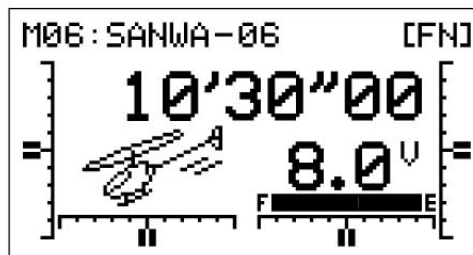# HELI MODEL TYPE

05.STOP WATCH (STOP WATCH AND COUNT UP TIMER), CONTINUED....

Using the Stop Watch

1) Press the END/M3 key two times to return to the Display screen. The Start time that you programmed will be displayed.

```
M06:SANWA-06        [FN]
        10'30"00
             8.0 ᵛ
        F▬▬▬▬▬▬E
```

2) To Start the Stop Watch, press the INC+/M1 key. To Stop the Stop Watch, press the DEC-/M2 key a second time. To Reset the Stop Watch to the programmed Start time, press the INC+/M1 and DEC-/M2 keys at the same time.

⚠ The Stop Watch is displayed in Minutes, Seconds, and 1/10 Seconds. 00' (Minutes) 00" (Seconds) 00 (1/10 Seconds).

Using the Count Up Timer

The Stop Watch function can also be used as a Count Up timer when the Stop Watch is set to 00'00"00. When the Count Up timer runs, UP will be displayed on the Display screen and an audible tone will sound at 1 minute intervals.

```
M06:SANWA-06        [FN]
     UP 00'00"00
             8.0 ᵛ
        F▬▬▬▬▬▬▬▬E
```

1) Set the Stop Watch Start time to 00'00"00 as described in the Setting the Stop Watch section above.

2) To Start the Count Up timer, press the INC+/M1 key. To Stop the Count Up timer, press the INC+/M1 key a second time. To Reset the Count Up timer to 00'00"00, press the INC+/M1 and DEC-/M2 keys at the same time.
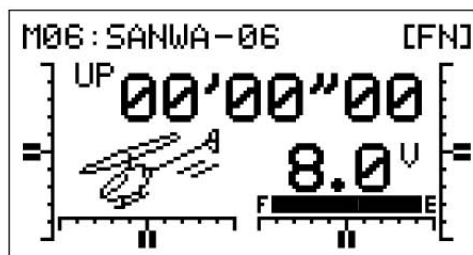
06.DATA COPY (MODEL PROGRAMMING DATA COPY)

The Data Copy function allows you to copy the Programming Data from one model to another model. This is convenient if you have similar Model Types. For example, if you have two models that are similar, you can copy the Programming Data from the first model to the second model to use as a base to start fine-tuning the programming for the second model.

Copying Model Programming Data

1) From the Display screen, press the ENTER key to display the Programming Menus.

2) Press the Navigation Pad ▲ ▼ to highlight DATA COPY, then press the ENTER key to display the DATA COPY menu. The cursor will default to the currently selected model, for example >06:SANWA-06 <HELI>.

```
[DATA COPY]
  ■06:SANWA-06 <HELI>
         ✦
  >06:SANWA-06 <HELI>
```
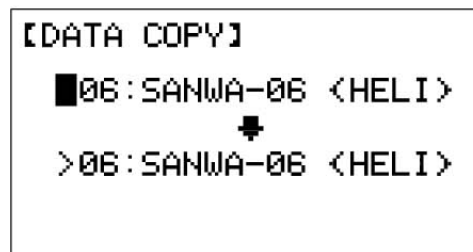
3) With the cursor adjacent to the top model number, press the INC+/M1 or DEC-/M2 keys to select the model you would like to copy Programming Data FROM. ENTER will flash in the Programming Window.

```
[DATA COPY]
  ■07:SANWA-07 <HELI>
         ✦
  >06:SANWA-06 <HELI>
        (ENTER)
```

Centering the Trim Switches and Servo Horns, Continued....

2) Install the servo horn onto the servo, making sure that the servo horn is as close to being centered as possible. In some cases you can get the servo arm closer to being centered by rotating the servo arm 180º and reinstalling it.
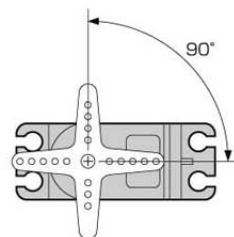
> **IMPORTANT** It is always recommended to install the servo horns as close to being centered as possible, prior to changing the Servo Centering percentage values. After you change the Servo Centering percentage values to center the servo horns, only then should you manually adjust the control linkages to center the control surfaces. When setting up your control linkages, it's recommended that the servo arms and the control surfaces should be centered, and the control linkages should be as close to perpendicular to the servo arms as possible.

⚠ The 90406 transmitter features Digital Trim Memory. Any amount of trim that you set during flight using the trim switches is automatically stored in memory for that specific channel and model, and for that specific Flight Mode (if Enabled). The Trim percentage values for each model will automatically be loaded when the transmitter is turned ON and your model is selected. For more information, see page 69.

Changing Servo Centering Percentage Values

1) From the Display screen, press the ENTER key to display the Programming Menus.

2) Press the Navigation Pad ▲ ▼ to highlight CENTER, then press the ENTER key to display the CENTER menu. The cursor will default to 1EL>0%.

```
[CENTER]
1       4
EL■  0%  RU>  0%
2       5
AI>  0%  GY>  0%
3       6
TH>  0%  PI>  0%
```

3) Press the Navigation Pad ▲ ▼ ◄ ► to highlight the channel that you would like to change the Servo Centering percentage value for.

4) Press the INC+/M1 or DEC-/M2 keys to change the Servo Centering percentage value to center the servo horn.

5) Repeat steps 3 and 4 to center the servo horns for the desired remaining channels.

```
[CENTER]
1        4
EL■ 10%  RU>  0%
2        5
AI>  0%  GY>  0%
3        6
TH>  0%  PI>  0%
```

> CENTER setting range is -150% to 150%. The default setting is 0%. Increase or decrease the Servo Centering Percentage Values to center the servo horns.

> **WARNING** We don't recommend using a Servo Centering percentage value outside the range of approximately -40% to 40%. Using a percentage value outside of this range can result in limited maximum servo travel.

Zeroing Out Trim

Although trim switch settings are automatically stored in memory for each individual model, some users may wish to always keep their trim switch settings at zero (centered) for all models. For example, after test-flying your model, if you have had to add trim to make your model fly straight and level, you can use the Servo Centering function to add that amount of trim back into the servo(s), then move the trim switches back to center. This ensures that your trim switches are always centered.

1) After flying your model, check your model's control surfaces to see how much trim was necessary to achieve straight and level flight.

2) From within the CENTER menu, highlight the channel you need to add Centering trim to.

3) Recenter the trim switch, then change the Servo Centering percentage value until the control surface is in the same position it was prior to recentering the trim switch. **Double-check the control throws to ensure the End Points haven't changed.**

⚠ In the default configuration, the same trim settings are stored across all Flight Modes. This option can be changed to allow you to store different trim settings for each individual Flight Mode. For more information, see page 69.

10. EPA (END POINT ADJUSTMENT)

The End Point Adjustment function allows you to adjust servo travel in each direction. This makes it possible to balance control throw in both directions and set the maximum desired control throw. For example, if you want the elevator axis to move Up and Down 4 degrees in each direction, but the elevator axis moves Down more than 4 degrees, decrease the End Point Adjustment in the Down direction, so that the elevator axis moves Up and Down the same amount. In addition, the End Point Adjustment function can be used to adjust the desired maximum control throw. For example, if your throttle binds when the throttle control stick is at full, you can decrease the throttle End Point Adjustment to lower the control throw.

⚠ The End Point Adjustment function can be overridden by other settings, such as Dual Rate. For example, if you have your End Point Adjustment percentage value set to 100%, and you set your Dual Rate percentage value to 150%, the servo will travel more than 100% when Dual Rate is ON.

⚠ When changing End Point Adjustment percentage values, changing the End Point Adjustment percentage value on one channel, for example, pitch, affects all the cyclic servos (due to CCPM). If you need to make End Point Adjustments to individual servos without affecting the other cyclic servos, use the CCPM End Point Adjustment function described on the next page.

Changing End Point Adjustment Percentage Values

1) From the Display screen, press the ENTER key to display the Programming Menus.

2) Press the Navigation Pad ▲ ▼ to highlight EPA, then press the ENTER key to display the EPA menu. The cursor will default to 1EL>U100% or 1EL>D100% depending on the last position of the elevator control stick.

```
【EPA】
1  U          4  R
EL■ 100%  RU> 100%
2  R          5
AI> 100%  GY> ---
3  L          6  L
TH> 100%  PI> 100%
```

⚠ In front of each End Point Adjustment percentage value is a specific icon. To set the End Point Adjustment percentage value for the desired direction of servo travel, the control stick must be moved in the direction of servo travel you want to change the End Point Adjustment percentage value for. For example, if you want to change the End Point Adjustment percentage value for Down elevator, push the elevator control stick forward, then release it. 'D' will be displayed in front of the Elevator End Point Adjustment percentage value.

3) Press the Navigation Pad ▲ ▼ ◄ ► to highlight the channel that you would like to change the End Point Adjustment percentage value for.

4) Press the INC+/M1 or DEC-/M2 keys to change the End Point Adjustment percentage value.

```
【EPA】
1  U          4  R
EL> 90%   RU> 100%
2  R          5
AI■ 105%  GY> ---
3  L          6  L
TH> 100%  PI> 100%
```

EPA setting range is 0% to 150%. The default setting is 100%. Increasing the End Point Adjustment percentage value increases servo travel and decreasing the End Point Adjustment percentage value decreases servo travel.

5) Repeat steps 3 and 4 to change the End Point Adjustment percentage values for the desired remaining channels.

⚠ Although the End Point Adjustment function is used to balance and adjust maximum control deflection, we suggest adjusting the control linkages first to try to achieve as close to the desired control deflection as possible, then use the End Point Adjustment function to make final adjustments.

To increase control surface deflection, you can either move the pushrod further out on the servo arm or move the pushrod closer to the control linkage. To decrease control surface deflection, you can either move the pushrod closer to the center of the servo arm or move the pushrod further away from the control linkage.

⚠ The End Point Adjustment percentage value for the Gyro channel cannot be changed in the EPA menu. To change Gyro Gain percentage values, see the Remote Gyro Gain Control section on page 75.

HELI MODEL TYPE

11. CP-EPA (CCPM END POINT ADJUSTMENT)

The CCPM End Point Adjustment function allows you to adjust servo travel in each direction for the elevator, aileron, and pitch servos independently. Unlike the standard End Point Adjustment function, which affects all the cyclic servos, CCPM End Point Adjustment allows you to adjust each cyclic servo independently without any affect on the other cyclic servos. For example, you can change the End Point Adjustment on the pitch servo without affecting the End Point Adjustment of the elevator or the aileron servos. This allows for the utmost control is setting up your swashplate for the most accurate movement and allows you to quickly and easily level the swashplate.

IMPORTANT To be able to access the CP-EPA menu and program the CCPM End Point Adjustment function, you must choose a CCPM swashplate setup in the TYPE menu.

Changing CCPM End Point Adjustment Percentage Values

1) From the Display screen, press the ENTER key to display the Programming Menus.

2) Press the Navigation Pad ▲ ▼ to highlight CP-EPA, then press the ENTER key to display the CP-EPA menu. The cursor will default to 1EL H>100%.

```
[CP-EPA]
 1      H■100% L>100%
EL
 2      H>100% L>100%
AI
 6      H>100% L>100%
PI
```

IMPORTANT In front of each CP-EPA percentage value is an 'H' or 'L' icon (High or Low, respectively). Making adjustments to the 'H' percentage value affects the High side of control stick travel and making adjustments to the 'L' percentage value affects the Low side of control stick travel.

3) Press the Navigation Pad ▲ ▼ ◀ ▶ to highlight the channel and direction that you would like to change the CCPM End Point Adjustment percentage value for.

4) Press the INC+/M1 or DEC-/M2 keys to change the CCPM End Point Adjustment percentage value.

```
[CP-EPA]
 1      H>100% L>100%
EL
 2      H>100% L>100%
AI
 6      H■ 90% L>120%
PI
```

CP-EPA setting range is 0% to 150%. The default setting is 100%. Increasing the CCPM End Point Adjustment percentage value increases servo travel and decreasing the CCPM End Point Adjustment percentage value decreases servo travel.

5) Repeat steps 3 and 4 to change the CCPM End Point Adjustment percentage values for the desired remaining channels.

12. SWASH (SWASHPLATE SETUP)

The Swashplate Setup function allows you to control a number of different functions related to the swashplate. Using the Swashplate Setup function, you are able to reverse individual elevator, aileron, and pitch functions.

For example, even if you select the correct Swashplate Type for your particular helicopter there may be a situation where instead of the swashplate rising for positive collective it may be necessary for the swashplate to fall for positive collective. Instead of 'fooling' the swashplate by selecting the opposite Swashplate Type and swapping the aileron and pitch channels in the receiver, then adjusting the servo reversing, the Swashplate Setup function allows you simply reverse the pitch function by changing the PI (Pitch) adjustment value opposite to what is displayed (e.g., change 100 to -100) to change the direction of travel for the pitch function. In addition, the Swashplate Setup function also allows you to control the overall throw of the elevator, aileron, and pitch functions by increasing or decreasing the percentage values.

The Swashplate Setup function also allows you to mix elevator, aileron, and pitch functions together without the need to use a separate mixer. For example, if you do a loop and the helicopter wants to roll out in one direction or another, you can change the Mixing adjustment values of the Elevator Master to the Aileron Slave at either the low or the high collective stick to trim out this tendency.
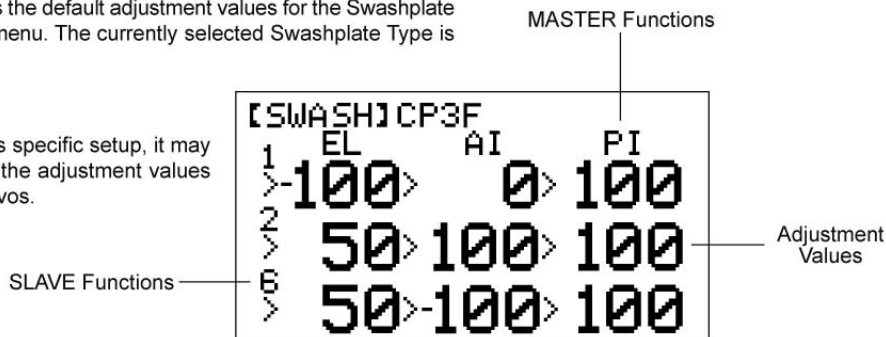
12.SWASH (SWASHPLATE SETUP), CONTINUED....

IMPORTANT To be able to access the SWASH menu and program the Swashplate Setup function, you must choose a CCPM swashplate setup in the TYPE menu.

⚠ The SWASH menu displays the default adjustment values for the Swashplate Type chosen in the TYPE menu. The currently selected Swashplate Type is displayed.

⚠ Depending on your model's specific setup, it may be necessary to decrease the adjustment values to keep from over-driving the servos.

MASTER Functions

[SWASH] CP3F
```
    EL     AI    PI
1
>-100>    0> 100
2
>  50>100> 100
6
>  50>-100> 100
```
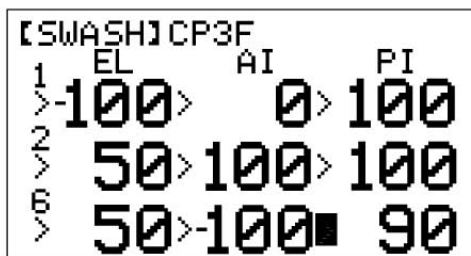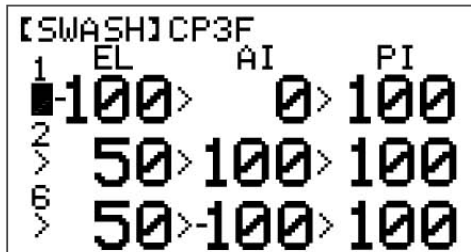
Adjustment Values

SLAVE Functions

The SWASH menu consists of a row of MASTER functions along the top and a column of SLAVE functions along the left side. In all cases, the MASTER function controls the SLAVE function. For example, if you want to increase the servo travel of the aileron channel when the throttle control stick is moved forward, increase the PI MASTER/AI SLAVE adjustment value.

If you want to change the rotation of servo travel for a channel, for example, the pitch channel, highlight PI MASTER/PI SLAVE and change the adjustment value to the opposite of the current adjustment value (e.g., 100 to -100).

Changing Swashplate Setup Adjustment Values

1) From the Display screen, press the ENTER key to display the Programming Menus.

2) Press the Navigation Pad ▲ ▼ to highlight SWASH, then press the ENTER key to display the SWASH menu. The cursor will default to 1> and the adjustment value displayed will vary based on the Swashplate Type currently selected.

[SWASH] CP3F
```
    EL     AI    PI
1
■-100>    0> 100
2
>  50>100> 100
6
>  50>-100> 100
```

3) Press the Navigation Pad ◄ ► ▲ ▼ to highlight the adjustment value you would like to change, then press the INC+/M1 or DEC-/M2 keys to change the adjustment value.

4) Adjust the desired remaining SWASH menu adjustment values using the same techniques.

[SWASH] CP3F
```
    EL     AI    PI
1
>-100>    0> 100
2
>  50>100> 100
6
>  50>-100■  90
```

SWASH menu setting range is -150 to 150. The default adjustment value varies based on Swashplate Type currently selected. To display the default adjustment values, highlight a specific adjustment value and press the INC+/M1 and DEC-/M2 keys at the same time.

13.TH-CUT (THROTTLE CUT)

The Throttle Cut function allows you to set a specific position that the throttle servo will move to. The Throttle Cut function is primarily used in glow- or gas-powered helicopters to shut down your engine after flight. You are able to adjust the Throttle Cut percentage value to ensure that when you press the Throttle Cut button to shut down your engine, the carburetor will close completely, yet not bind.

⚠ Before using the Throttle Cut function, make sure that the idle stop screw on your carburetor (if featured) is adjusted to allow the carburetor barrel to close completely.

13.TH-CUT (THROTTLE CUT), CONTINUED....

⚠ There are several different methods that can be used to set up your throttle control linkage and the Throttle Cut function. To prevent any chance of causing your throttle control linkage to bind, possibly resulting in damage to your throttle servo when you use the Throttle Cut function, we first suggest adjusting the Throttle Low End Point Adjustment percentage value so that when the throttle control stick is pulled all the way back the carburetor barrel closes completely without binding. Next, increase the throttle trim (using the throttle trim switch) to adjust your engine's idle. Now change the Throttle Cut percentage value to close the carburetor barrel without binding when you press the Throttle Cut button.

⚠ When the Throttle Cut function is Activated, throttle control will be disabled.

Changing the Throttle Cut Percentage Value

1) From the Display screen, press the ENTER key to display the Programming Menus.

2) Press the Navigation Pad ▲ ▼ to highlight TH-CUT, then press the ENTER key to display the TH-CUT menu. The cursor will default to >-100%.

```
[TH-CUT]

  ■-100%
```

3) Press the INC+/M1 or DEC-/M2 keys to set the position you would like the throttle servo to move to when you press the Throttle Cut button.
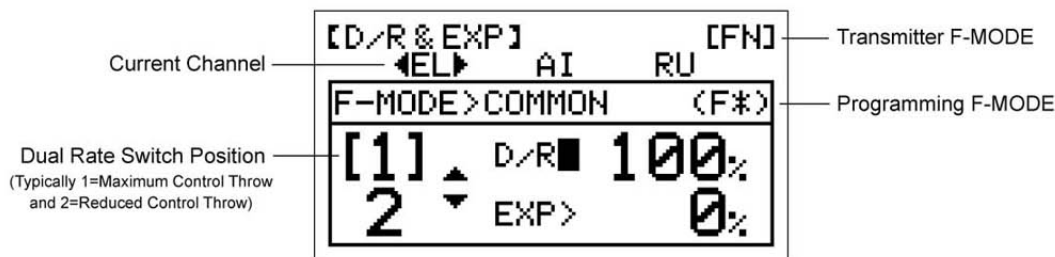
TH-CUT setting range is -150% to 0%. The default setting is -100%. Decreasing the Throttle Cut percentage value will increase throttle servo travel when the Throttle Cut button is pressed.

```
[TH-CUT]

  ■-125%
```

14.D/R & EXP (DUAL RATE AND EXPONENTIAL)

The 90406 transmitter features one Dual Rate switch that controls Dual Rate for the elevator, aileron, and rudder channels at the same time. In addition, the Dual Rate percentage value for each channel can be programmed independently. The Exponential function is linked directly to the Dual Rate switch, allowing you to program Exponential for each of the two Dual Rate positions separately. For greater flexibility, both Dual Rate and Exponential can be programmed either the same for all Flight Modes or separately for each of the three Flight Modes.

Current Channel ——

Dual Rate Switch Position ——
(Typically 1=Maximum Control Throw
and 2=Reduced Control Throw)

```
[D/R & EXP]        [FN]
 ◄EL►    AI    RU
F-MODE>COMMON    (F✳)
[1]  ▲  D/R■ 100%
 2   ▼  EXP>    0%
```

—— Transmitter F-MODE

—— Programming F-MODE

⚠ Transmitter F-MODE refers to the Flight Mode that the transmitter is currently operating in. Programming F-MODE refers to the Flight Mode that you would like to change the programming for.

Choosing the Flight Mode - Common or Separate

When set to COMMON, the Dual Rate and Exponential percentage values you program will be the same regardless of which Flight Mode the transmitter is operating in. You cannot program Dual Rate and Exponential percentage values separately for each Flight Mode. When set to SEPARATE, you can program Dual Rate and Exponential percentage values separately for each Flight Mode. This allows for greater flexibility.
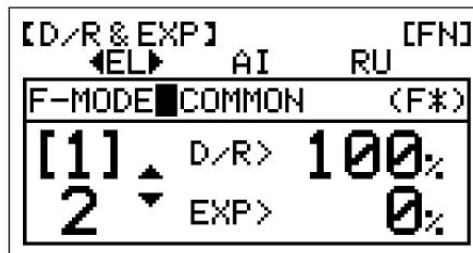
Choosing the Flight Mode - Common or Separate, Continued....

1) From the Display screen, press the ENTER key to display the Programming Menus.
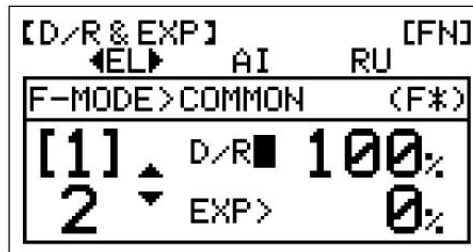
2) Press the Navigation Pad ▲ ▼ to highlight D/R & EXP, then press the ENTER key to display the D/R & EXP menu. The cursor will default to D/R>100%.

```
[D/R&EXP]            [FN]
     ◄EL►    AI    RU
F-MODE>COMMON        (F*)
[1]▲   D/R■ 100%
 2  ▼  EXP>    0%
```

3) Press the Navigation Pad ▲ to move the cursor to F-MODE>COMMON.

4) Press the INC+/M1 or DEC-/M2 keys to choose either SEPARATE OR COMMON.

```
[D/R&EXP]            [FN]
     ◄EL►    AI    RU
F-MODE■COMMON        (F*)
[1]▲   D/R> 100%
 2  ▼  EXP>    0%
```

5) If you choose SEPARATE, press the F-MODE key to choose the F-MODE number you would like to program the Dual Rate and Exponential functions for. Choose from FN, F1 or F2.

Dual Rate Overview

The Dual Rate function allows you to change the control authority of the control surfaces by changing the amount of servo travel. For example, if you are flying an aerobatic helicopter that requires a lot of control throw for aerobatics, but that same amount of control throw makes the helicopter difficult to control during normal flight, you can use the Dual Rate function to lower the control throw for normal flight with just the flip of the Dual Rate switch. Two Dual Rate settings are available for the Elevator, Aileron, and Rudder channels, and different Dual Rate settings can be programmed separately for each of the three Flight Modes.

⚠ Dual Rate is a percentage of End Point Adjustment. For example, if you set the Dual Rate 1 percentage value to 100%, the control surfaces will travel the same amount as defined by your End Point Adjustment programming, and if you set the Dual Rate 2 percentage value to 50%, the control surfaces will travel half that amount when Dual Rate 2 is Activated. Prior to takeoff, check the position of the Dual Rate switch to ensure that it is in the position you want.

Choosing the Channel

1) Press the Navigation Pad ◄ ► to highlight the channel you would like to make Dual Rate percentage value changes to. Choose either <EL>, <AI>, or <RU>.

> Dual Rate can be set for EL (Elevator), AI (Aileron), and RU (Rudder).

```
[D/R&EXP]            [FN]
     EL    ◄AI►   RU
F-MODE>COMMON        (F*)
[1]▲   D/R■ 100%
 2  ▼  EXP>    0%
```
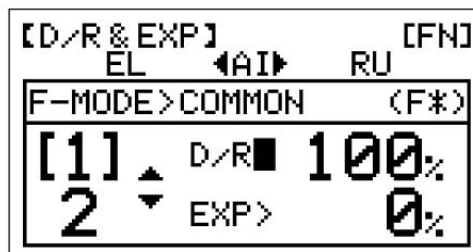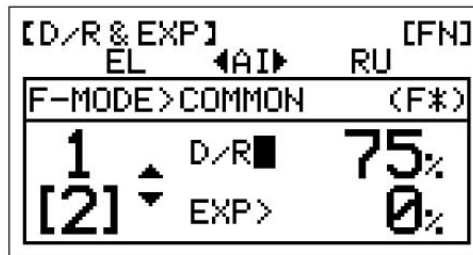
Changing the Dual Rate Percentage Values

Two different Dual Rate settings can be programmed to the Dual Rate switch. We recommend that Dual Rate 1 be set to the maximum control surface throw you desire, then set Dual Rate 2 to a different value that is less than maximum. For example, set the Dual Rate 1 percentage value to 100% and the Dual Rate 2 percentage value to 75%.

> **WARNING** Keep in mind that it's possible to set the Dual Rate percentage value higher than the End Point Adjustment percentage value. For example, with the End Point Adjustment percentage value set to 100% and the Dual Rate percentage value set to 150% the servo will move more than 100% when Dual Rate is turned ON. We strongly recommend that you set the Dual Rate 1 percentage value to no more than 100%. This will prevent any chance of exceeding your End Point Adjustment and overdriving your control linkage.

Changing the Dual Rate Percentage Values, Continued....

1) Move the Dual Rate switch to the position you would like to set a Dual Rate percentage value for, either 1 or 2.

2) Press the INC+/M1 or DEC-/M2 keys to set the desired Dual Rate percentage value for the channel you chose previously.

```
[D/R & EXP]              [FN]
      EL      ◄AI►    RU
F-MODE>COMMON        (F✱)
 1    ▲   D/R▮    75%
[2]   ▼   EXP>     0%
```

D/R setting range is 0% to 150%. The default setting is 100%. Increasing the Dual Rate percentage value increases servo travel and decreasing the Dual Rate percentage value decreases servo travel.

Exponential Overview

The Exponential function allows you to vary the amount of servo travel in relation to the movement of the elevator, aileron, and rudder control sticks near the neutral positions to change the way the control surfaces react to control stick movement. Increasing the Exponential value will soften the control feel around neutral and decreasing the Exponential value will heighten the control feel around neutral. For example, using a positive Exponential percentage value allows for smoother control by lessening the amount of servo travel in relation to the amount of control stick movement. Using a negative Exponential percentage value may result in more 'twitchy' control response because the amount of servo travel will be increased in relation to the amount of control stick movement. The Exponential function is linked directly to the Dual Rate switch. This allows you to program Exponential for each of the two Dual Rate positions separately.

⚠ Exponential does not change the total amount of servo travel at maximum control stick deflection. Exponential affects the ratio between servo travel and control stick movement at less than maximum control stick deflection.

Choosing the Channel

1) Press the Navigation Pad ◄ ► to highlight the channel you would like to make Exponential percentage value changes to. Choose either <EL>, <AI>, or <RU>.

```
[D/R & EXP]              [FN]
      EL      AI    ◄RU►
F-MODE>COMMON        (F✱)
[1]  ▲   D/R▮  100%
 2   ▼   EXP>     0%
```

Exponential can be set for EL (Elevator), AI (Aileron), and RU (Rudder).
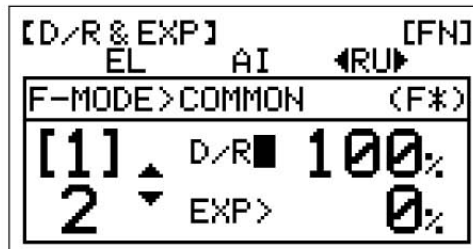
Changing the Exponential Percentage Values

The Exponential function is linked directly to the Dual Rate switch. This allows you to program Exponential for each of the two Dual Rate positions separately. For example, with the Dual Rate switch in position 1 (maximum travel), you can set the Exponential percentage value to 30% to soften the control feel around neutral and with the Dual Rate switch in position 2 (reduced travel) you can set Exponential percentage value to 0%. When the Exponential percentage value is set to 0%, the ratio between servo travel and control stick movement will be Linear throughout the entire range of deflection.

WARNING If you have not used Exponential functions in the past, we suggest that you start with a small percentage of Exponential (approximately 10%~20%) until you get used to the feel of how Exponential affects the control feel of your model. You will find that Exponential is most useful where strong control response is desired at extreme control stick positions, but softer control response to small control stick movements is desired in order to make very accurate small corrections to the flight path.

1) Press the Navigation Pad ▼ to move the cursor to EXP>0%.

2) Move the Dual Rate switch to the position you would like to set an Exponential percentage value for, either 1 or 2, then press the INC+/M1 or DEC-/M2 keys to set the desired Exponential percentage value for the channel you chose previously.

```
[D/R & EXP]              [FN]
      EL      AI    ◄RU►
F-MODE>COMMON        (F✱)
[1]  ▲   D/R>  100%
 2   ▼   EXP▮   10%
```

EXP setting range is -100% to 100%. The default setting is 0% (Linear). Increasing the Exponential percentage value softens the control feel around neutral. Decreasing the Exponential percentage value heightens the control feel around neutral.
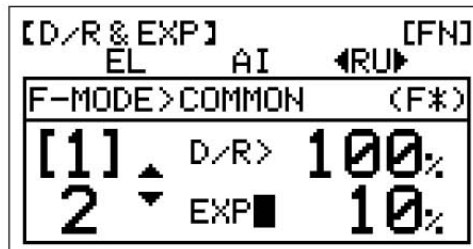
15.TRIM (DIGITAL TRIM)

The 90406 transmitter features Digital Trim Memory. Any amount of control surface trim that you set during flight using the trim switches is automatically stored in memory for that specific channel and for that specific model. The Digital Trim values for each model will automatically be loaded when the transmitter is turned ON. The Trim function allows you to choose whether you want trim changes saved the same across all three Flight Modes or if you want trim changes saved separately for each of the three Flight Modes. In addition, an option to lock the throttle trim in Flight Mode F1 is also available. This feature is convenient when flying aerobatics in Flight Mode F1, because if accidentally hit, the throttle trim could change your Throttle Curve and cause unintended consequences.

⚠ An audible double-tone is heard when the trim switches reach the center position. This allows you to know when the trim switches reach the center position without the need to look at the Trim Indicators on the Display screen.

Choosing the Trim Flight Mode Option

1) From the Display screen, press the ENTER key to display the Programming Menus.

2) Press the Navigation Pad ▲ ▼ to highlight TRIM, then press the ENTER key to display the TRIM menu. The cursor will default to F-MODE>COMMON.

```
[TRIM]
  F-MODE
  ■COMMON
```

3) Press the INC+/M1 or DEC-/M2 keys to choose the desired Trim Flight Mode option, either COMMON, SEPARATE or SEPARATE TH-TRIM LOCK (F1).

```
[TRIM]
  F-MODE
  ■SEPARATE
```

TRIM setting range is COMMON, SEPARATE, or SEPARATE TH-TRIM LOCK (F1). The default setting is COMMON.

WARNING When the Trim Flight Mode option is set to Separate or SEPARATE TH-TRIM LOCK (F1), Digital Trim values are stored in the specific Flight Mode you're using when you change the trim using the trim switches. For example, you could have 10 'clicks' of Up elevator trim in Flight Mode FN (Normal) and 5 'clicks' of Up elevator trim in Flight Mode F1. **Be cautious of this when switching between Flight Modes during flight.**

If SEPARATE TH-TRIM LOCK (F1) is chosen, throttle trim will NOT be adjustable when in Flight Mode F1.
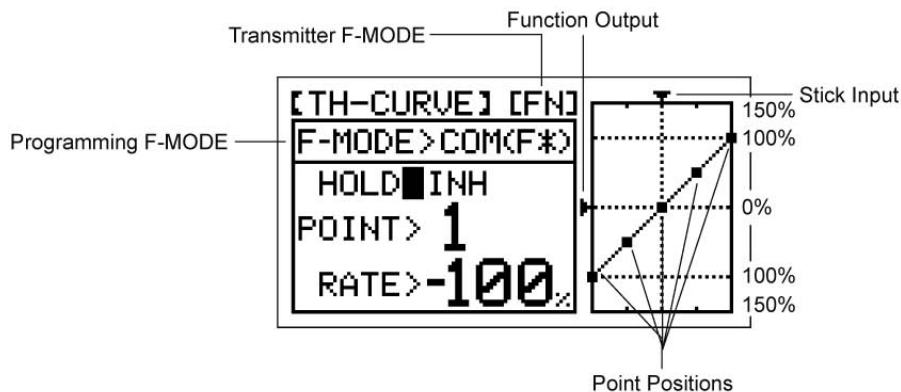
16.TH-CURVE (THROTTLE CURVE)

The Throttle Curve function allows you to vary the amount of throttle servo travel in relation to the movement of the throttle control stick at different points throughout the entire range of deflection. Five custom-programmable Points ensure a precise Throttle Curve to suit any situation. For example, if you are doing 3D flying, you can adjust the Throttle Curve so that you have maximum power and rotor head speed at both the low throttle control stick position and the high throttle control stick position when you have full negative and positive collective pitch for aerobatics, but reduced power when the throttle control stick is near the center, so that the rotor head will not overspeed with reduced collective.

Included within the Throttle Curve function is the Throttle Hold function. The Throttle Hold function allows you to set a specific position that the throttle servo will Hold and not respond to the throttle control stick. This function is typically used to Hold the throttle at idle or low speed, while still allowing you full pitch control. This is ideal for practicing auto-rotations and is also a good safety feature on electric helicopters, because when Activated, the rotor head will not spin up if you accidentally bump the throttle control stick up.

For greater flexibility, the Throttle Curve and Throttle Hold functions can be programmed either the same for all Flight Modes or separately for each of the three Flight Modes. A graph with Input and Output indicators help with programming visualization.

16. TH-CURVE (THROTTLE CURVE), CONTINUED....

Transmitter F-MODE — | Function Output

Programming F-MODE —

[TH-CURVE] [FN]
F-MODE>COM(F✱)
HOLD█INH
POINT> 1
RATE>-100

Stick Input — 150% / 100% / 0% / 100% / 150%

Point Positions

⚠ Transmitter F-MODE refers to the Flight Mode that the transmitter is currently operating in. Programming F-MODE refers to the Flight Mode that you would like to change the programming for.
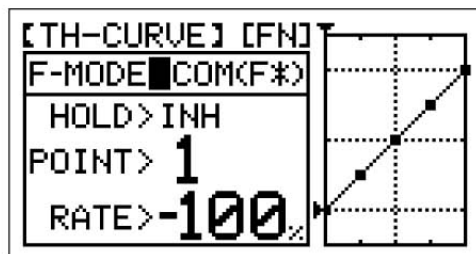
⚠ As you change the Point values and Rate percentage values, you can use the graph and Input and Output indicators to visualize the ratio between control stick movement and servo travel throughout the entire deflection range.

Choosing the Flight Mode - Common or Separate

1) From the Display screen, press the ENTER key to display the Programming Menus.

2) Press the Navigation Pad ▲ ▼ to highlight TH-CURVE, then press the ENTER key to display the TH-CURVE menu. The cursor will default to HOLD>INH.
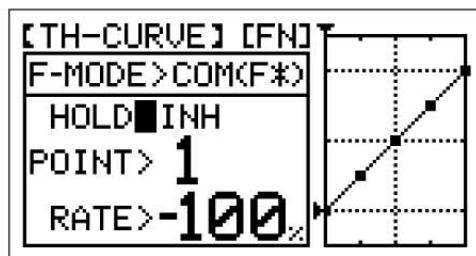
[TH-CURVE] [FN]
F-MODE>COM(F✱)
HOLD█INH
POINT> 1
RATE>-100

3) Press the Navigation Pad ▲ to move the cursor to F-MODE>COM.

4) Press the INC+/M1 or DEC-/M2 keys to choose either SEP OR COM (SEParate or COMmon).

[TH-CURVE] [FN]
F-MODE█COM(F✱)
HOLD>INH
POINT> 1
RATE>-100

5) If you choose SEPARATE, press the F-MODE key to choose the F-MODE number you would like to program the Throttle Curve function for. Choose from FN, F1 or F2.

Changing the Throttle Curve Point Values and the Rate Percentage Values

Five different Points with varying Rate percentage values can be programmed onto the Throttle Curve. Each Point will be displayed on the graph to give you a visual interpretation of the position of the Point on the Throttle Curve. The Point that is currently selected will flash.

WARNING Keep in mind that it's possible to set the Rate percentage values higher or lower than the throttle End Point Adjustment percentage values. For example, with the throttle High End Point Adjustment percentage value set to 100% and POINT>5 Rate percentage value set to 150% the servo will move 150%.

We strongly recommend that you set the Throttle Curve Point Rate percentage values no higher than your throttle End Point Adjustment percentage values unless specifically necessary for your particular setup. This will prevent any chance of overdriving your control linkage.

Changing the Throttle Curve Point Values and the Rate Percentage Values, Continued....

⚠️ In the default configuration the Throttle Curve is Linear. For example, when you move the throttle control stick from 0% to 100%, the throttle servo will travel from 0% to 100%, too. As long as the line on the graph remains straight, the Throttle Curve will be Linear. When a Point Rate percentage value is changed, the line on the graph curves (displaying the Throttle Curve) and throttle servo travel will vary in relation to throttle control stick movement.
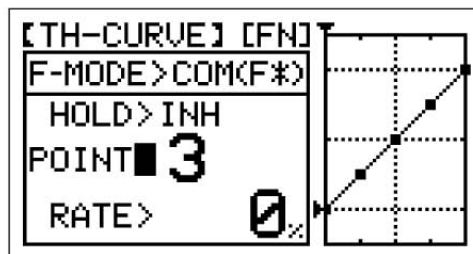
The tables below describe the default Point and Rate values.

POINT	DEFAULT RATE
1	-100%
2	-50%

POINT	DEFAULT RATE
3	0%
4	50%

POINT	DEFAULT RATE
5	100%

1) Press the Navigation Pad ▼ to highlight POINT>1.

2) Press the INC+/M1 or DEC-/M2 keys to choose which Point you would like to set a Rate percentage value for.


```
[TH-CURVE] [FN]
F-MODE>COM(F*)
 HOLD>INH
POINT■ 3
 RATE>      0%
```

> POINT setting range is 1 through 5. Point 1 is at the low end of the Throttle Curve and Point 5 is at the high end of the Throttle Curve. Point 3 is a the center of the Throttle Curve.

3) Press the Navigation Pad ▼ to highlight RATE>.

4) Press the INC+/M1 or DEC-/M2 keys to set the desired Rate percentage value for the Point you chose previously, then repeat the previous procedures to change the desired remaining Point and Rate percentage values.



```
[TH-CURVE] [FN]
F-MODE>COM(F*)
 HOLD>INH
POINT>  3
 RATE■   20%
```
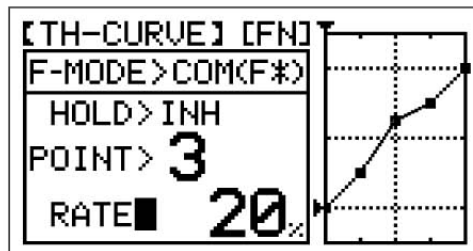
> RATE setting range for each Point is -150% to 150%.

Activating the Throttle Hold Function and Changing the Rate Percentage Value

⚠️ When you Activate the Throttle Hold function, you will not be able to program the Throttle Curve Function. In addition, when the Throttle Hold function is Activated, the throttle control stick will control Pitch only and the Throttle trim switch will be Inhibited.

1) Press the Navigation Pad ▲ ▼ to highlight HOLD>INH, then press the INC+/M1 or DEC-/M2 keys to change the INH/ACT setting to ACT.


```
[TH-CURVE] [FN]
F-MODE>SEP(F2)
 HOLD>ACT
 RATE■-100%
```

> HOLD setting range is INH/ACT. The default setting is INH. When Activated, the Throttle Hold function will be Active for that Flight Mode.
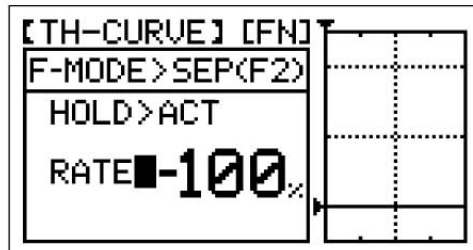
> **WARNING** Keep in mind that it's possible to set the Throttle Hold percentage value lower than the throttle End Point Adjustment percentage value. For example, with the throttle End Point Adjustment percentage value set to -100% and the Throttle Hold percentage value set to -150% the servo will move -150% when the Throttle Hold is Activated. We strongly recommend that you set the Throttle Hold Rate percentage value no higher than your throttle End Point Adjustment percentage values unless specifically necessary for your particular setup. This will prevent any chance of overdriving your control linkage.

HELI MODEL TYPE

Activating the Throttle Hold Function and Changing the Rate Percentage Value, Continued....

1) Press the Navigation Pad ▾ to highlight RATE>-100%.

2) Press the INC+/M1 or DEC-/M2 keys to set the position you would like the throttle servo to Hold at.

```
[TH-CURVE] [FN]
F-MODE>SEP(F2)
HOLD>ACT
RATE■ -50%
```
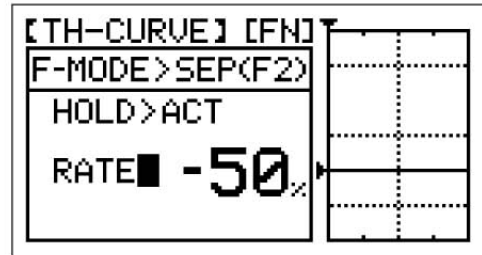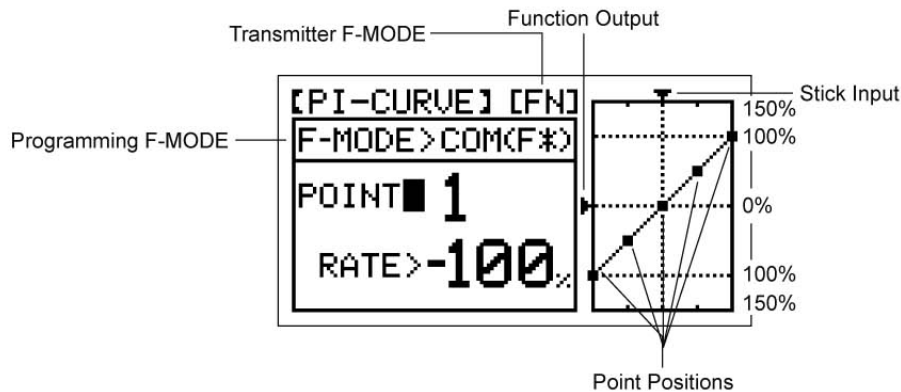
HOLD setting range is -150% to 0%. The default setting is -100%. Increasing the Throttle Hold percentage value will increase the position at which the throttle servo will Hold at and decreasing the Throttle Hold percentage value will decrease the position at which the throttle servo will Hold at.

17.PI-CURVE (PITCH CURVE)

The Pitch Curve function allows you to vary the amount of pitch travel in relation to the movement of the throttle control stick at different points throughout the entire range of deflection. Five custom-programmable Points ensure a precise Pitch Curve to suit any situation. For example, if you are doing 3D flying, you may want a Linear Pitch Curve with maximum negative pitch when the throttle control stick is at low, maximum positive pitch when the throttle control stick is at high, and 0 degrees of pitch when the throttle control stick is centered. Alternatively, for a more docile flying helicopter, you may want minimum negative pitch when the throttle control stick is all the way back and gradually increase pitch in small increments as the throttle control stick moves from low to high, to produce a smooth transition from low to high throttle.

For greater flexibility, the Pitch Curve function can be programmed either the same for all Flight Modes or separately for each of the three Flight Modes. A graph with Input and Output indicators help with programming visualization.

Transmitter F-MODE — Function Output

Programming F-MODE —

```
[PI-CURVE] [FN]
F-MODE>COM(F*)
POINT■ 1
RATE>-100%
```

Stick Input

150%
100%
0%
100%
150%

Point Positions

⚠ Transmitter F-MODE refers to the Flight Mode that the transmitter is currently operating in. Programming F-MODE refers to the Flight Mode that you would like to change the programming for.

⚠ As you change the Point values and Rate percentage values, you can use the graph and Input and Output indicators to visualize the ratio between control stick movement and servo travel throughout the entire deflection range.

**Choosing the Flight Mode - Common or Separate**

1) From the Display screen, press the ENTER key to display the Programming Menus.

2) Press the Navigation Pad ▴ ▾ to highlight PI-CURVE, then press the ENTER key to display the PI-CURVE menu. The cursor will default to POINT>1.

```
[PI-CURVE] [FN]
F-MODE>COM(F*)
POINT■ 1
RATE>-100%
```
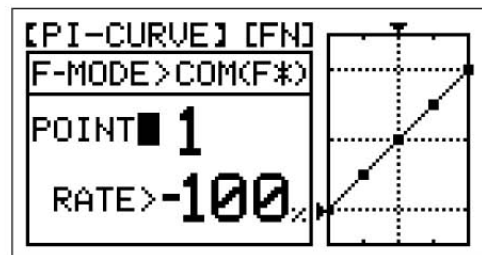
Choosing the Flight Mode - Common or Separate, Continued....

3) Press the Navigation Pad ▲ to move the cursor to F-MODE>COM.

4) Press the INC+/M1 or DEC-/M2 keys to choose either SEP OR COM (SEParate or COMmon).

```
[PI-CURVE] [FN]
F-MODE█COM(F*)

POINT>  1

RATE>-100%
```
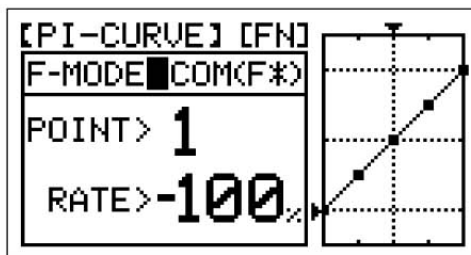
5) If you choose SEPARATE, press the F-MODE key to choose the F-MODE number you would like to program the Pitch Curve function for. Choose from FN, F1 or F2.

Changing the Pitch Curve Point Values and the Rate Percentage Values

Five different Points with varying Rate percentage values can be programmed onto the Pitch Curve. Each Point will be displayed on the graph to give you a visual interpretation of the position of the Point on the Pitch Curve. The Point that is currently selected will flash.

WARNING Keep in mind that it's possible to set the Rate percentage values higher or lower than the pitch End Point Adjustment percentage values. For example, with the pitch High End Point Adjustment percentage value set to 100% and POINT>5 Rate percentage value set to 150% the collective servos will move 150%. We strongly recommend that you set the pitch Curve Point Rate percentage values no higher than your pitch End Point Adjustment percentage values unless specifically necessary for your particular setup. This will prevent any chance of overdriving your control linkages.

⚠ In the default configuration the Pitch Curve is Linear. For example, when you move the throttle control stick from 0% to 100%, the elevator, aileron, and pitch servos will travel from 0% to 100%, too. As long as the line on the graph remains straight, the Pitch Curve will be Linear. When a Point Rate percentage value is changed, the line on the graph curves (displaying the Pitch Curve) and throttle servo travel will vary in relation to throttle control stick movement.
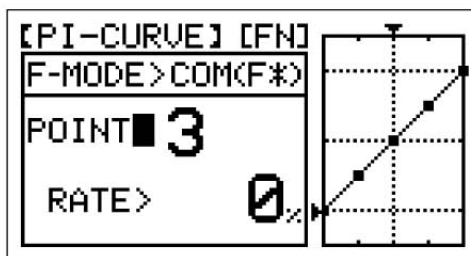
The tables below describe the default Point and Rate values.

POINT	DEFAULT RATE
1	-100%
2	-50%

POINT	DEFAULT RATE
3	0%
4	50%

| POINT	DEFAULT RATE
5	100%

1) Press the Navigation Pad ▼ to highlight POINT>1.

2) Press the INC+/M1 or DEC-/M2 keys to choose which Point you would like to set a Rate percentage value for.

```
[PI-CURVE] [FN]
F-MODE>COM(F*)

POINT█ 3

RATE>    0%
```

POINT setting range is 1 through 5. Point 1 is at the low end of the Pitch Curve and Point 5 is at the high end of the Pitch Curve. Point 3 is a the center of the Pitch Curve.

3) Press the Navigation Pad ▼ to highlight RATE>.

4) Press the INC+/M1 or DEC-/M2 keys to set the desired Rate percentage value for the Point you chose previously, then repeat the previous procedures to change the desired remaining Point and Rate percentage values.

```
[PI-CURVE] [FN]
F-MODE>COM(F*)

POINT> 3

RATE█  20%
```

RATE setting range for each Point is -150% to 150%.
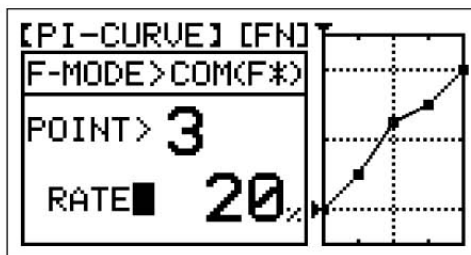
18.REVO-MIX (REVOLUTION MIXING)

The Revolution Mixing function mixes rudder and collective pitch controls, which makes the helicopter more stable when collective pitch is increased. For example, when you increase collective pitch, as the rotor head speed and pitch increase, the torque that it creates can cause the tail of the helicopter to pivot. Adding Revolution mixing helps prevent this from occurring, which makes the helicopter more stable in the yaw axis. The amount and the direction that the rudder moves with collective pitch control is adjusted by changing the High side and Low side percentage values.

The Revolution Mixing function can be programmed for both the High and Low throttle sides independently.

For greater flexibility, the Revolution Mixing function can be programmed either the same for all Flight Modes or separately for each of the three Flight Modes.

⚠ The Revolution Mixing function is typically used in conjunction with a gyro running in Rate mode only or if no gyro is used.
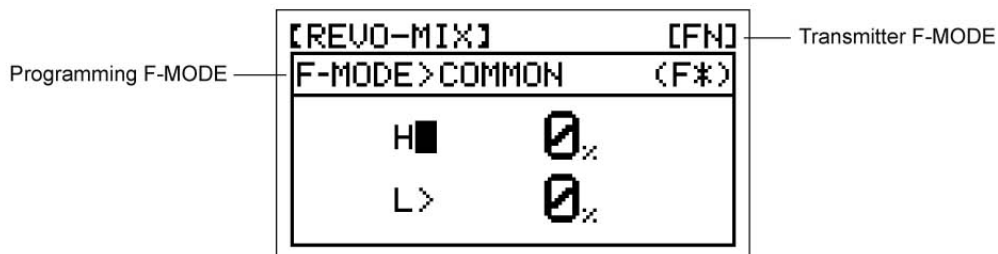
Programming F-MODE ——
Transmitter F-MODE ——

```
[REVO-MIX]        [FN]
F-MODE>COMMON     (F*)

     H■      0 %

     L>      0 %
```

⚠ Transmitter F-MODE refers to the Flight Mode that the transmitter is currently operating in. Programming F-MODE refers to the Flight Mode that you would like to change the programming for.

IMPORTANT We **DO NOT** recommend using the Revolution Mixing function with a Heading Hold mode or AVCS mode gyro. The Revolution Mixing function should only be used with a Rate mode gyro or in the event that no gyro is used.

IMPORTANT The Revolution Mixing function is not Activated directly by a switch. It is designed for use in a specific Flight Mode (or Flight Modes). For example, you may have programmed your gyro for Heading Hold mode in Flight Mode FN (Normal) and Rate mode in Flight Mode F1. In this case, you might program Revolution mixing only in Flight Mode F1.

Choosing the Flight Mode - Common or Separate

1) From the Display screen, press the ENTER key to display the Programming Menus.

2) Press the Navigation Pad ▲ ▼ to highlight REVO-MIX, then press the ENTER key to display the REVO-MIX menu. The cursor will default to H>0%.
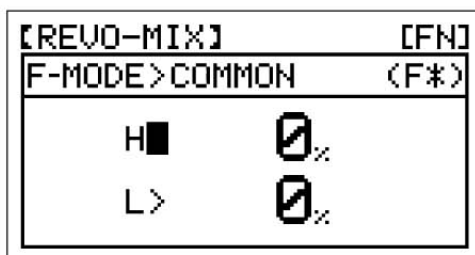
```
[REVO-MIX]        [FN]
F-MODE>COMMON     (F*)

     H■      0 %

     L>      0 %
```

3) Press the Navigation Pad ▲ to move the cursor to F-MODE>COM.

4) Press the INC+/M1 or DEC-/M2 keys to choose either SEPARATE or COMMON.

```
[REVO-MIX]        [FN]
F-MODE■SEPARATE   (F1)

     H>      0 %

     L>      0 %
```

5) If you choose SEPARATE, press the F-MODE key to choose the F-MODE number you would like to program the Revolution Mixing function for. Choose from FN, F1 or F2.

Changing the Revolution Mixing Function High Side Percentage Value

Changing the High side percentage value affects the Revolution Mixing function from half throttle stick to full throttle stick only. It has no effect on the Low throttle side.

1) Press the Navigation Pad ▾ to highlight H>0%.

2) Press the INC+/M1 or DEC-/M2 keys to choose the desired High throttle side percentage value.

```
[REVO-MIX]          [FN]
F-MODE>SEPARATE    (F1)

  H■  20%

  L>   0%
```
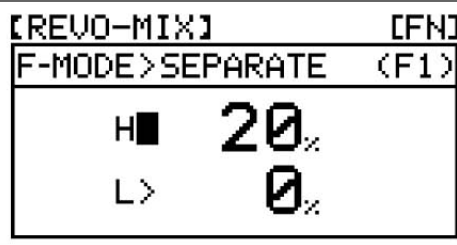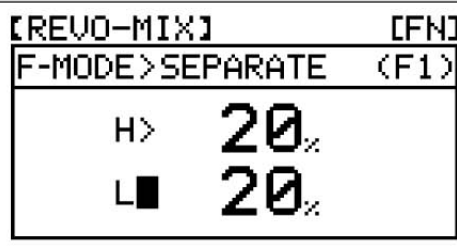
REVO-MIX H setting range is -150% to 150%. The default value is 0% (OFF). Using a positive or negative percentage value will determine the direction the rudder travels when collective pitch is increased. This mix is Linear.

Changing the Revolution Mixing Function Low Side Percentage Value

Changing the Low side percentage value affects the Revolution Mixing function from low throttle stick to half throttle stick only. It has no effect on the High throttle side.

1) Press the Navigation Pad ▾ to highlight L>0%.

2) Press the INC+/M1 or DEC-/M2 keys to choose the desired Low throttle side percentage value.

```
[REVO-MIX]          [FN]
F-MODE>SEPARATE    (F1)

  H>  20%

  L■  20%
```
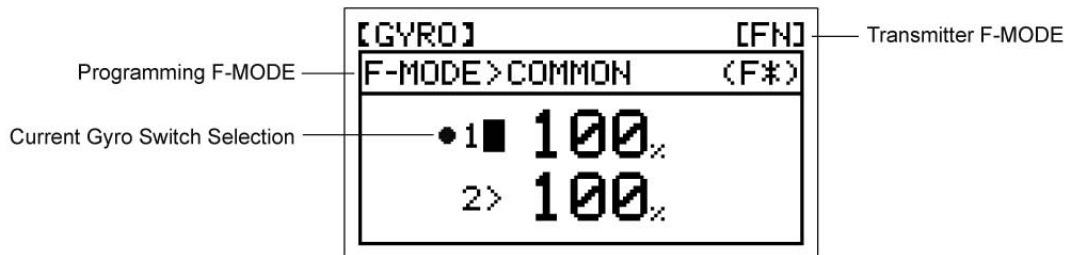
REVO-MIX L setting range is -150% to 150%. The default value is 0% (OFF). Using a positive or negative percentage value will determine the direction the rudder travels when collective pitch is increased. This mix is Linear.

19.GYRO (REMOTE GYRO GAIN CONTROL)

The Remote Gyro Gain Control function allows you to control Heading Hold mode gain and Rate mode gain remotely. Two separate Remote Gyro Gain Control function settings can be programmed and one can be selected at any time using the two-position Gyro switch. For example, you might want 100% gain for aerobatic flight, but then switch to 75% gain for sport flying. In essence, when you assign a Remote Gyro Gain Control percentage value to each of the two Remote Gyro Gain Control function settings, you effectively have dual rates for your gyro, just like you have dual rates for your elevator, aileron, and rudder control surfaces.

Depending on the Remote Gyro Gain Control function percentage values, you can adjust the gain in either Heading Hold mode or Rate mode. In addition, you can program a Heading Hold gain percentage value and a Rate gain percentage value separately, then switch between the two to aid in setting up your gyro.

For greater flexibility, the Remote Gyro Gain Control function can be programmed either the same for all Flight Modes or separately for each of the three Flight Modes.

Programming F-MODE ———
Current Gyro Switch Selection ———

```
[GYRO]              [FN]  ——— Transmitter F-MODE
F-MODE>COMMON      (F*)

  ●1■ 100%

   2> 100%
```

⚠ Transmitter F-MODE refers to the Flight Mode that the transmitter is currently operating in. Programming F-MODE refers to the Flight Mode that you would like to change the programming for.

IMPORTANT In order to use this feature, your gyro must support Remote Gain. For more information, and before using this function, please refer to your gyro's Operating Guide to familiarize yourself with its setup and use.