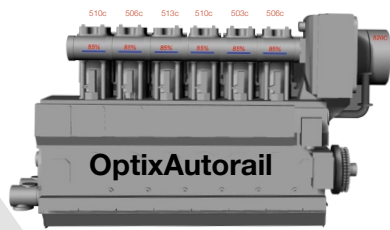
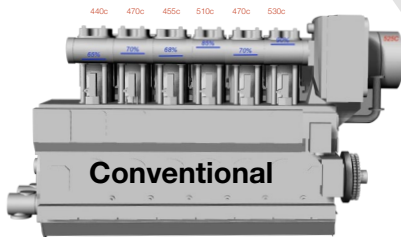


# OPTiX AUTORAIL



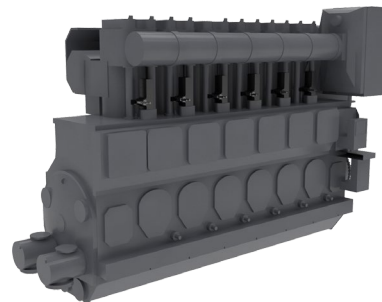
## Key Benefits

- ▶ Individual fuel control for each cylinder
- ▶ Optimization of fuel amount vs exhaust temp.
- ▶ More exact rpm control
- ▶ Higher safety
- ▶ Less mechanical wear
- ▶ Damage and repair forecast

## Next generation fuel pump control

The fuel pump control system OptixAutorail lower fuel consumption with up to 10% for engines equipped with individual fuel pumps. Enabling each individual cylinders fuel pump to be controlled to the most optimum power and cylinder-load.

- ▶ Run your main engine with even exhaust temperatures at all rpm levels
- ▶ All cylinders add equal power
- ▶ Even wear on bearings and pistons
- ▶ Load reduction only occurs when all cylinders are overloaded
- ▶ Reduce fuel consumption and emissions from COx, NOx, & SOx



## Even cylinder power takeout

On a standard fuelrack controlled engine the power takeout varies between the cylinders. It is common that exhaust temperatures vary of as much as 75 degrees and as a result of this the engine gets big variation in cylinderload. To reduce the fuel consumption on a engine the easiest way is to reduce the rpm and load the engine on lower rpm. However, the result of this is quite common also increased exhaust temperatures. The turbine temperature is a result of the highest cylinder exhaust temperature. When a high turbine temperature occurs the load control system deload the propeller.

With OptixAutorail system installed all cylinders have the same power takeout and therefore the deload only occurs when all cylinders are overloaded. After installation the exhaust deviation is within 5-10 degrees as standard.

# OPTIXAUTORAIL



## Easy installation and tuning

The OptixAutorail controlmodules are installed on each individual fuel pump. The exhaust temperature on each cylinder exhaust is measured and the individual fuel pump module is controlled with this as one of the references. During the installation the original fuel rack is disconnected and the original regulator is replaced by the control processor in the OptixAutorail system. To get a more exact engine rpm the OptixAutorail system has a separate rpm pickup. Mechanical installation is done in two days by OptixMarine installation team and thereafter one engineer joins the vessel for one day to tune the system to the specific engine. No docking or of-hire is needed for the installation.

## Get forecast on wear and maintenance

OptixAutorail is ethernet connected and uploads condition reports of each part in the system. This information includes daily calibration settings, variations in demanded fuel pump settings etc. Based on this data the system is able to perform forecast calculation related to engine wear, maintenance demand and other issues in the engines controlsystem.



## OptixAutorail is suitable for all ships

The OptixAutorail can work as a “stand alone” system together with the ships control system or in cooperation with a optimisation system/ software. Most tuning and optimisation systems “listen” to the existing data from the engine as it is today. They do their best to optimise and reduce fuelconsumption on the engine. However, it all come down to the correctness of the received data from the engine. If the temp from one cylinder is too high, the system will reduce the load on the engine. Hence the optimisation system is “fooled” by the engines data.

The OptixAutorail system is active within the engine instead of just listening to it. The result is that all systems that are listening to the engine will get correct data and therefore perform better. An installation of this system will result in fuelconsumption reduction of up to 10%.

The OptixMarine Team have more than 25 years experience in ships systems and believe that the shipping industry has a sustainable future. Our goal is to use this experiences and knowledge to lower energy consumption onboard ships.