DYNAMIC 10 SERIES

1/10 BRUSHLESS MOTOR
4-POLE SINTERED MAGNET
PRECISION BALANCED ROTOR
SENSORED TECHNOLOGY

USER MANUAL

LRP electronic GmbH
Hanfwiesenstraße 15
73614 Schorndorf
Germany

WWW.LRP.CC

DEAR CUSTOMER,

Thank you for your trust in this LRP product. By purchasing a LRP Dynamic 10 brushless motor, you have chosen a highly developed competition brushless motor full of innovative features. LRPs R&D team took all the experience and testing results from our worlds-winning motors to design these Dynamic 10 motor line. IFMAR World Champion Brushless Motor Technology:

- Sintered Neodymium Magnets
- XTEC Alu housing, fully dismountable
- Precision balanced rotor
- Sensored Technology
- Splitted soldertabs for easy installation
- Oversized ball bearings

Please read the following instructions carefully before you start using your product. This user guide contains important notes for the installation, the safety, the use and the maintenance of this product. Thus protecting yourself and avoid damages of the product.

Proceed according to the user guide in order to understand your product better. Please take your time as you will have much more joy with your product if you know it exactly. This user manual shall be kept in a safe place. If another customer is using this product, this manual has to be handed out together with it.

WARNING NOTES

Do not use aggressive advanced timing speed-control profiles with Dynamic 10 motors!
Because of their unique design, 4-Pole/12-Slot motors are not suited for speed-controls with built in timing algorithms. Make sure you disable such functions on your speed-control as otherwise you may overheat the motor which can result to motor damage in the worst case!

No toy. Not suitable for children under 14 years. Keep the product out of the reach of children.

Pay close attention to the following points, as they can destroy the product and void your warranty. Nonobservance of these points can lead to property damage, personal and severe injuries!

- Never leave the product unsupervised while it is switched on, in use or connected with a power source. If a defect occurs, it could set fire to the product or the surroundings.
- Avoid incorrect connections or connections with reversed polarity of the product.
- All wires and connections have to be well insulated. Short-circuits can possibly destroy the product.
- Never allow this product or other electronic components to come in contact with water, oil or fuels or other electro-conductive liquids, as these could contain minerals, which are harmful for electronic circuits. If this happens, stop the use of your product immediately and let it dry carefully.
- Avoid overtightening the motor screws. Damaged threads are not covered under warranty!
- Avoid overloading the motor due to wrong or too long gear ratios.
- Never apply full throttle if the motor is not installed. Due to the extremely high RPMs without load, the motor can get damaged.
- Always wire up all the parts of the equipment carefully. If any of the connections come loose as a result of vibration, you could loose control over your model.
- Avoid soldering longer then 5 seconds per soldering joint when replacing the power wires to prevent possible damage to the product due to overheating of the components. Use a high power soldering station with at least 60W for soldering.

The manufacturer can not be held responsible for damages, which are a result of non-observance of the warning notes and security advices.

SPECIFICATIONS

	Dynamic 10			Dynamic 10L		
Order No.	53430	53440	53450	53530	53540	53550
Voltage Input	3.7-11.1V		3.7-7.4V	3.7-14.8V		3.7-11.1V
RPM²	28120	35520	42920	17760	27380	34780
Specific RPM/V	3800kV	4800kV	5800kV	2400kV	3700kV	4700kV
Rotor	4-Pole Sintered					
Stack/Winding	12-Slot, low resistance					
Weight	198g			275g		
Diameter	35.9mm			35.9mm		
Length	54.0mm			70.0mm		
Output Shaft	3.17mm			5.0mm		

Specifications subject to change without notice. Measured at 7.4V

INSTALLATION & CONNECTIONS

HALL-SENSOR WIRE: This bi-directional multipole wire, which is supplied with all LRP sensored brushless speedcontrols, connects the speedo and the motor. Do not alter or modify this cable! Make sure, that the plugs have a proper and tight fit and are always clean.

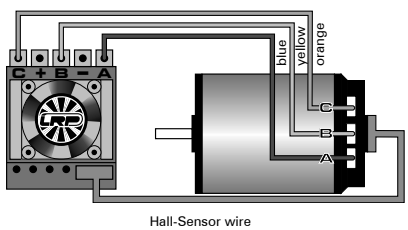
POWER WIRES: The unique splitted solder-tabs allow easy and convenient replacement of the power wires. Nevertheless some soldering skills are required. Talk to your local hobbyshop if you are concerned about soldering the wires yourself.

⚠ **Caution:** Avoid soldering longer then 5sec per soldering joint to prevent possible damage to the motor due to overheating of the inner components!

- Install the motor in the model.

⚠ **Caution:** The maximum length of the motor screws shall not exceed 8mm.

- Connect the power wires of the speedcontrol and the motor. Make sure, that the sequence is correct by checking the color code and the letters:
  - MOT.A = blue wire
  - MOT.B = yellow wire
  - MOT.C = orange wire
- If you're using a sensored speed-control: attach the hall-sensor wire to motor and speedo now.
- Finally check all the connections before using the motor.



Hall-Sensor wire

GEARING ADVISE

Please pay special attention to our gear ratio recommendations! A wrong gear-ratio causes excessive heating and may result in motor damage or thermal shutdown of your speed-control. Take your kits manual to find the correct pinion. Motor temperatures should be monitored, they should never exceed 100°C (= 210°F).

The following gear ratios are only a recommendation and a good starting point for use with 2S LiPo batteries (e.g. 7.4V). The perfect ratio may vary due to different speed-controls and it's profiles, track size, track conditions and batteries.

Also make sure you stay within the recommended voltage range for each motor type!

		Dynamic 10			Dynamic 10L		
Usage	Battery	3800	4800	5800	2400	3700	4700
Touring Car	2S / 7,4V	6,5:1	7,5:1	8,5:1	4;0:1	6,0:1	7,0:1
2wd Off-road	2S / 7,4V	7,5:1	8,5:1	9,5:1	5,0:1	7,0:1	8,0:1
2wd Short Course	2S / 7,4V	8,0:1	9,0:1	10,0:1	5,5:1	7,5:1	8,5:1
4wd Off-road	2S / 7,4V	8,5:1	9,5:1	10,5:1	6,0:1	8,0:1	9,0:1

DISASSEMBLY & MAINTENANCE

Due to the maintenance free design of the Dynamic 10 it is not necessary to open the motor frequently under normal conditions. It is just recommended to check that it's screws are always securely fastened and that you maintain the ball bearings frequently (clean, check, oil, replace if needed!) in order to achieve best performance. Of course you can also disassemble the motor entirely if you wish to do so.

Disassembly of the motor:
1. loosen the three front endcover screws (using 2.0mm allen key) and remove screws.
2. remove 4 small screws on the housing, using 1,5mm allen key.
3. remove rear endcover plate
4. remove the shims from the rotor shaft.
5. now you can carefully pull the rotor out of the housing, place the rotor in clean towel.
6. you have now access to the motors insides for cleaning. You may also use compressed air to clean the inside of the motor after you have removed the bearings.

Be careful with correct shim position during re-assembly and make sure to tighten the screws carefully!

SPARE & OPTIONAL PART

Order No.	
819307	Sensor-Wire „HighFlex" 70mm
819310	Sensor-Wire „HighFlex" 100mm
819315	Sensor-Wire „HighFlex" 150mm
819320	Sensor-Wire „HighFlex" 200mm
82505	Power-Wire Set Brushless 2.6mm² (red, black, blue, orange, yellow)
82506	Power-Wire Set Brushless 3.3mm² (red, black, blue, orange, yellow)
82510	Radical Motor Heatsink and Fan (unique „clamp style" heatsink design)
65790	Works Team Tools, Motor Bearing Replacer

REPAIR PROCEDURES / LIMITED WARRANTY

All products from LRP electronic GmbH (hereinafter called "LRP") are manufactured according to the highest quality standards. LRP guarantees this product to be free from defects in materials or workmanship for 90 days (non-european countris only) from the original date of purchase verified by sales receipt. This limited warranty doesn´t cover defects, which are a result of misuse, improper maintenance, outside interference or mechanical damage.

This applies among other things on:
- Overload (for example: unsoldered Star-ring)
- Excessive amounts of dirt inside the motor
- Rotor damage due to debris inside motor
- Mechanical damage due to external causes
- Rust

To eliminate all other possibilities or improper handling, first check all other components in your model and the trouble shooting guide, if available, before you send in this product for repair. If products are sent in for repair, which do operate perfectly, we have to charge a service fee according to our pricelist.

With sending in this product, the customer has to advise LRP if the product should be repaired in either case. If there is neither a warranty nor guarantee claim, the inspection of the product and the repairs, if necessary, in either case will be charged with a fee at the customers expense according to our price list. A proof of purchase including date of purchase needs to be included. Otherwise, no warranty can be granted. For quick repair- and return service, add your address and detailed description of the malfunction.

If LRP no longer manufactures a returned defective product and we are unable to service it, we shall provide you with a product that has at least the same value from one of the successor series.
The specifications like weight, size and others should be seen as guide values. Due to ongoing technical improvements, which are done in the interest of the product, LRP does not take any responsibility for the accuracy of these specs.

LRP-Distributor-Service:
- Package your product carefully and include sales receipt and detailed description of malfunction.
- Send parcel to your national LRP distributor.
- Distributor repairs or exchanges the product.
- Shipment back to you usually by COD (cash on delivery), but this is subject to your national LRP distributor's general policy.

DYNAMIC 10

The crossed-out wheeled bin means that within the European Union the product must be taken to separate collection at product end-of life. Do not dispose these products as unsorted municipal waste.