Title: Analysis of and Experimentation on Abrasive Roller Brush Assemblies for Determination of Vibration Characteristics and Sources

Position Ref: BRUSH

Positions Available: 1 student

Work Description:
Abrasive roller brush is the main part of sueding machines used in textile industry. These cylindrical brushes are used in finishing of woven, knitted, and nonwoven fabrics, as well as for giving fabric special effects. The brush is made from a metal tube, with metal shaft inserts at both ends, and covered by a plastic tube. After machining the surface of tube, drilling and filling operations are done for placing the abrasive composite fibers. Since these brushes work at high rpm and subject to relatively high temperatures, the operation must withstand vibrations. The aim is to investigate the rolling situations, materials, dimensions and working parameters of brushes. After doing certain experiments with various parameters, a table can be prepared about the working limitations of cylinder body versus dimension, material, and temperature variables. Some or all of the following may be involved:

- Analysis: Dynamics, Machine Elements
- Prototype Construction