MODEL MENU (COMMON FUNCTIONS)

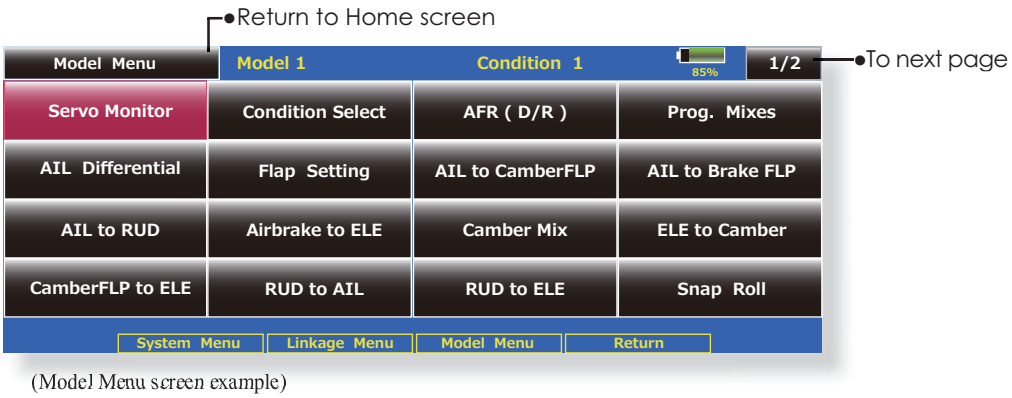
This section describes the AFR, program mixing, and other functions common to all model types.

Before setting the model data, use the Model Type function of the Linkage Menu to select the model type matched to the fuselage. When another model type is selected thereafter, the AFR, program mixing, and other setting data are reset.

The functions in the Model Menu can be set for each flight condition. When you want to use the system by switching the settings for each condition by switch, stick position, etc., use the Condition Select function to add flight conditions. (Up to 8 conditions can be used)

Note: The T18MZ is designed so that the airplane and glider (including EP glider) model types are compatible with fuselages of similar type wings. This section outlines the relationship between the functions common to airplanes and gliders, except some dedicated functions, and model type. The setting items depend on the number of servos and other differences according to the wing type used, but reread them. The setup screens in the instruction manual are typical examples.

- Touch the Model Menu button of the Home screen to call the Model Menu.
- When the button of the function you want to set is touched, a setup screen appears.



(Model Menu screen example)

*The Model Menu screen depends on the model type. This screen is for model type 4AIL+4FLP.

Model Menu functions (Common) list

●Servo Monitor

Servo test and servo position display (For a description of its functions, see the Linkage Menu section.)

●Condition Select

Flight conditions addition, deletion, copy, condition renaming, and condition delay can be set.

●AFR (D/R)

Sets the rudder angle and curve of all the operation functions. A D/R curve which can be switched with a switch, etc. can also be added.

●Prog. Mixes

Program mixing which can be freely customized. Up to 10 mixes can be used for each condition.

●Fuel Mixture

Mixing used in needle adjustment of engines which use a fuel mixture control carburetor. [Airplane, helicopter]

Condition Select

Flight conditions addition, deletion, copy, condition renaming, and condition delay can be set. [All model types]

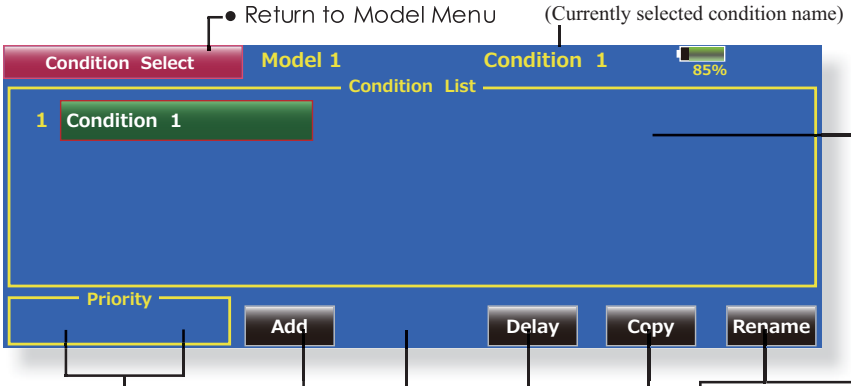
The functions in the Model Menu can be used by switching the settings of up to 8 flight conditions by using the Condition Select function to add flight conditions. Add conditions, as required.

When you do not want to use the Condition Select function, this setting is unnecessary. In this case, use the flight conditions (Condition 1) assigned at initial setting.

- Since switching by stick and lever position, in addition to ordinary toggle switch, is possible as the flight condition selector switch, this function can be linked with other operations.
- A Condition Delay function can be set. Unnecessary fuselage motion generated when there are sudden changes in the servo positions and when there are variations in the operating time between channels during condition switching can be suppressed. The delay can be set for each channel.

  When setting the delay function at the switching destination condition, the related function changes after a delay corresponding to the set amount.
- When multiple conditions were set, their operation priority can be freely changed.
- The condition name can be changed. The selected condition name is displayed on the screen. When a condition has been added, give it a name which can be easily confirmed.

- Touch the [Condition Select] button in the Model Menu to call the setup screen shown below.



Priority change

1. Touch the condition whose priority you want to change in Conditions List.
2. Change the priority with the priority [△] or [▽] button. (The last condition has the highest priority.)

*The initial setting condition cannot be moved. It has the lowest priority.

Condition Addition

1. When the [Add] button is touched, the Condition Select screen appears.

*Only the number of buttons corresponding to the conditions which can be added are displayed.

2. Select the desired conditions by touching the buttons.

*The selected conditions are added to Conditions List.

3. Touch the [NULL] button to call the <Switch> screen.
4. Select the switch to be used in condition switching.

(For a description of the switch selection method, see next page.)

5. The "Condition 1" data for the added conditions is copied.

●Condition delay setting

(For a description of the setting method, see the next page.)

Condition Reset

1. Select the condition by touching the condition you want to reset in Conditions List.
2. Touch the [Reset] button.
3. When the [Yes] button is touched, the condition is reset. (To abort resetting, touch the [No] button.)

Condition Renaming

1. Select the condition by touching the condition you want to rename in Conditions List.
2. Touch the [Rename] button.
3. Enter the new name from the keyboard which appears on the screen. (For a description of the method of using the Japanese language conversion mode, see "Characters Input Method" of the Basic Operation section.)
3. When the keyboard [Return] key is touched, the new name is registered. (To abort registration, touch the [ESC] key.)

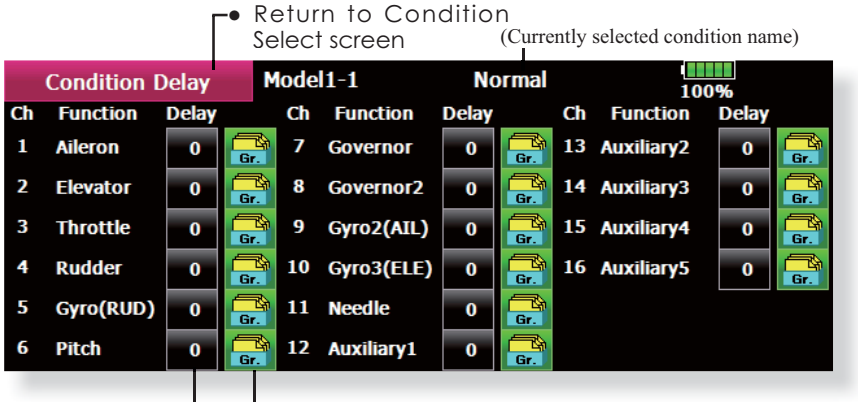
Condition Copy

1. Touch the [Copy] button. The Copy screen appears.
2. Select the condition by touching the button of the copy source conditions.
3. Next, select the condition by touching the copy destination condition.
4. Touch the [COPY] button.
5. When the [Yes] button is touched, the data is copied. (To abort copying, touch the [No] button.)

Condition switch setting and ON/OFF direction switching

*For a description of the selection method, see [Switch Setting Method] at the back of this manual.

● Touch the [Delay] button on the Condition Select screen to call the Condition Delay screen shown below.



Condition delay setting

1. Switch to the condition you want to set.
2. Touch the Delay button of the channel you want to set.
3. Use the adjustment buttons to set the delay.
   - ●Initial value: 0
   - ●Adjustment range: 0~27 (maximum delay)

●Group/single mode switching (Gr./Sngl)

(For a description of the operation method, see the description at the back of this manual.)

AFR (D/R)

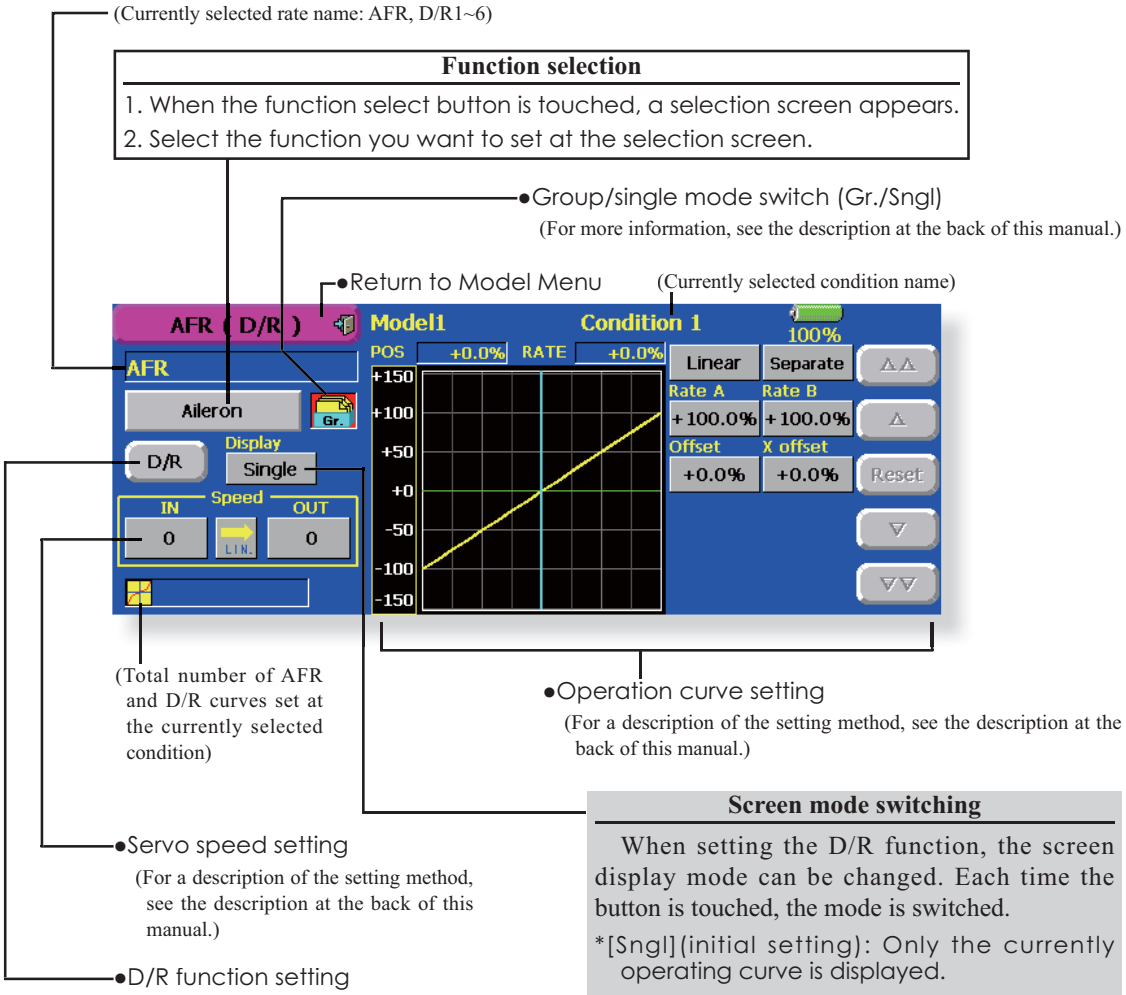
The rudder angle and curve of each operation function can be set. A D/R curve which can be switched by switch, etc. can also be added. [All model types]

AFR function is used to adjust the throw and operation curve of the stick, lever, and switch functions (CH1 to CH16) for each flight condition. This is normally used after End Point (ATV) has defined the maximum throw directions (End Point acts on ALL flight condition settings). When mixing is applied from one channel to another channel, both channels can be adjusted at the same time by adjusting the operation rate through the AFR function.

Setting method

- Operation curve adjustment: Six types of curves (linear, EXP1, EXP2, VTR, line and spline) can be selected. A maximum 17 points curve can be used for the line and spline curve types. (Initial setting: 9 points) The number of points can also be increased and decreased and curves from complex curves to simple curves can be used.
- Operation speed adjustment: The operation speed of each function when the function is operated (including at flight condition switching) can be adjusted. The function operates smoothly at a constant speed corresponding to the set speed.

- Touch the [AFR (D/R)] button in the Model Menu to call the setup screen shown below.



Screen mode switching

When setting the D/R function, the screen display mode can be changed. Each time the button is touched, the mode is switched.

*[Sngl](initial setting): Only the currently operating curve is displayed.

*The AFR and D/R curves set at the currently operating condition are displayed.

*[All Cond.]: The AFR curve set at all conditions is displayed.

Dual Rate setting

Up to 6 dual rates can be set for each condition.

*D/R (Dual Rate) is set for each condition, and is not reflected at other conditions.

*D/R (Dual Rate) at the top of the D/R list has priority.

Setting method

- Touch the [D/R] button from the AFR (D/R) screen of the function (ailerons, elevators, etc.) whose dual rate you want to set. The D/R list screen shown below is displayed. Touch the (function) button of the dual rate number to be assigned. That rate is automatically assigned to that function.
- Next, select the switch and its ON/OFF directions.

Close

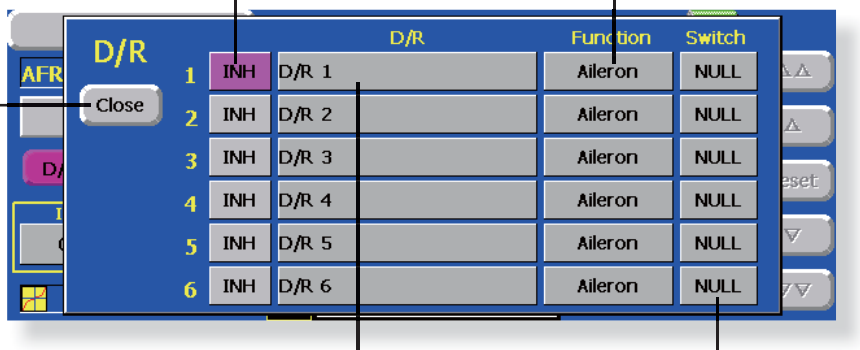
●At the end of each setting, touch the [Close] button.

Start D/R1

● To start D/R1, touch the [INH] button.

Function change

● When the aileron button is touched, the system asks for a [Yes] or [No]. To change the function, switch to the function selected at the AFR screen by answering [Yes].



Naming D/R1

1. To name D/R1, touch the [D/R1] button. A keyboard appears on the screen.
2. Enter the desired name from this keyboard and register it by touching the keyboard [Return] key. To cancel input and close the screen, touch the [ESC] key.

Switch setting

1. Touch the [NULL] button. The <Switch> screen appears.
2. Select (confirm) the switch and its ON direction.

Setting example

● Rudder ON/OFF by switch. When D/R is used by using the condition with the same switch, another rudder angle can be set.

Since the function shown below is used by an exclusive function, AFR (D/R) cannot be chosen.

Aileron2,Aileron3,Aileron4
Flap2,Flap4
Rudder2
Throttle(Only helicopter)
Pitch
Camber
Gyro(RUD),Gyro2(AIL),Gyro3(ELE)
Governor
Mixture
Elevator2
Butterfly

Prog. Mixes

Program mixing which can be freely customized. Up to 10 mixings can be used for each condition. [All model types]

Programmable mixing may be used to correct undesired tendencies of the aircraft, and it may also be used for unusual control configurations. Mixing means that the motion of a command channel, called the "master," is added to the motion of the mixed channel, called "slave."

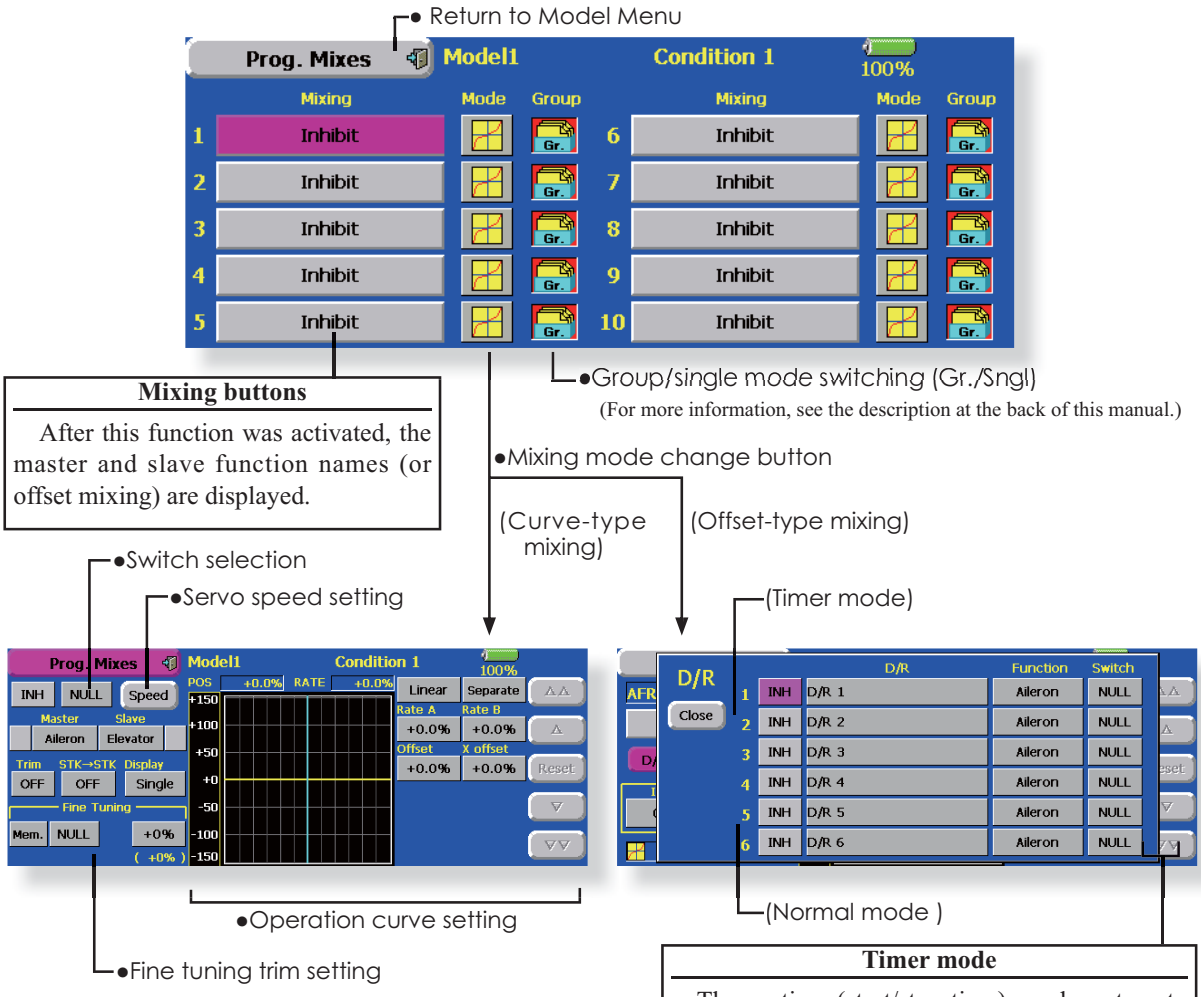
You may choose to have the Masters trim added to the Slave channel response, if you desire ("Trim" setting). The mixing curve can be changed so that the undesired tendencies can be corrected effectively by setting the LINEAR1/LINEAR2/EXP1/EXP2/VTR/LINE/SPLINE modes. The Delay function can be programmed for each rate. The Delay is used to change the rate smoothly when switching. You may define Mixing ON/OFF switch, control or you may choose to have mixing remaining on all the time.

Offset-type mixing applies a fixed offset or preset to the programmed channel servo operation and may control up to four circuits simultaneously.

The Programmable mixing includes a powerful link function, which allows Programmable mixing to be linked with the special mixing functions, or with other programmable mixing functions. The link function can be set up for Master and Slave channel individually.

The slave channel AFR mode (STK-STK mode) may be selected, where the slave channel AFR and D/R settings are observed when Link function is set. The knob for fine tuning can be set up for every mixing circuit. (Fine tune function)

● Touch the [Prog. Mixes] button in the Model Menu to call the setup screen shown below.



Mixing buttons

After this function was activated, the master and slave function names (or offset mixing) are displayed.

Timer mode

The on time (start/stop time) can be set up to 9 seconds. It is useful for landing gear control of the jet or scale plane, etc.

Setting methods

●Group/single mode selection

Activating functions for only the selected conditions:

1. Touch the Group button and switch to the Sngl mode.

*Each time the button is touched, it toggles between the Gr. and Sngl modes.

●Mixing mode selection

Using the offset mode:

1. Touch the Mode button and switch to the Offset mode.

*Each time the button is touched, it toggles between the Mix and Offset modes.

●Mixing setup screen selection

1. Touch the button of the mixing you want to set. The mixing setup screen is displayed. Activate the function.
2. Activate the function by touching the [INH] button.

*Each time this button is touched, it toggles between [INH] and [ON/OFF].

●Mixing ON/OFF switch setting and ON/OFF direction switching

*An ON/OFF switch is not set even when the function is activated.

1. When you want to turn mixing ON/OFF by switch, touch the [NULL] button to call the <Switch> screen and then select the switch and its ON direction.

*For a description of the selection method, see [Switch Setting Method] at the back of this manual.

●Master channel setting (except offset type mixing)

1. Touch the Master button to call the Function menu and select the master channel.
2. To link this mixing with other mixing, touch the button at the left of the master channel and select link.

*Each time the button is touched, it toggles between mixing direction + and - and "No display" (no link).

*Master channel control can be set to stick, VR, and other simple travels which do not include ATV, AFR, D/R, mixing setting, etc. In this case, display the <Switch> screen by touching the [H/W] button and then select master channel side control.

●Slave channel setting

1. Touch the Slave button to call the Function menu and select the slave channel.
2. To link this mixing with other mixing, touch the button at the right-hand side of the slave channel and select link.

*Each time the button is pressed, it toggles between mixing direction + and - and "No display" (no link).

●Trim mode ON/OFF setting

1. To turn the trim mode ON/OFF, touch the Trim button on the screen.

*When mixing includes master side trim, set the Trim button to [ON]. When mixing does not include master side trim, set the Trim button to [OFF].

*Each time this button is pressed, it toggles between [ON] and [OFF].

*This is effective when the master channel is set by Function.

●Slave channel AFR mode (STK→STK)

1. When Link is set at the slave side, and you want to add AFR (D/R) to the mixing rate, select [ON]. When you do not want to add AFR (D/R) to the mixing rate, select [OFF].

*Each time this button is pressed, it toggles between [ON] and [OFF].

*This is effective when making corrections when the fuselage is the same but the rudder angles are substantially different.

●Mixing curve type selection

1. Touch the curve type selection button of the curve type you want to use to display the selection screen and then select the curve you want to use.

*For a description of the curve setting method, see the description at the back of this manual.

●Fine tuning trim setting

1. When using the curve fine tuning function, touch the [NULL] button of the Fine Tuning item to call the <Switch> screen and then select the lever, VR, etc. you want to use.

*For a description of the fine tuning trim setting method, see the description at the back of this manual.

●Servo speed setting

1. When setting the servo speed, touch the Speed button. The Servo Speed setup screen is displayed.

*For a description of the servo speed setting method, see the description at the back of this manual.

*Offset mixing changes the speed. Use the Speed In and Speed Out buttons to readjust the speed..

The mixing switch can set a delay with a different rate at starting and stopping.

*This function is inactive when a mixing switch is not set.

●The programmable mixing (in mixing mode) STK to STK mixing function can be used even when the Master is a stick or other hardware.

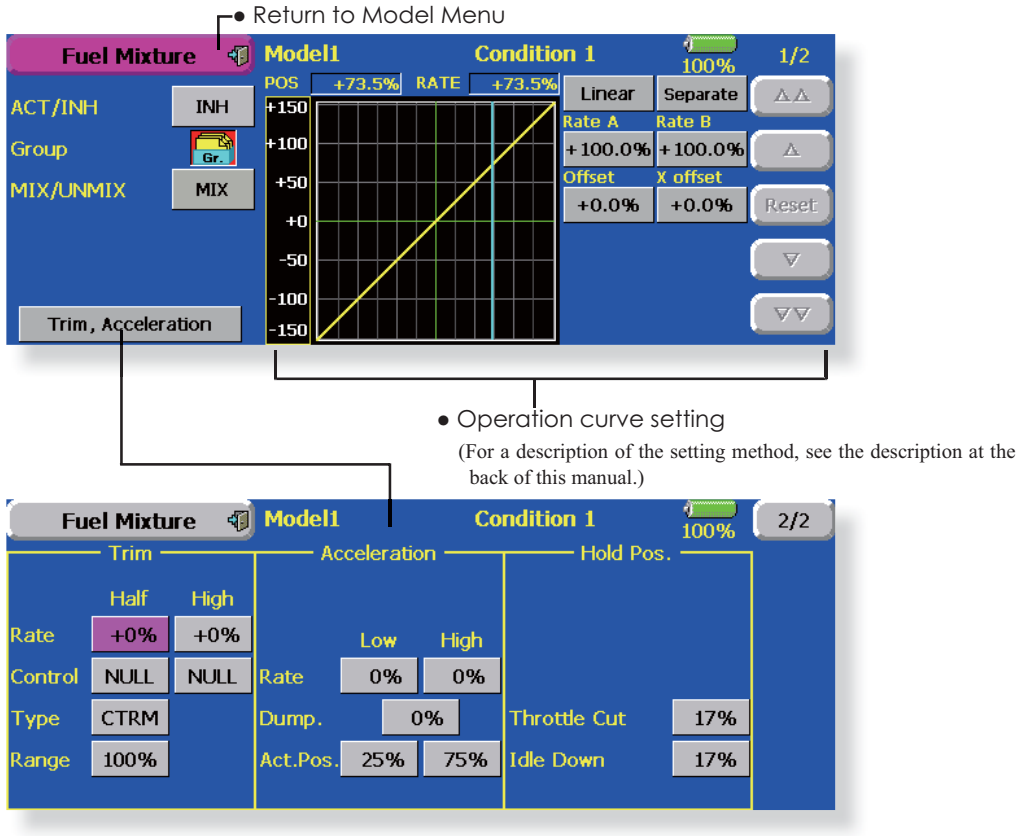
Fuel Mixture

Dedicated mixing used in needle adjustment of engines which use a fuel mixture control carburetor. [Airplane, helicopter]

This function is dedicated mixing used in needle adjustment of an engine that uses a fuel mixture control carburetor.

*The needle channel is assigned to CH9 as a default.

● Touch the [Fuel Mixture] button in the Model Menu to call the setup screen shown below.



Setting method

CTRM mode: Maximum amount of change near center by center trim operation. When the adjustment range (Range) value is made small, trim is active only near the center.

NORM mode: Normal trim (parallel movement trim) operation. When the adjustment range (Range) value is made small, trim is active only near the center. Needle high trim works as high trim based on the center. This operation is similar to reverse ATL trim.

1. An acceleration function can be set. This function is used when there are symptoms of the mixture being either too rich or too lean, which would be generated by sudden operation of the throttle stick. An acceleration (ACLR) function and deceleration (DCLR) function, which temporarily increase and decrease the fuel supply at acceleration and deceleration, can be set.
2. The return time after operation (Dump) can be set for both setting at acceleration (High) and setting at deceleration (Low).
3. A needle throttle cut function can be set.
4. Operation linked with the throttle hold functions (Cut and Idle), Throttle Cut function, and Idle Down function is possible.
5. The needle side cut position can be set. Set it to the fuel side full open position.

When the **MIX** mode is selected, the throttle curve set data becomes the mixing master. In the **UNMIX** mode, the throttle stick position becomes the mixing master.

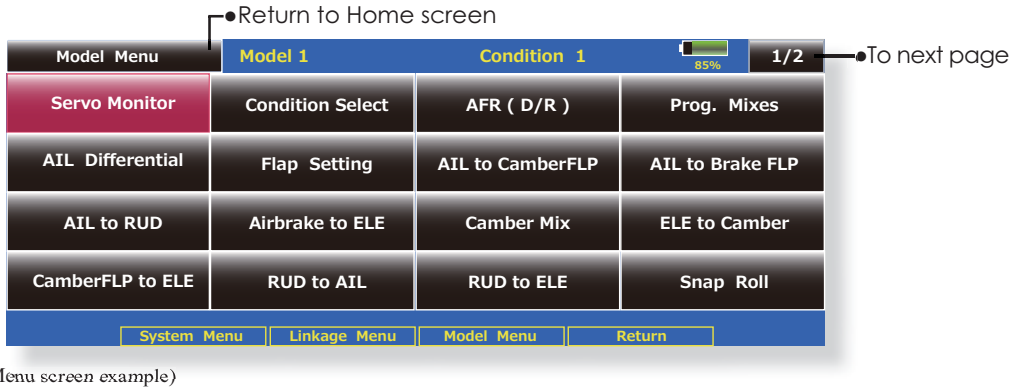
MODEL MENU (AIRPLANE/GLIDER FUNCTIONS)

The dedicated mixings, etc. usable when airplane, glider, or EP glider model type is selected are displayed in this Model Menu functions section. First use the Model Type function of the Linkage Menu to preset the model type, wing type, and tail type matched to the fuselage used. Later setting resets the data set by mixing function, etc.

These dedicated mixings can be set for each flight condition, as required. When you want to use the system by switching the settings for each condition by switch or stick position, use the Condition Select function to add flight conditions. (Up to 8 conditions can be used)

Note: The T18MZ is designed so that the airplane and glider (including EP glider) model types can handle fuselages of the same wing type.
The functions common to airplanes and gliders, except some dedicated functions, are summarized without regard to the model type.
The setting items are different, depending on the number of servos, etc. according to the wing type used. However, reread them. The setup screens in the instruction manual are typical examples.

- Touch the Model Menu button of the Home screen to call this Model Menu.
- When the button of the function you want to set is touched, a setup screen appears.



(Model Menu screen example)

*The Model Menu screen depends on the model type. This screen is for model type Airplane Wing Type 4AIL+4FLP.

Model Menu functions list

●AIL Differential

This function adjusts the left and right ailerons. Roll axis correction and fine tuning with a VR are also possible. This is convenient when making settings during flight.

[Airplane/glider, 2 ailerons or more]

●Flap Setting

The flaps can be adjusted independently. For a 4 flaps model, the camber flaps can be mixed with the brake flaps. [Airplane/glider, 2 flaps or more]

●AIL to Camber FLP

This mixing operates the camber flaps in the aileron mode. It improves the operation characteristic of the roll axis. [Airplane/glider, 2 ailerons + 2 flaps or more]

●AIL to Brake FLP

This mixing operates the brake flaps in the aileron mode. It improves the operation characteristic of the roll axis. [Airplane/glider, 4 flaps or more]

●AIL to RUD

This mixing is used when you want to operate the rudder at aileron operation. Banking at a shallow bank angle is possible. [Airplane/glider, 2 ailerons + 2 flaps or more]

●Airbrake to ELE

This mixing is used to correct operation of the airbrakes (spoilers) when landing. [Airplane/glider, general]

●RUD to AIL

This mixing is used to correct roll maneuvers, knife edge, etc. of stunt planes. [Airplane/glider, general]

●Camber Mix

This mixing adjusts the camber and corrects the elevators. [Airplane/glider, 2 ailerons or more]

●ELE to Camber

This mixing is used when you want to the mix camber flaps with elevator operation. Lifting force can be increased at elevators up. [Airplane/glider, 2 ailerons or more]

●Camber FLP to ELE

This mixing is used to correct for attitude changes when the camber flaps are being used. [Airplane/glider, 2 ailerons + 1 flap or more]

●Butterfly (Crow)

This function is used when powerful brake operation is necessary. [Glider, 2 ailerons or more]

●Trim Mix 1/2

The ailerons, elevators, and flaps trim offset rate can be called by switch or condition selection. [Glider, 2 ailerons or more]

●Airbrake

This function is used when airbrakes are necessary when landing or when diving, etc. during flight. (Airplane, general)

●Gyro

This is dedicated mixing when a GYA Series gyro is used. [Airplane/glider, general]

●V-tail

This function adjusts the elevators and rudder of V-tail models. [Airplane/glider, V-tail specifications]

●Ailevator

This function adjusts the elevators and ailerons of models with elevator specifications. [Airplane/glider, elevator specifications]

●Winglet

This function adjusts the left and right rudders of winglet models. [Airplane/glider, winglet specifications]

●Motor

The operation speed when the motor of F5B and other EP gliders is started by switch can be set. [EP glider, general]

●RUD to ELE

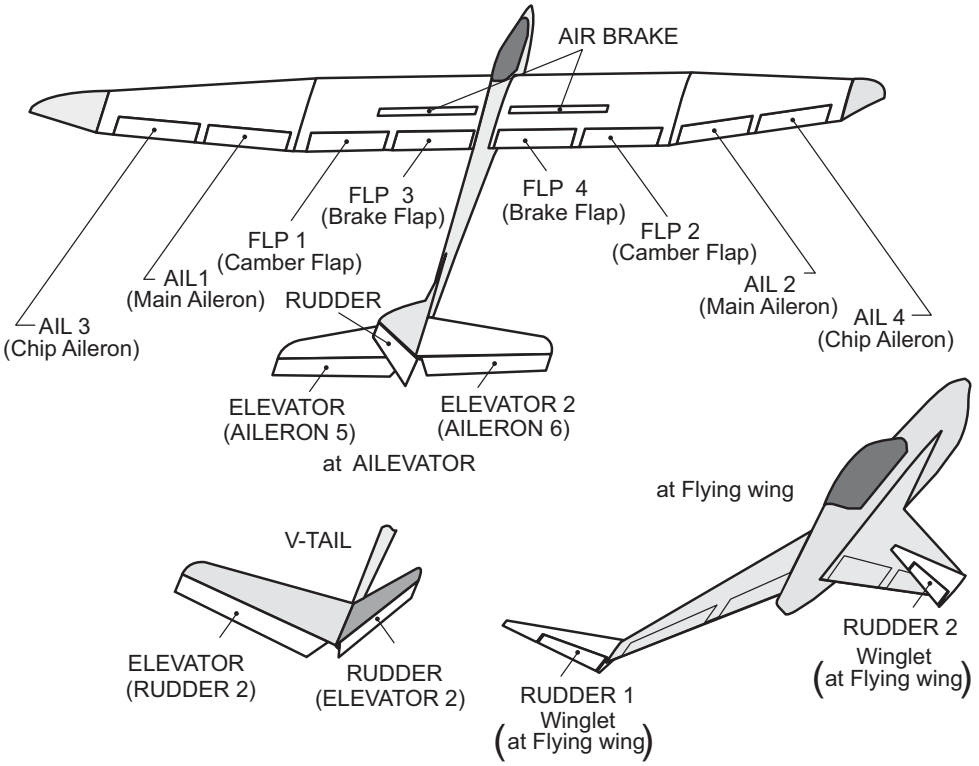
This function is used to correct roll maneuvers, knife edge, etc. of stunt planes. [Airplane, general]

●Snap roll

This function selects the snap roll switch and adjusts the steering angle of each rudder. Servo speed can also be adjusted. [Airplane general]

●Multi Engine

This function adjusts the throttles independently when using a multi engine model. (Maximum 4 engines) [Airplane, general]

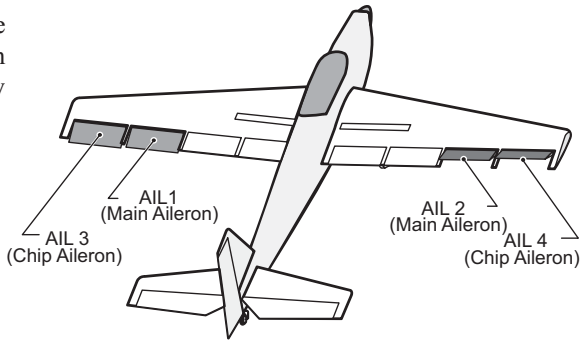


AIL Differential [Airplane/glider, 2 ailerons or more

The left and right ailerons differential can be adjusted independently. The differential rate can also be adjusted according to the flying state by setting a fine tuning VR.

●A fine tuning curve can be set.

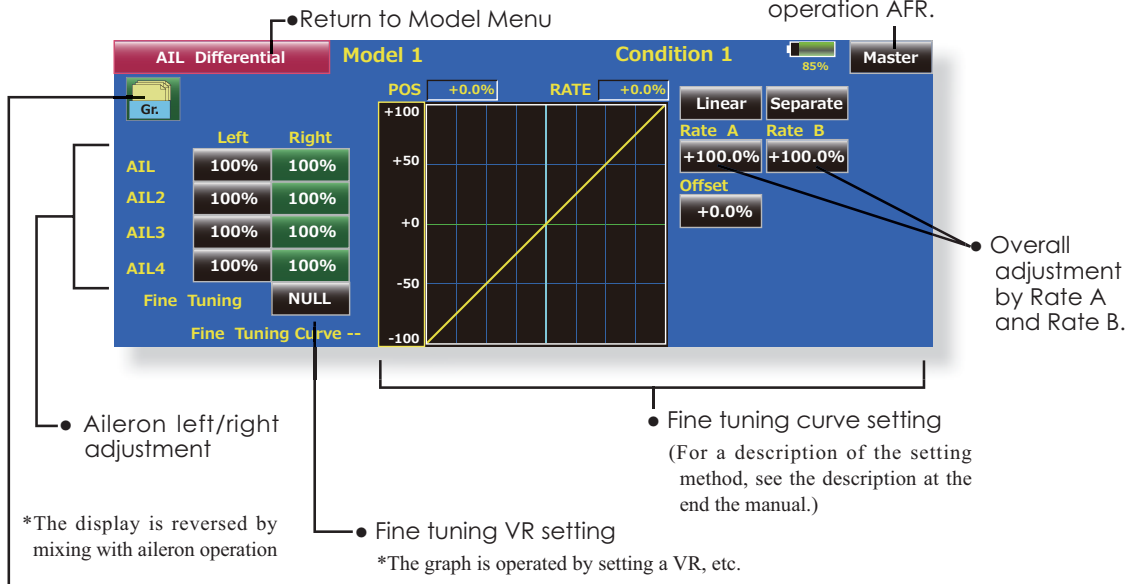
Note: Aileron up/down setting (%) reset is +100% when reset when setting is +, and -100% when reset when setting is -. Left and right mixing causes + and - to change. Before flying, confirm the direction of operation.



● Touch the [AIL Differential] button in the Model Menu to call the setup screen shown below.

<Wing type: 4 ailerons screen>

*The display screen is an example. The actual screen depends on the Model Type.



Setting method

● Touch the aileron (AIL) 1~4 left (or right) button, and adjust the aileron angles when the stick is moved to the left (or right) end.

*The aileron AFR screen can be directly called from the AIL Differential setup screen. ([Master] button)

● When setting the fine tuning VR, touch the "NULL" button to call the <Switch> screen, and then select the fine tuning VR.

● The fine tuning rate can be set by curve.

Flap Setting

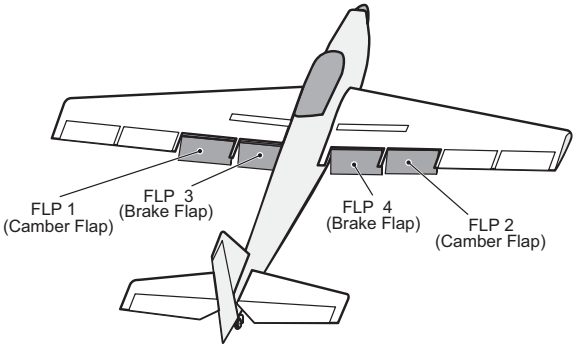
[Corresponding model type]: Airplane/glider, 2 flaps or more

The up/down travel of each flap (camber flaps: FLP1/2, brake flaps: FLP3/4) can be adjusted independently at each servo according to the wing type.

- The operation reference point of each flap can be offset

The camber flaps of a 4-flap model can be mixed with the brake flaps. (Brake FLP to camber FLP)

- An ON/OFF switch can be set.



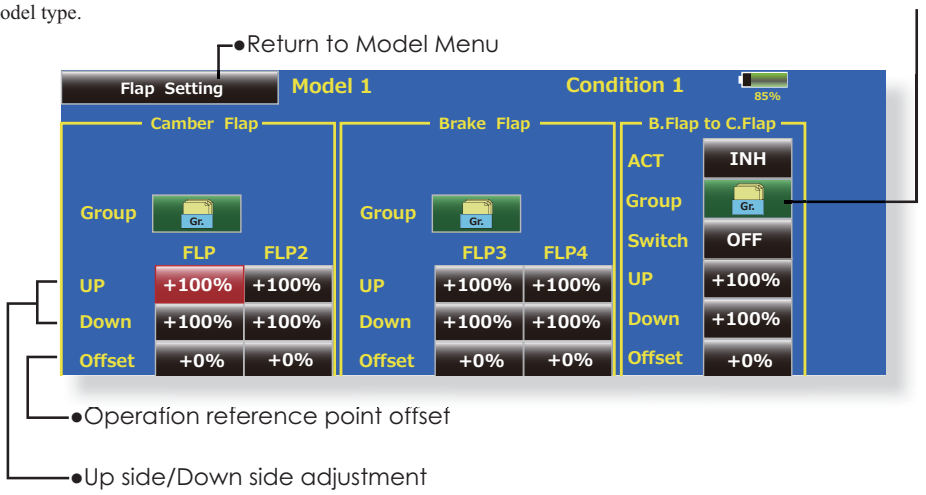
- Touch the [Flap Setting] button in the Model Menu to call the setup screen shown below.

<Wing type: 4 flaps screen>

*The display screen is an example. The actual screen depends on the model type.

- Group/single mode switching (Gr./Sngl)

(For more information, see the description at the back of this manual.)



Setting method

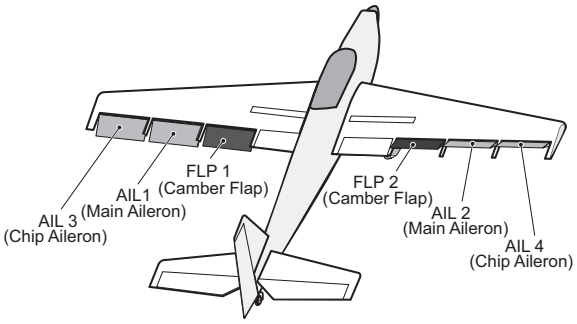
- Touch the flap (FLP) 1~4 Up or Down button according to the wing type and adjust the travel independently.
- To offset the operation reference point of each flap, touch the corresponding Offset button. Use the adjustment buttons displayed on the screen to offset the reference point.
- When using Brake FLP to Camber FLP mixing, touch the ACT button and set the function to ACT (ON). When setting a switch, touch the [NULL] button of the switch to call the <Switch> screen, and then select the switch and set its ON direction. (Always ON at "NULL" setting)
  (For a description of the switch selection method, see the description at the back of this manual.)

AIL to Camber FLP

[Corresponding model type]: Airplane/glider, 2 ailerons + 2 flaps or more

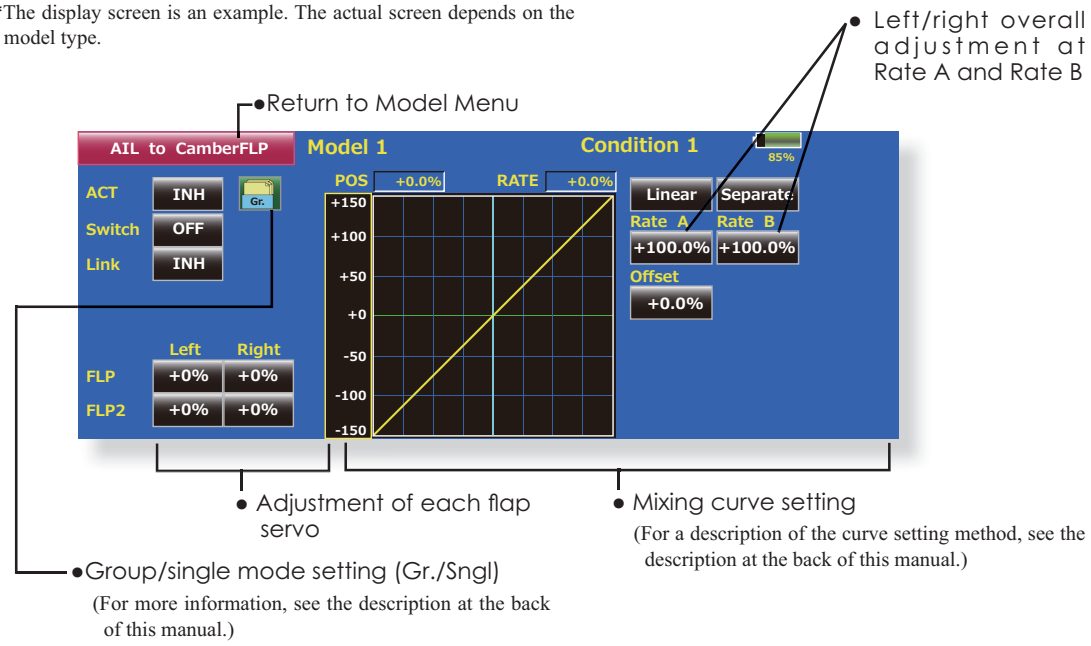
This mixing operates the camber flaps (FLP1/2) in the aileron mode. When the aileron stick is manipulated, the ailerons and camber flaps perform aileron operation simultaneously and the operation characteristic of the roll axis is improved.

- The aileron left/right mixing rate of each flap servo can be fine-tuned.
- A mixing curve can be set.
- An ON/OFF switch can be set.
- Linking is possible: Links this mixing to other mixings.



- Touch the [AIL to Camber FLP] button in the Mode Menu to call the setup screen shown below.

*The display screen is an example. The actual screen depends on the model type.



Setting method

- Touch the ACT button and set the function to ACT (ON).
- When setting a switch, touch the [NULL] button of the switch to call the <Switch> screen, and then select the switch and set its ON direction. (Always ON at "NULL" setting)
  (For a description of the switch selection method, see the description at the back of this manual.)
- Touch the left or right button of each flap servo, and adjust the mixing rate with the adjustment buttons.

*When the mixing direction is reversed by the linkage, adjustments can be made by changing the mixing rate polarity.

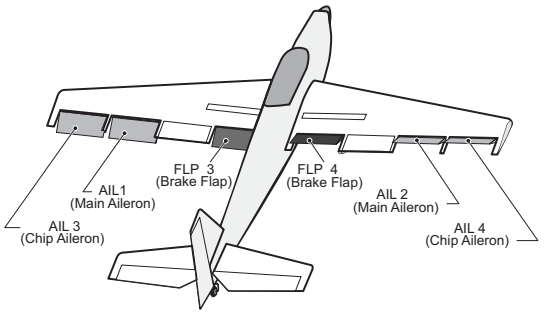
- A mixing curve can be set.
  (For a description of the mixing curve setting method, see the description at the back of this manual.)
- To set linking, touch the Link button and set it to ON.

AIL to Brake FLP

[Corresponding model type]: Airplane/glider, 4 flaps or more

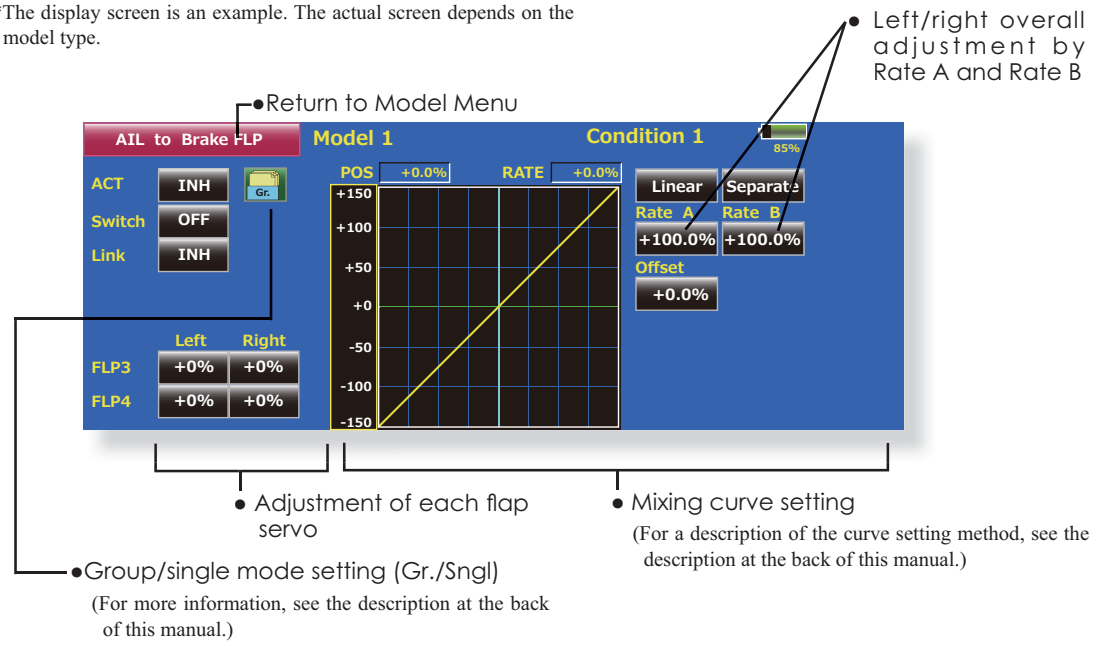
This mixing operates the brake flaps (FLP3/4) in the aileron mode. When the aileron stick is manipulated, the aileron and brake flaps perform the aileron operation simultaneously and the operation characteristic of the roll axis is improved.

- The aileron left and right mixing rates can be adjusted for each flap servo.
- A mixing curve can be set.
- Mixing during flight can be turned ON/OFF by setting a stick. (Always ON at NULL setting)
- Linking can be set: Links this mixing to other mixings.



- Touch the [AIL to Brake FLP] button in the Model Menu to call the setup screen shown below.

*The display screen is an example. The actual screen depends on the model type.



●Setting method

- Touch the ACT button and set the function to ACT (ON).
- When setting a switch, touch the [NULL] button of the switch to call the <Switch> screen, and then select the switch and set its ON direction. (Always ON at "NULL" setting)
  (For a description of the switch selection method, see the description at the back of this manual.)
- Touch the left or right button of each flap servo, and adjust the mixing rate with the adjustment buttons.

*When the mixing direction is reversed by the linkage, adjustments can be made by reversing the mixing rate polarity.

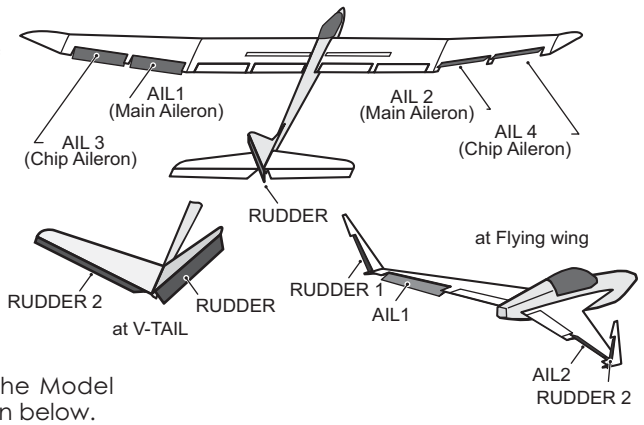
- A mixing curve can be set.
  (For a description of the curve setting method, see the description at the back of this manual.)
- To set linking, touch the Link button and set it to ON.

AIL to RUD

[Corresponding model type]: Airplane/glider, general

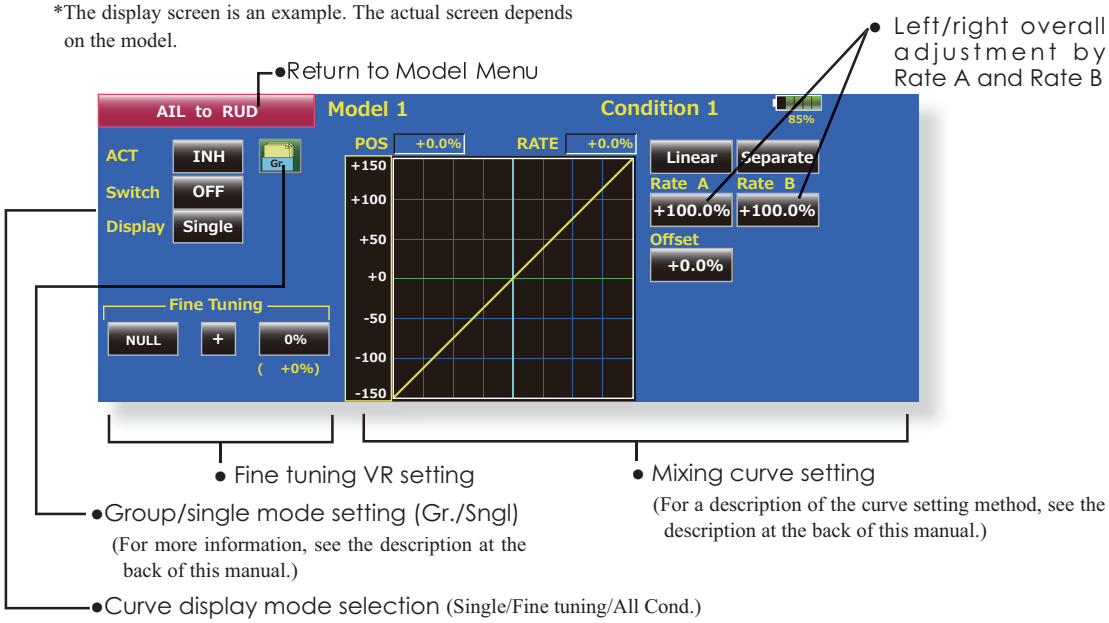
Use this mixing when you want to mix the rudders with aileron operation.

- A mixing curve can be set.
- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at NULL setting)
- The mixing rate can be fine-tuned by setting a VR.



- Touch the [AIL to RUD] button in the Model Menu to call the setup screen shown below.

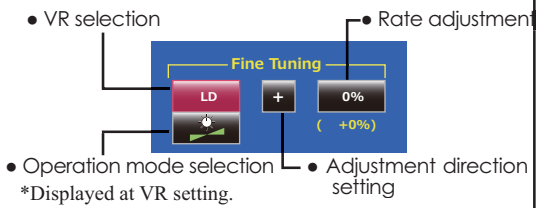
*The display screen is an example. The actual screen depends on the model.



Setting method

- Touch the ACT button and set the function to ACT (ON).
- When setting a switch, touch the [NULL] button of the switch to call the <Switch> screen, and then select the switch and set its ON direction. (Always ON at "NULL" setting)
  (For a description of the switch selection method, see the description at the back of this manual.)
- When setting a VR, touch the Fine Tuning "NULL" button to call the <Switch> screen, and then select the VR. The adjustment rate and direction can be set. The VR operation mode can also be selected.
- A mixing curve can be set.
  (For a description of the curve setting method, see the description at the back of this manual.)
- The curve display mode can be changed.
  Single : Displays the mixing curve only
  Fine tuning : Displays the mixing rate of the fine tuning VR
  All Cond. : Displays the mixing curve of all the conditions. (When conditions are set)

Fine tuning VR setting



[Operation modes]

Mixing rate 0% at center of VR
When the VR is turned counterclockwise and clockwise, the mixing rate increases and decreases, respectively.

Mixing rate 0% at left end of VR
When the VR is turned, the mixing rate increases.

Mixing rate 0% at right end of VR.
When the VR is turned, the mixing rate increases.

When the VR is turned to the left or right of the neutral position, the mixing rate increases.

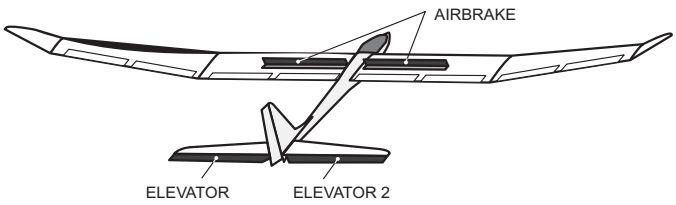
Airbrake to ELE

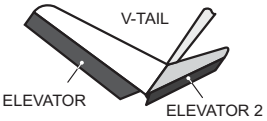
[Corresponding model type]: Airplane/glider, general

This mixing is used when you want to mix the elevators with airbrake (spoiler) operation. It raises the elevators to correct for drooping of the nose during airbrake operation.

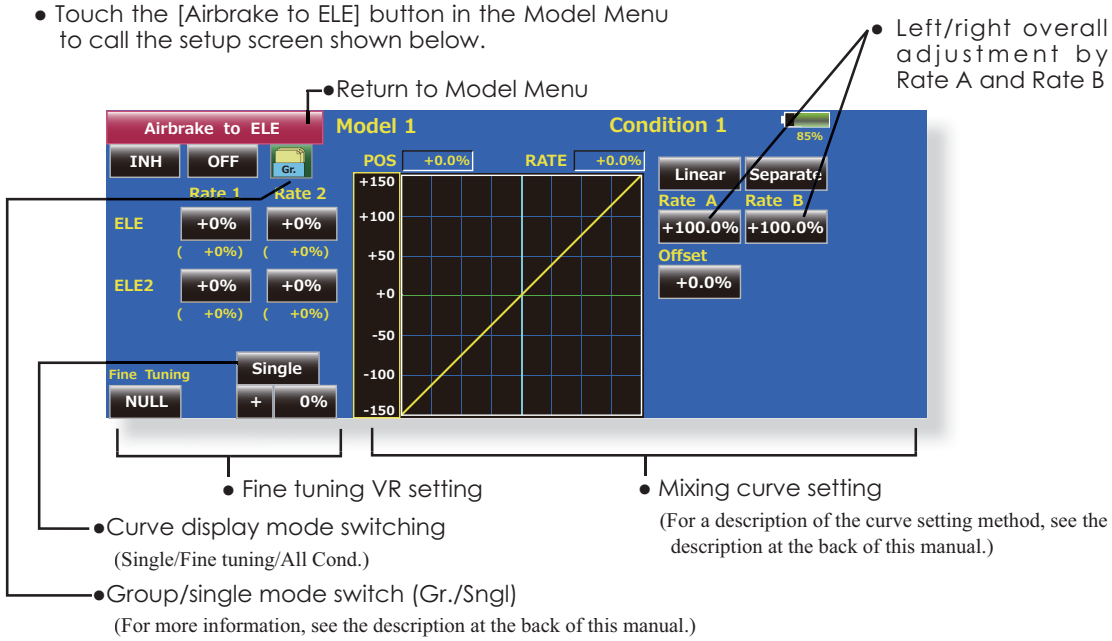
*This function does not operate when airbrake is not assigned at the Function menu in the Linkage Menu.

- The Rate 1 side/Rate 2 side mixing rate with the elevator servos can be adjusted.
- A mixing curve can be set.
- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at NULL setting)
- The mixing rate can be fine-tuned by setting a VR.





- Touch the [Airbrake to ELE] button in the Model Menu to call the setup screen shown below.



Setting method

- Touch the "INH" button and set the function to ACT (ON).
- When setting a switch, touch the [NULL] button to call the <Switch> screen, and then select the switch and set its ON direction. (Always ON at "NULL" setting)
  (For a description of the switch selection method, see the description at the back of this manual.)
- When setting a VR, touch the Fine tuning "NULL" button to call the <Switch> screen, and then select the VR. The adjustment rate and direction can be set.The VR operation mode can also be set.
  (For a description of the fine tuning VR setting method, see the description at the back of this manual.)
- A mixing curve can be set.
  (For a description of the curve setting method, see the description at the back of this manual.)
- The curve display mode can be set.

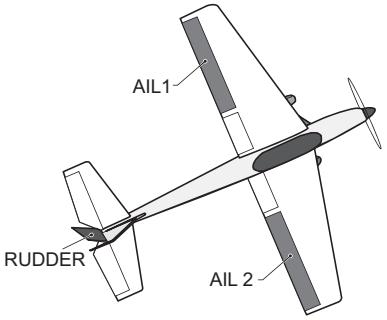
Single : Displays the mixing curve only
Fine tuning : Displays the adjustment rate of the fine tuning VR
All Cond. : Displays the mixing curve of all the conditions. (When conditions are set)

RUD to AIL

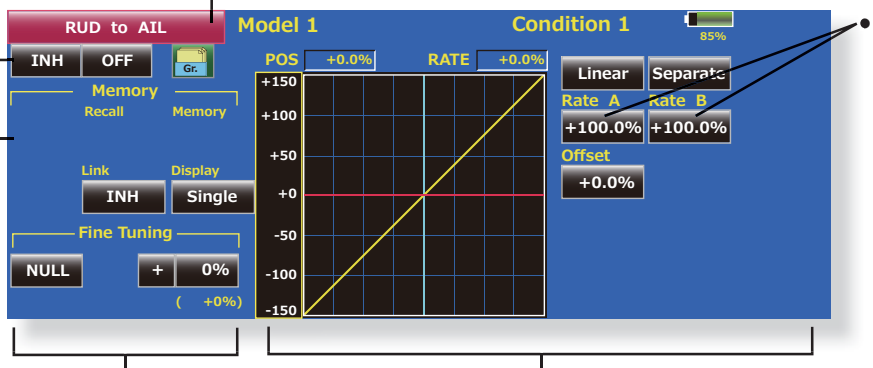
[Corresponding model type]: Airplane/glider, general

This function is used when you want to mix the ailerons with rudder operation. It is used when rudder is applied during roll maneuvers, knife edge, etc. of stunt planes. It can be used to bank scale models, large models, etc. like a full size plane.

- A mixing curve can be set.
- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at [NULL] setting)
- The rate of correction rudder can be memorized by using the memory function. This is convenient when setting a mixing curve. When memory operation (switch operation) is performed in the memory mode with correction rudder applied, the switch operation position at that time is displayed on the mixing curve. When the memory mode is exited, the memorized points are automatically reflected on the curve. (When the memory function is used, "Line" type curve is automatically selected.)
- Linking can be set: Links this mixing to other mixings.
- The mixing rate can be fine-tune by setting a VR.



- Touch the [RUD to AIL] button in the Model Menu to call the setup screen shown below.



- Return to Model Menu
- Overall adjustment by Rate A and Rate B.
- Fine tuning VR setting
- When set to ON by touching [INH], the memory items are displayed.
- Mixing curve setting

(For a description of the curve setting method, see the description at the back of this manual.)

Setting method

- Touch the "INH" button and set the function to ACT (ON).
- When setting a switch, touch the [NULL] button to call the <Switch> screen, and then select the switch and set its ON direction. (Always ON at "NULL" setting)
  (For a description of the switch selection method, see the description at the back of this manual.)
- When setting a VR, touch the Fine tuning "NULL" button to call the <Switch> screen and then select the VR. The adjustment rate and adjustment direction can be set,.
  The VR operation mode can also be set.
  (For a description of the fine tuning VR setting method, see the description at the back of this manual.)
- A mixing curve can be set.
  (For a description of the curve setting method, see the description at the back of this manual.)
- The curve display mode can be changed.
  Single : Displays the mixing curve only
  Fine tuning : Displays the adjustment rate of the fine tuning VR
  All Cond. : Displays the mixing curve of all the conditions. (When conditions are set)
- When linking: Touch the Link button and set it to ON.

Memory function usage method

(Example) Using the memory function with an F3A airplane (knife edge correction)

*When call switch ⇒[SW-A] and memory switch⇒[SW-H] were set

[Memory function operation]

1. Memory function mode: [Manual]⇒[Memory]
2. When the memory switch (SW-H) was set to ON while performing aileron correction when rudder was applied at knife edge, the point position at that time is memorized. Perform memorization while changing the left and right stick positions.
3. To recall the memorized positions, set [SW-A] to ON. The memorized correction rate is reflected on the curve, and operation is simultaneously set.

Note: When memorized from manual before flight, be sure that the memory SW is not accidentally set to ON and incorrect mixing setting is not applied when taxiing, starting the engine, etc.

Camber Mix

[Corresponding model type]: Airplane/glider, 2 ailerons or more

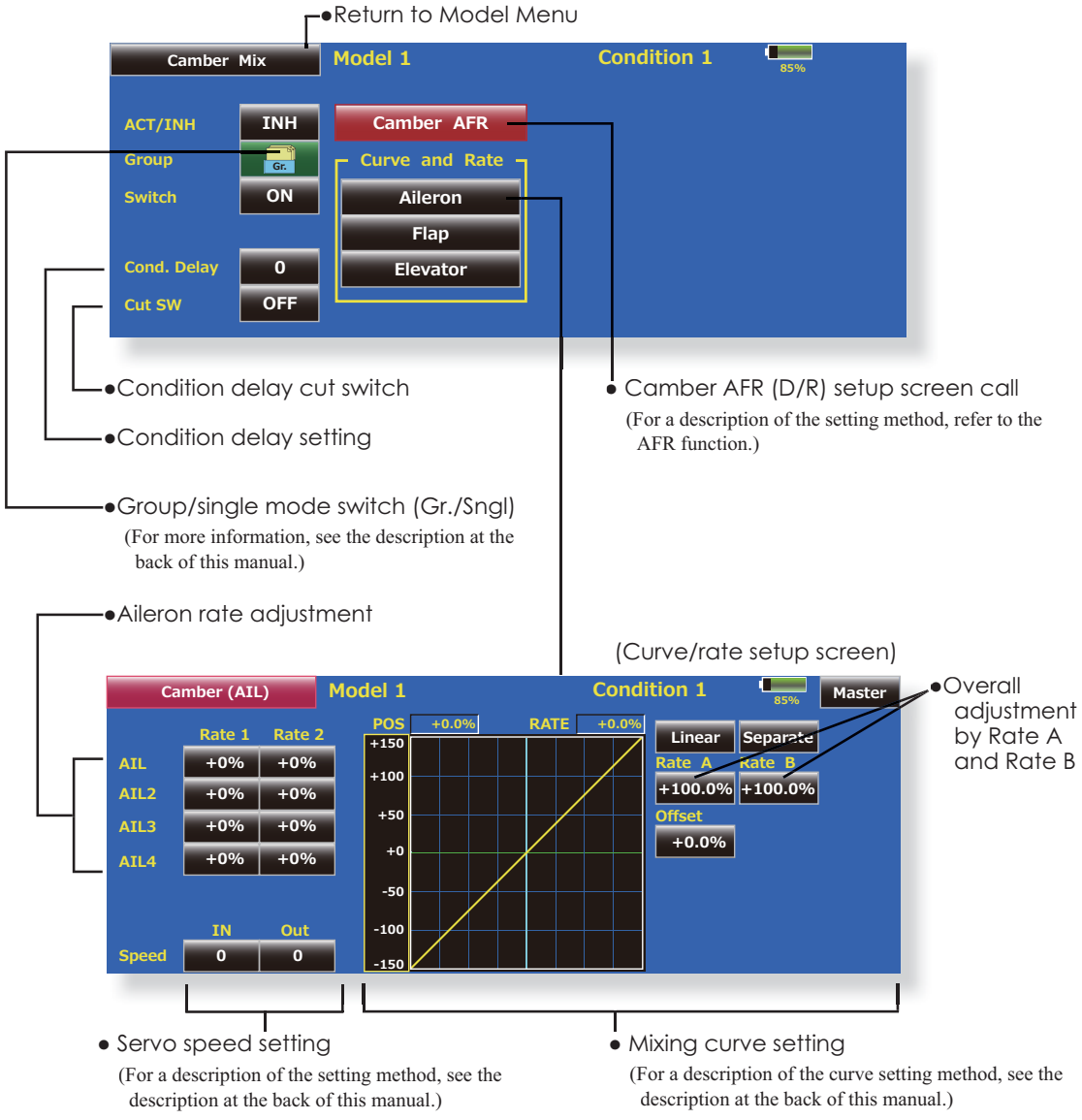
This function adjusts the AFR (D/R) rate of camber operation which operates the wing camber (ailerons, camber flaps, brake flaps) in the negative and positive directions. The aileron, flap, and elevator rates can also be adjusted independently by curve, and attitude changes caused by camber operation can be corrected.

*Initial setting assigns camber operation to side lever RST(Mode2) LST(Mode1).

- The up/down side rates of the aileron, flap, and elevator servos can be adjusted by curve. When the mixing direction is reversed by the linkage, adjustments can be made by changing the mixing rate polarity.
- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at NULL setting)
- A delay can be set for each condition. A cut switch which can turn OFF the delay function can be set.
- The speed of the aileron, flap, and elevator servos can be set. (IN side/OUT side)

- Touch the [Camber Mix] button in the Model Menu to call the setup screen shown below.

*The display screen is an example. The actual screen depends on the model type.)

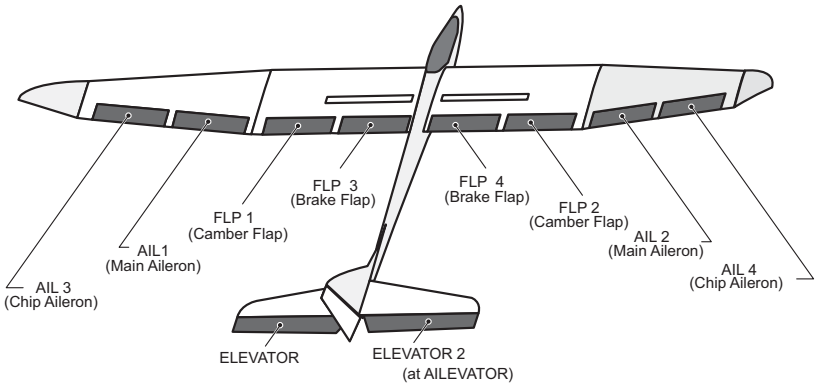


Setting method

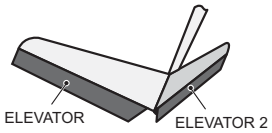
- Touch the "INH" button and set the function to ACT (ON).
- When setting a switch, touch the [NULL] button to call the <Switch> screen, and then select the switch and set its ON direction. (Always ON at "NULL" setting)
  (For a description of the switch selection method, see the description at the back of this manual.)
- When setting a condition delay, touch the Condition Delay button and set the delay with the adjustment buttons which appear on the screen. The VR operation mode can also be set.
  (For a description of condition delay, see the description at the back of this manual.)
- Camber AFR(D/R) screen call
  Touch the Camber AFR button to call the setup screen. (For a description of the setup method, see the description at the back of this manual.)

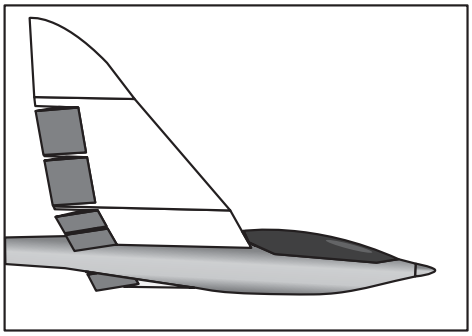
(Curve/rate setup screen)

- The curve and rate are adjusted by calling the aileron, flap, and elevator curve/rate screens. The rate and curve of each servo can be set by calling each screen. (For a description of the curve setting method, see the description at the back of this manual.)
  The servo speed can also be adjusted.



at V-TAIL





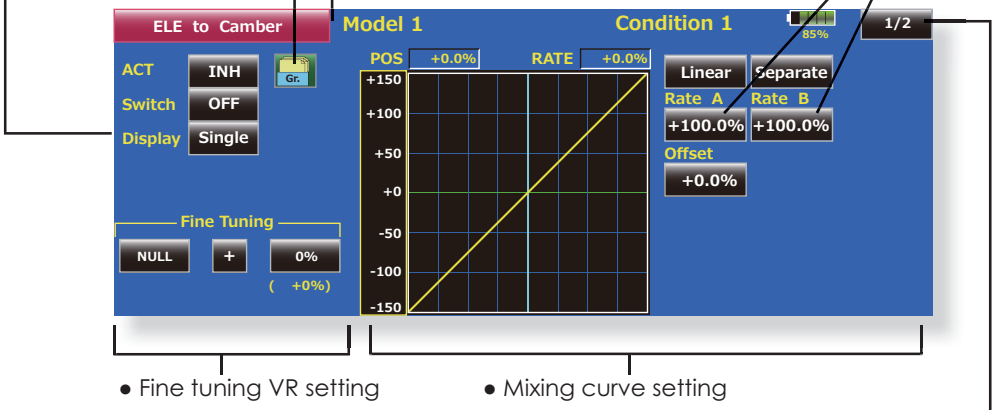
ELE to Camber

[Corresponding model type]: Airplane/glider, 2 ailerons or more

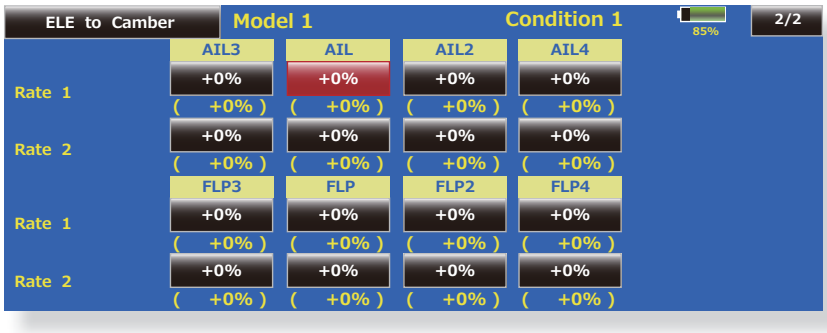
This function is used when you want to mix the camber flaps with elevator operation. When mixing is used so that the flaps are lowered by up elevator , lift can be increased.

- A mixing curve can be set.
- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at NULL setting)
- The mixing rate can be fine-tuned by setting a VR.

- Touch the [ELE to Camber] button in the Model Menu to call the setup screen shown below.
- Group/single mode switching (Gr./Sngl)
  (For more information, see the description at the back of this manual.)
- Curve display mode switching
  (Single/Fine tuning/All Cond.)
- Overall adjustment by Rate A and Rate B
- Return to Model Menu



- Fine tuning VR setting
- Mixing curve setting
  (For a description of the curve setting method, see the description at the back of this manual.)



(Ailerons and flaps rate adjustment screen)

Setting method

- Touch the ACT button and set the function to ACT(ON).
- When setting a switch, touch the [NULL] button of the switch to call the <Switch> screen, and then select the switch and set its ON direction. (Always ON at "NULL" setting.)
- When setting a VR, touch the Fine tuning "NULL" button to call the <Switch> screen, and then select the VR. The adjustment rate and adjustment direction can be set.
  The VR operation mode can also be selected.

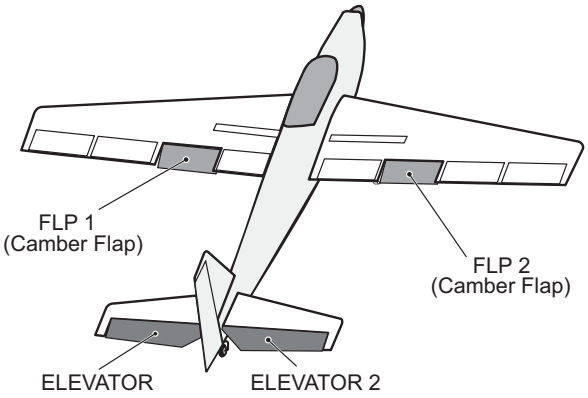
- A mixing curve can also be set.
  (For a description of the curve setting method, see the description at the back of this manual.)
- The curve display mode can be changed.
  Single : Displays the mixing curve only
  Fine tuning : Displays the fine tuning VR adjustment rate
  All Cond. : Displays the mixing curve of all the conditions (When conditions are set)

Camber FLP to ELE

[Corresponding model type]: Airplane/glider, 2 ailerons + 1 flap or more

This mixing is used to correct changes (elevator direction) generated when the camber flaps (speed flaps) are used.

- The elevator servos up side/down side rate can be adjusted. When the mixing direction is reversed by the linkage, adjustments can be made by changing the mixing rate polarity.
- A mixing curve can be set.
- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at NULL setting)
- The mixing rate can be fine-tuned by setting a VR.

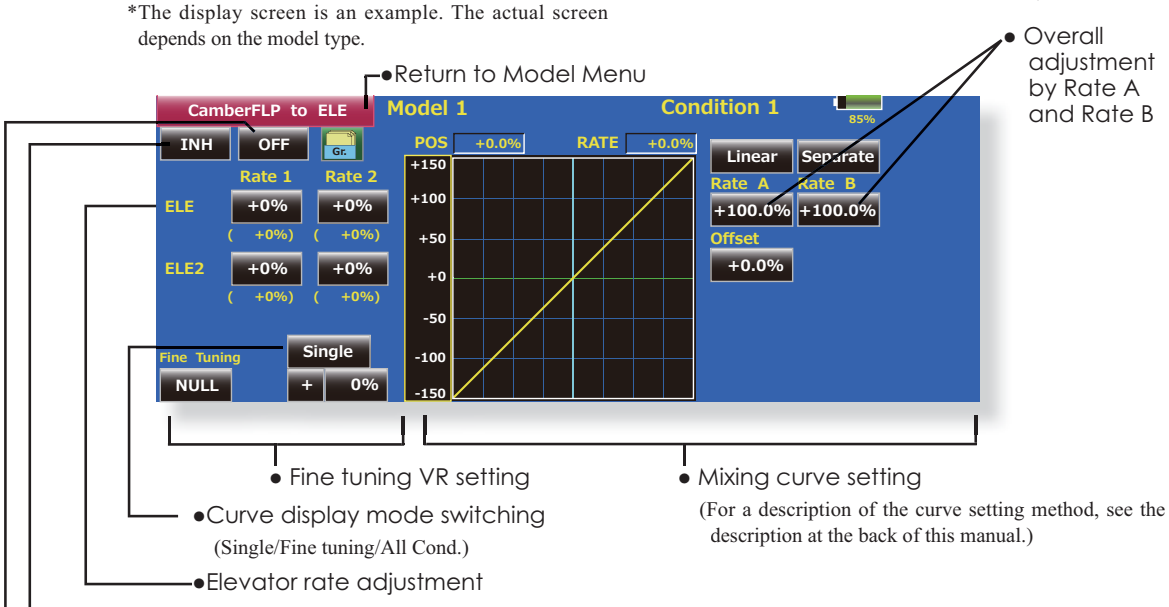


- Touch the [Camber FLP to ELE] button in the Model Menu to call the setup screen shown below.

*The display screen is an example. The actual screen depends on the model type.

- Group/single mode switching (Gr./Sngl)

(For more information, see the description at the back of this manual.)



Setting method

- Touch the ACT button and set the function to ACT(ON).
- When setting a switch, touch the switch button to call the <Switch> screen, and then select the switch and set its ON direction. (Always ON at "NULL" setting)
  (For a description of the switch setting method, see the description at the back of the manual.)
- Touch the elevator servos left and right buttons and adjust the mixing rate with the adjustment buttons displayed on the screen.

*When the mixing direction is reversed by the linkage, adjustments can be made by changing the mixing rate polarity.

- When setting a VR, touch the Fine tuning "NULL" button to call the <Switch> screen, and then select the VR.
  The VR operation mode can be selected.
- A mixing curve can be set.
  (For a description of the curve setting method, see the description at the back of this manual.)
- The curve operation mode can be changed.
  Single : Displays only the mixing curve
  Fine Tuning : Displays the adjustment rate of the fine tuning VR
  All Cond. : Displays the mixing curve of all the conditions (when conditions are set)

Butterfly

[Corresponding model type]: Glider, 2 ailerons or more

This function allows powerful brake operation by simultaneously raising the left and right ailerons and lowering the flaps (camber flap, brake flap).

This setting will allow the ailerons to be raised while the flaps are simultaneously lowered. Butterfly (Crow) produces an extremely efficient landing configuration by accomplishing the following:

1. Slow the aircraft's velocity.
2. Provide washout at the wing tips to reduce the tendency to tip stall.
3. Create more lift toward the center of the wing allowing it to fly at a slower speed

- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at NULL setting)
- The butterfly operation reference point can be offset. When the Offset button is touched when operated to the position to be changed, the reference point is offset. If the reference point is offset too much, unexpected operation may be performed.
- The ailerons, flaps, and elevators operation speed can be adjusted. (IN side/OUT side)
- A delay can be set for each condition. A cut switch which can turn OFF the delay function can also be set.
- The differential rate can be adjusted.

*When servo binding occurs when setting the ailerons and flaps in butterfly mixing, use the AFR function to adjust the rudder angle.

- Touch the [Butterfly] button in the Model Menu to call the setup screen shown below.

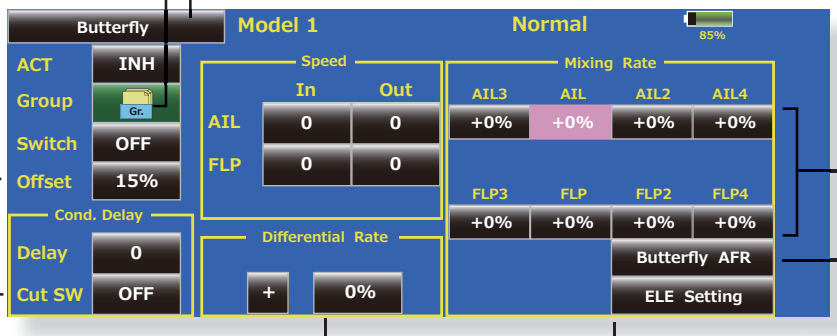
  (The display screen is an example. The actual screen depends on the model type. The screen shown below is for 4 ailerons and 4 flaps.)
- Touch the ACT button and set the function to ACT (ON).
- When setting a switch, touch the SWITCH [NULL] button to call the <Switch> screen, and then select the switch and set its ON direction.
- When offsetting the butterfly operation reference point, operate to the point you want to change and then touch the Offset button. The reference point displays 0%. When [Yes] is touched, the reference point is changed. Then, is "Initialized elevator curve? " is heard, it chooses in which.

- Group/single mode switching (Gr./Sngl)

  (For more information, see the description at the back of this manual.)

- Touch the Mixing Rate AIL and FLP buttons and adjust the mixing rates.

- Return to Model Menu



- Aileron and flap servos speed setting

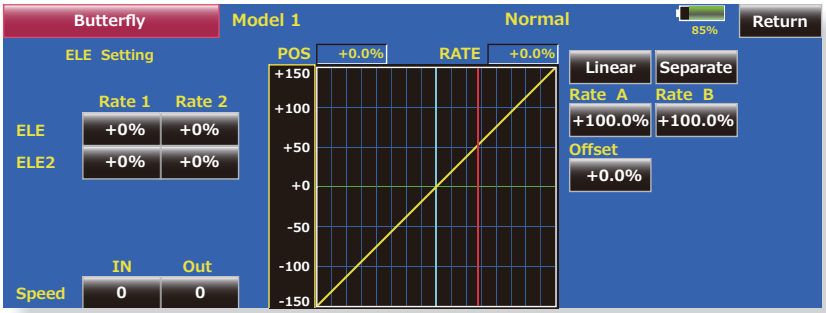
  (For a description of the setting method, see the description at the back of this manual.)
- Differential rate adjustment
- To elevator correction setup screen
- Condition delay setting and cut switch setting

  (For a description of the setting method, see the description at the back of this manual.)
- Calls the Butterfly AFR (D/R) setup screen

  (For a description of the setting method, see the description at the back of this manual.)

● Touch the ELE correction rate buttons and adjust the rates with the adjustment buttons displayed on the screen.

([ELE Setup] screen)

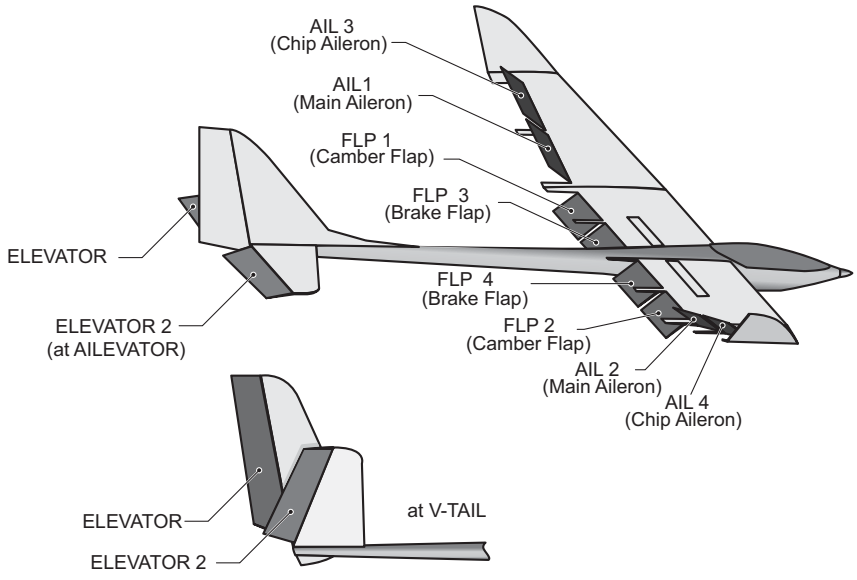


● Servo speed setting

(For a description of the setting method, see the description at the back of this manual.)

● Mixing curve setting

(For a description of the curve setting method, see the description at the back of this manual.)



Trim Mix 1/2

[Corresponding model type]: Glider, 2 ailerons or more

These functions call the ailerons, elevators, and flaps (camber flaps, brake flaps) trim offset rates preset according to the flight state.

The amount of ailerons, elevator, and flaps (camber flap, brake flap) trim offset can be set to a switch.

As an example **Trim Mix 1** can be set up for launching, with speed flaps and ailerons dropped, and a slight amount of up elevator. **Trim mix 2** can be used for high speed flying, with both ailerons and speed flaps reflexed slightly, and a bit of down elevator.

The trim functions can be activated during flight by setting a switch. To prevent sudden trim changes when switching flight conditions, a delay can be set to provide a smooth transition between the two. Trim Mix 2 will have priority over Trim Mix 1.

Example

1. Touch the ACT button and set the trim mix function to [ON].
   *When separating the settings for each condition, touch the group mode button and set it to [Sngl].
2. Select the ON/OFF switch.
3. Select the [Manual] or [Auto] mode.
   In the [Auto] mode, also select an auto SW. This switch can be linked to a stick, etc.

<Speed>
In: The operation speed at switch ON can be set.
Out: The return speed at switch OFF can be set.

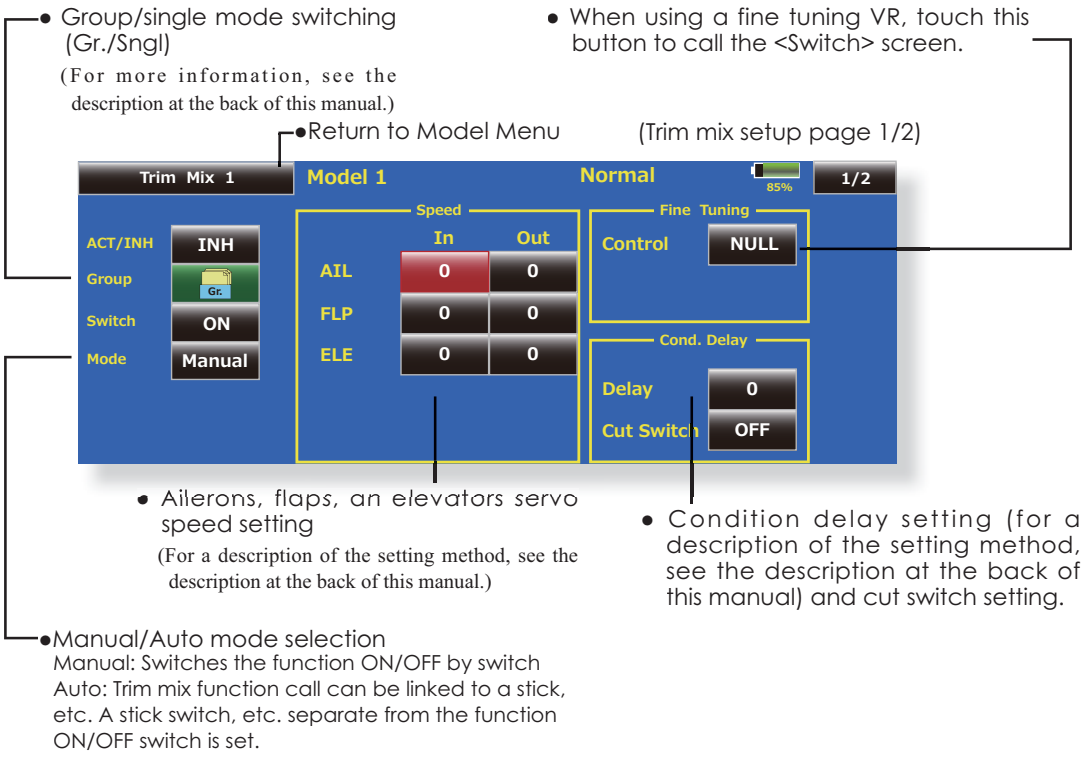
<Fine Tuning>
The offset rate can be varied in the Fine Tuning numeric range set at screen [2/2] by VR, etc. selection.

<Condition Delay>
When flight conditions are set, the operation speed can be set for each condition. Condition delay operation can be interrupted and each rudder quickly returned to its original position by selecting a cut switch.

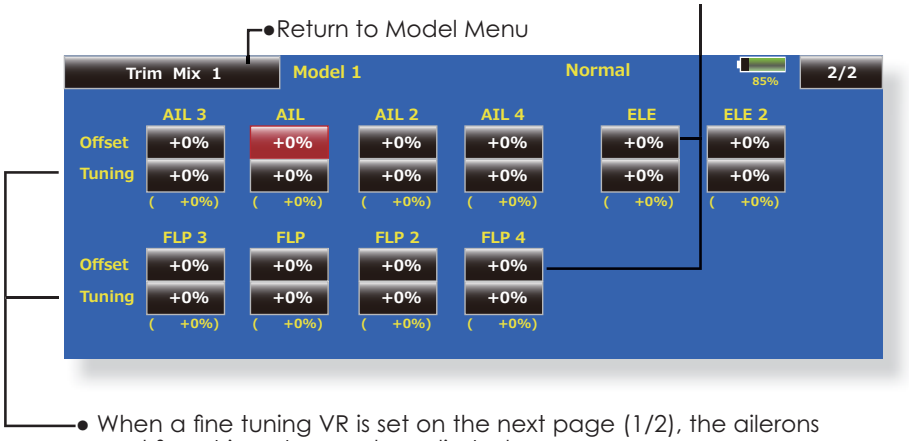
- Touch the [Trim Mix 1] button in the Model Menu to call the setup screen shown below.
  (The display screen is an example. The actual screen depends on the model type. The screen shown below is for 4 ailerons and 4 flaps.)

(Touch the [1/2] button to switch to page 2.)

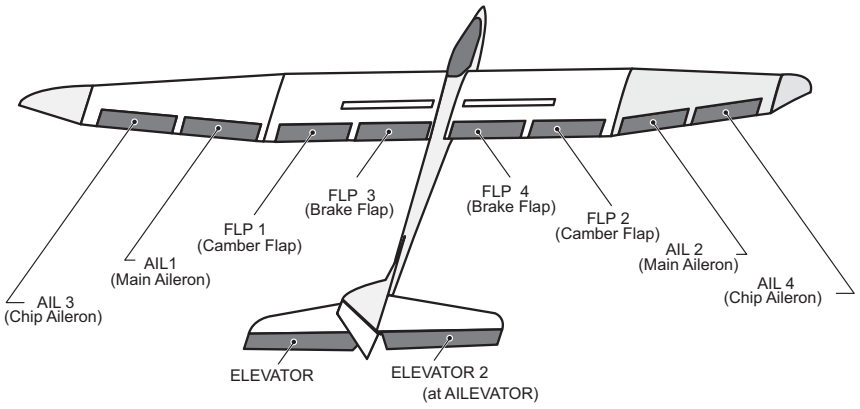
- Touch the ACT button and set the function to ACT (ON).
- When setting a switch, touch the Switch button to call the <Switch> screen, and then select the switch and set its ON direction. (Always ON at "NULL" setting)
  (For a description of the switch selection method, see the description at the back of this manual.)



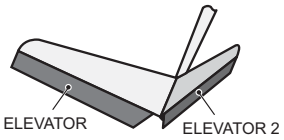
- The ailerons, flaps, and elevators offset rate can be adjusted.
  Touch the corresponding button and adjust the rate with the adjustment buttons displayed on the screen.



- When a fine tuning VR is set on the next page (1/2), the ailerons and flaps trim rates can be adjusted.
  Touch the corresponding button and adjust the rate with the adjustment buttons displayed on the screen.



at V-TAIL



Airbrake

[Corresponding model type]: Airplane, general

This function is used when an air brake is necessary when landing or diving, etc.

The preset elevators and flaps (camber flap, brake flap) offset amount can be activated by a switch.

The offset amount of the aileron, elevator, and flap servos can be adjusted as needed. Also the speed of the aileron, elevator, and flap servos can be adjusted. (IN side/OUT side) A delay can be set for each condition, and a Cut switch which will turn OFF the delay can be chosen. Trim amounts can be fine-tuned by setting a VR You can also set the Auto Mode, which will link Airbrake to a stick, switch, or dial. A separate stick switch or dial can also be set as the ON/OFF switch.

Setting example for F3A and other flaperon specifications

(When 2 ailerons model type selected)

(Page 2/2)

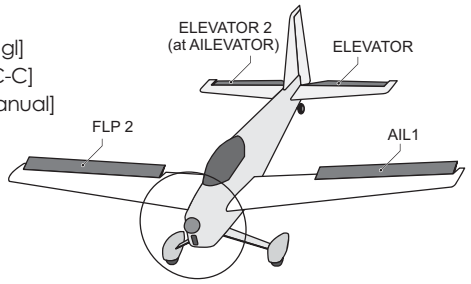
Offset rate:

AIL: [-35~-45%], AIL2: [-35~-45%], ELE: [+5~7%]

Note: The input numerics are examples. Adjust the travel to match the fuselage.

(Page 1/2)

ACT: [ON]
Group: [Sngl]
Switch: [SC-C]
Mode: [Manual]



- Touch the [Airbrake] button in the Model Menu to call the setup screen shown below. (The display screen is an example. The actual screen depends on the model type. The screen shown below is for 4 ailerons and 4 flaps.)
- Touch the ACT button and set the function to ACT(ON).
- When setting a switch, touch the Switch button to call the <Switch> screen, and then select the switch and set its ON direction. (Always ON at "NULL" setting)

(For a description of the switch selection method, see the description at the back of this manual.)

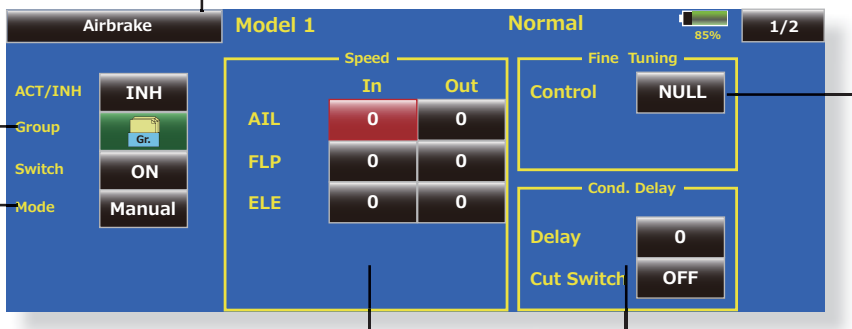
- Group/single mode switching (Gr./Sngl)

(For more information, see the description at the back of this manual.)

- When using a fine tuning VR, touch this button to call the <Switch> screen.

- Return to Model Menu

(Airbrake setup screen 1/2)



- Ailerons, flaps, an elevators servo speed setting

(For a description of the setting method, see the description at the back of this manual.)

- Condition delay setting (for a description of the setting method, see the description at the back of this manual) and cut switch setting.

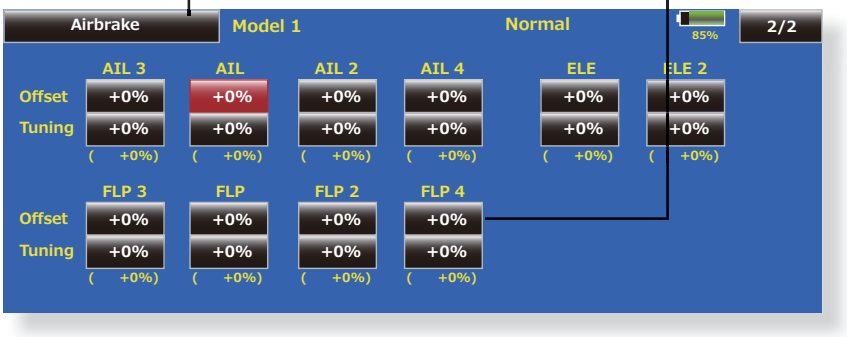
- Manual/Auto mode selection

Manual: Switches the function ON/OFF by switch
Auto: Trim mix function call can be linked to a stick, etc. A stick switch, etc. separate from the function ON/OFF switch is set.

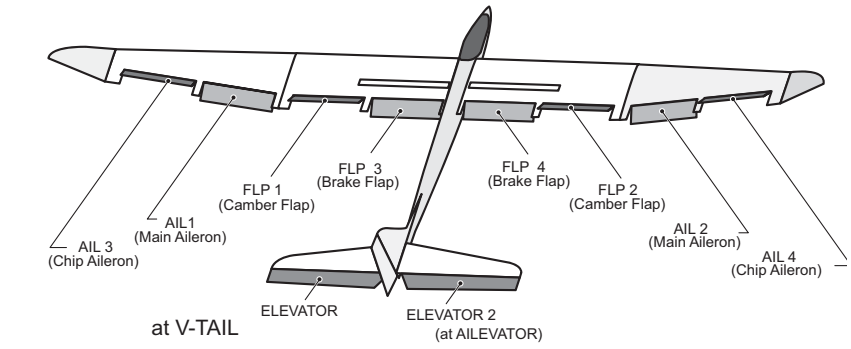
● The aileron, flap, and elevator offset rates can be adjusted.

Touch the corresponding button and adjust the rate with the adjustment buttons displayed on the screen.

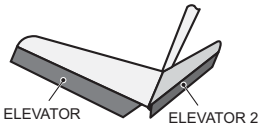
●Return to Model Menu



● When a fine tuning VR is set on the next screen (1/2), the aileron and flap trim rates can be adjusted. Touch the corresponding button and adjust the rates with the adjustment buttons displayed on the screen.



at V-TAIL



Gyro

[Corresponding model type]: Airplane/glider, general

This function is used when a GYA Series gyro is used to stabilize the fuselage attitude. The sensitivity and operation mode (Normal mode/GY mode) can be switched with a switch.

- Three rates (Rate 1/Rate 2/Rate 3) can be switched.
- Up to 3 axes (Gyro/Gyro 2/Gyro 3) can be simultaneously controlled.

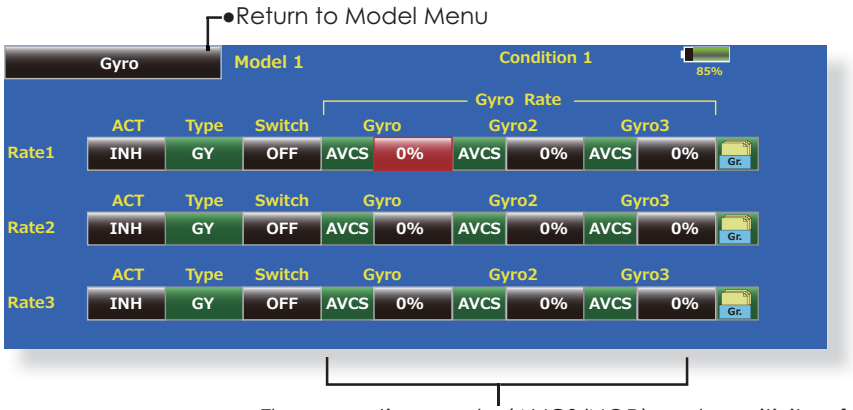
*Initial setting does not assign a sensitivity channel. Use the Function menu of the Linkage Menu to assign the sensitivity channel (Gyro/Gyro2/Gyro3) used to a vacant channel beforehand.

Set [ACT] and [Trim] other than Function to [NULL].

- Touch the [Gyro] button in the Model Menu to call the setup screen shown below.

- Group/single mode switching (Gr./Sngl)

  (For more information, see the description at the back of this manual.)



- The operation mode (AVCS/NOR) and sensitivity of the 3 axes Gyro/Gyro2/Gyro3 can be set.

- Three rates (Rate 1/Rate 2/Rate 3) can be used.
- Touch the ACT button of the rate to be used, and set the function to ACT ([ON] or [OFF]).
- When a Futaba GYA gyro is used, when [GY] type is s elected, the sensitivity set value is directly read in both the AVCS and NOR modes.
- When setting a switch, touch the switch button to call the <Switch> screen, and then select the switch and set its ON direction.

  (For a description of the switch selection method, see the description at the end of this manual.)

(Example) Setting 3 axes using a GYA351 and GYA352 (2 axes gyro)

- Wing type: Aileron 2 servos mounted fuselage selected
- Set Gyro 1 (GYA351): CH7, Gyro 2 (GYA352): CH8, Gyro 3 (GYA352): CH9 at the Function menu of the Linkage Menu.
- Rate 1 [OFF][GY][SW-E][NOR][60%][NOR][60%][NOR][60&][Gr]
  Rate 2 [INH][GY][NULL][AVCS][0%][AVCS][0%][AVCS][0%][Gr]
  Rate 3 [OFF][GY][SE-E][AVCS][60%][AVCS][60%][AVCS][60%][Gr]

*When separating the conditions, set to [Sngl].

*Set so that Rate 1 is turned on at the back position of switch E and Rate 3 is turned ON at the front position.

Since switch E is turned OFF at the center, Rate 2 remains [INH].

V-tail

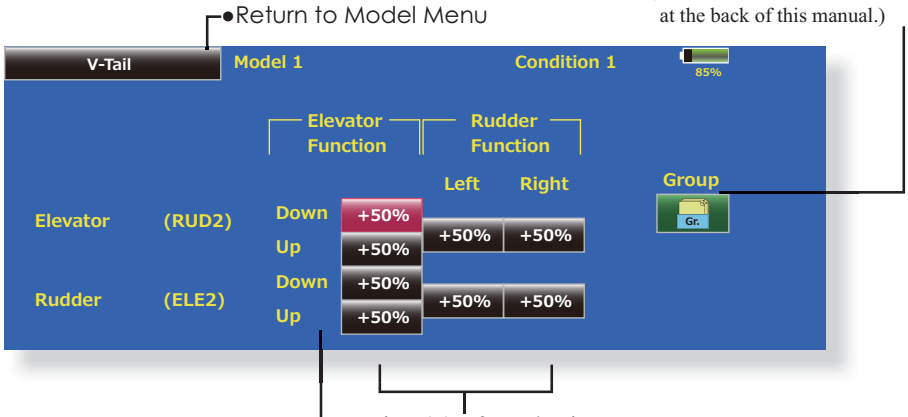
[Corresponding model type]: Airplane/glider, V-tail

This function let's you adjust for left and right rudder angle changes at elevator and rudder operation of a V-tail airplane.

V-tail is when 2 servos are used together to control rudder movement as Elevators. In addition to each rudder side moving up and down together, each side moves in opposite directions when moving as Elevators. On a V-tail, this is also known as a Ruddervator, as they can serve the same purpose.

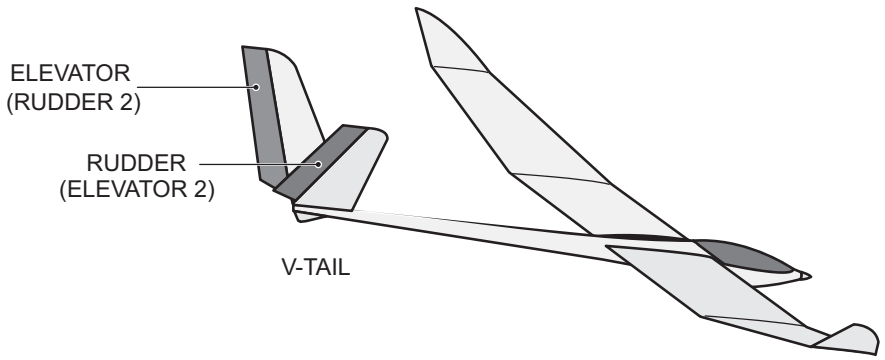
- Touch the [V-tail] button in the Model Menu to call the setup screen shown below.

- Group/single mode switching (Gr./Sngl)
  (For more information, see the description at the back of this manual.)



(Rudder function)
Left and right travel adjustment at CH1 and CH2 rudder operation

(Elevator function)
Up and down travel adjustment at CH1 and CH2 elevator operation



Ailevator [Corresponding model type]: Airplane/glider, V-Tail

(Effective only when 2 servos used at the elevators)

This function improves the operating performance of the roll axis by operating the elevators as ailerons.

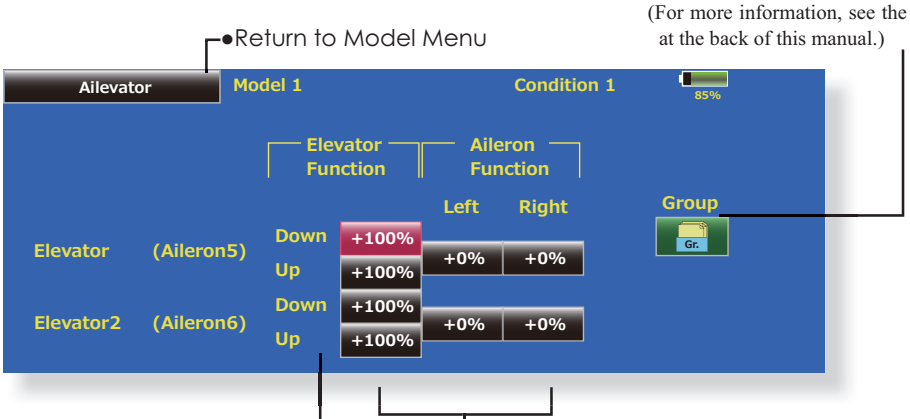
Ailevator is where each elevator in a standard (conventional) or v-tail moves independently, like ailerons on a wing. In addition to each elevator side moving up and down together, each side moves in opposite directions when moving as an Ailevator. On a V-tail, this is also known as a Ruddervator, as they can serve the same purpose. Typically, both Ailevator and ailerons are coupled together to maximize roll performance, especially on larger wingspan planes..

Note: Select Ailevator as the Model Type at the Model Type screen. This changes the output channel. Check the Function menu.

- Touch the [AIL] button in the Model Menu to call the setup screen shown below.

- Group/single mode switching (Gr./Sngl)

(For more information, see the description at the back of this manual.)

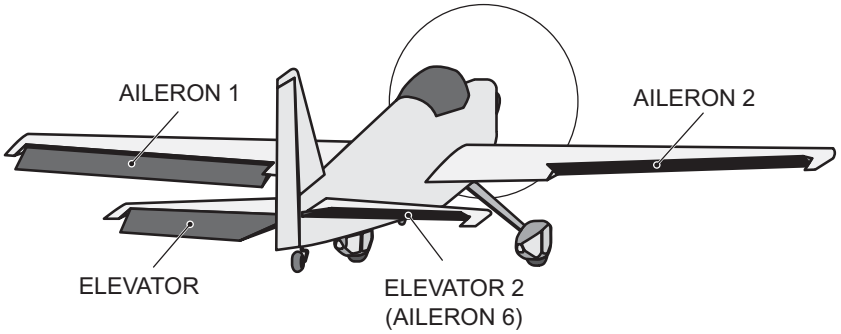


(Aileron function)

- When the elevators are used as ailerons, aileron travel of the left and right elevators can be adjusted.

(Elevator function)

- The up and down rate of the left and right elevators when the elevator stick is manipulated can be individually adjusted.



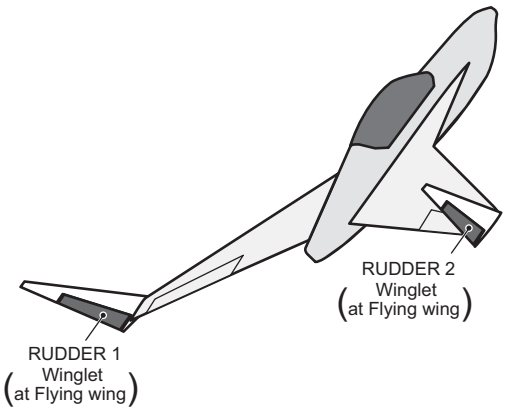
Winglet

[Corresponding model type]: Airplane/glider, winglet

This function adjusts the rubber left and right rudder angle of winglet specifications fuselages.

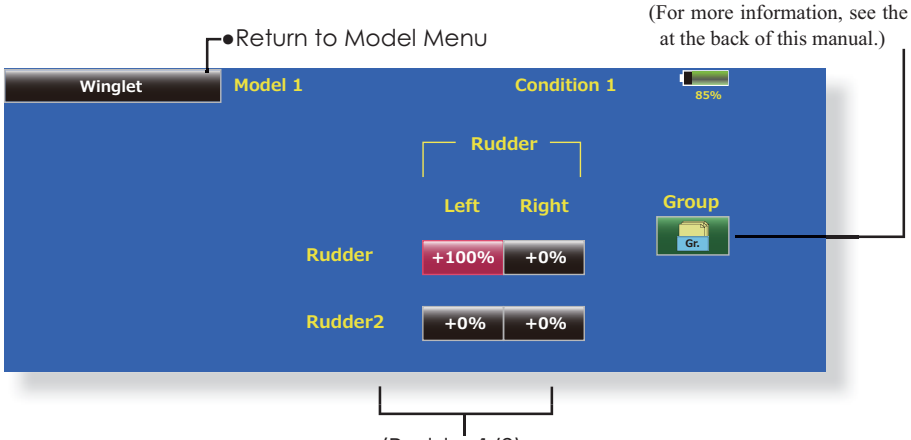
Winglets are used to improve the efficiency of aircraft lowering the lift-induced drag caused by wingtip vortices. The winglet is a vertical or angled extension at the tips of each wing.

Winglets work by increasing the effective aspect ratio wing without adding greatly to the structural stress and hence necessary weight of its structure - an extension of wing span would also permit lowering of induced drag, though it would cause parasitic drag and would require boosting the strength of the wing and hence its weight - there would come a point at which no overall useful saving would be made. A winglet helps to solve this by effectively increasing the aspect ratio without adding to the span of the wing.



- Touch the [Winglet] button in the Model Menu to call the setup screen shown below.

- Group/single mode switching (Gr./Sngl)
  (For more information, see the description at the back of this manual.)



(Rudder 1/2)

- The travel at rudder stick left and right operation can be individually set.

Motor

[Corresponding model type]: EP glider/Airplane, general

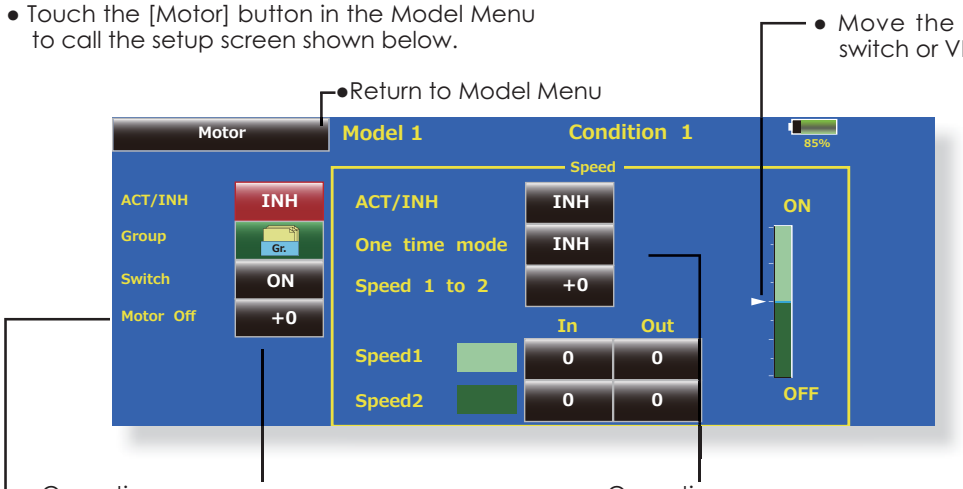
This function lets you set the operation speed when the motor of a F5B or other EP glider is started by switch. The operation speed can be set in 2 ranges of slow speed flight and high speed flight (Speed 1/Speed 2). This function can also be operated as a safety function by setting 2 switches.

- The In side and Out side operating speeds can be adjusted independently in 2 ranges (Speed 1/Speed 2).
- The boundary between the 2 ranges can be set. (From Speed 1 to Speed 2)
- The set operation speed operation can be activated at initial operation only. (1 time operation) However, operation can be repeated by setting the switch to OFF before operation is finished. When you want to reset 1 time operation, set the ACT button to [INH] and then reset it to [ON].
- The motor (CH3) is controlled by SW-G[Mode1] SW-E[Mode2]. (Initial setting) When changing the switch or stick which controls the motor, first change Function of the Linkage Menu.

Note: When using this function, always check initial operation with the propeller removed.

Note: The warning message is appears when the mixing is on status at the power on for safety

- Touch the [Motor] button in the Model Menu to call the setup screen shown below.



- Operation

  Touch the button and set the function to ON.
- Group/single mode switching (Gr./Sngl)

  (For more information, see the description at the back of this manual.)
- Switch

  A switch that turns the function itself ON/OFF can be selected.
- Motor off

  [Yes] and [No] are displayed by touching the Motor Off button when [SW-G(Mode1)] [SW-E(Mode2)]is in the motor OFF position. When [Yes] is touched, the direction of the motor switch is memorized. The screen graph display ON direction also changes.

- Operation

  Touch the button and set the function to ON.
- When you want to set the "One time mode", touch the button and set the mode to [ON].
- Speed 1 to 2

  The Speed 1 and Speed 2 region boundary can be changed,
- Operation speed adjustment

  The speed when Speed 1 and Speed 2 are ON (In) and OFF (Out) can be adjusted.

Notes

- First decide the motor OFF point, and then set the speed. When you want to reset the motor OFF point, also reset the speed.
- We recommend that Motor OFF be set in combination with F/S.
- Set the basic operation direction with the Reverse function to match the amp used.
- Always set the Motor OFF position.

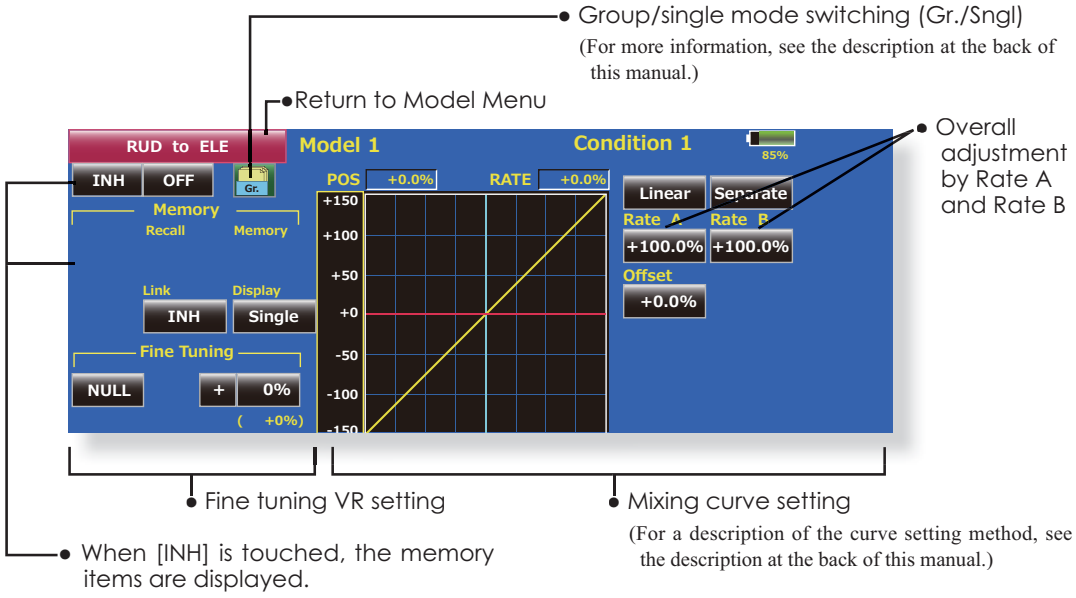
RUD to ELE

[Corresponding model type]: Airplane, general

This function is used when you want to mix elevator operation with rudder operation. It is used to correct undesirable tendencies when rudder is applied in roll maneuvers, knife edge, etc. of stunt planes.

- A mixing curve can be set.
- Mixing during flight can be turned ON/OFF by setting a switch. (Always ON at NULL setting)
- The amount of correction rudder can be memorized by using the Memory function. This is convenient at mixing curve setting. When memory operation (switch operation) is performed with correction rudder applied in the Memory Mode, the stick position at that time is displayed on the mixing curve. The point is automatically reflected in the curve. (When the Memory function is used, "Line" is automatically selected as the curve type.)
- Link can be set: Links this mixing to other mixings.
- The mixing rate can be fine-tuned by setting a VR. (Fine tuning)

- Touch the [RUD to ELE] button in the Model Menu to call the setup screen shown below.



Setting method

- Touch the "INH" button, and set the function to ACT(ON).
- When setting a switch, touch the "NULL" button to call the <Switch> screen, and then select the switch and set its ON direction. (Always ON at "NULL" setting)
  (For a description of the switch setting method, see the description at the back of this manual.)
- When setting a VR, touch the Fine Tuning "NULL" button to call the <Switch> screen, and then select the VR. The fine tuning rate and adjustment direction can be set.
  The VR operation mode can also be set.
  (For a description of the fine tuning VR setting method, see the description at the back of this manual.)
- The curve display mode can be changed.
  Single : Displays the mixing curve only
  Fine Tuning : Displays the fine tuning rate of the fine tuning VR
  All Cond. : Displays the mixing curve of all the conditions (When conditions are set)
- When setting Link, touch the Link button and set it to ON.

Memory function usage method

(Example) Using the memory function with an F3A airplane (knife edge correction)

*When call switch ⇒[SW-A] and memory switch⇒[SW-H] were set

[Memory function operation]

1. Memory function mode: [Manual]⇒[Memory]
2. When the memory switch (SW-H) is set to ON while performing elevator correction when rudder was applied at knife edge, the point position at that time is memorized. Memorization is performed while changing the left and right stick positions.
3. To recall the memorized positions, set [SW-A] to ON. The memorized correction rate is reflected on the curve, and operation is simultaneously set.

Note: When memorized from manual before flight, be sure that the memory SW is not accidentally set to ON and incorrect mixing setting is not applied when taxiing, starting the engine, etc.

Snap Roll

[Corresponding model type]: Airplane, general

This function selects the switch and rate adjustment of each rudder, (ailerons, elevators, or flaps) when a snap roll is performed.

- Four snap roll directions can be set. (Right/up, right/down, left/up, left/down)
- Operation mode: When [Master] mode is selected, the Snap Roll function is turned ON/OFF by master switch in the state in which the direction switch was switched to the direction in which you want to snap roll. When [Single] mode is selected, snap roll in each direction can be executed by means of independent switches.
- A safety switch can be set. As a safety measure, the switch can be set so that snap roll is not executed when, for instance, the landing gear is lowered, even if the switch is turned on accidentally. The snap roll switch is activated only when the safety switch is ON.
- The operation speed of the aileron, elevator, and flap servos can be adjusted for each snap roll direction. (In side/Out side) (Page 2/2)

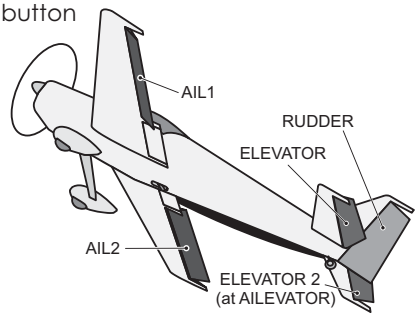
(Example) Setting example for F3A

- Mode: [Master]
- Safety SW: [SW-G] (Safety measure)
- Master SW: [SW-H] (Main switch for executing snap roll)
- Direction switches:

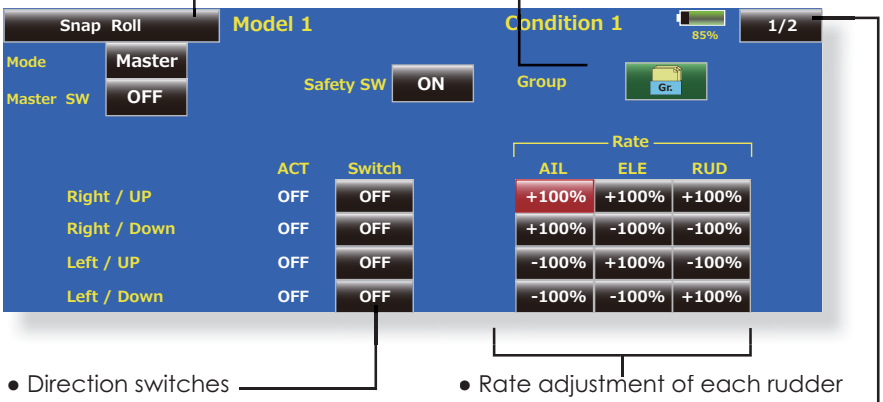
  *The snap roll up side left and right and down side left and right direction switches are selected here.

  Right/Up: OFF [SW-D] Right/Down: OFF [SW-D] Left/Up: OFF [SW-A] Left/Down: OFF [SW-A]
- Speed adjustment (Screen 2/2)

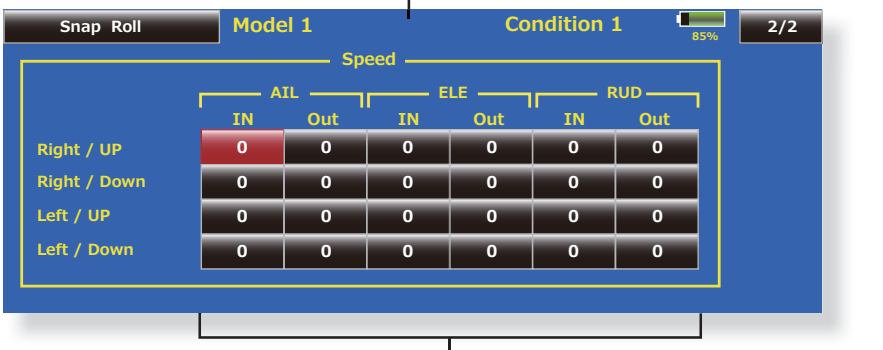
  The operation speed of each control surface when the snap switch is ON can be changed and snap roll executed by stick while there is switch operation can be performed.
- Touch the [Snap Roll] button in the Model Menu to call the setup screen shown below.



- Curve display mode switching (Single/Fine tuning/All Cond.)
- Return to Model Menu
- Group/single mode switching (Gr./Sngl) (For more information, see the description at the back of this manual.)



- Direction switches
- Rate adjustment of each rudder



- Adjustment of the servo speed of each rudder

(For a description of the setting method, see the description at the back of this manual.)

Multi Engine

[Corresponding model type]: Airplane, general

This function lets you adjust the throttle when using a multi engine airplane with up to 4 engines. The Throttle Cut function, Idle Down function, Throttle Hold function, High Trim, and Idle Trim can be adjusted by throttle channel (THR, THR2, THR3, THR4).

*Initial setting assigns only one throttle channel (THR). When using this function, the number of throttle channels must be assigned beforehand at the Function menu of the Linkage Menu.

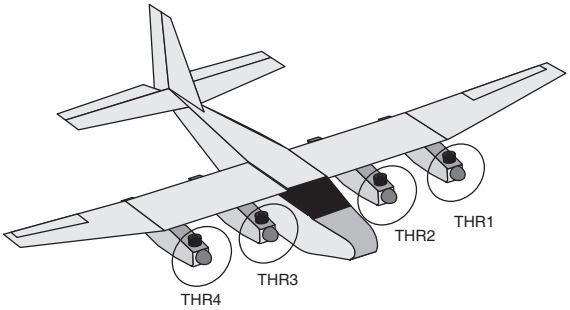
- The throttle cut position can be set for each throttle channel. Throttle cut operation is linked to the switch set with the Throttle Cut function of the Linkage Menu.

*The throttle cut position set at this screen is effective.

- The throttle down offset rate can be set for each throttle channel. Idle down operation is linked to the switch set with the Idle Down function of the Linkage Menu.

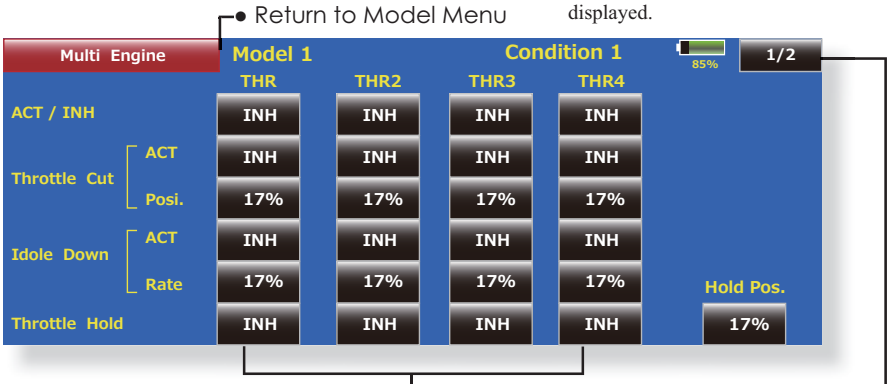
*The idle down offset rate set at this screen is effective.

- Operation can be fixed at the engine speed (carburetor opening angle) for each throttle channel with the Hold Position function. The hold position can be changed.
- High side trim and idle trim can be set for each channel. Operation acts as high trim or idle trim based on the center.

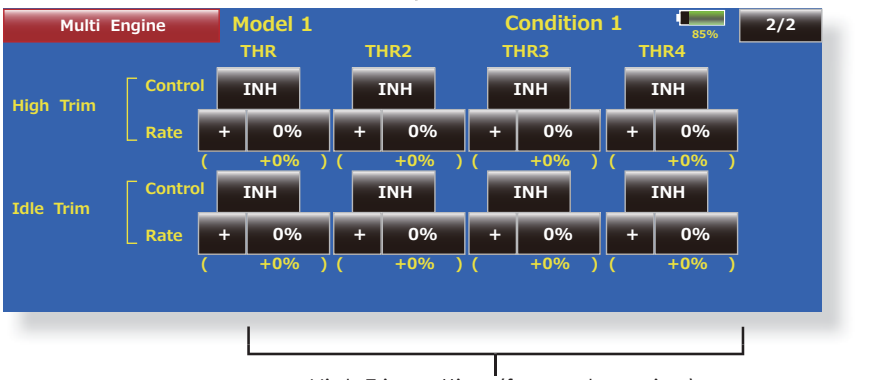


- Touch the [Multi Engine] button in the Model Menu to call the setup screen shown below.

*The number of engines (1~4) assigned by Function menu in the Linkage Menu setup screen is displayed.



- Throttle cut position setting (for each engine)
- Idle down offset rate setting (for each engine)
- Throttle hold position setting

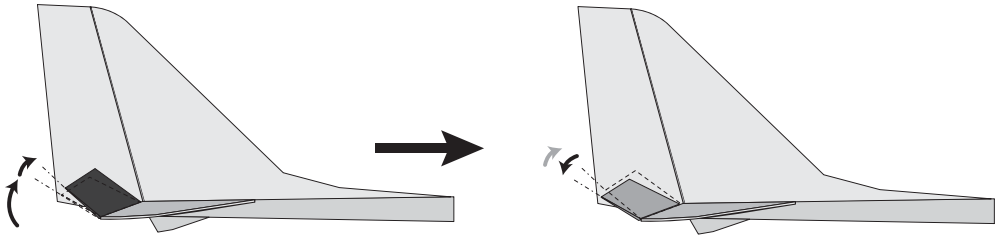


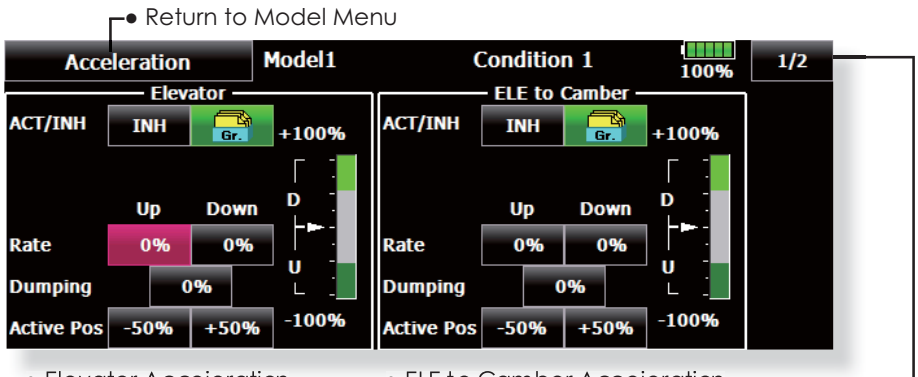
- High Trim setting (for each engine)
- Idle Trim setting (for each engine)

Accelerration [Corresponding model type]: EP glider,glider

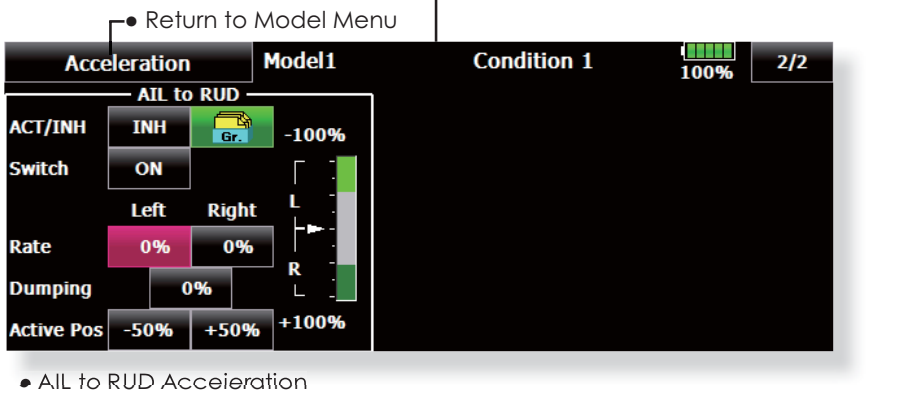
Acceleration setting can be performed at elevator, ELE to CAMBER and AILERON to RUDDER. (Glider and EP glider only)

- This setting is divided into elevator setting andcamber setting. The setting method is the same.
- Camber setting sets the acceleration functionfor ELE to CAMBER mixing. Setting is notperformed when ELE to CAMBER mixing isINH.
- The acceleration function can be set for both theUP side and DOWN side.
- Function ON/OFF switch setting is performedforAILERON to RUDDER setting only.
- AILERON to RUDDER setting is acceleration function setting for aileron to rudder mixing.Itis not performed when AILERON to RUDDERmixing is INH.





- Elevator Acceieration
- ELE to Camber Acceieration



- AIL to RUD Acceieration

MODEL MENU (HELICOPTER)

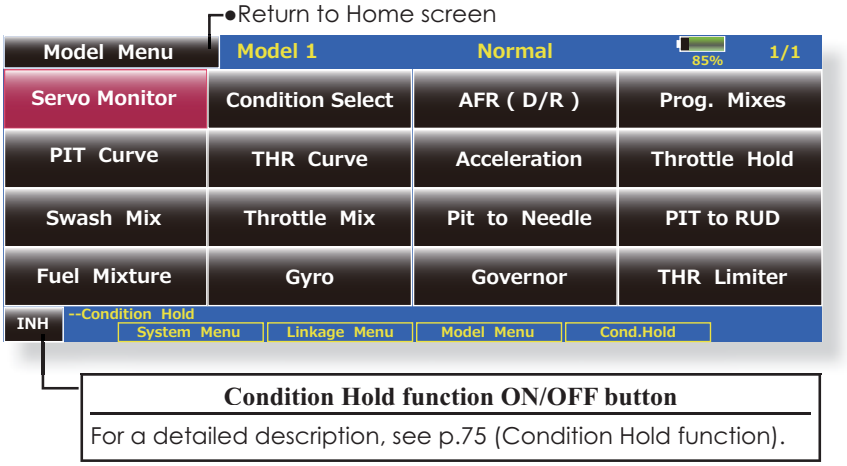
This section contains information on the commands that apply to helicopters only. For instructions on Airplanes and Sailplanes, refer to the sections pertaining to those aircraft. Each of these functions can be set independently for different flight conditions. To get to these settings, touch the desired function button to be entered.

Use the Model Type function in the Linkage Menu to select the swash type matched to the fuselage beforehand. If you later change model types, all settings will be lost.

Also, add flight conditions at the Condition Select screen before setting the model data at each function. (Up to 8 conditions can be used)

The AFR function, fuel mixture and other functions common to all model types, are described in a separate section.

● Touch the Model Menu button of the Home screen to call the menu shown below. Touch the button of the function you want to set to call the setup screen.



Condition Hold function ON/OFF button

For a detailed description, see p.75 (Condition Hold function).

Model Menu functions (helicopter) list

PIT Curve: Adjusts response in different flight conditions

THR Curve: Throttle curve and hovering trim adjustment

Acceleration: Counteracts torque due to sudden throttle and pitch commands

Throttle Hold: Moves the throttle to idle during autorotation

Swash Mix: Compensates for each control response

Throttle Mix: Compensates for power loss when cyclic applied

Pit to Needle: Adjusts response curve in different flight conditions

Pit to RUD: Handles torque changes from pitch angle inputs

Fuel Mixture: Commands a second servo to adjust the fuel mixture at the carburetor

Gyro: Used to switch Futaba GY series gyro sensitivity

Governor: Used to switch RPM of the helicopter's head

Throttle Limiter: Limits the high range of the throttle movement by any slider or trimmer

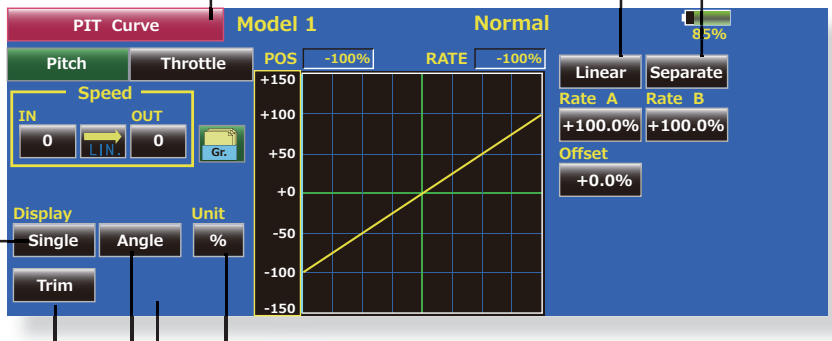
PIT Curve/Pitch Trim

PIT Curve

This function adjusts the pitch operation curve for each flight condition for the optimal flight state relative to movement of the throttle stick.

The pitch curve can be freely selected from linear operation curve to smooth curve, and adjusted to match the curve you want by means of the T18MZ's powerful Curve Edit Function (6 types of curves can be selected). Up to 17 points can be set for linear or curve types. However, when using the 3 points or 5 points specified to create a curve, a simple and smooth curve can be created by selecting the curve type and reducing the number of input points to 3 or 5, and then entering the specified value at the corresponding points that you created.a curve, a simple and smooth curve can be created by selecting the curve type and reducing the number of input points to 3 or 5, and then entering the specified value at the corresponding points that you created.

- Touch the [PIT Curve] button in the Model Menu to call the setup screen shown below.
- There are 4 types of display. The curve of all the conditions or the pitch and throttle curves can be displayed on one screen.
- Linear type is 9 points, but for simple use, 4~5 points are sufficient.
- Normally use Separate.
- Return to Model Menu



- Trim can be used as hovering pitch and pitch trim. The high and low side pitch can be fine-tuned.
- Units can be selected from [%] and [Deg]. When [Deg] is selected, the rotor pitch angle is displayed and becomes the setting standard. When [Deg] was selected, the high, center, and low pitch angles are enterd.
- Can be copied to the pitch trim adjustment position.
- When the [Angle] button is touched, the pitch angle input screen is displayed. Input the maximum pitch, center, and low pitch.

Normal curve adjustment

- For normal curve, usually use [Line] type and create a basic pitch curve centered about hovering. Use this function together with the THR Curve (Normal) function and adjust the curve so that up/down control is best at a constant engine speed.

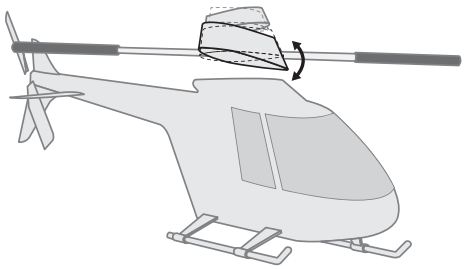
Idle up curve adjustment

- For the high side pitch curve, set the maximum pitch which does not apply a load to the engine. For the low side pitch curve, create curves matched to loop, roll, 3D, and other purposes and use the idle up curves according to the performance.

Note: When the curve type is changed, the data is reset.

Throttle hold curve adjustment

- The throttle hold curve is used when executing auto rotation dives.



Operation precautions

⚠WARNING

When actually starting the engine and flying, always set the idle up condition switch to [OFF] and start the engine in the idling state.

Setting method

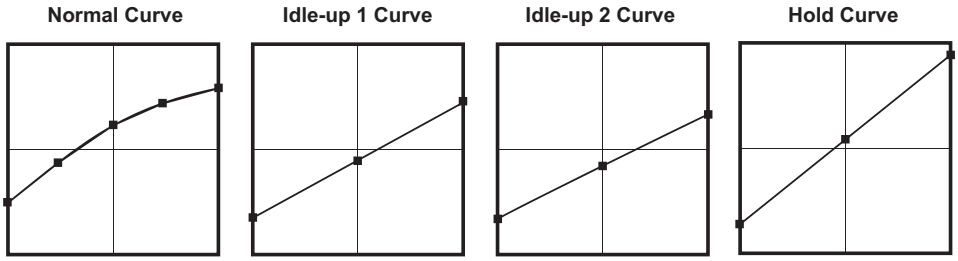
- Group button: When you also want to input the same setting contents at other conditions, perform setting in the group mode (initial setting). In this case, the same contents are input to the other conditions set in the group mode. When you want to set each condition independently, select the single mode. Other conditions can be set independently.
- Normal % input or angle input can be selected at rate adjustment at curve setting. For angle input, if the high side, low side, and center angles are input beforehand, the rate can be set by reading the angle directly (standard).
- The curve graph display mode can be selected. This is convenient when checking curves other than the curve currently being set.
  [Sngl]: Displays only the curve currently being set
  [Fine Tuning]: When pitch trim is used, a curve with pitch trim adjustment added is also displayed.
  [All Cond.]: Displays the pitch curve of all the conditions. The curve of the condition currently in use is indicated by a bold line.
  PIT&THR: The throttle hold curve of the condition currently in use is also displayed.
- The Throttle Curve setup screen can be called with one touch, which is convenient when making adjustments alternately with the throttle curve.
- The servo operation speed can be set. When adjusted when the pitch is too sensitive, the pitch operation feeling can be changed.
- When increasing the number of points, use the cursor keys [<][>] to move the cursor to the point where you want to enter a point (■) and touch the Rate button. The point is created.

Curve setting examples

The screens shown below are curves created by entering the pitch angle at low, center, and high side 3 points or 5 points at each condition. They were created by reducing the number of points to the 3 points of low side, center, and high side. When actually creating a curve, input the angle specified at the fuselage (or the reference value).

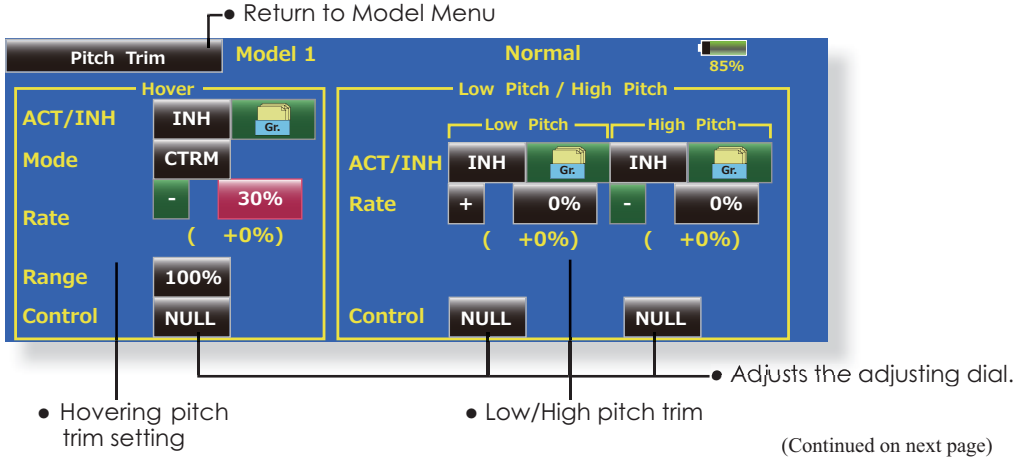
*For a description of the curve setting method, see the description at the back of this manual.

●Pitch Curve (Example)



Pitch Trim (Hovering pitch, high pitch, low pitch)

The hovering pitch, low pitch, and high pitch trim setup screen can be called from the PIT Curve setup screen.



(Continued on next page)

Hovering pitch trim

The Hovering Pitch function trims the pitch near the hovering point. Normally, it is used with the hovering condition. The hovering pitch can be fine tuned for changes in rotor speed accompanying changes in temperature, humidity, and other flight conditions. Adjust the hovering pitch so that rotor speed is constant. This function can be used together with the Hovering Throttle Trim function for more delicate operation.

Setting method

- When using only the hovering (normal) condition, switch the group button to the single mode before setting.
- Set the function to ACT [ON].
- Select the adjustment knob. Selection example: LD or T6
- The trim operation mode (Mode: CTRM/ NORM) can be selected.

  CTRM mode: Maximum amount of change near center by center trim operation

  NORM mode: Normal trim (parallel movement trim) operation. The advantage of using this mode is that the hovering pitch can be adjusted without changing the curve.
- Trim adjustment range (Range) setting

When this value is made small, trim can only be used near the center.

- The trim rate can be adjusted and the operation direction can be changed.

High Pitch/Low Pitch Trim

High Pitch/Low Pitch Trim is the pitch servo high side and low side trim function.

Setting method

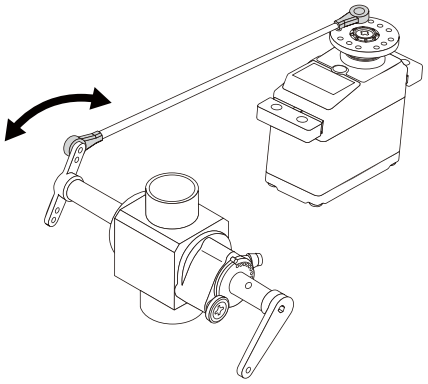
- When setting the adjustment knobs common to all the conditions, set them in the group mode.
- Set the function to ACT (ON).
- Select the adjustment knobs. Selection example: LST (high side), RST (low side)
- The trim rate can be adjusted and the operation direction can be changed.
- Trim acts as high side or low side trim with the center as the standard.

THR Curve/Throttle Hover trim

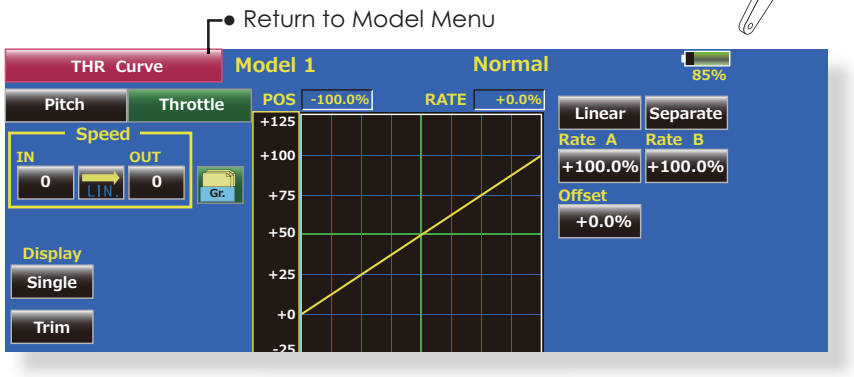
THR Curve

This function adjusts the throttle operation curve for each condition for optimum the engine speed to throttle stick movement.

A throttle curve from linear operation curve to smooth curve can be set. Adjustment to the curve you want to use is possible by using the 18MZ's powerful Curve Edit Function. Up to 17 curve points can be set, however, when the 5 points and other point data is used, a smooth curve can be easily created by reducing the number of input points of the curve to 5 and entering the specified value at the corresponding points.



- Touch the [THR Curve] button in the Model Menu to call the setup screen shown below.



Normal curve adjustment

- Normal curve creates a basic curve centered around hovering. Use it along with the normal pitch curve and adjust so that up/down control at a constant engine speed is easiest.

Idle up curve adjustment

- Set a normal up curve that maintains a constant speed at all times, even when operation which reduces the pitch was performed in flight. Create a curve matched to loop, roll, 3D, or other purposes and the idle up curve according to the performance.

Operation precautions

⚠WARNING

When actually starting the engine and flying, always set the idle up condition switch to [OFF] and start the engine in the idling mode.

Setting method

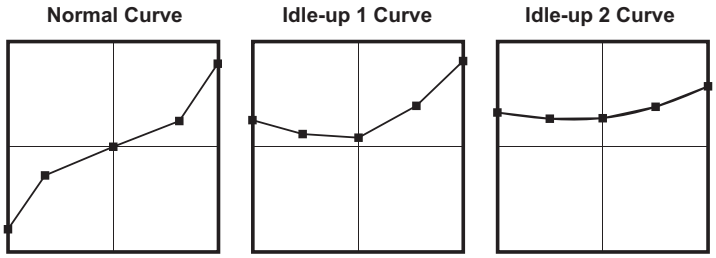
- Group button: When you want to simultaneously enter the same settings to other functions, make the settings in the group mode. (Initial setting) In this case, the same setting contents are entered to the other conditions in the group mode. When you want to set each condition independently, make the settings after selecting the single mode.
- The curve graph display mode can be selected. This is convenient when checking curves other than the one being set.
  [Sngl]: Displays only the curve being set.
  [Fine Tuning]: When Throttle Hover trim is used, a curve with trim adjustment added is also displayed.
  [All Cond.]: Displays the throttle curve of all the conditions. The curve of the condition currently in use is indicated by a bold line.
  [PIT&THR]: The pitch curve of the condition currently in use is also displayed.
- The pitch curve setup screen can be called with one touch. This is convenient when alternately adjusting these curves with the pitch curve.
- The servo speed can be set. Adjust the throttle speed when the throttle is too sensitive

Curve setting examples

The curves shown below were created by using the Line mode and inputting the data of the 5 points 0% (low side), 25%, 50% (center), 75%, 100% (high) side at each condition. They were created by reducing the number points of the line to 5. When actually creating a curve, enter the data specified per the fuselage (or the reference value).

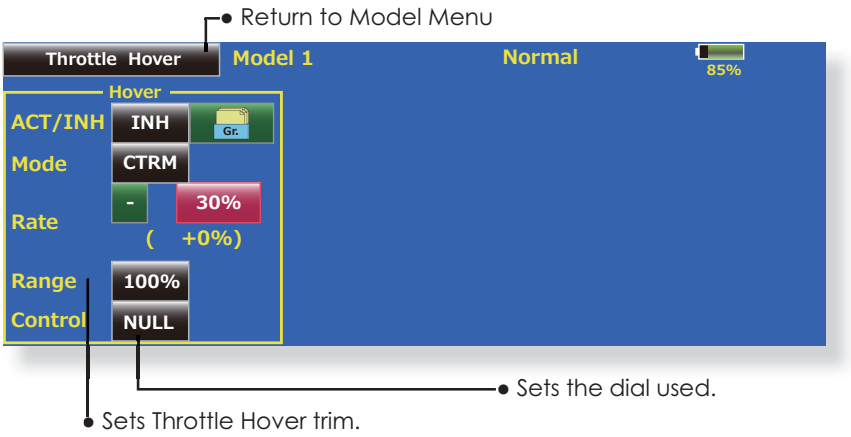
*For a description of the curve creation method, see the description at the back of this manual.

●Throttle Curve (Example)



Throttle Hover trim

The Throttle Hover trim setup screen can be called from the THR Curve setup screen.



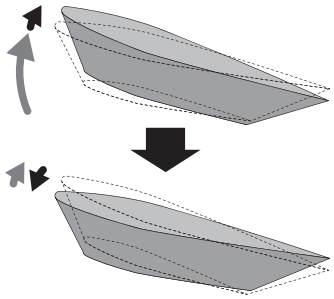
The Throttle Hover function trims the throttle near the hovering point. Normally, use it with hovering conditions. Changes in rotor speed accompanying changes in the temperature, humidity, and other flight conditions can be trimmed. Adjust the throttle so that rotor rotation is most stable. More delicate trimming is also possible by using this function along with the Hover Pitch function.

Setting method

- When using the hovering (normal) condition only, switch the [Gr.](group button) mode to the [Sngl](single) mode and make the settings.
- Set the function to ACT ([ON]).
- Select the adjustment knob. Selection example: RD
- The trim operation mode (Mode: CTRM/NORM) can be selected.
  CTRM mode: Maximum rate of change near center by center trim operation
  NORM mode: Normal trim (horizontal movement trim) operation. The advantage of using this mode is that hovering throttle can be adjusted without changing the curve.
- Trim adjustment range (Range) setting
  When the value is made small, trim acts only near the center.
- The trim rate can be adjusted and the operation direction can be set.

Acceleration Mixing

This function is used to adjust the pitch and the throttle rise characteristic at acceleration/ deceleration operation. An acceleration function which temporarily increases the pitch and throttle operations at throttle stick acceleration/deceleration operation can be set.



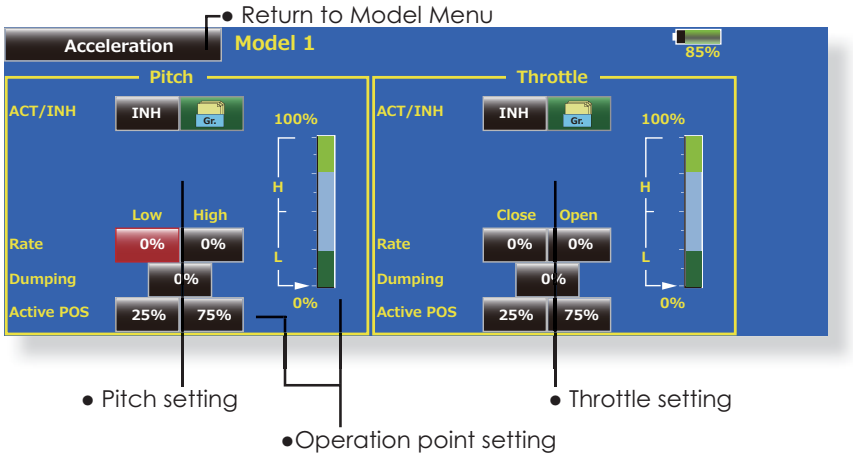
Example of acceleration function use

- When used at pitch, the Acceleration function is effective when you want to quicken the response of the fuselage at 3D flight flip, etc.

  When used, high pitch temporarily exceeds maximum pitch, but immediately returns to maximum pitch.

Using Acceleration with Pitch is effective when you want to maximize speed for 3D aerobatics and other aircraft responses. As an example, "High pitch" temporarily overrides "maximum pitch" and immediately returns to the maximum pitch position.

- Touch the [Acceleration] button in the Model Menu to call the setup screen shown below.



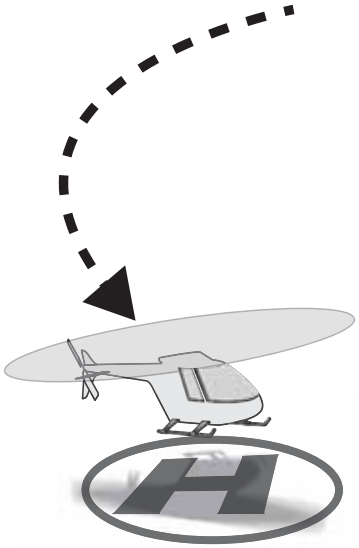
Setting method

- Acceleration can be set at both setting at acceleration (high) and setting at deceleration (low).
  (The operation point is displayed on a graph.)
- Acceleration rate setting (Rate)
- The return time after operation (Dumping) can be set.
- The operation point at acceleration and deceleration can be set. When an operation point is exceeded, acceleration is performed.

Note: When using the Acceleration funtion, since the pitch stroke is large, make your settings so there is no binding of your linkage.

Throttle Hold

This function sets the throttle cut position at auto rotation dive. The throttle position can also be set to an idling position separate from the throttle cut position. Setting of these 2 positions can be selected by switch. This allows use for switching during training.

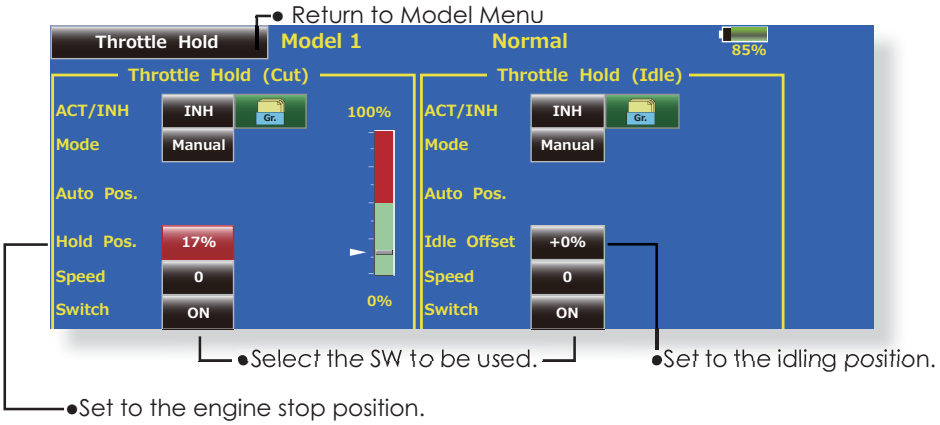


Example of use

- Since Throttle Hold has 2 modes (Cut) and (Idle), using it in the Idling mode during training and in the Cut mode when stopping the engine at meets, etc. is convenient.

Note: When throttle hold is set to ON in the normal condition, throttle hold acts and the throttle servo is deactivated. Always set throttle hold to ON in the hold condition.

- Touch the [Throttle Hold] button in the Model Menu to call the setup screen shown below.



Setting method

- Operation mode selection
  Manual mode: The throttle hold function is operated by switch operation only.
  Auto mode: The throttle hold function operation is linked to the throttle stick position.
  Auto position setting: When the Auto mode was selected, the throttle position (auto position) can be selected. Move the throttle stick to the position you want to set and touch the (auto position) button.
- Hold position adjustment
  Throttle Hold (Cut) sets the throttle cut position. Adjust it so that the carburetor is full open.
  Throttle Hold (Idle): Make this adjustment to maintain idling for training. Adjustments can be made based on the throttle curve idle position.
- The throttle servo operating speed can be adjusted. (Speed)
- Throttle cut or training function can be switched by hold function selector switch.

Operation precautions

⚠WARNING

When starting the engine, confirm that the idle up condition and throttle hold condition are [OFF].

Swash Mixing

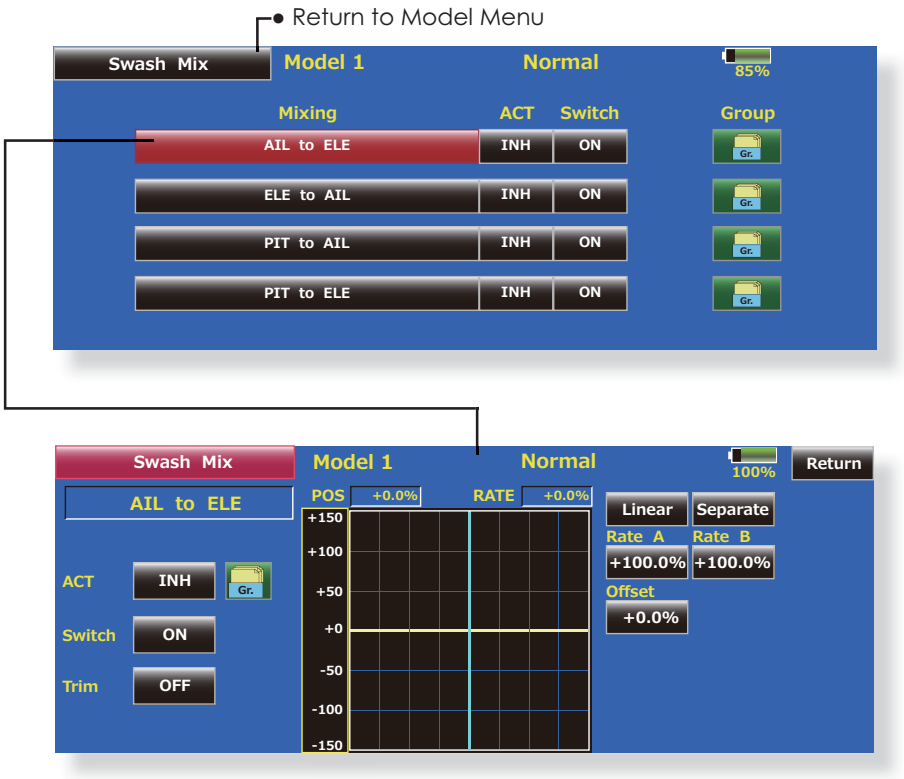
The swash mix function is used to correct the swash plate in the aileron (roll) direction and elevator (cyclic pitch) corresponding to each operation of each condition.

Adjustment by independent curve for aileron, elevator, and pitch operations is possible. The operation can be smoothly adjusted by calling up the “Curve setup” screen by touching the button that corresponds to the mixing and direction which needs correction.

Example of use

- As an example, use swash mixing to correct undesirable tendencies in the roll direction
- For a condition which uses AIL to ELE, set this function to ON. When raising the nose at a right roll, when the Rate B side is input and the right aileron is operated, the elevator moves to the down side. Tune by adjusting the Rate. For right roll, adjust to the Rate A side.

- Touch the [Swash Mix] button in the Model Menu to call the setup screen shown below.



Setting method

- When using this function, touch the [INH] button and display [ON] or [OFF].
- When you want to set the same contents at other conditions, select the group mode (Gr.). When you want to set the selected condition only, select the single mode (Sngl).
- The correction rate can be set by curve.
- A switch can be set.
  When [NULL] is set, the swash mixing function is operated by merely selecting the condition.
  When setting an [ON]/[OFF] switch, touch the [NULL] button and set the switch and its ON position at the <Switch> screen.
- Trim on /off setting
  You can select mixing characteristics either with trim or without trim.

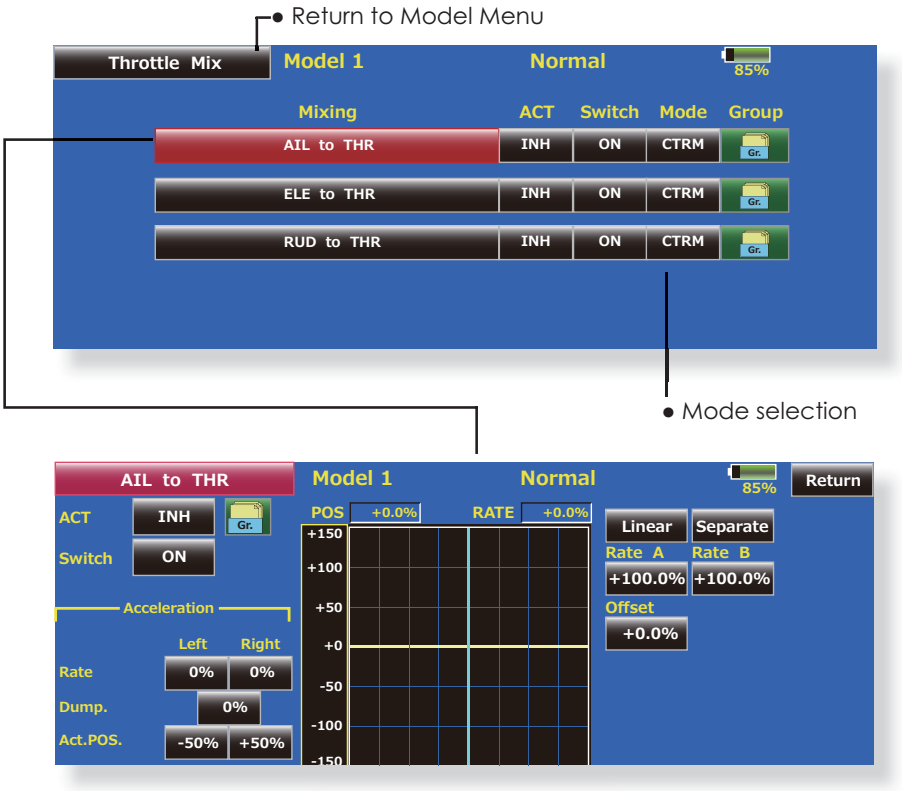
Throttle Mixing

This function corrects slowing of engine speed caused by swash plate operation at aileron or elevator operation. The method of applying clockwise or counterclockwise torque when pirouetting can also be corrected.

An acceleration function which temporarily increases the throttle side correction rate relative to rapid stick operation can also be set.

When correction is necessary, touch the mixing corresponding to the mixing that needs correction to call the curve setup screen, and then correct the slowing.

- Touch the [Throttle Mix] button in the Model Menu to call the setup screen shown below.



- CTRM mode: The mixing rate is reduced by the throttle stick high and low position.
- LINEAR mode: Constant mixing rate to all the throttle stick ranges.

Setting example

- AIL to THR applies a load to the engine and corrects sinking of the engine speed when the throttle stick was operated. Engine racing can be adjusted independently at the right aileron and left aileron by Rates A and B.

Setting method

- When using this function, touch the [INH] button and display [ON] or [OFF].
- When you want to set the same contents at other conditions, select the group model (Gr.). When you want to set the selected condition only, select the single mode (Sngl).
- The correction rate can be set by curve.
- A switch can be set.
  When [NULL] is set, the function is operated by merely selecting the condition.
  When setting an [ON]/[OFF] switch, touch the [NULL] button and then set the switch and its ON direction at the <Switch> screen.

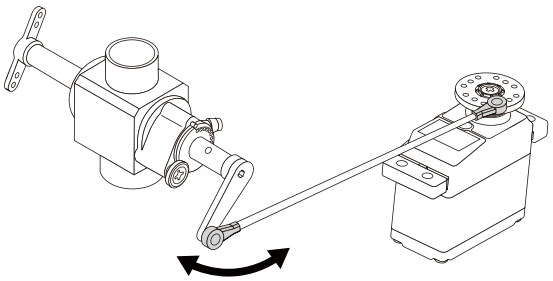
<Acceleration function setting>

- Acceleration can be set for both settings (High) and (Low) at maximum correction rate.
- Acceleration rate setting (Rate)
- The return time (Dump.) after operation can be set.
- The operation point when the correction rate is increased and decreased can be set independently. When an operation point is exceeded, acceleration operation is performed.

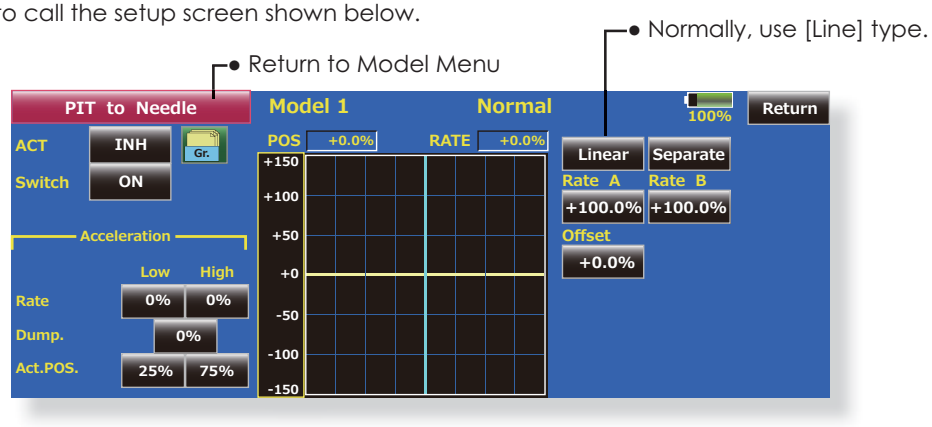
PIT to Needle Mixing

This mixing is used when the engine is equipped with needle control or other fuel-air mixture adjustment. A needle curve can be set.

An acceleration function which temporarily increases needle operation at throttle stick acceleration/deceleration operation can be set. The rise characteristic of the needle servo at acceleration and deceleration operation can be adjusted.



● Touch the [PIT to Needle] button in the Model Menu to call the setup screen shown below.



Setting method

- ●When using this function, touch the [INH] button and display [ON] or [OFF].
- ●When you want to set the same contents at other conditions, select the group mode (Gr.). When you want to set the selected condition only, select the single mode (Sngl).
- ●A needle curve can be set.
- ●A switch can be set.
  When [NULL] is set, the function is operated by merely selecting the condition.
  When setting and [ON]/[OFF] switch, touch the [NULL] button and set the switch and its ON direction at the <Switch> screen.

< Acceleration function setting>

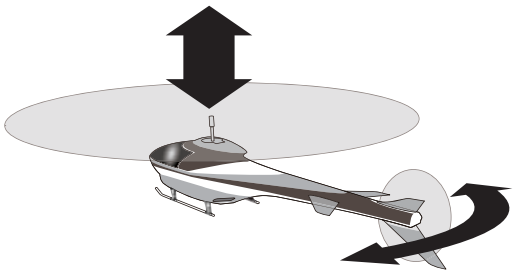
- ●Acceleration can be set at both setting at acceleration (High) and setting at deceleration (Low).
- ●The acceleration rate (Rate) and the return time after operation (Dump.) can be set.
- ●An operation point (Operation Point) at acceleration and deceleration can be set. When an operation point was exceeded, acceleration operation is performed.

PIT to RUD Mixing (Revolution Mixing)

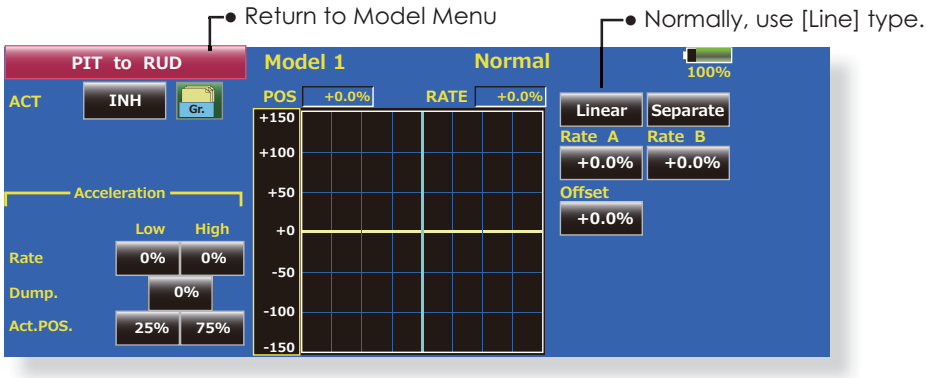
Use this mixing when you want to suppress the reaction torque generated by main rotor pitch and speed changes at pitch operation. Adjust so that the nose does not move in the rudder direction.

An acceleration function which temporarily increases the correction rate at throttle stick acceleration/deceleration operation can be set. The mixing rate at acceleration/deceleration can be set.

However, when a GY Series or other heading hold gyro is used, since correction is performed by the gyro, this mixing is not used. If this function is used when the gyro operation mode is the AVCS mode, the neutral position will change.



- Touch the [PIT to RUD] button in the Model Menu to call the setup screen shown below.



Setting method

- When using this function, touch the [INH] button and display [ON] or [OFF].
- When you want to set the same contents at other conditions, select the group mode (Gr.). When you want to set the selected condition only, select the single mode (Sngl).
- A mixing curve is set.

<Normal condition mixing curve>

The mixing curve rate starts from a small value.

For a rotor with a clockwise operation direction (polarity), when pitch was operated at the plus side, set so that mixing is in the clockwise direction. First, trim at hovering and then adjust the neutral position.

1. Adjustment between slow and hovering

   Repeatedly hover from take off and land from hovering at a constant rate matched to your own rhythm, and adjust the pitch so the nose does not deflect when the throttle is raised and lowered.

2. Throttle high side (up to climbing from hovering and diving hovering)

*Repeat climbing and diving from hovering at a constant rate matched to your own rhythm and adjust the pitch so that the nose does not deflect when the throttle is raised and lowered.

<Idle up condition mixing curve>

Set the mixing rate so that the rudder direction at high-speed flight is straight ahead. Adjust for each condition used.

<Acceleration function setting>

- Acceleration operation can be performed for both setting at acceleration (High) and setting at deceleration (Low).
- Acceleration rate setting (Rate)
- The return time after operation (Dump.) can be set.
- An operation point (Operation Point) at acceleration and deceleration can be set independently. When an operation point was exceeded, acceleration operation is performed.

Gyro Mixing

It is mixing only for a Gyro in the case of using a Futaba GY series Gyro.

Sensitivity and operational mode (Normal mode / GY mode) can be set up for three Gyro for every condition, respectively.

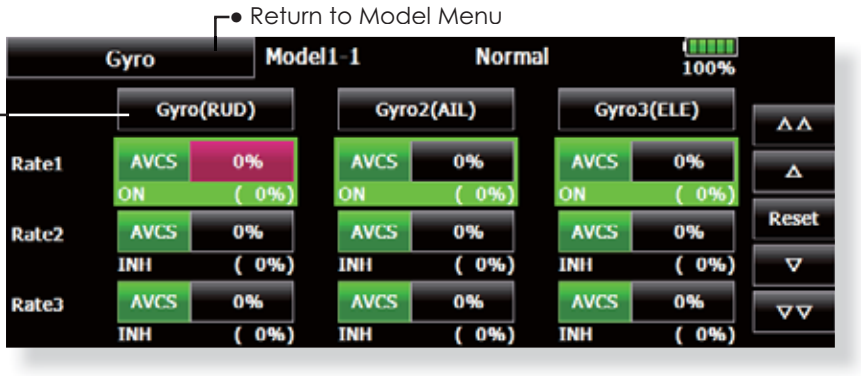
Note: Always set both (ACT) and (Trim) for the [Gyro] function.

Setting example

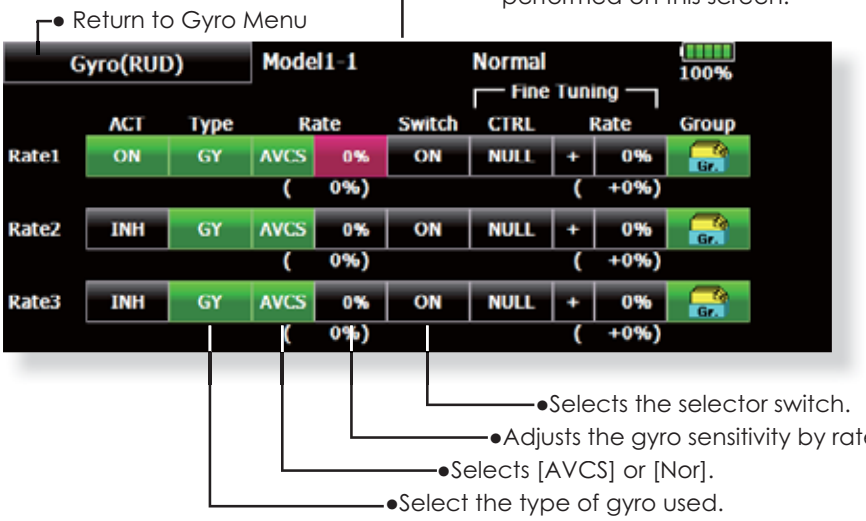
- Normally, it is convenient to preset high sensitivity (Rate 1) and low sensitivity (Rate 2) when either the AVCS mode or Normal mode is used.

- Touch the [Gyro] button in the Model Menu to call the setup screen shown below.

- A setup of the mode of 3 Gyros and Rete can be performed on this screen.



- A detailed setup of each Gyro can be performed on this screen.



Setting method

- Touch the [INH] button of the rate to be used and display [ON].
- When you want to set the same contents at other conditions, select the group mode (Gr.). When you want to set the selected condition only, select the single mode (Sngl).
- Three rates can be switched for each condition. (Rate 1/Rate 2/Rate 3)
- A fine tuning VR can be set.

Governor Mixing

This is used to switch the RPM of the helicopters head. Up to 3 rates can be set for each condition.

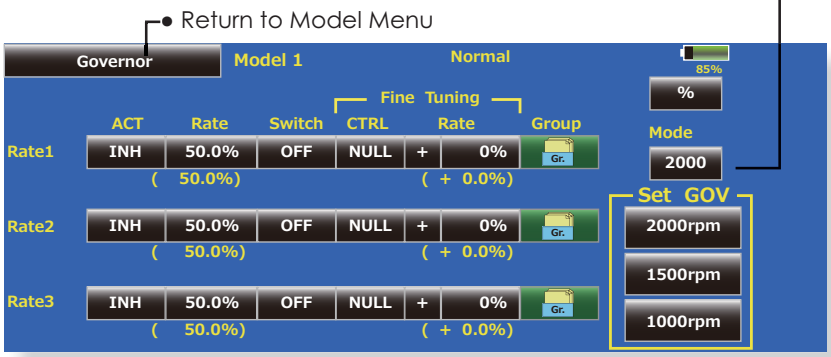
*The governor is used by connecting the governor speed setting channel to CH7 (initial setting).

*When using an independent governor [ON]/[OFF] switch, connect the AUX([ON]/[OFF]) connector of the governor to CH8 (initial setting) and set the switch to Governor2 at the Function menu of the Linkage Menu.

*When using the Fuel Mixture function, the mixture servo is controlled from the governor. When transmitting the mixture curve data from the transmitter to the governor, the governor AUX (m.trm) connector must be connected to Governor2 function and governor side setting performed. See the governor instruction manual.

Note: Always set (Act) and (Trim) to [NULL] for [Governor] and [Governor 2] of the Function menu. The subtrim of [Governor] is made 0%. Make the reverse direction normal.

● Touch the [Governor] button of the Model Menu to call the setup screen shown below.



● When the "Mode" buttonon the Governor screenis pressed, the display mode is switched.

2000: 2000rpm mode

2500: 2500rpm mode.

● The 2500rpm mode and 2000rpm mode aredifferent when the rate is 50.0% (=2500rpm) orgreater. At rates below 50.0%, the rpm displayis the same for both modes.

● When the 2500rpm mode is set,100.0%=2500rpm. The maximum value is 110.0%=2700rpm.

● When the 2000rpm mode is set,100.0%=2000rpm. The maximum value is110.0%=2100rpm. (Conventional specifications)

● There is no change in the transmitter outputeven when the 2500rpm mode and 2000rpmmode are switched. Calibration must beperformed at the governor side.

Setting method

● Touch the [INH] button of the rate to be used and display [ON].

● When you want to set the same contents at other functions, select the group mode (Gr.). When you want to set the selected condition only, select the single mode (Sngl).

● Three speeds (rates) can be set for each condition. (Rate 1/Rate 2/Rate 3)

● End point initialization
The governor output channel end point(ATV) "travel" and "limit" are now initialized when the governor setting "Operate" button was pressed.

● When switched from INH to ON or OFF,"travel" is initialized to 100 and "limit" is initialized to 155.

● When "Operate" of rates 1, 2 and 3 is switched to INH under all conditions, "travel" is initialized to 100 and "limit" is initialized to 135.

Also, this mixing and the governor side speed setting must be matched beforehand by the following method:

● Set so that when the governor side is placed in the speed setting item state and [2000rpm] of Set GOV of the screen above is touched, the governor speed is set to "2000", when the [1500rpm] button is touched, the governor speed is set to "1500", and when the [1000rpm] button is touched, the governor speed is set to "1000".

● When you want to read the speed directly, press the [%] button and display [rpm].

● The speed can be witched by setting a switch. Also, when [OFF] is set instead of speed setting, the governor can be turned [ON]/[OFF] without setting a separate [ON]/[OFF] switch.

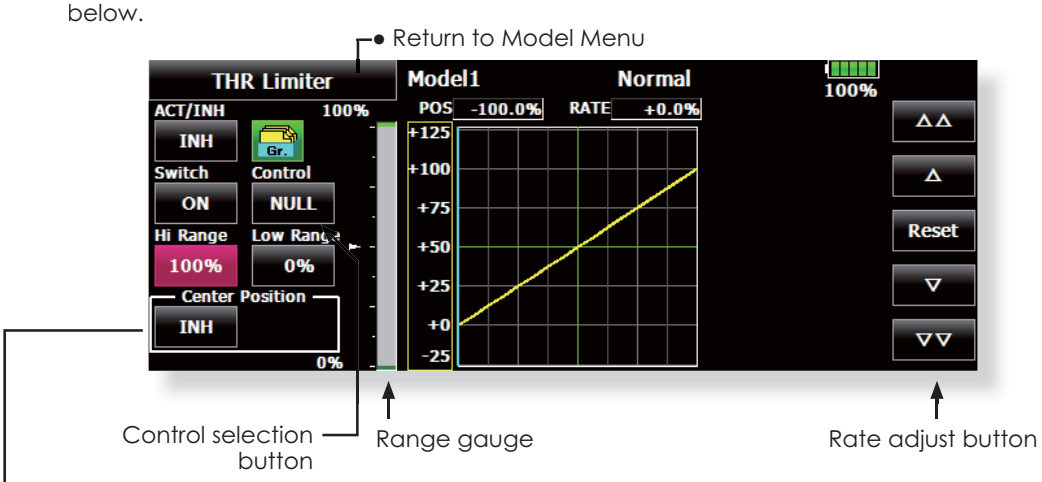
● A speed fine tuning VR can be set.

*VR selection, adjustment width, and adjustment direction can be set.

Throttle Limiter

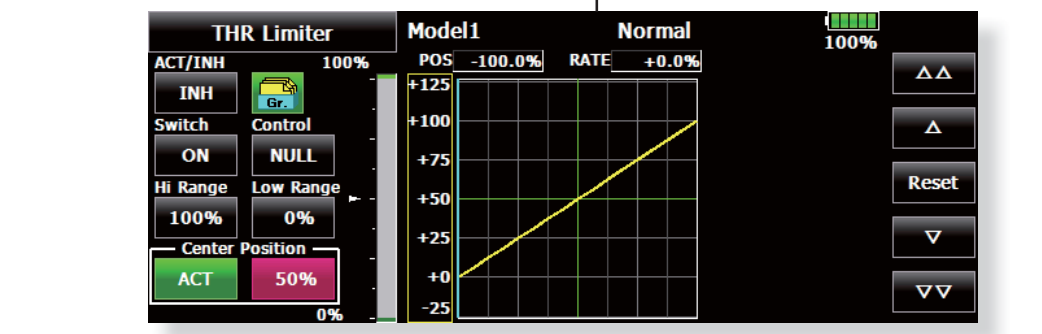
This function limits the high range of the throttle movement by any slider or trimmer. The adjustment range of the high and low end can be set.

- Touch the [Throttle Limiter] button of the Model Menu to call the setup screen shown below.



Setting method

- Activate the mixing and select the on/off switch.
- Select the control for adjustment of the high limit.
- Set the high range. The range gauge shows the setting position.
- Set the low range same as high range setting.



The limit value at the operation hardware neutralposition can now be adjusted using the throttlelimiter.

1. Set "Center position" on the throttle limiterscreen to Operate.

2. When the "Center position" rate is changed, thelimit value at the operation hardware neutralposition can be adjusted.
   - The limit value at the operation hardware neutral position when "Center position" was changed to INH (at conventional operation) is the center value between "High side range" and "Low side range".
   - When "Center position" was switched from INH to Operate, the "Center position" rate is reset to the center value between "High side range" and "Low side range"
   - The "Center position" rate can be set between "High side range" and "Low side range".

Common operations used in function setup screen

This section describes the functions often used at the function setup screen. Refer to it when setting each function.

Operations related to flight conditions

Group/single mode switching (Gr./Sngl)

When setting multiple flight conditions, linking the setting contents with other conditions (Gr.) or setting independently (Sngl) can be selected. When the button is touched, it toggles between Gr. and Sngl.

*Group mode (Gr.) (initial setting): The same setting contents are set to all the flight conditions in the group mode.

*Single mode (Sngl): Select this mode when the setting contents are not linked with other conditions.

*Selecting the single (Sngl) mode at each condition after presetting in the group mode (Gr.) is convenient.

Condition delay setting

Unnecessary fuselage motion generated when there are sudden changes in the servo position and variations in the operating time between channels at condition switching can be suppressed.

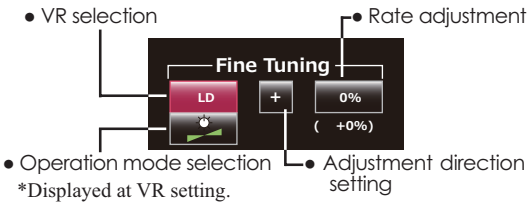
When the delay function is set at the switching destination condition, a delay corresponding to that amount is applied and the related functions change smoothly.

[Setting method]

1. Switch to the condition you want to set.
2. Touch the Delay button.
3. Use the adjustment buttons to set the delay.
   *Initial value: 0
   *Adjustment range: 0~27 (maximum delay)

Operations related to VR tuning

Fine tuning VR setting



*Displayed at VR setting.

[Operation modes]

Mixing rate 0% at center of VR
When the VR is turned counterclockwise and clockwise, the mixing rate increases and decreases, respectively.

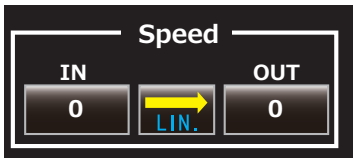
Mixing rate 0% at left end of VR
When the VR is turned, the mixing rate increases.

Mixing rate 0% at right end of VR.
When the VR is turned, the mixing rate increases.

When the VR is turned to the left or right of the neutral position, the mixing rate increases.

Operations related to servo speed

Servo speed setting (1)

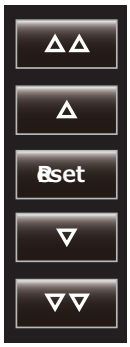


The speed at each operation (including flight condition switching) can be adjusted. The servos operate smoothly at a constant speed corresponding to the set speed. The operation speed (In Speed) and the return speed (Out Speed) can be set individually.

Switch the operation mode according to the set function. When the button is touched, it toggles between [LIN] and [SYM].

"SYM" mode: Mode used with ailerons and other self-neutral functions

"LIN" mode: Mode used with functions which hold the operation position of the throttle and switch channel, etc.



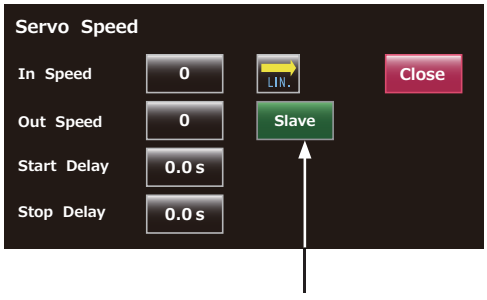
[Setting method]

1. Select the function ([LIN] or [SYM]) matched to the master channel. Each time the button is touched, it toggles between [LIN] and [SYM].
2. Touch the In or Out Speed button and set the servo speed.

Initial value: 0

Setting range: 0~27

Servo speed setting (2) (Prog. Mix only)



Speed mode: Slave/Master

The speed mode can be selected.

Slave mode: The speed at programmable mixing switching can be adjusted. The servos operate smoothly at a constant speed corresponding to the set speed.

Master mode: The servo movement is traced by the setting curve. The trace speed is adjusted by in and out speed.

[Setting method]

1. When setting the servo speed, touch the Speed button. The Servo Speed setup screen shown above is displayed.
2. Select the function ([LIN] or [SYM]) matched to the master channel. Each time the button is touched, it toggles between [LIN] and [SYM].

   "SYM" mode: Mode used with ailerons and other self-neutral functions.

   "LIN" mode: Mode used with functions which hold the operating position of the throttle and switch channel, etc.
3. Touch the In Speed button and set the servo speed.

   Initial value: 0

   Setting range: 0~27
4. Touch the Out Speed button and set the servo speed.

   Initial setting: 0

   Setting range: 0~27
5. Touch the Start Delay button and set the delay time from switch ON to the start of function operation.

   Initial setting: 0.0 sec

   Setting range: 0~4 secs
6. Touch the Stop Delay button and set the delay time from switch OFF to the start of function operation.

   Initial setting: 0

   Setting range: 0~4 secs

At master mode;

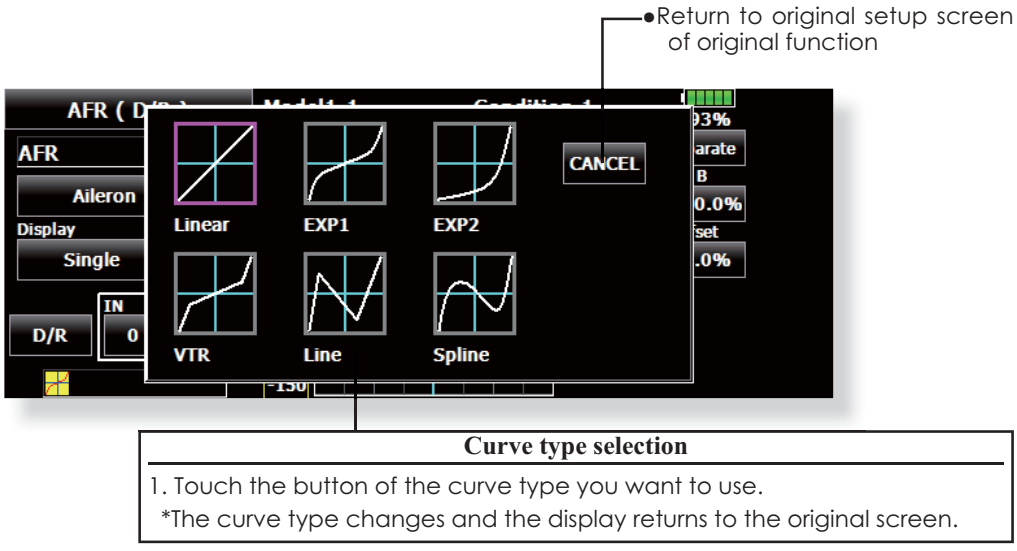
1. Set desired in and out speed.
2. Select the master channel to any toggle switch.
3. The slave channel's servo traces the setting curve as the master toggle switch is moved. Below the case, AUX1 servo traces an EXP1 curve as the SW-F is operated.

Curve setting operation

This section describes the setting procedure of curves which are used with the AFR function and each mixing function.

Curve type selection

When the curve type select button on the mixing function screen or other screen is touched, the setup screen shown below is called.



Curve type selection

1. Touch the button of the curve type you want to use.
   *The curve type changes and the display returns to the original screen.

When curve type is changed:

The curve shape is inherited when the curve type is changed.

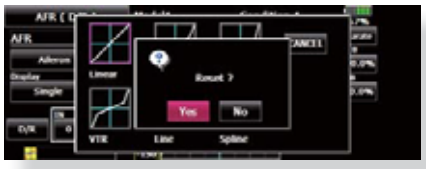
(Example: Changes from EXP1 to Line curve type.)

Changed to line or spline mode, the curve is retrieved as 17 points curve.

The Rate A and Rate B are inherited on the linear, EXP1, EXP2 and VTR.

Other data except Rate A and Rate B are retrieved from the previous setting data when changing the curve type.

At the curve type changes, the dialogue box asks whether the current curve is reset or inherited. The default curve is used when selecting the Yes button on the confirmation dialogue.



Setting by curve type

When the curve type is selected as described above, adjustment buttons corresponding to the curve type appear on the original screen. Adjust each curve as described below.

Linear curve adjustment

Rate A and Rate B can be adjusted separately or simultaneously.

[Setting modes]

- ***[Separate] mode:** Rates are adjusted separately.
- ***[Combined] mode:** Rates are adjusted simultaneously.

[Setting method]

1. Select the setting mode.
2. Touch the Rate A or Rate B button.
3. Use the adjustment buttons to set the rate.

*Initial value: +100.0%

*Adjustment range: -200.0~+200.0%

The curve can also be offset horizontally in the vertical direction and the rate reference point can be offset to the left or right.

[Offsetting the curve horizontally in the vertical direction]

1. Touch the Offset button.
2. Use the adjustment buttons to move the curve horizontally up and down.

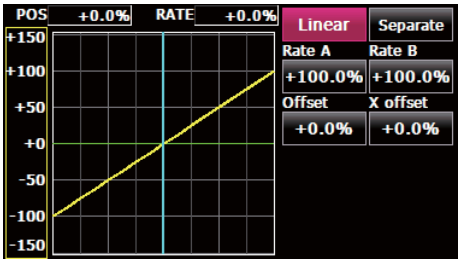
*Initial value: +0.0%

[Offsetting the rate reference point to the left or right]

1. Touch the X Offset button.
2. Use the adjustment buttons to move the reference point to the left or right.

*Initial value: +0.0%

(Linear curve)



(Rate adjustment buttons)

●Return to initial value

EXP1 curve adjustment

Rate A and Rate B can be adjusted separately or simultaneously. The EXP curves rate (EXP A, EXP B) can also be adjusted separately or simultaneously.

[Setting modes]

- ***[Separate] mode:** Rates are adjusted separately.
- ***[Combined] mode:** Rates are adjusted simultaneously.

[Setting method]

1. Select the setting mode.
2. Touch the button of the rate or EXP curve rate your want to set.
3. Use the adjustment buttons to set the rate.

*Initial value: +100.0% (rate), +0.0 (EXP rate)

The curve can also be horizontally offset in the vertical direction.

[Offsetting the curve horizontally in the vertical direction]

1. Touch the Offset button.
2. Use the adjustment buttons to move the curve horizontally up or down.

*Initial value: +0.0

VTR curve adjustment

Rate A and Rate B can be adjusted separately or simultaneously. The VTR curve point positions (P. Pos. A, P. Pos. B) and rates (P. Rate A, P. Rate B) can also be adjusted separately or simultaneously.

[Setting modes]

- ***[Separate] mode:** Positions and rates are adjusted separately.
- ***[Combined] mode:** Positions and rates are adjusted simultaneously.

[Setting method]

1. Select the setting mode.
2. Touch the button of the rate or VTR curve point position (or rate) you want to set.
3. Use the adjustment buttons to set the VTR curve point position (or rate).

*Initial values: +100.0% (Rate), -50.0% (P.Pos.A), +50.0% (P.Pos.B), +0.0% (P. Rate)

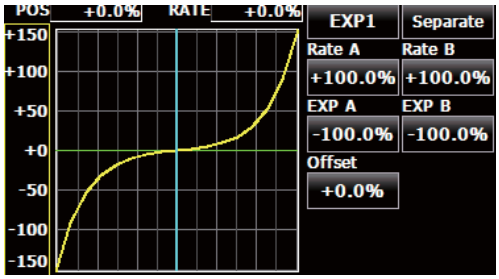
The curve can also be offset horizontally in the vertical direction.

[Offsetting the curve horizontally in the vertical direction]

1. Touch the Offset button.
2. Use the adjustment buttons to move the curve horizontally up and down with the adjustment buttons.

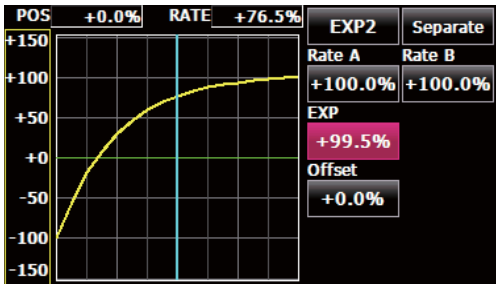
*Initial value: +0.0%

(EXP1 curve)



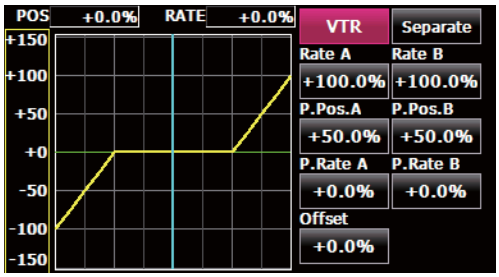
- Using the EXP1 curve is helpful in smoothening starting of the ailerons, elevators, rudder, etc.

(EXP2 curve)



- Using the EXP2 curve is helpful in engine rise and other engine control.

(VTR curve)



- Setting is fast if left, right, up, and down are first decided in the Combined mode and the mode is then switched to the Separate mode.

  When this curve is used when the operating rudder angle is large such as with acrobatic models, switching from normal flight to acrobatic rudder angle is performed without switch operation.

Line and spline curve adjustment

Line curves or spline curves of up to 17 points can be used. (Initial value: 7/9 points) The set points can be freely increased, decreased, and offset. Curves which are symmetrical to the left and right of center can also be set.

[Setting modes]

*__[Separate] mode:__ Normal setting

*__[Combined] mode:__ Creates a left and right symmetrical curve.

[Adjusting the rate of each point]

1. Use the move between points buttons [<<] or [>>] to select the point. (The pink point is the selected point.)
2. Touch the Rate button.
3. Use the adjustment buttons to adjust the rate.

[Point addition method]

1. After touching the point button, move the stick, etc. to the point you want to add and press the [Move] button. (An outlined point appears on the graph.)

Or move the stick, etc. to the position you want to add and press the [Move] button. (An outlined point appears on the graph.)

2. Use the move buttons [<] or [>] to fine adjust the position.
3. Touch the Insert button.

*A new point is created.

[Point deletion]

1. Use the move between points button [<<] or [>>] and select the point. (The pink point is the selected point.)
2. Touch the [Delete] button. (The selected point becomes an outlined point.)
3. Touch the move between point button [<<] or [>>].

*The point is deleted.

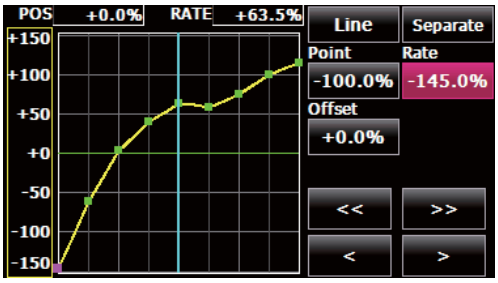
The curve can also be offset horizontally in the vertical direction.

[Offsetting the curve horizontally in the vertical direction]

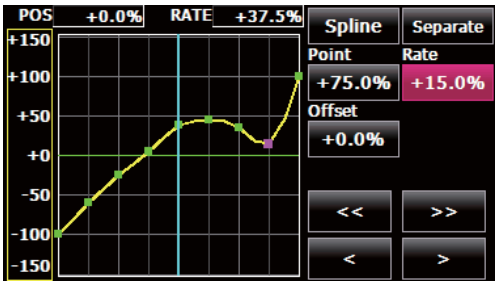
1. Touch the Offset button.
2. Use the adjustment buttons to move the curve horizontally up and down.

*Initial value: +0.0%

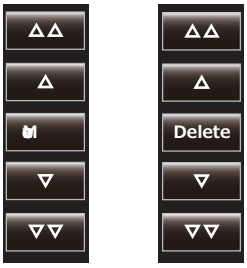
(Line curve)



(Spline curve)



(Rate adjustment buttons)



Switch selection method

The various functions used in the T14MZ can be selected by switch. The switch (including when stick, trim lever, or VR are used as a switch) setting method is common to all functions.

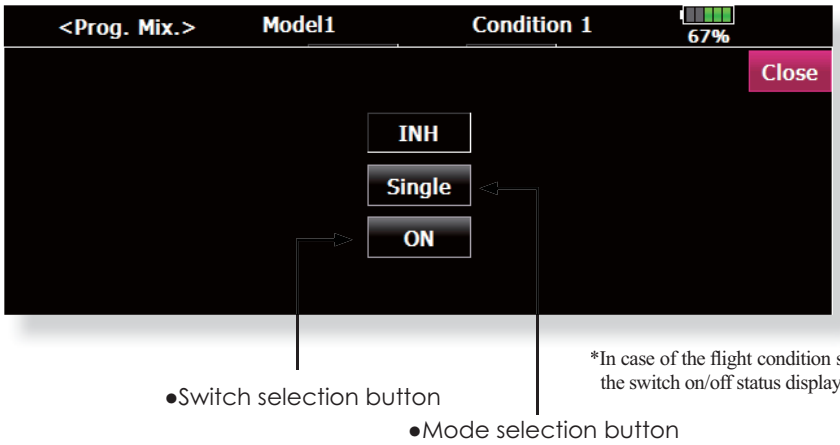
Switch mode selection (Single switch/Logic switch)

When the switch select button at a mixing function screen or other screen is touched, the switch mode selection screen shown below is called. Single switch mode or logic switch mode can be selected.

Logic switch

The Logic switch can activate functions by some switches combination. Can be set up to 4 switch combinations. The Logic switch can be assigned to the mixing function as well as the flight condition select (except for Snap roll function on airplane mode).

(Switch mode selection screen example)



*In case of the flight condition select, the top of the switch on/off status display is not shown.

If using the single switch:

1. Push the switch selection button.
   *The switch selection screen appears.
   *For a description of the switch selection method, see the section "Switch selection" below.

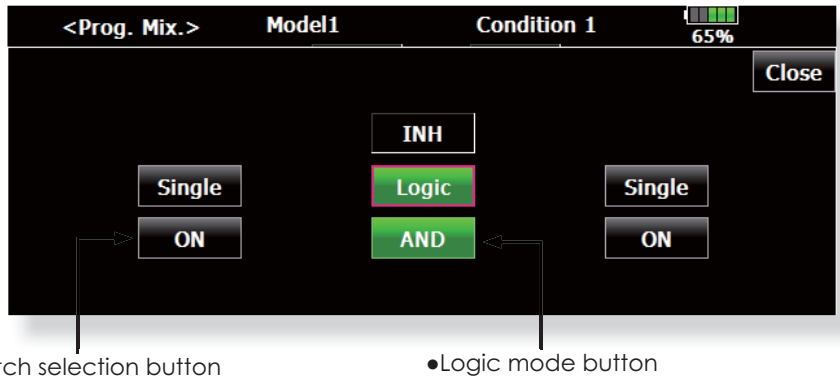
If using the logic switch:

1. The switch mode display is changed by pushing the mode selection button. And then push the [Yes] button.
   *The logic mode setting screen appears.
   *For a description of the logic mode setting method, see the section "Logic switch" below.

Logic switch

At the logic switch mode, the switch selection buttons appear on both the left and right side of the display.

(Logic switch setting screen)



1.The logic selection dialogue appears when you push the logic mode button. The 3 types of logic, either AND, OR or EX-OR, can be selected.

Logic combination table:

SWITCH		LOGIC		
SW1	SW2	AND	OR	Ex-OR
off	***off***	***off***	***off***	***off***
off	***on***	***off***	***on***	***on***
on	***off***	***off***	***on***	***on***
on	***on***	***on***	***on***	***off***

2. The left and right side of the switch mode can be set to the logic switch mode as well. In this case, a maximum of 4 switches can be assigned to the logic switch. The left and right logic are calulated first, then the center of the logic is calculated. Finally, switch on/off status determined by the 4 switches' combination.

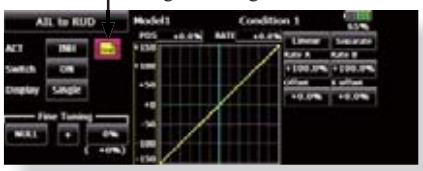
In the above case, the two switches in the left are calculated by AND logic. Next the two switches in the right are calculated as same way. Finally the first case and 2nd case are calculated by OR logic.

Caution:

1. The maximum number of the logic switch is 10 for the flight condition select and 8 for the mixing on/off selection on each flight condition. The error message will appear when the exceeded logic switch is going to be selected. In this case, delete the unused logic switch first, then select the new logic switch.

2. The mixing on/off switch modes are automatically assigned by single mode, not supported the group mode.

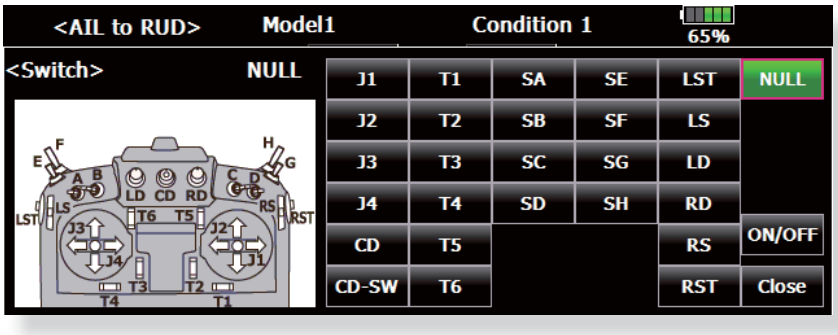
Assigned to single mode



Switch selection

When the switch selection button at the switch mode selection screen or the logic switch setting screen is touched, the selection screen shown below is called.

(Switch selection screen example)



When switch is selected

Switch ON/OFF setting is possible at each position.

- **Alternate:** Alternate switching mode is available depending on mixing function.

1. When the ON position switch is touched after the switch was selected, the screen shown below appears.

*When the button of each position is touched, it toggles between ON and OFF.

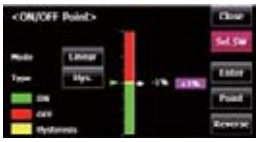
2. Touch the button and set to the ON position.
3. Close the screen by touching [Close].

When stick, trim lever, or VR is selected.

When a stick, trim lever, or VR is used as a switch, the following 4 modes can be selected.

- **Mode:** Lin/Sym
- **Type:** Hysteresis (Hys.)/box (Box)

1. When the ON position button is touched after stick, etc. was selected, the screen shown below appears.



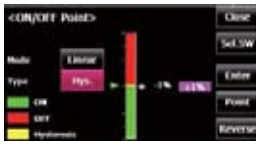
2. Select the mode you want to use, and set it as described below.
3. Close the screen by touching [Close].

Operation modes

The operation modes when stick, trim lever or VR are selected are described below. Change the operation mode by touching the Mode and Type buttons.

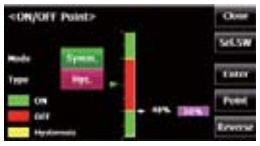
Linear hysteresis mode

This setting method selects function ON/OFF based on the set point. Hysteresis (dead band) can be set between ON and OFF. The ON and OFF positions can be reversed with the Reverse button.



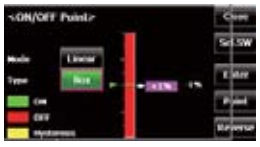
Symmetrical hysteresis mode

Operation is the same as the linear hysteresis mode, but left and right (up and down) operations are symmetrical about the neutral position. For example, when you want to switch DR1 with the aileron stick, when the stick is moved to the left or right, DR1 can be turned ON at the same left and right position.



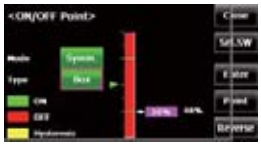
Linear box mode

This mode turns on the switch within a range of 2 points. Each point can be set. The ON and OFF positions can be reversed with the Reverse switch.



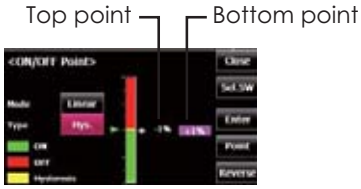
Symmetrical box mode

Operation is the same as the linear box mode, but left and right (up and down) operation is symmetrical about the neutral position.



When shifting the ON/OFF point

The ON/OFF and hysteresis (dead band) boundary point (there are 2 points: top and bottom) position can be shifted. ON/OFF is possible at a free position.



[Setting method]

1. Select the top and bottom boundary points with the [Point] button.
2. Move the stick, etc. to the point you want to shift and touch the [Enter] button. The boundary points change.

*Also shift other points, as required.

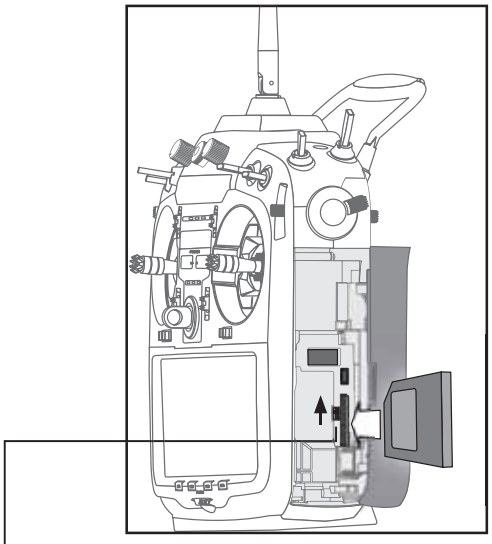
Updating

T18MZ transmitter program can be updated. When functions are added or improved, the update file can be downloaded from our website. Copy the update files to the SD card and then use the following procedure to update the program.

Updating procedure

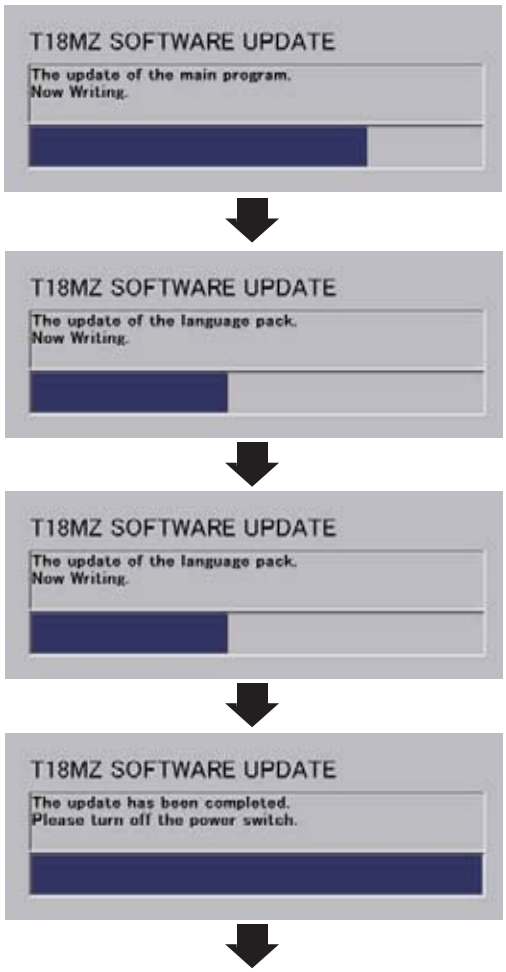
Note: If the battery fully discharges during program updating, updating will fail. When the remaining battery capacity is 50% or less, always recharge the battery before updating.

Note: The model data in the transmitter can be used unchanged after updating, but to be safe, back up the model data before updating.



1. Insert the SD card containing the update file into the card slot.
2. Use tweezers to switch the slide switch (update switch) at the side of the card slot in the up direction.
3. Turn on the transmitter power. An update screen is displayed. Rotary key or the arbitrary direct keys are pressed.

4. When updating is complete, the screen shown below appears.



5. Turn off the power switch. After the monitor LED goes off, switch the update switch in the down direction.

If fault happens, an error message can come out and cannot update.

After the updating above has been completed, turn on the power and then check the system program version at the system menu information screen.

FUTABA CORPORATION
1080 Yabutsuka, Chosei-mura, Chosei-gun, Chiba-ken, 299-4395, Japan
Phone: +81 475 32 6982, Facsimile: +81 475 32 6983