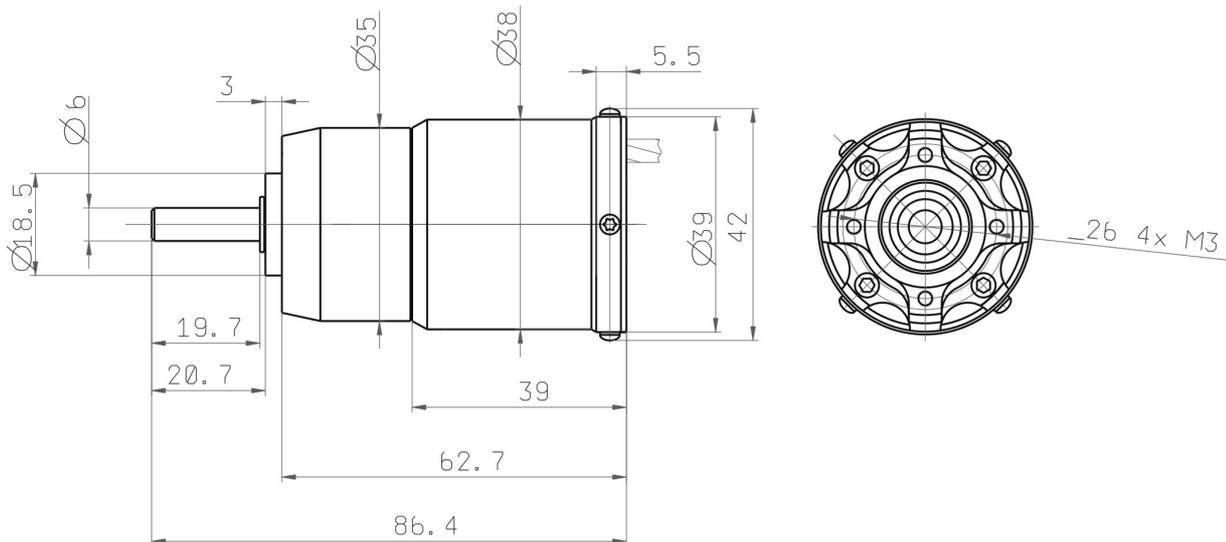




# PHASOR RACE 2035 SERIES

## 1. Introduction

While Phasor Race motors were originally created for racing applications, they are also great for supplying exceptional power for sport and recreational models. True to their design, these light weight motors provide excellent performance and high efficiency at all load levels. Robust construction allows the use of these motors in FAI F5B, F5F, F5J and other competition categories. To get the most in reliability and durability from these motors you should follow the instructions.



## 2. Motor Design

Phasor Race Motors are designed with the utmost precision. The shaft is supported by two ball bearings; the rotor is wrapped with Kevlar and dynamically balanced. With this design you never have to worry about loose pinion gears. The end of the motor shaft has teeth milled into it and is directly connected to the planetary gear.

## 3. Safety

- The motor must be protected from dirt and moisture during operation. Even a small piece of unwanted material may seriously damage the rotor.
- Periodically make sure that all screws are tight. Even with a dynamically balanced rotor, it is still possible for vibrations from the propeller to cause the screws to loosen over time. Be sure to check the motor mounting screws, the screws which secure the gearbox to the motor and the screws in the rear of the motor. Re-secure any screws, as needed with medium thread locking compound.
- Never exceed the recommended maximum speed of the propeller or motor. Failure to do so may result in damage to the propeller or motor. In the worst case scenario, this can cause destruction of the entire model or injury to bystanders. Only use a balanced propeller. Before each flight, make sure that the propeller is properly attached to the output shaft and is not mechanically damaged. Due to the high output power of these motors, if you see any propeller damage, replace it immediately.

- Always make sure that the motor and ESC wires are sufficiently insulated against possible short circuits. After each flight, disconnect the flight battery to prevent an accidentally spinning propeller.
- Make sure that all people are clear of the propeller arc and clear of the front of the rotating propeller.
- Keep the motor away from any devices sensitive to magnetic fields, such as pacemakers or computer disks.
- Always ensure adequate cooling for both the motor and speed control. Motor temperature should never exceed 100 ° C. If it becomes too hot, it can permanently damage the entire driveline and possibly your model.
- Before using the motor with the any speed control, make sure that actual, measured current draw does not exceed the maximum operating limit for your speed control.
- The manufacturer assumes no liability for any damages caused by improper operation of the motor or improper installation.

## 4. Installation

When installing your motor in a model, place the receiver as far away from the motor itself and any power wires as is reasonably possible.

The wire length between the motor controller and batteries should not exceed 20 cm. If longer wires are needed for your installation, they must be fitted every 20 cm with low impedance capacitors.

The motor unit should be attached to the bulkhead using four M3 screws with a pitch of 26 mm. Be sure to use screws that are long enough to sufficiently thread into the gearbox but not long enough to enter the actual gearbox compartment and interfere with gearbox operation.

We recommend you connect the motor to the controller using properly sized connectors (i.e., 5.5 mm diameter for currents up to 150 A). To connect the controller to the drive battery it is recommended to use 5.5 mm Anti-Spark connectors.

If the motor rotates in the opposite direction that you need, swap any two wires leading from the controller to the motor. (Or make the appropriate changes in your controller's programming).

## 5. Maintenance

The motor and gearbox bearings are factory lubricated and do not need service before installation and use. When cleaning, never use any solvents or degreasing agents. The use of solvents or degreasing agents could accidentally remove lubrication from the gears and bearings which could lead to premature wear in the gearbox.

After, approximately, every hour of use or at the end of the flight season, check the gearbox's lubrication. Remove the four socket head, M2,5 screws and pull the body of the gearbox away from the motor. Check the grease - all moving parts must be covered with a thin film. If you need to add grease, proceed as follows: wipe the motor shaft teeth (pinion) and re-apply a small amount of grease. Remove the satellite gears with their needle bearing cages (keeping track of their original locations and orientations). Only a slight pull should be required to remove them. Wipe with a cloth and push a small amount of grease into the cages. Never overfill the gearbox with grease or remove the output shaft.

Reassembly: place the spacer washer onto the front ring gear and then slide the gearbox onto the motor. Twist the gearbox back forth a few times to ensure the proper fit of the rotating pinion teeth to the satellite gear teeth. Now slide one of the M2,5x18 screws into the holes in the gearbox, locate the correct position for the screw and tighten by hand just a few turns to start the screw into its threaded hole. Slide the other bolts into place and tighten slightly in an alternating pattern. Finally, tighten all screws evenly and firmly. Be sure to secure them with a thread locking compound, such as Loctite medium.

If the motor is run particularly hard (near its stated maximums), it is recommended to check the lubrication of gearbox more often. Be sure to perform the inspections! The inspections are important so that you can detect any excessive wear or other problem before it can affect your aircraft. To extend the life of your Phasor Race system, never change the rotation direction of the geared motor once it has been established. Always use Jeti Model or other good quality grease for high speed gearboxes.

Never disassemble the motor by attempting to unscrew the rear end. Improper disassembly/installation could damage the rotor. If you need to service the rotor body (i.e., in case of dirt contamination or model crash), please contact the manufacturer or Jeti dealer. Note: Damaging the seal on the rear face will void the warranty.

## 6. Phasor Race 2035 series specifications

Dimensions without gearbox (diameter x length)	38x60 mm
Dimensions with gearbox	38x88 mm
Weight without gearbox	280 g
Weight with gearbox	355 g
Magnet Material	SmFeB
Maximum Motor RPM	70,000
Output Shaft Diameter	6 mm
Gearbox Ratio	6.75 : 1
Max Continuous Power	1400W
Poles	4
Timing	8-12°
Switching Frequency	8-12kHz

## 7. Specifications of Particular Types

	<b>Phasor Race 2035/4100 1D</b>	<b>Phasor Race 2035/2700 1,5D</b>	<b>Phasor Race 2035/2100 2D</b>
Number of Turns	1	1,5	2
RPM/V	4100	2700	2100
Voltage Range	10-24V	13-28V	20-40V
Resistance	3.3m Ohm	8.0m Ohm	13.1m Ohm
No Load Current (8V)	6.8A	3.7A	2.0A
Recommended Cell Count	3-6 LiPol, 9-18 NiCd/NiMH	4-7 LiPol, 12-21 NiCd/NiMH	6-10 LiPol, 18-30NiCd/NiMH
Maximum Current	240A/5s	180A/5s	120A/5s
Recommended Prop	3S: 18x10 4S: 16x8	4S: 18x13 5S: 17x10 6S: 16x8	6S: 18x11 7S: 17x8 8S: 15x6
Recommended ESC	Mezon 165 Opto	Mezon 165 Opto	Mezon 135 Opto
Application	Sport hotliner, FAI F5B (5S)	Hotliner up to 5kg, FAI F5B (7-8S)	FAI F5B (10S)

## 8. Warranty

This product is guaranteed for 24 months from the date of purchase, provided that it has been operated in accordance with these instructions at the prescribed load and becomes mechanically damaged. Proof of purchase required for any warranty claim. For customer service, see your Jeti dealer or the manufacturer.