Technical Support

Surface Appearance of Brushes

S1 SMOOTH POLISHED SURFACE
This indicates good performance. However, if the polish is mirror-like (glazed), high frequency chatter due to low current may be the cause. Check the side-faces of the brush for signs of vibration.

S2 OPEN TEXTURED SURFACE
This, again, indicates that brush performance is satisfactory. Actual appearance will depend on the type of grade.

S3 FINELY LINED SURFACE
Another satisfactory condition. Fine lines indicate the presence of dust in the atmosphere. This may be overcome by the use of filters or ducting the machine’s air supply from another area.

S4 FINELY SERRATED SURFACE
This is a further development of (S3) above. The causes are normally atmospheric contamination or lack of load current.

S5 HEAVY SERRATED SURFACE
As (4) above, but problem is more severe or has been allowed to continue for longer.

S6 GHOST MARKED SURFACE
This may be associated with difficult commutation and can arise from incorrect neutral position, interpole problems or other causes of poor commutation.
S7 BURNT EDGES
Normally occurs on the trailing edge of the brush. Caused by poor commutation and heavy sparking.

S8 PITTED SURFACE
Indicates heavy under-brush sparking as a result of current overload or brush instability.

S9 LAMINATED SURFACE
This is an unusual condition caused by an armature winding fault giving rise to poor commutation.

S10 DOUBLE-BEDDED SURFACE
This occurs as a result of brush tilting on a reversing machine, i.e. the brush beds itself in both directions of rotation. In itself this does not give any cause for concern.

S11 COPPER PARTICLES
Copper pick-up from commutator surface can result from copper drag problems or heavy peak loads. Can cause further commutator wear.

S12 CHIPPED EDGES
Normally occurs on the leading (entering) edge of the brush. Breakage can result from poor commutator profile, high micas and severe brush instability.