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INTRODUCTION TO SAMPLING FOR MINERAL PROCESSING

Part 5 in a series "Process Control Samplers"

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Objectives of Sampling

- **Process Control**
  - Normally for concentrate and tailings of each stage of the flotation process
  - Requires sampling to verify tendencies in the process
  - Important for maximizing metal recoveries
  - Feed for On Stream (OSA) and Particle Size (PSM) Analyzers
  - Required to produce 8 to 12 m^3/ hr of continuous sample

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Sampling - Golden Rule

- The “golden rule” states that for correct sampling “all parts of the material being sampled must have an equal probability of being collected and becoming part of the final sample for analysis” (Gy)

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Process Control Samplers

- Slurry should be properly mixed before cutter or nozzle
- Velocity of slurry going through the cutter or nozzle should be the same as the velocity of main slurry

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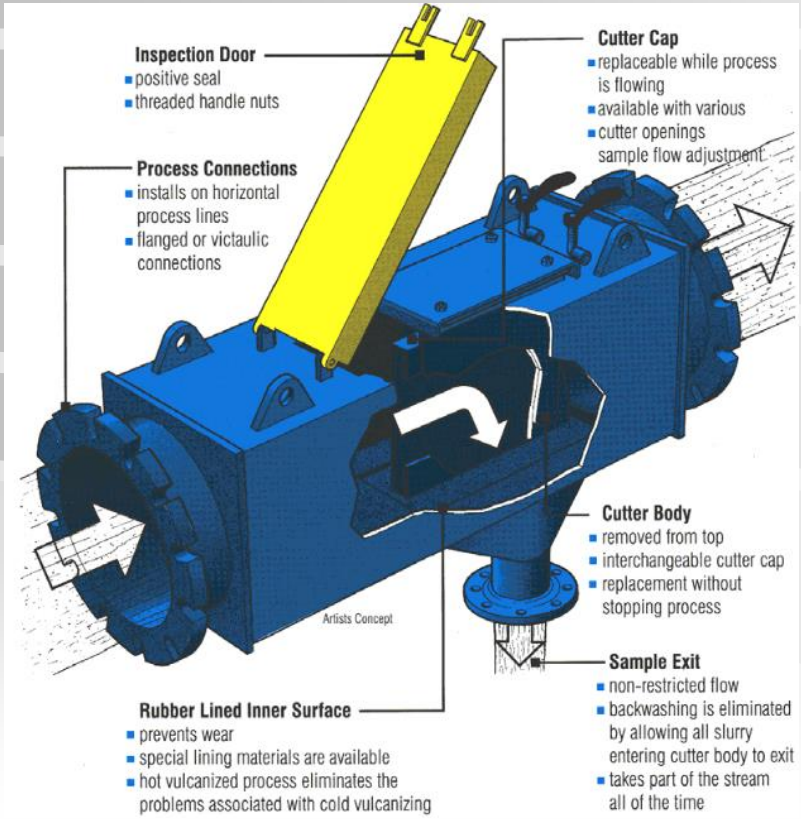
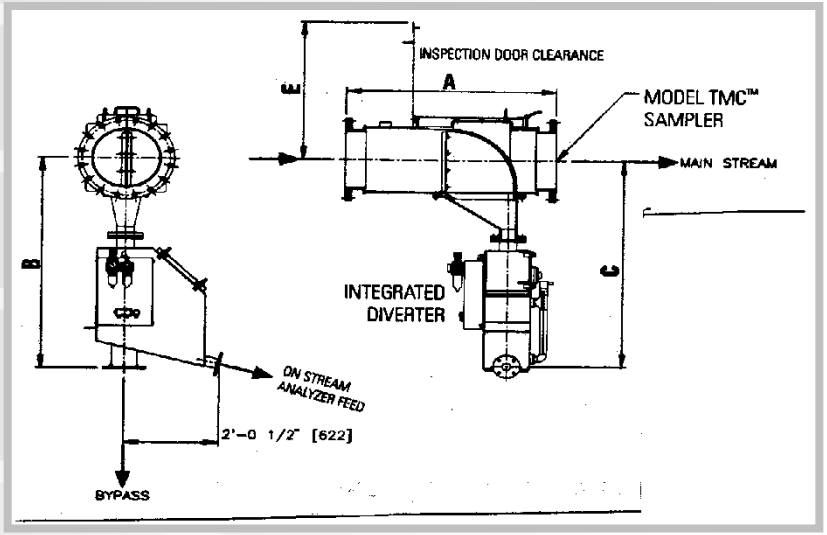
Gravity Flow Fixed Cutter





TMC™

w/ Integrated Diverter

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CONSTANT FLOWRATE CONTROL TO AN ON-STREAM ANALYZER EVEN DURING PROCESS FLUCTUATIONS

TMC™ Primary Sampler w/ M1860 Flow Diverter

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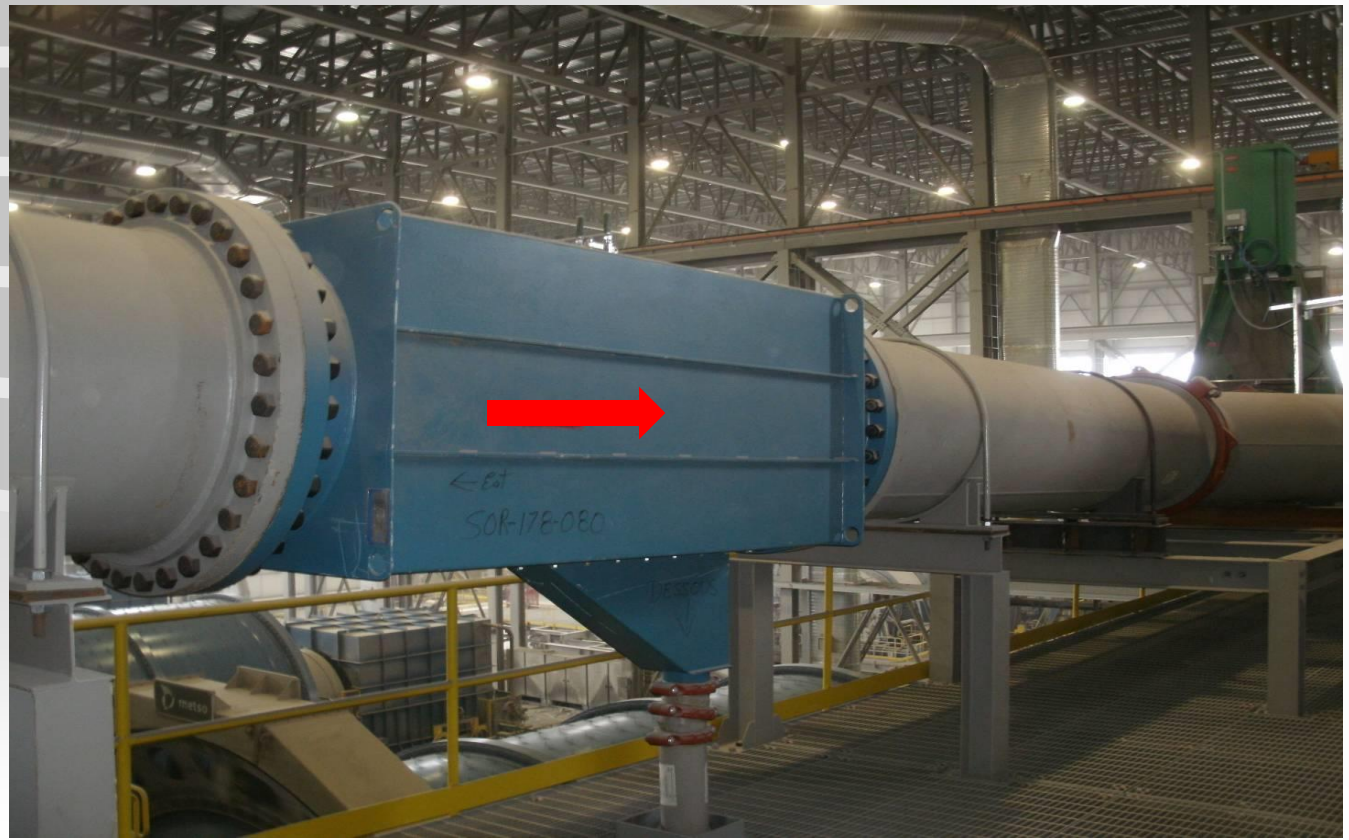
TMC – Primary Sampler



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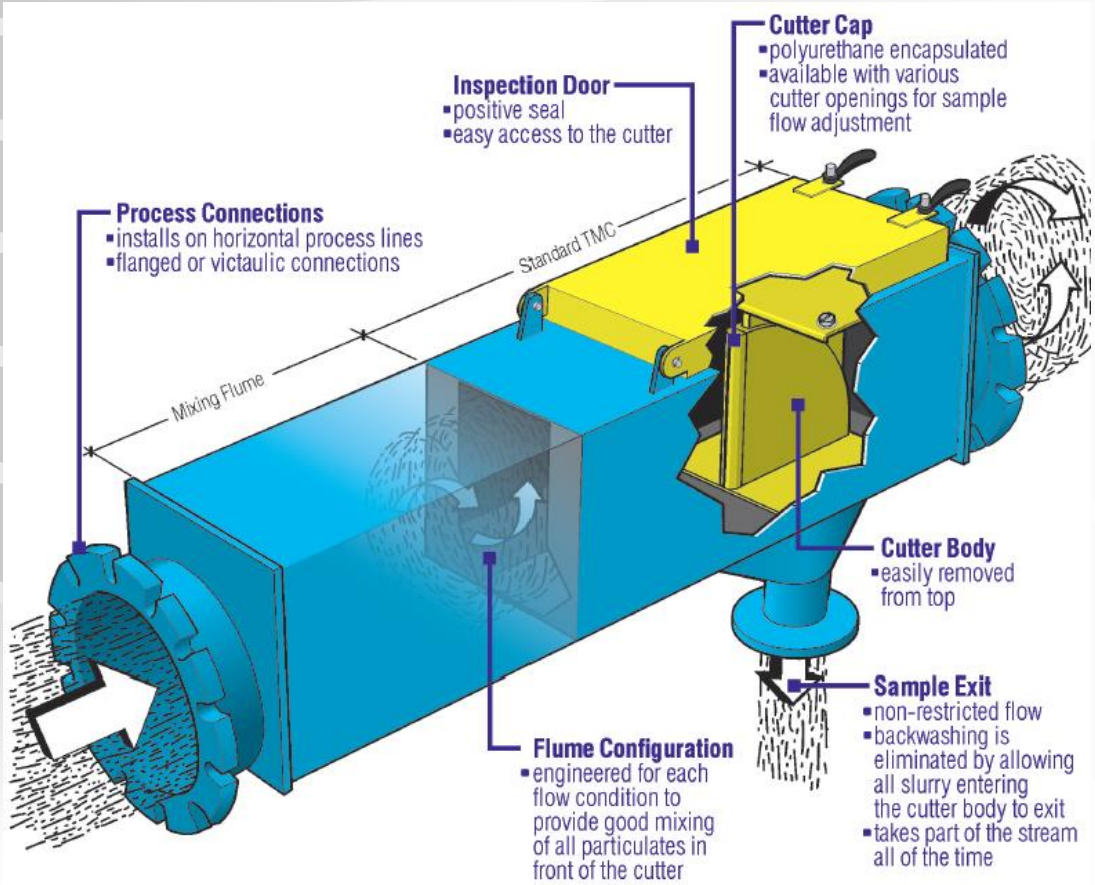
TMCF – Primary Sampler



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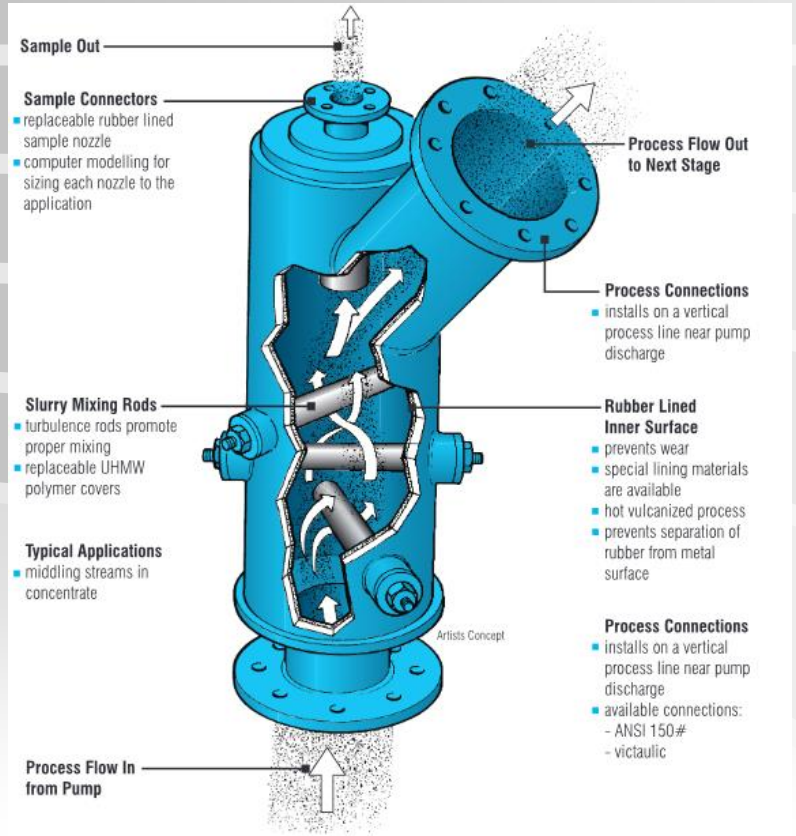
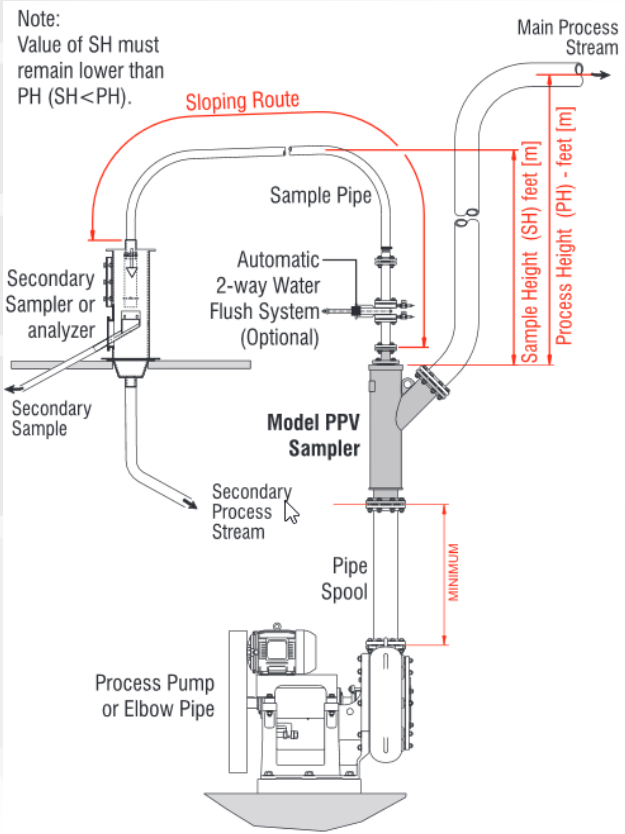
PPV – Primary Sampler





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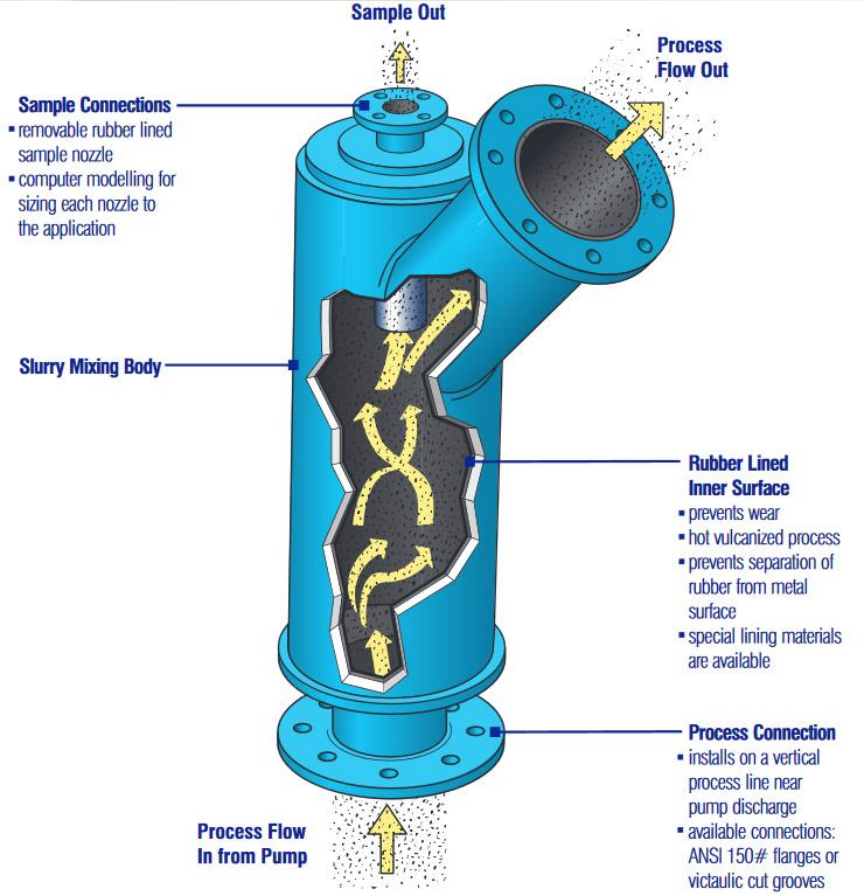
PPVNB – Primary Sampler



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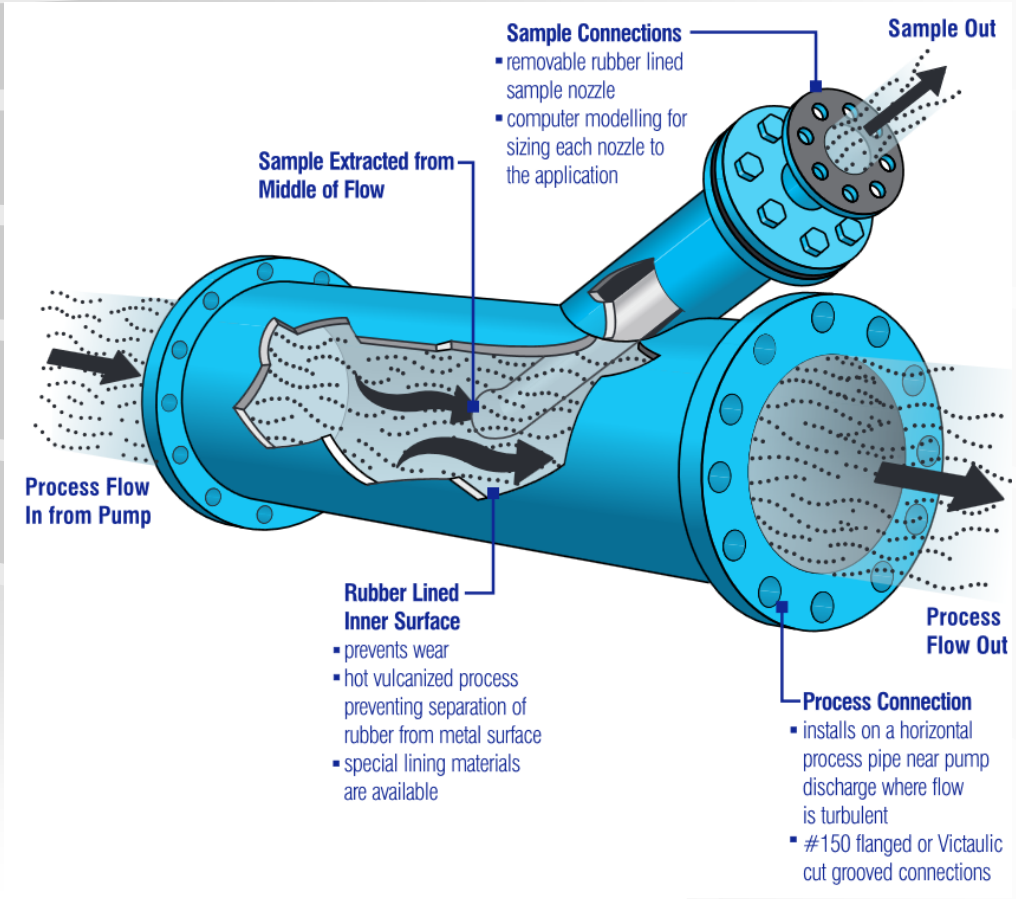
PPH – Primary Sampler



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Pressure Pipe Horizontal Sampler PPH

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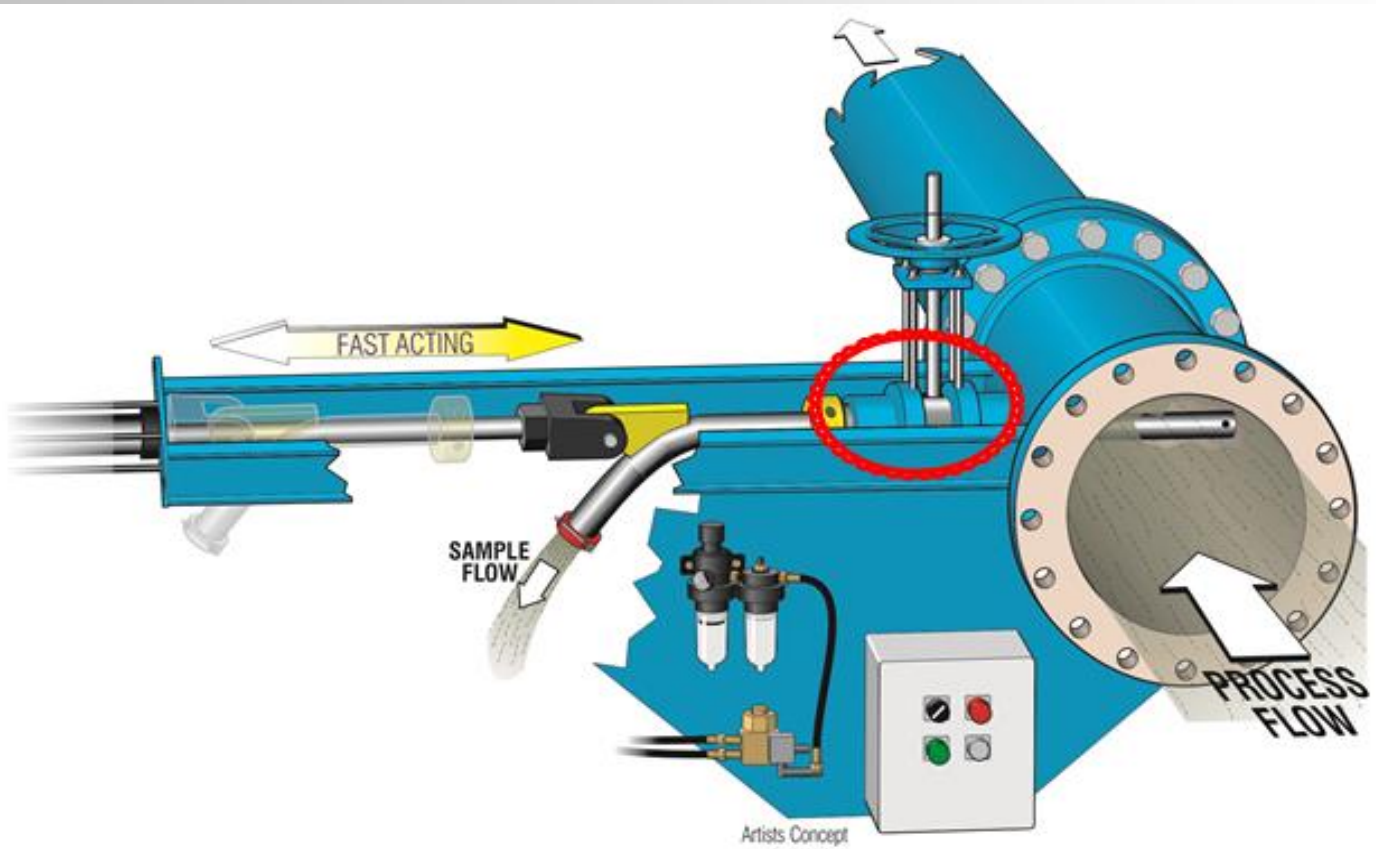
Poppet Sampler



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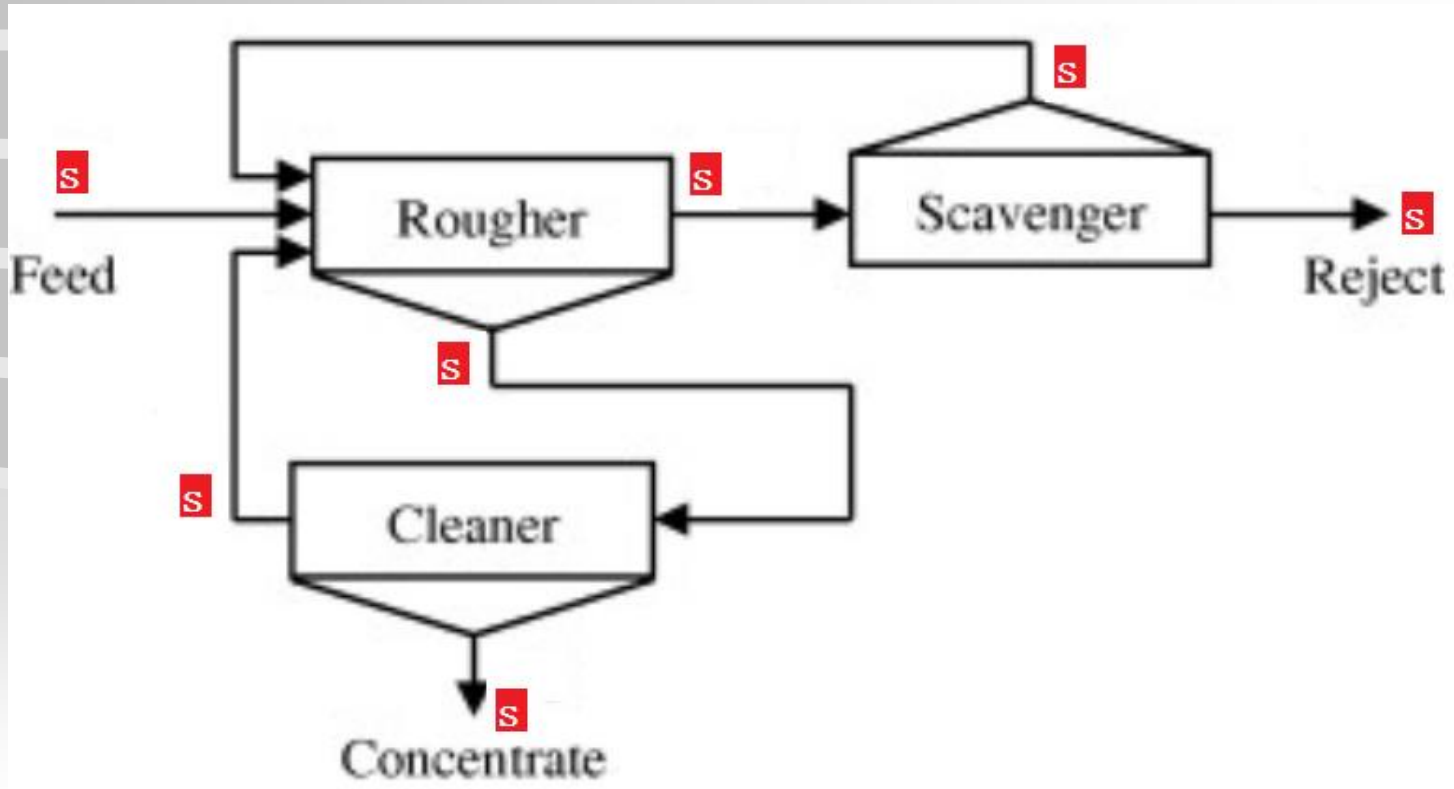
Sampling Points



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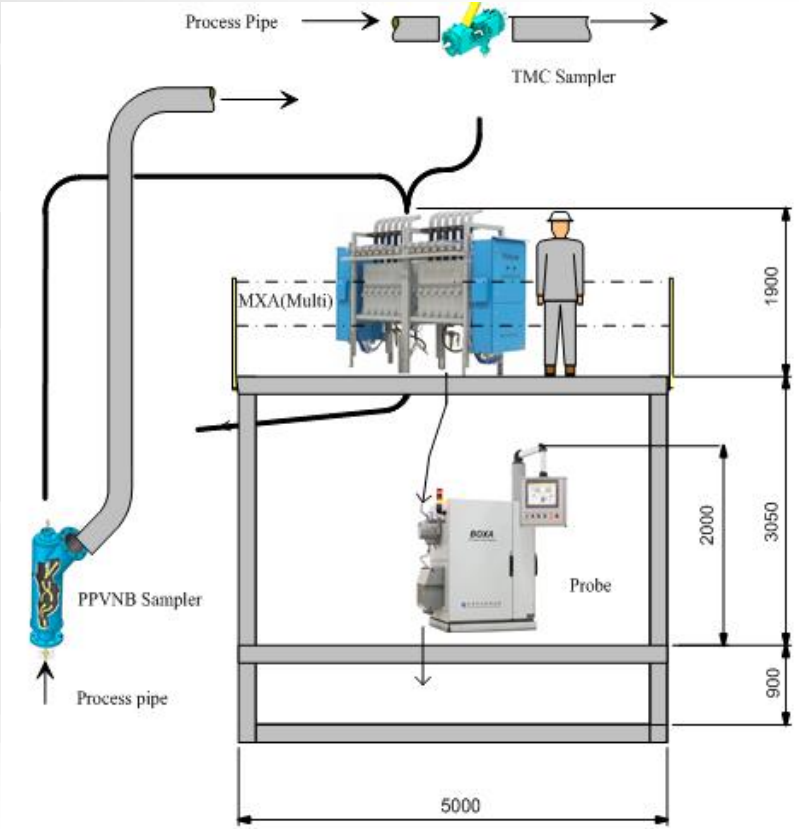
OSA System Overview

- Samplers provide sample to the MXA's
- Return lines go back to the process
- MXA's direct a single sample to the probe to be measured
- Assays results generated and sent to plant's DCS and displayed locally



Layout

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Slurry Multiplexer (MXA)

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On Stream Analyzer (OSA)

XRF Measurement of Slurry

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Particle Size Analyzer

Particle Size Measurement of Slurry

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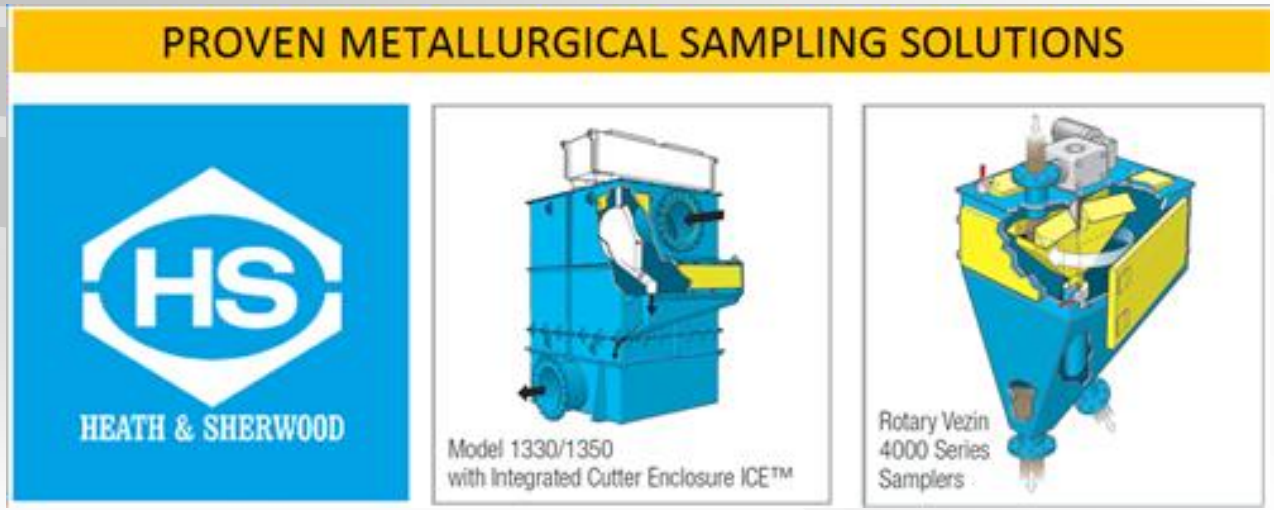
For more information you can always contact us at:
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