Belvac Production Machinery
Technical Bulletin
Information for Customers Operating & Maintaining Belvac Machines
ISSUE 1, VOLUME 19, JANUARY 2016

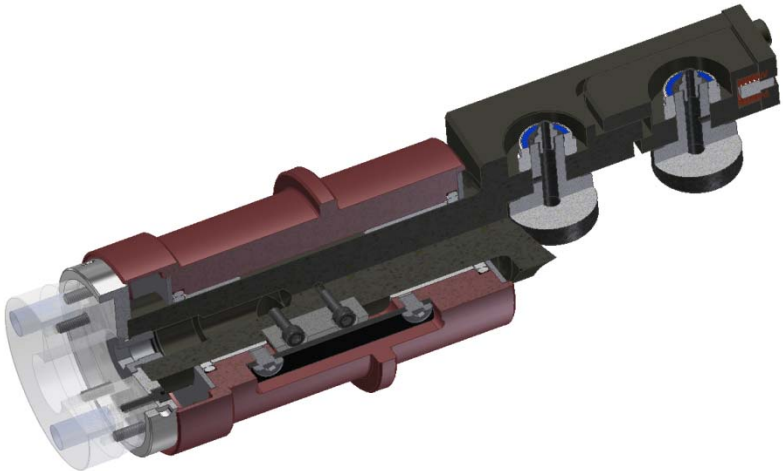
THE Belvac Necker (TBN) Light Tester Push Ram Wear Limits

This tech bulletin serves to provide information on Light Tester Push Ram assemblies of The Belvac Necker (TBN). Applies to push ram assembly 8952089. Rebuild Kit 8954290 is now available and contains the bushings, seals and key required to rebuild the Light Tester Push Ram.

Light Tester Push Ram

General Maintenance

The Light Tester Push Ram bushings and key are initially lubricated when assembled. This initial greasing is all that is necessary. A small film of grease (Mobilth SHC 100) is applied to the bushings and key. If the ram is disassembled for any reason, it is recommended to apply this small film of grease to the bushings and key before reassembly.



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Field Inspection

Bushing life is dependent on many variables including machine speed and ambient environment.

Belvac recommends that a regular check of "Lift and Twist" on the Light Tester Push Rams be performed. It is recommended that this check be performed quarterly. The following explains the lift and twist procedure.

Excessive radial clearances are determined by measuring the "LIFT" of the ram with respect to the ram bushing. Excessive key and keyway clearances are determined by measuring the "TWIST" of the ram in the ram bushing.

Observing warning signs can avoid ram failure or loss of productivity due to degraded performance. The following are recommended methods for obtaining the above clearances.

PUSH RAM WEAR -- "LIFT" MEASUREMENT

Measurements on the push ram are to be made with the ram at top dead center (TDC) and 1 position before and after (11,12,1 o'clock (See Figure 1) position on the turret). Set up a dial indicator on the push ram as shown. The stylus of the dial indicator is to contact the very top of the acrylic push pad 0.13" from the face. Grasping the ram at the cam follower end, vertically push down and lift up on the ram until a hard stop is felt in each direction (see Figures 2 and 3). The total range of motion between the two hard stops is the clearance between the ram and the bushing. When the total range of motion or clearance exceeds 0.020" (0.50 mm) the ram assembly is to be replaced or rebuilt.

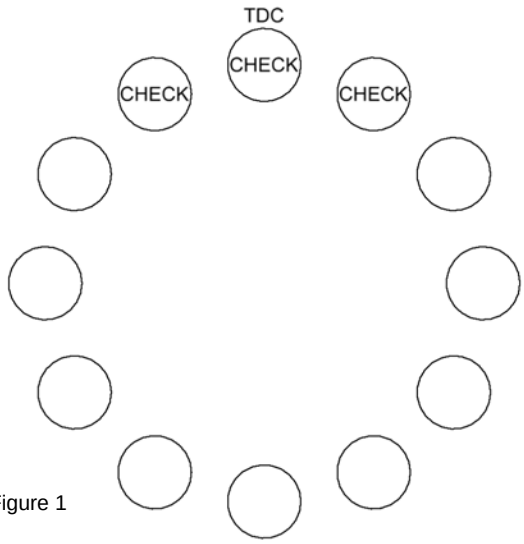

Figure 1

KEY WEAR -- "TWIST" MEASUREMENT

Keyway-to-key clearance is determined by rotating the ram inside the bushing. The following measurements may be made at the positions shown in the illustration for Light Tester Push Ram Assemblies. Set up a dial indicator on the ram as shown. The stylus of the dial indicator is to contact the flat portion of the ram in the middle of rib as shown in Figure 2.

Rotate the ram clockwise and counterclockwise in the bushing until a hard stop is felt in each direction. The total range of motion between the two hard stops is the clearance between the key and the keyway (see Figure 4). When the total range of motion or clearance exceeds 0.030" (.762mm) the ram assembly is to be replaced or rebuilt.

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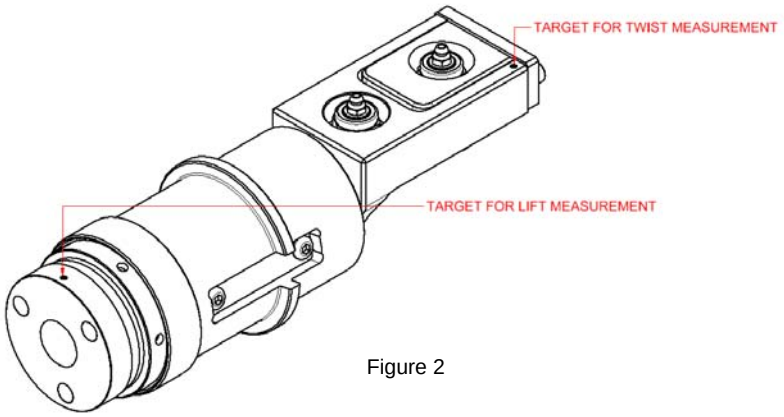

Figure 2

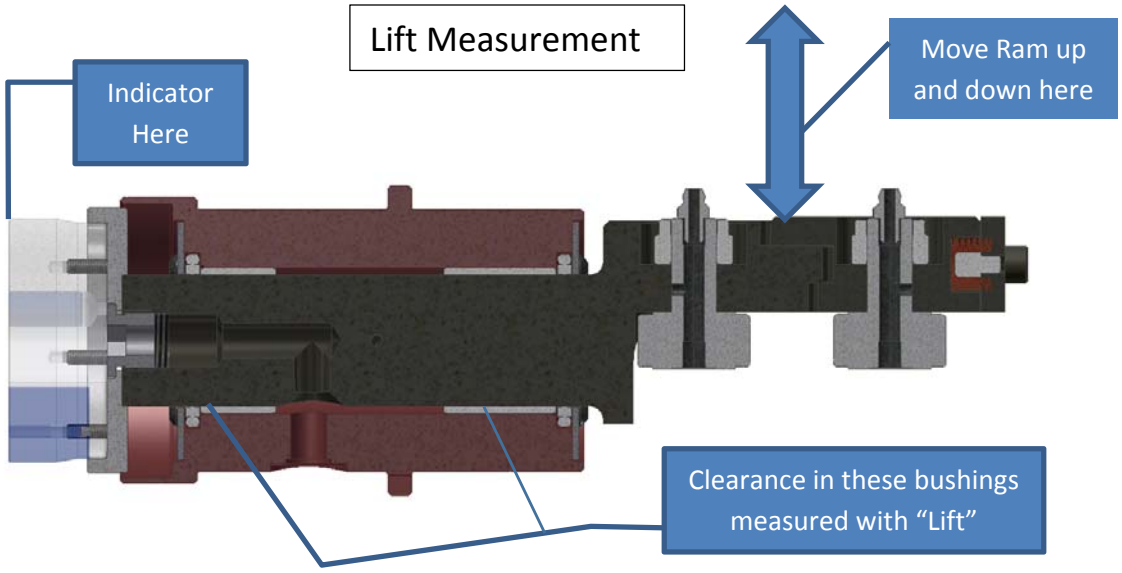

Figure 3

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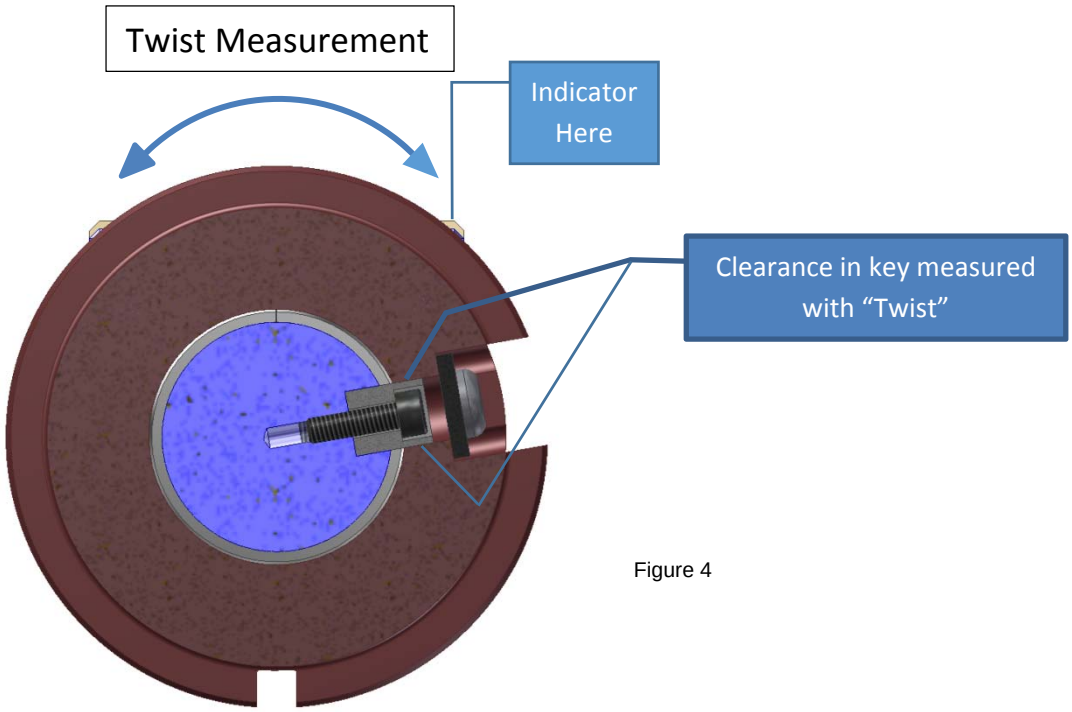
Twist Measurement
Indicator Here
Clearance in key measured with "Twist"

Figure 4