

Haliza 10

Reciprocating Machinery Analyzer



Measure Vibration & Pressure

Analyze Machinery Performance

Improve Plant Efficiency & Reliability



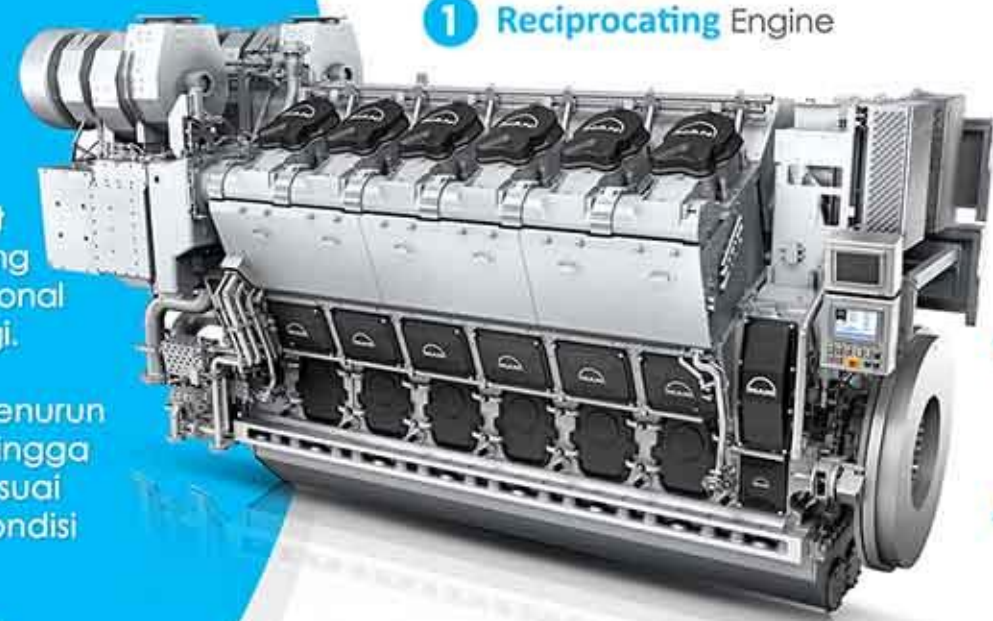
For:

-  Power Plant Diesel Engine
-  Marine Diesel Engine
-  Reciprocating Compressor

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Reciprocating Machinery Analyzer

- 1 **Diesel Machinery** adalah aset penting dari sebuah *plant* yang mahal dengan biaya operasional dan *maintenance* yang tinggi.
- 2 **Performance mesin** akan menurun (*derating*) seiring waktu sehingga perlu perawatan berkala sesuai acuan awal berdasarkan kondisi aktual mesin.
- 3 Mesin tidak bisa bicara, perlu adanya **pengukuran kondisi aktual parameter mesin** yang akurat dan bisa dipercaya.



1 Reciprocating Engine

Measure:
• Vibration
• Pressure
• Phase/RPM

SENSOR

2 Haliza 10 (On-site Analysis)



3 SofHaliza (Off-site Analysis)



Fungsi Haliza 10

Machinery Analyzer untuk mesin **Reciprocating** yang dilengkapi kemampuan untuk melakukan pengukuran **Vibration** dan **Pressure** sehingga dapat diketahui kondisi normal / abnormal suatu mesin, seperti:

Kerusakan Keausan dini pada komponen Kesalahan penyetelan

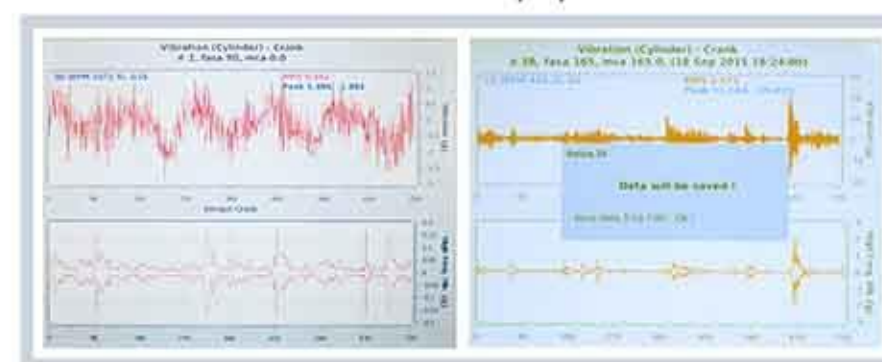
Analisis lebih lanjut menggunakan **SofHaliza** mampu **mendiagnosis** kondisi mesin sehingga penanganan lanjutan yang tepat dapat dilakukan untuk meningkatkan **Plant Efficiency & Reliability**

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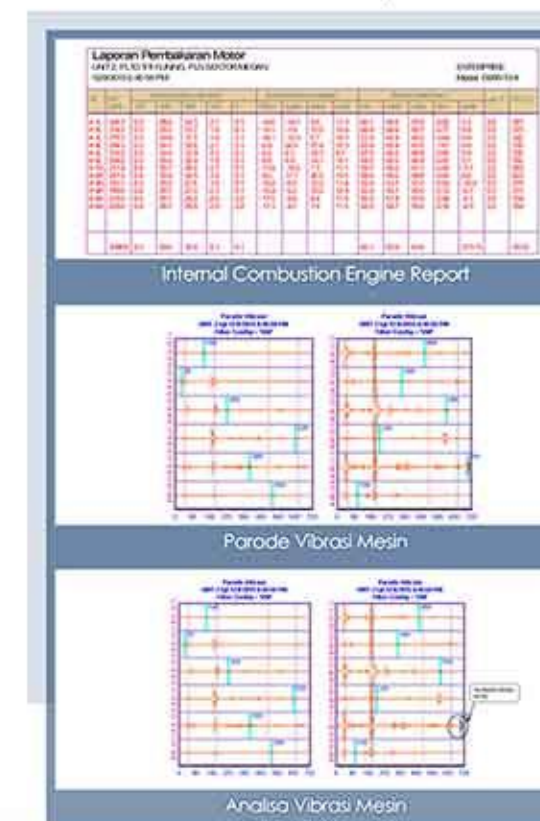
adalah **Portable Analyzer** untuk mesin **Reciprocating** yang digunakan untuk mengukur dan menganalisa mesin secara berkala sebagai dasar tindakan perawatan yang dilakukan.



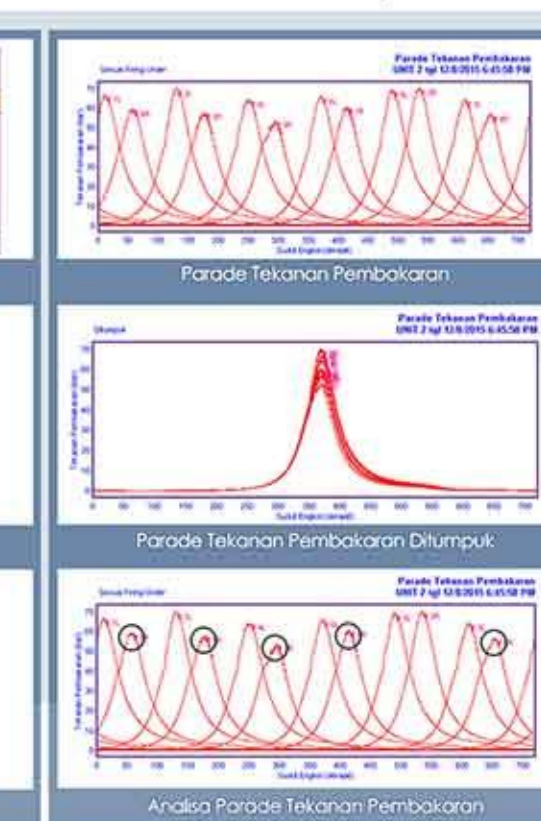
On-board Display



Vibration Analysis



Pressure Analysis



Analyze

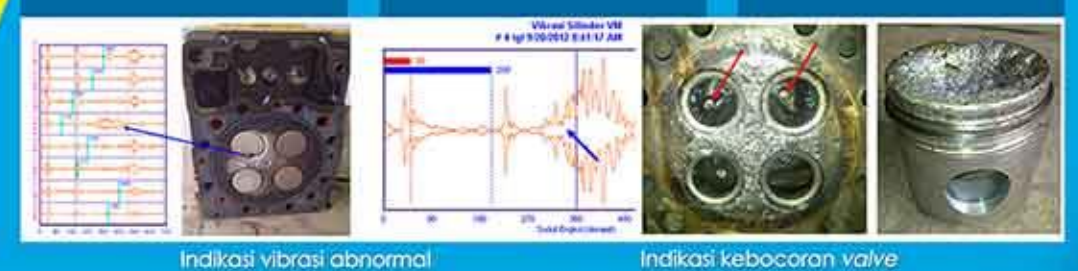
- Indikasi ketidaksesuaian *valve timing*
- Indikasi ketidakseimbangan kompresi pembakaran
- Indikasi kebocoran kompresi pembakaran
- Indikasi kinerja injektor (diesel)
- Indikasi keausan pada *mechanical parts*

Improvement Action

- Rekomendasi penyetelan *valve mechanism*
- Rekomendasi pemeriksaan dan perbaikan *valve seat*
- Rekomendasi pemeriksaan *injector*
- Rekomendasi pemeriksaan *cylinder mechanism*
- Rekomendasi pemeriksaan *cooling system*

Result

- Kinerja mesin lebih stabil
- Keseimbangan *peak pressure* tiap silinder
- Keseimbangan daya *output* tiap silinder
- Kinerja mesin kembali ke kondisi awal/baru
- *Firing order* dan *peak pressure* sesuai dengan rekomendasi pabrik



Indikasi vibrasi abnormal

Indikasi kebocoran valve

Technical Specification

Haliza Portable Analyzer

Processor & Main System

ARM Cortex A8 Processor

- Low Power 720 MHz Core Clock

Memory

- 256 MB system memory
- 4 GB boot flash

Operating System

- Embedded Linux

Analog / Digital Converter

- 24 bit, 2 channels
- Low Pass Filter with programmable gain

Sensor/Interface Port

- Accelerometer input
- Pressure input
- Pick-up/Phase input
- Analog DC/AC input

Display & Interfacing

Color Display

- 5.7 inch TFT LCD
- High resolution 640x480 pixels
- Sunlight readable
- LED Backlight

Battery

- Li-ion 12.6 Volt 3600 mAh
- 10 hours of normal operation
- 18 hours operation with minimum backlight

Casing

- Unibody CNC-machined Aluminium
- Accompanied with rubber dampers for safety
- Weight 2 kg
- Dimension 225 x 177 x 45 mm
- Working environment 20 - 50°C

Analysis Software

SofHaliza (Latest release)

Certification

- IP65
- EMC/EMI Emission Immunity

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New Generation Machinery Analyzer

Sensors

Vibration Sensor (Accelerometer)

- Response frequency 0.5 Hz - 15 kHz
- Bias voltage 12.5 Volt, 4 mA
- Sensitivity 100 mV/g RMS
- Magnetic base

Cable and Connector

- Sensor cable
- Push-pull non-corrosive connector

Pressure Transducer

Piezoresistive Pressure Transducer

- Type: dynamic
- Measurement range 0 - 250 bar
- Fluid temperature range 10 - 1400 °C

Cooler

- Air cooling system, attached to the sensor

Rotation Sensor

Rotation Pick-Up Sensor

- Once-per-turn pick-up
- Type: Hall effect
- Equipped with magnetic stand
- Equipped with signal conditioner
- Optional connection (cable / wireless)
- Laser type (optional)

Timing light

- Cable and connector
- Pick-up cable to signal conditioner
- Signal conditioner cable
- Push-pull non-corrosive connector

Temperature Gun

Infrared Temperature Gun

- Non-contact infrared with laser pointer
- Effective range : -30 - +535°C

Tools & Accessories

Battery Charger

- Battery Charger 16 Volt 4.5 Ah
- 2 hours to fully charge the battery
- Equipped with charging protection and control

User Manual

Spanner 35 mm for pressure transducer
Hardshell Suitcase



Haliza 10 Package

PRODUCT

- ✓ Haliza Machinery Analyzer
- ✓ SofHaliza Analyzer Software

SENSOR

Vibration Sensor

- ✓ Accelerometer & cable (3m)
- ✓ Flat surface Magnetic base

Pressure Sensor

- ✓ Static Transducer & cable (3 m)
- ✓ Dynamic Transducer & cable (3 m)
- ✓ Cooling fin

Phase Sensor

- ✓ Magnetic Pickup
- ✓ Signal conditioner/Amplifier
- ✓ Marker cable (30 m)
- ✓ Laser Pickup (optional)
- ✓ Magnetic stand

TOOLS

- ✓ Portable Stroboscope/Timing Light
- ✓ Infrared Temperature Gun
- ✓ Communication Cable (USB)
- ✓ Battery Charger

ACCESSORIES

- ✓ User Manual
- ✓ Hardcase
- ✓ Wrench for Pressure Sensor

Benefit

- Mempercepat pengambilan keputusan *maintenance*
- Meningkatkan performa mesin
- Meningkatkan efisiensi biaya operasional
- Mengurangi *unplanned downtime*
- Memperpanjang usia aset
- Meningkatkan *plant reliability*



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