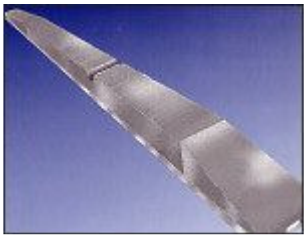
Technical Support - Linear Current Collection

Visual Identification of the Problem

Whilst most collector systems operate trouble-free within the normal maintenance requirements, if new trials or a new system is introduced this may require some special attention. Morgan has experienced engineers to assist in avoiding potential performance problems. Recognising particular symptoms or faults is largely a matter of experience and Morgan's experienced engineers are available to give advice and assistance.

The first step is to examine the symptoms as they appear on the carbons and their sheaths or holders. Consideration should then be given to historical performance and frequency of occurrence.

Damaged parts are often the result of failure elsewhere in the system and are not, themselves, at fault. This is why it is vital to include all the evidence in any investigation and not to concentrate solely on the damaged pieces.

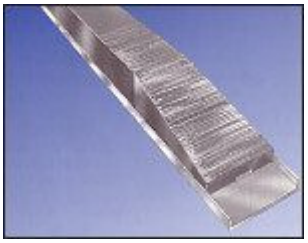


Grooving

Small central area of carbon worn down on both strips. Caused by badly set sectional insulators resulting in heavy sparking at this point. Arc damage to sheath also possible. Sparking likely to be seen in service.

Wear in Central Area of Carbon Strip

Poor wire stagger causes the wire to run only in the central area of the strip. It is sometimes possible to alleviate the problem by mounting an additional strip to increase central contact area.



Excessive Running on Cable Ends & Horns

The wire running onto the end-horns causes sparking and wire damage. If possible, increase carbon width on the pan-head.

Edge Damage

Poor wire contact results in heavy sparking. Contact is affected by current loading; contact pressure; weather; speed; wire and pantograph condition.

Mechanical Damage

Chipping of carbon edges can eventually lead to breaking. The method of fixing affects this and may determine what is acceptable in service.

Copper Pick-Up on Carbon Surface

Another possible result of poor contact - see Edge Damage

Sheath Damage

Poor contact between carbons and sheath leads to hot spots. Temperatures here can be high enough to burn or even melt the sheath.

Good Contact Surface

The actual surface will vary with respect to service conditions, but will display a degree of polish with little mechanical damage.