CLAIMS

1. A method of processing a component surface by abrading the component surface using an abrasive surface, said method comprising:

rotating said abrasive surface about an axis extending parallel to said component surface; and

moving said abrasive surface or said component surface along a computer generated toolpath whilst applying a force between said abrasive surface and said component surface,

wherein the force between the abrasive surface and the component surface is increased from a minimum force to a maximum force as the distance along the toolpath increases;

the method further comprising a first calibration step comprising establishing the minimum force by moving the abrasive surface relative to the surface of a plate formed of a material substantially identical to the component surface whilst urging the abrasive surface towards the plate surface using a first force and measuring the amount of material removed, if necessary, adjusting the first force until the amount of material removed falls within a desired range and using the first force or adjusted first force as the minimum force.

2. A method according to claim 1 wherein the force between the abrasive surface and the component surface is increased linearly from the minimum force to the maximum force as the distance along the toolpath increases.

3. A method according to claim 1 or 2 comprising moving the abrasive surface or the component surface automatically by moving the abrasive surface or the component surface using a computer-controlled robotic arm.

4. A method according to any one of claims 1 to 3 comprising controlling the force between the abrasive surface and the component surface by a pneumatic, hydraulic, mechanical or electrical compliance force system.

5. A method according to any one of claims 1 to 4 further comprising modifying the feed rate to control the amount of material removed from the component surface.

6. A method according to any one of the preceding claims further comprising a second calibration step comprising processing the plate surface by moving the abrasive surface relative to the plate surface along a toolpath whilst urging the abrasive surface towards the

plate surface using the minimum force, detecting when the amount of material removal drops below the desired range and increasing the force by an amount necessary to increase the material removal to within the desired range, repeating the detecting and increasing steps until the tool path is complete and selecting the force in use at the end of the toolpath as the maximum force.

7. A method according to any one of the preceding claims wherein the abrasive surface is provided on a belt.

8. A method according to any one of the preceding claims wherein the component surface is a surface of an aerofoil for a gas turbine engine.