Types of Motors Used in FRC

CIM Motor:

The CIM motor forms the foundation of many moving mechanisms in FRC robots. It is commonly used in systems such as drivetrains, elevators, and robot arms. First introduced to FRC in 2002, its most notable feature is its high stall tolerance. This allows the motor to operate for several minutes even when stalled without causing damage or failure.

Falcon 500:

The Falcon 500 is one of the most popular motors in FRC due to its power and efficiency, making it suitable for a wide variety of mechanisms. It is a brushless motor and is designed to be used with the Talon FX motor controller.

NEO:

The NEO Brushless Motor offers an excellent power-to-weight ratio, making it ideal for lightweight designs that still require high power output. It was the first brushless motor designed specifically for FRC and is mechanically similar to CIM-style motors, allowing it to serve as a replacement in many applications.

Kraken X44:

The Kraken X44 is a powerful motor designed to be efficient in tight spaces. Its balance of high torque and speed makes it commonly used in shooter and intake mechanisms that require rapid and powerful movement.

Kraken X60:

The Kraken X60 delivers high power and performance, making it ideal for demanding mechanisms such as elevators and climbers. Its durable design allows for long-term use without failure, helping to improve the overall reliability and performance of the robot.

NEO 550:

The NEO 550 is a compact motor that is often used in intake mechanisms due to its small size. It is compatible with a wide variety of gearboxes, which also makes it suitable for shooter systems and other high-speed mechanisms.

775 Pro:

The 775 Pro is a motor specifically designed for FRC and has become increasingly popular in recent years. With a speed of up to 18,700 RPM, it is ideal for mechanisms that require high speed, such as shooters, conveyors, and intakes. However, its main drawback is its low stall durability, meaning it can be damaged if it remains stalled under high load for too long.

Sources:

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