



Simplifying Recovery Boiler Operation and Maintenance

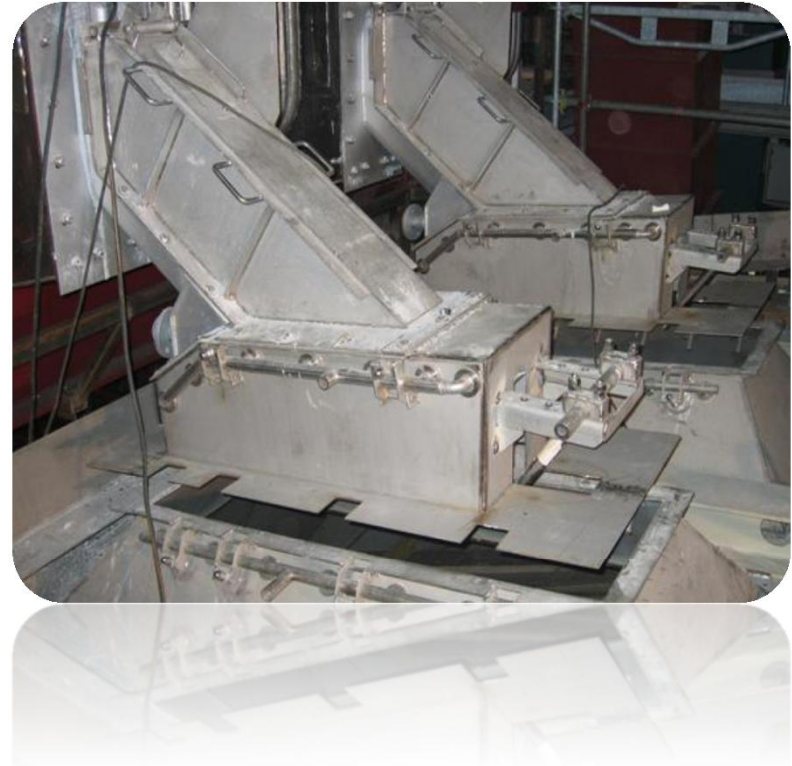
Going from Two to One Dissolving Tank
for Vintage Recovery Boilers

Background

- A large number of older Vintage recovery boilers were designed with two dissolving tanks.
- The number of spouts used and the shape of the tanks were the main reason for using two tanks.
- Capacity of a dissolving tank is largely function of residence time.
- Typical capacity of Vintage spouts is about 700,000 lb DS/day per spout.
- Valmet spouts have a design capacity of up to 1.4 million lb DS/day, offering the possibility to greatly reduce the number of spouts and the elimination of the need for two dissolving tanks.

Advantages of Valmet Spouts

- Improved shattering
- Quieter spout deck
- Increased safety
- Improved density control
- Reduces load on vent stack
- Easier maintenance
- Shatter jet steam consumption ≤ 170 kg/spout/hr with one nozzle in operation



Valmet standard smelt spout assembly

Benefits

- Smelt Spout

- Steep design angle
- More even smelt flow
- Improved shattering
- Easier cleaning

- Water-cooled & insertable
- Self leveling
- Easier change-out
- Less Maintenance Cost

- Micro-Hoods

- Enclosed system
- Improved dissolving tank/scrubber fan performance

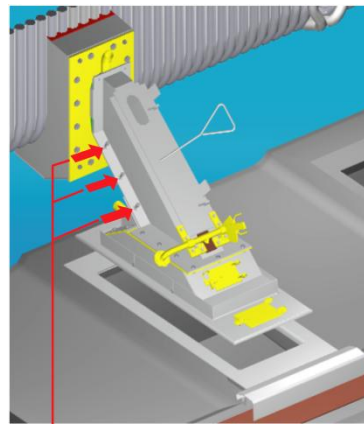
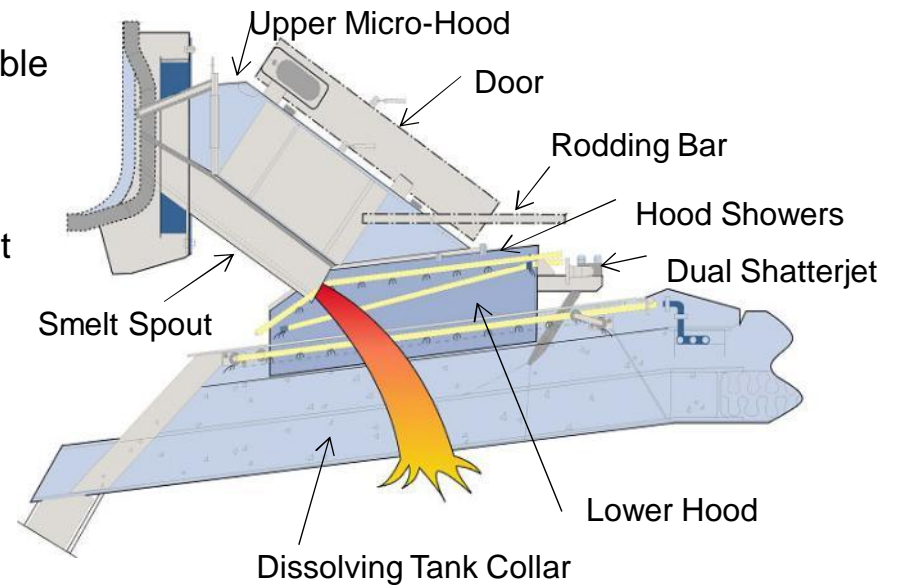
- Easier maintenance

- Dual Shatterjets

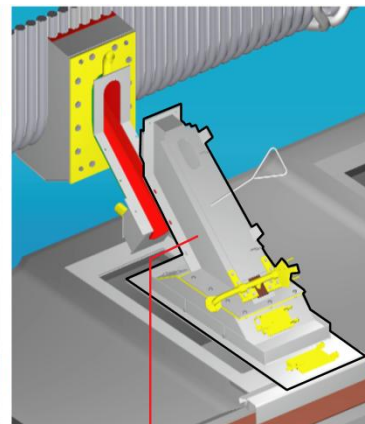
- Quieter spout deck
- Improved shattering
- Dramatically reduced steam consumption

- Increased safety
- Full range of adjustability

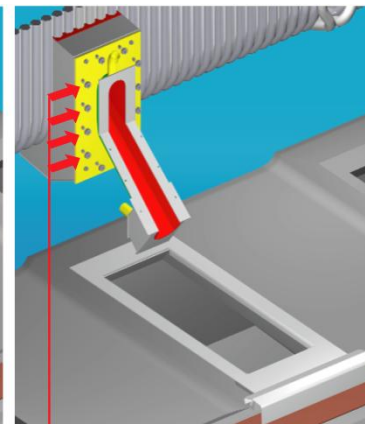
- ROI ≤ 12 months



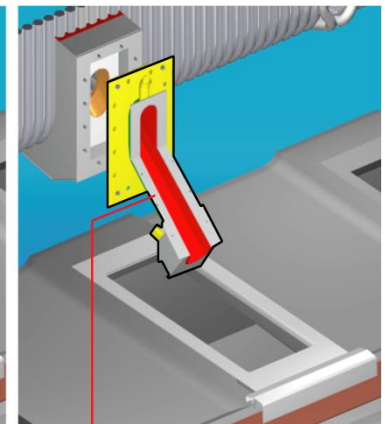
Unscrew the bolts



Hood off



Unscrew the nuts



Smelt spout off

Benefits of Having Less Spouts and Going to a Single Dissolving Tank

- Reduced maintenance and operating cost for the tanks (piping, pumps, agitators, cleaning, inspection, tank repairs, venting)
- Easier to control green liquor density in one tank vs balancing both
- Less operator intervention / time needed with only one side of boiler.
- One less dangerous area around the boiler as spout decks require additional PPE
- Lower cost of spout changes with less spouts
- Better flow in each spout and easier to keep spout running with less spouts

