

LRP **VECTOR X20** **BRUSHLESS** **MODIFIED** **MOTOR**



Since the beginning, LRP has been on the forefront of brushless motor design. As one of the first companies to launch a dedicated 1/10-scale brushless system, they've had their hand in numerous World and National titles, and their Vector X20 series represents an entirely new design packed full of innovative features. Features like a new can design, dual-axis balanced rotors, a waterproof sensor system, a new race-optimized stator, and oversized bearings are some of the perks of the X20. At first glance, this motor may look like a lot of motors in the hobby, but with its tech-filled list of design features, it deserves a closer look.

Starting on the outside, the X20 features LRP's new Coolmax housing, which is made up of a machined T6 aluminum, two-piece design. The main part of the housing is a removable section that makes up two-thirds of the motor and features cooling vents along with radial fins to maximize the motor's cooling capability. The other third adds a second set of vents and fins but is attached to the stator during the manufacturing process.

Inside the X20 is a new 12.5mm sintered WorksTeam rotor. This rotor is laser-etched on the output shaft for easy identification, and dual-axis balanced to produce maximum power and efficiency, according to LRP. The shaft has been redesigned to fit inside larger oversized bearings for increased efficiency and lifespan, while also providing lower friction for better output.

On the sensor end of the motor, a solid plastic cap provides cover for a waterproof PreciSensor system, LRP's proprietary sensor boards that are not



Left: The Vector X20 features a dual-axis, sintered rotor for maximum performance.
Right: Timing is set by using one of five included timing inserts for precise adjustment.



only fully waterproof but provide an optimal sensor position around the rotor to produce better power and feel. The cover also houses one of the motor's five included timing inserts. Rather than rotating the end of the motor using small marks, the inserts provide exact increments and are each marked with the correct degree increment.

I selected the 8.5-turn version of the X20, installed it in my 2WD buggy, and headed to the track. The motor has three sets of mounting holes, so matching it up to motor plate slots is a snap on any vehicle. The X20 does not include a sensor wire, which leaves the length up to you. For the most precise racer this isn't an issue, but overall, it would be nice to have a spare in the box, as sensor wires are easy to break, no matter what brand you're using. Delivery of power is very linear and smooth, which is great for a 2WD buggy where you have a very small amount of tire to put the power to the ground. After my first run at my normal gearing, the motor was cool, under 130 degrees to be exact, so I increased the timing by replacing the insert with a 35-degree one. Back on the track the car had a noticeable bump in power compared my previous



Left: The X20's rotor is etched with its size for easy tech inspection.
Right: Beneath the XTEC endbell cap sits LRP's PreciSensor waterproof sensorboard.



run and after six minutes of running, the temperature was still around 130. This was a testament to the X20's efficiency and well-designed housing.

In the fast paced world of brushless motor design, LRP's new X20 is certainly a bird of a different feather. While it doesn't look much different than other motor offerings on the outside, it's what's inside that matters. Features like a machined can optimized for cooling, a dual-axis balanced rotor, and innovative bearings and sensor board design put the X20 up front.

—Erich Reichert



SPECS

Weight: 5.8oz. (165g)

Kv: 4100

Rotor: Sintered

Voltage input: 3.7V – 7.4V

Wind: Star (multi-strand copper winding)

PLUS

- ➕ Timing inserts provide exact measurements
- ➕ Rotor is marked for easy ID
- ➕ Mounting holes all the way around for easy install

MINUS

- ➖ Does not include a sensor wire

SOURCES

LRP lrp-america.com