

Thank you for purchasing the XBL 2500KV high performance sensorless brushless motor! Brushless power systems can be very dangerous, any improper use may cause personal injury and damage to the product and related devices. We strongly recommend reading through this user manual before use. Because we have no control over the use, installation, or maintenance of this product, no liability may be assumed for any damages or losses resulting from the use of this product. We do not assume responsibility for any losses caused by unauthorized modifications to our product.

## 01 WARNINGS



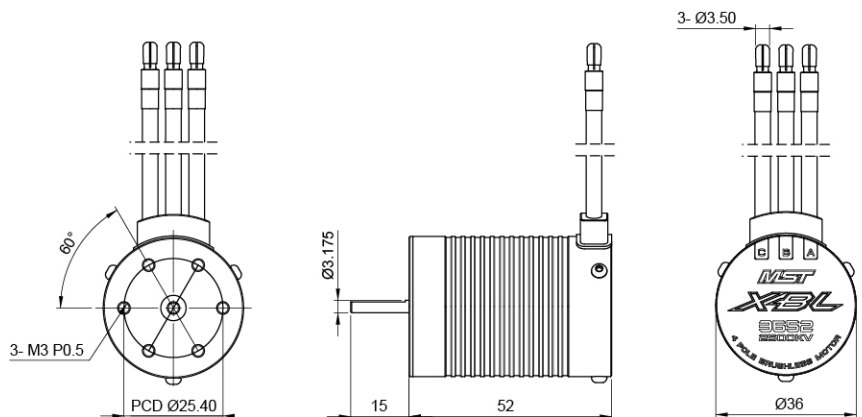
- Never leave this product unsupervised when it is powered on.
- Ensure all wires and connections are well insulated before connecting the motor to related devices, as short circuit will damage your motor.
- Read through the manuals of all power devices and chassis and ensure the power configuration is rational before using this unit.
- Never hit full throttle before installing the pinion, as high speed rotation may cause damage to the motor in circumstances of no load.
- Ensure all devices are well connected, in order to prevent poor connection that may cause your vehicle to lose control or other unpredictable issues such as damage to the device.
- Stop using the motor when its shell temperature exceeds 100°C / 212°F; otherwise the rotor may be demagnetized and cause irreversible damage to your motor.

## 02 FEATURES

- Innovative 4-pole-8-magnet "staggered pole" rotor with low cogging effect and torque pulsation greatly improves control feel around corners.
  - O-ring seal fitted between the front end bell and motor case isolates screw holes from inner parts to prevent liquid or dust from getting inside and protect motor from damage.
  - Special design implemented by the motor case (the end attaches to the front end bell) isolates inner coils from outside to protect winding from being damaged by overlong screws.
  - Special technology for temperature control implemented by this motor guarantees less heat more efficiency (efficiency rate of up to 90%).
  - CNC machined aluminum housing, high purity copper windings, advanced rotor structure, high-quality alloy steel output shaft, high-precision bearings for high durability and smoothness.
  - Rebuild-able design (partially rebuild-able) for routine maintenance effectively prolongs the motor life and raises the motor efficiency.
- Excellent match between XBL Brushless Motor 2500KV with XBL Brushless ESC 50A guarantees users large torque plus a very smooth and linear power band.

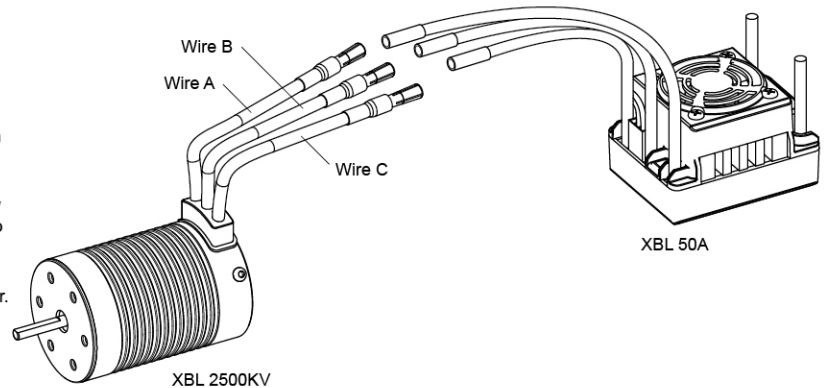
## 03 SPECIFICATIONS

MODEL	XBL 2500KV
PN	601022
KV (No-load)	2500
LiPo	2-3S
Resistance	0.0176
No-load Current	2.7A
Diameter & Length	Ø = 36 / L = 52
Shaft & Length	Ø = 3.175 / L = 15
Poles	4
Weight	19g
Applications	1:10 Scale Touring Car/ Buggy(Sport) 1:10 Scale Drift 1:10 Scale Monster Truck/ Truck (Light-duty)



## 04 INSTALLATION & CONNECTION

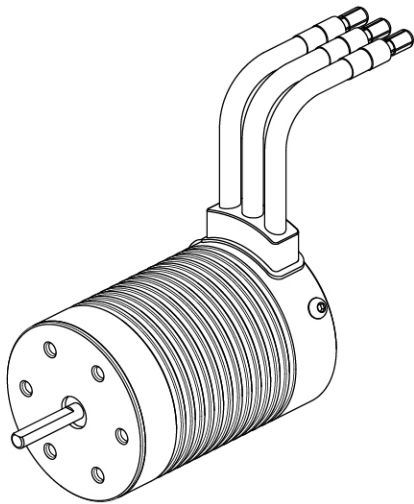
- 1 HOW TO MOUNT THE MOTOR INTO A RC VEHICLE**  
M3 mounting screws (6×M3) are needed here, as the mounting holes are 5mm in depth, so we don't recommend using the M3 screws with the length exceeds 8mm to mount the motor into your vehicle.
- 2 HOW TO CONNECT THE MOTOR TO AN ESC**  
There is no polarity on the A/B/C three ESC-to-motor wires, so do not worry about how you connect them initially. You may find it necessary to swap two wires if the motor runs in reverse.
- 3 RECHECK THE INSTALLATION & CONNECTIONS**  
Recheck the installation and all the connections before turning on the power.



## 05 FDR/ GEAR RATIO SELECTION

It's important to select the FDR/gear ratio properly, as improper FDR/ gear ratio may cause you great loss. Therefore, please choose the gear ratio by referring to the following points!

- 1 OPERATING TEMPERATURE OF THE MOTOR**  
The motor temperature should be lower than 100°C (212°F) during the operation. Temperatures above 100°C will weaken the magnet and may partly melt the coils and eventually damage the ESC (because of strong current). Therefore, the most effective way to prevent overheat is to select the right gear ratio.
- 2 PRINCIPLE OF GEAR RATIO SELECTION**  
To avoid potential risks such as ESC/ motor damage or malfunction caused by overheat, please start with a very small pinion first and check the ESC & motor temperatures regularly throughout the run. This is the only way to guarantee that your motor won't overheat. If the motor and ESC temperatures remain stable and low in the running, then you can slowly increase the pinion size while monitoring temperatures to determine the safe gearing for your vehicle, climate and track condition. Because these elements may change, so please keep monitoring the ESC & motor temperatures to protect your electronics from damage.



感謝您購買本產品！無刷動力系統功率強大，錯誤的使用可能造成人身傷害和設備損壞。在使用設備前，請務必仔細閱讀本說明書，並嚴格遵守規定的操作程序。我們不承擔因使用本產品而引起的任何責任，包括但不限於對附帶損失或間接損失的賠償責任；同時，我們不承擔因擅自對產品進行修改所引起的任何責任。我們有權在不經通知的情況下變更產品設計、外觀、性能及使用要求。

## 01 注意事項



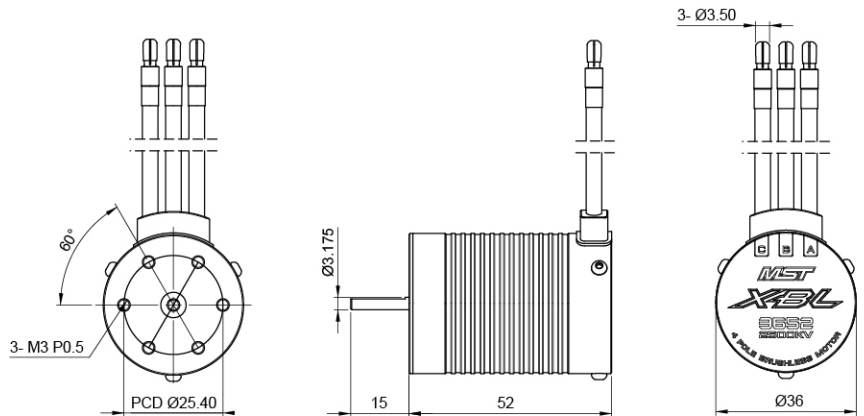
- 在產品處於通電狀態時，不應分散精力去處理其他事情。
- 連接馬達前，請確保需要絕緣的部位處理良好，短路會毀壞產品。
- 使用此馬達前，請認真查看各動力設備以及車架說明書，確保動力搭配合理，
- 避免因錯誤的動力搭配導致馬達超載而損壞。
- 齒輪未安裝前，禁止全油門操作。無負載情況下高速運轉可能會損壞馬達。
- 請務必仔細連接好各部件，若連接不良，遙控模型車可能無法正常控制，或出現部件損壞等其他不可預知的情況。
- 勿使馬達外殼溫度超過100攝氏度（212華氏度），高溫可能導致轉子退磁並最終對馬達造成不可恢復的損壞。

## 02 產品特色

- 業界首創的4極8磁片“錯極”轉子專利技術，齒槽效應極低，低速時非常順滑，油門收低時不會產生讓車手厭煩的“過強拖刹”效應，極大提升了車輛減速過彎時的操控性。
- 前端蓋內嵌O型密封圈，將螺紋孔完全與馬達內部隔離，螺絲鎖緊後，前面蓋近乎完全防水密封效果，有效避免前端蓋進入液體，從而損壞馬達。
- 馬達外殼前部鋁板防護，與內部線圈隔離，避免螺釘過長損傷銅線，有效保護馬達。
- 高硬度鋁質CNC外殼、耐高溫線圈、防爆轉子、高韌性合金輸出軸、進口高精度長壽命優質軸承打造馬達超強耐用性。
- 超高輸出效率，最高可達90%；在同等負載情況，有效降低了馬達溫度，且能輸出更大功率。
- 可拆卸式結構設計（注：部分可拆），便於日常清潔和維修，能夠有效地延長馬達使用壽命、提高馬達的工作效率。馬達完美匹配XBL無感無刷電變50A，為玩家帶來剛柔並濟的極致操控體驗。

## 03 規格

型號	XBL 2500KV
PN	601022
KV（空載）	2500
適用鋰電	2-3S
內阻（Ω）	0.0176
空載流	2.7A
外徑 / 長度 (mm)	Ø = 36 / L = 52
軸徑 / 外露軸長 (mm)	Ø = 3.175 / L = 15
馬達極數	4
重量 (g)	196
主要用途	1:10 房車/越野(娛樂) 1:10 甩尾 1:10 大腳/卡車(輕載)



## 04 安裝和連接

### 1 安裝馬達

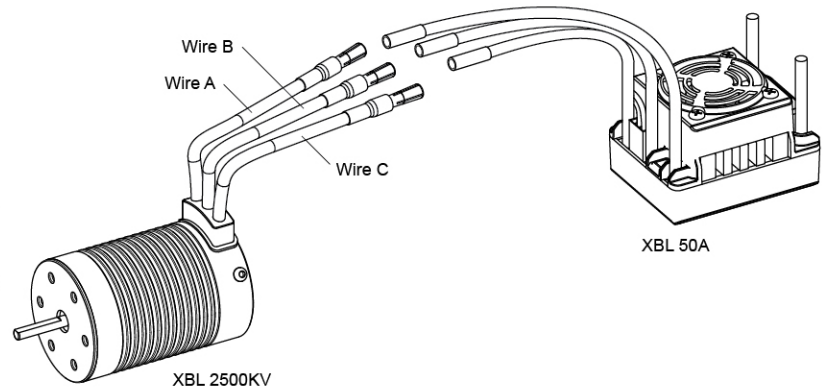
該馬達安裝螺絲規格為6個M3螺絲孔，面板螺孔可鎖入深度為5mm，因此建議採用不長於8mm的M3螺絲進行安裝，具體安裝情況可試車架而定。

### 2 馬達連接

馬達與電變相連無嚴格的線序要求，電變的#A/#B/#C可以與馬達的三線隨意對接，若出現轉向相反，任意交換兩條電機線即可。

### 3 檢查

開啟遙控車電源前，請再次仔細檢查馬達安裝的可靠性及所有連接的正確性。



## 05 齒比選擇

齒比的合理選擇非常重要，不合適的齒比可能會給您帶來重大損失。請遵守以下要點來正確選擇齒比！

### 1 馬達的工作溫度

馬達在工作時，溫度應低於100°C（212°F）；溫度高於100°C時，將會使馬達轉子磁性減弱，且線圈可能出現局部燒熔短路現象，產生大電流而損壞電變。選擇合適的齒比可以有效防止馬達過熱。

### 2 齒比選擇原則

為防止馬達過熱引發潛在危險而導致電變和馬達損壞，請從一個最少齒數的馬達小齒進行齒比配置，並隨時檢查馬達溫度，這是唯一能確保馬達不過熱的方法。車子在行駛途中，如果馬達及電變溫度一直處於穩定的低溫範圍內，您可以試著使用齒數較多的小齒，並密切監測馬達溫度，以確定更改後的齒比是否適合您的模型車、當地氣候及賽道條件（請注意氣候及賽道條件不是恆定不變的，而是經常會發生變化，所以頻繁地監測電變及馬達的溫度是一項重要的日常操作，它可以確保您的電子設備長期穩定地工作）。