Adjusting the drum drive motor belt tension

Applies to

☑ Trendsetter NEWS

Background

The drum belt connects the drum to the motor and must be tensioned properly in order for the system to function correctly. Over tensioning the belt causes excessive noise and vibration. Excessive vibration may show up in plots as the appearance of stitching parallel to the main scan direction. HRX heads are most susceptible to this vibration. Under tensioning the belt may cause a drum servo amp error.



CAUTION:
Exercise extreme caution when working with the drum drive.

Tools and parts

BrecoFlex belt tension meter (90-1062)

Steps

1. Unplug the drum motor.



DANGER
Do not put hands or fingers on the toothed side of the belt.

2. Loosen the screws on the motor mount so that it can slide vertically.
3. Apply pressure to the motor horizontally to locate the reference edge of the motor mount to the reference edge of the engine casting.
4. While keeping the reference edges against each other, apply a slight downward force on the motor to tension the belt.
5. Hold the motor in this position and tighten the motor mount screws.
6. Fasten a small washer to the belt with a paper clip approximately half way between the drum pulley and the motor pulley.
7. Use a BrecoFlex belt tension meter to check the frequency of vibration of the belt.

   It must be 55-70 Hz. If not, repeat procedure.

Notes

Belt Tension to Frequency Relationship

$$f = \frac{1}{\lambda} \cdot \sqrt{\frac{T}{\rho}} \qquad f = \frac{1}{2 \cdot l} \cdot \sqrt{\frac{T}{\rho}} \qquad T = 4 \cdot f^2 \cdot l^2 \cdot \rho$$

where:

λ is wavelength of vibration (m) ***T*** is belt tension (N)

ρ is belt mass/length (kg/m) ***f*** is the frequency (Hz)

l is the distance from motor to drum pulley tangents (free length of belt)

Date modified

09 Oct 2003