

Ammonia and Methanol Syngas Revamp

Applicable to Centrifugal Compressors



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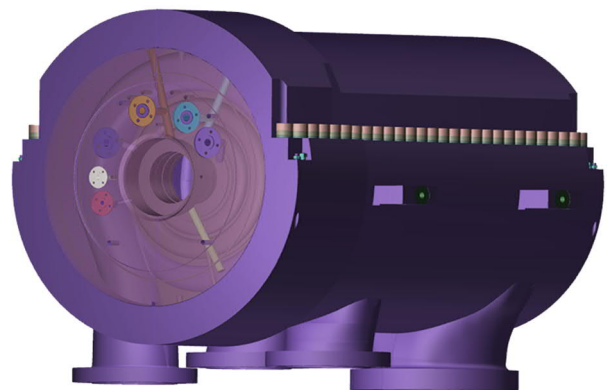
Siemens Energy offers a comprehensive portfolio of compression solutions for upstream, midstream, and downstream applications. Compressor solutions can be standardized or tailored to your needs in a variety of applications – such as on- or offshore gas production, natural gas transmission and distribution, air separation, chemicals, petrochemicals, and refining. The Ammonia & Methanol Syngas 3rd Generation Revamp is applicable to all Siemens Energy OEM and non-OEM Centrifugal Compressors that are used as part of Ammonia and Methanol Syngas processes.

Ammonia and Methanol Syngas Revamp Overview

Historically, converter changes that typically decrease compressor discharge requirements tend to free up power by creating lower compressor head requirements. Clients in this situation typically push for more production and higher flows, which causes the compressor to run inefficiently.

It is important to note that this type of process static equipment change can occur without any change in compression. Clients can operate for extended periods without realizing the full impact of energy loss. The best way to identify if this condition exists is when there is a

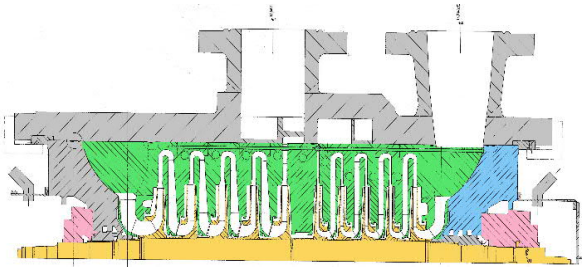
visible change in syngas loop converter and resultant pressure reduction. With the new Ammonia and Methanol Syngas Revamp, Siemens Energy is proud to offer its clients the ability to experience reduction in power requirements with an increase in energy efficiency and reliability.



Siemens Energy Ensures Customer Satisfaction by Increasing System Capacity, Process Efficiency, and Reliability.

Technical Design and Improvements

- Maintain current interconnecting piping and E&I work versus more invasive footprint replacement.
- Hardware manufacturing, which constitutes the project phase with the longest lead time, can be implemented while the machine is still running. Only the installation requires the train to be shutdown.
- As a result, quicker turnaround and shorter downtime are achieved.



Features and Benefits

- The new Ammonia and Methanol Syngas Revamp provides a quick and high ROI.
- This revamp will allow you to start saving on energy consumption the moment it's installed.
- Reformer discharge pressures can be used to reduce power requirements in syngas trains.
- EPC/Process licensors can create schemes to use new high-pressure reformers to remove whole compression bodies.
- Ammonia purification is done to increase ammonia syngas reaction efficiency.

Applicability

As the compressor OEM, Siemens Energy is best suited to provide a conversion solution that ensures the best overall compressor performance and maintenance, from a single source. Applicable to all Siemens Energy OEM and non-OEM Centrifugal Compressors.

Support Services and Implementation

Siemens Energy Field Services experts support the customer in all the aspects of installation. Siemens Energy's services provide upgrade, revamp, repair solutions, and technical support at all levels of client projects.

Scope of Work

May require some modifications or custom fitting for installation with its interchangeability and process changes that affect head requirements and potential to revamp the Ammonia trains.

Upgrade includes:

- One complete set of statics
- One complete rotor
- Optional: seals, bearings, heads

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