

50650 1-STAR ●  
50660 2-STAR ●  
50670 3-STAR ●  
50680 4-STAR ●

**VECTOR**  
BRUSHLESS MODIFIED

BRUSHLESS  
MAINTENANCE FREE  
SENSORED TECHNOLOGY

## USER GUIDE

**LRP**  
ELECTRONIC

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### WARNING NOTES

**IMPORTANT:** Pay close attention to the following points, as they will destroy the motor and void your warranty:

- Never solder a Schottky diode to the motor or the speed-control when you are using a LRP VECTOR Brushless Modified motor.
- Avoid soldering longer than 5sec per soldering joint when replacing the power wires to prevent possible damage to the motor due to overheating of the components!
- Never connect the motor incorrectly or with reversed polarity.
- All wires and connections have to be well insulated. Short-circuits can destroy the motor.
- Avoid overtightening the motor screws. Damaged threads are not covered by warranty!

### INSTALLATION / CONNECTIONS

- Install the motor in the model.  
**CAUTION!** The maximum length of the motor screws shall not exceed 8mm.

- Connect the motor and the speed-control, using the Hall-Sensor wire.

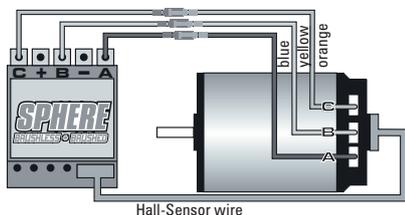
- Connect the power wires of the speed-control to the motor. You can do this by using the pre-assembled motor plugs or by soldering on the power wires directly to the motor.

- **CAUTION!** Make sure, that the polarity is

right by checking the color code and the letters:

- MOT.A = blue wire
- MOT.B = yellow wire
- MOT.C = orange wire

- Finally check all the connections before using the motor.



#### HALL-SENSOR WIRE:

This bi-directional multipole wire connects the speed-control and the motor. Do not alter or modify this cable! The Hall-Sensor wire is imminent for the use of the LRP VECTOR Brushless Modified motor. Connect the motor to the speed-control, by using this wire and make sure, that the plugs have a proper and tight fit. There are replaceable hall sensor wires available:

- #81910 (20cm)
- #81920 (10cm)

#### POWER WIRES:

The LRP VECTOR Brushless Modified comes pre-wired using common motor connectors. It's simply „plug & play“ when you intend using a LRP SPHERE speed-control. You can also use normal power wires (a complete set of power wires is included with the LRP SPHERE and SPHERE COMPETITION) and solder them directly to the motor 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 replacing the wires yourself.

There is a replacement power wire set available: #82505

**CAUTION:** Avoid soldering longer than 5sec per soldering joint when replacing the power wires to prevent possible damage to the speed-control due to overheating of the components!

### GEARING

Never overgear your LRP VECTOR Brushless Modified motor. A wrong gear-ratio causes much more heating and may result in a temperature shutdown of your speed-control under extreme conditions. Due to the unique VECTOR brushless design, this motor needs to be geared much lower than normal brushed motors. Take your kits instruction manual to find the correct pinion. The following recommendations are a good starting point but may vary due to different tracks, models and batteries:

	Touringcars 1:10 (small tracks)	Touringcars 1:10 (big tracks)	Off-Road 2WD	Off-Road 4WD
4-star	10.5 : 1	9.8 : 1	12.0 : 1	14.0 : 1
3-Star	9.4 : 1	8.2 : 1	11.0 : 1	13.0 : 1
2-Star	8.6 : 1	7.5 : 1	10.0 : 1	12.0 : 1
1-Star	7.8 : 1	7.0 : 1	9.0 : 1	11.0 : 1

### REPAIR PROCEDURES / LIMITED WARRANTY

All products from LRP electronic (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 from the original date of purchase verified by sales receipt. This limited warranty doesn't cover defects, which are a result of normal wear, misuse or improper maintenance.

To eliminate all other possibilities or improper handling, first check all other components before you send in this product for repair or warranty. Products sent in for repair, that operate perfect have to be charged with a service fee.

By sending in this product, you assign LRP to repair the product, if it is no warranty case. The original sales receipt 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.

Our limited warranty liability shall be limited to repairing the unit to our original specifications. In no case shall our liability exceed the original cost of this unit. Because we don't have control over the installation or use of this product, we can't accept any liability for any damages resulting from using this product. By installing or operating this product, the user accepts all resulting liability.

Dear Customer,  
thank you for your trust in this LRP product. By purchasing a LRP VECTOR Brushless Modified motor, you have chosen a high-performance brushless motor full of new design features, such as:

- Neodymium magnets
- Handwound
- VTEC X9/X10 teardown, dismountable
- Sensored technology
- Adjustable timing
- Standard 540 size/weight

Please read the following instructions to ensure, that your LRP VECTOR Brushless Modified motor always works up to your full satisfaction.

Please read and understand these instructions completely before you use this product!  
With operating this product, you accept the LRP warranty terms.

### SPECIFICATION

	VECTOR 4-Star	VECTOR 3-Star	VECTOR 2-Star	VECTOR 1-Star
RPM	61.200	55.440	49.680	43.920
Kv	8.500 rpm/Volt	7.700 rpm/Volt	6.900 rpm/Volt	6.100 rpm/Volt
Power	283W	263W	242W	220W
Efficiency	91%	92%	92%	93%
Ball Bearings	2 x R166ZZ			
Teardown	VTEC X10 - dismountable	VTEC X9 - dismountable		
Timing	adjustable			
Winding	Star			
Hall-Sensor pin assignment	compliant to IFMAR/EFRA/ROAR/BRCA/DMC rules			

Measured at 7.2V. Specifications subject to change without notice.

### TIMING

With the LRP VECTOR Brushless Modified motor, you have the possibility to change the timing. The factory setting is position 2. You can easily see this by checking the mark on the plastic ring and the corresponding timing scale on the motor can. This setting is the best compromise between performance, runtime and torque. By altering the timing, you change the characteristics of the motor. With a higher timing, the motor revs higher, but has less torque. We recommend to use the factory setting. It is the best for most applications.

**Please note:** You need to use a shorter gearing, when using a higher timing. **When using a LRP SPHERE COMPETITION speed with ADPC profiles 3-6, the timing of the motor has to be set to 2.**

To change the timing, do the following:

1. Loosen the 3 screws on the backplate of the motor.
2. Turn the plastic ring with the timing mark to the desired timing position. You can use a small screwdriver to turn the plastic ring, if necessary.

**Please note:** To change the timing, you only need to turn the plastic ring with the timing mark. Do not try to turn the whole backplate of the motor.

3. Re-tighten the 3 screws on the backplate of the motor again.



Timing setting 2



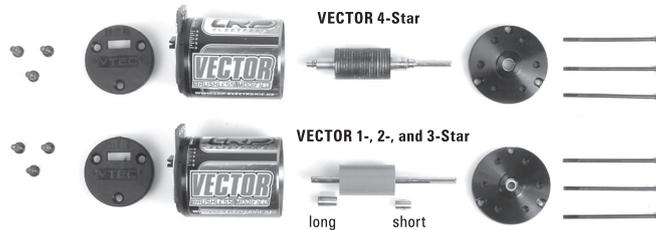
Timing setting 6

### DISASSEMBLY

Due to the maintenance free design of the LRP VECTOR Brushless Modified motor, it is not necessary to open the motor under normal conditions. Nevertheless, if you intend to check the ball bearings and oil them from time to time, you can disassemble the motor.

**Disassembling of the motor:**

1. Remove the 3 screws at the front of the motor and take off the front cover. You can now take out the ball bearing to clean it or, if necessary, to oil it.
2. Carefully take the magnet out of the can.  
**IMPORTANT!** There are two spacers on the front and back of the shaft. They both have a different length. Please be sure to use the right length spacer on the front and rear when putting the magnet back into the can. **This does not apply to the 4-Star motor. The motor already has fixed spacers.**
3. Remove the 3 screws from the back of the motor and take off the backplate. You can now take out the ball bearing to clean it or, if necessary, to oil it.
4. To re-assemble the motor, begin with step 3. Double-check, that you use the right length spacers on the magnet shaft and be sure to re-tighten all screws securely.



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.