

**Who we are :**  
We are into research and manufacturing of Permanent magnet generators, Brushless DC motors and PMSM motors since 2002 formerly as Electromagnet. We have developed permanent magnet generators that is enhanced with power and control over required torque. Our BLDC motors are in house engineered for quality and durability. Specially designe d for Industrial and automobile.

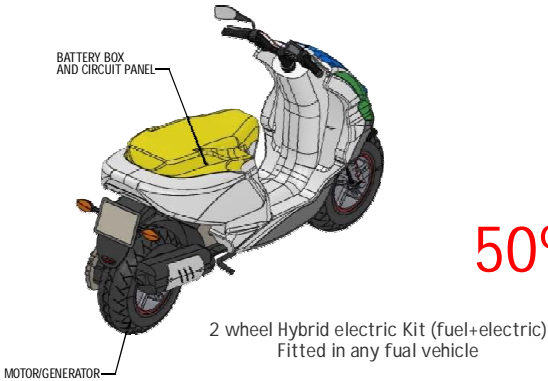
**We at Kalfi pledge provide efficient BLDC Motors, PMSM Motors, Controllers and Electric Hybrid kits.**

Out hybrid kits can be installed on any vehicle which may run on petrol, diesel or CNG. Replacing the wheels with our BLDC Hub motors, adding controller and battery back up. Our motors are efficient to generate electric charge while on run with other fuels to charge the battery.

Making your vehicle run on electricity and charge on the go to extend your electric run distance.

We are into Permanent magnet generator / HUB Motors manufacturing with our own state of art design and technology manufactured here in India with high quality materials. Tested on road.

Run capacity/kms	Wattage/Power	Frame sizes	Charge capacity	Charge time distance
100 kms	2000 watt	2 wheelers	2 kwh	20 – 150 kms
100 – 500 kms	4000 watt	4 wheelers	4 kwh	20 – 150 kms
100 – 500 kms	6000 watt	4 wheelers	6 kwh	20 – 400 kms
100 – 500 kms	9000 watt	4 wheelers	9 kwh	20 – 500 kms



Our Self charging Electric vehicle kit which can be added externally to any vehicle on wheel hub to make it run on electric source.

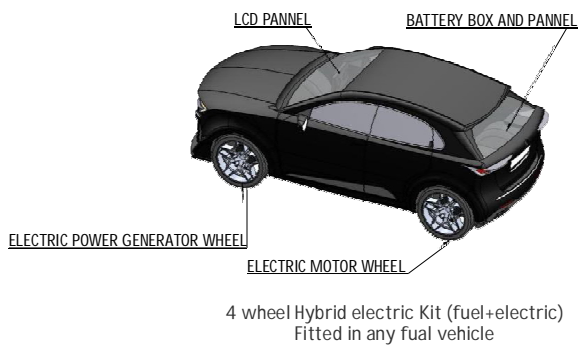
**50% SELF CHARGE**

This will enhance the range of power source(electric or fuel) of any vehicle It can be added externally on wheel hub of Any wehicle without making any changes to original vehicle engine.

No need to charge the battery. It is self charging when run on other fuels.

Green Energy





Self charging Electric vehicle kit which can be added externally to any vehicle on wheel hub to make it run on electric source. That doesn't effect the existing vehicle engine and it makes the vehicle hybrid that means it can run on electric source and it can run by petrol /diesel/CNG also

1. Mechanical design or system that makes possible to add electric drive/motor on hub without disturbing original vehicle running function.
2. Electrical connection system that enables additional electric running feature to vehicle that may be running on any fuel.
3. The motor also include charge generator internally and additionally to charge the battery while running on other fuel and enhancing the power support to extent the charge while running on battery.

This also must become affordable to install the electric kit while the basic functions of vehicle remains the same. For e.g. the electric storage is for 100 kms, vehicle runs on electric for 100 kms, then it can be run on regular fuel for 20 kms which will charge the battery again and after 20 kms we can gain shift it to electric drive.

We still have the option to plug in charge when and where time and facility is available. We have covered the options of speed and comfort as well.

#### Advantages

- There is no drive distance limitation.
  - Easy installation without making any changes to original engine.
  - Only wheel changes to electric motor/generator
  - Battery charge time covered in Fuel run so time saving and cost saving
  - Low cost installation.
  - Upto 60 km/h for 2 wheelers and upto 100 km/h for 4 wheels achieved.
- Zero carbon emission, save environment and human health conscious.

**No Carbon Emmission**



BLDC Motors



A motor converts supplied electrical energy into mechanical energy. Various types of motors are in common use. Among these, brushless DC motors (BLDC) feature high efficiency and excellent controllability, and are widely used in many applications. The BLDC motor has power-Saving advantages relative to other motor types.

Since the rotor is a permanent magnet, it needs no current, eliminating the need for brushes and commutator. Current to the fixed coils is controlled from the outside.

BLDC HUB Motor

Advantages of BLDC Motors

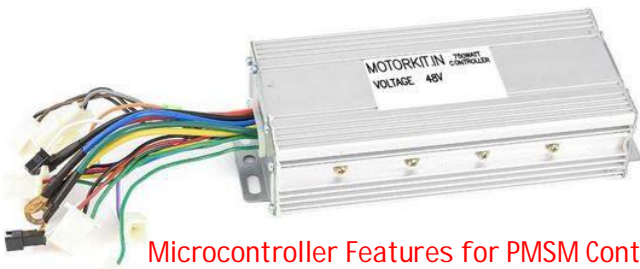
One big advantage is efficiency, as these motors can control continuously at maximum rotational force (torque). Brushed motors, in contrast, reach maximum torque at only certain points in the rotation. For a brushed motor to deliver the same torque as a brushless model, it would need to use larger magnets. This is why even small BLDC motors can deliver considerable power.

The second big advantage-related to the first -is controllability. BLDC motors can be controlled, using feedback mechanisms, to delivery precisely the desired torque and rotation speed. Precision control in turn reduces energy consumption and heat generation, and - in cases where motors are battery powered - lengthens the battery life.

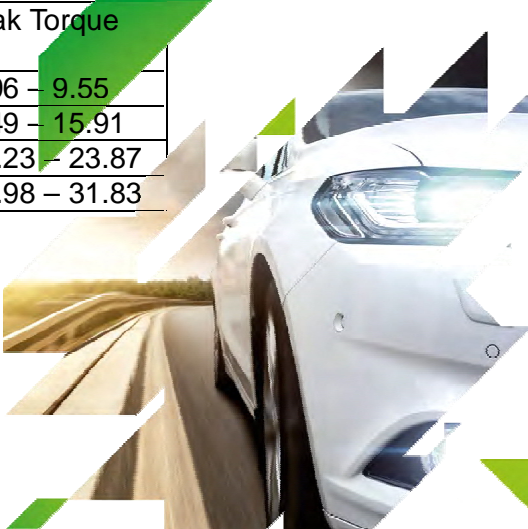
BLDC motors also offer high durability and low electric noise generation, thanks to the lack of brushes. With brushed motors, the brushes and commutator wear down as a result of continuous moving contact, and also produce sparks where contact is made. Electrical noise, in particular, is the result of the strong sparks that tend to occur at the areas where the brushes pass over the gaps in the commutator. This is why BLDC motors are of ten considered preferable in applications where it is important to avoid electrical noise.

Our Range of BLDC and PMSM Motors

Power	Operation Voltage	Current	RPM	Peak Torque
3 KW	48-60	62 Ampere	500-3000	57.96 – 9.55
5 KW	60-72-96	70 Ampere	500-3000	95.49 – 15.91
7.5 KW	60-72-96	105 Ampere	500-3000	143.23 – 23.87
10 KW	72-96	140 Ampere	500-3000	190.98 – 31.83



Microcontroller Features for PMSM Control

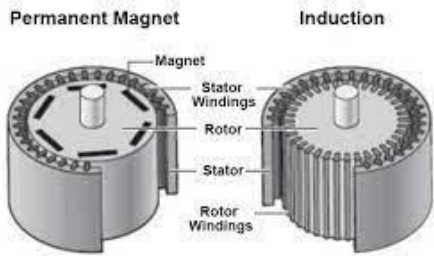


Generate your own energy





PMSM Controller



Permanent Magnet Synchronous Motor (PMSM)

The Permanent Magnet Synchronous Motor (PMSM) is an AC synchronous motor whose field excitation is provided by permanent magnets, and has a sinusoidal back EMF waveform. The PMSM is a cross between an induction motor and brushless DC motor. Like a brushless DC motor, it has a permanent magnet rotor and windings on the stator. However, the stator structure with windings constructed to produce a sinusoidal flux density in the air gap of the machine resembles that of an induction motor. Its power density is higher than induction motors with the same ratings since there is no stator power dedicated to magnetic field production.

With permanent magnets the PMSM can generate torque at zero speed, it requires digitally controlled inverter for operations. PMSM are typically used for high performance and high-efficiency motor drives. High-performance motor control is characterized by smooth rotation over the entire speed range of the motor, full torque control at zero speed, and fast acceleration and deceleration.

To achieve such control, vector control techniques are used for PMSM. The vector control techniques are usually also referred to as field-oriented control (FOC). The basic idea of the vector control algorithm is to decompose a stator current into a magnetic field-generating part and a torque-generating part. Both components can be controlled separately after decomposition.

Economy  
At Your  
Home

