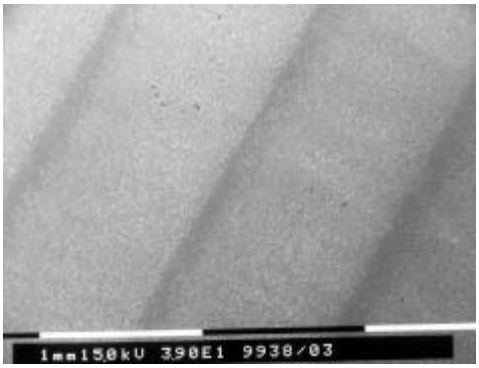

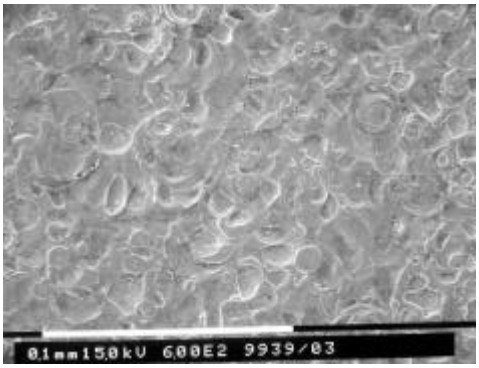

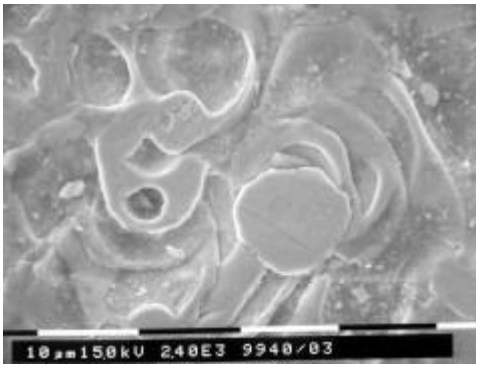

EDM or Fluting

Machine: Carton board line shaft drive.

Problem: Noisy bearings. Vibration measurements on belt pulley shaft bearings showed BPFO pattern with very high levels. This problem first appeared after a change in lubrication of the pulley bearings from grease to oil.
The bearings were replaced and typical EDM pattern was found on bearing races.

Analysis: The voltage between pulley shaft and ground was 1.9 Volts at 300 Hz, apparently this voltage is enough to cause damage to the bearing. The source of this voltage was the DC motor, 300 Hz equals the rectifier firing frequency. Rectifier was replaced with no change in the shaft voltage. Pictures show electronic microscope enlargements from EDM pattern found on roller bearing outer race.

Remedy: The problem was solved by grounding the pulley shaft.

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