Subject: F53 Bill Length Errors with Polymer Notes

Update B: Added information regarding Cassette Width setting.
Update A: A second issue was discovered (belt in wrong position) and documented below.

Overview

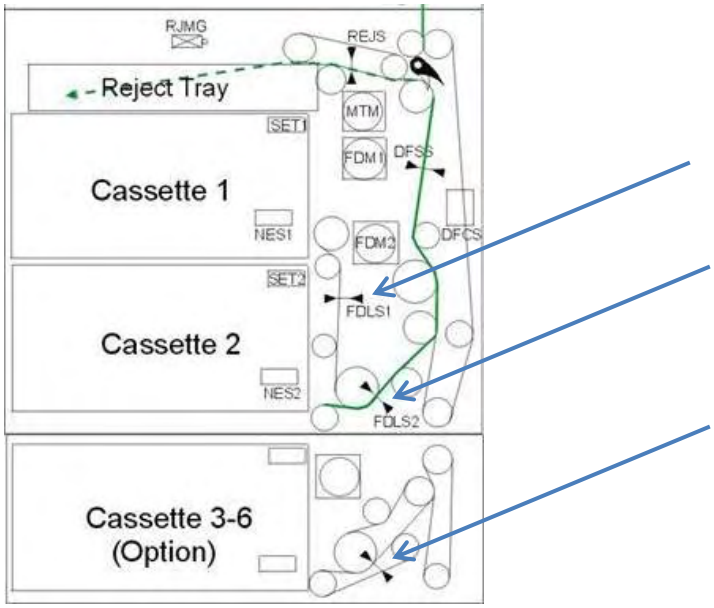
As new Polymer notes (with clear windows) are introduced into various countries, there have been some instances of the F53 generating errors after the 'Transparency' bit has been enabled (reference PSB-12-020 for recent introduction in Canada, and PSB-13-016 for a recommended FW update). The most common of these errors is for Long Bill Length.

While currently only used in Canada and Australia, some other countries have also announced that they will soon be converting to the use of these Polymer notes.

Solution #1

One cause has been found to be with the sensors in the F53 not being able to properly sense the windows in the notes because they are dirty. While the reduced sensitivity of the sensor due to dust/dirt may not be apparent with the use of standard paper notes (solid), the introduction of the Polymer notes with windows required more sensitivity of the sensor to recognize the partially transparent window.

Any geography that begins using Polymer notes for the first time should anticipate these sensors needing to be cleaned on any units that have been installed and operational. In the illustration below, the FDLS sensors (especially #2) are the most critical for this error, though during the Service or Preventive Maintenance all sensors and belts should be cleaned. This illustration below does not show the exit transport (which is different in each version of U-Scan). There is also a BPS sensor in the exit transport that should be cleaned.



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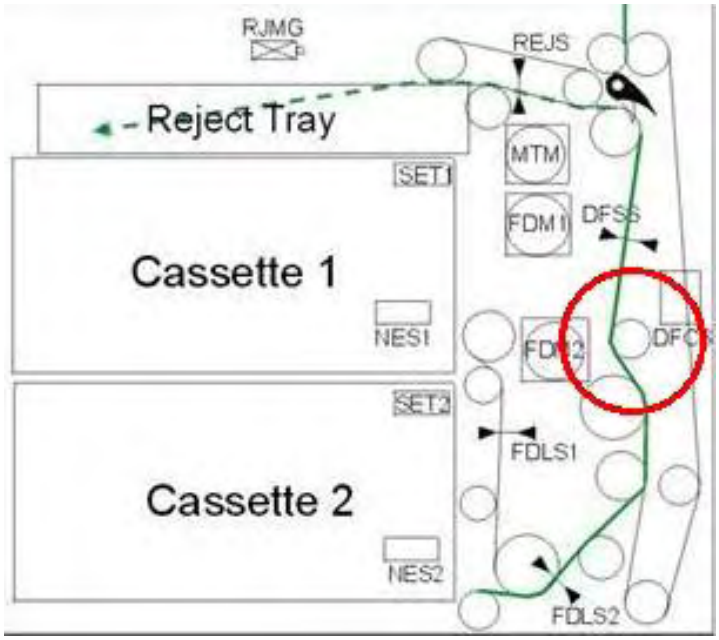
Solution #2

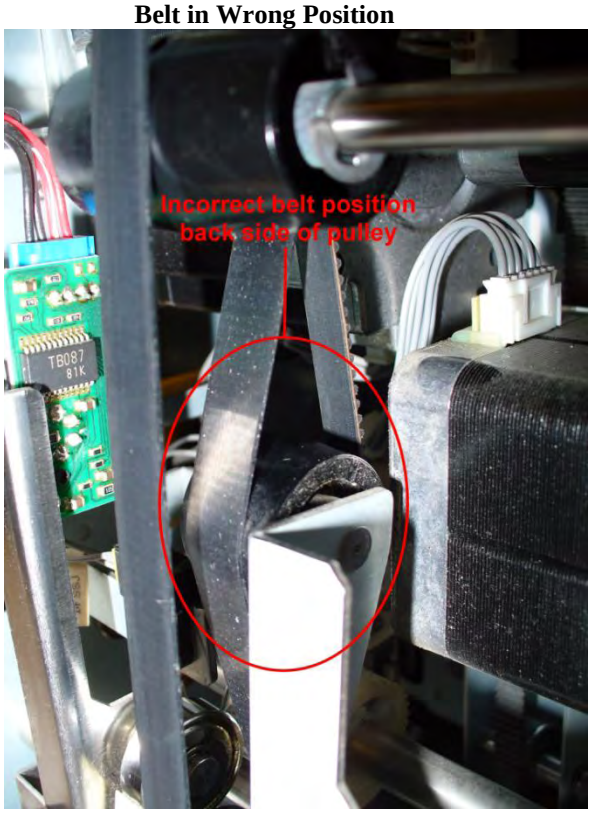
When a customer clears a potential jam in the rear of the unit, it is possible that they inadvertently pull a specific belt out of position. While the unit may appear to continue to function, the bill timing may be affected enough to cause some issues. This is most prevalent from Cassette #2 and with the use of Polymer Notes.

F53 Rear
Belt in Wrong Position

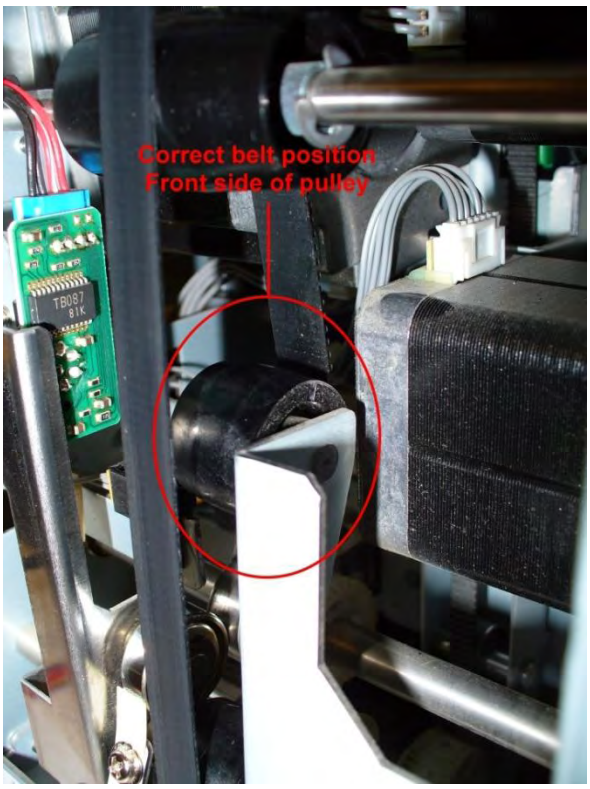
Illustration of Belt Routing



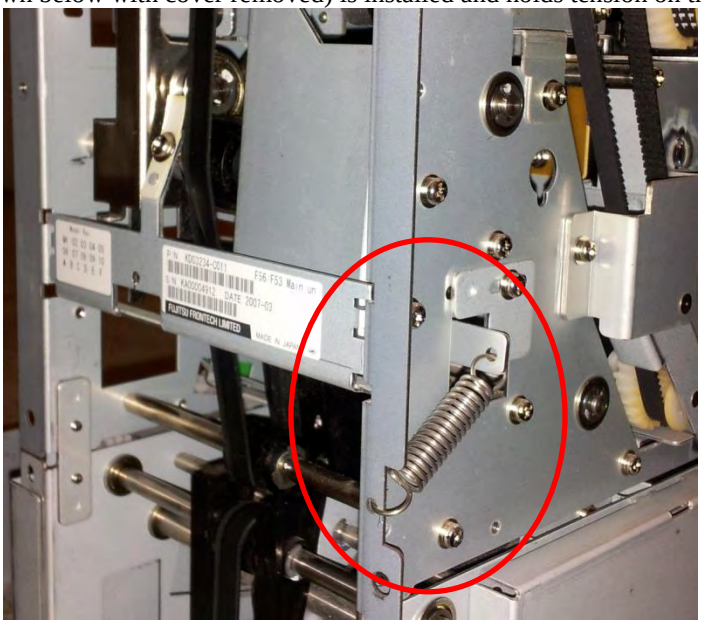
F53 Rear – Close Up
Belt in Wrong Position



F53 Rear – Close Up
Belt in Correct Position

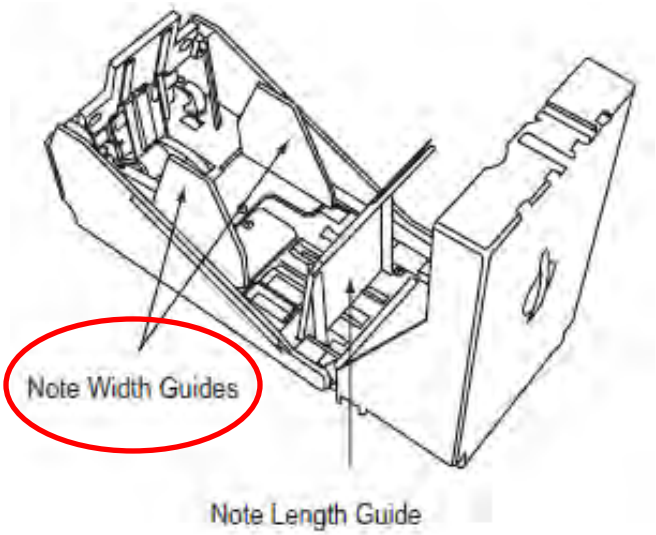


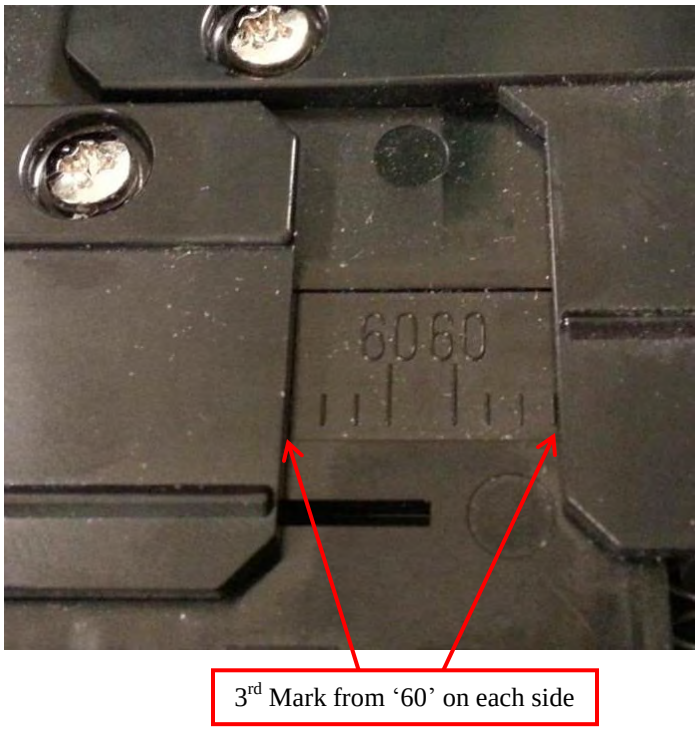
Also make sure the spring (shown below with cover removed) is installed and holds tension on the wheel.



Cassette Width Setting

The published dimensions of the new Canadian notes is slightly different that actual measured value of the production minted notes, was documented as 69mm width, is actually 69.85mm. Following testing of the new production notes, it has been found that for optimum performance, the Cassette Note Width settings should be set to 72 on each side (each mark = 4).





Impact

- Production None.
- Installed Units Fit-On-Fail – Periodic Preventive Maintenance is highly recommended (ref PSB-08-051).
  - If a particular unit continues to have a high reject rate, it should be replaced and returned for repair.
- Repair Center
  - Clean all belts, rollers and sensors on any F53 that is returned for repair. Verify all belts in correct position.
- Service Spares None.