The new prechamber has been developed to improve overall engine efficiency. Among the many advantages it offers is increased combustion stability, which results in a more stable load.

The prechamber is the ignition source for the main fuel charge, and is thus one of the essential components of a lean-burn spark-ignited gas engine. The prechamber should be as small as possible in order to achieve low NOx values, but still big enough to provide rapid and reliable combustion. Among the design parameters taken into consideration are the:

- shape and size
- mixing of air and fuel
- gas velocities and turbulence at the spark plug
- cooling of the prechamber and the spark plug
- choice of material.

The new prechamber represents the latest design based upon advanced, three-dimensional, computerised fluid dynamics. As a result, the Wärtsilä 34SG engine now features:

- more stable combustion
- improved efficiency (up to 1%)
- reduced NOx emissions
- reduced urea consumption of up to 25% in SCR installations

The new prechamber is available for the following engines:

- 1% prechamber for the Wärtsilä 12V34SG and Wärtsilä 18V34SG engines
- 0.9% prechamber for the Wärtsilä 9L34SG, Wärtsilä 16V34SG and Wärtsilä 20V34SG engines

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