



# 40A Brushed Crawler Combo, ESC and 35T Motor

## Instruction Manual | Manuel d'utilisation

DYNS0900



ENGLISH

### 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 horizonhobby.com or towerhobbies.com and click on the support or resources 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:

**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.

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

**NOTICE:** Procedures, which if not properly followed, create a possibility of physical property damage AND a little or no possibility of 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. 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 attempt disassembly, use with incompatible components or augment product in any way without the approval of 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.**

### WATERPROOF COMPONENT

Your new Horizon Hobby® Dynamite® 60A Brushed Waterproof ESC has been designed and built to allow you to operate the product in many "wet conditions", including puddles, creeks, wet grass, snow and even rain.

While waterproof, this component has not been designed to be immersed in water for long periods of time and should NOT be treated like a submarine. In addition, most metal parts, including any 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 ESC and to keep the warranty intact, it should only be used as described in the "Usage Conditions" section of this manual. Additionally, the procedures described in the "Wet Conditions Maintenance" section 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 your vehicle in those conditions.

**CAUTION:** Failure to exercise caution while using this product and comply 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 ESC.
- Do not operate your ESC 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.

### USAGE CONDITIONS

Your ESC will operate successfully in any of the following, individual-usage scenarios:

**NOTICE:** This ESC is waterproofed for use in wet conditions. Make sure the other components in your vehicle are waterproof or water-resistant before driving in wet conditions.



### INCLUDED COMPONENTS

35T 540 Size Brushed Motor	DYNS1230
Waterproof Brushed Crawler ESC	DYNS2214
Male to Male Extension for Auxiliary Input	SPMA3041

### MOTOR SPECIFICATIONS

Motor Type	540 Sized Brushed, Open Endbell (Rebuildable)
Turns	35
Rotor	Precision Balanced 3 Slot
Vehicle Type	1/10 Rock Crawler - Slow Speed Applications Requiring Precise Movement Control
Brushes	Replaceable
Bearings	Oversized Rubber Sealed Ball Bearings
Dimensions	53mm Long x 36mm Diameter (2.1 in Long x 1.4 in Diameter)
Weight	169g (6 oz)
Motor Shaft	3.12mm (1/8th inch) With Flat Spot For Pinion Gear Set Screw
Mounting threads	M3 @ 26mm Spacing Center to Center
Timing	Adjustable
Power Connector	3.5mm Bullet
Cells	2S-3S LiPo/ 6-9 cell NiMH

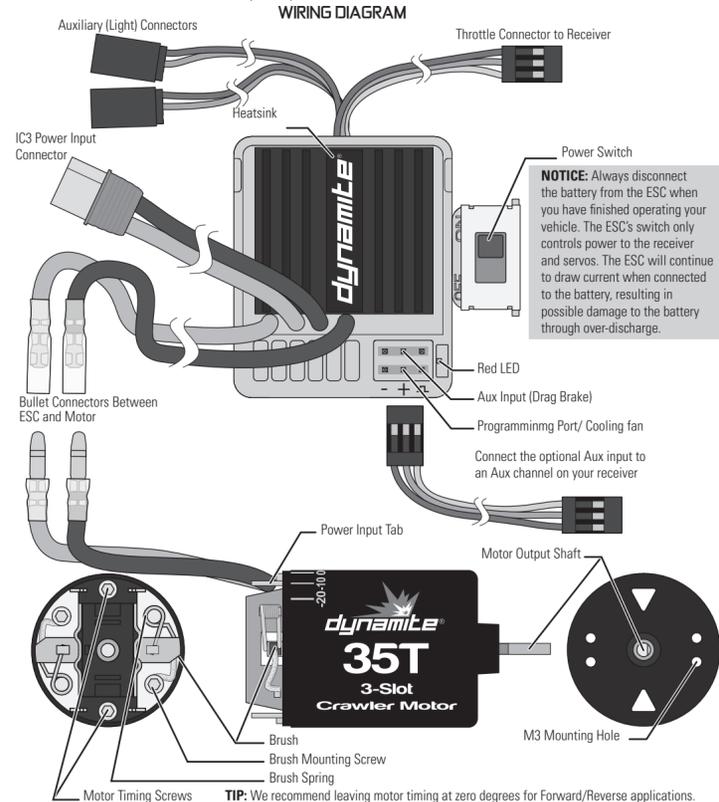
### ESC SPECIFICATIONS

Type	Brushed
Constant/Peak	40A/180A
Function	Forward/Reverse (Crawler Mode, Default) Forward/Brake/Reverse, Forward/Brake (Program Card DYNS3005 Required)
Auxiliary Input	Adjustable Drag Brake
Programming Port	Optional Programming Box or Cooling Fan (Power Supplied by BEC)
Auxiliary Power Outputs	(2) Standard Female Servo Connectors for Lights, etc. @ 6V (Power Supplied by BEC)
Vehicle Type	1/10 Rock Crawler
Optional Features	Programming Menu Only Accessible With Optional DYNS3005 Program Card
Battery Type/Input Voltage	2-3 cell Li-Po/Li-Fe; 5-9 cell Ni-MH/Ni-Cd
Recommended Motor Type	540-/550-Size Motors
Compatible Motors (Based on Battery Voltage)	Below 8.4V; Down to 12T Below 12.6V; Down to 35T
BEC Output	6V/3A (Shared Between Receiver, Auxiliary Light Output, and Cooling Fan)
Dimensions	46.5mm x 34mm x 28.5mm (1.83 in x 1.12 in)
Weight	68 g (2.4 oz) With Wires
Battery Connector	IC3™ Connector (EC3™ compatible)
Motor Connector	3.5mm Bullet

### QUICK START

The quick start setup guide will get you running quickly using the ESC's default settings.

- Mount the ESC and motor in your car.
- Connect the ESC to the motor.
- Connect the ESC receiver lead to the throttle port on your receiver.
- Ensure the ESC switch is OFF.
- Connect a fully charged battery to the ESC. Power ON the ESC.
- Calibrate the ESC to the transmitter.



**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.

**TIP:** We recommend leaving motor timing at zero degrees for Forward/Reverse applications.

### MOUNTING THE SPEED CONTROL

- Mount the ESC in the location specified by your vehicle's instruction manual, or in an area with adequate airflow and protection from damage.
- Ensure all wiring connections can be reached prior to mounting.
- Use double-sided foam tape on the bottom of the case to secure the ESC in position.
- Secure all wiring and ensure heatsink has access to airflow.
- The switch can be mounted to the side of the ESC with the integrated slide mount, or mounted elsewhere with double-sided foam tape.

### ESC CALIBRATION PROCEDURE

- Ensure proper ESC function by calibrating the ESC to your transmitter inputs.
- Begin with no battery connected.
  - Ensure your transmitter is powered ON, the throttle is not reversed, the throttle trim is neutral and the throttle travel range is at 100%. Disable any special functions such as ABS, etc.
  - Keep the throttle at neutral and power ON the ESC.
  - The ESC automatically calibrates the throttle range after 3 seconds.
  - The ESC LED will blink and the motor will beep to indicate the battery mode selection.
  - The ESC LED will blink a number of times to show the current drag brake setting with no motor beeps.
  - One long LED blink and one long beep will indicate when the ESC is ready to run.

### ADJUSTABLE DRAG BRAKE (OPTIONAL)

The ESC has a port to connect a jumper to an auxiliary channel on your receiver. When connected, the auxiliary channel will manage the drag brake. You can choose to configure your transmitter several different ways to suit your needs. We recommend a linear switch on your transmitter, giving you to easy access to choose from light to strong drag brake.

If the Aux jumper for the drag brake is not installed, the drag brake can be set from the programming menu. It is defaulted to 70%.

### PROGRAMMING

The ESC may be programmed from the optional Dynamite DYNS3005 Program Card.

To change settings with the programming box:

- Begin with no battery connected.
  - Connect the cable for the programming box into the programming port as shown.
  - Connect a battery and power ON the ESC.
  - Select the programming choices.
  - Power off the ESC.
  - Disconnect the cable for the programming box.
- The programming port may be used to power a cooling fan for the ESC.

### MOUNTING THE MOTOR

- Install the pinion gear for your vehicle (not included) on the motor shaft with blue thread locking compound. Verify the pinion is spaced correctly for your vehicle to fully mesh with the spur gear.

**NOTICE:** Verify the mounting screws do not protrude more than 3mm into the motor or the motor may be permanently damaged.

- Mount the motor with the 3mm motor mounting screws provided with your vehicle and set the gear mesh.
- Connect the red power connectors together and the black power connectors together between the ESC and the motor.
- If you need to reverse the motor direction, reverse the power connections.

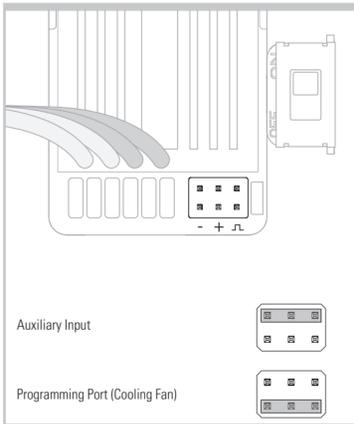
### BATTERY MODE TYPE SELECTION

The battery mode type is set with the throttle input during power up. To leave the battery mode without changes, power the vehicle on with the throttle at neutral. Complete ESC Calibration before changing the battery mode type.

To change the battery mode selection:

- Connect a battery to the ESC with the power switch in the off position.
- Hold full throttle while turning the power switch on. Continue to hold full throttle for eight seconds until the motor emits a sound, indicating the mode has changed. The mode selection will cycle to the next option each time you complete this process.

Upon powering on the ESC normally, the LED will blink and the motor will beep once to indicate NiMH Mode, twice to indicate 2 cell LiPo Mode, and three times to indicate 3 cell LiPo Mode.



### LOW VOLTAGE CUTOFF PROTECTION

If the voltage of the battery drops below the threshold for 2 seconds, the ESC will enter the low voltage protection mode.

BATTERY TYPE SETTING	THRESHOLD	PROTECTION
2S-3S Li-Po	3.3V per cell	Power at 40%
	3.1V per cell	Power Off
5-7 Ni-MH	5V	Power at 40%
	4.5V	Power Off

### TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	SOLUTION
ESC ON - No motor function, audible tone or LED	Battery/connection issue	Recharge/replace battery. Secure all connections
	Damaged ESC/switch	Repair/replace ESC switch/ESC
Motor - Stops and LED blinks	Damaged motor	Repair/replace
	Low voltage protection	When the ESC LED blinks, recharge/replace battery
Motor - Accelerates irregularly	Overheat protection	When the LED blinks, let motor/ESC cool, change set up or gearing to avoid overheating
	Battery issue	Repair damaged wiring/replace battery
Motor - Does not turn continuously in response to throttle	Incorrect gearing	Adjust/replace gearing
	Worn or damaged motor	Repair/replace motor
Motor - Slows but will not stop	ESC/motor damaged	Repair/replace wiring or motor/ESC
	Incorrect transmitter/ESC calibration	Adjust throttle travel/other throttle settings on the transmitter/ESC. Repeat the ESC Calibration Procedure
Steering servo - Operates; motor does not run	Damaged motor	Test the motor apart from the vehicle system, repair/replace motor as needed
	Incorrect transmitter/ESC calibration	Adjust throttle travel/other throttle settings on the transmitter/ESC. Repeat the ESC Calibration Procedure
Steering/motor - Do not function	Low battery voltage	Recharge/replace
	Wrong model memory selected on transmitter	Select correct model settings on your transmitter, refer to transmitter and/or receiver manual
Vehicle - Does not operate at full speed	Receiver not bound to transmitter	Bind transmitter to receiver, refer to transmitter and/or receiver manual
	Battery issue	Recharge/replace
Vehicle - Does not operate at full speed	Incorrect transmitter/ESC calibration	Adjust throttle travel/other throttle settings on the transmitter/ESC. Repeat the ESC Calibration Procedure

### LED INDICATOR AND MOTOR SOUNDS

Upon powering on the ESC, the LED will blink and the motor will emit a series of beeps to indicate its status. First it will display the battery mode selection, second the drag brake setting, and then it will indicate it is ready to operate.

FEATURE	LED STATUS	MOTOR SOUND
1. Ni-MH/Ni-CD Battery 2S Li-Po Battery v Li-Po Battery	1 Blink	1 Short Beep
	2 Blinks	2 Short Beeps
	3 Blinks	3 Short Beeps
2. Drag Brake Setting	1-9 Blinks	No Sound
3. ESC Ready	1 Long Blink	1 Long Beep

DURING OPERATION	LED STATUS
Stop	OFF
Forward partial throttle	Blinks
Full Throttle	Solid
Reverse partial throttle	Blinks
Full Throttle	Solid
Partial Brake	Blinks
Full Brake	Solid
Battery Low Voltage	Blinks
Overheat	Blinks

### PROGRAMMABLE FEATURES - OPTIONAL PROGRAMMING BOX DYNS3005 REQUIRED

PROGRAMMABLE FEATURE	1	2	3	4	5	6	7	8	9
1. Running mode	Fwd/Brk	Fwd/Rev/Brk	Fwd/Rev						
2. Lipo Battery	On	Off							
3. Cutoff Voltage	Disable	Auto (low)	Auto (Medium)	Auto (High)					
4. Start-up Force	0%	2%	4%	6%	8%	10%	12%	14%	16%
5. Max Forward Force	25%	50%	75%	100%					
6. Max Reverse Force	25%	50%	75%	100%					
7. Max Brake Force	0%	12.5%	25%	37.5%	50%	62.5%	75%	87.5%	100%
8. Initial Brake Force	0%	6.25%	12.5%	18.75%	25%	31.25%	37.5%	43.75%	50%
9. Drag Brake	0%	5%	10%	50%	60%	70%	80%	90%	100%
10. Drag Brake Rate Control (Level)	1	2	3	4	5	6	7	8	9
11. Neutral Range	3%	4%	5%	6%	7%	8%	9%	10%	12%
12. Start Mode/Punch (Level)	1	2	3	4	5	6	7	8	9
13. PWM Frequency	1K	2K	4K	8K	16K				
14. Freewheeling	Enabled	Disabled							

Black out cells with white text represent the default settings

### 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 for a period of 1 year from 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 or (vii) use that violates any applicable laws, rules, or 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, 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 https://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 Li-Po 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 ½ 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.

**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/	2904 Research Rd Champaign, Illinois, 61822 USA
	Horizon Product Support (Product Technical Assistance)	productsupport@horizonhobby.com 877-504-0233	
	Sales	websales@horizonhobby.com 800-338-4639	

### FCC INFORMATION

#### Supplier's Declaration of Conformity

##### Brushed Crawler Combo 35T(DYNS0900)

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.

**CAUTION:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Horizon Hobby, LLC  
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Email: compliance@horizonhobby.com  
Web: HorizonHobby.com

### IC INFORMATION

**CAN ICES-3 (B)/NMB-3(B)** 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.

