~B150(TH)
H150~L150(AUX1, AUX2)
- Default: 0



Setting SUB-T



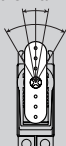
! Note

When installing the servo horn onto your servo, fix the servo horn as close to the center as possible and center it with Sub Trim. If Sub Trim and the transmitter main trim are off to one side, it causes dead band (the range the servo does not move) to the steering wheel and the throttle trigger.

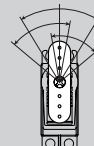
● About Trim and Sub Trim

Trim is a feature for adjusting the neutral (center) position of the servo. When your model does not run straight after installing the steering servo onto the model, Trim adjusts the main trim of the steering. Also, the neutral position of the carburetor on RC cars needs neutral adjustment of the throttle servo along with linkage adjustment after installing the servo. Neutral position adjustment is necessary not only after installing the servo but for changes that happen during running such as tire wears and chassis twist. MT-R Trim features two types of Trim including Center Trim that adjusts only the neutral position without changing the end of the operating angle and Parallel Trim that moves the end of the operating angle and the neutral position simultaneously. Sub Trim that adjusts the neutral (center) position before fixing the servo horn is Parallel Trim and the main trim is Center Trim.

- Center Trim (Main Trim)
Even if you move the neutral position with Trim, the end of the operation angle does not move.



- Parallel Trim (Sub Trim)
When you move the neutral position with Trim, the end of the operation angle also moves. When Sub Trim is adjusted after linkage is completed, readjustment of End Point Adjustment (EPA) will be necessary.



How to Use Each Feature

BASE

SETTING

- Base sets multiple functions all at once such as the Reverse that determines the direction of the servo of each channel, the speed controller according to a specific RC car, the Sub Trim that adjusts the neutral position, and the End Point Adjustment [EPA].

END POINT ADJUSTMENT [EPA]

- EPA setting can adjust left and right steering servo range for steering operation, high and brake throttle working range for throttle trigger operation, and the servo working range for AUX1, AUX2 (3ch, 4ch).

[ST-EPA] STEERING END POINT ADJUSTMENT

- Due to linkage, suspension balance and the difference of the tire diameter, left and right cornering radius can be different. In case of this, this feature adjusts the servo working range of left and right so that left and right cornering radius can be the same.

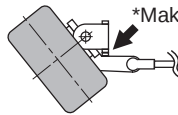
- 1) Before adjusting Steering End Point Adjustment (ST-EPA), make a neutral adjustment of the servo (P.22).
Neutral adjustment is to align the center position with Sub Trim by turning the power on and installing the servo horn in the approximate center position.

- 2) Select either of [EPA-L/EPA-R] with up and down key
Determine with the Enter.

- 3) Adjust the working range with up and down key.

*When the cursor is on either of EPA-L/EPA-R, it is also possible to move the cursor by steering operation.

- Setting Range: L/R 0% ~ 150%
- Default: L/R 100%



*Make sure the servos do not lock to make clicking sound

<SETTING> ST TH A1 A2 6.00		
D/R	REV	NOR
SPEED	SUB-T	0
CURVE	EPA-L	100%
F/S	EPA-R	100%
BASE		
FUNC		



• If the linkage is locked for a long period, it can cause the servo breakage.

[TH-EPA] THROTTLE END POINT ADJUSTMENT

- It adjusts the High Point of FET Speed Controller, Brake Point, carburetor of engine and the brake working range.

- 1) For a nitro car, make a neutral adjustment of the servo (P.20) before adjusting the Throttle End Point Adjustment (TH-EPA).

Neutral adjustment is to align the center position with Sub Trim by turning the power on and installing the servo horn in the approximate center position.

- 2) Select [TH/Throttle] with up and down key.

- 3) Select either of [EPA-H/EPA-B] with up and down key.
Determine with the Enter.

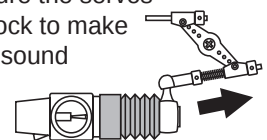
- 4) Adjust the operating quantity with up and down key.
When adjusting ESC / FET Speed Controller, normally set both the high side and the brake side to 100% and set neutral, high point and brake point on the ESC / FET Speed Controller side (Setting method is different depending on the ESC / FET Speed Controller).

*When the cursor is on either of EPA-H/EPA-B, it is also possible to move the cursor by trigger operation.

- Setting Range: H/B 0% ~ 150%
- Default: H/B 100%

<SETTING> ST TH A1 A2 6.00		
D/R	REV	NOR
SPEED	SUB-T	H100
CURVE	EPA-H	100%
F/S	EPA-B	100%
BASE		
FUNC		

*Make sure the servos do not lock to make clicking sound



• When EPA setting value is too large on the fully open side of the carburetor and the brake side for throttle linkage, the servo is locked and it can cause the motor malfunction and runaway.

[AUX1-EPA]**AUX1 • END POINT ADJUSTMENT**

- You can use AUX1 for functions of accessories and adjust the maximum steering angle with EPA. Since you can set H/L separately, precise adjustment is possible.

*When setting AUX1 to [CODE5/CODE10] in AUX TYPE, the operation will not be reflected even by adjusting EPA.

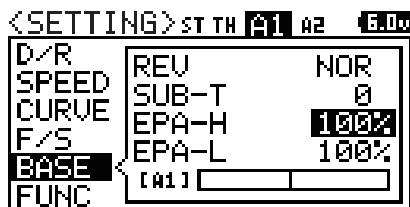
- 1) Before adjusting AUX1 End Point Adjustment (A1-EPA), make a neutral adjustment of the servo (P. 22). Neutral adjustment is to align the center position with SubTrim by turning the power on and installing the servo horn in the approximate center position.

- 2) Select [AUX1] with up and down key.

- 3) Select either of [EPA-H/EPA-L] with up and down key.
Determine with the Enter.

- 4) Adjust the working range with up and down key.

- Setting Range:H/L 0%~150%
- Default: H/L100%

**[AUX2-EPA]****AUX2 • END POINT ADJUSTMENT**

- You can use AUX2 for functions of accessories and adjust the maximum steering angle with EPA. Since you can set H/L separately, precise adjustment is possible.

*When setting AUX2 to [CODE5/CODE10] in AUX TYPE, the operation will not be reflected even by adjusting EPA.

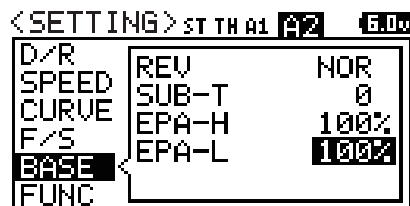
- 1) Before adjusting AUX2 End Point Adjustment (AUX2-EPA), make a neutral adjustment of the servo (P. 22). Neutral adjustment is to align the center position with Sub Trim by turning the power on and installing the servo horn in the approximate center position.

- 2) Select [AUX2] with up and down key.

- 4) Select either of [EPA-H/EPA-L] with up and down key.
Determine with the Enter.

- 3) Adjust the working range with up and down key.

- Setting Range:H/L 0%~150%
- Default: H/L100%



How to Use Each Feature

FUNCTION [FUNC]

SETTING

- Function can set trim, ALB (Anti-Lock Brake), OFFSET, and TH TYPE (Throttle Type) on each channel.

TRIM

- Correct neutral (center) of each channel (ST/TH/A1/A2) with Trim.
- As default, steering is set for Trim 1 (TRM1), and throttle for Trim 2 (TRM2).

1) Select a channel (ST/TH/AUX1/AUX2) for adjusting Trim with up and down key.

2) Determine with Enter operation and adjust with up and down key.

○ Setting Range:

ST:L100~R100

TH:H100~B100

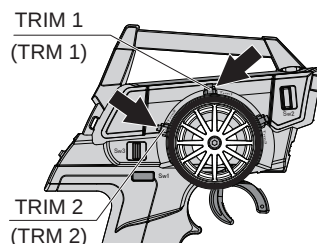
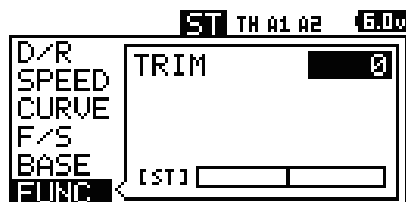
AUX1:H100~L100

AUX2:H100~L100

○ Default:

ALL : 0

*Make an adjustment with TRM1 (ST) and TRM2 (TH) during operation. You can change the Trim lever position with the Key Assignments Trim feature (P. 46).



IMPORTANT

• About Trim

Trim is a feature to adjust the neutral (center) position of the servos. After installing the steering servo onto a car, you can adjust with Trim when the car does not move straightly. Neutral position adjustment is necessary not only after installing the servo but for changes that happen during running such as tire wears and chassis twist.

- It's Sub Trim that adjusts the center position when adjusting linkage (P. 22)



Note

- If Trim and Sub Trim are off to one side, it causes dead band (the range the servo does not move) to the steering wheel and the throttle trigger. When installing the servo horn, fix the servo horn as close to the center as possible and center it with Sub Trim.

ANTI-LOCK BRAKE [ALB]

- Anti-Lock Brake enables stable braking on a low grip road.
- Because of the stable braking, you can drive ideal cornering lines as intended.

1) Select [ALB] with up and down key.

2) The menu changes to ALB setup menu with the enter operation.

3) Setting Stroke (STROKE)

Set Stroke of ALB with up and down key.
Stroke is the width of repeated actions at the time of braking.

- Setting Range: OFF, 0% ~ 100%
- Default: OFF *ALB does not work when it is off.

4) Setting Point (POINT)

Set Point of ALB with up and down key.
Point is the position where ALB starts acting when operating the brake.

- Setting Range: 5% ~ 100%
- Default: 80%

5) Setting Lag (LAG)

Set Lag of ALB with up and down key.
Lag is a setting of time lag from the time when operating to the point to the time when ALB starts acting.

- Setting Range: 0.00s ~ 1.00s
- Default: 0.00s

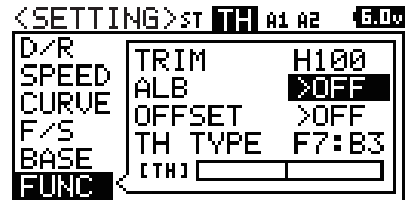
6) Setting Cycle (CYCLE)

Set a cycle of ALB with up and down key.
Cycle is a frequency setting of repeated actions for braking.

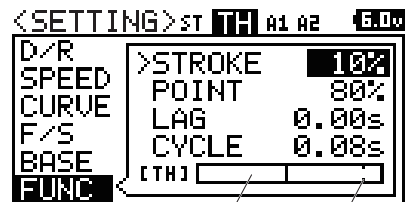
- Setting Range: 0.01s ~ 1.00s
- Default: 0.03s

*While Anti-Lock Brake working, transmitter LED will be high-speed flashing.

*LED flashing time and way of flashing are same in any setting values.



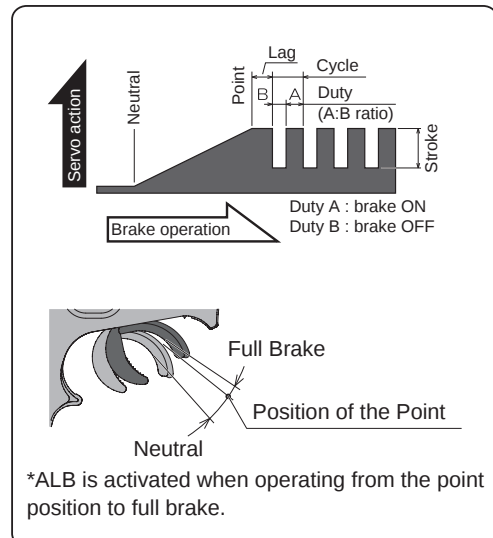
ENTER ↓ ↑ BACK



Trigger indicator

Point Position

[ALB will be worked when trigger operation is right side (Brake side)]



SUPPLEMENT

- Activate the brake rather strongly not to the extent that the tires of your RC car lose their grips (not to slip) and adjust so that Anti-Lock Brake is activated just before the tires are locked and slide.
- If you set ALB using a speed controller with a back on an RC car, you may not able to operate back movement. When using a back movement, turn ALB off.

How to Use Each Feature

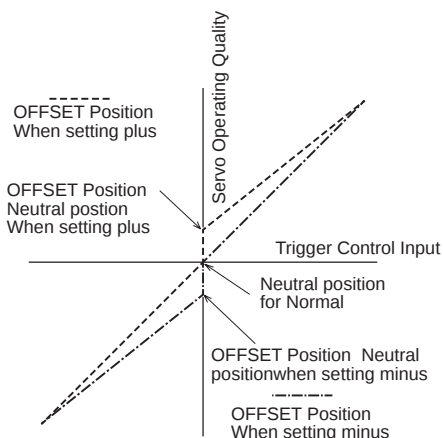
FUNCTION [FUNC]

SETTING

- Function can set trim, ALB (Anti-Lock Brake), OFFSET, and TH TYPE (Throttle Type) on each channel.

OFF SET

- By moving the position of the throttle neutral at the time of starting a nitro RC car engine, it improves the start-up performance of the engine.
- You can fix at a position where idling speed is increased so that the engine will not stop during refueling your nitro RC car.
- By operating the switch that has been set, you can stop the engine of your RC boat.
- You can use various power sources with Offset feature.
- ON/OFF of the Offset can be assigned to the switch.



- 1) Select [OFFSET] with up and down key.
- 2) Determine with enter operation.
It will change to OFFSET Setting menu.
- 3) Setting Offset [OFFSET]
Set ON/OFF of the Offset feature with up and down key.
 - Setting Range: ON/OFF
 - Default: OFF
- 4) Setting Position [POS]
Set Position of the Offset with up and down key.
 - Setting Range: H100%~B100%
 - Default: 0%

```

<SETTING> ST TH A1 A2 6.0v
D/R TRIM H100
SPEED ALB >OFF
CURVE OFFSET >OFF
F/S TH TYPE F7:B3
BASE [TH]
FUNC
    
```

ENTER ↓ ↑ BACK

```

<SETTING> ST TH A1 A2 6.0v
D/R >OFFSET OFF
SPEED POSI 0%
CURVE
F/S
BASE [TH]
FUNC
    
```

THROTTLE TYPE [TH TYPE]

- You can move the neutrals position of the throttle and set the operating ratio of the forward side and the brake (backward) side to either 7:3 or 5:5.

*Set the throttle type according to the speed controller to be used.

1) Select [TH TYPE] with up and down key.

2) Determine with enter operation.

It will change to TH TYPE Setting menu.

3) Setting the Throttle Type

Set the Throttle Type with up and down key.

○ Setting Range: F7:B3 / F5:B5

○ Default: F7:B3

*When changing TH TYPE, the screen changes to the confirmation screen and a message is displayed. Operate following the message.

```

<SETTING> ST TH A1 A2 6.00
D/R TRIM H100
SPEED ALB >OFF
CURVE OFFSET >OFF
F/S TH TYPE F7:B3
BASE [TH]
FUNC
  
```

ENTER ↓ ↑ BACK

```

<SETTING> ST TH A1 A2 6.00
Confirmation
Set to F50:B50 ?
NO / YES
  
```

- NO →Cancel to Change Throttle Type
- YES →Confirm to Change Throttle Type

How to Use Each Feature

AUX

AUX

- AUX menu sets the performance of AUX1 and AUX2 (3ch, 4ch). You can choose from STEP AUX (STEP), POINT AUX (POINT), 4WS (4-Wheel Steering: Coordinate Phase, Opposite Phase). MOA (Motor On Axle), AUX-MIX (AUX Mixing: ST → AUX/TH-AUX) and CODE-AUX.

STEP AUX

- Setting Step AUX allows you to set the operating quantity by operating assigned Trim or a switch.
- By factory default, the AUX feature is set to the Step AUX.

- 1) Select [AUX] with up and down key.
- 2) Determine with enter operation.
It will change to CH Setting menu.
- 3) Setting Step AUX (STEP AUX)
Determine [CH] to activate with the enter.
Set the position of the motion with up and down key.

*Operating range also can be set by
EPA (End Point Adjustment, P.24).

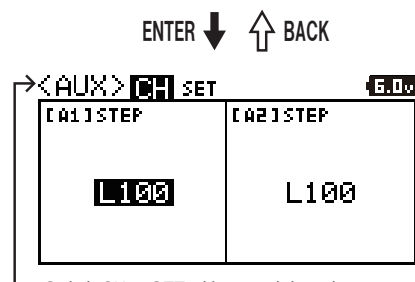
- Setting Range: H100% ~L100%
- Default: 0%

- 4) Mode Setting (MODE)
Determine with enter, and set working step values
to the used method.

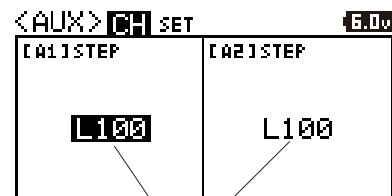
- Setting Range: 1/2/5/10/20/25/50/100
- Default: 5

SET can be AUX TYPE and MODE setting and
shortcut of the key assign function.

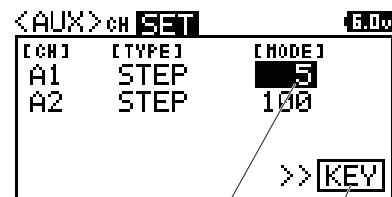
*Assign the features to Trim and switch with
Key Assignments according to the used method.



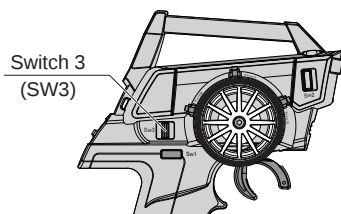
Switch CH to SET with up and down key.
Select CH with enter.



AUX1 Setting AUX2 Setting
Operation Position



STEP Setting Shortcut for Key Assign



POINT AUX

- By setting Point AUX and assigning the movement of AUX1/AUX2 (3ch, 4ch) to the switch and Trim, you can move the servo to Point1, Point2, and Point3 position. The Point that moved can be set with EPA (End Point Adjustment). Adjust the Point position according to the usage.

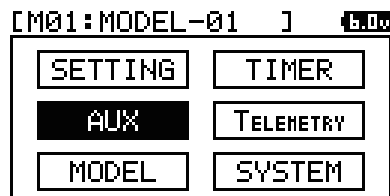
*Point number is 3 point cannot change.

- 1) Select [AUX] with up and down key.
- 2) Change [SET] menu with enter.
*Switch CH to SET with up and down key.
- 3) Type Setting (POINT)
Select [POINT] on AUX TYPE with up and down key.
- 4) Point and setting values
Select A1 or A2 you want to set and enter.
Select 1, 2, or 3 you want to set and enter.
Set values with up and down key.

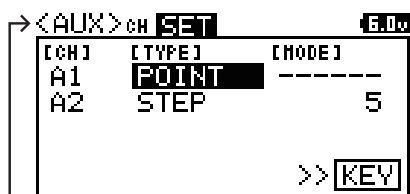
*AUX1 and AUX2 can be set AUX TYPE separately.

*Operating range also can be set by EPA (End Point Adjustment, P.24).

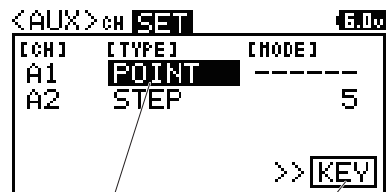
*Assign on SW3 or trim according to the used method.



ENTER ↓ ↑ BACK

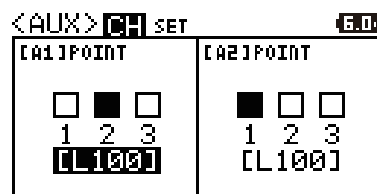
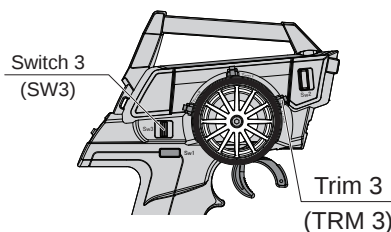


Switch CH to SET with up and down key.
Select SET with enter.



Switch Type

Shortcut for Key Assign



How to Use Each Feature

AUX

AUX

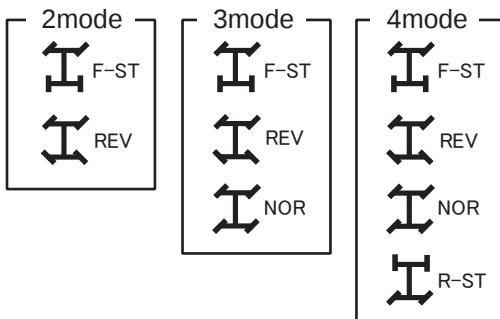
- AUX menu sets the performance of AUX1 and AUX2 (3ch, 4ch). You can choose from STEP AUX (STEP), POINT AUX (POINT), 4WS (4-Wheel Steering: Coordinate Phase, Opposite Phase). MOA (Motor On Axle), AUX-MIX (AUX Mixing: ST → AUX/TH-AUX) and CODE-AUX.

4-WHEEL STEERING [4WS]

- With the operation of assigned Trim or Switch, control the motion of the 4 Wheel Steering.

- 1) Select [AUX] with up and down key.
- 2) Change [SET] menu with enter.
*Switch CH to SET with up and down key.
- 2) Type setting (4WS)
Select [4WS] on AUX TYPE setting with up and down key.
- 4) Mode setting
Set 4WS working mode to used method.

- Setting Range: 2 mode / 3 mode/ 4 mode
- Default: 4 mode

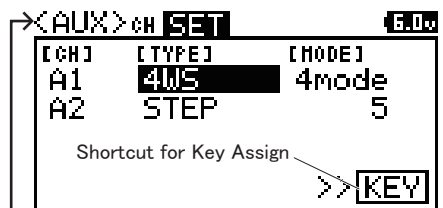
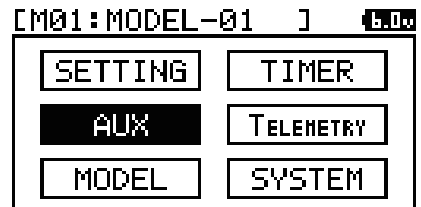


*Please refer the above picture for working mode.

- 5) Working mode setting
Enter working mode setting and change the mode with up and down key.
*In case of changing mode while driving, please assign workig mode on trim or switch.

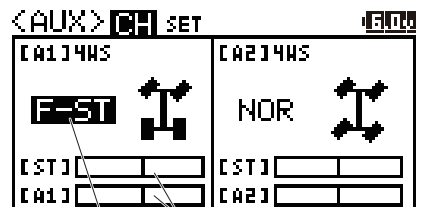
- Setting range: F-ST / REV / NOR / R-ST

- * Switch working mode by mode setting on SET.
- * Rear steering servo will work on AUX 1 or AUX channel by setting 4WS.
- *Operating range can be set by EPA (End Point Adjustment, P.24).



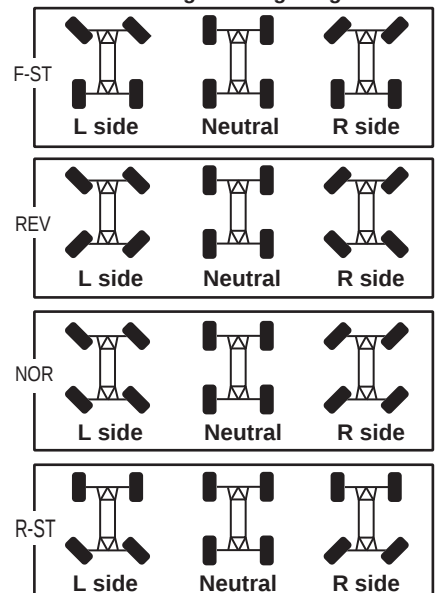
Switch CH to SET with up and down key.

Select SET with enter.



Servo Monitor
Switch Working Mode

Steering Working Image



FRONT-REAR WHEEL SEPARATE DRIVE [MOA]

- By setting Motor On Axle (MOA), you can adjust the drive ratio of front and rear wheels of a front-rear dual motor car.

- 1) Select [AUX] with up and down key.

- 2) Change [SET] menu with enter.

- ### 3) TYPE setting (MOA)

Select [MOA] on AUX TYPE setting with up and down key.

- #### 4) MODE setting

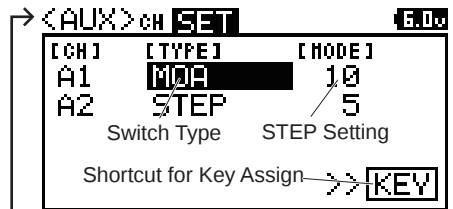
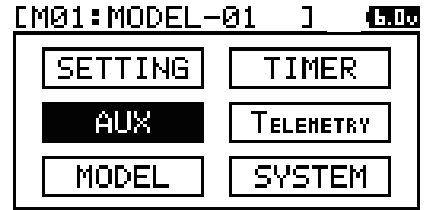
Set MOA drive ratio to the used method.

Setting Range: 1/2/5/10/20/25/50/100

Default: 10

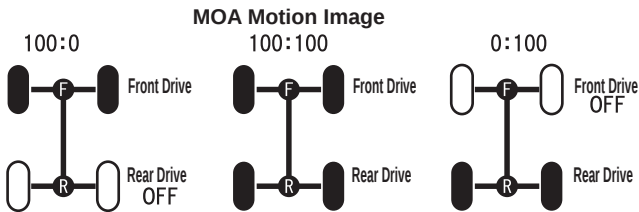
*Connect the speed controller for controlling the rear motor to the channel (AUX1/AUX2) that is set to MOA.

*When using, assign the features to switch or trim or operate with up and down key.

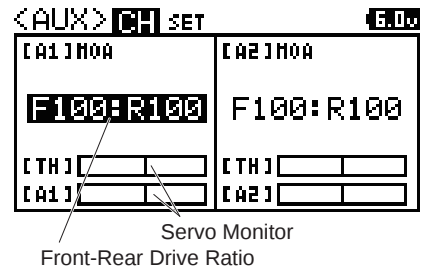


- Switch CH to SET with up and down key.

Select SET with enter.



*By changing the ratio, you can adjust the gear ratio of front-rear.



How to Use Each Feature

AUX

AUX

- AUX menu sets the performance of AUX1 and AUX2 (3ch, 4ch). You can choose from STEP AUX (STEP), POINT AUX (POINT), 4WS (4-Wheel Steering: Coordinate Phase, Opposite Phase). MOA (Motor On Axle), AUX-MIX (AUX Mixing: ST → AUX/TH-AUX) and CODE-AUX.

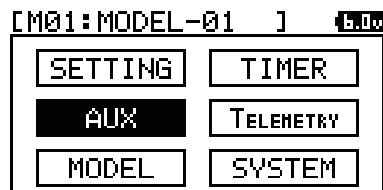
AUX MIXING [AUX MIX]

- Setting AUX Mixing allows you to mix from the steering to AUX and from the throttle to AUX.

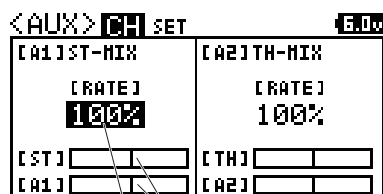
- 1) Select [AUX] with enter.
- 2) Change [SET] menu with enter.
*Switch CH to SET with up and down key.
- 3) TYPE setting (AUX-MIX)
Select [AUX-MIX] on AUX TYPE setting with up and down key.
- 4) MODE Setting
Set mixing mode to the used method.
 - Setting Range: ST-mix / TH-mix
 - Default: ST-mix
 - *ST-mix is mixed from the steering to AUX.
 - TH-mix is mixed from the throttle to AUX.
- 5) Mixing rate setting
Set mixing rate with up and down key.

- Setting Range: 0%~100%
- Default: 100%

*Assign the features of the Mixing Rate to Trim or the switch with Key Assignments, or operate with up and down key.



Switch CH to SET with up and down key.
Select SET with enter.



Servo Monitor
Mixing Rate Setting

CODE AUX

- Code AUX (CODE AUX) is a feature to perform code communication by assigning a setting value to each code of CODE1-CODE10.

It is an extension feature to change the setting of speed controller (SUPER VORTEX series/ SV-D2), PGS servo series, and the Gyro System (SGS-01C/SGS01D/SGS-02) that are compatible to CODE AUX.

- You can set 2 types of Code AUX1 and CODE AUX2.

*Please set response mode [SHR] on A1 and A2 when binding with a receiver. (p.43).

*In case of using CODE AUX, please do NOT connect servos on receiver CH3 and CH4 port.

1) Select [AUX] with up and down key.

2) Change [SET] setting menu with enter.

*Switch CH to SET with up and down key.

3) Type Setting (CODE AUX)

Select [CODE] on AUX TYPE setting with up and down key.

*CODE is only compatible with CODE10 products.

*MT-R is not compatible with CODE5 products such as SV-ZERO, SV-SPORT, SV-TYPE D, SGS-01, and SGS-01D.

4) Mode setting

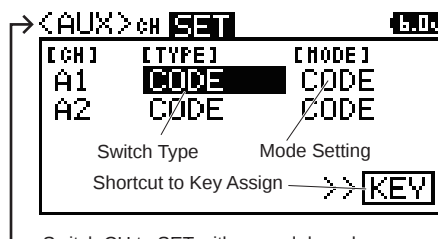
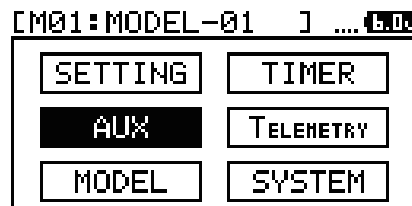
Display function name for CODE10 products by setting mode for compatible product.

- Setting Range: CODE/SV-G/D (only AUX1)
CODE/PGS/SGS-02 (only AUX2)
- Default: CODE

5) CODE AUX setting

Select CODE with enter key.

Set value with up and down key.



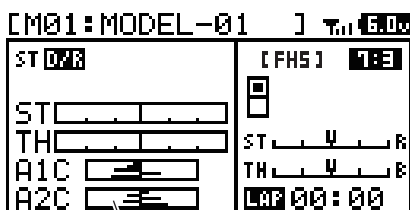
Switch CH to SET with up and down key.

Select SET with enter.

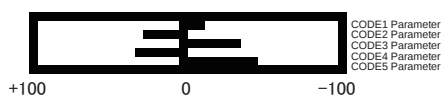
<AUX> CH SET			
[A1]CODE1	1/2	[A2]CODE2	1/2
CODE1	0	CODE1	0
CODE2	0	CODE2	0
CODE3	0	CODE3	0
CODE4	0	CODE4	0
CODE5	0	CODE5	0

When Mode Setting Is CODE

*In case of setting CODE on AUX TYPE, CODE AUX setting condition will display on top screen as below pictures.



AUX TYPE = When setting is CODE AUX, bar display



*CODE6~10 is not displayed on top display.
Please check display on the AUX menu.

How to Use Each Feature

MODEL MENU

MODEL

- You can set the features about Model Select, Model Name, Model Copy and Model Clear.
- Installed with high capacity EEPROM and it can memorize data for 20 models of M01 ~ M20.

MODEL SELECT

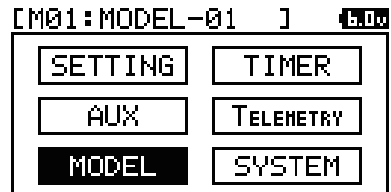
- You can call model data of memorized M01 ~ M20 easily.

- 1) Select [MODEL] with up and down key.
Determine with enter.
- 2) Setting Model Select (MODEL SELECT)
Select [MODEL SELECT] with up and down key.
Determine with enter.
- 3) Selecting Model
Select Model to call with up and down key.
- Setting Range: M01 ~ M20
- 4) When moving the cursor to the model to call
and Enter is being operated, a message
is displayed on the screen.
Follow the display to operate and select a model.

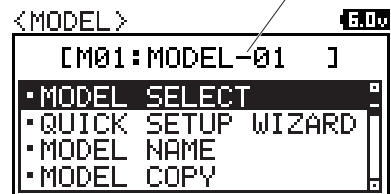
1. Model Display

2. Model Select

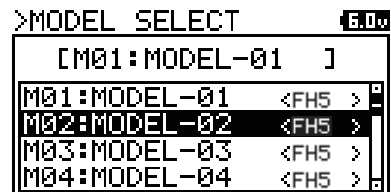
3. Confirmation



ENTER ↓ ↑ BACK
Current Model

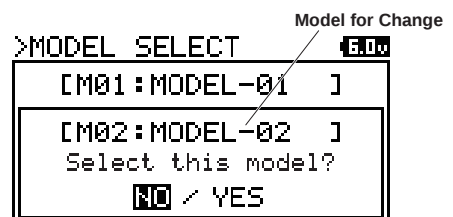


ENTER ↓ ↑ BACK



Select model you want to use

ENTER ↓ ↑ BACK



Confirm model you want to use

No: Back to 2.

Yes: Change Model and Back to 2.

SUPPLEMENT

MT-R has a feature of Direct Model Select. When turning the power switch of the transmitter on while pressing the Back/Cancel button, it starts from the MODEL SELECT screen so that you can easily call a model to use.

MODEL NAME

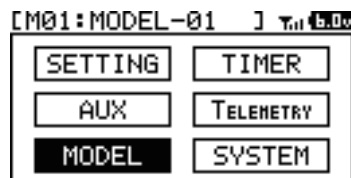
- You can register a model name with up to 10 characters of alphabets, numbers, symbols, and Japanese Katakana for each model.

- 1) Select [MODEL] with up and down key.
Determine with the Enter operation.
- 2) Setting Model Name [MODEL NAME]
Select [MODEL NAME] with up and down key.
Determine with the Enter operation.
- 3) Setting Model Name
Move the cursor "_____" with up and down key to the position to input texts. Once the position is determined, press the Enter key to determine the cursor position.
"_____" is flashing when moving, and is turning on when determined.
- 4) Select texts to enter with up and down key. Once the texts to enter are determined, enter with the Enter key.

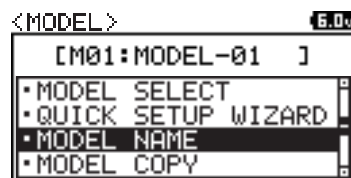
*When changing texts are already entered or when moving the cursor of the text input position, press the Back button to cancel the action.

- Setting Range: A~Z,a~z,0~9,Symbols, Space, Japanese Katakana, Little Katakana.

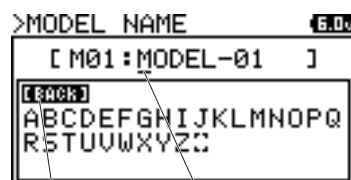
- 5) Repeat 3) and 4), and enter texts.



ENTER ↓ ↑ BACK



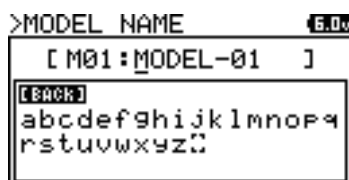
ENTER ↓ ↑ BACK



Cursor for select word

Cursor position for select word
(When moving cursor, the line will be flashed)

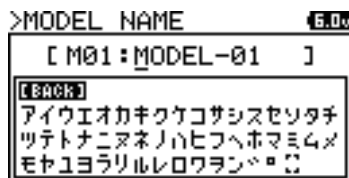
Alphabet lower cases



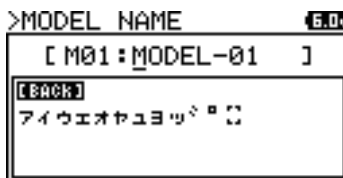
Number and Symbols



Japanese Katakana



Japanese Little Katakana



How to Use Each Feature

MODEL MENU

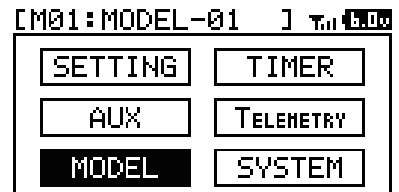
MODEL

- You can set the features about Model Select, Model Name, Model Copy and Model Clear.
- Installed with high capacity EEPROM and it can memorize data for 20 models of M01 ~ M20.

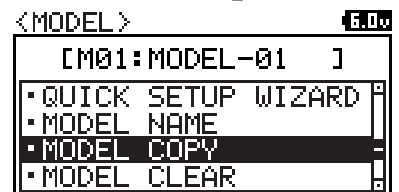
MODEL COPY

- You can copy a selected model data to another model.

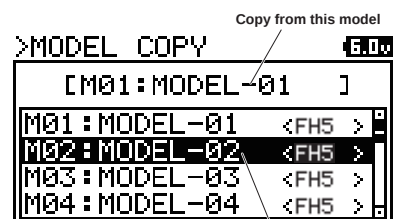
- 1) Select [MODEL] with up and down key
Determine with the Enter operation.
- 2) Setting Model Copy [MODEL COPY]
Select [MODEL COPY] with up and down key.
Determine with the Enter operation.
- 3) Selection of a Copy Destination Model
Select a Copy Destination Model with up and down key.
*Model for copy is model date is current using model.
- 4) When Enter is being operated a message is displayed on the screen. Follow the display to operate and complete Model Copy.



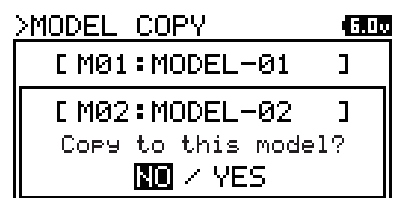
ENTER ↓ ↑ BACK



ENTER ↓ ↑ BACK

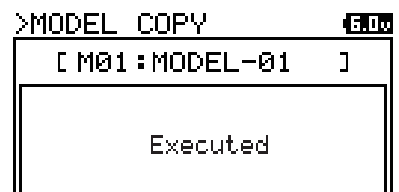


1. Select Copy Model



2. Confirm to Copy

NO: Back to 1.
YES: Move to 3.



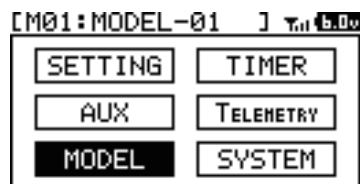
3. Executed

Back to 1. after completed

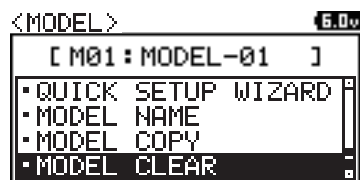
MODEL CLEAR

- A feature to clear (initialize) the setting data of Models.

- 1) Select [MODEL] with up and down key.
Determine with the Enter operation.
- 2) Setting Model Clear [MODEL CLEAR]
Select [MODEL CLEAR] with up and down key.
Determine with the Enter operation.
- 3) When Enter is being operated, a message is displayed on the screen. Follow the display to operate and complete Model Clear.

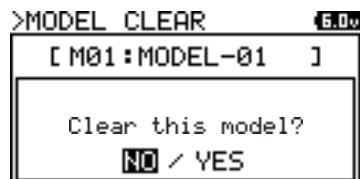


ENTER ↓ ↑ BACK



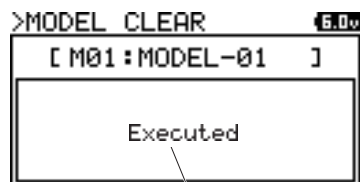
ENTER ↓ ↑ BACK

1. Confirmation



NO: Back to Model Display
YES: Move to 2.

2. Clear Completion



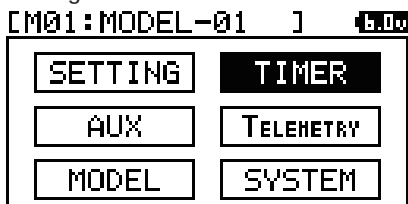
After flashing twice,
Back to model display

How to Use Each Feature

TIMER MENU

TIMER

- It has three timer features including Lap Timer, Interval Timer and Down Timer.
- When selecting a timer and operate the up and down key, you can toggle between the timer screen and the setting screen.

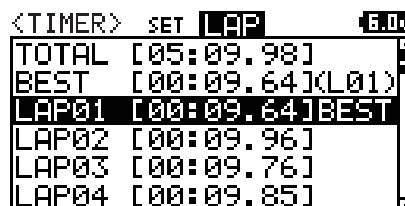


ENTER ↓ ↑ BACK



<SET Display>

↔
UP Key
Down Key



<LAP Display>

- Lap display can be checked measured lap time.
- Select Lap with up and down key during stopping lap timer.
- *The fastest lap in the measured lap time will be shown [BEST].

LAP TIMER

- You can measure and record each lap up to 99 laps (works for all models).
- Pre Alarm (PRE-ALM) is installed and the alarm goes off before the goal.

1) Select [TIMER] with up and down key. Determine with the Enter operation.

2) Change [SET] menu with enter.

*Switch SET to LAP with up and down key.

3) TYPE setting

Change [LAP] on TYPE setting with up and down key.
Determine with enter.

4) Goal Time setting

Set goal time [ALRM] with up and down key.

- Setting Range: 00:01 ~ 99:59 (unit: 00:01 each)
- Default: 05:00

5) As the default, timer switch is set on SW1.

Holding SW1 will standby timer.

Then when push SW1 again or operating throttle,
timer will be started.

6) After starting timer, lap time is recorded when pushing SW1.
After pushing SW1, the switch will not work while 3 seconds.

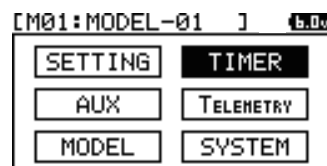
7) Completing measuring

By holding SW1, measuring will be completed.

Or pushing SW1 after finished goal time will complete measuring.

*When turning the power switch off while the timer is activated,
the timer will be reset.

*When the timer is set to SW1, the timer will be in the standby
mode by holding the switch even on a screen other than
the TIMER setting screen.



ENTER ↓ ↑ BACK

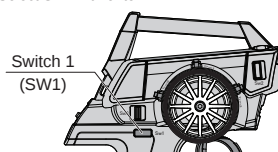


Switch Type

Shortcut to Key Assign

Switch SET to LAP with up and down key.

Select SET with enter.



INTERVAL TIME [INT TIMER]

- It activates the alarm at the time set at the beginning of running and uses it as the guideline for the lap time.

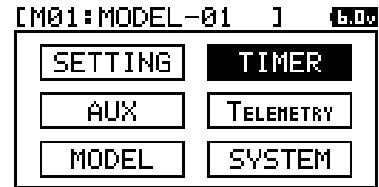
- 1) Select [TIMER] with up and down key.
Determine with the Enter operation.
- 2) Change [SET] menu with enter.
*Switch SET to LAP with up and down key.
- 3) Setting the Type [TYPE]
Select [INT] with up and down key. Determine with enter.
- 4) Setting Interval (INTERVAL)
Set the Interval Timer.

○ Setting Range: 00:00.01 ~ 99:59.99

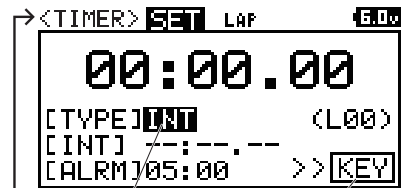
○ Default: 00:00.00

*Interval timer will not work for 00:00.00.

- 5) As the default, timer swith is set on SW1.
Holding SW1 will standby timer.
Then when push SW1 again or operating throttle,
timer will be started.
- 6) After starting timer, lap timer will be reset when pushing SW1.
- 7) Completing measuring
By holding SW1, measuring will be completed.
After finished goal time, pushing SW1 will be lap timer reset.
*When turning the power switch off while the timer is activated, the timer will be reset.
*When the timer is set to SW1, the timer will be in the standby mode by holding the switch even on a screen other than the TIMER setting screen.



ENTER ↓ ↑ BACK



Switch Type Shortcut to Key Assign

Switch SET to LAP with up and down key.
Select SET with enter.

DOWN TIMER

- It can be for calculating running time of an electric RC car and the fuel consumption of an engine RC car.
- You can set for per second up to 99 : 59.
- When the timer switches to Up Timer after Down Timer ends, you can check lap time after the end.

- 1) Select [TIMER] with up and down key.
Determine with the Enter operation.
- 2) Change [SET] menu with enter.
*Switch SET to LAP with up and down key.
- 3) Setting the Type [TYPE]
Select [DOWN] with up and down key. Determine with enter.

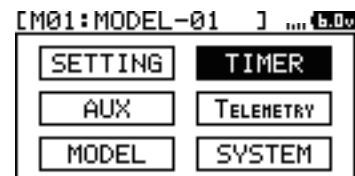
- 4) Set the Interval Timer.

○ Setting Range: 00:01 ~ 99:59

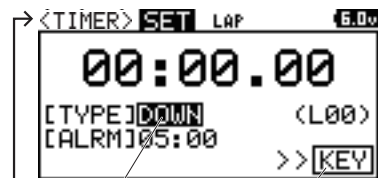
○ Default: 05:00

*Down timer will work as up timer for 00:00.

- 5) As the default, timer swith is set on SW1.
Holding SW1 will standby timer.
Then when push SW1 again or operating throttle,
timer will be started.
- 6) After starting timer, down timer will be reset when pushing SW1.
- 7) Completing measuring
By holding SW1, measuring will be completed.
*When turning the power switch off while the timer is activated, the timer will be reset.
*When the timer is set to SW1, the timer will be in the standbymode by holding the switch even on a screen other than the setting screen.



ENTER ↓ ↑ BACK



Switch Type Shortcut to Key Assign

Switch SET to LAP with up and down key.
Select SET with enter.

How to Use Each Feature

TELEMETRY MENU

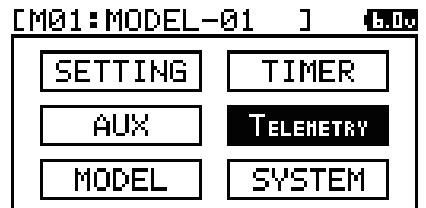
TELEMETRY

- A menu for setting Telemetry-related LOGGER, ALERT SETTING, TELEMETRY SETTING.
- To use the Telemetry, you can check with a compatible device such as SUPER VORTEX series.
- With Telemetry, you can check the data of 2 line of temperature, battery voltage and number of rotations with the transmitter.

•LOGGER:Check 2 line of temperature, battery voltage and number of rotations

•ALERT SETTING:Alert by setting temperature and battery voltage

•TELEMETRY SETTING:Various settings of Telemetry features



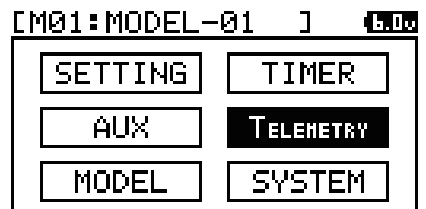
LOGGER

- Transmitter enables to record 2 temperatures (T1/T2) as battery, engine, and motor receiver voltage, engine or motor rotation number (PRM) with compatible receiver and Super Vortex series.
- Record (Log) setting can be set LOG STEP on the TELEMETRY SETTING (p.42).
Log data interval is 0.1 ~ 45.9 seconds.
- Record (Log) can be 120 STEP (Min 12 seconds ~ Max 90 minutes).
- Logger working can be started by holding enter on each [LOGGER] display (T1/T2/VOLT/RPM) or assigned switch.

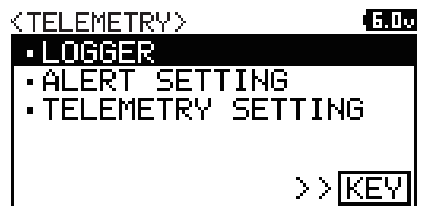
1) Select [TELEMETRY] with up and down key. Determine with enter.

2) Select [LOGGER] with up and down key. Determine with enter.

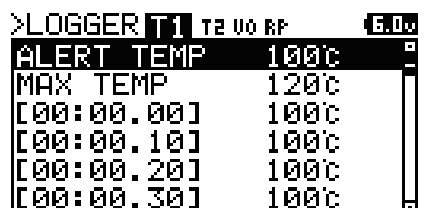
3) Select data for display [T1/T2/VOLT/RPM(RP)] with up and down key. Determine with enter.
Check log data with up and down key.



ENTER ↓ ↑ BACK



ENTER ↓ ↑ BACK



ALERT SETTING

- Alert setting is alerting by setting temperature and voltage. Also, transmitter blue LED will flash by setting telemetry data.

1) Select [TELEMETRY] with up and down key. Determine with enter.

2) Select [ALERT SETTING] with up and down key. Determine with enter.

3) T1 ALERT SETTING

Select [T1 ALERT] with up and down key. Determine with enter.

- Setting Range: 0~150°C(32~302°F)
- Default: 100°C(212°F)

4) T2 ALERT SETTING

Select [T2 ALERT] with up and down key. Determine with enter.

- Setting Range: 0~150°C(32~302°F)
- Default: 100°C(212°F)

5) VOLT ALERT Setting

Select [VOLT ALERT] with up and down key. Determine with enter.

- Setting Range: 3.0V ~ 9.0V
- Default: 3.8V

5) HOLD TIME Setting

*Sudden throttle work might be caused to instant voltage drop and it might lead unnessesry alert. In this situation, the HOLD TIME setting can make time to prevent from the unnessesary alert and provide stable alert for the unusual situation.

- Setting Range: 0.0~5.0 sec
- Default: 1.0 sec

[M01:MODEL-01] 6.0v

SETTING	TIMER
AUX	TELEMETRY
MODEL	SYSTEM

ENTER ↓ ↑ BACK

<TELEMETRY> 6.0v

• LOGGER
• ALERT SETTING
• TELEMETRY SETTING

>> [KEY]

ENTER ↓ ↑ BACK

>ALERT SETTING 6.0v

T1 ALERT	100c
T2 ALERT	100c
VOLT ALERT	3.8v
HOLD TIME	1.0sec

TELEMETRY SETTING

- Set each feature of Telemetry.

1) Select [TELEMETRY] with up and down key. Determine with enter.

2) Select [ALERT SETTING] with up and down key. Determine with enter.

3) TELEMETRY ON/OFF SETTING

Select [ON/OFF] with up and down key. Determine with enter.

- Setting Range: ON/OFF
- Default: ON

4) LOG STEP SETTING

Select [LOG STEP] with up and down key. Determine with enter.

- Setting Range: 00.1 ~ 45.9s
- Default: 00.1s

5) T1/T2 UNIT SETTING (Temperature unit setting)

Select [T1/T2 UNIT] with up and down key. Determine with enter.

- Setting Range: °C/°F
- Default: °C

6) RPM RATIO SETTING

*When setting RATIO RPM sensor in the subtracted position, you can display the number of rotations of the motor and engine after back calculation with RATIO setting.

- Setting Range: 00.001~64.999
- Default: 01.000

[M01:MODEL-01] 6.0v

SETTING	TIMER
AUX	TELEMETRY
MODEL	SYSTEM

ENTER ↓ ↑ BACK

<TELEMETRY> 6.0v

• LOGGER
• ALERT SETTING
• TELEMETRY SETTING

>> [KEY]

ENTER ↓ ↑ BACK

>TELEMETRY SETTING 6.0v

ON/OFF	ON
LOG STEP	00.1
T1/T2 UNIT	°C
RPM RATIO	01.00 0

How to Use Each Feature

SYSTEM MENU

SYSTEM

- A feature for setting system of the transmitter, such as Bind, Key Assignments (KEY ASSIGN), Buzzer, Battery, LCD and CALIBRATION.

BIND

- Select the output system that suits the receiver, set a mode for the servo (analog/digital) and the speed controller to be used and bind the transmitter with the receiver.
When using first time, please bind with receiver.

*MT-R does not bind with RX-493i from the factory.

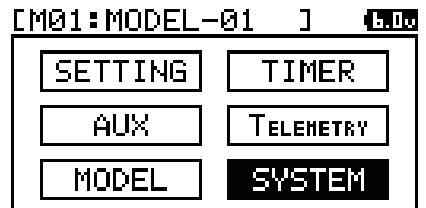
- 1) Select [SYSTEM] with the up and down key.
Determine with the Enter operation.

- 2) Select [BIND] with up and down.
Determine with the Enter operation.

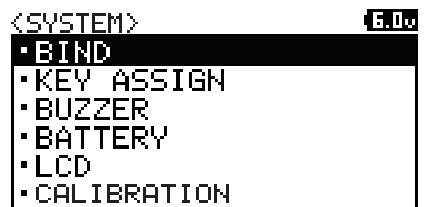
- 3) Setting RF MODE (Signal output system)
 - Output System
 - FH5
RX-491,RX-492, RX-492i RX-493, RX-493i
 - *FH4, FH3, FH-E, DS mode receivers are not compatible.

- 4)Setting Channel Mode
Set the response mode for each channel with up and down key.
•You can the set the response mode for each channel.

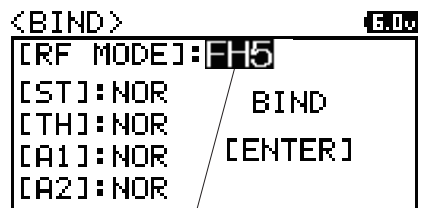
- Setting Range: NOR(Normal)
 - SHR(High Response)
 - SSR(Super Response)
 - SUR (Ultra Response)
- Default: NOR



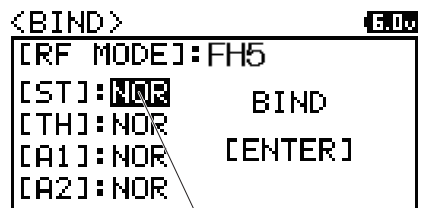
ENTER ↓ ↑ BACK



ENTER ↓ ↑ BACK



Output System



Response Mode

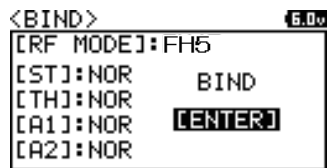
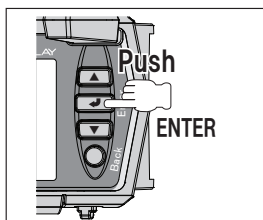
IMPORTANT

- Note that, in SHR/SSR/SUR mode, an analog servo will not work. If you mistakenly use an analog servo in SHR/SSR/SUR mode, it will not operate normally and the servo will be broken.
Do not use an analog servo in SHR/SSR/SUR mode.
- For digital servo (SRG, ERB ERS series, Digital ERG series), it can work for either mode of NOR/SHR.
- SSR mode works only for PGS ,SRG servo, SUPER VORTEX series, HV-12 STOCK SPECIAL and HV-01.
- SUR mode works for only PGS servo, SUPER VORTEX Gen2 / PRO / SV-D2.
- In SHR/SSR mode, BL/RACER, BL/FORCE, F2000, F2200, F3000, F3300, SBL-01, 02 and 03CL do not work.
- BL-SIGMA, SV-08, HV-10, HV-12 and F2500 work in NOR/SHR mode.

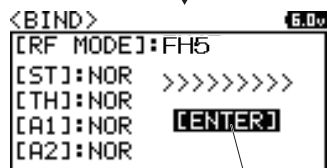
7) Setting BIND

- What is BIND: Each of MT-R transmitters has its own unique ID (solid identification) number. BIND is to let the receiver memorize the ID number. Operation will be possible only between the transmitter and the receiver that completed Binding.

- 1] When setting in the BIND menu is done, set BIND with up, down, and enter key.
- 2] Move the cursor to [ENTER] in the BIND menu and operate Enter. The transmitter now is ready for BIND operation.

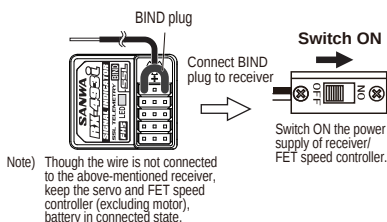


ENTER ↓



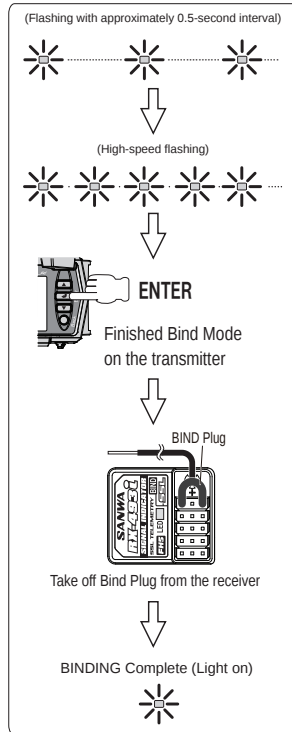
Status of the Receiver LED Flashing

- 3] Turn on the receiver with inserting Bind Plug in BIND/SSL port.



- 4] When BINDING is done properly, the LED of the receiver starts flashing slowly at first then it flashes in high speed. When the LED of the receiver flashes in high speed, operate the Enter key of the transmitter to complete BINDING. Then, please take off the Bind Plug from the receiver. When BINDING is done properly, the LED of the receiver is lit. When the LED of the receiver is lit, please check the bind completion by using servo operation.

*When BINDING cannot be done properly, restart from step 2).



! Note

- BINDING is not done at the factory. Please make sure to complete BINDING before use.
- When the receiver is new, make sure to complete BINDING for the transmitter and the new receiver.
- Make sure to use the set of the transmitter and the receiver that completed BINDING.
- When changing the setting in the BIND menu after BINDING, repeat BINDING.
- When changing the setting of the mode (NOR/SHR/SSR/SUR) after BINDING, repeat BINDING. If you do not re-BIND, setting changes will not be reflected.

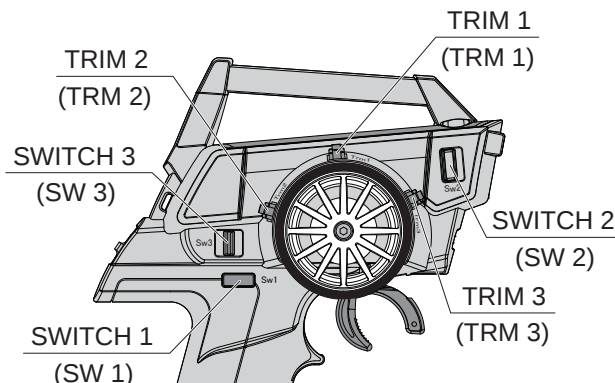
How to Use Each Feature

SYSTEM MENU

SYSTEM

- A feature for setting system of the transmitter, such as Bind, Key Assignments (KEY ASSIGN), Buzzer, Battery, LCD and CALIBRATION.

Switch and Trim position



Features assigned to the Switch and Trim at the factory

TR1: Steering Trim(TRM-ST)
TR2: Throttle Trim(TRM-TH)
TR3: Dual Rate ST(D/R-ST)
SW1: TIMER
SW2: OFF
SW3: OFF

KEY ASSIGN SWITCH

- You can assign features to the switches (SW1, SW2, SW3) of the transmitter and toggle ON/OFF of the features during operation.

- 1) Select [SYSTEM] with up and down key.
Determine with the Enter operation.
- 2) Select [KEY ASSIGN] with up and down key.
Determine with the Enter operation.
- 3) Setting the Switch (SW1/SW2/SW3)
Operate the Enter with [SW] and set the feature to assign to the switch with up and down key.

- Setting Range:

Switch	Assignable Futures
SW1	OFF, ASIST-ST, D/R-ST, D/R-TH, D/R-BR, CUR-ST, CUR-TH, SPD-ST, SPD-TH, ALB, OFFSET, AUX1, AUX2, TIMER, TE-CLR, LOGGER

Switch	Assignable Futures
SW2	OFF, ASIST-ST, D/R-ST, D/R-TH, D/R-BR, CUR-ST, CUR-TH, SPD-ST, SPD-TH, ALB, OFFSET, AUX1, AUX2

Switch	Assignable Futures
SW3	OFF, D/R-ST, D/R-TH, D/R-BR, CU-R-ST, CU-R-TH, CU-R-BR, SP-ST-F, SP-ST-R, SP-TH-F, SP-TH-R, ALB-ST, ALB-LG, ALB-CY, OFFSET, AUX1(CD1~10), AUX2(CD1~10)

- Default : SW1: TIMER SW2: OFF SW3: OFF

*BY Setting [ASSIST-ST] onto SW1 and SW2, you can turn ON/OFF the feature of D/R, SPEED and CURVE that can be set onto the steering.

- 4) Setting Mode

It sets the switch performance but there are cases that you cannot set depending on the feature to assign.

- Setting Range

TOGGLE (Switching between ON/OFF when pressed every time)

PUSH (ON is worked when switch is only pressed)

[M01:MODEL-01] Trm 6.0w



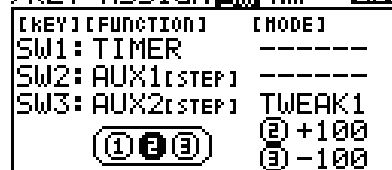
ENTER ↓ ↑ BACK

<SYSTEM> 6.0w



ENTER ↓ ↑ BACK

>KEY ASSIGN SW Trm 6.0w



About MODE Setting for SW3

	①	②	③
TWEAK1	Neutral	P1	P2
TWEAK2	P1	Neutral	P2

P1/P2 can be changed freely.

KEY ASSIGN TRIM

- You can change the setting value of each feature with Trim1 - Trim3.
- You can also change the setting of the variation change in one time of Trim operation with the STEP setting and the direction of the action with the REV setting.

1) Select [SYSTEM] with up and down key.

Determine with the Enter operation.

2) Select [KEY ASSIGN] with up and down key.

Determine with the Enter operation.

3) Setting Trim (TRM1/TRM2/TRM3)

Select [TRIM] with enter. Change the setting and set a feature to assign with up and down key.

○ Setting Range:

>KEY ASSIGN sw TRM 6.00			
[KEY]	[FUNCTION]	[STEP]	[REV]
TR1:	TRM-ST	5	NOR
TR2:	TRM-TH	5	NOR
TR3:	D/R-ST	1	NOR

Switch	Assignable Futures
TRIM1	OFF, TRIM-ST, TRM-TH, TRIM-A1, TRIM-A2, D/R-ST, D/R-TH, D/R-BR, CU-R-ST, CU-R-TH, CU-R-BR,
TRIM2	SP-ST-F, SP-ST-R, SP-TH-F, SP-TH-R, ALB-PO, ALB-ST, ALB-LG, ALB-CY, OFFSET,
TRIM3	AUX1(CD1~10), AUX2(CD1~10)

- Default:
- TR1:TRM-ST
TR2:TRM-TH
TR3:D/R-ST

4) Setting Step

Set the variation of the movement by one-time Trim operation.

Select [STEP] with up and down key. Determine with the Enter operation and set the variation.

○ Setting Range: 1~100

○ Default: 5

5) Setting the Direction of Action

Set the direction of action when operating Trim. Select [REV] with up and down key.

Determine with the Enter operation and set the direction of action.

○ Setting Range: NOR/REV

○ Default: NOR

How to Use Each Feature

SYSTEM MENU

SYSTEM

BUZZER

- You can set operating sounds of key operation, Trim and Switch and the buzzer tones.
- You can set 5 steps of the volume and 7 types of tones.

- 1) Select [SYSTEM] with up and down key.
Determine with the Enter operation.
 - 2) Select [BUZZER] with up and down key.
Determine with the Enter operation.
 - 3) Setting Tone and Volume
You can switch between Tone (scales) and Volume (Sound Volume) with up and down key. Select an item to change setting to adjust.
- Setting Range: VOLUME OFF~5
TONE 1~7
 - Default: VOLUME 4
TONE 1

```
[M01:MODEL-01] T.M 6.0v
[SETTING] [TIMER]
[AUX] [TELEMETRY]
[MODEL] [SYSTEM]
```

ENTER ↓ ↑ BACK

```
<SYSTEM> 6.0v
• BIND
• KEY ASSIGN
• BUZZER
• BATTERY
• LCD
• CALIBRATION
```

ENTER ↓ ↑ BACK

```
>BUZZER 6.0v
• VOLUME 4
• TONE 1
```

BATTERY

- You can change the voltage setting of the battery alarm of the transmitter.
- By selecting Type [DRYx4 (Batteries)/Ni-MH x4 (Nickel Metal Hydride)/Li-Fe x2 (Lithium Ferrite) /Li-Po x2 (Lithium Polymer),CUSTOM], you can set the alarm easily.
*When selecting CUSTOM with the Type, you can set ALERT VOLT that sets voltage to make Alarm go off and LIMIT VOLT of the lower limite voltage.

- 1) Select [SYSTEM] with up and down key.
Determine with the Enter operation.
 - 2) Select [BATTERY] with up and down key.
Determine with the Enter operation.
 - 3) Setting TYPE
Set TYPE for the battery to be used with up and down key.
- Setting Range: DRY x4 (AA x4)
Ni-MH x2 (Nickel Metal Hydride)
Li-Po x2 (Lithium Polymer)
Li-Fe x2 (Lithium Ferrite)
CUSTOM: ALERT VOLT:4.1 ~ 9.0v
: LIMIT VOLT:4.0 ~ 9.0v
 - Default: DRYx4 (AA x4)

```
<SYSTEM> 6.0v
• BIND
• KEY ASSIGN
• BUZZER
• BATTERY
• LCD
• CALIBRATION
```

ENTER ↓ ↑ BACK

```
>BATTERY 6.0v
• TYPE DRYx4
• ALERT VOLT 4.6v
• LIMIT VOLT 4.0v
```

LCD

- You can set LCD contrast (intensity) and lighting mode of Back Light.

1) Select [SYSTEM] with up and down key. Determine with the Enter operation.

2) Select [LCD] with up and down key. Determine with the Enter operation.

3) Set LCD contrast (intensity), lighting mode of Back Light, and language.

- Setting Items: CONTRAST (Intensity of Display)
LIGHTS-MODE (Backlight Lighting Mode)
LIGHT-TIME (Backlight Lighting Time)

- Setting Range: CONTRAST:0~30
LIGHT-MODE:OFF /KEY-ON /ALWAYS
LIGHT-TIME:1~30sec

- Default: CONTRAST:15
LIGHT-MODE:KEY-ON
LIGHT-TIME:10sec

```
<SYSTEM> 6.0v
• BIND
• KEY ASSIGN
• BUZZER
• BATTERY
• LCD
• CALIBRATION
```

```
ENTER ↓ ↑ BACK
>LCD 6.0v
• CONTRAST 15
• LIGHT-MODE KEY-ON
• LIGHT-TIME 10
```

CALIBRATION

- Due to wearing and tearing of the internal mechanical elements over the usage time, the neutral position and the operation angle might become off. In such case, you can correct the neutral positions and the operation angle of the steering and the throttle.

1) Select [SYSTEM] with up and down key.
Determine with the Enter operation.

2) Select [CALIBRATION] with up and down key.
Determine with the Enter operation.

3) Select a channel to calibrate with up and down key.
Determine with the Enter operation.

4) When selecting [STEERING], operate the Enter with the steering wheel in neutral, then operate the steering wheel fully to left and right.

5) When entering the range, [OK] is displayed.
Operate following the display.

6) When calibration is done, [Executed] is displayed.

*If the throttle side also needs calibration, refer to the steering to set.

```
<SYSTEM> 6.0v
• BIND
• KEY ASSIGN
• BUZZER
• BATTERY
• LCD
• CALIBRATION
```

```
ENTER ↓ ↑ BACK
>CALIBRATION 6.0v
• STEERING < L10>
• THROTTLE < 0>
```

```
>CALIBRATION STEERING 6.0v
[NEUT] POS < ---->
```

```
>CALIBRATION STEERING 6.0v
[NEUT] POS < 0> OK
[L] POS < 122> OK
[R] POS < -122> OK

Adjust ok? NO / YES
```



SUPPLEMENT

- Steering did not work correctly even if you did calibration. Please contact with our distributor in your country.

```
>CALIBRATION STEERING 6.0v

Executed
```

Completed Calibration

←
YES

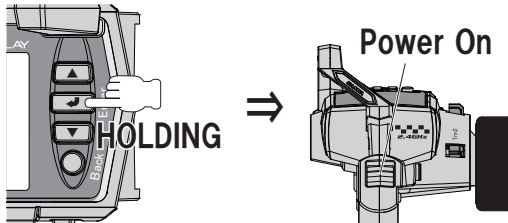
Select YES if calibration is OK

How to Use Each Feature

QUICK SETUP WIZARD

- Quick Setup Wizard function is easily to set up when you set up new RC car.
- Setup Wizard is flowing start menu→model select→type select→model initialize→RF mode select→response mode select→bind→base setting.

1) Turn the power switch on with holding enter key.



2) Quick Setup screen is displayed.
Setup Wizard will be started with Enter.

3) Switch model select, and select model with up and down key.
Determined car type with enter.

4) When the screen is changed to Car Type selection screen, select a Car Type using Multi-Selector.
When a Car Type is selected, set with Enter.

Setting up Type

○ Setting Range:

EP CAR STANDARD
EP CAR DRIFT
EP CAR (PGS)
EP CAR (SV-G2P)
EP CAR (SV-D2)
GP CAR STANDARD
1/5 GP CAR DUAL BR1
1/5 GP CAR DUAL BR2
CRAWLER 4WS/MOA

○ Default:

EP CAR STANDARD

*Channel operation of each type will be as follows.

TYPE Lists

CH \ TYPE	EP CAR STANDARD	EP CAR (DRIFT)	EP CAR (PGS)	EP CAR (SV-G2P)	EP CAR (SV-D2)	GP CAR STANDARD	1/5 GP DUAL-BR1	1/5 GP DUAL-BR2	CRAWLER 4WS/MOA
CH1	STEERING	STEERING	STEERING	STEERING	STEERING	STEERING	STEERING 1	STEERING	STEERING F
CH2	ESC	ESC	ESC	ESC	ESC	THROTTLE /BRAKE	THROTTLE /BRAKE R	THROTTLE	ESC F
CH3	AUX1	AUX1	CODE1	CODE1	CODE1	AUX1	STEERING 2	BRAKE R	STEERING R
CH4	AUX2	AUX2	CODE2	CODE2	CODE2	CODE2	BRAKE F	BRAKE F	ESC R

*Select a type to be used according to a R/C.

< QUICK SETUP > 6.00

QUICK SETUP WIZARD
START
[ENTER]

ENTER ↓ ↑ BACK

1. SELECT MODEL 6.00

[M01 : MODEL-01]
M01 : MODEL-01 < FH5 >
M02 : MODEL-02 < FH5 >
M03 : MODEL-03 < FH5 >
M04 : MODEL-04 < FH5 >

ENTER ↓ ↑ BACK

2. SELECT CAR TYPE 6.00

TYPE : EP CAR (SV-G2P)
1ch>ST Trn2>TRM-TH
2ch>ESC Trn3>D/R-ST
3ch>CDsv-g2p SW2>OFF
4ch>CDpgs-cl2 SW3>OFF

ENTER ↓ ↑ BACK

3. MODEL INITIALIZE 6.00

[M01 : MODEL-01]
< EP CAR (SV-G2P) >
INITIALIZE? NO / YES

ENTER ↓ ↑ BACK

5) When deciding the car type using Enter, the screen changes to Initialization (Model Initialization) screen.
Do initialization following the message.

6) When initializing (Initializing Model) is completed, the screen changes to RF Mode Selection Screen.
MT-R is only compatible with FH5 RF mode.

○Default: FH5

•Compatible Receivers: FH5

RX-491,RX-492,RX-492i RX-493,RX-493i

7) Once RF Mode for the receiver is determined, the screen changes to the Response Mode screen.
Set Response Mode according to the servos and the equipment to be used.
Set with up and down key and finalize with the Enter key.

○ Setting Range: NOR(Normal / Analog Servo)

SHR(High Response / Digital Servo)

SSR(Super Response / SRG Servo)

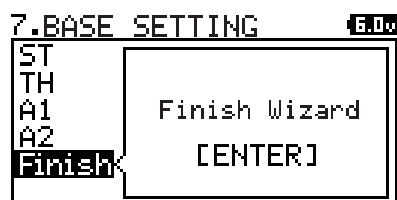
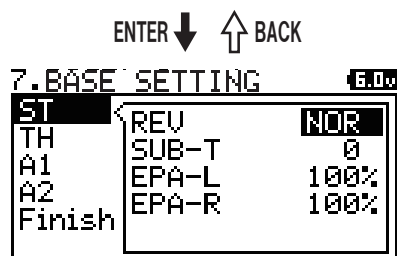
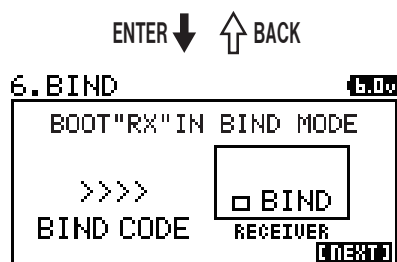
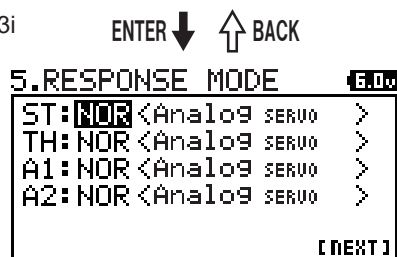
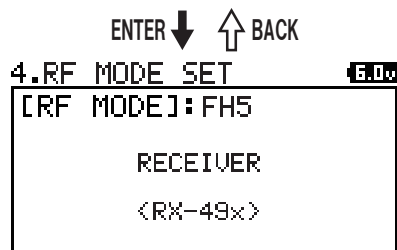
SUR (Ultra Response / PGS Servo)

○ Default: NOR(Normal / Analog Servo)

8) When Response Mode setting is completed, the screen changes to BIND Set up Screen.
Follow the screen message and start Binding.

9) When Binding (BIND) is done, the screen changes to the Base Set Up screen.
Complete setting for each channel (refer to p.43).

10)When Base setting is done, Set Up Wizard will end.
If you press the Enter button, the screen changes to the Top screen.



IMPORTANT

- Please note that the analog servos do not work in SHR/SSR/SUR modes. If you mistakenly use the analog servos in SHR/SSR/SUR modes, it does not work normally and the servos will be broken. Never use analog servos in SHR/SSR/SUR modes. For digital servos (SRG, ERB, ERS Series and Digital ERG Series), either NOR or SHR mode works.
- SSR mode works only for PGS, SRG Servos, SUPER VORTEX/SV-PLUS series, HV-12, STOCK SPECIAL and HV-01.
- SUR mode works only for PGS servo, SUPER VORTEX Gen2 / PRO / SV-D2.
- With SHR/SSR/SUR mode, BL-RACER, BL-FORCE, F2000, F2200, F3000 F3300, SBL-01 02 and 03CL do not work. Make sure to use them in NOR mode.
- BL-SIGMA, SV-08, HV-10, HV-12 and F2500 work in NOR/SHR modes.
- Please read user manual of using speed controller.

How to Use Each Feature

ABOUT QUICK SETUP WIZARD

- Quick Setup Wizard function is easily to set up when you set up new RC car.
- Setup Wizard is flowing start menu→model select→type select→model initialize→RF mode select→response mode select→bind→base setting.

① EP CAR STANDARD

For Standard Electric RC Car Setting

1CH : ST (Steering)	SW1 : TIMER	TR1 : TRM-ST
2CH : ESC (Speed Controller)	SW2 : OFF	TR2 : TRM-TH
3CH : AUX1	SW3 : OFF	TR3 : D/R-ST
4CH : AUX2		

② EP CAR DRIFT

For Drift Car Setting

Pushing TRM3 can change AUX(3CH) setting.

*Connected Gyro in receiver 3CH can be set.

1CH : ST (Steering)	SW1 : TIMER	TR1 : TRM-ST
2CH : ESC (Speed Controller)	SW2 : OFF	TR2 : TRM-TH
3CH : AUX1	SW3 : OFF	TR3 : AUX1
4CH : AUX2		

③ EP CAR (PGS)

For Electric Car setting with PGS servo series for steering.

Connected PGS servo to receiver SSL port can be set by AUX CODE 10 in AUX menu.

1CH : ST (Steering)	SW1 : TIMER	TR1 : TRM-ST
2CH : ESC (Speed Controller)	SW2 : OFF	TR2 : TRM-TH
3CH : AUX1	SW3 : OFF	TR3 : D/R-ST
4CH : CODE (PGS)		

④ EP CAR (SV-G2P)

For Electric Car setting with PGS servo series for steering and

SUPER VORTEX Gen2, Gen2 PRO, and SV-D2 for throttle.

Connected PGS servo and the speed controller to receiver SSL port can be set by AUX CODE 10 in AUX menu.

1CH : ST (Steering)	SW1 : TIMER	TR1 : TRM-ST
2CH : ESC (Speed Controller)	SW2 : OFF	TR2 : TRM-TH
3CH : CODE (SV-G/D)	SW3 : OFF	TR3 : D/R-ST
4CH : CODE (PGS)		

⑤ EP CAR (SV-D2)

For Drift Car setting with SUPER VORTEX Gen2, Gen2 PRO, SV-D2

and SGS-02 for Gyro.

Connected the speed controller and gyro to receiver SSL port can be set by AUX CODE 10 in AUX menu.

⑥ GP CAR STANDARD

For Standard Nitro Car setting

Assigned to turn on and off OFFSET function to SW2.

In case of using PGS servo series for steering and throttle, connected the PGS servo to receiver SSL port can be set by AUX CODE 10 which can set device by transmitter.

1CH : ST (Steering)	SW1 : TIMER	TR1 : TRM-ST
2CH : TH/BR (Throttle/Brake)	SW2 : OFFSET	TR2 : TRM-TH
3CH : AUX1	SW3 : OFF	TR3 : D/R-ST
4CH : CODE (PGS)		

⑦ 1/5GP DUAL -BR1

1CH & 3CH for steering, and 2CH & 4CH for throttle and brake setting

Assigned 2CH brake servo working can be set by TRM2.

Assigned 4CH brake servo working can be set by TRM3.

1CH : ST1 (Steering)	SW1 : TIMER	TR1 : TRM-ST
2CH : TH/BR (Throttle/Brake)	SW2 : OFFSET	TR2 : D/R-BR
3CH : ST2 (Steering)	SW3 : OFF	TR3 : AUX2
4CH : BR (Brake)		

⑧ 1/5GP DUAL-BR2

1CH for steering, 2CH for throttle, and 3CH & 4CH for brake setting

Assigned 3CH brake servo working can be set by TRM2.

Assigned 4CH brake servo working can be set by TRM3.

2CH / 3CH brake servo mixing rate can be set by AUX menu.

2CH / 4CH throttle and brake mixing rate can be also set by AUX menu.

1CH : ST1 (Steering)	SW1 : TIMER	TR1 : TRM-ST
2CH : TH (Throttle)	SW2 : OFFSET	TR2 : AUX1
3CH : BR1 (Brake)	SW3 : OFF	TR3 : AUX2
4CH : BR2 (Brake)		

⑨ CRAWLER 4WS/MOA

1CH & 3CH for steering, and 2CH & 4CH for speed controller setting

4WS mode can be changed by TRM3. [F-ST]⇔[REV]⇔[NOR]⇔[R-ST]

MOA-RATE can be changed by TRM2. [F100:R0]⇔[F100:R100]⇔[F0:R100]

Detailed MOA setting and 4WS setting can be changed by AUX menu.

1CH : ST1 (Steering)	SW1 : TIMER	TR1 : TRM-ST
2CH : ESC1(Speed Controller)	SW2 : OFF	TR2 : AUX2
3CH : ST2 (Steering)	SW3 : OFF	TR3 : AUX1
4CH : ESC2 (Speed Controller)		

Assign Function List

Display Name	Function Name	TRIM	SW1	SW2	SW3
OFF	———(NO FUNCTION)	○	○	○	○
TRIM-ST	Steering Trim	○	—	—	—
TRIM-TH	Throttle Trim	○	—	—	—
TRIM-A1	AUX1 Trim	○	—	—	—
TRIM-A2	AUX2 Trim	○	—	—	—
D/R-ST	Steering Dual Rate	○	○	○	○
D/R-TH	Throttle Dual Rate	○	○	○	○
D/R-BR	Brake Dual Rate	○	○	○	○
CUR-ST	Steering Curve	—	○	○	—
CUR-TH	Throttle Curve	—	○	○	—
CU-R-ST	Steering Curve Rate	○	—	—	○
CU-R-TH	Throttle Curve Rate	○	—	—	○
CU-R-BR	Brake Curve Rate	○	—	—	○
SPD-ST	Steering Speed	—	○	○	—
SPD-TH	Throttle Speed	—	○	○	—
SP-ST-F	Steering Speed Forward	○	—	—	○
SP-ST-R	Steering Speed Return	○	—	—	○
SP-TH-F	Throttle Speed Forward	○	—	—	○
SP-TH-R	Throttle Speed Return	○	—	—	○
ALB	Anti-Lock Brake	—	○	○	—
ALB-PO	Anti-Lock Brake Point	○	—	—	—
ALB-ST	Anti-Lock Brake Stroke	○	—	—	○
ALB-LG	Anti-Lock Brake Lag	○	—	—	○
ALB-CY	Anti-Lock Brake Cycle	○	—	—	○
OFFSET	OFFSET	○	○	○	○
AUX1	AUX1	○	○	○	○
AUX1(CODE1)	AUX1(CODE 1)	○	—	—	○
AUX1(CODE10)	AUX1(CODE10)				
AUX2	AUX2	○	○	○	○
AUX2(CODE1)	AUX2(CODE1)	○	—	—	○
AUX2(CODE10)	AUX2(CODE10)				
ASIST-ST	Steering Drive Assist	—	○	○	—
TIMER	Timer	—	○	—	—
TE-CLR	Telemetry Max Clear	—	○	—	—
LOGGER	Log Clear & Start	—	○	—	—

Settable...「○」 Unsettable...「—」

Transmitter LED Indication List

LED Condition	Working Condition
Light on	Normal Operation (While Transmitter Output)
High-speed Flashing	ALB Working
Medium-speed Flashing	Battery Alarm Working
Flashing	Logger Working
Twice Flashing	OFFSET Working
	Telemetry Working
	POWER ON Alarm Working
High-speed Flashing	Battery (LIMIT) Alarm Working
	Over Voltage Alarm Working
Low-speed Flashing	BIND Command Sending

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When this happens

症状	原因	措施
没有权力。	电池被消耗掉了。 电池放置不当。	换上新电池或 更换新电池或充电电池。 按照指示的极性重新安装电池。
偶尔会断电。	连接器的连接不良。	带到三和服务
长度不够	电池被消耗掉了。	用新电池或充电后的电池替换。 如果问题不能得到解决。 请联系三和服务
警报不停止。	发射器的电池电压被耗尽。	用新电池或充电电池替换。
按键时没有点击声。	BUZZER功能的音量被关闭（0）。	检查BUZZER功能
伺服机的速度很慢。	SPEED功能被设置为负值。	检查SPEED功能
	接收器的电池电压正在下降。	用新电池或充电电池替换。
	车身一侧的联动装置很重。	检查车体一侧的连杆是否轻度移动。
左边和右边的转向角是不同的，即使它们是对齐的。	修剪中线没有对准。	对准修剪，重置EPA。
操作时，伺服机将不会在两端工作	D/R和EPA的转向角设置过大。	将任一数值设置为100%以下。
即使按动微调键， 伺服装置也不工作	修剪工作范围在一侧达到最大。	请重置伺服喇叭和微调中心。

Service and Support

This is warranted against manufacturer defects in materials and workmanship, at the original date of purchase. This warranty does not cover components worn by use or damage caused by improper voltage, tempering, modification, misuse, abuse, improper wiring, reverse polarity, moisture or using outside its intended scope of use.

Terms of this warranty can vary by region. Please read the warranty card included with your radio control system for specific warranty information.

If you have any questions or concerns, we're here to help. If you encounter a problem with your radio control system, first check the Troubleshooting Guide on Page 56.

If you require further help that cannot be solved using The Troubleshooting Guide, or if you have technical questions, please contact SANWA service center in your region.

For a complete list of distributors in your region, please visit www.sanwa-denshi.com/rc/distributors.html.

For Service In North America:

Serpent America

5121 NW 79 Ave. Unit 03,

Doral, Florida 33166 USA

Telephone: (305)-677-3253

Fax: (305)-675-0415

Email: info@serpentamerica.com

Factory Service:

Sanwa Electronic Instrument CO., LTD.

1-2-50 Yoshita-Honmachi

Higashiosaka, Osaka, 578-0982 Japan

Telephone: 81-729-62-1277

Fax: 81-729-64-2831

Email: rcintl@sanwa-denshi.co.jp

Product features and specifications can vary by region. Not all products are legal for use in all regions.



Please note that products purchased outside of North America cannot be serviced under warranty by Serpent America. In some cases, we can make repairs for products purchased outside of North America, however, applicable repair costs and shipping charges will be applicable. For warranty claims outside North America, please contact the service center in your region.

FCC COMPLIANCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the operating instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment OFF and ON, the user is encouraged to try to correct the 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 technician for help.

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.



Changes or modifications made to this equipment not expressly approved by SANWA may void the FCC authorization to operate this equipment.

RF Exposure Statement:

This transmitter has been tested and meets the FCC RF exposure guidelines when used with the SANWA accessories supplied or designated for this product, and provided at least 20cm separation between the antenna the user's body is maintained. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.



SANWA ELECTRONIC INSTRUMENT CO., LTD.

**1-2-50 Yoshita-Honmachi
Higashiosaka, Osaka, 578-0982 Japan**

**Telephone: 81-729-62-1277
Facsimile: 81-729-64-2831
Email: general@sanwa-denshi.co.jp**

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