

## Carbon Brush

**Carbon Brush** is a device which transmits energy or signal between the fixed part and the revolving part of rotating machinery such as motor or generator. Generally speaking, it is made up of pure carbon and coagulant with the cube shape. It is placed on a metal stent with a spring to press it on the shaft. It is called **Carbon Brush** because its main ingredient is carbon. Since **Carbon Brush** is easy to be worn out, it is necessary to maintain it regularly and clean up the coke. For instance, when the oil drilling is completed, it is essential to carry out a test by putting down a device through the shaft. **Carbon Brush** is needed to transmit the signal from the rotating part (cable drum with wires wrapped on the outside), to the device on the ground. **Carbon Brush** has a wire leading on the top, a bit like a rubber band used for rubbing the pencil. Its volume can be large or small. As a kind of sliding contacts, **Carbon Brush** is widely used in a lot of electric equipment. Its main materials include power graphite, graphite fat dip, metal (copper, silver) graphite.

### Installation of **Carbon Brush**

1. Carbon graphite should be able to move up and down after installed in the brush holder. And the space should measure 0.1mm-0.3mm between **carbon brush** and the brush holder to avoid swing due to a too large space. The distance between the lower end of the brush holder and the commutator should be kept around 2mm. if the distance is too short, the brush holder will easily injure the commutator; too long, the brush holder will easily shake to cause injury.

2. In theory, only the same type of **carbon brush** can be used on the same motor, but for certain large and medium-sized motors that have difficulties in commutation, we can use Gemini **carbon brush** whose edge for sliding adopts the **carbon brush** with good lubrication capability and the edge for drawing adopts the **carbon brush** with good spark suppression capability so as to improve the performance of **carbon brush**.

3. The unit pressure exerted on the different **carbon brushes** of the same motor should be kept even to avoid the imbalanced distribution of the electric currents which might cause the over heat and sparks from particular **carbon brushes**. The unit pressure of **carbon brush** should be selected according to the technical performance table. For motors that have a high speed of rotation or those that work under the shaking condition, the unit pressure should be increased accordingly to ensure its normal function. For example, the unit pressure of the **carbon brush** of the traction machine motor is 0.4-0.6kgf/cm<sup>2</sup>.

Note: a too high **carbon brush** unit pressure will make **carbon brush** more easily to be worn out and a too low pressure will lead to instability and mechanic sparks.

### The replacement of **carbon brush**

1. **Carbon brush** needs to be replaced if it is worn out to a certain degree. And it is best to replace all at a time. The mixture of old and new parts might cause the uneven distribution of electric currents. For large units, to replace the **carbon brush** while stopping its normal work will definitely affect the production. We can do this without stopping its work. We usually advise the clients to replace 20% of the **carbon brush** each time (that is 20% of each brush bar of every motor), and the interval for each replacement is 1-2 weeks. When the **carbon brush** runs well, the rest can be replaced to ensure the normal and successive work of the units.
2. To ensure a good contact between the **carbon brush** and commutation, it is necessary to grind the arc for the new **carbon brush**, which is usually finished on the motor. Place a piece of fine glass sandpaper between the **carbon brush** and the commutation, then grind the **carbon brush** along the rotating direction of the motor under the normal spring pressure. The sandpaper should be stuck closely to the commutation until the **carbon brush** is matched. After that, take off the sandpaper, blow away the dust with compressed air and clean up with soft cloth. Emery paper is not suitable for grinding the **carbon brush** because the silicon carbide particles may embed into the slots of the commutation and injure the surface of the **carbon brush** and the commutation when the motor is in operation. After the grinding of the arc, the motor should first operate at a low number of load operation of 20%-30% to allow the **carbon brush** to match the commutation and establish an even oxide film. Then, the electric currents can be gradually increased to the rated load.

XiangHai **Carbon Brushes** is a manufacturer and supplier of **carbon brush** in china. Our products of **Carbon brush** are electric tool **carbon brush**, electric motor **carbon brush**, automotive **carbon brush**, motorcycle **carbon brush**, silver **carbon brush**, copper **carbon brush**. Our company has passed the international quality system certification of ISO9001:2000. We have clients in South Africa, Middle East, South America and Southeast Asia .If you need **carbon brush**, please contact us.

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