

Operating instruction and specifications

TorQstar AL 41XX and AL 70XX

1. Before commissioning the following must be observed:

- a, Since this is a so-called external rotor (AL) the housing rotates. The motor must be securely fixed to the screw connections provided before testing!
- b, It must be ensured that no contamination of any kind can get into the engine!
- c, The connection cables must be laid in a way that they cannot touch the rotor.
- d, Maintain sufficient distance from rotating parts (propellers etc.).
- e, In principle, the intended cooling must always be able to dissipate the heat generated by the motor (also see technical data).
- f, For motor versions with integrated water cooling, the CUSTOMER is solely responsible for the necessary external devices and connections.
- g, Screw-in depth AL 41XX: **max. 6,0 mm** AL 70XX: **max. 10,0 mm**
- h, Limit speed AL 41XX: **max. 35.000 U/min** AL 70XX: **max. 20.000 U/min**

2. Electrical connection:

- a, We generally recommend to only use high quality connector systems. Ideally, our 400A - 6mm connector system.
- b, Keep all cables as short as possible! If not otherwise possible, extend and twist the cables to the motor (minimize interference).
- c, The direction of rotation can easily be changed by swapping two motor connections.

3. Technical specifications:

- a, The achievable engine power increases approximately proportionally with the speed. This means that the highest power can only be used at maximum speed.

TorQstar **4125** at 35.000 U/min approx. 6KW (bei η / P_{max})

TorQstar **4140** at 35.000 U/min approx. 10KW (bei η / P_{max})

TorQstar **7025** at 20.000 U/min approx. 15 KW (bei η / P_{max})

TorQstar **7040** at 20.000 U/min approx. 20 KW (bei η / P_{max})

TorQstar **7050** at 20.000 U/min approx. 24 KW (bei η / P_{max})

- b, The speed increases approximately proportionally with the operating voltage.
- c, The torque increases approximately proportionally with the current consumed, increasing.
- d, Frequency: > 12 KHz
- e, Timing setting depending on the load approx. 18° - 27°, if possible, autotiming is recommended!
- f, Thanks to a new type of technology, the partial load resistance is comparable to that of our inrunner Motors.
- g, The temperature during operation shall not exceed 100 °C!
- h, All efficiency data (η) include losses from the motor and controller. The overall efficiency 91% contains a controller loss of approx. 1 - 2%, this corresponds to a motor efficiency of approx. 92 - 93%.