

Constant Force (CF) Springs

The characteristics of CF springs show the force is constant over a wide range of spring extensions, as the spring travels down the brush box the force remains constant until it has reached 0.8* Dia of coil.

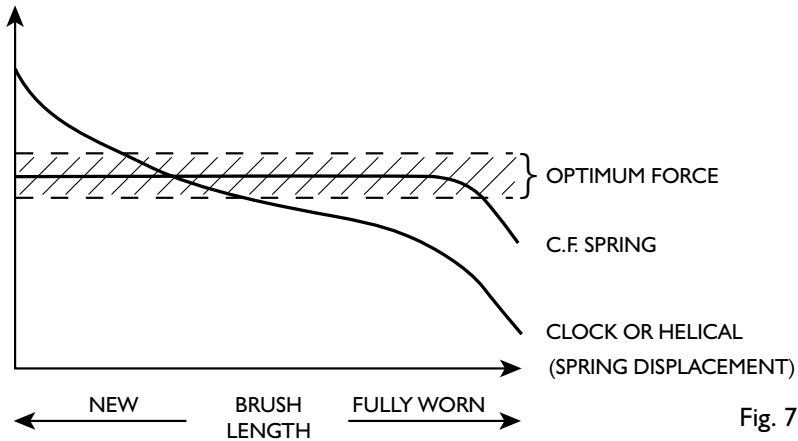


Fig. 7

Traction motors generally represent an arduous test of brushes and brush holders because of vibration and the shock loads that the motors can receive. C.F. spring brush holders have generally proved to offer advantages over conventional spring brush holders in the traction applications, and large production orders have subsequently been received.

Insulation

Although laboratory tests have shown that no appreciable current flows through the C.F. spring even if the brush flexible becomes disconnected, it is preferable to insulate the spring from the brush. This is achieved by fitting a non-conducting insert to the top of the brush where the spring bears upon it. Alternatively, Morgan Advanced Materials can provide fully-insulated spring assemblies.

Care and handling of the C.F. spring unit

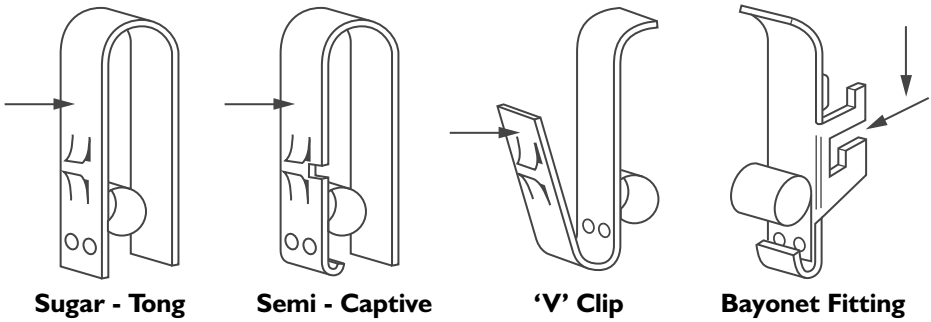


Fig. 8: Various spring types

1. To release the spring unit apply pressure on the latching side of the clip, as shown by arrow in fig 8. This will allow the clip to become free and rise out of the brush box under the tension between spring and brush.
2. When refitting, ensure that the spring clip is correctly placed in the brush guide and that the latching engages in the hole. Check by a slight pull on the clip to see that engagement is positive.
3. Check the Direction of the Brush top bevel as shown in fig 9.

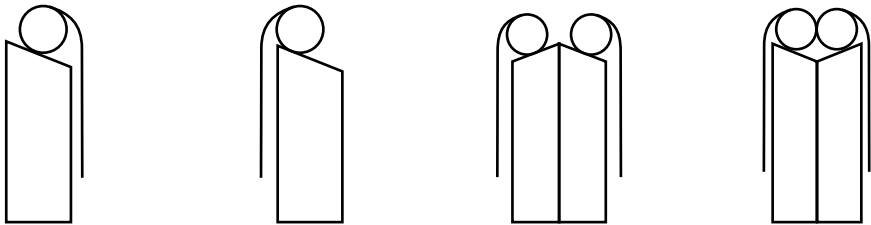


Fig. 9: Direction of brush top bevels