

MT 140.01

Assembly exercise piston compressor: functional test



The illustration shows MT 140.01 together with the compressor MT 141 under test.

Description

- **test device for the piston compressor assembly exercise from MT 141**
- **permits assessment of the assembly**

The MT 140.01 test device is used in conjunction with the piston compressor assembly exercise MT 141. The fully assembled compressor is placed on the test device. Here the complete system is professionally assembled, including alignment of the motor and compressor. The electrical connection of the compressor can also be demonstrated if required as part of the teaching process. A successfully completed assembly exercise can then be examined for operability using a formal test procedure. During the functionality test, the pressure rise in the tank and the current consumption of the drive motor are recorded over time.

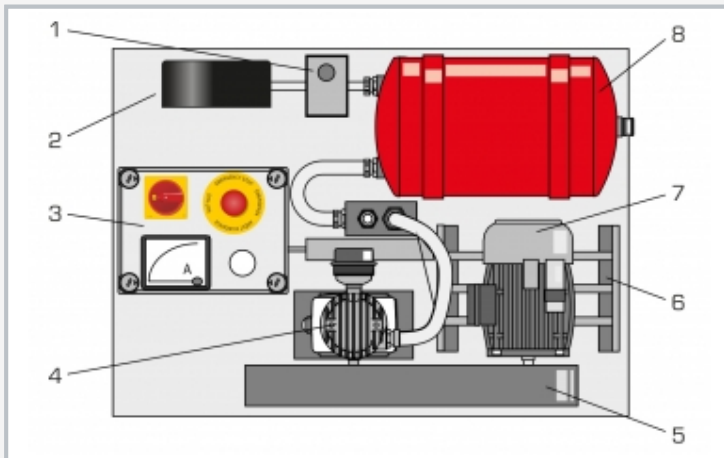
The components of MT 140.01 are clearly laid out on a base plate. The unit contains an electric motor with belt pulley and protective screen. A switch box is included with displays and controls as well as a pressure vessel with display, safety valve and pressure switch. An ammeter on the switch box indicates the current consumption of the drive motor. The compressor being checked is installed on the test bed and connected to the drive motor via a belt drive.

Learning objectives/experiments

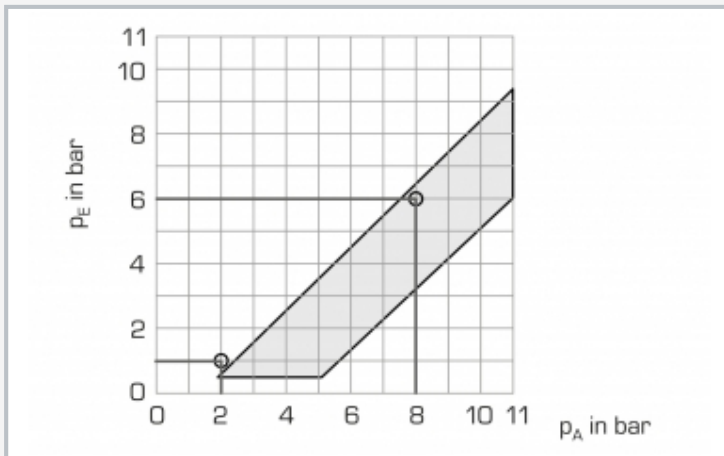
- in conjunction with the piston compressor MT 141
 - ▶ functional testing of a piston compressor
 - ▶ pressure rise in tank over time
 - ▶ current consumption of drive motor as function of pressure
 - ▶ familiarisation with a compressed air generator and its components
 - ▶ function and mode of operation of safety elements: safety valve, pressure switch, non-return valve
 - ▶ professional installation of the compressor in the test device, including setting and alignment

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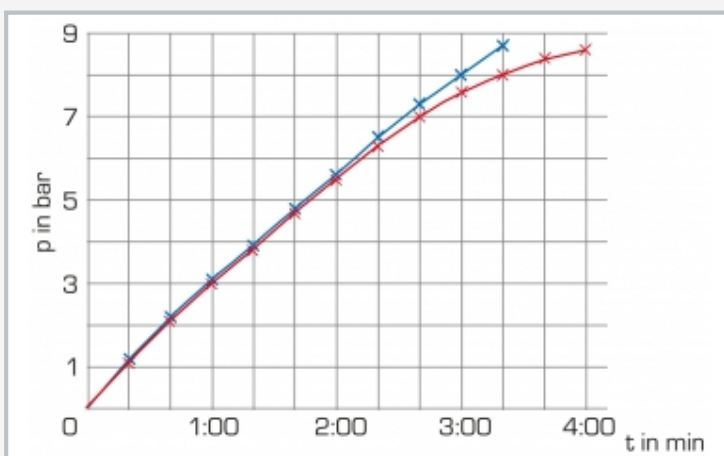
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1 pressure switch, 2 manometer, 3 switch box with ammeter, 4 compressor MT 141, 5 belt guard, 6 motor carriage, 7 electric motor, 8 pressure vessel



Pressure diagram of the pressure switch: p_E switch-on pressure, p_A switch-off pressure, grey area: permissible pressure switch values



Tank pressure p in bar over pumping time t in minutes; blue: good assembly, red: poor assembly

Specification

- [1] unit for functionality testing of the piston compressor from assembly exercise MT 141
- [2] driven by electric motor and belt drive
- [3] single-phase electric motor on adjustable carriage
- [4] pressure vessel with adjustable pressure switch and manometer
- [5] switch box with controls and ammeter (class 2,5) to indicate current consumption
- [6] safety devices: pressure switch, safety valve, protective screen for belt drive, emergency-off switch
- [7] the unit forms part of the GUNT assembly, maintenance and repair practice line

Technical data

Single-phase motor

- power output: 250W
- speed: 1405 min^{-1}

Pressure vessel

- capacity: 10L
- max. pressure: 10bar

Measuring ranges

- pressure: 0...16bar
- current: 0...4A

230V, 50Hz, 1 phase

120V, 60Hz, 1 phase; 230V, 60Hz, 1 phase

UL/CSA optional

LxWxH: 820x550x500mm

Weight: approx. 45kg

Scope of delivery

- 1 experimental unit
- 1 stopwatch
- 1 set of tools
- 1 oil (0,5L)
- 1 manual

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Required accessories

051.14100

MT 141

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