

# MT 130

## Assembly exercise: centrifugal pump



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

### Description

- **broad range of learning opportunities with interdisciplinary problems**
- **supported by augmented reality**
- **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**

Centrifugal pumps are rotodynamic pumps and operate normally primed. They are in widespread use, are compact and relatively simple in design. The working medium is conveyed by centrifugal force generated by the rotation of the pump impeller.

The MT 130 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 centrifugal 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. An augmented reality interface [Vuforia View] for mobile devices is available for visualising the processes and functions in a pump.

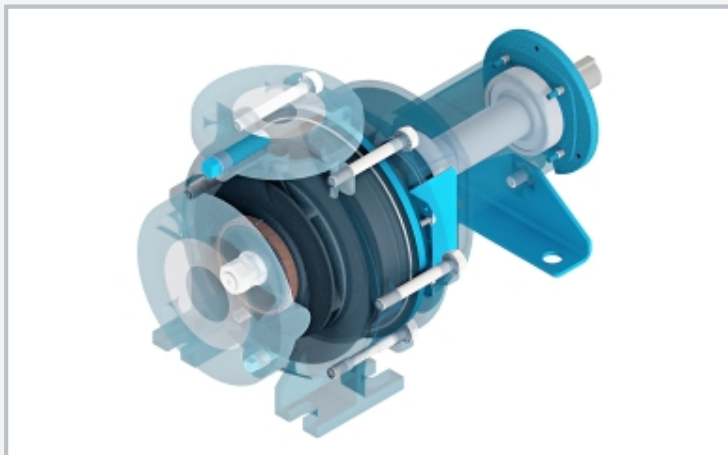
The disassembled centrifugal pump with a set of small parts and 2 assembly devices is delivered in the sturdy storage system with foam inlay. The MT 120.02 Transport roller or the MT 120.01 Trolley are suitable for convenient transport of the assembly exercise.

### Learning objectives/experiments

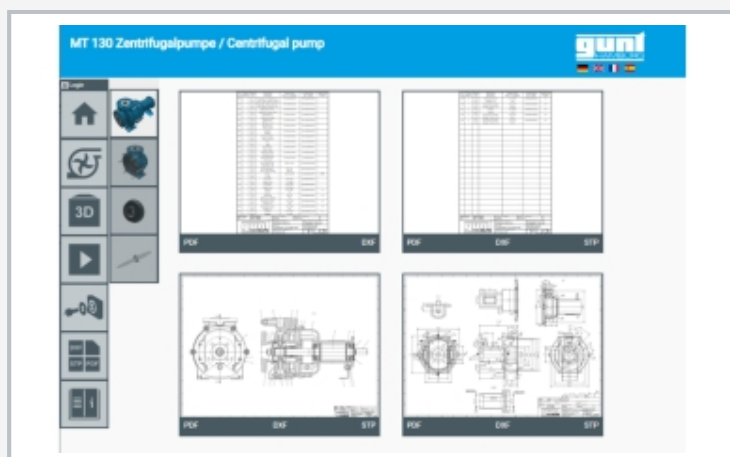
- **function and design of a centrifugal pump**
- **planning and presentation of the assembly process, supported by augmented reality**
- **assembly and disassembly, including for maintenance and repair purposes**
- **read and understand technical drawings in imperial measurements (PDF, DXF and STEP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

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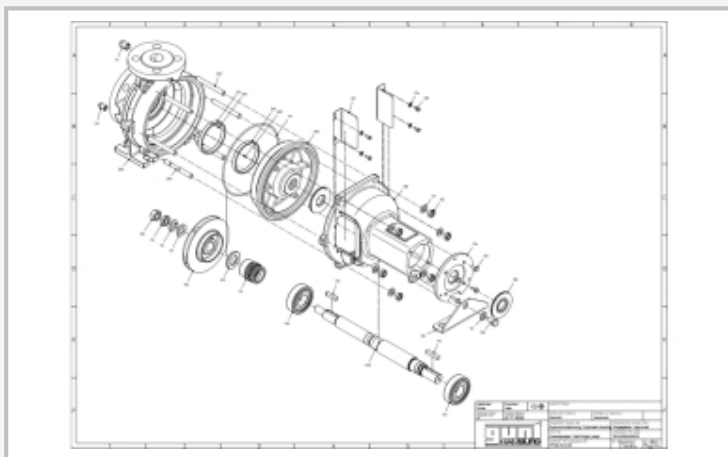
## Assembly exercise: centrifugal pump



Transparent sectional drawing of the assembled centrifugal pump



Screenshot of the GUNT Media Center



Exploded view available in the GUNT Media Center

### Specification

- [1] assembly kit of a single-stage, normally primed centrifugal pump with a spiral housing
- [2] part of the GUNT Practice Line for assembly, maintenance and repair
- [3] disassembled centrifugal pump with set of small parts and assembly devices, delivered in sturdy storage system with foam inlay
- [4] pump according to EN 733
- [5] enclosed pump impeller with 5 blades, designed for pure liquids
- [6] pump shaft sealing with mechanical seal
- [7] augmented reality: visualisation of machine elements, display of exploded views, functions
- [8] multimedia instructional materials: PDF, CAD files, STEP files, videos
- [9] online access to the GUNT Media Center

### Technical data

- Single-stage centrifugal pump
- power consumption: max. 3kW
  - max. head: 25m
  - speed: 2900min<sup>-1</sup>
  - intake connection: DN50
  - delivery connection: DN32
  - impeller diameter: 142mm
  - housing and impeller: grey cast iron

LxWxH: 600x400x945mm (storage system)

Weight: approx. 32kg

### 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: 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 700.17	Cutaway model: centrifugal pump