



**VATERRA<sup>®</sup>**

**FORD<sup>®</sup> FIESTA<sup>®</sup> RALLYCROSS**

**OWNER'S MANUAL**

BEDIENUNGSANLEITUNG  
MANUEL DE L'UTILISATEUR  
MANUALE DELL'UTENTE

## NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, LLC. For up-to-date product literature, visit [www.horizonhobby.com](http://www.horizonhobby.com) and click on the support tab for this product.

## MEANING OF SPECIAL LANGUAGE

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:

**NOTICE:** Procedures, which if not properly followed, create a possibility of physical property damage AND a little or no possibility of injury.

**CAUTION:** Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.

**WARNING:** Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of superficial injury.



**WARNING:** Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is a sophisticated hobby product and NOT a toy. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision. Do not use with incompatible components or alter this product in any way outside of the instructions provided by Horizon Hobby, LLC. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

**AGE RECOMMENDATION: Not for children under 14 years. This is not a toy.**

## REGISTER YOUR VATERRA PRODUCT ONLINE

Register your vehicle now and be the first to find out about the latest option parts, product updates and more. Click on the Support tab at [WWW.VATERRARC.COM](http://WWW.VATERRARC.COM) and follow the product registration link to stay connected.

## SAFETY PRECAUTIONS AND GUIDELINES

- » Always keep a safe distance in all directions around your model to avoid collisions or injury. This model is controlled by a radio signal subject to interference from many sources outside your control. Interference can cause momentary loss of control.
- » Always operate your model in open spaces away from full-size vehicles, traffic and people.
- » Always carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.).
- » Always keep all chemicals, small parts and anything electrical out of the reach of children.
- » Always avoid water exposure to all equipment not specifically designed and protected for this purpose. Moisture causes damage to electronics.
- » Never place any portion of the model in your mouth as it could cause serious injury or even death.
- » Never operate your model with low transmitter batteries.

# WATER-RESISTANT VEHICLE WITH WATERPROOF ELECTRONICS //////////////////////////////////////

Your new Horizon Hobby vehicle has been designed and built with a combination of waterproof and water-resistant components to allow you to operate the product in many “wet conditions”, including puddles, creeks, wet grass, snow and even rain.

While the entire vehicle is highly water-resistant, it is not completely waterproof and your vehicle should NOT be treated like a submarine. The various electronic components used in the vehicle, such as the Electronic Speed Control (ESC), servo(s) and receiver are waterproof, however, most of the mechanical components are water-resistant and should not be submerged.

Metal parts, including the bearings, hinge pins, screws and nuts, as well as the contacts in the electrical cables, will be susceptible to corrosion if additional maintenance is not performed after running in wet conditions. To maximize the long-term performance of your vehicle and to keep the warranty intact, the procedures described in the “Wet Conditions Maintenance” section to follow must be performed regularly if you choose to run in wet conditions. If you are not willing to perform the additional care and maintenance required, then you should not operate the vehicle in those conditions.



**CAUTION:** Failure to exercise caution while using this product and complying with the following precautions could result in product malfunction and/or void the warranty.

## GENERAL PRECAUTIONS

- » Read through the wet conditions maintenance procedures and make sure that you have all the tools you will need to properly maintain your vehicle.
- » Not all batteries can be used in wet conditions. Consult the battery manufacturer before use. Caution should be taken when using Li-Po batteries in wet conditions.
- » Most transmitters are not water-resistant. Consult your transmitter’s manual or the manufacturer before operation.
- » Never operate your transmitter or vehicle where lightning may be present.
- » Do not operate your vehicle where it could come in contact with salt water (ocean water or water on salt-covered roads), contaminated or polluted water. Salt water is very conductive and highly corrosive, so use caution.
- » Even minimal water contact can reduce the life of your motor if it has not been certified as water-resistant or waterproof. If the motor becomes excessively wet, apply very light throttle until the water is mostly removed from the motor. Running a wet motor at high speeds may rapidly damage the motor.
- » Driving in wet conditions can reduce the life of the motor. The additional resistance of operating in water causes excess strain. Alter the gear ratio by using a smaller pinion or larger spur gear. This will increase torque (and motor life) when running in mud, deeper puddles, or any wet conditions that will increase the load on the motor for an extended period of time.

## WET CONDITIONS MAINTENANCE

- » Drain any water that has collected in the tires by spinning them at high speed. With the body removed, place the vehicle upside down and pull full throttle for a few short bursts until the water has been removed.



**CAUTION:** Always keep hands, fingers, tools and any loose or hanging objects away from rotating parts when performing the above drying technique.

- » Remove the battery pack(s) and dry the contacts. If you have an air compressor or a can of compressed air, blow out any water that may be inside the recessed connector housing.
- » Remove the tires/wheels from the vehicle and gently rinse the mud and dirt off with a garden hose. Avoid rinsing the bearings and transmission.

**NOTICE:** Never use a pressure washer to clean your vehicle.

- » Use an air compressor or a can of compressed air to dry the vehicle and help remove any water that may have gotten into small crevices or corners.
- » Spray the bearings, drive train, fasteners and other metal parts with a water-displacing light oil. Do not spray the motor.
- » Let the vehicle air dry before you store it. Water (and oil) may continue to drip for a few hours.
- » Increase the frequency of disassembly, inspection and lubrication of the following:
  - Front and rear axle hub assembly bearings.
  - All transmission cases, gears and differentials.
  - Motor—clean with an aerosol motor cleaner and re-oil the bearings with lightweight motor oil.

 **WARNING AGAINST COUNTERFEIT PRODUCTS:**

Thank you for purchasing a genuine Spektrum product. Always purchase from a Horizon Hobby, LLC. authorized dealer to ensure authentic high-quality Spektrum product. Horizon Hobby, LLC. disclaims all support and warranty with regards, but not limited to, compatibility and performance of counterfeit products or products claiming compatibility with DSM or Spektrum.

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Please read the entire manual to gain a full understanding of the vehicle, fine-tuning the setup, and performing maintenance.

- 1** Read the safety precautions found in this manual.
- 2** Install the AA batteries in the transmitter. Only use alkaline or rechargeable batteries.
- 3** Install a fully charged battery in the vehicle.
- 4** Power ON the transmitter and then the vehicle. Always power the transmitter ON before the vehicle and power it OFF after the vehicle has been powered OFF.
- 5** Check the steering and throttle control directions. Verify that the servos are moving in the correct direction.
- 6** Drive your vehicle.
- 7** Perform any necessary maintenance.

## COMPONENTS

- » 1/10-Scale Ford Fiesta Rallycross RTR Car
- » Spektrum™ DX2E 2.4GHz DSM® Radio System
- » Dynamite® Fuze™ 70A Waterproof Sensorless Brushless ESC
- » Dynamite Fuze 540 4-Pole 3300Kv Sensorless Brushless Motor
- » 313WP Standard Waterproof Servo
- » 4 AA batteries (for transmitter)



## RECOMMENDED ACCESSORIES

- » Hobby grade knife
- » Needle nose pliers
- » Side cutting pliers
- » Safety goggles
- » Soldering iron

Use only Dynamite tools or other high-quality tools. Use of inexpensive tools can cause damage to the small screws and parts used on this type of model.

## NEEDED TO COMPLETE

- » Dynamite Reaction® 7.4V 5000mAh 2S 30C Li-Po Hardcase: EC3 (DYN9005EC)
- » Dynamite Prophet™ Sport Li-Po 25W AC Charger (DYN4101)

## SUPPLIED TOOLS



- » "L" shaped hex wrench
  - 1.5mm, 2mm, 2.5mm



- » 4-way wrench



- » Flat Turnbuckle Wrench



- » Shock Tools

## SPEKTRUM DX2E RADIO SYSTEM

For more information on the transmitter, go to [www.horizonhobby.com](http://www.horizonhobby.com) and click on the support tab for the Spektrum DX2E to download the instruction manual.

### AVC SENSITIVITY

The ST RATE dial adjusts the sensitivity, or stability, value in the receiver. If you increase the sensitivity, the AVC system becomes more sensitive to the vehicle drifting left or right. You would use maximum sensitivity during high speed driving or drag racing, when you want the vehicle to stay in a straight line. As the sensitivity value increases, the amount of steering travel decreases.

Turn the ST RATE knob counter-clockwise to reduce the sensitivity.

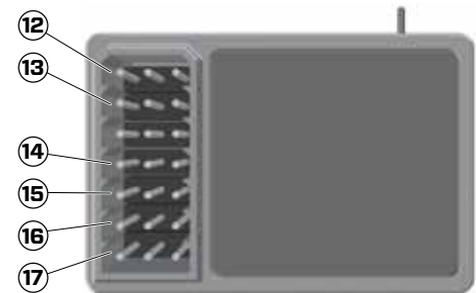
Turn the ST RATE knob clockwise to increase the sensitivity.

**IMPORTANT:** The ST RATE knob will only adjust the sensitivity when the transmitter is bound to a DSMR™ receiver. When the transmitter is bound to a DSM, DSM2® or DSM Marine receiver, the ST RATE knob controls the steering dual rate.

- 1 Steering Wheel** controls direction (left/right) of the model
- 2 Throttle Trigger** controls speed and direction (forward/brake/reverse) of the model
- 3 Antenna** transmits the signal to the model
- 4 ON/OFF Switch** turns the power ON/OFF for the transmitter
- 5 Indicator Lights**
  - *Solid green light* indicates adequate battery power
  - *Flashing green light* indicates the battery voltage is critically low. Replace batteries
- 6 ST Trim** Adjusts the total steering travel
- 7 TH Trim** Adjusts the total throttle travel
- 8 ST Rate** Adjusts the sensitivity value in the receiver
- 9 BIND Button** puts the transmitter into Bind Mode
- 10 ST. REV** reverses the function of the steering when the wheel is turned left or right
- 11 TH. REV** reverses the function of the speed control when pulled back or pushed forward

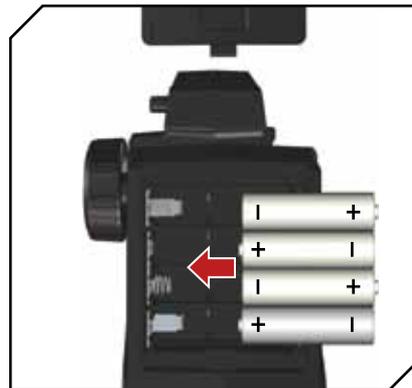
### SRS4200 AVC TECHNOLOGY RECEIVER

- 12 BIND**
- 13 DISABLE**
- 14 AUX 2**
- 15 AUX 1**
- 16 THR**
- 17 STR**



## INSTALLING THE TRANSMITTER BATTERIES

- 1 Push in the battery cover a small amount to release the retaining tab, then remove the cover.
- 2 Install 4 AA batteries, taking care to align the battery polarity to the diagram in the transmitter's battery case.
- 3 Carefully reinstall the battery cover by aligning the tabs with the slots on the transmitter.

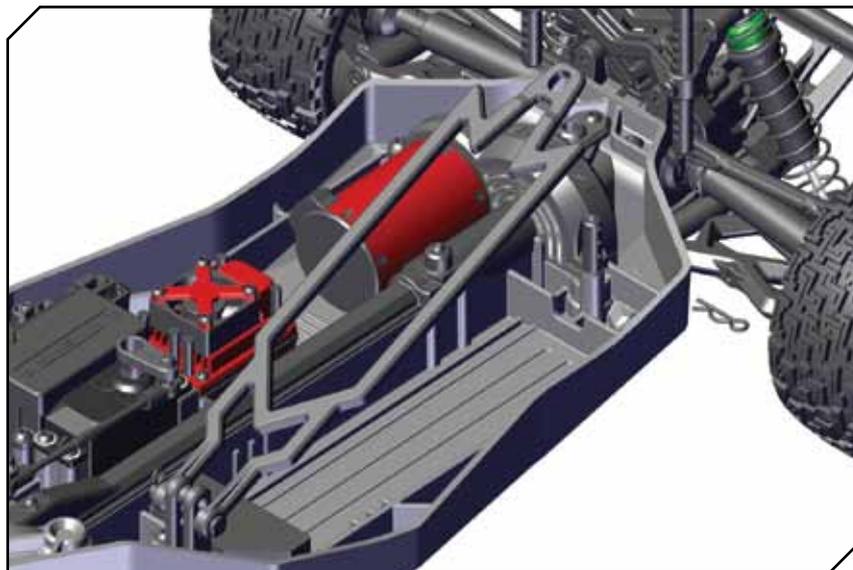


**CAUTION:** NEVER remove the transmitter batteries while the vehicle is powered ON, as loss of control, property damage or injury may result.

**CAUTION:** If using rechargeable batteries, charge only rechargeable batteries. Charging non-rechargeable batteries may cause the batteries to burst, resulting in injury to persons and/or damage to property.

## INSTALLING THE BATTERY AND POWERING ON THE VEHICLE

- 1 Remove the body clips and remove the body.
- 2 Remove the body clip from the battery strap, then lift the battery strap. The battery strap will rotate toward the front of the vehicle.
- 3 Install the fully charged battery in the vehicle.
- 4 Ensure the ESC is powered off.
- 5 Connect the battery to the ESC.
- 6 Lower the battery strap and secure it using the body clip.
- 7 Center the ST TRIM and TH TRIM on the transmitter. Power on the transmitter.
- 8 Power on the ESC. The vehicle and receiver MUST remain motionless for at least 2 seconds.
- 9 Reinstall the body and body clips on the vehicle.



## BINDING AND CALIBRATING THE RECEIVER //////////////////////////////////////

The Spektrum SRS4200 receiver features Active Vehicle Control™ (AVC™) technology that responds similar to traction control in full-scale vehicles. In addition to traction control, AVC technology also increases steering stability during high speed driving or while driving over rough terrain. As you increase the AVC sensitivity, the system increases steering stability and traction control, similar to reducing the amount of steering rate in a computer transmitter. Reducing the sensitivity value increases the amount of steering control from the transmitter. The SRS4200 receiver also enables you to quickly turn AVC on or off if you participate in organized racing.

Your Spektrum DX2E comes prebound to the vehicle; however, if you need to rebind or calibrate the receiver, see the following instructions.

**IMPORTANT:** You must use digital servos with the SRS4200 receiver. Using analog servos will reduce the performance of the system and may cause analog servos to overheat.



- 1 Insert the Bind Plug in the BIND port on the receiver.
- 2 Connect a fully charged battery pack to the ESC.
- 3 Power on the ESC. The orange LED flashes, indicating the receiver is in bind mode.
- 4 Center the ST TRIM and TH TRIM dials on the transmitter.
- 5 Press and hold the BIND button while powering on the transmitter.
- 6 Release the BIND button when the orange LED slowly flashes. The transmitter and receiver are linked when the orange LED is solid.
- 7 Pull the transmitter trigger to Full Throttle.
- 8 Push the transmitter trigger to Full Brake, then return the trigger to center.
- 9 Turn the transmitter steering wheel to Full Right.
- 10 Turn the transmitter steering wheel to Full Left, then return the steering wheel to center. The orange LED flashes once.
- 11 Remove the Bind Plug, then power off the receiver to save the settings.
- 12 Power off the transmitter.

## BEFORE RUNNING YOUR VEHICLE //////////////////////////////////////

- 1 Break in the differentials. While holding the chassis with only the left side tires firmly on the ground, give the car about 1/8 throttle for 30 seconds. The right side tires should spin freely during this time. Repeat this with only the right side tires firmly on the ground, allowing the left side tires to spin freely. Repeat this 2–3 times.
- 2 Check for free suspension movement. All suspension arms and steering components should move freely. Any binds will cause the vehicle to handle poorly.
- 3 Charge the battery.
- 4 Check the calibration of the ESC. If recalibration is required, follow the setup instructions.
- 5 Adjust the transmitter settings to your desired configuration.

## RUN TIME

The largest factor in run time is the capacity of the battery pack. A larger mAh rating increases the amount of run time experienced.

The condition of a battery pack is also an important factor in both run time and speed. The battery connectors may become hot during driving. Batteries will lose performance and capacity over time.

Driving the vehicle from a stop to full speed repeatedly will damage the batteries and electronics over time. Sudden acceleration will also lead to shorter run times.

### TO IMPROVE RUN TIMES

- » Clean and oil bearings often. If bearings are dirty, they will increase friction and cause reduced performance.
- » Keep your vehicle clean and maintained.
- » Allow more airflow to the ESC and motor.
- » Change the gearing to a lower ratio. A lower ratio decreases the operating temperature of the electronics. Use a smaller pinion gear or larger spur gear to lower the gear ratio.
- » Use a battery pack with a higher mAh rating.

### DRIVING PRECAUTIONS

- » Maintain sight of the vehicle at all times.
- » Routinely inspect the vehicle for loose wheel hardware.
- » Routinely inspect the steering assembly for any loose hardware. Driving the vehicle off-road can cause fasteners to loosen over time.
- » Do not drive the vehicle in tall grass. Doing so can damage the vehicle or electronics.
- » Stop driving the vehicle when you notice a lack of power. Driving the vehicle when the battery is overly discharged can cause the receiver to power off. If the receiver loses power, you will lose control of the vehicle.
- » Do not apply forward or reverse throttle if the vehicle is stuck. Applying throttle in this instance can damage the motor or ESC.
- » After driving the vehicle, allow the electronics to cool before driving the vehicle again. Remove the body of the vehicle to reduce cooling time.

## TUNING, ADJUSTING & MAINTAINING YOUR VEHICLE

- » Examine your vehicle on a regular basis.
- » Use a brush to remove dirt and dust.
- » Look for damage to the suspension arms and other molded parts.
- » Re-glue the tires to the wheels, if necessary.
- » Clean and oil all wheel bearings.
- » Use suitable tools to tighten fasteners.
- » Make sure the camber and steering linkages are not bent. Replace any bent linkages.
- » Adjust the Toe and Camber settings, if necessary.
- » Remove the shocks and inspect them for damage. Rebuild the shocks if oil is leaking.
- » Inspect electronics and batteries for exposed wires. Repair exposed wires with shrink-wrap, or replace the wire.
- » Make sure the ESC and receiver are secure on the chassis. Replace the double-sided tape, if necessary.
- » Power ON the transmitter. If the green LED is dim or off, replace the AA batteries in your transmitter.
- » Check the spur gear and pinion gear for wear.

### SERVICE/REPAIR

If any problems other than those covered in this manual arise, please call the appropriate electronics service department. Refer to the Warranty and Service Information section for the appropriate department to contact.

### CLEANING

Performance can be hindered if dirt gets in any of the moving suspension parts. Use compressed air, a soft paintbrush, or a toothbrush to remove dust or dirt. Avoid using solvents or chemicals as they can actually wash dirt into the bearings or moving parts, as well as cause damage to the electronics.

## TECHNICAL SPECIFICATIONS

### Type

Sensorless/Waterproof

### Constant/Peak

70A/290A

### Resistance

0.0012 Ohms

### Function

Forward Only with Brake  
Forward/Reverse with Brake

### Operation

Proportional forward,  
proportional reverse with braking delay

### Battery Type/ Input Voltage

2-3 cell Li-Po/Li-Fe or  
4-9 cell Ni-MH/Ni-Cd

### BEC Output

6V/3A

### Overload Protection

Thermal

### Dimensions (LxWxH)

1.24 x 1.08 x 1.30 in  
(31.5 x 27.5 x 33mm)

### Weight

2.61 oz (74 g) with wires

**NOTICE:** Always disconnect the battery from the ESC when you have finished operating your vehicle. The ESC's switch only controls power to the receiver and servos. The ESC will continue to draw current when connected to the battery, resulting in possible damage to the battery through over-discharge.

## ESC LED STATUS

- » No ESC LEDs will glow when there is no throttle input from the transmitter.
- » The red ESC LED glows when there is any throttle input from the transmitter.

## AUDIBLE WARNING TONES

- 1 Input voltage:** The ESC checks the input voltage when it is powered ON. If a voltage problem is detected, the ESC continuously sounds 2 beeps with a 1 second pause (xx-xx-xx). Power OFF the ESC and ensure the connections are secure and that the battery power is not too low for safe operation.
- 2 Radio connection:** The ESC checks radio signal input when it is powered ON. If a problem is detected, the ESC continuously sounds 1 beep with a 2 second pause (x--x--x). Power OFF the ESC and ensure the radio system is operating correctly.

## ESC CALIBRATION PROCEDURE

Ensure proper ESC function by calibrating the ESC to your transmitter inputs.

- 1** Power OFF the ESC.
- 2** Ensure your transmitter is powered ON, the throttle is not reversed, the throttle trim is neutral and the throttle travel range is at 100%.
- 3** Press the SET button while powering ON the ESC. Release the button as soon as the green LED starts to flash.
- 4** Calibrate the throttle points by pressing the SET button once after each step.
  - **Neutral (1 flash)** Leave the throttle at rest, untouched
  - **Full throttle (2 flashes)** Pull the throttle fully back
  - **Full brake/reverse (3 flashes)** Push the throttle fully forward
- 5** The motor vibrates for 3 seconds after the last step is completed.

## ESC FUNCTIONS AND MODES

The ESC includes programming options so you can adjust the way your vehicle performs. Refer to the included settings table to adjust the ESC for your driving conditions.

## ESC PROGRAMMING PROCEDURE

Programming is accomplished using the SET button on the ON/OFF switch.

### Programming the ESC

- 1** Connect a fully charged battery to the ESC.
- 2** Power ON the ESC.
- 3** Hold the SET button for 1 second until the green LED blinks, then release the SET button to enter programming mode.
- 4** Press and release the SET button as needed to get to the desired menu option (the green LED will blink corresponding to the menu item number).
- 5** When at the desired menu item, hold the SET button for 3 seconds until the red LED blinks.
- 6** Press the SET button to move among the settings based on how many times the red LED blinks (Refer to the table for more information).
- 7** Save the setting by holding the SET button for 3 seconds.
- 8** Power OFF the ESC and repeat the instructions above to change other settings.

**Tip:** If desired, the ESC programming can be returned to default settings by powering ON the ESC and holding the SET button for 5 seconds.

## Default Settings

PROGRAMMABLE ITEMS	PROGRAMMABLE VALUE							
	1	2	3	4	5	6	7	8
<b>1 Running Mode</b>	Forward Only with Brake	Forward/Reverse with Brake						
<b>2 Drag Brake Force</b>	0%	5%	10%	15%	20%	25%	30%	40%
<b>3 Low Voltage Cutoff Threshold</b>	non-protection	2.6V/Cell	2.8V/Cell	3.0V/Cell	3.2V/Cell	3.4V/Cell		
<b>4 Start Mode (Punch)</b>	Level 1	Level 2	Level 3	Level 4				
<b>5 Max Brake Force</b>	25%	50%	75%	100%				

## DESCRIPTIONS

### 1 Running Mode

- Forward Only with Brake**  
 Intended for competition use, this mode allows only forward and brake controls.
- Forward/Reverse with Brake**  
 This mode is the basic all-around mode, allowing forward, reverse and brake controls. To engage reverse while moving forward, apply the brake until the vehicle has come to a complete stop. Release the brake, then apply the brake again. While braking or in reverse, engaging the throttle will result in the vehicle immediately accelerating forward.

### 2 Drag Brake Force

Adjusts the amount of brake automatically applied when the throttle is returned to neutral. This simulates the engine braking effect of a full-scale vehicle, allowing improved turn-in and your vehicle's general response to controls.

### 3 Low Voltage Cutoff Threshold

This function helps to prevent battery over-discharge. The ESC continuously monitors the battery's voltage. If the voltage falls below the voltage threshold for 2 seconds, the output power shuts off and the red LED flashes twice repeatedly.

The cutoff threshold calculation is based on individual Li-Po cell voltage. For Ni-MH batteries, if the voltage battery pack is higher than 9.0V, it will be treated as a 3-cell Li-Po battery pack; if it is lower than 9.0V, it will be treated as a 2-cell Li-Po battery pack.

*Example:* for a 8.0V Ni-MH battery pack used with a 2.6V/cell threshold, it will be treated as a 2-cell Li-Po battery pack and the low-voltage cutoff threshold will be 5.2V (2.6x2=5.2). Using the optional Digital Program Box (DYN3748, sold separately), you can adjust the custom values for the cutoff threshold. Unlike the preset values, custom cutoff values are for the total battery voltage, not individual cell voltage.

### 4 Start Mode (Punch)

Sets the initial throttle punch when the car accelerates. Level 1 gives a very soft initial acceleration and level 4 gives a stronger initial acceleration.

### 5 Max Brake Force

Adjusts the maximum braking force. A higher value provides stronger braking, but can also cause the wheels to lock, resulting in loss of control of the car.

# DYNAMITE FUZE 540 4-POLE 3300KV SENSORLESS BRUSHLESS MOTOR

## GEARING

Your vehicle has been equipped with the optimal gearing for the stock platform. It offers an ideal balance between speed, power and efficiency. Should you decide to customize your vehicle with optional batteries or motors, it may be necessary for you to change the pinion or spur gear.

Installing a pinion gear with less teeth or a spur gear with more teeth will provide greater torque but will reduce top speed. Likewise, a pinion gear with more teeth or a spur gear with fewer teeth will reduce torque and increase top speed. Care should be taken when installing larger pinion gears as this can “overgear” the vehicle, resulting in overheating of the motor and ESC. When testing different gearing options, pay close attention to the temperature of the motor and speed control to ensure you are operating within the temperature range of the components. The motor or ESC should never be so hot that it cannot be touched. If temperatures are too hot, a different gearing combination with a lower pinion gear and/or higher spur gear is suggested.

## PRECAUTIONS

- » Never touch moving parts.
- » Never disassemble while the batteries are installed.
- » Always let parts cool before touching.

## ADJUSTING THE SLIPPER

Turn the 5mm adjustment nut clockwise (to the right) to reduce the slip or counterclockwise (to the left) to increase the slip.

## CHANGING THE PINION GEAR/GEAR RATIO

Your vehicle comes with the 20T pinion gear. To change to another pinion gear (sold separately), follow the directions below.

- 1 Unscrew the 3 screws holding the gear cover/motor mount in place.
- 2 Remove the motor gear cover.
- 3 Remove the pinion gear.
- 4 Remove the screws holding the motor and move to the appropriate holes (marked with the number of teeth on the pinion) and reinstall the screws.
- 5 Place the new pinion gear on the motor shaft.
- 6 Reinstall the gear cover.



## GEAR CHART //

### FINAL DRIVE RATIOS

		FINAL DRIVE RATIO		
		2S	3S	
Marginal Thermo OK	PINION	16T	14.52	14.52
		17T	13.66	13.66
		18T	12.91	12.91
		19T	12.23	12.23
		20T	11.61	11.61
		21T	11.06	11.06
		22T	10.56	10.56
		23T	10.10	10.10
		24T	9.68	9.68

### EXAMPLE

INTERNAL GEAR RATIO	2.67
SPUR	87
PINION	20
FINAL DRIVE RATIO	11.61

## SETTING THE GEAR MESH

The gear mesh has already been set at the factory, and setting it is only necessary when changing motors or gears.

Proper gear mesh (how gear teeth meet) is important to the performance of the vehicle. When the gear mesh is too loose, the spur gear could be damaged by the pinion gear of the motor. If the mesh is too tight, speed could be limited and the motor and ESC will overheat.

To set the gear mesh, screw the motor into the corresponding marked set of holes. For example, with a 20T pinion, the motor screws must be screwed into the holes labeled “20”.

## CHANGING THE TRAVEL ADJUST SETTINGS //////////////////////////////////////

- 1 Hold the trigger in the full brake position while powering on the transmitter. The LED flashes rapidly, indicating the programming mode is active.
- 2 **Throttle End Point** Continue holding full throttle. Turn the TH TRIM knob to adjust the full throttle end point.
- 3 **Brake End Point** Hold the trigger in the full brake position. Turn the TH TRIM knob to adjust the full brake end point. Return the trigger to the center position.
- 4 **Left Steering End Point** Hold the steering wheel in the full left position. Turn the ST TRIM knob to adjust the left end point.
- 5 **Right Steering End Point** Hold the steering wheel in the full right position. Turn the ST TRIM knob to adjust the right end point. Return the steering wheel to the center position.
- 6 Power off the transmitter to save the travel adjust settings.

The minimum Travel is 75%, and the Maximum travel is 150%.

**IMPORTANT:** If the travel is changed on the DX2E, you must rebind and calibrate the SRS4200.

## DISABLING THE STABILITY ASSIST FUNCTION //////////////////////////////////////

- 1 Insert a Bind Plug in the BIND port on the receiver.
- 2 Insert a second Bind Plug in the DISABLE port on the receiver.
- 3 Connect a fully charged battery pack to the ESC.
- 4 Power on the ESC. The orange LED flashes, indicating the receiver is in bind mode.
- 5 Center the ST TRIM and TH TRIM dials on the transmitter.
- 6 Press and hold the BIND button while powering on the transmitter.
- 7 Release the BIND button when the orange LED slowly flashes. The transmitter and receiver are linked when the orange LED is solid.
- 8 Pull the transmitter trigger to Full Throttle.
- 9 Push the transmitter trigger to Full Brake, then return the trigger to center.
- 10 Turn the transmitter steering wheel to Full Right.
- 11 Turn the transmitter steering wheel to Full Left, then return the steering wheel to center. The orange LED flashes once.
- 12 Remove the Bind Plugs, then power off the receiver to save the settings.
- 13 Power off the transmitter.

If you participate in organized racing, you may be required to turn Stability Assist off.

**IMPORTANT:** You must calibrate the receiver each time it is placed in bind mode.

To activate AVC, see the steps in “Calibrating the Receiver”.

## TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	SOLUTION
Vehicle does not operate	<ul style="list-style-type: none"> <li>» Battery not charged or connected</li> <li>» ESC switch not ON</li> <li>» Transmitter not ON or low battery</li> </ul>	<ul style="list-style-type: none"> <li>» Charge battery/connect</li> <li>» Turn ON ESC switch</li> <li>» Turn ON/replace batteries</li> </ul>
Motor runs but rear wheels don't move	<ul style="list-style-type: none"> <li>» Pinion not meshing with spur gear</li> <li>» Pinion spinning on motor shaft</li> <li>» Slipper too loose</li> <li>» Transmission gears stripped</li> <li>» Drive pin broken</li> </ul>	<ul style="list-style-type: none"> <li>» Adjust pinion/spur mesh</li> <li>» Replace pinion gear on motor</li> <li>» Check and adjust slipper</li> <li>» Replace transmission gears</li> <li>» Check and replace drive pin</li> </ul>
Steering does not work	<ul style="list-style-type: none"> <li>» Servo plug not in receiver properly</li> <li>» Servo gears or motor damaged</li> </ul>	<ul style="list-style-type: none"> <li>» Check if connected/all the way</li> <li>» Replace or repair servo</li> </ul>
Won't turn in one direction	<ul style="list-style-type: none"> <li>» Servo gears damaged</li> </ul>	<ul style="list-style-type: none"> <li>» Replace servo</li> </ul>
Motor does not run	<ul style="list-style-type: none"> <li>» Motor plugs loose</li> <li>» Motor wire broken</li> <li>» ESC damaged</li> </ul>	<ul style="list-style-type: none"> <li>» Plug in completely</li> <li>» Repair or replace as needed</li> <li>» Contact Horizon Hobby Product Support</li> </ul>
ESC gets hot	<ul style="list-style-type: none"> <li>» Motor over-gearred</li> <li>» Driveline bound up</li> </ul>	<ul style="list-style-type: none"> <li>» Use smaller pinion or larger spur gear on motor</li> <li>» Check wheels, suspension and transmission for binding</li> </ul>
Poor run time and/or sluggish acceleration	<ul style="list-style-type: none"> <li>» Battery not fully charged</li> <li>» Charger not allowing full charge</li> <li>» Slipper slipping too much</li> <li>» Motor worn out</li> <li>» Driveline bound up</li> </ul>	<ul style="list-style-type: none"> <li>» Recharge battery</li> <li>» Try another charger</li> <li>» Check/adjust slipper</li> <li>» Replace motor</li> <li>» Check wheels, transmission for binding</li> </ul>
Poor range and/or glitching	<ul style="list-style-type: none"> <li>» Transmitter batteries low</li> <li>» Vehicle battery low</li> <li>» Loose plugs or wires</li> </ul>	<ul style="list-style-type: none"> <li>» Check and replace</li> <li>» Recharge or replace</li> <li>» Check all wire connections and plugs</li> </ul>
Slipper won't adjust	<ul style="list-style-type: none"> <li>» Drive pin missing in shaft</li> <li>» Spur gear face worn out</li> </ul>	<ul style="list-style-type: none"> <li>» Replace drive pin</li> <li>» Replace spur gear and adjust slipper</li> </ul>
The front wheels oscillate	<ul style="list-style-type: none"> <li>» The steering gain is set too high</li> </ul>	<ul style="list-style-type: none"> <li>» Turn down the steering gain</li> </ul>
The front wheels turn the wrong way when the car slides/rotates	<ul style="list-style-type: none"> <li>» The steering channel was reversed after calibration</li> </ul>	<ul style="list-style-type: none"> <li>» Rebind and calibrate</li> </ul>
The throttle does not reduce when the car slides/rotates	<ul style="list-style-type: none"> <li>» The throttle channel was reversed after calibration</li> </ul>	<ul style="list-style-type: none"> <li>» Rebind and calibrate</li> </ul>

# LIMITED WARRANTY //////////////////////////////////////

## WHAT THIS WARRANTY COVERS

Horizon Hobby, LLC, (Horizon) warrants to the original purchaser that the product purchased (the “Product”) will be free from defects in materials and workmanship at the date of purchase.

## WHAT IS NOT COVERED

This warranty is not transferable and does not cover (i) cosmetic damage, (ii) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (iii) modification of or to any part of the Product, (iv) attempted service by anyone other than a Horizon Hobby authorized service center, (v) Product not purchased from an authorized Horizon dealer, or (vi) Product not compliant with applicable technical regulations.

OTHER THAN THE EXPRESS WARRANTY ABOVE, HORIZON MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER’S INTENDED USE.

## PURCHASER’S REMEDY

Horizon’s sole obligation and purchaser’s sole and exclusive remedy shall be that Horizon will, at its option, either (i) service, or (ii) replace, any Product determined by Horizon to be defective. Horizon reserves the right to inspect any and all Product(s) involved in a warranty claim. Service or replacement decisions are at the sole discretion of Horizon. Proof of purchase is required for all warranty claims. SERVICE OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE PURCHASER’S SOLE AND EXCLUSIVE REMEDY.

## LIMITATION OF LIABILITY

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF HORIZON HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability. If you as the purchaser or user are not prepared to accept the liability associated with the use of the Product, purchaser is advised to return the Product immediately in new and unused condition to the place of purchase.

## LAW

These terms are governed by Illinois law (without regard to conflict of law principals). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Horizon reserves the right to change or modify this warranty at any time without notice.

## WARRANTY SERVICES

### QUESTIONS, ASSISTANCE, AND SERVICES

Your local hobby store and/or place of purchase cannot provide warranty support or service. Once assembly, setup or use of the Product has been started, you must contact your local distributor or Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please visit our website at [www.horizonhobby.com](http://www.horizonhobby.com), submit a Product Support Inquiry, or call the toll free telephone number referenced in the Warranty and Service Contact Information section to speak with a Product Support representative.

### INSPECTION OR SERVICES

If this Product needs to be inspected or serviced and is compliant in the country you live and use the Product in, please use the Horizon Online Service Request submission process found on our website or call Horizon to obtain a Return Merchandise Authorization (RMA) number. Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. An Online Service Request is available at [http://www.horizonhobby.com/content/\\_service-center\\_render-service-center](http://www.horizonhobby.com/content/_service-center_render-service-center). If you do not have internet access, please contact Horizon Product Support to obtain a RMA number along with instructions for submitting your product for service. When calling Horizon, you will be asked to provide your complete name, street address, email address and phone number where you can be reached during business hours. When sending product into Horizon, please include your RMA number, a list of the included items, and a brief summary of the problem. A copy of your original sales receipt must be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

**NOTICE:** Do not ship Li-Po batteries to Horizon. If you have any issue with a LiPo battery, please contact the appropriate Horizon Product Support office.

### WARRANTY REQUIREMENTS

**For Warranty consideration, you must include your original sales receipt verifying the proof-of-purchase date.** Provided warranty conditions have been met, your Product will be serviced or replaced free of charge. Service or replacement decisions are at the sole discretion of Horizon.

### NON-WARRANTY SERVICE

**Should your service not be covered by warranty, service will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost.**

By submitting the item for service you are agreeing to payment of the service without notification. Service estimates are available upon request. You must include this request with your item submitted for service. Non-warranty service estimates will be billed a minimum of 1/2 hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashier's checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for service, you are agreeing to Horizon's Terms and Conditions found on our website [http://www.horizonhobby.com/content/\\_service-center\\_render-service-center](http://www.horizonhobby.com/content/_service-center_render-service-center).

**ATTENTION: Horizon service is limited to Product compliant in the country of use and ownership. If received, a non-compliant Product will not be serviced. Further, the sender will be responsible for arranging return shipment of the un-serviced Product, through a carrier of the sender's choice and at the sender's expense. Horizon will hold non-compliant Product for a period of 60 days from notification, after which it will be discarded.**

### WARRANTY AND SERVICE CONTACT INFORMATION

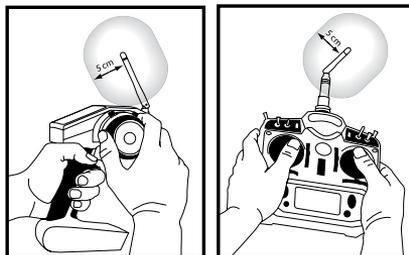
COUNTRY OF PURCHASE	HORIZON HOBBY	CONTACT INFORMATION	ADDRESS
United States of America	Horizon Service Center (Repairs and Repair Requests)	servicecenter.horizonhobby.com/RequestForm/	4105 Fieldstone Rd Champaign, Illinois 61822 USA
	Horizon Product Support (Product Technical Assistance)	www.quickbase.com/db/bghj7ey8c?a=GenNewRecord 888-959-2306	
	Sales	sales@horizonhobby.com 888-959-2306	
United Kingdom	Service/Parts/Sales: Horizon Hobby Limited	sales@horizonhobby.co.uk +44 (0) 1279 641 097	Units 1-4 Ployters Rd Staple Tye Harlow, Essex CM18 7NS United Kingdom
Germany	Horizon Technischer Service	service@horizonhobby.de +49 (0) 4121 2655 100	Christian-Junge-Straße 1 25337 Elmshorn
	Sales: Horizon Hobby GmbH		
France	Horizon Hobby SAS	infofrance@horizonhobby.com +33 (0) 1 60 18 34 90	11 Rue Georges Charpak 77127 Lieusaint, France
China	Service/Parts/Sales: Horizon Hobby - China	info@horizonhobby.com.cn +86 (021) 5180 9868	Room 506 No. 97 Changshou Rd. Shanghai, China 200060

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**ANTENNA SEPARATION DISTANCE**

When operating your Spektrum transmitter, please be sure to maintain a separation distance of at least 5 cm between your body (excluding fingers, hands, wrists, ankles and feet) and the antenna to meet RF exposure safety requirements as determined by FCC regulations.

The following illustrations show the approximate 5 cm RF exposure area and typical hand placement when operating your Spektrum transmitter.



AT	BE	BG	CZ	CY	DE	DK
EE	ES	FI	FR	GR	HR	HU
IE	IT	LT	LU	LV	MT	NL
PL	PT	RO	SE	SI	SK	UK
IS	LI	NO	CH			

**CE** **DECLARATION OF CONFORMITY**  
(in accordance with ISO/IEC 17050-1)

No. HH2014041101

Product(s): 1:10 4WD Ford Fiesta RallyCross Car  
(Spektrum DX2E transmitter and SRS4200 receiver included)

Item Number(s): VTR03010

Equipment class: 2

The object of declaration described above is in conformity with the requirements of the specifications listed below, following the provisions of the European R&TTE directive 1999/5/EC, EMC Directive 2004/108/EC and LVD Directive 2006/95/EC:

**EN 300-328 V1.7.1: 2006**

**EN301 489-1 V1.9.2: 2012**

**EN301 489-17 V2.1.1: 2009**

**EN60950-1:2006+A11:2009+A1:2010+A12: 2011**

**EN55022:2010 + AC:2011**

**EN55024:2010**

Signed for and on behalf of:

Horizon Hobby, LLC  
Champaign, IL USA  
April 11, 2014

Robert Peak  
Chief Financial Officer  
Horizon Hobby, LLC

**IC INFORMATION** //

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

**INSTRUCTIONS FOR DISPOSAL OF WEEE BY USERS IN THE EUROPEAN UNION**

This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.