Elessent™
MECS® TECHNOLOGIES

# MECS® DYNAWAVE® REVERSE JET SCRUBBER
## SULFUR RECOVERY UNITS (SRUs)

### 99.9+% SULFUR REMOVAL AT THE LOWEST COST AND WITH THE HIGHEST RELIABILITY

**Claus SRUs are found in various industries, such as refineries, natural gas processing plants, chemical plants and coal gasification facilities.**

The Claus process is widely used to recover sulfur from $H_2S$-containing gas streams. However, a Claus SRU can typically recover only 95–98% of the sulfur present. Many times, Tail Gas Treatment Units (TGTUs) are installed downstream of a Claus SRU to increase the overall sulfur recovery to 99.0–99.9% in order to comply with local environmental regulations.These TGTUs may include amine-based TGTUs (SCOT type), cold-bed sub-dew point processes (SULFREEN®, CBA, etc.), or direct oxidation type processes (SUPERCLAUS®, EUROCLAUS®, etc.).

### Recovery efficiency

Depending on the sulfur recovery efficiency provided by the SRU/TGTU combination, local environmental regulations for $SO_2$ emissions may be met normally. However, operations during startup, shutdown and malfunction upsets may require further treatment downstream of the TGTU or treatment as an alternate/redundant operation to the TGTU. This is where the DynaWave® wet gas scrubbing technology can provide reliable and worry-free operations and guaranteed $SO_2$ removal to meet environmental regulations and good-neighbor objectives.

### Worry-free, simple and robust design

The DynaWave® system is a unique open-bore reverse jet scrubber that utilizes "froth zone" technology to perform desulfurization in a wet gas environment. This proven technology will reduce total installed cost, simplify operations and deliver over 99.9+% sulfur removal. Contact MECS, Inc. (MECS) for more information regarding environmental performance enhancements for your specific SRU application.

### FEATURES AND BENEFITS

**Emissions reduction:**

- 99.9+% sulfur removal
- Less than 25 ppm $SO_2$ emissions
- Meets environmental and good-neighbor objectives

**Operations and reliability:**

- Low capital cost
- Less operating cost
- Meets startup, shutdown and malfunction emissions regulations
- Alternate/redundant operation to the TGTU
- Simple controls, reliable operation

**Technology:**

- Field proven
- Added flexibility:
  - Handles high $SO_2$ inlet
  - Can compensate for and complement SRU performance
  - Handles SRU tail gas if TGTU is shut down or bypassed
  - Excellent polishing technology for very low $SO_2$ levels (10 ppm)
- Over 400 DynaWave® scrubbers installed worldwide

**Elessent Clean Technologies**
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## SULFUR RECOVERY UNITS (SRUs)

### HOW A REVERSE JET WET GAS SCRUBBER WORKS

The DynaWave® reverse jet scrubber is an open duct in which scrubbing liquid is injected through a non-restrictive reverse jet nozzle, counter current to the dirty inlet gas. Liquid collides with down-flowing gas to create the "froth zone," a region of extreme turbulence with a high rate of mass transfer.The clean, water-saturated gas continues through the scrubber vessel to mist removal devices.The liquid reverses direction and returns to the vessel sump for recycle back to the reverse jet nozzle. For SRU applications, DynaWave® technology is installed after the incinerator and before the stack.

### TYPICAL MECS® DYNAWAVE® REVERSE JET SCRUBBER

**Claus SRU:**

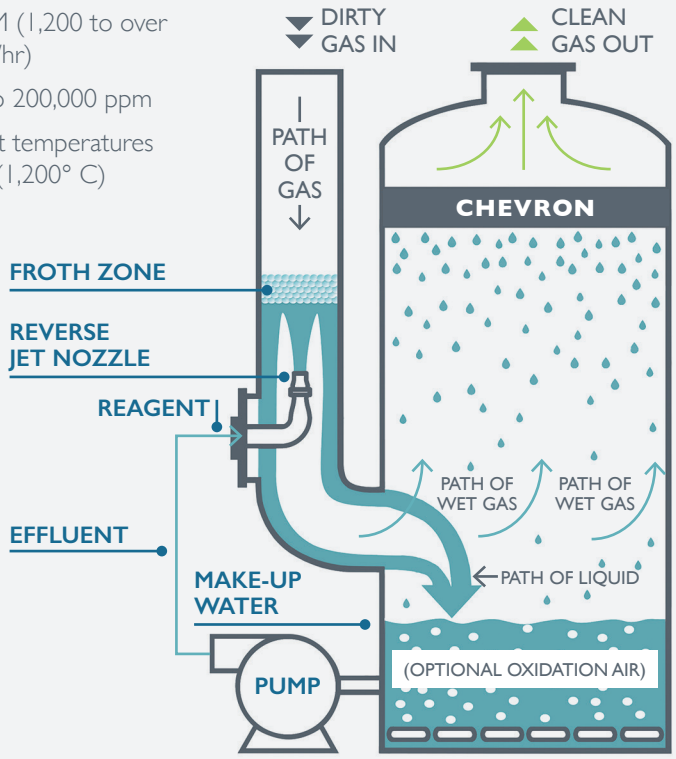
- Claus–Incinerator–DynaWave®
- Claus–TGTU–Incinerator–DynaWave®

**Proven performance:**

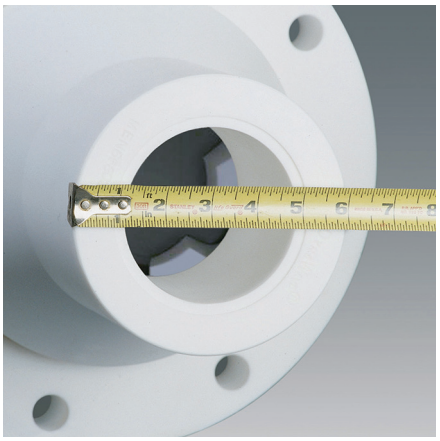
- Over 400 wet scrubbing systems installed worldwide
- Flow rates from 700 to over 1,200,000 SCFM (1,200 to over 2,000,000 $Nm^3/hr$)
- $SO_2$ levels up to 200,000 ppm
- Can handle inlet temperatures up to 2,200° F (1,200° C)

**Other sulfur applications:**

- $H_2S$ scrubbing
- Sulfur pit or storage vents
- Flare gas $H_2S$ scrubber
- Fuel gas treater
- Coal gasification




*See how it works. View the video on the MECS website at: MECS.ElessentCT.com*



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