

# UPGRADING ALPHA LUBRICATION

REPLACING ORIGINAL NON-RETURN VALVES WITH HJ SIP VALVES GENERATES BIG SAVINGS

Upgrading existing Alpha Lube systems reduces both oil consumption and extends the lifetime of cylinder liner and piston rings.

## Strong combination

HJ SIP valves are mounted in the liner using the same holes as your current non-return valves (lubrication quills). HJ SIP is a high-pressure injection lubrication system that injects the cylinder oil as a spray (fine mist) above the piston.

The oil is perfectly distributed on the upper part of the liner, by injecting the oil into the scavenge air swirl. The air swirl lifts the oil and ensures a thin, uniform oil film on the upper liner.

Due to the optimal distribution of the cylinder oil, the friction between the liners and rings are reduced resulting in lower feed rate and reduced wear rate.

## Injection frequency

Increasing the injection frequency offers a potential reduction of cylinder oil consumption by 25-50% while at the same time reducing the wear of liners and piston rings.

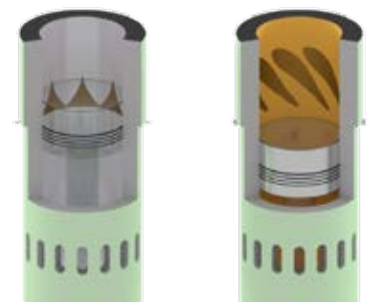
## An upgrade consists of two parts

1. Increasing Alpha Lube Injection Frequency
2. Installation of HJ SIP valves (in combination with Alpha Lube)

## Benefits

- Reduced oil consumption (25-50% savings in CLOC)
- Reduced wear of liners and piston rings
- Cylinder oil is distributed where the cylinder oil is needed the most
- Improved cleaning reduces the risk of accelerated liner wear and piston ring breakage
- Reduced oil stress due to increased injection frequency (optional)

### Lubrication visualized



Before upgrade

After upgrade