MT 140

Assembly station: piston compressor

Description

- **fully equipped mobile teaching station for demonstration purposes. Provides an introduction to assembly techniques using a piston compressor as an example**
- **comprehensive and well-structured instructional material**
- **learning in a practical environment**
- **highly suitable for developing interdisciplinary technical understanding**

Compressors are at the core of compressed air generator plants. These plants are used where compressed air is used as a source of energy. Compressed air is often used instead of electrical energy, particularly in workplaces where there is a risk of explosion of combustible gases. The heat generated by compression is dissipated by cooling fins. The compressor is driven by a V-belt.

The mobile workstation MT 140 forms part of the GUNT assembly, maintenance and repair practice line designed for training at technical colleges and in company training centres.

The station includes everything required to provide students with an introduction to a wide range of demanding assembly projects. A disassembled piston compressor is contained in the drawers of the trolley cabinet which also holds the tools and assembly aids, small parts and gaskets required for assembly. A second fully functional compressor, permanently mounted to the workbench, can be used for demonstration purposes. This enables references to be made between individual components and the complete assembled system at any time during teaching.

Large-format drawings suitable for workshop practice can be attached to the display board at the rear of the trolley. All steps involved can be demonstrated to, and then performed by, the students. The comprehensive and clearly structured instructional material, including a set of drawings, sets out the individual steps in detail. It also provides additional information on the areas of application, mode of operation and design of the assemblies.

The MT 140.01 test stand is required for functional testing after assembly is complete.

Learning objectives/experiments

- design and function of a compressor
- reading and understanding engineering drawings
- familiarisation with components and assemblies, their design features and functions
- dimensioning exercises, gauging parts
- work planning, in particular planning and presentation of the assembly process
- familiarisation with assembly aids and jigs
- assembly exercises: assembly of modules and complete units
- analysis of faults and damage, in conjunction with maintenance and repair steps
- material selection criteria

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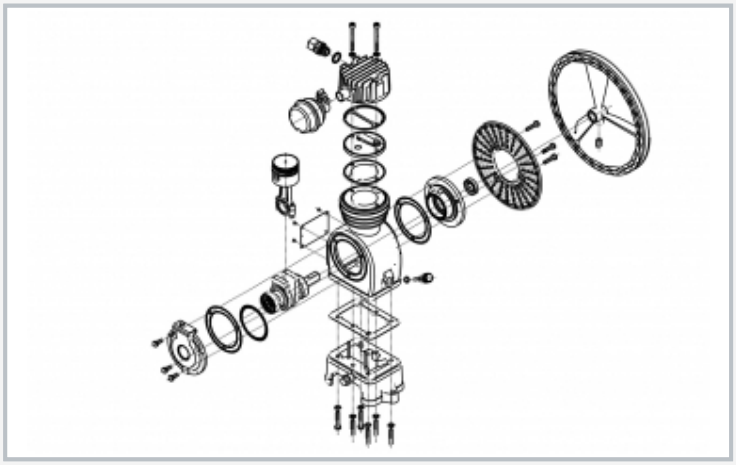
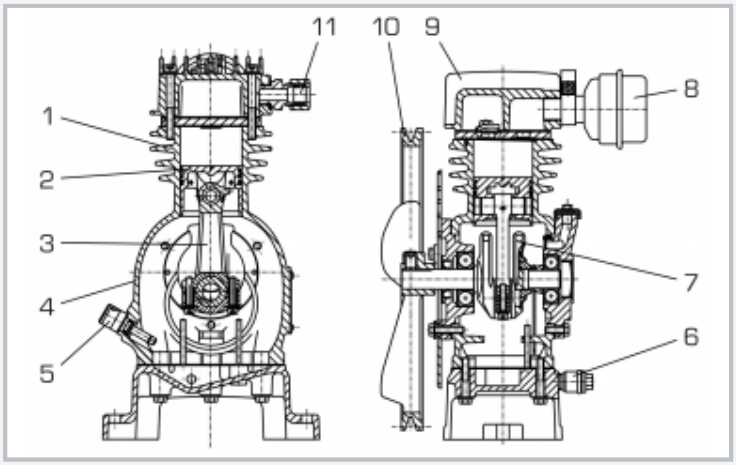
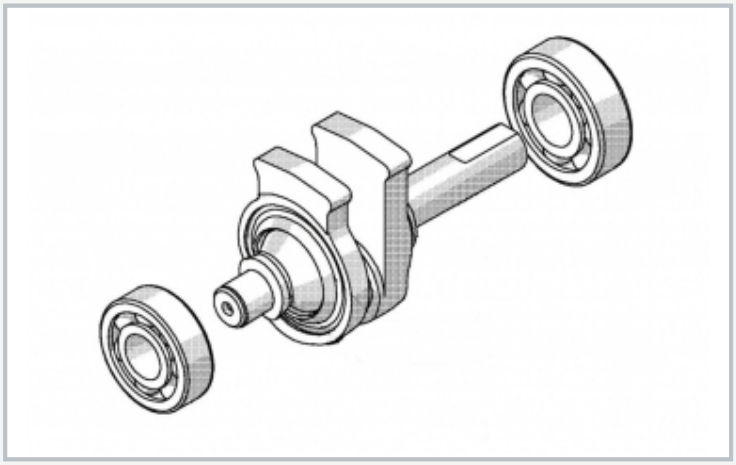


The illustration shows the graphic explosion drawing which serves as an aid to the students in the assembly of the compressor. It is designed to be put up on the display board at the rear of the workshop trolley.



1 cylinder, 2 piston, 3 connecting rod, 4 crankcase, 5 dipstick, 6 oil drain plug, 7 crankshaft, 8 air filter, 9 cylinder cover, 10 V-belt pulley, 11 pressure joint



Crank mechanism

Specification

[1] assembly project for engineering training
[2] 2 piston compressors: 1x set of components for assembly, 1x assembled, mounted on trolley as demonstrator
[3] single-stage compressor, air-cooled, with fan flywheel, intake filter and pipe unions
[4] compressor consisting of piston and cylinder, housing, driving gear, cylinder cover with valves
[5] workshop trolley with rear drawing display board, built-under cabinet with 3 lockable drawers and vice with 115mm jaw width
[6] assembly kit, tool kit, assembly aids, accessories and gaskets as well as instructional material contained in built-under cabinet
[7] the assembly station forms part of the GUNT assembly, maintenance and repair practice line

Technical data

Air-cooled single-cylinder piston compressor
- cylinder bore: 50mm
- stroke: 32mm
- displacement volume: 63cm^3
- speed: 1850min^{-1}
- max. pressure: 10bar
- intake capacity: 115L/min
- drive power output: 700W
- dimensions, assembled: LxWxH: 223x256x314mm

LxWxH: 1520x800x1850mm (workshop trolley)
Weight: approx. 150kg

Scope of delivery

1 workshop trolley with rear drawing display board and built-under cabinet
1 working piston compressor
1 compressor in parts
1 set of assembly tools and jigs
1 set of small parts and gaskets
1 set of instructional material, consisting of technical description of system, complete set of drawings with individual parts and parts list, description of assembly and disassembly sequences, set of transparencies for overhead projector

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Optional accessories

051.14001	MT 140.01	Assembly exercise piston compressor: Functional test
051.14010	MT 140.10	Cutaway model piston compressor