

E and EL Pulverizer Springs

Purpose

To advise owners and operators of E or EL pulverizers to inspect dual purpose springs. The dual purpose spring serves two functions: 1) preloads the grinding elements, and 2) prevents the upper grinding ring from rotating.

Background

Existing dual purpose springs are typically replaced with new springs when replacing a set of worn out grinding elements. This common practice of spring replacement reasonably ensures that proper ball loading is maintained throughout the ring and ball grinding life, before fatigue, corrosion or erosion can weaken the springs.

Problem

Operators have become reluctant to discard springs and routinely reuse springs without evaluating their condition. This has resulted in the use of weak springs. Weak springs can lead to one or all of the following conditions:

1. Capacity loss
2. Increase in rejection rate
3. Outward ring wear
4. Chipping of flutes on EL top ring
5. Chipping of inner and outer lips on top and bottom rings
6. Banding of balls
7. Eccentric loading

Recommendation

Maintenance procedures should be reviewed. During pulverizer element rebuilds, the measuring of the dual purpose spring lengths should be included.

Remove the spring and measure its overall length. See Figure 1 for proper measurement point. The overall length measured should be compared to the spring length given in Table 1 for the spring wire diameter installed in the pulverizer.

Note: Replace any spring that has lost more than 3/8 of an inch or more from the original overall length.

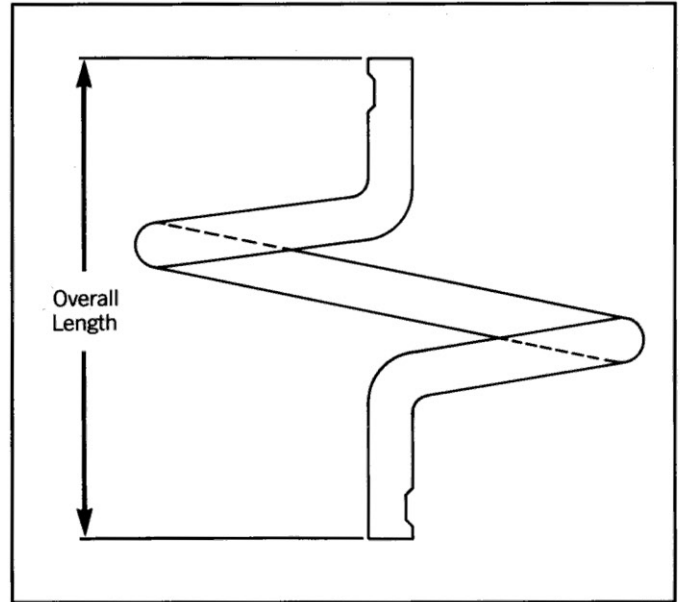


Figure 1 Typical E and EL spring showing locations for measuring overall length.

Spring Wire Diameter in Inches	Application	Overall Length Unloaded in Inches
1-5/8	EL-76 Special	13-7/8
1-1/2	E & EL 47-76 Standard	13-7/8
1-3/8	E & EL 41-44 Standard	12-5/8
1-1/8	E & EL 35-38 Standard	12
1	E & EL 21-32 Standard	11-1/4
1-1/8	EL-26 Special	11-1/4

Pulverizer Fire

Scorched paint or observing a high coal/air outlet temperature are indicators that a fire has occurred inside the pulverizer. In this case, the pulverizer should be opened and inspected since a fire may overheat a spring, causing stress relief or annealing. To inspect, at least one spring should be unloaded and its free length measured. If the

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spring is heat damaged, the change in free length will be shorter by an inch or more from the original length. Any spring that has lost 3/8 of an inch or more from the original length should be replaced. If one spring has been damaged, all other springs should be inspected and replaced if necessary.

Support

Contact Babcock & Wilcox Field Service Engineering if you have any questions or require assistance in performing this inspection.

For more information, contact your nearest B&W sales and service office.

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