

TEAM CORALLY PRO/RED-Series Motors - User Guide

Thank you for choosing a **TEAM CORALLY PRO / RED-SERIES** brushless motor. By using the very latest in brushless technology this motor will provide ultra efficient performance and unbelievable power. This has been reached through a special match of a precision manufactured rotor and all new purpose build stator design. Because of the extremely high RPM combined with superb torque and power control it is ideal for use in a wide variety of RC cars from 1/12 On-Road and 1/10 Touring through to 1/10 Off-Road and Monster Trucks. The **RED-SERIES Sensorless** motors use a trouble free technology that shows great performance and prevents mechanical failures caused by dirt or humidity. The **PRO RED-SERIES Sensorless** motors provide added power control through it's extremely smooth, linear performance.

TEAM CORALLY PRO / RED-SERIES MOTOR SPECIFICATIONS:

Corally Part #	Technology Type	No. of Turns	Winding Type	Maximum Power	RPM Per Volt	Voltage Range	Weight	Length Can/Overall	Can Diameter	Magnets
#398035	SENSORLESS	3.5 Turns	STAR	1800 Watt	11,000	6.0 - 7.4	~168 g	50.5/65 mm	36 mm	Sintered
#398045	SENSORLESS	4.5 Turns	STAR	1350 Watt	8,500	6.0 - 7.4	~168 g	50.5/65 mm	36 mm	Sintered
#398055	SENSORLESS	5.5 Turns	STAR	840 Watt	6,950	6.0 - 7.4	~168 g	50.5/65 mm	36 mm	Sintered
#398065	SENSORLESS	6.5 Turns	STAR	750 Watt	5,900	6.0 - 7.4	~168 g	50.5/65 mm	36 mm	Sintered
#398075	SENSORLESS	7.5 Turns	STAR	720 Watt	5,000	6.0 - 7.4	~168 g	50.5/65 mm	36 mm	Sintered
#398085	SENSORLESS	9.5 Turns	STAR	780 Watt	4,020	6.0 - 7.4	~168 g	50.5/65 mm	36 mm	Sintered
#398095	SENSORLESS	10.5 Turns	STAR	550 Watt	3,640	6.0 - 7.4	~168 g	50.5/65 mm	36 mm	Sintered
#398105	SENSORLESS	13.5 Turns	STAR	400 Watt	2,830	6.0 - 7.4	~168 g	50.5/65 mm	36 mm	Sintered
#398115	SENSORLESS	17.5 Turns	STAR	250 Watt	2,180	6.0 - 7.4	~168 g	50.5/65 mm	36 mm	Sintered
#397060	SENSORLESS	6.0 Turns	DELTA	1400 Watt	11,750	6.0 - 7.4	~165 g	50.5/65 mm	36 mm	Sintered
#397070	SENSORLESS	7.0 Turns	DELTA	1350 Watt	10,050	6.0 - 7.4	~166 g	50.5/65 mm	36 mm	Sintered
#397080	SENSORLESS	8.0 Turns	DELTA	1200 Watt	8,800	6.0 - 7.4	~165 g	50.5/65 mm	36 mm	Sintered
#397095	SENSORLESS	9.5 Turns	STAR	400 Watt	4,000	6.0 - 7.4	~166 g	50.5/65 mm	36 mm	Sintered
#397105	SENSORLESS	13.5 Turns	STAR	280 Watt	3,000	6.0 - 7.4	~161 g	50.5/65 mm	36 mm	Sintered

SUGGESTED TEAM CORALLY ACCESSORIES & REPLACEMENT PARTS:

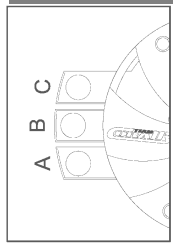
● CORALLY POWER CASE "BRUSHLESS"	Part# 90275	● CORALLY BALL BEARINGS - CERAMIC (1 PR.)	Part# 1077	● CORALLY MOTOR CLEANING SPRAY (400 ML)	Part# 60659
● CORALLY SPEEDMORNER - HEX (2.0 MM)	Part# 16083	● CORALLY BALL BEARINGS - STEEL (1 PR.)	Part# 1078	● CORALLY BEARING OIL	Part# 60677

CONNECTING THE MOTOR TO THE ESC:

- ▲ See the instructions of your ESC for additional user directions and advice on how to connect it to the motor. ▲ Some ESC's do not support the use of sensorless or DELTA wound motors. When using a sensorless motor it is advised to make sure, prior to installation, that the ESC can be used with your motors (e.g. CORALLY BMS ESC's).
- ▲ Choose M3 mounting screws with a length that will not enter the motor more than 4mm to prevent it from being damaged. ▲ Install the motor in the car with the solder tabs positioned in a way to prevent it from damage during racing and for convenient access. ▲ Connect the 3 power wires coming from the ESC to the motor. ▲ It is important to take care that wire A coming from the ESC is connected to solder tab A on the motor - ESC wire B to B on the motor - and ESC wire C to C on the motor.

RED-Series - SENSORLESS

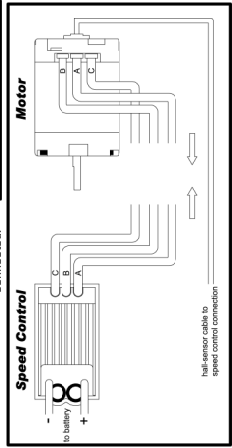
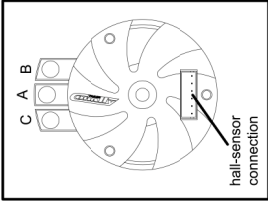
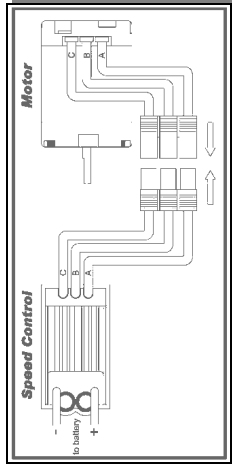
The correct A - B - C position of the power wires on the RED-SERIES SENSORLESS Motors is indicated on the above diagram.



The power wires on the PRO RED-SERIES SENSORLESS motors should be soldered in C - A - B order as indicated on the beside diagram.

* PRO RED-SERIES SENSORLESS motors have a Hall-Sensor connector in the back plate that connects to the ESC.

** The C - A - B sequence remains the same with / without the sensor connected.



TIMING:

The timing on brushless motors is being controlled through ESC settings. The setting on the motor itself does not make a difference. Therefore it is not mechanically possible to change the timing on all RED-Series brushless motors. Some speed controls have the option to change the timing or come with optional programs which may have a different timing setting. Please see your ESC's instructions for further information.

GEAR RATIO:

Use the below gear ratio chart as an indication to start with. The best gear ratio will vary depending on track conditions, track length, traction, car, batteries, speed control etc.. A wrong gear ratio will reduce performance, cause excessive heat and may damage your motor. See the manual of your car kit to choose the correct pinion and spur gear for the required gear ratio.

RED SERIES - GEAR RATIO CHART

PART #	TYPE	TURNS	WIND	1:10 TOURING			OFF ROAD		
				6.0 VOLT	7.2 - 7.4 VOLT	2WD (6.0 V.)	4WD (6.0 V.)	1/2 (MM/REV)	4.8 VOLT
#398035	SENSORLESS	3.5 T	STAR	9.5 - 10.5	11.5 - 12.5	13.0 - 14.0	14.0 - 15.0	28.0 - 30.0	
#398045	SENSORLESS	4.5 T	STAR	8.5 - 9.5	10.0 - 11.0	12.0 - 13.0	13.0 - 14.0	30.0 - 32.0	
#398055	SENSORLESS	5.5 T	STAR	7.5 - 8.5	9.0 - 10.0	11.0 - 12.0	12.0 - 13.0	34.0 - 36.0	
#398065	SENSORLESS	6.5 T	STAR	7.0 - 8.0	8.5 - 9.5	10.5 - 11.5	11.5 - 12.5	37.0 - 39.0	
#398075	SENSORLESS	7.5 T	STAR	6.5 - 7.5	8.0 - 9.0	10.0 - 11.0	11.0 - 12.0	39.0 - 41.0	
#398085	SENSORLESS	9.5 T	STAR	6.0 - 7.0	7.0 - 8.0	9.0 - 10.0	10.0 - 11.0	42.0 - 43.5	
#398095	SENSORLESS	10.5 T	STAR	5.5 - 6.5	6.5 - 7.5	8.5 - 9.5	9.5 - 10.5	43.0 - 44.5	
#398105	SENSORLESS	13.5 T	STAR	4.5 - 5.5	5.0 - 6.0	7.5 - 8.5	8.5 - 9.5	46.0 - 47.5	
#398115	SENSORLESS	17.5 T	STAR	3.5 - 5.0	4.0 - 5.5	6.5 - 7.5	7.5 - 8.5	48.0 - 52.0	
#397060	SENSORLESS	6.0 T	DELTA	10.0 - 12.0	13.0 - 14.0	15.5 - 16.5	16.5 - 17.5	23.0 - 25.0	
#397070	SENSORLESS	7.0 T	DELTA	10.5 - 11.5	12.5 - 13.5	14.5 - 15.5	15.5 - 16.5	24.5 - 26.5	
#397080	SENSORLESS	8.0 T	DELTA	10.0 - 11.0	12.0 - 13.0	13.5 - 14.5	14.5 - 15.5	23.5 - 25.5	
#397095	SENSORLESS	9.5 T	STAR	9.0 - 10.0	10.0 - 11.0	11.0 - 12.0	12.0 - 13.0	25.0 - 27.5	
#397105	SENSORLESS	13.5 T	STAR	8.5 - 9.5	9.5 - 10.5	10.5 - 11.5	11.5 - 12.5	28.0 - 30.0	

CHECKING THE GEAR RATIO:

Start trial running with the suggested gear ratio (see above gear ratio chart) for 2-3 minutes and measure the temperature of both the ESC and the motor. The gear ratio will be too low if the ESC gets hot and the motor remains cold. In this case you should use a bigger motor pinion to reduce the motor revs. The gear ratio will be too high if the ESC remains cold but the motor gets hot. In this case you should use a smaller motor pinion to increase the motor revs. If both have about the same temperature the gear ratio is about correct. The gear ratio can now be properly adjusted and optimized to the track etc.. Always make sure to keep the temperature of both the ESC and the motor under 100 °C! Too much heat will demagnetize the motor, drop efficiency and the temperature will raise quickly. The ESC and motor could be broken and battery power is just being wasted on heat.

MAINTENANCE & DISASSEMBLY:

CORALLY RED-Series brushless motors feature a low maintenance design. It might be necessary to open the motor anyway for oiling or replacing the ball bearings, for cleaning or for motor replacement.

DISASSEMBLY OF THE MOTOR:

▲ Use a 2.0 mm hex screwdriver to remove the 3 screws at the front plate of the motor. ▲ The front and back plate can now be removed for cleaning, rotor and ball bearing replacement, oiling or maintenance. ▲ Make sure that the screw holes in the front and back plate are well in line during assembly. Do not over tighten the screws!

WARNING - INCORRECT USE WILL VOID WARRANTY - PLEASE NOTE FOLLOWING:

- ▲ Keep the product out of the reach of children. Not a toy. ▲ Make sure all parts are wired up accordingly. Avoid incorrect connections. All wires and connections have to be well insulated. ▲ Avoid excessive heat. Also when soldering or replacing the power wires. Avoid contact with water or other liquid. ▲ Do not give full throttle if the motor is not installed in your car. The excessive RPM may cause damage. ▲ A wrong gear ratio may overload the motor and cause damage. ▲ Carefully read this User Guide and take notice of all instructions which include installing the motor, maintenance and choosing the gear ratio. **Incorrect handling may cause damage and void warranty!**
- ▲ Team Corally PRO/RED-SERIES Brushless Motors are **EXTREMELY POWERFUL** and should be handled accordingly!

WARRANTY:

Team CORALLY declares this product to be free from manufacturing defects. No warranty can be claimed for any damage caused by the use of this product including damage caused by incorrect installation, wear, overload, dirt, rust, mechanical damage or incorrect maintenance.

DISPOSAL:



Do not dispose of these products as unsorted municipal waste. The correct method of disposal is to take it to your local collection point for recycling electrical and electronic equipment. The symbol shown here which may be found on the product itself, in the operating instructions or on the packing, indicates that this is the case.

CORALLY RC BV

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