



BOAT COMPACT DRIVE 25/35-20 Mk2

We thank you for having bought our product and hope that it will quite comply with your requirements. We recommend you to study this instruction. Observance of the directions stated here will ensure you operating without problems, achieving of a good output and a corresponding service life of the engine.

TECHNICAL SPECIFICATION OF ELECTROMOTOR

- three-phase AC brushless motor
 - dual ball bearing with long life grease
 - high speed ball bearings
 - two pole rotor - single piece FeNdB type
 - FeNdB magnet
 - toroidal windings
 - winding directly under aluminium body for better cooling
 - one part body turned from bar stock on CNC machine
 - black anodized surface
 - heat treated shaft
 - high quality MP JET gold 2,5 mm connectors
- Recommend regulator: three-phase, sensorless (with EMF detection version), suitable version 18A.

ASSEMBLY ELECTROMOTOR TO THE DRIVE COMPACT

AC Compact drive is supplied from producer in built - in two length of shafts (MPJ 50010 – 175 mm, MPJ 50011 – 200 mm). In case that is necessary the electromotors disassemble (and again assemble), the instructions to this process are here:

1. Disassembly – disconnect the connectors between ESC and motor.
 - disconnect water cooling tubings from motor.
 - release two hexagon socket set screw M3x3 from direct shaft coupler which hold the direct coupler to motor shaft. Not release other two hexagon socket screw M3x3 (which hold direct shaft to boat shaft).
 - remove two socket head screw M2,5x5 and take out is.
 - now it is possible the motor take out from boat.
 - the flange is on the electromotor.
 2. Backward assembly of electromotor on shaft - the motor shaft (motor is inclusive flange) put to direct coupler without the gap between flange Compact and motor.
 - the motor secure with two socket head screw M2,5x5.
 - the direct coupler secure with two hexagon socket set screw M3x3.
 - the turning of shaft must be free.
 - connect water cooling.
 - connect the connectors between ESC and motor.
 3. Exchange of direct shaft coupler - make the disassembly according to point 1.
 - release two hexagon socket set screw M3x3 of direct shaft coupler which hold the direct coupler to motor shaft.
 - the new direct coupler (MPJ 53029) put on the same place and secure hexagon socket set screw M3x3.
- Notice: the PTFE axial bearing ring must have the small axial play. Big play = the water in boat, the small play = not freely turning of boat shaft. Ideal is what smallest. e.g. 0,01mm.

ASSEMBLY DRIVE UNIT TO BOAT

The drive unit mount please to the body of the boat in according with instructions from producer of boat. The standard assembly is glue. Drive will push in the boat body to the correct position. Special beds (e.g. behind flange Compact or electric motor) will set up to the correct position. Check out tube of the drive will ensure CA glue at point passage through body. In finish reinforce space among shaft and own boat body with 5 min. epoxy resin.

CONNECTING ELECTROMOTOR TO REGULATOR

The electromotor has cable wires or terminal connectors with male part of connectors (MPJ 21020). Female parts with shrinking isolations are included in the package and must be soldered to regulator output cables. Connectors must be disconnected by being pulled from the connector parts, without applying any force on the cable (or being pulled from the motor unit).

The recommend boat screw is approx. 30 mm dia (for 7 or 8 cells), pitch in according with speed of boat model. In the course with size of boat screw observe the working mode of electromotor (maximum current).

COOLING

It is necessary to ensure adequate water cooling. The cooling circuit make please in accordance with the instructions from producer of boat model. At first rides is necessary check, whether from check out opening on the run sprays water - cooling circuit works well.

Usual causes malfunction cooling circuit:

1. impurity confined cooling circuit (grass, leaf etc.)
2. interrupted cooling circuit inside craft - downfallen or cracked water tube.
3. not correct placing of input cooling of the circuit.

MAINTENANCE OF ELECTROMOTOR

The ball bearings of electromotor have a longlife high quality grease, they can be changed if necessary. Avoid penetration of dirt or water into the electromotor.

It is recommended the output shaft bearing to oil with light machine oil.

IMPORTANT SAFETY ADVICE

- the boat screw must be undamaged and balanced
- make sure that the onlookers stay at a safe distance when the motor runs
- use only boat screw recommended for this power
- the run without water cooling is strictly prohibited
- first switch on your transmitter, check the position of the throttle stick (and related switches if there are any). Only then connect your power pack to the speed controller and switch on the receiver.
- follow the manual of your regulator
- do not use the motor for other applications (non modeling use).
- this position product and this manual are subject to change without notice

GUARANTEES

All units are controlled and tested before purchase. Full guarantee for manufacturing and material defects is valid one year from the purchase date. The guarantee covers none of the following:

- improper mounting and overheating
- using the motor for other purposes than recommended
- periodic maintenance and repair or replacement of parts due to normal wear
- repair costs after non-authorized services or the customer himself

NOTICE

The electromotor has a relative high rpm per Volt. Therefore, do not connect this motor without load to voltage bigger then 15 V because it could be damaged easily when exceeding maximum rpm.

Number of cells	6-10
RPM per Volt	2650
Maximum recommend speed (min ⁻¹)	40000
Maximum speed (min ⁻¹)	45000
Maximum efficiency (%)	approx. 82
Current for maximum efficiency (A)	7-15
Short time current (A)	25
Internal resistance (mΩ)	100
Dimensions - diameter/ length (mm)	25/35
Shaft diameter (mm)	3
Number of turns	20
Weight of electromotor (g)	74
Weight of drive unit Compact MPJ 50010 (g)	116
Weight of drive unit Compact MPJ 50011 (g)	118
Recommend boat screw	30 mm dia, M4
Recommend length of standard boat (mm)	to 750
Recommend length of racing boat (mm)	to 400