

SRI Jigger Tubes System Delivers Improved Vacuum Pan Performance

The SRI Jigger Tubes System significantly improves the operation of sugar mill natural circulation vacuum pans.

At the heart of the system is the SRI Jigger Tube, a stainless steel tube laser drilled with about 100,000 small holes per metre of tube length. The very small hole size allows noxious gases and/or vapour to be released from the tube without the return of massecuite or molasses through the holes.

The SRI Jigger Tubes are placed under the calandria, in a pattern and position to provide maximum enhancement of massecuite circulation. In the most energy efficient arrangement noxious gases from the calandria are used as the jigger gas. Alternatively, process steam can be used.

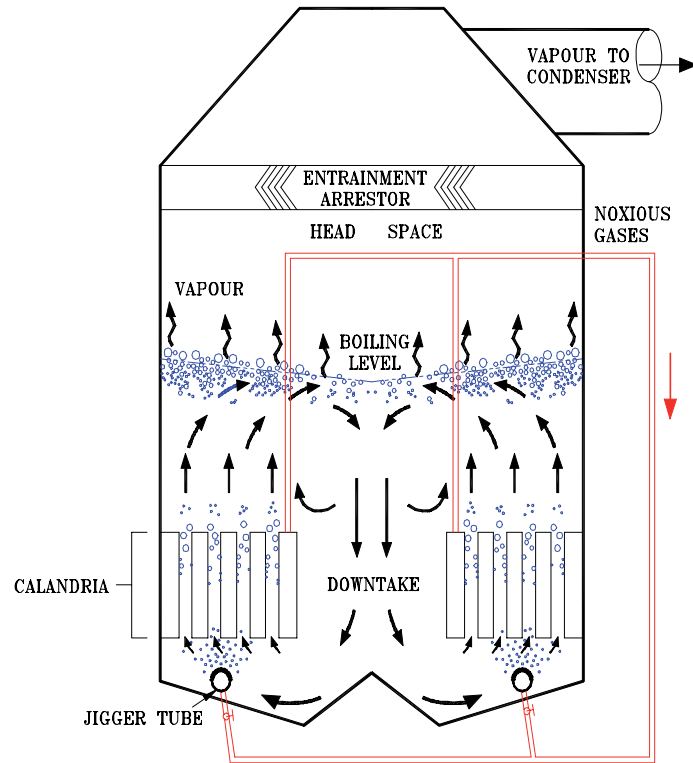
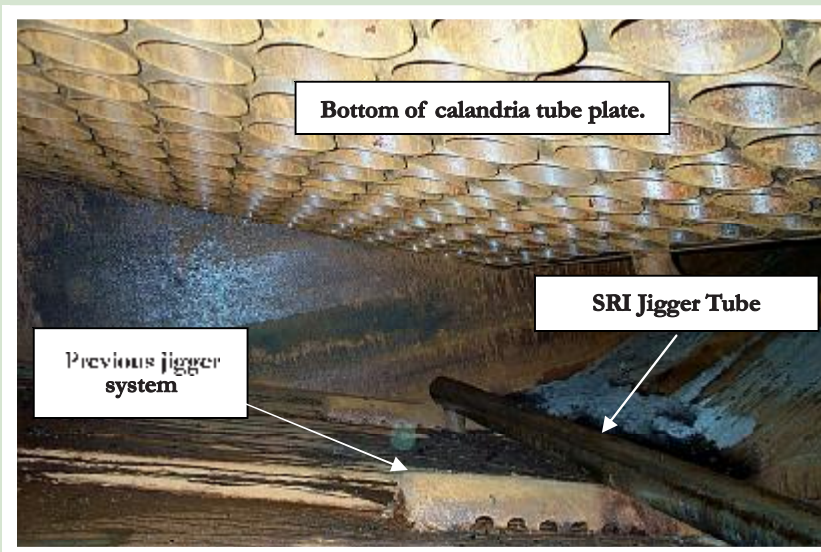


Illustration of the benefits of the SRI jigger system on circulation in a batch pan.



Jigger pipe installed under the calandria in a horizontal continuous pan.

The SRI Jigger Tubes System can be installed as a replacement for existing jigger systems. The SRI system will boost pan circulation by providing better distribution of the jigger feed and will reduce the possibility of erosion of the bottom tube plate and calandria tubes.

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The SRI Jigger Tubes System is typically fed with noxious gases (incondensable gases) withdrawn from the calandria noxious gas venting system.

The SRI Jigger Tubes are positioned under the calandria. They disperse a multitude of small gas bubbles into the massecuite over a wide area and at a position designed to maximise the increase of massecuite circulation. Some vapour accompanies the noxious gases and this passes into the massecuite to boost circulation further.



Photo of gas bubbles rising in water from a single laser drilled hole

Features

- Improved circulation and heat transfer
- Low maintenance
- Commissioning and control are simple
- No complex control system required
- Easily retrofitted to existing batch and continuous pans
- Can replace existing jigger systems to improve pan performance
- Unobtrusive to massecuite flow from pan
- Does not suffer from massecuite bleed - hence no non-return valves required

Benefits

- Improved circulation velocities of up to 20%
- Improved heat transfer coefficients of 5-30%
- Shorter batch pan cycle times by at least 2-3%
- Less fine grain formation
- Increased brix of massecuite (0.6 unit higher brix for C massecuite)
- Reduced calandria pressure of 20 to 40 kPa
- Reduced steam rates to maintain similar throughput
- Reduced need for balance water and/or pan aids
- Tighter pan control

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