

Everllence AdaptiVIT



Main Benefit



Operational efficiency

Adaptive Variable Injection Timing



Operational efficiency

- Enhancement of engine efficiency through reduced specific fuel consumption
- Compensation of engine wear
- Optimization across various load conditions

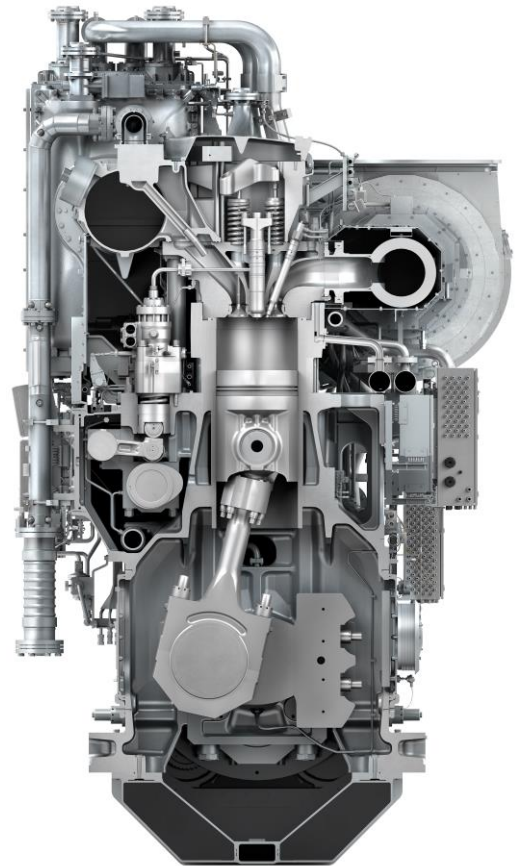


Other Benefits

- Compliance with specified emission regulations
- Stand-alone system
- Continuous cylinder pressure monitoring

How the Solution works

- Manual or electrical VIT are being replaced by an adaptive VIT
- Combustion pressure sensors and NO_x sensors provide additional data for enhanced combustion parameter monitoring
- New control cabinet analyzes real-time engine parameters
- Servo Motor, equipped with a worm gear mechanism, drives an eccentric shaft
- Rotation of the eccentric shaft induces horizontal movement of the rocker arms
- The position of the rocker arms is critical for initiating pressure buildup and fuel injection
- The ignition timing plays a critical role in determining the engine's characteristics
- Advancing the ignition timing results in higher combustion pressures (part load) and reduced fuel consumption
- Retarding the ignition timing contributes to lower NO_x emissions



For further information:

Should you have any queries, our Retrofit & Upgrades team will be pleased to be of assistance.

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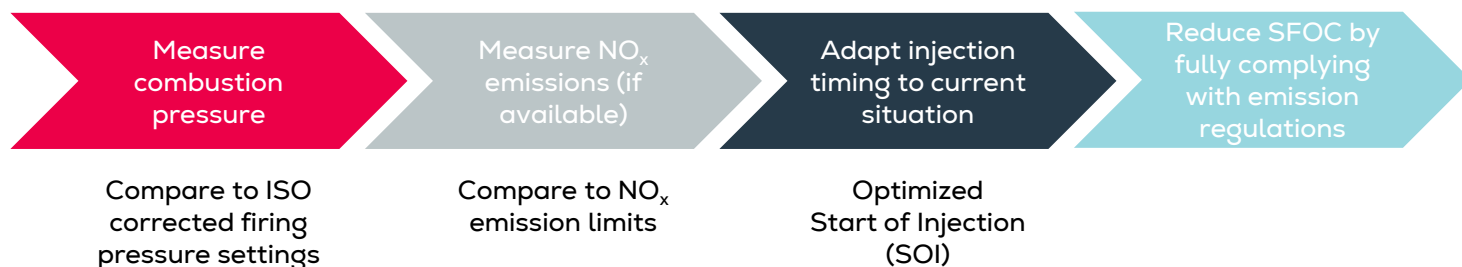
Contact:

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Workflow



Scope of Supply

- Installation of combustion pressure sensors for each cylinder
- Integration of new control cabinet and servo motor
- System adjustment and commissioning procedure

Case Study

– Engine type:	18V48/60
– Power Output:	20,700 kW
– Load considered:	85% MCR
– Annual operating time:	6000 hrs
– SFOC reduction:	up to 2g/kWh
– Annual fuel savings:	211 mt/a
– Fuel price: (Global 20 Ports 2025)	480 \$/mt
– Annual cost savings:	101,300\$

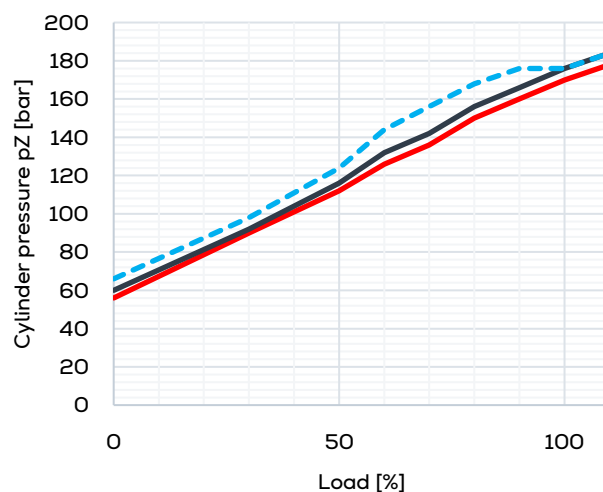
Applicability

AdaptiVIT is available for the following engine types (Power Application):

48/60, 48/60B, 51/60, 51/60R and 51/60DF

Benefits of AdaptiVIT

- **Compensation:** Decrease of original cylinder pressure due to engine wear can be compensated
- **Optimization:** Increase of cylinder pressure between 50% and 90% load
- **Diagnostics:** Analysis of real time combustion data*



— Wear — Original - - - Optimization

* only possible if engine is equipped with a multi gap wheel

MAN Energy Solutions is now:

Everllence

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