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Paper Title: Silhouette Abrasive machining on vertical CNC milling Machine

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Abstract: General purpose CNC milling machines can be used for all types of milling operations. On a different note a profile abrasive machining for many jobs like, engine components, Axle components which requires surface finish because of the nature & function of that part in its location.

This experiment elaborates the combination of both Profile abrasive machining & vertical CNC milling machine to achieve the surface finish & accuracy that is only possible on a 5- Axis JIG Grinding Machines which are on a very higher side cost wise & maintenance too.

A profile abrasive machining operation of a complex geometry part that has a multifaceted angle normal to one plane, can be done on a 5- Axis JIG Grinding Machines.

This setup of "Silhouette Abrasive Machining on vertical CNC milling machine" uses the flexibility of CNC Milling machine to achieve accurate machining with desired surface finish. It comprises of a special attachment which increases the speed of the spindle.

Along with the attachment a modified tool path for abrasive machining is also generated to suit the abrasive machining operation to achieve the desired surface finish.

Using such a combination will give cost advantages at prototype development & also for low production batches. Also there's no need to install a separate 5- Axis JIG Grinding Machines which are very high maintenance high cost machines.