The Western States Machine Company

Roberts Centrifugals

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FIELD SERVICE BULLETIN

Date: August 20, 2010

To: All Customers with Model N-11 and N-13 Dischargers

Subj: **DISCHARGER INSPECTION, MAINTENANCE, AND ADJUSTMENT**

Discharger Description

The Discharger Assembly removes sugar from the centrifugal machine basket wall following the centrifuge operation. A discharger shoe moves vertically down the basket wall to remove the sugar and is pulled away from the basket wall when not in use. Two compressed air operated cylinders provide the drive for the vertical and horizontal movements of the discharger.

A baseplate with a vertical pivot shaft is bolted to the curb top. The discharger housing is mounted on the pivot shaft. The discharger radial load is supported by two bronze bushings on the pivot shaft and the thrust load by bronze wearing plates on the square ram.

The horizontal movement of the discharger is provided by a horizontal single acting free piston that is incorporated in the discharger housing (N-11), or mounted external on the right hand side of the housing (N-13). The piston acts against fixed stops and has an oil cushioned forward motion and a spring return. The return spring(s) is mounted outside the discharger housing. The discharger shoe is mounted at the bottom of a square ram that is raised and lowered by a vertically mounted double acting compressed air cylinder. The cylinder is mounted on the end of the housing that extends over the curb top opening

The square ram travels in two replaceable wearing plates. The wearing plates are packed with laminated shims that allow for wear adjustment.

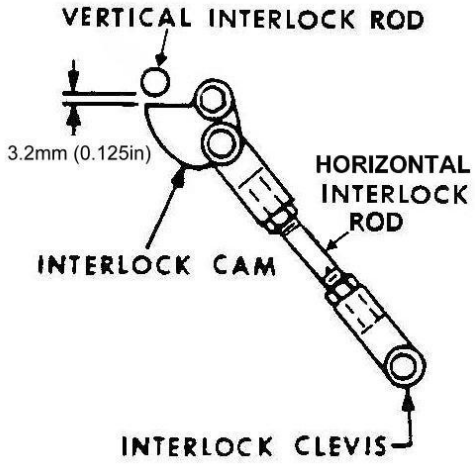
The discharger shoe is manufactured from cast bronze with a flexible, spring-loaded replaceable tip. The pressure exerted by the tip springs can be varied by adding or removing springs to allow for differing massecuite conditions.

A shoe rest bracket is secured to the under side of the curb top at the on rest position. The rest acts as a support for the shoe assembly and prevents the shoe and ram falling into the basket when compressed air is not available.

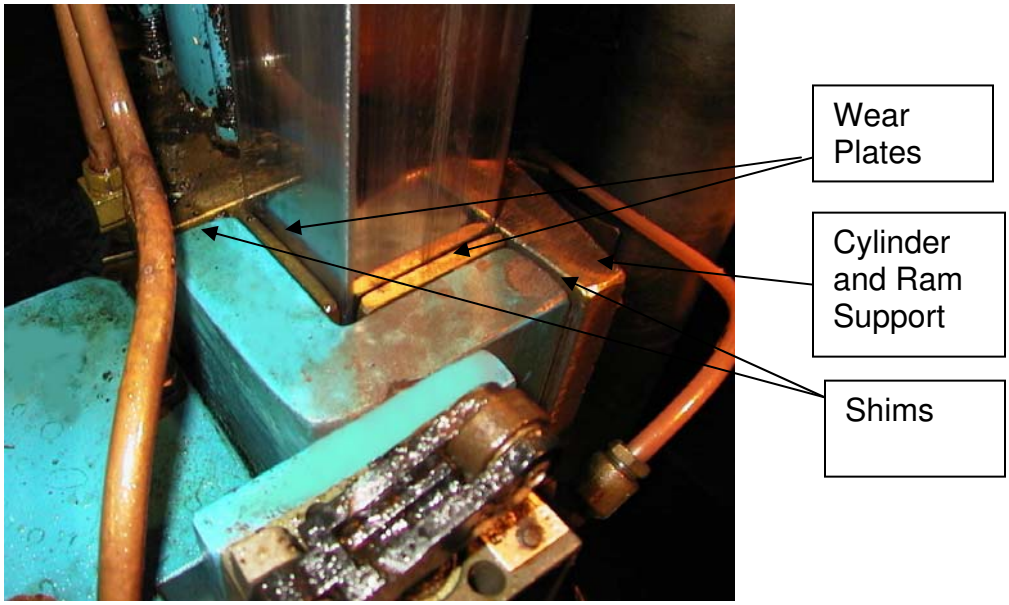
The end of the rest bracket has an adjustable nylon insert that acts as a bearing for the square ram when it is raised at the end of the discharge cycle.

Discharger Inspection and Maintenance

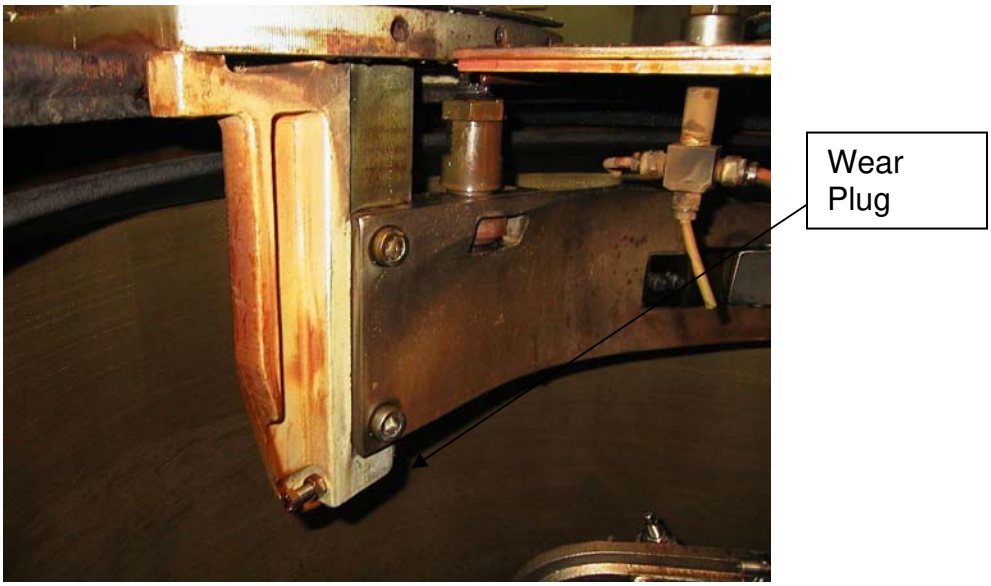
1. Check for adequate clearance on the valve lifter interlock cam. Clearance should be 1/8".



2. Check for excessive play at the top of the discharger ram. The plough must have a small amount of play at the wear plates. The maximum amount of free play in the wear plates is measured at the top of the square ram with the discharger in the up and on rest position. The maximum acceptable lateral movement of the square ram at the top is 1/16". If the free play in the ram is excessive, tighten by removing shims from the joint between the cylinder support bracket and the discharger housing. If it is not possible to tighten the ram sufficiently by removing shims, wear plates must be replaced. The cylinder and ram support bracket may also need replaced if the discharger was operated for a prolonged period with excessive free play in the ram.



3. The nylon wear plug on the discharger rest bracket should extend 1/4” to protect the discharger ram.



4. Check the condition and finish of the discharger ram. The ram should have a smooth chromed finish free of nicks, burs, and corrosion.

5. Check the discharger for air and oil leaks and repair as necessary.

6. Check the oil level in the discharger housing.

   To refill the N-11 discharger, ensure the discharger is in the on rest position. Fill the housing to the line on the oil fill plug dipstick.

   To refill the N-13 discharger, move the discharger to the in position. Fill the housing to within 1” of the top of the housing.

7. Check the discharger base is level and shim between the discharger base and the curb top if necessary. Check that the discharger cutting tip travels parallel to the basket wall.

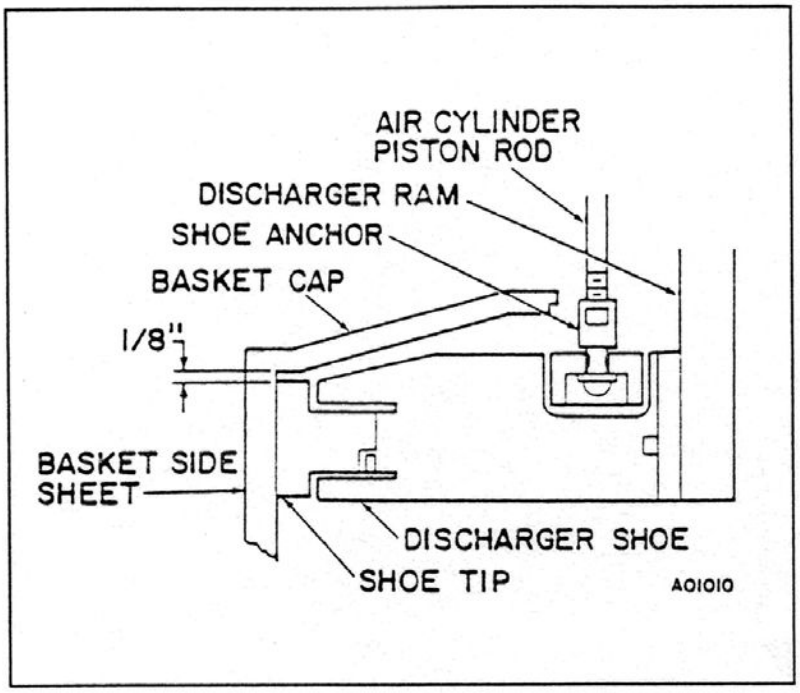
8. Check the discharger shoe tip and replace if necessary. It should not have a sharp edge. Replace any broken tip springs.

9. Check the discharger shoe wash for proper function and orientation.

10. Lubricate the discharger grease fittings.

Discharger Adjustments

1. The shoe should be adjusted by means of the shoe anchor so that the shoe tip has 1/8" clearance below the basket cap. This adjustment is made with air on the "UP" side of the cylinder. After making this adjustment, the shoe should be checked at the bottom of the cylinder stroke to make sure a clean basket is affected. If not, further adjustment should be made until this requirement is satisfied.



2. Adjust the shoe in limit switch stop screw so the shoe tip just touches the basket lining. At the same time adjust the limit switch lever to trip the switch within the 1/8" travel of the stop screw.

Any questions on these procedures should be addressed to the WSMC Field Service Department at 513-863-4758 or service@westernstates.com