

CT 152

Four-stroke petrol engine with variable compression for CT 159



Description

- engine for installation in the CT 159 test stand
- part of the GUNT-FEMLine

In conjunction with the CT 159 test stand and the HM 365 load unit, the engine is highly suitable for investigation of different compression ratios, ignition timing adjustment and an adjustable jet nozzle.

The engine used here is an air-cooled single-cylinder four-stroke petrol engine with external carburation. A modified cylinder head permits experiments with various combustion chamber inserts and compression ratios. To adjust the mixture composition, the carburettor was modified. CT 152 is fitted with a manual adjustment to adjust the ignition timing – from advanced to retarded.

The engine includes a sensor to measure the exhaust gas temperature. The sensor, ignition cut-off as well as air and fuel supply are connected to the CT 159 test stand.

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

Learning objectives/experiments

- in conjunction with CT 159 test stand + HM 365 load unit, in addition to the standard basic experiments
 - ▶ influence of compression ratio, mixture composition, ignition timing on engine characteristics and exhaust gas temperature

Specification

- [1] air-cooled single-cylinder four-stroke petrol engine for installation in the CT 159 test stand
- [2] 5 variable compression ratios, adjustable by varying the combustion chamber geometry
- [3] adjustable ignition point
- [4] mixture composition adjustable
- [5] engine mounted on vibration-insulated base plate
- [6] force transmission to brake via pulley
- [7] engine complete with fuel hose and exhaust gas temperature sensor
- [8] fuel hose with self-sealing quick-release coupling

Technical data

- Air-cooled single-cylinder petrol engine
- power output: 1,2kW at 2500min⁻¹
 - bore: 65,1mm
 - stroke: 44,4mm
 - compression ratios: 1:10; 1:8,5; 1:7 (original compression ratio), 1:5,5; 1:4
 - ignition timing adjustable in 11 stages: 10° after TDC to 40° before TDC

Belt pulley: diameter=125mm

LxWxH: 350x420x500mm
Weight: approx. 21kg

Scope of delivery

- 1 engine, complete with all connections and supply lines
- 5 combustion chamber inserts
- 1 pin type face wrench
- 1 manual

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Required accessories

063.15900	CT 159	Modular test stand for single cylinder engines, 2,2kW
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Optional accessories

063.15902	CT 159.02	Exhaust gas analysing unit
063.15901	CT 159.01	Electronic engine indicating system for CT 159
with		
063.15903	CT 159.03	Pressure transducer and TDC sensor for CT 150 / CT 152