



PART LIST

PARTS	
Item No.	Item Description
111007F	3mm Flat Locknut (10)
111007ST	3mm Steel Locknut (10)
111160	4mm Special Wheel Lock Nut (4)
111166	R8 Angled Body Clip (10)
111167	2.6mm Lock Nut (10)
115001BK	Ball End & Steel Ball (6) BLACK
115030	5X4mm Ball Stud(10)
116137	3x70mm Hardened Adjustable Rod (2)
116201	2x10.8mm Pin (10)
116203	E-clip 5 (10)
116237	2.5x11.8mm Pin (10)
116240	2x9.8mm Pin (10)
116241	3M Double Side Tape 4x2.2cm
116242	EVA Tape 3x14cm
116247	2x16.8mm Pin (10)
123516BU	3.5x16mm Steel BH Screw (6)
126208C-5	2.5x8mm Steel Cap Screw (6)
126306	3x6mm Steel FH Screw (6)
126306BU	3x6mm Steel Button Head Screw (6)
126308	3x8mm Steel F.H. Screw (6)
126308BU	3x8mm Steel Button Head Screw (6)
126308C	3x8mm Steel Cap Screw (6)
126308SBU	M3X8mm SBH Screw(10)
126310	3x10mm Steel F.H. Screw (6)
126310BU	3x10mm Button Head Screw (6)
126310C	3x10mm Cap Screw (6)
126312	3x12mm Steel F.H. Screw (6)
126312BU	3x12mm Button Head Screw (6)
126312C	3x12mm Cap Screw (6)
126314	3x14mm Steel FH Screw (6)
126314BU	3x14mm Button Head Screw (6)
126314C	3x14mm Cap Screw (6)
126316C	3x16mm Cap Screw (6)
126318C	3x18mm Cap Screw (6)
126320S	3x20m Set Screw (6)
126322C	3x22mm Cap Screw (6)
126325C	3x25mm Cap Screw (6)
126330C	3x30mm Cap Screw (6)
126332C	3x32mm Cap Screw (6)
126340C	3x40mm Cap Screw (6)
126345C	3x45mm Cap Screw (6)
126370C	3x70mm Cap Screw (6)
126404S	4x4mm Set Screw (6)
126408S	4x8mm Set Screw (6)
130103	4.2x10x0.2mm Shim (6)
130109	5.2x15x0.3 Washer (10)
130116	3.2x8x0.7 Washer (10)
130138	3.5x7x1 Washer (10)
130139	5.2x15x0.5 Washer (10)

PARTS	
Item No.	Item Description
150612	6x12x4mm Bearing (4)
150814	8x14x4mm Bearing (2)
151218	12x18x4mm Bearing (4)
152005	O-Ring 4.7X1.4mm(10)
152011	3.8x1.9 O-RING (10)
191003	THOR WP-1040ESC
191023	THOR 3657 Brushed Motor 2-3S Lipo
191027	THOR GT2E 2.4G Transmitter w/Receiver
191028	THOR GT2E 2.4G Receiver
191029	S901 Servo 9KG
503140	Long Ball Cup 5mm (6)
510101	E5 Complete Differential Kit (F/R)
510102	E5 Bevel Gear -43T/11T
510103	E5 F/R Differential Outdrive (2)
510104	E5 Differential Case Gasket (4)
510105	E5 Differential Bevel Shaft (2)
510106	E5 Differential Bevel Gear Set (for 1 diff)
510107	E5 Bevel Gear Case
510108	E5 Spur Gear-46T
510109	E5 Spur Gear Hub
510110	E5 Spur Gear Shaft
510111	E5 Spur Gear Shaft Outdriver
510112	E5 C-Clip 9.8x1.1mm (4)
510114	E5 Shock Body (2)
510115	E5 Shock Bladder (4)
510116	E5 Shock Piston (4)
510117	E5 Shock Spring Holder
510119	E5 Shock O-Ring & Washer
510120BK	E5 Shock Spring (2)-BK
510121	E5 Shock Pivot Ball Joints (4)
510122	E5 Front Skip Plate
510123	E5 Front Bumper
510124	E5 Front LED Light
510125	E5 Differential Box
510125	E5 Differential Box
510126	E5 Lower Arm Mount (2)
510127	E5 Shock Tower
510128	E5 Shock Pivot Ball Mount (2)
510129	E5 Pin Stopper (4)
510130	E5 Universal Driveshaft (2)
510131	E5 Upper Arm (2)
510132	E5 Lower Arm (2)
510133	E5 Steering Block (2)
510134	E5 Pivot Ball (9mm) (4)
510135	E5 Wheel Hexes 14mm (4)
510136	E5 Mounted Tire (Pair)
510137	E5 Lower Arm Hinge Pin (2)
510138	E5 Upper Arm Hinge Pin (2)
510140	E5 Center Driveshaft - Long

PARTS	
Item No.	Item Description
510141	E5 Chassis linkage block
510142	E5 Body Post (F/R)
510143	E5 Body Post Mount (F/R)
510145	E5 Servo Saver Inner Post (2)
510146	E5 Servo Saver Post
510147	E5 Servo Saver Spring
510148	E5 Steering Linkage Plate
510149	E5 Servo Saver Nylon Parts
510150	E5 Center Driveshaft - Short
510151	E5 Wheelie Linkage
510152	E5 Wheelie Lower Mount
510153	E5 Wheelie Upper Mount
510154	E5 Wheelie Wheel
510155	E5 Pivot Ball (5mm) (6)
510157	E5 Bushing 4x7x2.35 (4)
510158	E5 Chassis
510159	E5 Waterproof Receiver Box
510160	E5 Battery Straps (2)
510161	E5 Battery Mount
510162	E5 ESC Cover
510163	E5 Stainless Sand Filter (2)
510164	E5 Central linkage Plate
510165	E5 Adjust Motor Mount
510166	E5 Central Case
510167	E5 Extension Cord
510180	E5 Center Driveshaft Joint (2)
510181	E5 C-Clip 12x1.4mm (4)
510182	E5 Servo Arm - Short (Futaba) (2)
510183	E5 Rear Driveshaft (2)
510184	E5 Rear Outdrive (2)
510185	E5 Shims for Rear Wing (2)
510186	E5 Rear Wing
510187	E5 Rear Wing Support
510188	E5 Taillight Holder
510189	E5 LED Taillight
510190C	E5 HX Body Shell - Clear
510190B	E5 HX Body Shell - Blue
510190G	E5 HX Body Shell - Green
510190O	E5 HX Body Shell - Orange
510190R	E5 HX Body Shell - Red
510210	E5 Shock Absorber Set (2)
510211	E5 Shock Shaft for 510210 (2)
K6310-350	K Factory Shock Oil 70ml/2.5oz #350
K6330-7000	K Factory Diff Oil 40ml #7000
K6602-12	M1.0 Pinion Gear for 5mm Shaft 12T

INSTRUCTION MANUAL



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CE 61671
Made In Taiwan



Thanks for purchasing our electronic speed controller(ESC). The power system for RC model can be very dangerous, please read this manual carefully. In that we have no control over the correct use, installation, application, or maintenance of our products, no liability shall be assumed nor accepted for any damages, losses or costs resulting from the use of the product.

【FEATURES】

1. Water-proof and dust-proof for all weather races.
2. Small size with built-in capacitor module.
3. Automatic throttle range calibration, easy to use.
4. Multiple protections: Low voltage cut-off protection for Lipo or NiMH battery / Over-heat protection / Throttle signal loss protection.
5. Easily programmed with the jumpers.

【SPECIFICATIONS】

Model		WP-1040-BRUSHED WP-1040-BRUSHED-Crawler& Boat *	WP-1060-BRUSHED
Cont. / Burst Current		Forward: 40A / 180A Backward: 20A / 90A	Forward: 60A / 360A Backward: 30A / 180A
Input		2-3S Lipo, 5-9 Cells NiMH	
Cars Applicable		1:10 on-road, off-road Buggy, Truggy, SCT 1:10 Crawler, Tank & Boat	
Motor Limit	2S Lipoor 5-6 cells NiMH	540 or 550 size motor ≥12T or RPM < 30000 @7.2V	540 or 550 size motor ≥8T or RPM <45000 @7.2V
	3S Lipo or 7-9 cells NiMH	540 or 550 size motor ≥18T or RPM < 20000 @7.2V	540 or 550 size motor ≥13T or RPM <30000 @7.2V
	Resistance	Fwd: 0.002 Ohm, Bwd: 0.004 Ohm	Fwd: 0.0008 Ohm, Bwd: 0.0016 Ohm
	Built-in BEC	2A/6V (Linear mode BEC)	3A/6V (Switch mode BEC)
Dimension& Weight	WP-1040-BRUSHED: 46.5*34*28.5, 65g WP-1040-BRUSHED-CRAWLER: 46.5*34*28.5, 70g		36*30*18, 40g
Model		WP-1625-BRUSHED WP-1625-BRUSHED-Crawler	WP-860-DUAL BRUSHED
Cont. / Burst Current		Forward: 25A / 100A Backward: 25A / 100A	Forward: 60A / 360A Backward: 30A / 180A
Input		2-3S Lipo, 5-9 Cells NiMH	
Cars Applicable		1:18 & 1:16 on-road, off-road 1:18 & 1:16 Crawler and Boat	
Motor Limit	2S Lipoor 5-6 cells NiMH	280, 370 or 380 size motor or RPM < 30000 @7.2V	540, 550 or 775 size motor ≥12T or RPM < 30000 @7.2V
	3S Lipo or 7-9 cells NiMH	280, 370 or 380 size motor or RPM < 20000 @7.2V	540, 550 or 775 size motor ≥18T or RPM <20000 @7.2V
	4S Lipoor 10-12cells NiMH	Not Available	540, 550 or 775 size motor ≥24T or RPM <15000 @7.2V
	Resistance	Fwd: 0.003 Ohm, Bwd: 0.003 Ohm	Fwd: 0.001 Ohm, Bwd: 0.002 Ohm
Built-in BEC		1A/6V(Linear mode BEC)	3A/5V(Switch mode BEC)
Dimension& Weight	34mm*24mm*14mm, 23.5g		46mm*36mm*26.3mm, 73g

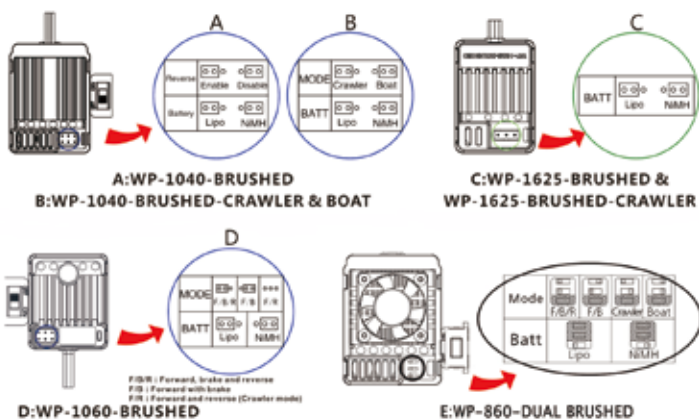
* There are 2 kinds of WP-1040-BRUSHED-Crawler& Boat speed controllers, one has 1 output for 1 motor, and the other one has 2 outputs for 2 motors (2 motors work synchronously).

** The WP-860-DUAL BRUSHED has 2 outputs to drive 2 motors synchronously. When driving 2 motors, the Turns of the motors need to be increased.

【BEGIN TO USE】

1. Connect the ESC, motor, receiver, battery and servo according to the following diagram

"+" and "-" wires of the ESC are connected to the battery pack.
Attention: The incorrect polarity will damage the ESC immediately.



PROTECTION FUNCTIONS

1. Low voltage Cut-off (LVC) protection: If the voltage of battery pack is lower than the threshold for 2 seconds, the ESC will enter the protection mode. When the car stops, the red LED blinks to indicate the low voltage cut-off protection has been activated.

Table A: LVC protection for WP-1060-BRUSHED, WP-1040-BRUSHED, WP-860-DUAL BRUSHED (F/B/R or F/B mode).

2S Lipo	3S Lipo	4S Lipo	5-9 cells NiMH
Output reduces 50% at 6.5V Output cuts off at 6.0V, cannot be recovered	Output reduces 50% at 9.75V Output cuts off at 9.0V, cannot be recovered	Output reduces 50% at 13V Output cuts off at 12V, cannot be recovered	Output reduces 50% at 4.5V Output cuts off at 4.0V, cannot be recovered

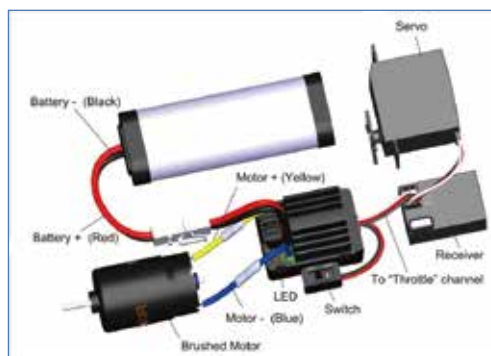
Table B: LVC protection for WP-1625-BRUSHED-Crawler, WP-1040-BRUSHED-Crawler&Boat, WP-860-DUAL BRUSHED (Crawler or Boat mode).

2S Lipo	3S Lipo	4S Lipo	5-9 cells NiMH
Output cuts off at 6.5V. If the throttle stick moves to neutral and then up again, the output can be recovered to 50%. If the voltage drops to 6.5V again, the above process repeats in circles.	Output cuts off at 9.75V. If the throttle stick moves to neutral and then up again, the output can be recovered to 50%. If the voltage drops to 9.75V again, the above process repeats in circles.	Output cuts off at 13V. If the throttle stick moves to neutral and then up again, the output can be recovered to 50%. If the voltage drops to 13V again, the above process repeats in circles.	Output cuts off at 4.5V. If the throttle stick moves to neutral and then up again, the output can be recovered to 50%. If the voltage drops to 4.5V again, the above process repeats in circles.

2. Over-heat protection: When the internal temperature of the ESC is higher than 100 Celsius degree or 212 Fahrenheit degree for 5 seconds, the ESC will reduce and cut off the output power. When the car stops, the red LED blinks to indicate the over-heat protection has been activated. If the ESC cools down to 80 Celsius degree (176 Fahrenheit degree) the output power is recovered to normal state.
3. Throttle signal loss protection: The ESC will cut off the output power if the throttle signal has been lost for 0.1 second. The "Fail Save" function of the radio system is strongly recommended to be activated.

THE DIFFERENCE BETWEEN "BRUSHED" AND "BRUSHED-CRAWLER& BOAT" ESC

1. "Brushed" and "Brushed-Crawler& Boat" ESCs have different backward-running modes. "Brushed" ESC uses "Double-Click" method to make the car go backward. When you move the throttle stick from forward zone to backward zone for the first time, the ESC begins to brake the motor, the motor speeds down but still running, so the backward action is NOT happened at this moment. When the throttle stick is moved to the



The control cable of the ESC (three wires with black, red and white color) is connected to the throttle channel of the receiver (Usually CH2). The "Motor +" and "Motor -" wires are connected to ESC without any order. If the motor runs in the opposite direction, please swap these two wire connections.

2. Set the Transmitter

Please set the "D/R", "EPA" and "ATL" to 100% for throttle channel (for transmitter without LCD, please turn the knobs to the maximum value), and set the "TRIM" of the throttle channel to 0 (for transmitter without LCD, please turn the TRIM knob to its neutral position). For Futaba™ and the similar transmitters, the direction of throttle channel shall be set to "REV", while

other radio systems shall be set to "NOR".

The "Fail Save" function of the radio system is strongly recommended to be activated. Please make sure that the motor can be stopped when the "Fail Save" happens.

3. Throttle Range Setting (Throttle Range Calibration)

In order to make the ESC match the throttle range of different transmitters, the calibration of the ESC is necessary.

To calibrate the ESC, please turn on the transmitter, keep throttle stick at its neutral position, wait for 3 seconds to let the ESC execute self-test and automatic throttle calibration. When the ESC is ready to run, a long beep sound is emitted from the motor.

Note: Please calibrate the throttle range again when using a new transmitter or changing the settings of the neutral position of throttle channel, D/R, ATV, ATL or EPA parameters, otherwise the ESC may not work properly.

【BEEP SOUND AND LED STATUS】

The Meaning of Beep Sound	LED Status
<ul style="list-style-type: none"> ● 1 short Beep: The battery is NiMH/NiCd ● 2 short Beeps: The battery is 2S Lipo ● 3 short Beeps: The battery is 3S Lipo ● 4 short Beeps: The battery is 4S Lipo ● 1 long Beep: Self-test and throttle calibration is OK, the ESC is ready to run 	<ul style="list-style-type: none"> ● When the throttle stick is in neutral range, red LED is off ● Forward, brake or reverse at partial throttle, red LED blinks ● Forward, brake or reverse at full throttle, red LED is solid

【THROTTLE STICK POSITION】



【SET THE ESC】

The ESC is programmed by the jumpers (Tweezers is recommended to plug and unplug the jumper).

backward zone again (The 2nd "click"), if the motor speed is slowed down to zero (i.e. stopped), the backward action will be activated. The "Double-Click" method prevents mistakenly reverse when the brake function is frequently used in steering.

"Brushed-Crawler& Boat" ESC uses "Single-click" to make the car go backward. When you move the throttle stick from forward zone to backward zone, the car will go backward immediately. This mode is common for the Rock Crawler and tank.

2. The maximum reverse force (for backward running) is 50% for the general "Brushed" ESC, 100% for the "Crawler" mode of a "Brushed-Crawler& Boat" ESC, and 25% for the "Boat" mode of a "Brushed-Crawler& Boat" ESC.
3. The Low Voltage Cut-off Protection modes are different (Please check the instructions in the section of "PROTECTION FUNCTIONS").

TROUBLE SHOOTING

Trouble	Possible Reason	Solution
After power on, motor can't work, no sound is emitted, and LED is off.	The ESC doesn't get its working voltage; Connections between battery pack and ESC are broken.	Check the battery wire connection or replace the defective connectors.
	Switch is damaged.	Replace the switch.
After power on, motor can't work; red LED blinks.	Throttle signal is abnormal.	Check the throttle wire connection; make sure it is plugged into the throttle channel of the receiver.
	Automatic throttle range calibration is failed.	Set the "TRIM" of throttle channel to 0 or turn the knob to its neutral position.
The car runs backward while giving throttle. (The motor runs in the opposite direction)	The wire connections between ESC and the motor need to be changed.	Swap two wire connections between the ESC and the motor.
The car can't go backward.	The jumper position is wrong.	Check the jumper and plug it to the correct position.
	The neutral point of throttle channel is changed or drifted.	Set the "TRIM" of throttle channel to 0 or turn the knob to its neutral position.
The car can't go forward, but can go backward.	The direction of throttle channel is not correct.	Reset the direction of throttle channel from original "NOR" to "REV", or from original "REV" to "NOR".
The motor doesn't work, but the LED in the ESC works normally.	The connections between motor and ESC are broken.	Check the connections and replace the defective connectors.
	Motor is damaged.	Replace the motor.
The motor suddenly stops running while in working state	The throttle signal is lost.	Check the transmitter and the receiver.
	Low voltage cut-off protection or Over-heat cut-off protection has been activated.	Check the throttle wire connection. Replace the battery pack, or cool down the ESC.
The car cannot get top speed and the red LED doesn't solid on at full throttle	Some setting in the transmitter are incorrect.	Check the settings. Set D/R, EPA, ATL to 100% or turn the knobs to maximum value. Set TRIM to 0 or turn the knob to its neutral position.
Motor is cogging when accelerated quickly.	The battery has limited discharge ability. Motor RPM is too high, the gear ratio is too aggressive.	Use battery with better discharge ability. Use motor with lower RPM, or use smaller pinion to get softer gear ratio.
	Something wrong in the driving system of the car.	Check the driving system of the car.