



TARANG SCIENTIFIC INSTRUMENTS



TARANG SCIENTIFIC INSTRUMENTS



## DC MOTOR

**TARANG SCIENTIFIC INSTRUMENTS**  
DHARWAD

Phone : 0836-2775204

Cell : 94482 31960

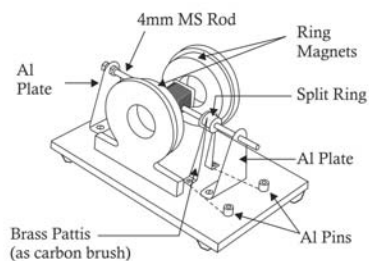
E-mail: [info@tarangscientificinstruments.com](mailto:info@tarangscientificinstruments.com)  
[www.tarangscientificinstruments.com](http://www.tarangscientificinstruments.com)

### DC MOTOR

Conversion of Electrical Energy into  
Mechanical Energy

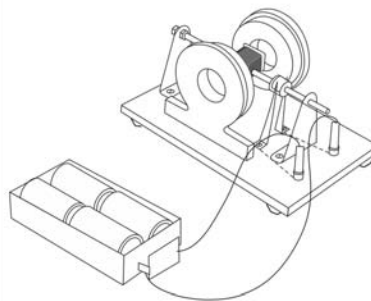
#### Assembly :

Consists of an armature made from cast iron piece with ms rod fixed at its centre. An insulated copper wire of 26G is wound on the cast iron piece. The wire is wound to have 200 turns. The starting and end points of this copper wire are soldered to the split rings (made from brass and are fixed over a plastic bush) fixed on the 4mm MS rod. This coil with split rings assembly is fixed on a clear acrylic base using two aluminium supports. Two strong ring magnets (Red and blue coloured) which are fixed to the acrylic plates are mounted in line with each other on opposite sides of the coil, close to the coils. The magnets are mounted ensuring that opposite poles are facing each other. This provides the magnetic field. Another two brass pattis are fixed on the acrylic base in line with each other on opposite sides of the split rings such that their top edges are in touch with split rings. The lower end of these two brass pattis are connected to the two aluminium pins respectively as shown in the



TARANG SCIENTIFIC INSTRUMENTS

diagram. These two brass pattis acts as carbon brushes and the aluminium pins which are connected to these pattis can be used to pass current through the coil. Two banana pins with wires connected are part of the kit. This DC motor works with minimum of 1.5V DC supply.



#### To do and notice :

##### Step 1 :

Put the two given banana pins in the aluminium pins of the assembly.

##### Step 2 :

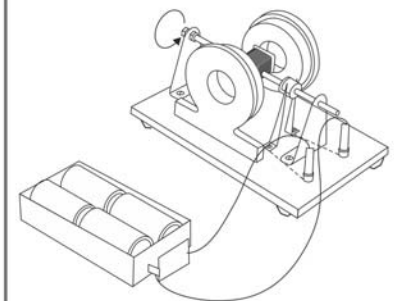
Connect the wires of these pins to a DC supply of 1.5 V or 3V or 6V. Give a slight push to the coil. You will observe that the coil starts rotating. It will continue to rotate as long as DC supply is connected.

##### Step 3 :

Reverse the direction of the current through the coil and observe the change in the direction of the rotation.



TARANG SCIENTIFIC INSTRUMENTS



#### What is going on?

When electric current passes through the coil in the magnetic field, the electro-magnetic force produces a torque which turns the armature. The electric current is supplied externally through split rings via carbon brushes (Brass patti in this case). The split rings reverse the current in each half revolution to keep the torque turning the coil in the same direction..



TARANG SCIENTIFIC INSTRUMENTS