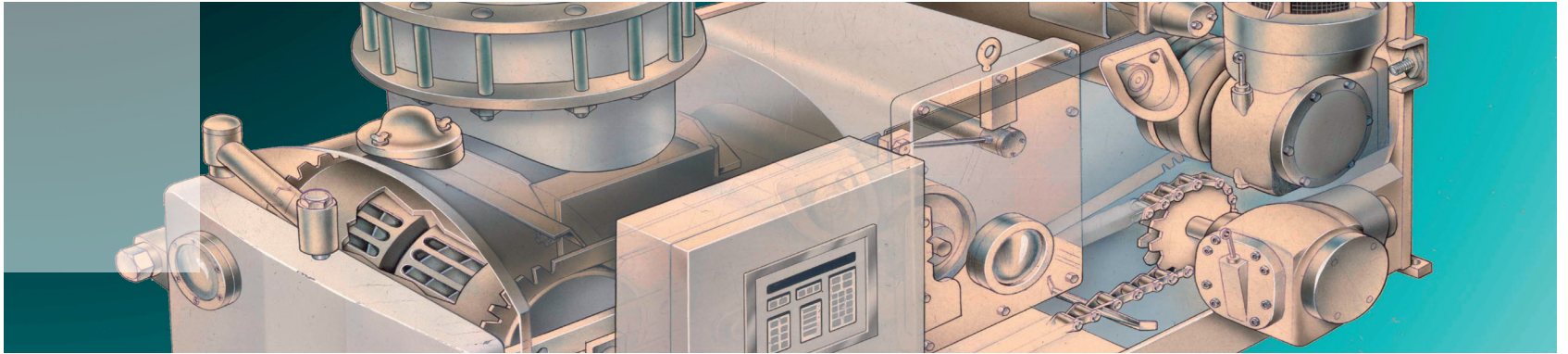
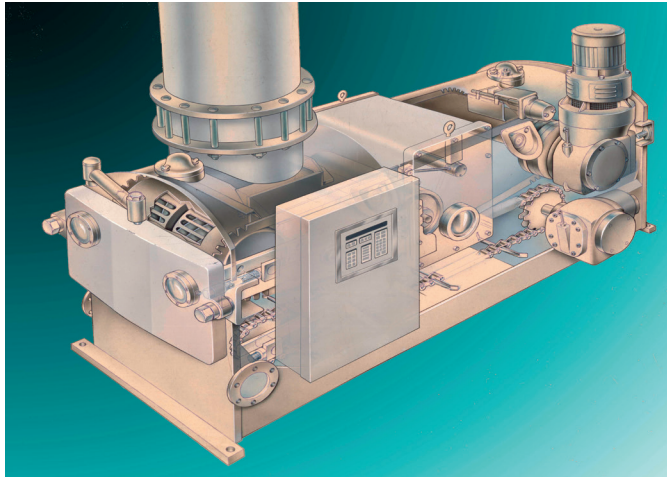


TECHNICAL BULLETIN



Feeder Body Thinning Four Options to Meet NFPA Code



Stock Equipment Company (Stock) is committed to being the market leader in providing safe and reliable equipment to the power industry while complying with the latest codes and standards. The National Fire Protection Association code states the minimum requirements of a feeder within the fuel feed system of a pulverized coal boiler shall be a pressure confinement rating of 50psi. The majority of feeders installed on PC boilers in North America have been in service 30+ years and Stock has become aware of some older feeders with thinning bodies.

Stock recognizes the adverse environmental conditions the feeder bodies may have been exposed to during years of service and that the resulting feeder body thinning could be beyond the designed minimums. A host of factors could affect the feeder body depending on the type of coal and the process.

Reason for Concern

Corrosion and erosion of the inlet and outlet areas of the feeder is of particular concern from years of use. Corrosion may result from temperature variants that can add to dew point condensation then mix with elements in the coal causing localized corrosion. This combined with the potential for feeder fires or mill puffs may pose a safety concern within the plant. Feeders with body leaks that burn PRB coal pose a unique safety hazard due to the potential for accumulation of the volatile PRB coal dust in the plant.

Preventative Actions

Stock recommends that a review of the feeder body be performed and has outlined the probable areas of the feeder prone to thinning which can be checked from the outside of the feeder. However, we further recommend a thorough inspection of the feeder body when the feeder may be taken out of service as feeder thinning can occur in different locations based on operating conditions and the historical preventative maintenance. Any areas with visible corrosion/erosion should be checked with an ultrasonic thickness (UT) gauge.

Stock offers PASS testing and inspection services to review and monitor feeder condition and much more. At your request, Stock will send a knowledgeable Field Service Engineer to inspect feeder bodies and suggest preventative measures. Following the inspection, a full report will be provided outlining current feeder status and any follow up actions required or recommended.

High Risk Areas

The area around the inlet collar is a known area of corrosion due to temperature variants creating dew point corrosion from warm seal air (or worse, pulverizer gases) coming in contact with cold coal from the bunker. It is suggested to take measurements on a 3" square grid around inlet (Figure 1).

The area on the sides of the outlet chute within the feeder is a known area of erosion due to material abrasion. This area can be spot checked from the outside as well. A 3" square grid should be applied to the accessible area from the outside of the feeder (Figure 2).

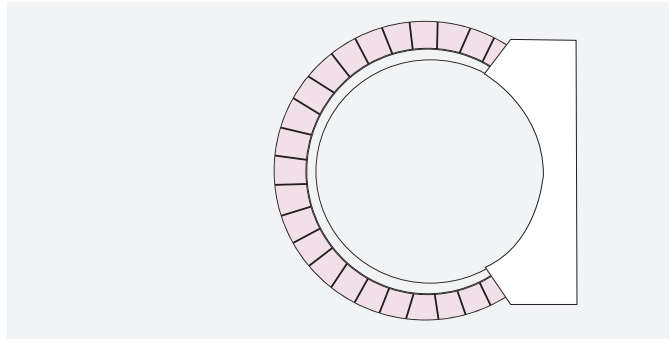


Fig. 1 Test at points where lines intersect

Additional areas of the feeder outside of the high risk areas outlined above could also have body thinning and should be inspected on regular intervals to ensure safe operating conditions.

Potential Options

Option 1: Preventative Maintenance

Inlet Collar, Body

In order to maintain proper thickness Stock Equipment recommends preventative maintenance such as coating of the interior of the feeder following the verification of proper thickness to minimize future corrosion. Preventative maintenance is the only requirement above 0.1875" inlet collar or feeder body thickness.*

Outlet Chute Wear Plate

Ensure that the wear plate is installed and not severely worn and no degradation to the outlet has occurred. If wear plate is worn replace with a new AR400 wear plate.

Option 2: Pressure Boundary Restoration

Inlet Collar, Body

Pressure Boundary restoration may be an option when the inlet collar or feeder body is above 0.156" and below 0.1875".* Rebuild and repair the feeder by performing pressure boundary restoration such as weld overlay on the feeder body. The welder must be qualified to ensure this is a pressure part boundary restoration.

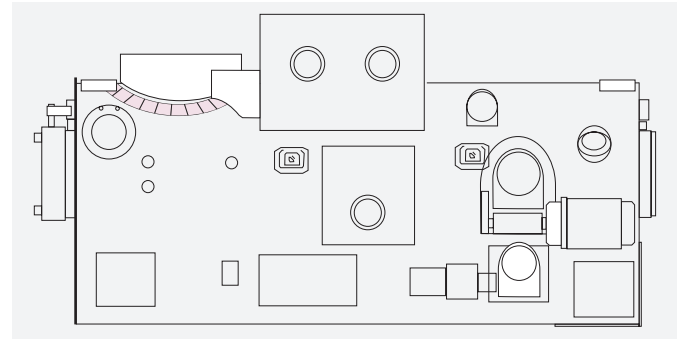


Fig. 2 Test at points where lines intersect

Outlet Chute

Pressure Boundary restoration may be an option when the outlet chute is worn beyond the wear plate but still has a thickness above 0.250".* Rebuild and repair the feeder by performing pressure boundary restoration such as weld overlay on the feeder body. The welder must be qualified to ensure this is a pressure part boundary restoration.

Option 3: New Plate or Saddle

Inlet Collar, Body (Figure 3)

A new plate or saddle may be an option when the inlet collar or feeder body is below 0.156".* A similar option would be the installation of a new plate or saddle to the affected areas. This can be designed and fabricated by Stock and sent to the site for installation. All areas the Saddle is attached to must be above 0.156".*

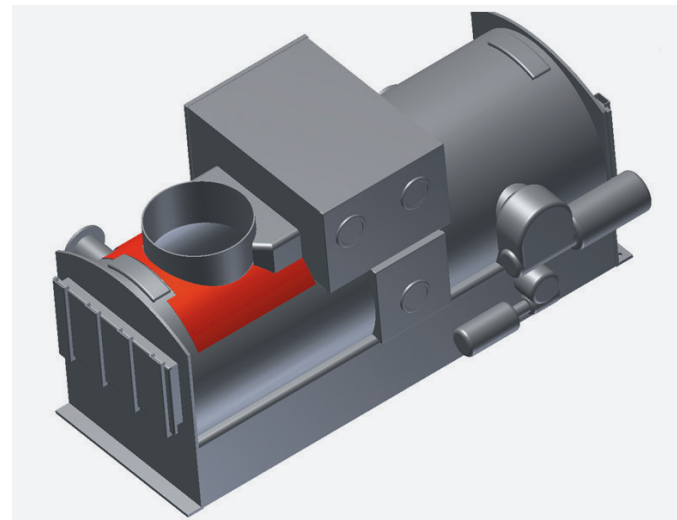


Fig. 3

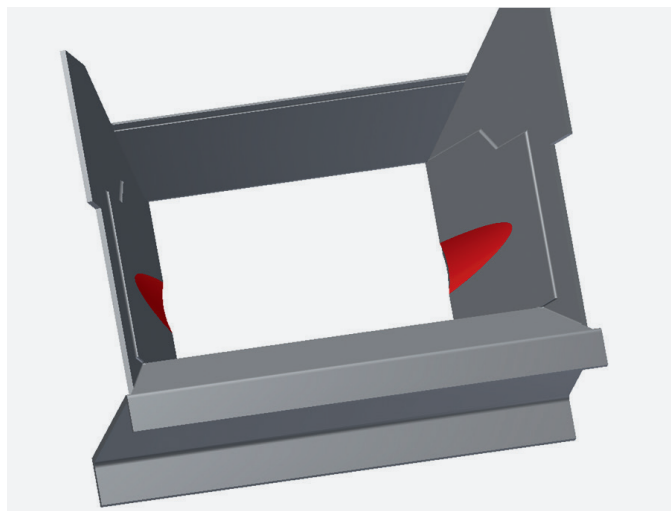


Fig. 4

New Outlet Chute (Figure 4)

New outlet chute panels may be an option when the outlet chute is worn beyond the wear plate but still has a thickness below 0.250".

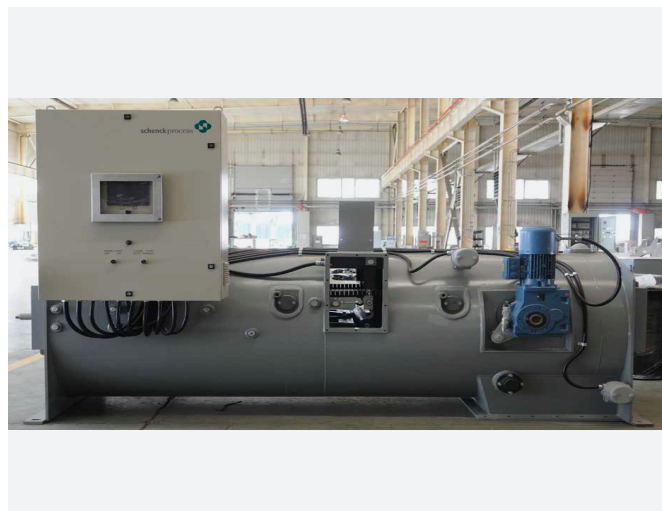


Fig. 5

Option 4: In kind replacement to EG feeder or MULTIDOS® HPG feeder

The following features are available in the MULTIDOS® HPG feeder (Figure 5):

- Active tracking and tensioning station to maintain belt alignment.
- Belt Motion Monitor is available to detect belt slippage.
- Inlet width available in 24-inches (610mm), 36-inches (914mm).
- Cleanout conveyor motion monitor to detect chain breakage or jamming is available..
- Belt water spray and deluge system is available.
- Two bolt end doors.
- Belt reversing feature is available



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* Measurements provided are for typical feeder designs.

Please consult your local Stock Representative to discuss your specific feeder design. Any repairs on a Stock Feeder must be pressure tested to ensure it is able to withstand the 50psi outlined in the NFPA Code.

All information is given without obligation. All specifications are subject to change.

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