

# MT 141

## Assembly exercise: piston compressor



The illustration shows the assembled piston compressor and the GUNT Media Center on a tablet (not included)

### Description

- part of GUNT DigiSkills learning projects, supported by augmented reality
- multimedia teaching material on USB flash drive and online in the GUNT Media Center: 3D PDF, DXF/STEP files, videos

Piston compressors are a type of driven positive displacement machines, which transfer energy from the compressor to the fluid via a variable volume. The MT 141 device is an air-cooled piston compressor that sucks in ambient air and from this generates compressed air.

The MT 141 assembly kit is part of the GUNT Practice Line for assembly, maintenance and repair, which is designed for training at vocational schools and company training centres. The close link between theory and practice-based learning content is evident. The assembly and disassembly processes can easily be completed within standard lesson times. Only basic tools, all supplied with the kit, are required for assembly. The fit seats of the compressor are designed so that the entire assembly can be carried out by hand.

The contemporary didactic multimedia teaching materials provide extensive technical information as a basis for lesson design. The core element of the teaching materials is a complete set of drawings in file format with parts lists, individual part designations, exploded view and assembly drawings and 3D drawings. All drawings are to standard and dimensioned in accordance with production requirements. The set of drawings consists of DXF, STEP and PDF files. The assembly videos are also very useful. All terms are bilingual in German and English. The files are also available free of charge online in the GUNT Media Center. An augmented reality interface (Vuforia View) for mobile devices is available to visualise the processes and functions in a compressor. devices is available.

The disassembled piston compressor with a set of small parts and 4 assembly devices is delivered in a stable storage system with foam inlay. The MT 120.02 Transport roller or the MT 120.01 Trolley are suitable for convenient transport of the assembly exercise. Using the optionally available MT 140.01 unit, the assembled compressor can be subjected to a functional test.

### Learning objectives/experiments

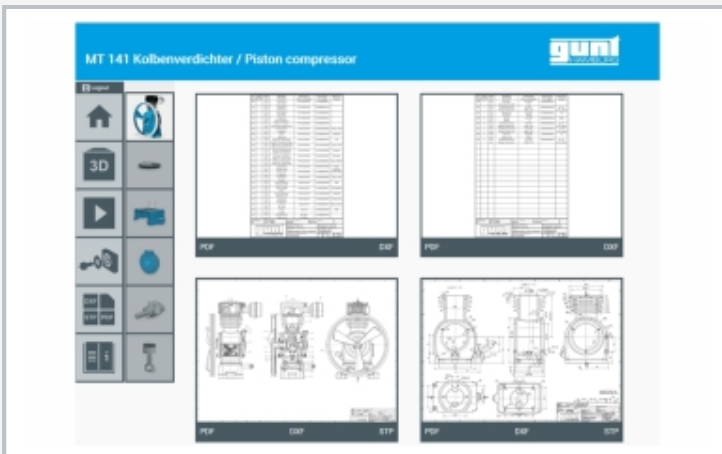
- function and design of a piston compressor
- planning and presentation of the assembly process, supported by augmented reality
- assembly and disassembly, also for maintenance and repair purposes
- read and understand technical drawings (PDF, DXF and STEP files)
- familiarisation with various machine elements: piston, crankshaft
- familiarisation with assembly aids and devices
- create programmes for 3D printing and CNC machining

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Transparent view of the assembled piston compressor (screenshot from assembly video)



Screenshot of the GUNT Media Center



Multimedia teaching material: assembly video

### Specification

- [1] single-stage piston compressor assembly kit, air-cooled, with fan flywheel and intake filter
- [2] part of the GUNT Practice Line for assembly, maintenance and repair
- [3] disassembled piston compressor with small parts kit and 4 assembly devices, delivered in stable storage system with foam inlay
- [4] compressor consisting of crankcase with cylinder, piston and rod, cylinder head and valve plate
- [5] augmented reality: visualisation of machine elements, display of exploded views, functions
- [6] multimedia instructional materials: PDF, CAD files, STEP files, videos
- [7] online access to the GUNT Media Center

### Technical data

Single-stage piston compressor, air-cooled

- cylinder bore: 50mm
- stroke: 32mm
- displaced volume: 63cm<sup>3</sup>
- speed: 1850min<sup>-1</sup>
- max. pressure: 10bar
- intake capacity: 115L/min
- drive power: 0,75kW

Dimensions, assembled, LxWxH: 223x256x314mm

LxWxH: 600x400x760mm (storage system)

Weight: approx. 27kg

### Required for operation

PC or online access recommended

### Scope of delivery

- 1 kit
- 1 set of tools
- 1 set of assembly jigs
- 1 set of spare parts
- 4x storage system with foam inlay
- 1 set of instructional material, consisting of: technical description of system, complete set of drawings with lists of parts (PDF, DXF, STEP), description of assembly and disassembly sequences, assembly videos, online access to the GUNT Media Center

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### Optional accessories

|           |           |  |
|-----------|-----------|--|
| 051.12001 | MT 120.01 | Trolley  |
| 051.12002 | MT 120.02 | Transport roller                                     |
| 051.14001 | MT 140.01 | Assembly exercise piston compressor: functional test |