



Technical News Bulletin

Elmira, New York, Feb. 19, 2009

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Kit Significantly Improves Veritas™ iM Rotate Mechanism

Summary

A new rotate mechanism is now available for the Veritas iM. In extensive field testing, the new mechanism has shown significant improvement in the reliability and durability of all critical moving parts. This new rotate mechanism is now standard on all new Veritas iMs and is available as an upgrade kit (part number 26298A) for installed machines.

This new rotate mechanism is designed to address the following issues that have been reported with previous versions of the Veritas iM rotate mechanism:

- Failure of the helical beam coupling caused by angular misalignment.
- Failure of the spline bushing due to abrasion caused by vertical misalignment of the spline shaft.
- Abrasion of the spline shaft due to the failure of the spline bushing.
- Failure of both the rotate head and spline shaft caused by continuous impact of bottles against the rotate head, especially during high-speed operation.

Improving Parts Durability

Helical Beam Coupling

The failure of the helical beam coupling was caused by the pivot of the rotator head at a location that caused the coupling to be axially misaligned when the rotator head was adjusted to hold down the bottle during rotation. This area of the rotator mechanism was improved by modifying the design of the coupling to place the pivot axis of the rotator head at a point that changed the axial misalignment to angular misalignment (refer to Figure 1). The angular misalignment is now between 1 and 2°, which is well within the 5° rating of the coupling.

Spline Shaft and Bushing

The failure of the spline shaft and bushing from abrasion was caused by fretting corrosion of the spline shaft and the spline coupling. Fretting corrosion is caused by the combination of corrosion and the abrasive effects of corrosion product debris often seen in equipment with moving or vibrating parts. On the Veritas iM rotator this failure is caused by chafing of similar materials (the spline shaft and spline bushing) while sliding or vibrating under load. Two steps were taken to prevent and eliminate the failure of these parts.

1. A dry film lubricant is applied to the spline bushing.
2. The side load and vibration of the spline shaft was decreased by moving the spline bushing to the bottom of the shaft. An additional benefit was better alignment and support of the spline shaft.

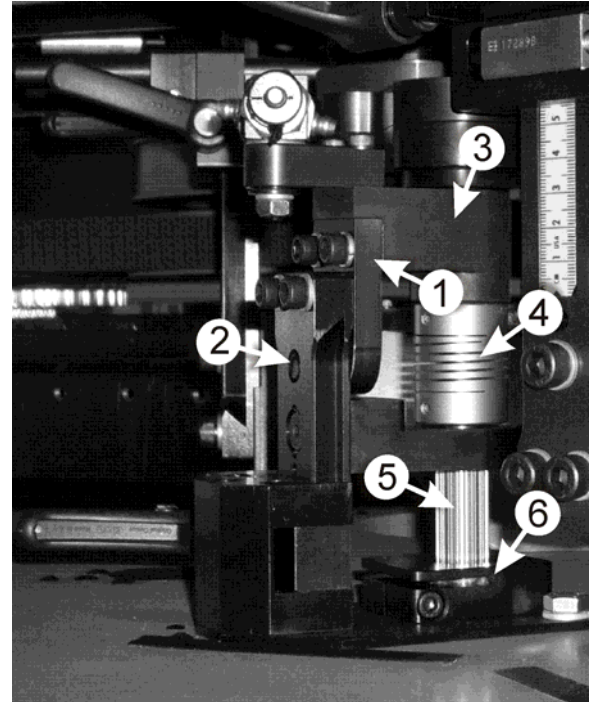


Figure 1: Modifications to upper parts of the rotator

1. New pivot plate
2. Pivot pin
3. Modified rotator body
4. Helical coupling
5. Spline shaft
6. Spline disk shield and disk shield housing

Rotate Head

Failures of the rotate head were caused by the spline shaft hitting the inside of the rotate head drive shaft when the rotator was turning. By relocating the spline bushing to the bottom of the spline shaft, spline shaft interference was eliminated (refer to Figure 2). This also decreases the maximum possible misalignment of the rotate head and spline shaft to ranges that are well within the tolerances for these parts. In addition to relocating the spline bushing, a Nylatron® disk shield has been added to a new housing located above the top plate to reduce the amount of debris that can enter the bushing.

Upgrading Existing Rotate Mechanisms

The Rotator Upgrade Kit (26298A) is designed for installation on Veritas iMs with serial numbers 150 to 265 and provides all parts necessary to upgrade one rotate mechanism. Three kits are required for each machine and kits are handed to match the hand of the machine. For right-hand machines, order 26298AR; for left-hand machines, order 26298AL). Machines with serial numbers 266 and higher already have the modifications described in this bulletin. Machines with serial numbers 149, and lower, have a different rotate mechanism. For information concerning replacement of the rotate mechanisms on these machines, contact the Emhart Glass Technical Service Department

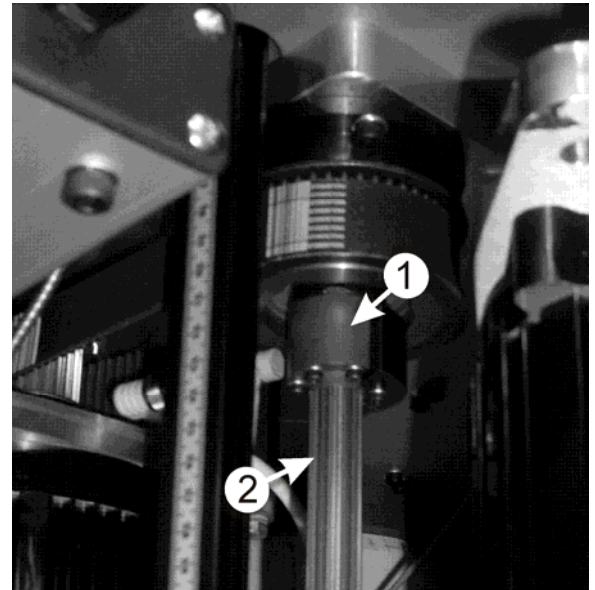


Figure 2: Modifications to lower part of rotator

1. Spline bushing relocated to bottom portion of the spline shaft
2. Spline shaft

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