

# VECTOR K7 SERIES

BRUSHLESS SPORTS MODIFIED SINTERED  
NEODYMIUM MAGNET  
PRECISENSOR™ SYSTEM  
GERMAN TECHNOLOGY



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USER MANUAL

WWW.LRP.CC

## DEAR CUSTOMER,

thank you for your trust in this LRP product. By purchasing a LRP Vector K7 brushless motor, you have chosen a highly developed competition brushless motor full of innovative features. LRP's R&D team took all the experience and testing results from our world-winning motors to design these Vector K7 motor line. IFMAR World Champion Brushless Motor Technology!

- Double ball bearings
- Handwound, Star winding
- XTEC Alu housing, fully dismantlable
- Pre-Wired

- Sintered Neodymium Magnets
- Sensored Technology
- Split solder tabs for easy installation
- Standard 540 size and weight

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 Vector K7 motors!

Because of its unique design with HVS Technology and PreciSensor System, such profiles are not required to gain same performance as normal motors (with extreme speed-control timing advance) and with Vector K7 such profiles only result in higher motor temperature but not higher performance!

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 lose control over your model.
- Avoid soldering longer than 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

	21.5T	17.5T	13.5T	10.5T	8.5T	6.5T
Order Nr.	50491	50481	50461	50451	50441	50431
Voltage input	3.7 - 14.8V		3.7 - 11.1V		3.7 - 7.4V	
RPM	12580	16280	22570	26640	31820	40700
Specific RPM/V	1700kV	2200kV	3050kV	3600kV	4300kV	5500kV
Power	145W	175W	230W	280W	300W	370W
Efficiency	93%	93%	93%	93%	92%	92%
Magnet Material	Sintered 12.45mm					
Sensor assignment	Compliant to all worldwide organizations rules					
Winding	Star (Multistrand Copper Winding)					
Weight	154g					
Diameter	35.8mm					
Length	50.2mm					
Output Shaft	3.17mm					

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 speed-controls, 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:** Your motor comes pre-wired using common motor connectors. It's simply „plug & play“ when you intend using a designated LRP speed-control. You can also solder the motor directly the power-wires if you prefer to use a „hardwired“ wire setup, 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 than 5sec per soldering joint to prevent possible damage to the motor due to overheating of the inner components!

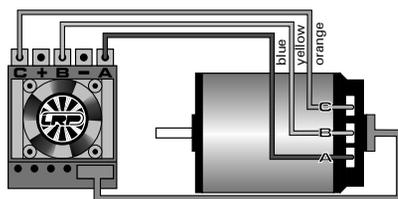
- Install the motor in the model.

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

- Connect the power wires of the speed-control 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. The actual gearing may vary due to different speed-controls and it's profiles, track size, track conditions and batteries:

	Volts	21.5T	17.5T	13.5T	10.5T	8.5T	6.5T
Touring Car	7.4	3.5:1	4.0:1	6.0:1	6.5:1	7.0:1	8.0:1
1:12	3.7	75mm	68mm	57mm	48mm	44mm	40mm
2wd + 4wd off-road	7.4	5.5	6.0	7.0	8.0	9.0:1	10.5:1
Truck Off-road	7.4	6.5:1	7.0:1	8.0:1	9.0:1	10.0:1	12.0:1

## DISASSEMBLY & MAINTENANCE

Due to the maintenance free design of the Vector K7 it is not necessary to open the motor frequently under normal conditions. It is just recommended to check that it's three 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.

You can oil both bearings from the outside, the front bearing through the housing and the rear housing through the small hole in the center of the plastic endcover.

### Disassembly of the motor:

1. loosen the three endcover screws (using 1.5mm allen key) and remove screws
2. remove the plastic endcover and the front housing.
3. now you can carefully pull the rotor out of the housing, place the rotor in clean towel or designated container.
4. you have now access the motors insides for cleaning. You may also use compressed air to clean the inside of the motor after you have removed the bearings.

**Caution:** Be careful that you do not overtighten the screws when re-assembling the motor!

## 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.

