

# MT 134

## Assembly exercise: piston pump



The illustration shows the device and the GUNT Media Center, tablet not included

### Description

- **broad range of learning opportunities with interdisciplinary problems**
- **part of the GUNT Practice Line for assembly, maintenance and repair**
- **multimedia instructional materials on USB stick and online in GUNT Media Center: 3D PDF, DXF files, STEP files, videos**

Piston pumps are positive displacement pumps and operate in an oscillatory manner, normally primed. The pump presented here is a dual-action piston pump. This means that each piston stroke is both an intake and delivery stroke.

The MT 134 assembly kit is part of the GUNT Practice Line for assembly, maintenance and repair, which has been designed for technical colleges 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 piston pump are designed so that the entire assembly can be carried out by hand.

The contemporary multimedia instructional materials provide extensive technical information as base for lesson design. The core element of the teaching materials is a complete set of drawings as files with lists of parts, single-part drawings, exploded views, assembly drawings and 3D drawings. All drawings are to standard and are dimensioned in accordance with production requirements. The set of drawings consists of DXF files, STEP files and PDF files. Assembly videos are also useful features. The files are also available free of charge online in the GUNT Media Center.

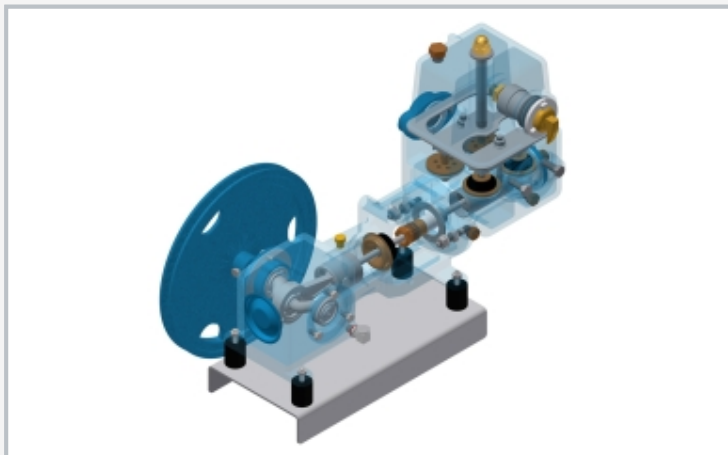
The disassembled piston pump with a set of small parts and an assembly device is delivered in the sturdy storage system with foam inlay. The MT 120.02 Transport roller or the MT 120.01 Trolley are suitable for convenient transport of the assembly exercise.

### Learning objectives/experiments

- function and design of a piston pump
- planning and presentation of the assembly process
- assembly and disassembly, including for maintenance and repair purposes
- read and understand technical drawings in imperial measurements (PDF, DXF and STEP files)
- familiarisation with different file formats and their application, e.g. for 3D printing and CNC machining
- familiarisation with various machine elements: piston, mechanical seal
- familiarisation with assembly aids and devices

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Transparent sectional drawing of the assembled piston pump



Screenshot of the GUNT Media Center



Storage system with foam inlay: tools

### Specification

- [1] dual-action piston pump assembly kit
- [2] part of the GUNT Practice Line for assembly, maintenance and repair
- [3] disassembled piston pump with set of small parts and assembly device, delivered in sturdy storage system with foam inlay
- [4] air vessel to compensate for pressure surges
- [5] integrated safety valve returns a portion of the flow back to the intake side in event of overpressure
- [6] piston rod seal based on the gland principle
- [7] pump drive via V-belt pulley
- [8] multimedia instructional materials: PDF, CAD files, STEP files, videos
- [9] online access to the GUNT Media Center

### Technical data

#### Piston pump

- max. flow rate: 1000L/h
- max. head: 40m
- max. power consumption: 250W
- drive via V-belt, motor speed: 1450min<sup>-1</sup>
- intake connection: 1"
- delivery connection: 1"

LxWxH: 600x400x1030mm (storage system)  
Weight: approx. 30kg

### 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
- 5x storage system with foam inlay
- 1 set of instructional material: technical description of system, complete set of drawings with lists of parts (PDF, DXF, STEP), description of assembly and disassembly sequences, assembly videos, on-line access to the GUNT Media Center

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Optional accessories

|           |                            |
|-----------|----------------------------|
| MT 120.01 | Trolley                    |
| MT 120.02 | Transport roller           |
| HM 700.20 | Cutaway model: piston pump |