

## CT 100.23

### Water-cooled four-stroke diesel engine for CT 110



#### Description

##### ■ test engine for use in CT 110 test stand

In conjunction with the CT 110 test stand, which includes a drive and brake unit, the four-stroke diesel engine is highly suitable for use in teaching the fundamentals of engine functioning and measurement.

The engine used here is an water-cooled single-cylinder four-stroke diesel engine with indirect injection. The engine is started and slowed down by an electric motor mounted in the CT 110 unit. The cooling water circulation contains a circulating pump, flow meter and temperature sensors. The brake unit is connected by way of an elastic claw coupling.

The engine is prepared for measurement of the cylinder pressure for indication. It includes a sensor to measure the exhaust gas temperature and a connection to measure the intake pressure. Both sensors, ignition cut-off and fuel supply are connected to the CT 110 test stand.

The full load and partial load characteristic curves of the engine are plotted in experiments.

#### Learning objectives/experiments

- in conjunction with CT 110 test stand
  - ▶ familiarisation with a water-cooled four-stroke diesel engine
  - ▶ plotting of torque and power curves
  - ▶ determination of specific fuel consumption
  - ▶ determination of volumetric efficiency and lambda (fuel-air ratio)
  - ▶ determination of engine friction loss
  - ▶ determination of amount of heat emitted by the engine

#### Specification

- [1] water-cooled single-cylinder four-stroke diesel engine with swirl chamber for installation in the CT 110 test stand
- [2] engine mounted on base plate
- [3] force transmission to brake via elastic claw coupling
- [4] engine complete with fuel hose and exhaust gas temperature sensor
- [5] cooling water circuit with circulating pump, flow meter and temperature sensors
- [6] fuel hose with self-sealing quick-release coupling

#### Technical data

Single-cylinder diesel engine with indirect injection

- bore: 75mm, stroke: 70mm
- power output: 5,1kW at 3000min<sup>-1</sup>

Cooling water circuit

- capacity: 2,5L
- pump: max. 640L/h

Measuring ranges

- temperature: 2x 0...100°C
- flow rate: 30...300L/h

LxWxH: 600x420x600mm

Weight: approx. 50kg

#### Scope of delivery

- 1 engine, complete with all connections and supply lines
- 1 manual

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#### Required accessories

CT 110                    Test stand for single-cylinder engines, 7,5kW

#### Optional accessories

CT 159.02              Exhaust gas analysing unit  
CT 100.11              Exhaust gas calorimeter for CT 110  
CT 100.13              Electronic engine indicating system for CT 110  
with  
CT 100.15              Pressure transducer for CT 100.23