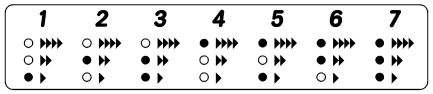
VX FUNCTIONS

PRESS & HOLD VX 'SET' BUTTON TO SELECT 'SET-UP' MODE, THEN PRESS & RELEASE 'SET' BUTTON TO CHANGE SETTINGS. THE VX HAS 6 FUNCTIONS: LEDs 1, 2 & 3 ON SOLID/FLASHING.

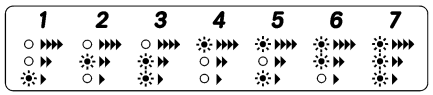
FUNCTION 1 (solid)

POWER LIMITING (SMOOTH RESPONSE)



< LESS < < < < SMOOTH > > > > MORE >

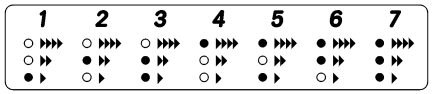
POWER INCREASED (PUNCHY RESPONSE)



< LESS < < < < PUNCH > > > > MORE >

FUNCTION 2 (solid)

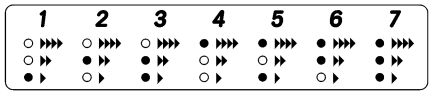
BRAKE MINIMUM (brake strength at min. braking)



< LESS < < < < BRAKING > > > > MORE >

FUNCTION 3 (solid)

BRAKE MAXIMUM (brake strength at max. braking)

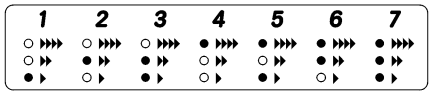


< LESS < < < < BRAKING > > > > MORE >

FUNCTION 1 (flash)

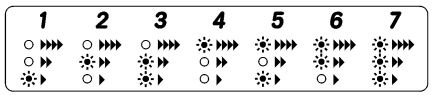
Hold TX at full brake position for 4 seconds to set launch control.

LAUNCH CONTROL (SMOOTH RESPONSE)



< LESS < < < < SMOOTH > > > > MORE >

LAUNCH CONTROL (PUNCHY RESPONSE)

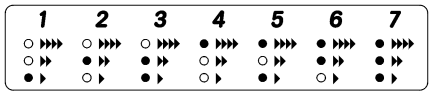


< LESS < < < < PUNCH > > > > MORE >

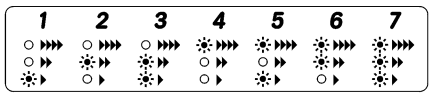
FUNCTION 2 (flash)

DRAG BRAKE has minimum braking applied when throttle is at neutral.

BRAKE RESPONSE (PROPORTIONAL)



BRAKE RESPONSE (PROPORTIONAL WITH DRAG)

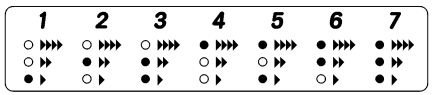


Brake Programs 2 - 7 solid and 2 - 7 flash automatically increase braking. 2 = slow increase 7 = fast increase

FUNCTION 3 (flash)

Throttle start speed.

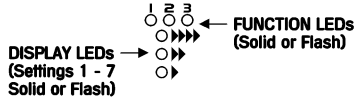
MINIMUM SPEED (1 = SLOWEST 7 = FASTEST)



< LESS < < < < SPEED > > > > MORE >

LED STATUS ○ OFF ● ON (SOLID) ☼ FLASHING

Function Range Settings: 1 = minimum 7 = maximum.



FUNCTION & TECHNICAL NOTES :

Power limiting uses voltage/current monitoring. Power increasing uses dynamic throttle position modification. 'AutoBrake' Brake Response settings automatically apply braking when any brake control position is selected. To reset VX to factory settings press SET button then plug in power. (press until reset procedure is complete) The VX 'POWER LOGIC' system is fully integrated and protects the VX power components. If any fault has been detected, or operating conditions exceed the units power parameters the system will prevent serious damage. If the RED LED flashes and the VX does not operate it must be returned to MRT for fault diagnosis and repair.

VX PRO TECHNICAL SPECIFICATIONS

Case Dimensions	39x27x17mm	Brake On-Resistance	0.0011Ω
Weight (no wires)	Approx. 25g	†Brake Current	160A
Voltage Input (4 - 7 cells)	4.8V - 8.4V	Regenerative Braking	Yes
Drive On-Resistance	0.00055Ω	Brake Response Programs	14 Selectable
PWM Frequency	Optimised	'Power Logic' Control System	Yes
PWM Resolution	800 Steps	Rx Supply Output	6V/3A (peak)
†Drive Current	320A	Rx Supply Priority/Protection	Yes
Power Programs	14 Selectable	Adjustable Minimum Speed	7 Settings
Launch Control	Programmable	'FP' Water and Dust Protection	Yes 100%

†MOSFET Transistor Rating at 25°C Junction Temperature.

MODEL RACING TECHNOLOGY

VX

PRO

ADVANCED DIGITAL ELECTRONIC SPEED CONTROL

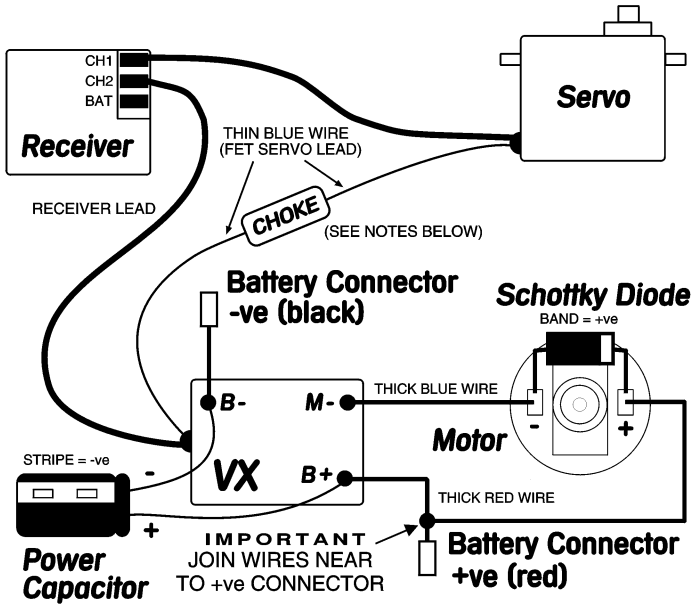
INSTRUCTIONS

MODEL RACING TECHNOLOGY
258 DOVER ROAD, FOLKESTONE, KENT, CT19 6NS, ENGLAND.
TELEPHONE/FAX (UK) 01303 259196 www.team-mrt.com

PLEASE READ THE INSTRUCTIONS!!

BEFORE YOU USE YOUR VX YOU MUST READ THE INSTRUCTIONS CAREFULLY. REFER TO THE WIRING DIAGRAM TO MAKE SURE CONNECTIONS ARE CORRECT.

VX WIRING DIAGRAM



a) If you're using a FET servo, connect the thin blue wire from your VX to the thin blue wire on the servo by wiring a 4.7uH choke into the lead. (a choke should be supplied with FET servos)

b) If using a non-FET servo the thin blue wire from your VX is not used and should be insulated.

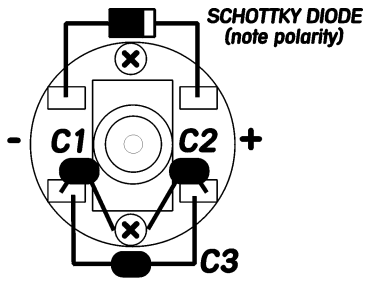
VX WIRING:

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 VX WILL OPTIMISE ELECTRICAL EFFICIENCY. (REFER TO DIAGRAM FOR WIRING DETAILS)

INSTALLATION OF CAPACITORS AND SCHOTTKY DIODE



VX 'POWER LOGIC' AND 'FP' SPEC

YOUR VX IS AN ADVANCED COMPETITION ELECTRONIC SPEED CONTROLLER THAT HAS BEEN DEVELOPED TO PROVIDE MAXIMUM PERFORMANCE IN ALL RACE CONDITIONS. IT's UNIQUE 'POWER LOGIC' PROGRAMMING MONITORS AND CONTROLS THE POWER FLOW TO MAINTAIN THE OPTIMUM RESPONSE, WHICH IS ESSENTIAL FOR TOTAL CAR CONTROL. YOUR VX ALSO HAS 'FP' PROTECTION TO MAKE IT 100% WATERPROOF AND DUSTPROOF.

INSTALLING YOUR VX

CONNECT UP YOUR VX ACCORDING TO THE WIRING DIAGRAM AND REMEMBER TO FOLLOW THE ADVICE BELOW:

- **TAKE CARE** WHEN SOLDERING TO VX CONNECTORS, POWER WIRES OR SOLDER POSTS. USE AT LEAST A 25W SOLDERING IRON AND MAKE SURE A GOOD SOLDER JOINT IS MADE. DO NOT SOLDER POWER WIRES ONTO PLUGS WHILE CONNECTED TO VX POWER SOCKETS.

- 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 VX INCREASES POWER/EFFICIENCY BY ELIMINATING HARMFUL VOLTAGE SPIKES THAT GENERATE HEAT, REDUCING POWER AND PERFORMANCE.
- ALWAYS KEEP THE RECEIVER AND RECEIVER AERIAL WELL AWAY FROM ALL THE POWER WIRES IN YOUR CAR.
- INSTALL YOUR VX SECURELY IN YOUR CAR WITH VELCRO OR SERVO TAPE - FIT VX IN A SAFE POSITION.
- KEEP POWER WIRE LENGTHS AS SHORT AS POSSIBLE TO MAXIMISE CAR PERFORMANCE AND EFFICIENCY.
- KEEP VX/MOTOR POSITIVE POWER WIRE JOINT AS CLOSE TO POSITIVE BATTERY CONNECTOR AS POSSIBLE TO HELP MINIMISE THE RISK OF ANY STEERING AND THROTTLE GLITCHES UNDER HARD ACCELERATION.
- FOR 4 CELL RACING RUN A SEPARATE RX PACK AND TURN VX ON AND OFF USING RX PACK ON/OFF SWITCH. THE RADIO SET-UP PROCEDURE SHOULD BE FOLLOWED USING A 6 CELL PACK TO SET VX TO TRANSMITTER.

NOTE: A MOTOR MUST BE CONNECTED TO VX FOR BEEPS TO BE HEARD.

ADJUSTING YOUR VX TO A TRANSMITTER

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

1. CONNECT VX TO A BATTERY PACK. PRESS AND HOLD THE VX 'SET' BUTTON UNTIL VX IS IN 'RADIO SET' MODE. THE AMBER 'NEUTRAL' LED SHOULD BE ON WITH THE RED AND GREEN LEDs FLASHING TO INDICATE THAT THE NEUTRAL POSITION HAS BEEN SET, AND THAT FULL POWER AND FULL BRAKES STILL NEED TO BE SET.

2. MOVE AND HOLD THE TRANSMITTER THROTTLE AT THE POSITION WHERE FULL POWER IS TO BE SET, (NORMALLY AT FULL MOVEMENT) PRESS AND RELEASE THE VX 'SET' BUTTON TO SET FULL POWER. THE AMBER AND GREEN LEDs SHOULD NOW BE ON SOLID AND THE RED LED SHOULD BE FLASHING. NOTE: DURING SET-UP ANY INCORRECT SETTINGS WILL NOT BE ACCEPTED AND MUST BE RE-SET.

3. MOVE AND HOLD THE TRANSMITTER THROTTLE AT THE POSITION WHERE FULL BRAKES ARE TO BE SET, (NORMALLY AT FULL MOVEMENT) PRESS AND RELEASE THE VX 'SET' BUTTON TO SET FULL BRAKES.

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

SETTING AND USING YOUR VX

SETTING YOUR VX IS VERY EASY. THE 14 BUILT IN 'PRO-RESPONSE' POWER PROGRAMS WILL HELP TO GIVE YOU PERFECT THROTTLE CONTROL IN VARYING TRACK CONDITIONS. CONNECT YOUR VX TO A BATTERY PACK THEN PRESS AND RELEASE THE 'SET' BUTTON TO SWITCH YOUR VX ON. (THE AMBER 'NEUTRAL' LED SHOULD COME ON)

YOUR VX IS SUPPLIED SET ON POWER PROGRAM 1 (RED LED FLASHING) AND IS A GOOD SETTING TO START WITH. PROGRAM 1 IS SET AS A 'NORMAL' THROTTLE, THE RESPONSE IS PROPORTIONAL TO THE TX THROTTLE POSITION. IE. WHEN YOU MOVE THE TX THROTTLE CONTROL THE POWER OUTPUT WILL MATCH YOUR INPUT EXACTLY, THIS IS THE MOST BASIC METHOD OF CONTROL AVAILABLE ON SPEEDOs, BUT YOUR VX CAN DO A LOT MORE THAN THIS.

FIRST TRY A RUN WITH THE VX SET AS SUPPLIED. IF YOU WANT TO INCREASE THE PERFORMANCE TRY A RUN ON PROGRAMS 2 UP TO 7 (LEDs FLASHING). THESE DYNAMIC 'PUNCHY' POWER PROGRAMS ARE GOOD FOR RACING WITH Ni-MH BATTERIES OR STOCK MOTORS AS THEY GIVE MAXIMUM PUNCH. (FOR SETTINGS SEE THE NEXT PAGE) THESE PROGRAMS INCREASE IN PUNCH WITH 2 THE LOWEST PUNCH AND 7 THE MAXIMUM PUNCH.

YOU CAN ALSO TRY OUT THE SMOOTH SETTINGS, THEY ARE THE POWER PROGRAMS FROM 1 UP TO 7 (LED SOLID). THESE PROGRAMS INCREASE IN POWER LIMITING WITH PROGRAM 7 (LED SOLID) HAVING THE MAXIMUM LIMITING. SMOOTH SETTINGS HELP TO MAKE CAR CONTROL EASIER BY REDUCING LOW SPEED ACCELERATION THAT CAUSES WHEEL-SPIN. AN OPTIMUM POWER SETTING IS ONE THAT ALLOWS YOU TO GET FAST BUT CONSISTENT LAP TIMES. BUT, IT'S BEST TO RUN WITH A PUNCHY SETTING AND DRIVE SMOOTHLY, IT'S THE MOST EFFICIENT DRIVING STYLE.

TO CHANGE THE POWER PROGRAM ON YOUR VX - WHILE THE VX IS ON, PRESS AND HOLD THE VX 'SET' BUTTON, AFTER A DELAY THE POWER PROGRAM CURRENTLY SET WILL BE DISPLAYED. FUNCTION LED 1 IS ON SHOWING THE SELECTED FUNCTION (SEE NEXT PAGE FOR VX FUNCTIONS). TO CYCLE THROUGH ALL THE AVAILABLE PROGRAMS PRESS AND RELEASE THE 'SET' BUTTON. AFTER A SETTING HAS BEEN SELECTED LEAVE THE VX FOR 10 SECONDS TO EXIT 'SET' MODE, OR PRESS AND HOLD THE 'SET' BUTTON TO MOVE ON TO THE NEXT VX FUNCTION. TO CYCLE THROUGH THE VX FUNCTIONS REPEAT THE SAME PROCEDURE AS DESCRIBED ABOVE.

IF A PERFECT 'ASSISTED START' FROM THE START LINE IS REQUIRED THE VX 'LAUNCH CONTROL' CAN BE USED. (IT WILL USE THE 'LAUNCH CONTROL' VALUE SET) - HOLD THE TX THROTTLE CONTROL IN THE FULL BRAKE POSITION UNTIL THE LEDs INDICATING FULL BRAKES (AMBER AND RED LED ARE ON SOLID) GO OFF AND ON AGAIN TO SHOW START RESPONSE IS SET READY FOR USE. THE THROTTLE WILL BE 'ASSISTED' UNTIL FULL POWER HAS BEEN HELD ON FOR 0.5 SECONDS, AFTER THIS THE THROTTLE RESPONSE WILL RESET TO THE PREVIOUSLY PROGRAMMED POWER SETTING - NOTE: DON'T USE FULL POWER BEFORE THE RACE START OR YOU WILL LOSE LAUNCH CONTROL. BY INTELLIGENT USE OF THE LAUNCH CONTROL YOU WILL BE ABLE TO GAIN ON YOUR COMPETITORS AND HELP TO WIN YOU RACES . . . BUT DON'T FORGET YOU WILL NEED TO PRACTICE WITH LAUNCH CONTROL TO GAIN THE MOST. REMEMBER YOU CAN SET A SLOWER START TO STOP WHEEL-SPIN OR A FASTER START IF THE GRIP IS GOOD!!