

CHANGING MEMORY SETTINGS

YOUR Vtrac HAS BEEN SUPPLIED PRE-SET WITH MEMORY 1 SET AS A 'NORMAL' THROTTLE CONTROL RESPONSE, MEMORIES 2 TO 5 INCREASE THROTTLE RESPONSE (PUNCHY), AND MEMORIES 6 TO 10 DECREASE IT (SMOOTH). TO CHANGE A MEMORY SETTING FROM THOSE SUPPLIED TO YOUR OWN 'CUSTOM' SETTINGS DO THE FOLLOWING:

PRESS AND RELEASE THE 'SET' BUTTON UNTIL THE MEMORY YOU WANT TO CHANGE IS THE SELECTED MEMORY.

PRESS AND HOLD THE 'SET' BUTTON UNTIL THE GREEN 'MODE' LED IS ON, THE CURRENTLY SELECTED DYNAMIC THROTTLE PROGRAM WILL BE SHOWN ON THE 'SETTING' LEDs 1 TO 10 AS LED OFF, LED FLASHING OR LED SOLID. LED OFF IS A 'NORMAL' THROTTLE, LED FLASHING ARE THE 'PUNCHY' SETTINGS AND LED SOLID ARE 'SMOOTH'.

PRESS AND RELEASE THE 'SET' BUTTON TO CYCLE THROUGH THE 20 DYNAMIC THROTTLE PROGRAMS AVAILABLE. WHEN YOU HAVE SELECTED THE ONE YOU WANT TO USE SWITCH THE Vtrac OFF TO EXIT 'SET-UP' MODE.

THE SAME SET-UP METHOD IS USED TO CHANGE THE START RESPONSE, BRAKE RESPONSE, BRAKE MINIMUM AND BRAKE MAXIMUM SETTINGS. (REFER TO THE 'VTRAC SET-UP GUIDE' SHEET FOR INSTRUCTIONS)

DYNAMIC THROTTLE RESPONSE (DTR)

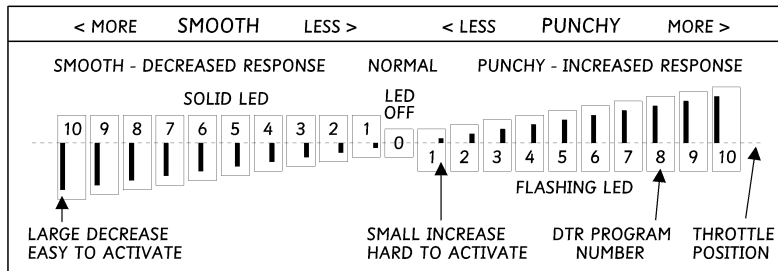
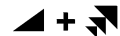
'DTR' IS THE MOST ADVANCED POWER MANAGEMENT SYSTEM FOR DIGITAL ELECTRONIC SPEED CONTROLLERS. DTR IS MUCH BETTER THAN CURRENT LIMITING WHICH CAN ONLY LIMIT 'CURRENT PEAKS' AND IS LESS EFFICIENT. THE WAY DTR OPERATES MEANS THE 'FEEL' OF THE THROTTLE IS ALWAYS GOOD, ESPECIALLY AT LOW-MID SPEED. INSTEAD OF LIMITING CURRENT DRAW ABOVE A SET 'CURRENT LIMIT' WHEN ACCELERATING, DTR CONTINUOUSLY MODIFIES THE THROTTLE IN RESPONSE TO THE DRIVERS INPUT GIVING IMPROVED ON-TRACK PERFORMANCE.

DTR WILL GIVE YOU AN ON-TRACK ADVANTAGE IN VARYING TRACK CONDITIONS AND ON MANY TRACK SURFACES. BY TESTING OUT SETTINGS TO FIND THOSE THAT WORK WELL FOR YOU AND SAVING THEM AS 'CUSTOM SETTINGS' YOU WILL SOON HAVE A USEFUL RANGE OF STORED SETTINGS AVAILABLE TO CALL UP WHEN REQUIRED.

THE BLANK 'CUSTOM SETTINGS' TABLES ON THE VTRAC SET-UP GUIDE CAN BE COPIED AND USED TO KEEP A RECORD OF YOUR OWN CUSTOM SETTINGS. THESE COULD BE FOR DIFFERENT CARS, TRACKS, MOTORS ETC.

THE TABLE BELOW SHOWS THE DYNAMIC THROTTLE PROGRAMS, EACH PROGRAM HAS TWO PARAMETERS:
1 'THROTTLE RATE' HOW EASILY A THROTTLE CONTROL CHANGE WILL ACTIVATE 'POWER CONTROL'
2 'POWER CONTROL' THE AMOUNT OF THROTTLE INCREASE/DECREASE USED TO CONTROL THE POWER

DYNAMIC THROTTLE PROGRAMS



EACH DTR PROGRAM IS SHOWN AS A BOX, THE DASHED HORIZONTAL LINE SHOWS THE THROTTLE POSITION. THE THICK VERTICAL BAR IS THE AMOUNT OF THROTTLE INCREASE/DECREASE AND THE POSITION OF THE VERTICAL BAR IN EACH BOX (LEFT OR RIGHT) SHOWS WHEN THE 'POWER CONTROL' WILL BE ACTIVATED. IF IT'S TO THE LEFT IN THE BOX IT'S EASY TO ACTIVATE AND TO THE RIGHT IT IS HARDER TO ACTIVATE. WHEN SET TO EASY ANY MOVEMENT OF THE THROTTLE CONTROL WILL EFFECT THE POWER TO THE MOTOR. WHEN SET TO HARD ONLY QUICK 'JABBING' MOVEMENTS OF THE THROTTLE WILL EFFECT THE POWER.

Vtrac PRO FP SPECIFICATIONS

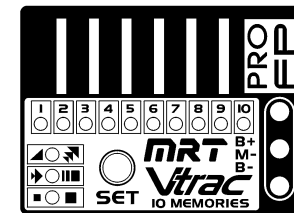
Case Dimensions	40x29x16mm	Brake On-Resistance	0.00375Ω
Weight (no wires)	Approx. 34g	†Brake Current	160A
Voltage Input (4 - 7 cells)	4.8V - 8.4V	Regenerative Braking	Yes
Drive On-Resistance	0.00075Ω	Brake Response Programs	10 Selectable
†Drive Current	480A	'Brake Minimum' Settings	11 Selectable
PWM Throttle Resolution	800 Steps	'Brake Maximum' Settings	11 Selectable
PWM Frequency	Optimised	Neutral 'Drag' Braking	Adjustable
Pro-Set 'Throttle Rate'	Programmable	Enhanced Power System (EPS) ..	Yes
Pro-Set 'Power Control'	Programmable	Rx Supply Output Voltage	6.0V
'Start Response' Settings	11 Selectable	Rx Supply Output Current	3.0A (peak)
Pro 'DTR' Throttle Programs ..	20 Selectable	Rx Supply Priority/Protection ..	Yes
10 User Set-up Memories	Programmable	'FP' Water and Dust Protection ..	Yes 100%

†MOSFET Transistor Rating at 25°C Junction Temperature.

MODEL RACING TECHNOLOGY

Vtrac PRO FP

ADVANCED DIGITAL ELECTRONIC SPEED CONTROL INSTRUCTIONS



MODEL RACING TECHNOLOGY

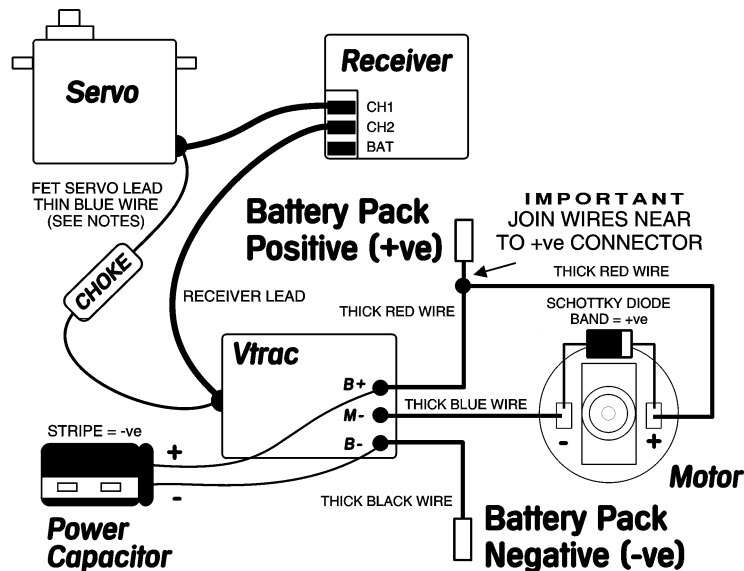
258 DOVER ROAD, FOLKESTONE, KENT, CT19 6NS, ENGLAND.
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IMPORTANT Please Read!!

BEFORE WIRING UP YOUR Vtrac PLEASE READ THE INSTRUCTIONS CAREFULLY AND LOOK AT THE WIRING DIAGRAM. REMEMBER YOUR Vtrac IS 100% WATERPROOF, NOW RACING IN THE WET IS FUN!!

IT IS VERY IMPORTANT THAT YOU DO NOT SHORT OUT OR REVERSE CONNECT ANY OF THE WIRES ON YOUR Vtrac AS THIS COULD CAUSE DAMAGE TO YOUR SPEED CONTROLLER AND THE EQUIPMENT CONNECTED TO IT. IF YOU DO INCORRECTLY CONNECT THE POWER WIRES AND THE BRAKES STOP WORKING, DO NOT USE YOUR Vtrac AS FURTHER DAMAGE COULD OCCUR - RETURN TO MRT FOR REPAIR.

Vtrac WIRING DIAGRAM



- If using a FET servo, connect the thin blue wire from the Vtrac to the thin blue wire from the servo and wire a 4.7uH choke into the lead. (choke should be supplied with FET servo)
- If using a non-FET servo the thin blue wire from the Vtrac is not used and should be insulated.

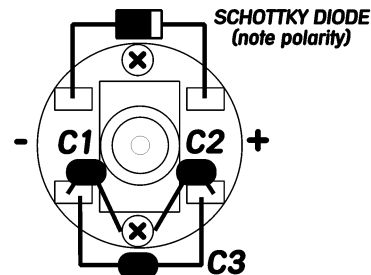
Vtrac Wiring

Thick black wire - Battery Negative (B-)
 Thick red wire - Battery Positive (B+)
 Thick blue wire - Motor Negative (M-)
 Thin blue wire - FET Servo Lead

CAPACITORS: C1, C2 & C3 ARE 0.1uF

USING SCHOTTKY DIODES ON THE MOTOR AND A POWER CAPACITOR ON THE Vtrac WILL OPTIMISE ELECTRICAL EFFICIENCY. (REFER TO DIAGRAM FOR WIRING DETAILS)

INSTALLATION OF CAPACITORS AND SCHOTTKY DIODE



Vtrac INSTALLATION

WIRE UP YOUR Vtrac ACCORDING TO THE WIRING DIAGRAM AND REMEMBER TO FOLLOW THE ADVICE BELOW:

- DO NOT ALLOW SOLDER POSTS TO GET TOO HOT WHEN SOLDERING POWER WIRES. USE AT LEAST A 25W SOLDERING IRON AND MAKE SURE A GOOD SOLDER JOINT IS MADE.
- ALWAYS USE A MOTOR WITH 3 CAPACITORS FITTED TO HELP PREVENT ANY POSSIBLE RADIO INTERFERENCE.
- FITTING SCHOTTKY DIODES ON MOTORS AND A POWER CAPACITOR TO THE Vtrac INCREASES EFFICIENCY BY ELIMINATING HARMFUL VOLTAGE SPIKES THAT GENERATE HEAT, REDUCING POWER AND PERFORMANCE.
- ALWAYS KEEP THE RECEIVER AND RECEIVER AERIAL AWAY FROM ALL THE POWER WIRES IN YOUR CAR.
- IF USING A SEPARATE RECEIVER BATTERY DISCONNECT RED RX WIRE FROM Vtrac RX PLUG AND INSULATE.
- INSTALL YOUR Vtrac SECURELY IN CAR WITH VELCRO OR SERVO TAPE - FIT Vtrac IN A SAFE POSITION.
- KEEP POWER WIRE LENGTHS AS SHORT AS POSSIBLE TO MAXIMISE PERFORMANCE AND EFFICIENCY.
- KEEP Vtrac/MOTOR POSITIVE POWER WIRE JOINT AS CLOSE TO POSITIVE BATTERY CONNECTOR AS POSSIBLE TO HELP AVOID STEERING AND THROTTLE GLITCHES UNDER HARD ACCELERATION.
- YOUR Vtrac IS 100% PROTECTED FROM WATER/DUST/DIRT AND DOES NOT NEED ANY FURTHER PROTECTION.
- A HEATSINK CAN BE USED ON THE Vtrac FETs, BUT SHOULD NOT GET HOT DUE TO THE HIGH Vtrac SPEC.

NOTE: MOTOR MUST BE CONNECTED TO Vtrac FOR BEEPS TO BE HEARD.

ADJUSTING YOUR Vtrac TO A TRANSMITTER

AFTER WIRING UP YOUR Vtrac, TURN YOUR TRANSMITTER ON AND SET THE THROTTLE TRIM TO NEUTRAL.

- CONNECT YOUR Vtrac TO A BATTERY PACK WITH THE Vtrac ON/OFF SWITCH TURNED 'OFF'. PRESS AND HOLD THE Vtrac 'SET' BUTTON AND THEN SWITCH THE Vtrac 'ON'.
- AFTER 1 SECOND THE MOTOR SHOULD 'BEEP' AND THE AMBER 'NEUTRAL' LED SHOULD COME ON. THE NEUTRAL POSITION HAS BEEN SET. THE GREEN AND RED LEDs SHOULD BE FLASHING.
- MOVE AND HOLD THE TRANSMITTER THROTTLE AT THE POSITION FULL POWER IS TO BE SET, (NORMALLY AT FULL MOVEMENT) PRESS AND RELEASE THE 'SET' BUTTON TO SET FULL POWER. THE AMBER AND GREEN LEDs SHOULD BE ON AND THE RED LED SHOULD BE FLASHING. NOTE: DURING SET-UP ANY INCORRECT SETTINGS WILL NOT BE ACCEPTED AND MUST BE RE-SET.
- MOVE AND HOLD THE TRANSMITTER THROTTLE AT THE POSITION FULL BRAKES ARE TO BE SET. (NORMALLY AT FULL MOVEMENT) PRESS AND RELEASE THE 'SET' BUTTON TO SET FULL BRAKES.

THE RADIO SET-UP IS NOW COMPLETE, YOUR Vtrac SHOULD BE IN 'RUN' MODE. (ONLY AMBER 'NEUTRAL' LED ON)

SETTING AND USING YOUR Vtrac

SETTING YOUR Vtrac IS VERY EASY. THE 20 'PRO-RESPONSE' DYNAMIC CONTROL PROGRAMS WILL GIVE YOU PERFECT THROTTLE CONTROL LIKE THE BEST DRIVERS IN THE WORLD, SIMPLY BY THE PRESS OF A BUTTON!!

CONNECT YOUR Vtrac TO A BATTERY PACK AND SWITCH THE Vtrac ON, AFTER POWER-UP THE AMBER LED IS ON.

YOUR Vtrac IS SUPPLIED SET ON MEMORY 1 AND IS READY FOR USE RIGHT AWAY.

MEMORY 1 IS SET AS A 'NORMAL' THROTTLE. THE RESPONSE IS PROPORTIONAL TO THE TX THROTTLE POSITION. IE. IF YOU MOVE THE TX THROTTLE CONTROL THE POWER AND BRAKES WILL MATCH YOUR INPUT EXACTLY, THIS IS A BASIC CONTROL METHOD AVAILABLE ON ALL SPEEDOS - YOUR Vtrac CAN DO A LOT MORE THAN THIS!!

FIRST TRY A RUN WITH THE Vtrac SET AS SUPPLIED. IF YOU WANT TO INCREASE THE PERFORMANCE TRY A RUN ON MEMORIES 2 UP TO 5 (LEDs FLASHING). THESE PUNCHY MEMORY SETTINGS ARE GOOD FOR NI-MH BATTERIES OR STOCK MOTORS AS THEY GIVE THE MAXIMUM 'PUNCH'. (SEE CHART FOR DETAILS OF THE MEMORY SETTINGS)

YOU CAN ALSO TRY OUT THE SMOOTH SETTINGS, THEY ARE THE MEMORY SETTINGS FROM 6 TO 10 (LED SOLID). MEMORIES 6 TO 10 INCREASE IN 'SMOOTHNESS' FROM 6 UP TO 10 WITH MEMORY 10 BEING THE SMOOTHEST. SMOOTH SETTINGS REDUCE LOW SPEED ACCELERATION AND WHEEL-SPIN MAKING YOUR CAR EASIER TO DRIVE. THE OPTIMUM POWER SETTING IS THE ONE THAT ALLOWS YOU TO DRIVE AND GET CONSISTENT FAST LAP TIMES!!

TO CHANGE THE SELECTED MEMORY SETTING ON YOUR Vtrac, SIMPLY PRESS AND RELEASE THE 'SET' BUTTON. THE 3 'MODE' LEDs WILL FLASH AND ONE OF THE 'SETTING' LEDs (NUMBERED 1 TO 10) WILL BE ON TO SHOW THE CURRENTLY SELECTED MEMORY. TO CYCLE THROUGH THE MEMORIES PRESS AND RELEASE THE 'SET' BUTTON. AFTER THE REQUIRED MEMORY HAS BEEN SELECTED SIMPLY SWITCH YOUR Vtrac OFF TO EXIT 'SET-UP' MODE.

Vtrac POWER SETTING ADVICE

MOTORS, GEARING AND BATTERIES HAVE THE BIGGEST EFFECT ON CAR PERFORMANCE. USE 'PUNCHY' SETTINGS WITH NI-MH BATTERIES TO GIVE MAXIMUM CAR PERFORMANCE. USE 'SMOOTH' SETTINGS TO HELP IMPROVE CAR CONTROL AND REDUCE WHEEL-SPIN.

