

# Shah Engineering Works

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## Technical Support on Slip Rings –

Troubles	Causes
<b>BURNING OF FLEXIBLES</b> The primary cause is persistent unequal load distribution between brushes, because of:	<ol style="list-style-type: none"><li>1. Unequal pressure on the brushes.</li><li>2. Brushes sticking in boxes.</li><li>3. Mixing different grades on one ring. Loose termination screws, dirty or blurred terminals.</li><li>4. Corrosion of flexibles by gas.</li><li>5. Flexibles too short or too stiff, tending to hold brush off the ring.</li></ol>
<b>FLATS</b> Burnt or worn patches which can result from:	<ol style="list-style-type: none"><li>1. Starting against a heavy load, especially if the brush pressure is light.</li><li>2. Unequal current sharing between brushes.</li><li>3. Rotor out of balance.</li><li>4. Synchronised vibration from an external source.</li><li>5. Tarnishing or rusting of the exposed portion of the ring whilst the machine is idle, particularly if it is out of service for a considerable time. This particular trouble can be avoided by lifting the brushes and covering the rings, or wiping them with light oil as the machines comes to rest.</li><li>6. A series of burnt patches, each patch corresponding to the brush outline and therefore referred to as ghost marking is often associated with sparking – see below.</li></ol>
<b>GROOVING OR SERRATION</b>	<ol style="list-style-type: none"><li>1. Long periods of light load running</li><li>2. Unsuitable brush grade</li><li>3. Incorrect or unequal brush pressure</li><li>4. Dust from the atmosphere or from brush bedding</li><li>5. Brushes badly bedded</li></ol>
<b>SPARKING</b> Although this can result from overloading or from unsuitable grade of brush, sparking on slip rings is usually mechanical in origin from such causes as:	<ol style="list-style-type: none"><li>1. Poor alignment of brush holders</li><li>2. Low or unequal brush pressure</li><li>3. Imperfect bedding of the brushes</li><li>4. Brushes sticking in their boxes, because of insufficient clearance or dust</li><li>5. Dust from atmosphere getting underneath the brushes</li><li>6. Flexibles too short or too stiff</li><li>7. Rings out of true</li><li>8. Rotor out of balance</li><li>9. Vibration from external source (This often gives rise to ghost marking)</li></ol>