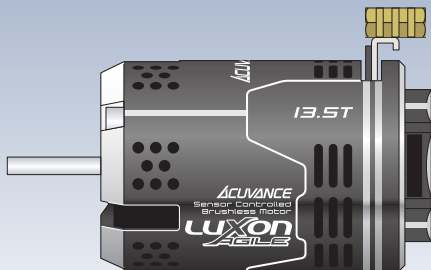


LUXON AGILE

INSTRUCTION MANUAL



Thank you for purchasing the ACUVANCE Sensor-Controlled Brushless Motor.

This motor provides the best performance when used in combination with the ACUVANCE brushless ESC "TACHYON". To obtain 100% performance of this product, be sure to read this instruction manual. After reading this manual, keep it carefully.

*LUXON AGILE is a motor dedicated to sensor-controlled brushless ESC. It is not applicable to sensorless ESC.

Characteristic of LUXON AGILE

AGILE performs lineup of a characteristic different rotor by the same diameter, same length

AGILE is equipped with the industry's first MFC system which enabled the interactive changes from a torque type to a rotary type without breaking weight balance. The optional rotor has the same weight, same diameter and same length in a torque type and rotary type. Therefore you can feel the essential characteristic change of the motor without spoiling "the natural and direct silky feeling" that ACUVANCE cultivated in the LUXON series.

Upsizing and lightweighting of the rotor blade

The rotor blade which produced a current of air in the inside is upsized and lightweighted. It balanced rotary performance with ability for higher cooling.

Drivers can customize a body color

AGILE adopted new transformation (TF) jacket to enable the customization of the motor color. You can create an original color in conformity to a chassis if you use TF color jacket for exclusive use of optional AGILE.

Dual sensor connector

AGILE has two places of sensor connectors. It improved the flexibility of the layout by placing a connector in the different direction.

Extended ADVANCED ANGLE

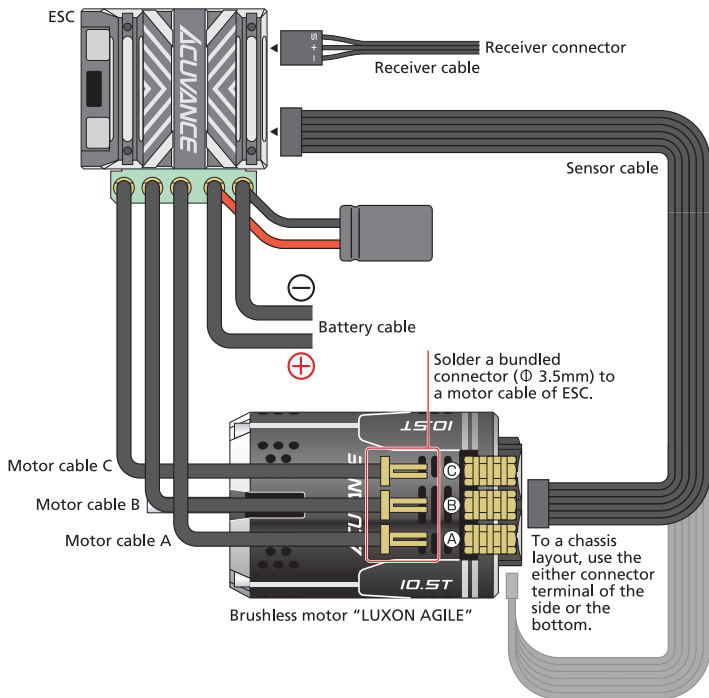
It extended advanced angle to 55 degrees, further high speed supports becoming it.

Large-diameter bearing

It adopts a large-diameter type to a front bearing, then it improved the rotary direction and the durability. (Outer diameter: 12.700mm/ Inside diameter: 4.762mm)

CONNECTIONS

Connect the motor as shown below:



•Sensor cord

The sensor cord transmits a position signal of Hall element to a speed controller (hereinafter, referred to as ESC). Since the ESC and the motor use the same type of connector, there is no limitation in cord inserting direction. However, when inserting the cord, match the cord with the connector shape. If the sensor cord is not connected, the ESC initial setup cannot be performed. (During travel, keep the sensor cord connected to the ESC.)

Connect the sensor cord securely, because a contact failure causes malfunction and damage to equipment. Modification of the sensor cord causes a failure of the motor. Never attempt to modify the sensor cord.

CAUTION

When performing in-vehicle installation, do not group the motor cable with the sensor wire. Noise may cause improper operation.

**WARNING**

To connect the LUXON to the ESC, be sure to connect the cables with the "A", "B" and "C" symbols matched with each other. If a cable with a different symbol is connected, motor rotation control is disabled. Furthermore, a large current may flow through the ESC and the motor, resulting in damage and burnout of the equipment. Unlike the sensorless type brushless motor, the LUXON cannot change the rotating direction even if the cable connections are exchanged. Change the rotating direction* with the ESC, as required.

CAUTION

All motor cable "A", "B", "C", if it's not fitting solder between cable and connector terminal, motor may not operate correctly. Under overload situation, it may begin to melt solder. It's recommended that confirm soldering part if it doesn't operate normally.

* To change the motor rotating direction, a rotating direction change function is required for the ESC. (TACHYON provides this function).

**WARNING**

To replace the motor cable, use a soldering iron which provides a large soldering tip area and high output (approx. 70W), and quickly conduct the soldering work. If a soldering iron's output is low, solder is hard to melt, disabling secure connections of the cables. This may result in cable disconnection or contact failure when vibration is applied to the cable. If heat application time is excessively long, it causes damage to the internal parts. (Use thorough caution so that the terminals will not be short-circuited by solder.)

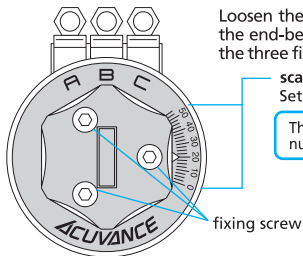
**WARNING**

To fasten the motor to the motor mount, be sure to use screws with up to 8 mm length.

CAUTION

Various wires/cables will deteriorate due to usage conditions and aging. This may result in the loss of performance for the motor/ESC main unit and in some cases, it may result in damage, so the replacement of various wires/cables in a timely manner is recommended.

How to adjust motor timing



Loosen the three fixing screws and then match the line found on the end-bell with the motor timing scale. After this, firmly tighten the three fixing screws.

scale of motor timing

Set the line to an angle of your choosing.

The maximum rpm will increase as the motor timing number increases.

For prevention of trouble, please become advanced angle with less than 60 degrees of total with advanced angle (Boost timing + Turbo timing) in ESC by all means.

IMPORTANT!

Advanced angle is for normally rotating it. When you reverse a motor direction change by function of ESC, the maximum and minimum of the scale are replaced.

- When you set advanced angle with maximum (55), it will be minimized at the time of the reverse rotation. When you set advanced angle with minimum (0), it will be maximum at the time of the reverse rotation. When you let motor direction reverse, please be careful enough.

PRECAUTION FOR USE

- Before using this product, carefully read the important warnings described in this instruction manual to understand the instructions thoroughly.



DANGER

Instructions that the user must observe to prevent serious injury.

CAUTION

Useful information for handling this product.



WARNING

Instructions that the user must observe to prevent accidents.

•About installation



DANGER

To prevent accident and fault:

Conduct wiring work carefully. If a connecting part comes off under vibration during travel, motor control may be disabled.



WARNING

To prevent accident and fault:

The soldering of each part must be conducted within 5 seconds. Applying heat for a long period causes damage to the electronic components.

•About cable connections

CAUTION

To prevent accident and fault:

Make sure that the cables are properly connected. Do not connect the power supply with reverse polarities. Be sure to insulate cable connection terminals. If the connection terminals are short-circuited, it may result in damage to this product.

•About modification



DANGER

To prevent smoke, fire and burns:

Never attempt to solder the circuit board and electronic components in the motor.

•Handling precautions



DANGER

To prevent smoke, fire and burns:

During use of this product (when a power supply is connected to the motor, or when the power switch is ON), keep watching the motor. If an abnormal condition occurs, it may result in fire or other accident.

CAUTION

To prevent accident and fault:

Do not install this product in a place where water, oil, fuel or other conductive liquids are present. Electronic components are vulnerable to minerals contained in such liquids. If the product becomes wet with such liquids, immediately stop operation, and dry it.

CAUTION

To prevent accident and fault:

Be sure not to use the motor in fully-throttled condition, if the motor is not incorporated in a chassis drive unit. Running the motor at a high speed under no load causes damage to the motor.

CAUTION

To prevent accident and fault:

If an improper gear ratio is selected, it results in motor overload, causing the motor to be damaged by abnormal heating. Select an appropriate gear ratio carefully.

Sensor Controlled Brushless Motor

LUXON AGILE

SPECIFICATIONS

	8.5 T	9.5T	10.5 T	11.5T	13.5T	17.5T
Allowable voltage (V)*1	4.8V~11.1V					
KV (rpm/V)	4,920	4,360	3,950	3,620	3,100	2,310
Power (W)*2	390	350	320	290	250	200
Efficiency (%)*2	91	92	92	92	92	92
Rotor type	Sintered rotor, ϕ 12.3 mm (Neodymium magnet)					
Coil winding method	Star-winding					

The specifications are subject to change without prior notice.

*1: Allowable voltage of the motor. Pay attention to the ESC's allowable voltage.

*2: With 7.2 V input (4.5T: 6.0 V), Under no load

REFERENCE GEAR RATIO

Select an appropriate gear ratio based on the reference values listed below. The following values are only for your reference. The optimum gear ratio varies depending on the ESC performance, machine settings and characteristics of the traveling course. Determine the optimum gear ratio by observing heating-up condition of the ESC and the motor.

	8.5T	9.5T	10.5T	11.5T	13.5T	17.5T
On-road technical course [7.2 - 7.4 V]	6.6 : 1	6.2 : 1	5.0 : 1	4.8 : 1	4.4 : 1	3.5 : 1
On-road technical course [6.0 V]	6.0 : 1	5.6 : 1	5.2 : 1	5.0 : 1	4.6 : 1	3.7 : 1
Off-road 2WD	9.5 : 1	9.0 : 1	8.5 : 1	8.1 : 1	7.4 : 1	6.7 : 1
Off-road 4WD	8.6 : 1	8.2 : 1	7.8 : 1	7.5 : 1	6.5 : 1	5.6 : 1
Off-road truck	7.3 : 1	7.0 : 1	6.7 : 1	6.3 : 1	5.5 : 1	4.6 : 1

