

Remote Control Systems

2.4 Ghz RADIO CONTROL

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TX-10

Digital Proportional R/C

Thank you for purchasing this Microprocessor based Electronic Speed Control (ESC) R/C system.

THE TX-10 IS FOR USE WITH RCS OMEGA-3v7 ECS's THAT USE OPERATING PROGRAM Av1 FOR LOW OFF CONTROL.

THE TX-10 HANDPIECE HAS A CENTRE OFF DÉTENTE ON SPEED CONTROLLER KNOB. THAT ALSO MAKES THE TX-10 SUITABLE FOR USE WITH MOST CENTRE OFF ESC's INCLUDING

VIPER-10 SERIES FOR CENTRE OFF CONTROL.

INSTRUCTION MANUAL

THESE INSTRUCTIONS REFER SPECIFICALLY TO THE TX-10 HANDPIECE (SAME AS THE TX-20+).

They should be read in conjunction with the RCS ESC you are using.

PLEASE NOTE: THE PLASTIC HANDPIECE ENCLOSURES MAY DIFFER FROM PICTURES BELOW.

"CENTRE OFF Speed Control

TX-10



© RCS 2016

CENTRE OFF LARGE KNOB WITH DÉTENTE FOR 150° CONTROL. EITHER SIDE OF NEUTRAL.

"LOW OFF" Speed Control

TX-10



© RCS 2016

SWITCH FOR DIRECTION SETTING. 300° KNOB FOR LOW OFF CONTROL OF SPEED.

Battery Replacement



© RCS 2014

INSERT THE 9 VOLT BATTERY. DO NOT ALLOW BATTERY TO GO FLAT BY LEAVING THE TX SWITCHED ON.

THE TX-10 IS GUARANTEED FOR ONE YEAR.

You will supply a locomotive or trail car, the 14 – 20 volt traction batteries (depending on ESC), a fuse, ON-OFF switch and wires where necessary, to connect the ESC to the battery and motor(s).

Where soldering is necessary, we recommend a low wattage soldering iron and resin core solder.

TO AVOID CONFUSION WITH OTHER OPERATORS, WE SUGGEST YOU MARK THE TX TO SHOW WHICH LOCO IT IS OPERATING.

CAUTION

DO NOT ATTEMPT TO ALTER THE TUNING OF THE RADIO EQUIPMENT.
DO NOT USE RADIO CONTROL EQUIPMENT IN THUNDERSTORMS.

CHILDREN UNDER 12: ADULT SUPERVISION RECOMMENDED DURING USE.

RCS TX & RX PRODUCTS MUST NOT BE USED FOR CONTROLLING RIDE ON LOCOMOTIVES CAPABLE OF CARRYING MEMBERS OF THE GENERAL PUBLIC.

PREPARING THE #TX-10

THESE INSTRUCTIONS REFER TO THE **RCS TX-10** 2.4 GHz 5 CHANNEL R/C.
LAYOUT OF THE TX-10 TRANSMITTER.

The Direction switch is in the upper middle of the hand piece. The speed control knob sits just below the direction switch. Top left is the ON –OFF switch. Top right is the Bind/Ch # 5 pushbutton. At the top end of the case is the Inertia knob. There are 4 sound system function triggers. They are marked F1, F2, F3 and F4. These correspond to outputs 1, 2, 3 & 4 on the # LT-SW4v2 & RCS ESC's. Servo Channels # 6 & # 7 are on the front end.

Prior to using this system there are two procedures that must be carried out by the operator, unless the TX and RX have already been bound and the system calibrated.

“BINDING”.

The 1st procedure is to “BIND” the receiver (RX) to the Transmitter (TX). This applies to all brands and types of ESC's. “BINDING” is accomplished by following a few simple steps below.

The operating program will ignore the RX Fail Safe commands.

The operator must have the spring loaded direction switch in neutral & the throttle knob to zero. i.e. Fully CCW.

HOW TO “BIND” USING A DSM2 RX.

1.1 MANUAL BIND. Insert the “BINDING” plug supplied with the DSM2 RX into the “BINDING” pins on the **RX**. You can also use the # BINDER switch assembly if you do not wish to get inside the loco.

For # 7-Ch-RX see separate instruction pages.

1.1 AUTO-BIND receivers 1.3 below. Turn on the loco power >RX and wait 20 seconds for the RX to enter bind mode. RX LED will flash rapidly OR;

1.2 MANUAL BIND Turn the loco RX ON. The RX LED will start blinking very rapidly to indicate it is ready to be bound.

1.3 AUTO-BIND Loco power ON >RX and wait 20 seconds for the RX to enter bind mode. RX LED will flash rapidly. The loco with an OMEGA-3v6/7 ESC will always give a very slight jerk at switch ON. This is normal.



ON – OFF SWITCH



BINDING BUTTONS



Channels # 6 & # 7.

1.4 Press **and hold** the right pushbutton on the handpiece marked with a hexagonal symbol. You should keep TX & RX at least 1 x metre apart for binding to take place.

1.5 Then press **and hold** the ON – OFF button to **ON**. Hold both buttons until the RX LED stops flickering & starts blinking slowly. Then let both TX buttons go. The TX button also blinks slowly & then goes to solid ON.

1.5 The LED on the RX will blink more slowly and then go solid ON.

1.6 When “BINDING” is complete the RX LED will change to solid ON.

N.B. “BINDING” plug MUST be removed BEFORE the SYSTEM is turned OFF.

1.7 The “BINDING” plug is removed & stored safely.

RCS offers an optional extra # **BINDER** cable and pushbutton. When fitted this will enable any non RCS loco to be bound to any TX without requiring access to the inside of the loco. This will enable any loco to be swapped between any other DSM2 TX's. You will be able to “hand off” speed matched locos for MU'ing into a consist.

How to calibrate the system is covered in the # OMEGA-3v7 ESC instructions.

GENERAL INFORMATION.

DIRECTIONAL LIGHTS & SOUND SYSTEM TRIGGERS.

CENTRE OFF. The VIPER-10-15/24 ESC's do not have any directional lighting outputs.

The RCS # Rx102-1 series have directional LED lighting outputs. Pin # 6 = F. Pin # 7 = R.

OR: RCS has a small add on module # **REV-LITE** that reads the speed & direction of the motor & switches lights accordingly.

LOW OFF ESC. The # OMEGA-3v7 has terminals for directional lighting. If the directional lights are incorrect, swap over the wiring to them at the L & R terminals.

SOUND TRIGGERS. Apart from the fitted F1 – F4 sound triggers, the direction switch can also be used as 2 x sound triggers using Ch # 3. # 2-W-S (or similar) required. Total of six triggers available.

The bind button also controls Ch # 5. You can add a servo for mechanical operation. EG a Kadee servo uncoupler.

With a servo "Y" cable the Ch # 5 button can operate both front and rear uncouplers simultaneously. A # SIG-REV may be required if the direction of rotation of the Kadee servo uncoupler arm is backwards.

SERVO CONTROL. The TX-10 uses Ch # 6 & Channel # 7 to give full digital proportional control of two servos.

The knobs that control these two servo outputs do not have a centre déteinte & are mounted on the top end of the case. Each knob can operate one Kadee servo uncoupler without any extra parts needed.

TROUBLESHOOTING.

The TX-10 battery will eventually go flat if left switched on. If the battery goes flat slowly the internal TX-10 operating program will likely be disrupted.

USING THE TX-10 WITH A CENTRE OFF ESC.

The TX-10 is ideal for use with RCS **CENTRE OFF** ESC's such as the # VIPER-10-15 & VIPER-10-24.

Before you switch the system on, make sure the large throttle knob is in neutral.

The direction switch will not be used. It could instead be used for two more switched functions using one # 2-W-S.



CENTRE OFF NEUTRAL



To drive forwards. With the ESC in neutral, twist the knob to the right.



To drive in reverse. With the ESC in neutral, twist the knob to the left:

CENTRE OFF CONTROL.

FORWARDS - SPEEDING UP.

To select forwards direction twist the knob from neutral slowly clockwise (CW) to the right. If the Rx102-1 receiver is being used, the Front LED will come on just as the loco speeds up following the knob setting.

SLOWING DOWN. Turn the knob back to the left (CCW) to set desired speed.

STOPPING. . Completely stop the loco by bringing the knob back to neutral.

REVERSE - SPEEDING UP.

To select reverse direction twist the knob slowly to the left (CCW). The Rear LED will come on just as the loco speeds up following the knob setting.

SLOWING DOWN. Turn the knob back to the right (CW) to set desired speed.

STOPPING. Completely stop the loco by bringing the knob back to neutral.

SHUTTING DOWN. When you have finished operating, turn off the loco(s) before the TX.

USING THE TX-10 WITH A LOW OFF ESC.

The TX-10 is the best TX handpiece for use with RCS **LOW OFF** ESC's such as the # OMEGA-3v7 using RCS AV1 program. The TX-10 hand piece is essentially a 5 channel stick R/C in a smaller case.

Before you switch the system on, make sure the large throttle knob is fully CCW (OFF). The direction switch will be automatically centered. If you don't do this the ESC cannot start up when switched "ON".

USING RCS ESC's WITH Av1 PROGRAMS.

The OMEGA-3v7 ESC was calibrated at the factory and should not need re-calibration. The OMEGA-3v7 instructions show how to calibrate if needed.

The large knob controls channel # 1 the throttle. Make sure the knob is fully CCW before switching on. Otherwise the RCS # OMEGA-3v7 ESC cannot switch ON. This is the same as the Channel # 1 stick being fully down.

Unless binding, switch ON the TX-10 first & then the ESC.

1. The direction switch is the same as the Ch # 3 elevator stick.

From neutral, push the switch forwards once to set the ESC into forwards direction.

Like an elevator stick it will spring back to the off position when released.

2. From the OFF position twist the large knob to the right (clockwise, CW) to ramp the speed up.

To change from forwards to reverse firstly twist the large knob fully to the left (CCW) to the stop.

Once the loco is completely stopped pull the switch back and release it to get the ESC back to neutral.

Then pull the switch back again to set the direction to reverse.

Then twist the large knob to the right (clockwise, CW) to ramp the speed up in reverse.

N.B The TX-10 cannot be used with any ESC's using the RCS BV1 PROGRAM.



To set forward. With the ESC in neutral, push the direction switch forwards & then release it.



Twist the big knob clockwise (CW) to increase the loco speed.



To reverse the loco, return the big knob fully to the left (CCW) and pull the switch back twice and release it.



Twist the big knob clockwise (CW) to increase the loco speed.