**Lehner Motoren Technik**

Lise-Meitner-Strasse 1, 85662 Hohenbrunn / Germany
Phone: +49(0)8102/805537 FAX: +49(0)8102/805539
mail: vertrieb@lehner-motoren.com

Operating instruction and specifications

# Series 10xx 15xx 19xx 22xx

1. Because of the high packing density of the motors the depth for the mounting screws is max. 3 mm (2/17“) Series 10xx max. 2,5 mm (3/32“).
2. External lead-through connectors are twisted winding wires that can break when bent several times..
3. Rpm values of the motors are proportional to the DC voltage at the controller. The mechanical rpm limits are for series 10xx 15xx 19xx max. 85000 rpm, for series 22xx max. 50000 rpm.
4. The maximal power throughput depends strongly on the rpm and on cooling.
   Make sure there is good cooling.

   Operating voltage x 2 = rpm x 2 = double power

5. All motors are equipped with rotors optimized for partial power. This yields an efficiency loss of no more than 7% (typically 4 - 5%) at half power. If the operating parameters are outside the approved max. efficiency range (full power current too high), there is the risk of thermal destruction of the magnetic rotor through excessive eddy currents. You need to have allways an optimal adaptation.
6. There are many different motor controllers made by various manufacturers. Depending on design and software version they can behave differently (e.g. start, start protection, timing etc.).
7. Our rpm / power data have been determined by using 15° timing.
8. Triangle or star configuration:
   Default is the triangle configuration. All data in the rpm table applies to the triangle configuration. In star configuration the motor behaves as if it has 1.73 times the number of windings and an accordingly lower, by the same factor, rpm per Volt. The series 10xx motors have a soldering board at the back where you can implement the desired configuration. For the star configuration the three D-D soldering bridges have to be seperated and the three S-S traces have to be connected. Motors of the series 15xx, 19xx and 22xx can be ordered with 6 connections on the backplate. There you can implement the two different configuration by connecting the twisted winding wires in the order shown below.

   Example: A 1920/10 motor in star configuration is approximately equivalent to a motor 1920/17 in triangle configuration. 1920/10 with triangle configuration has 3,135 rpm per volt, in the star configuration the same motor would have 1,844 rpm per volt.


series 10xx
soldering board

series 15xx 19xx 22xx
triangle configuration

series 15xx 19xx 22xx
star configuration