

# Wärtsilä Retrofit pulse lubricating system



Costs for cylinder lubricating oil are a critical issue for vessel operators with market prices for lubricating oil constantly fluctuating while availability can be limited. The electronically-controlled Wärtsilä Retrofit pulse lubricating system (RPLS) delivers reduced cylinder oil consumption without compromising piston running reliability.

## 30-50% LESS CYLINDER LUBRICATING OIL

The guide feed rate for Wärtsilä RTA and RT-flex engines retrofitted with the Wärtsilä Retrofit pulse lubricating system is 0.8 g/kWh of cylinder lubricating oil. With a traditional specific oil consumption of 1.1 – 1.6 g/kWh this means that the consumption can go down by 30-50% after the engine has been retrofitted with Wärtsilä RPLS.

The reduction in cylinder oil feed rate allowed by the Wärtsilä RPLS, compared with the existing accumulator system, is made possible through the improved distribution of cylinder lubricating oil to the piston ring package and the precise timing of oil delivery.

## BENEFITS

### Economical benefits

- Reduced cylinder lubricating oil (CLO) consumption leading to reduction of total operation costs

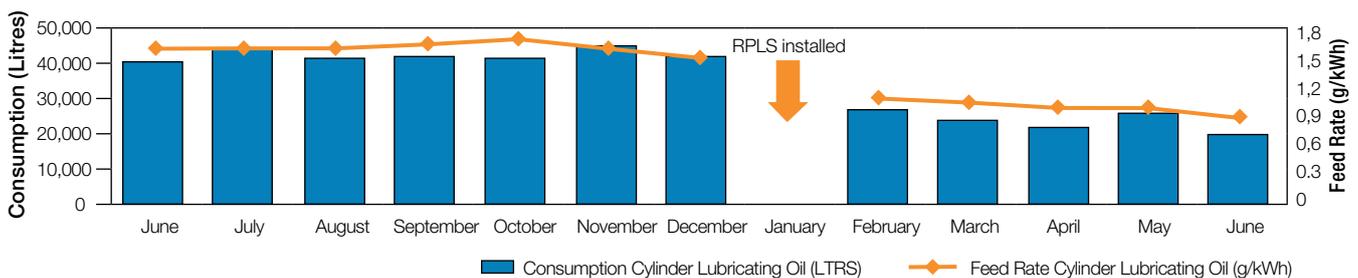
### Technical benefits

- Precise injection of CLO into piston ring package
- Accurate metering of CLO to achieve potential savings
- Less deposits built up due to reduced lubrication

### Environmental benefits

- Reduction in solid particle emissions due to reduced lube oil consumption

## Real time experience on an existing installation with Wärtsilä RPLS



Wärtsilä RPLS is based on a lubricating module for each cylinder with integrated monitoring electronics, which delivers pressurised cylinder lubricating oil to newly-developed lubricators that fit existing cylinder liners of the Wärtsilä RTA and RT-flex engine types.

### SCOPE OF SUPPLY & INSTALLATION

Wärtsilä RPLS is available in two different packages:

<b>Wärtsilä RPLS Full package</b>	Wärtsilä is managing and executing everything from pre-inspection until sea-trial and guarantees a fully functional RPLS system. This package is ideal when you have limited resources available and want to have peace of mind
<b>Wärtsilä RPLS Basic package</b>	Wärtsilä is delivering all material, supervising the installation and makes commissioning and sea-trial of the system. This package is ideal when you have skilled resources available and by that want to save on investment costs and shorten pay-back time

Wärtsilä RPLS can be fitted during commercial operation of the vessel. Since it is an independent system with only few connections or interfaces to other systems. The preparation and the installation are easy and fast. All equipment is supplied ready for installation and commissioning.

Wärtsilä RPLS is available for all RTA and RT-flex engines. For other engine types, please contact your nearest local Wärtsilä office.

Scope by Wärtsilä	Basic package	Full package
Pre-inspection	✓	✓
All material and software	✓	✓
Supervision	✓	✓
Full installation work		✓
Final check, settings, commissioning and sea trial	✓	✓
Delivery costs		✓
Travelling time and expenses		✓

### WORKING PRINCIPLE

The basic principle of the Wärtsilä RPLS is to deliver metered quantities of cylinder lubricating oil at precise timing under pressure exactly into the piston ring package from where it is evenly distributed around the circumference of the cylinder liner.

The main components of the Wärtsilä RPLS are:

1. **Pulse lubricating module**, consisting of a dosage pump with electronically-controlled timing
2. **Lubricators**, up to eight in a single row around the cylinder liner
3. **Filter and measuring system**
4. **Servo oil supply unit** (on RTA engines) or pressure reducing unit (on RT-flex engines)
5. **Control system**
6. **Crank angle sensors**, two of which one is redundant

