

**ACE RC®**



# **COUGAR**

**3CH RADIO CONTROL SYSTEM P3i**

## **Digital Pistol Grip Radio Control System**



**No.8306**



**Please read all instructions thoroughly before assembling the kit.**

The contents are subject to change without prior notice due to product improvements and specification changes.

# **INSTRUCTION MANUAL**

## Introduction

Congratulations on your purchase of an ACE Cougar P3i digital proportional radio system. The Cougar P3i is the best choice of the computer pistol grip radio system for driver requirement precision and smoothness of operation at the same time. Equipped with the 10-model memory, large LCD display, digital trims, AUX channel 3 button, and lots of advanced programming functions with all of the new bells and whistles.

With proper use and care, ACE Cougar will make the control advanced and simple, and provide you with many years of enjoyment. Before operating your new radio system or installing into your model, please take a few minutes to familiarize with the various features of the system by reading this owner's manual thoroughly.

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## Features


### TRANSMITTER

- Easy-to-read LCD Display Screen
- 10-Model Memory
- Changeable plug-in RF module for both FM and AM system
- Electronic digital trim levers for throttle and steering
- Steering/Throttle sub-trim
- Steering/Throttle/Aux EPA
- Steering/Throttle/Brake ARC adjustment
- Steering dual-rate adjustment
- Battery Voltage indicator
- Adjustable steering wheel tension
- Low battery Alarm

### RECEIVER

- Super-Heterodyne for extra long range
- Crystal interchangeable for versatility
- Multi-signal intensified input jamming ratio

## System contents

Item	COUGAR P3i Radio System		
Item No	8306	8306-S1	8306-C1
Transmitter	COUGAR P3i		
Receiver	TR301F		
Servos	N/I	S1903 x 1	C1016 x 1
Accessory	Switch hardness x 1, Receiver Battery holder x 1, Frequency flag x 1		
			

## Specifications

Transmitter	COUGAR P3i
Configuration	Pistol Grip
Encoder	3-Channel Computer System
Frequency(MHz)	26/27/40/75
Modulation	AM/FM PPM
Current Drain	200mA@9.6V
Band Width	+/-10KHz/ +/-40db
Power Requirement	9.6V/8 cell AA Battery
Dimension (w/o Antenna)	220x99x182mm / 8.66x3.89x7.16in
Weight (g/oz)	443g/15.59oz

Receiver	TF301F
Frequency(MHz)	26/27/40/75
Channel	3Ch
BEC	NO
Modulation	FM PPM
Single Conversion	455KHz
Channel Spacing	10KHz
Battery Power	4.8~6V
Current Drain	35mA@6V
Dimension-mm/in	35.6x26x15 mm / 1.40x1.02x0.59in
Weight(g/oz)	10g/0.35oz

Servos	STD SERVO S1903	MICRO SERVO C1016
Item No.	No.8114	No.8117
Control	Plus width control	
Operating Range	+/- 45 degree	
Power Supply	4.8~6V	
Current Drain	10mA/Idel, 650mA/stall	5.0mA@4.8V
Torque(Kg-cm/oz-in)@4.8V	3Kg-cm/42.18oz-in	1.6Kg-cm/22.2oz-in
Speed(sec/60°)-4.8V	0.19sec/60°	0.1sec/60°
Dim-mm/in(LxWxH)	40.4x20.0x37.9mm/1.6x0.8x1.48in	22.1x11.4x23.6mm/0.87x0.45x70.93in
Weight(g/oz)	47.4/1.67	9/0.32



- |                                      |  |                                       |
|--------------------------------------|--|---------------------------------------|
| <b>1</b> Transmitter Antenna         | <b>6</b> Digital Throttle Trim lever           | <b>11</b> Steering Wheel              |
| <b>2</b> Power Indicator             | <b>7</b> Digital Steering D/R(Dual Rate) lever | <b>12</b> Power Switch                |
| <b>3</b> Edit Buttons                | <b>8</b> AUX Ch Button                         | <b>13</b> Throttle Trigger            |
| <b>4</b> LCD Display                 | <b>9</b> External Charging Jack                | <b>14</b> Steering tension adjustment |
| <b>5</b> Digital Steering Trim lever | <b>10</b> RF Module and crystal                | <b>15</b> Battery Cover               |

## Transmitter Controls

- 1. Transmitter Antenna:** Never operate the transmitter without extending this antenna or you may create interference to other modeler.
- 2. Power Indicator:** The LED light display to indicate the power is “on” or “off”.
- 3. Edit Buttons:** The left and right buttons are the “functions” selecting keys. The up(+) and down(-) buttons are the value adjusting keys. For the detail of the operating of these buttons, please refer the “Function” setting procedure (Page?).
- 4. LCD Display:** The Cougar transmitter adopts the “Easy-to-Read” display design. All the setting functions are shown on the display. Just use the ‘Edit Buttons” to select the function (left and right key) and do the setting (up and down key). For the detail setting procedure for all the function show on the display, please refer the “Function” setting procedure (Page?).
- 5. Digital Steering Trim lever:** Push this lever left or right to adjust the center point of the steering servo. Follow the adjustment, the cursor will move on the top ruler line of the LCD screen to display the current position. Basically, this adjustment is to run the model straight.
- 6. Digital Throttle Trim lever:** Push this lever up or down to adjust the center point of the throttle/brake servo. Follow the adjustment, the cursor will move on the left ruler line of the LCD screen to display the current position. Basically, this adjustment is to set the braking amount of “Drag Brake” or “Coast Brake”.

**NOTE:** With the Digital Throttle Trim function, the maximum throttle servo travel setting will not be effected to prevent loss the full-throttle position setting. But for the Digital Steering Trim, the maximum steering servo travel setting will be changed on both left and right side. So, if the setting is not suitable, it will cause the interference with the mechanical limit, and will have the chance to bind the steering linkage or even damage the steering servo.

- 7. Digital Steering D/R(Dual Rate) lever:** Push this lever left or right to adjust the amount of the steering dual rate. Right to increase the dual rate amount and left to decrease the amount.
- 8. AUX Ch Button:** Provides an extra function for the control of the model movements.
- 9. External Charging Jack:** Recharge the transmitter battery only as using a rechargeable NiCd/NiHM battery pack.
- 10. RF Module and crystal:** The crystal is plug-in the RF Module and the module unit is also plug-in the transmitter. Both AM&FM modules with frequency 75MHz are available for the Cougar radio system. Just press the tabs on both side of the module unit with your thumb and finger while pulling it outward to remove the module from the transmitter.

**NOTE:** It's recommended to use only the ACE crystal set, and to change the both transmitter and receiver crystal at the same time.

- 11. Steering Wheel:** Controls the steering of the model.
- 12. Power Switch:** Sliding to turn the transmitter on or off. Between “ON” and “OFF”, there is a selection of “DISPLAY”. When the switch is placed in the “DISPLAY” position, you can use the left and right edit buttons to get data setting for all the function show on the LCD display. But you edit that and also cannot use that to drive the model.
- 13. Throttle Trigger:** Pull or push to control the movement of the model.
- 14. Steering tension adjustment:** Use a Phillip type screw driver to tighten or loosen the tension of the steering wheel.
- 15. Battery Cover:** Sliding to remove the cover to install or remove the batteries.

## Installation

### Transmitter batteries replacement/installation

- 1) Slide the battery cover in the direction as shown to remove the cover.
- 2) Install 8pcs alkaline or rechargeable "AA" size cells into the battery holder that connected with the transmitter.
- 3) Slide on the battery cover and make sure it is closed securely.
- 4) Turn the power on to check. If the Power Indicator LED fails to light, check the batteries for insufficient contact or incorrect battery polarity.



#### NOTE:

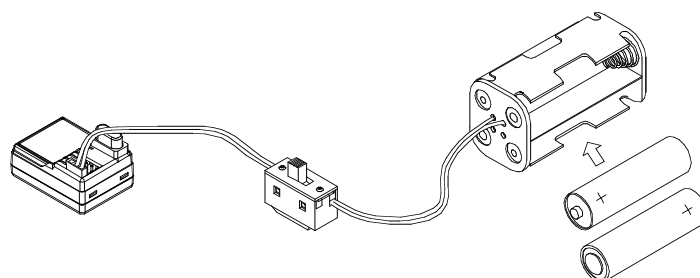
- a) Use only fresh, alkaline cells, all of the same brand.
- b) Make certain that the contacts in the battery holder stay clean by using a pencil eraser to gently remove any corrosion or dirt that may accumulate on them. It is recommended to do this each time you install fresh cells into your transmitter.
- c) If use the rechargeable 9.6V battery pack, then just remove the battery holder by pull out the connector from the transmitter. Then plug-in the battery pack connector to the transmitter.
- d) When the rechargeable battery is installed in the transmitter, they can be charged through the external charging jack located on the transmitter.

#### ⚠ WARNING:

- a) Do not attempt to charge the alkaline batteries, they may cause explode!!
- b) When charge the rechargeable battery, set the power switch on "OFF" position before charging. And the charger plug must be correct type ("+" inside and "-" outside, type TAMIYA N-3U or equivalent). The wrong type may burst causing personal injury and damage.
- c) Always be sure the batteries are loaded in the correct polarity order. If the batteries are load incorrectly, the transmitter may be damaged.

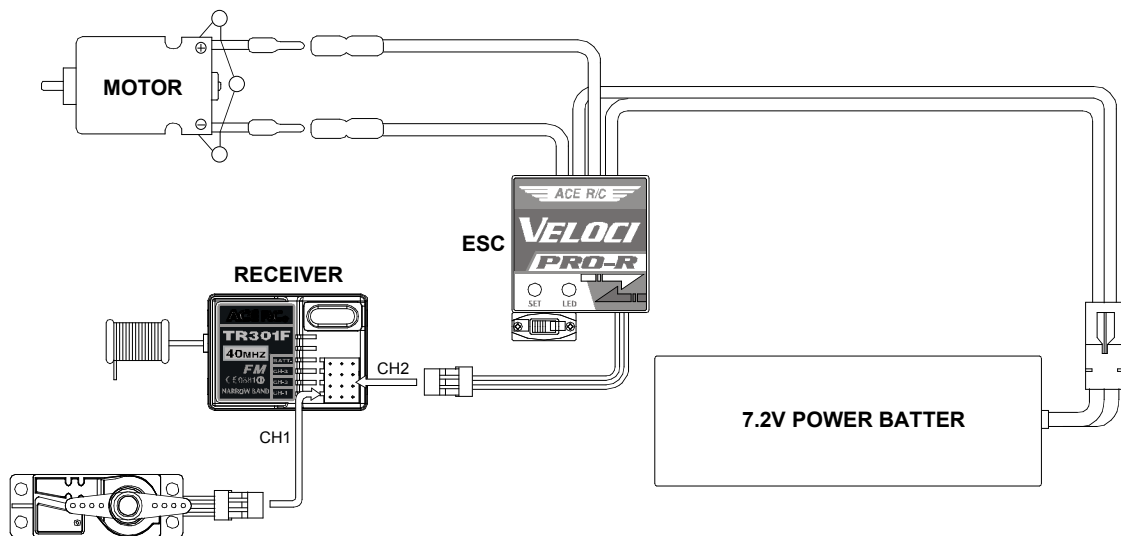
### Receiver battery replacement/installation

Insert 4 fresh AA cells into the receiver battery holder. Make sure the batteries are located in the correct polarity order. Maintain the battery contacts in the same way as described in previous section. Insert the switch harness plug into the receiver socket marked "BATT".

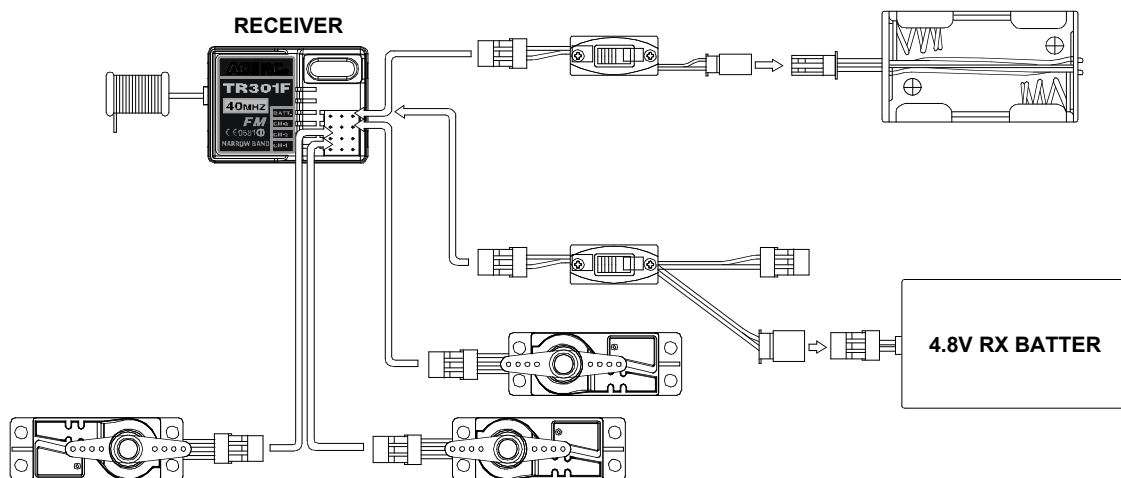


## Radio installation

- 1) Connect the receiver, servos, and switch hardness/battery pack as shown.
- 2) If you are not familiar with all the control system. Do the "bench test" before to install all the devices on the model.
- 3) A build-in BEC (Battery Eliminator Circuitry) function are adopted in the receiver.
- 4) Always follow the "transmitter on first, off last" procedure.
- 5) Always install the receiver as far as possible from the motor, ESC, power battery, motor wires.. or other noise source. Especially, do not route the motor wire next to the receiver, crystal or receiver antenna.



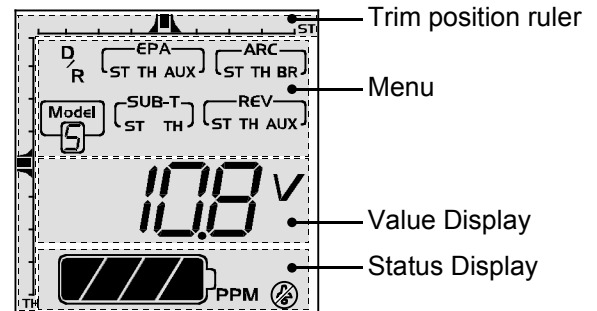
## Electric Car Installation







## Gas/Nitro Car Installation

# Function

Basically, there are 4 main areas on the screen. They are “Menu”, “Value Display”, “Status Display”, and “Trim position ruler”. Using the left and right “Edit Buttons”, the cursor will be moved to the function you like to edit. When you entry the menu function, you can press the up and down “Edit Buttons” to edit the value. After setting, just press the right and left buttons to move the cursor to other function and the previous value already be saved.



## 1. Power On

Slide up the “Power Switch” to turn on the radio. You will hear a short “Bi” tone. Then on the display, the “model number”(  ) will be shown on the “Menu” area, and the battery voltage value”(  ) will be shown on “Value Display” area, and “battery voltage status diagram”(  ) / transmitter system ( “PPM” ) and tone setting ( “” ) will be shown on “Status Display” area.


On the top and left ruler line of the screen, the current neutral position of the steering and throttle servos will be shown on the top and left “Trim position ruler”.

You can use the current selected model number setting to play your model. Or use the “Edit Buttons” to start the programming procedure. The following are the order of the set-up procedure and detail description for each function.

### NOTE:

- 1) For the current battery status can be easy read from the voltage value or battery status diagram. Charging or change the battery when the voltage is lower than 8.8V.
- 2) For the radio RF system, the Cougar P3i is adopt the PPM system, so the **PPM** . will be show on the display all the time.

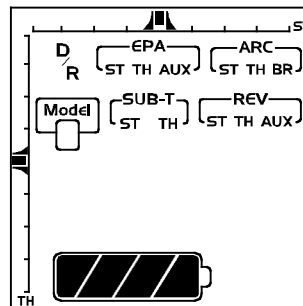
## 2. Audio on/off beep setting “ ”

The default setting of the audio beep sound is “On”. So there will be no icon show on the right lower display screen. Under the “Audio on” mode, you can hear “Bi” sound when you press the edit button or digital trim lever. If you don’t like the audio on mode, you can turn off that and switch to the “silent” mode by the following procedure. When you switch to the “Silent” mode, the silent icon “  ” will be show on the right lower display screen.

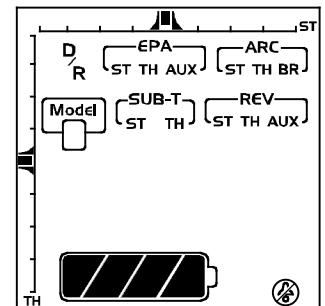
- 1) Turn off the radio.
- 2) Pressing the “up”(+) edit button and hold it.
- 3) Turn on the radio, and you will hear a short “Bi” tone (power on) and later a long “Bi” tone (finish tone mode switching). Then release the hold finger on “up”(+) edit button.

### NOTE:

Repeat the above 1)~3) procedure, then you can switch the “audio off” silent mode to the “audio on” mode.



Audio on Mode



Audio off Mode