FAITHFUL®

TZ 100

Spatial imagination with three-view display



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

Description

- **model set for developing spatial imagination**
- **fundamentals of three-view display**
- **part of DigiSkills learning projects**
- **multimedia instructional materials: PDF, DXF files, STEP files**

In order to describe a spatial body adequately and thereby fulfil a basic principle of exact replication and repeatable production, several views of the body are usually necessary. To do this, bodies are shown in three planes: front view, side view and plan or bottom view.

The presentation follows fixed rules that are defined in the standards. Even for simple bodies, the presentation in three planes requires a considerable degree of abstraction ability and spatial imagination on the part of students. This ability is a prerequisite for both creating and interpreting engineering drawings or sketches and is taught by means of geometric models.

The DigiSkills 1 learning project includes various model sets, from the simple geometric model to models with real function. The TZ 100 model set provides a learning concept for the introduction to the field of "Descriptive geometry".

A room corner for the multiview projection, which is composed of three surfaces, holds the models. The corresponding view is inserted in each surface of the room corner so that direct comparison between the model (workpiece) and the drawing is possible.

A total of ten models of varying difficulty are included. One model is made of acrylic in order to develop an understanding of hidden edges. The other models are made of aluminium.

The models are precision-manufactured so that measuring exercises can also be conducted. All parts are clearly laid out in a storage system. Multiple storage systems can be stacked on top of each other for space-saving storage.

The contemporary didactic multimedia instructional materials are available online in the Media Center. The core element is a complete set of drawings in file form (DXF, STEP, PDF) for each model. A selection of different worksheets with solutions completes the instructional material.

Learning objectives/experiments

- familiarisation with three-view display as a basic principle of engineering drawing
- step-by-step development of spatial thinking: from the concrete situation to the abstract representation in an engineering drawing
- measuring exercises

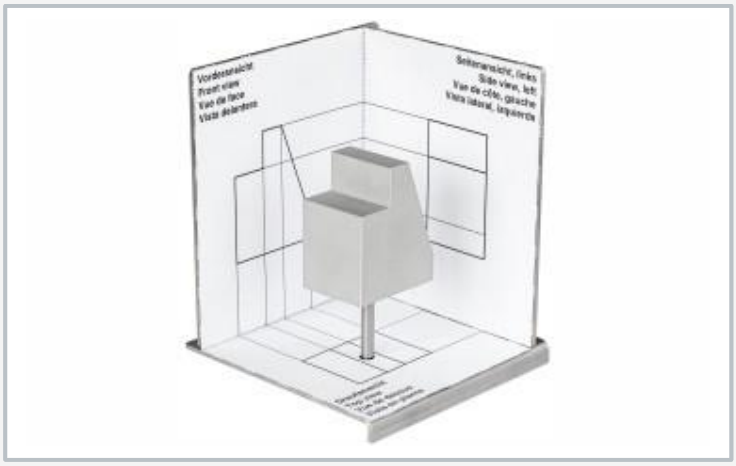
- develop digital skills
  - retrieve information from digital networks and obtaining it from digital networks
  - use digital learning media, get to know Web Based Training (WBT) and use them
  - use assistance, simulation, diagnosis or visualisation systems, e.g. QR codes, CAD viewer tool

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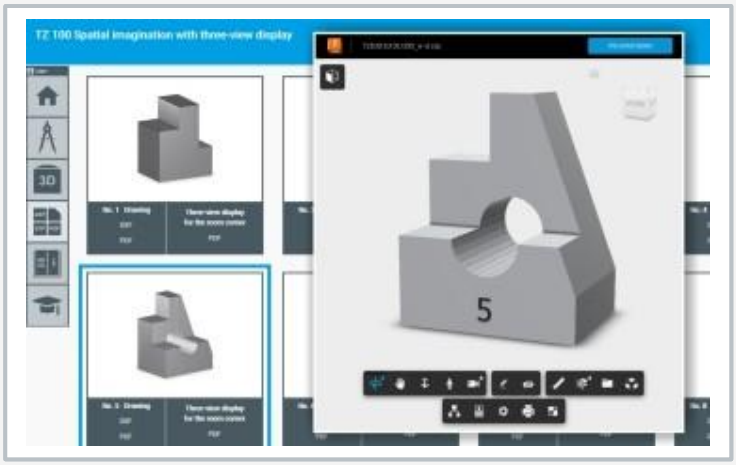
Spatial imagination with three-view display



Room corner consisting of three surfaces with inlaid drawing and a prismatic model



Prismatic and cylindrical models



Screenshot of the Media Center and CAD viewer tool

Specification

[1] set of models from the descriptive geometry discipline to develop spatial imagination
[2] introduction to engineering drawing
[3] precision manufacture of the models allows measuring exercises
[4] room corner composed of three surfaces for multiview projection
[5] 9 aluminium geometric models; cylindrical and prismatic shapes
[6] 1 model made of acrylic
[7] storage system for parts
[8] multimedia instructional materials: PDF, DXF files, STEP files
[9] online access to the Media Center
[10] part of the DigiSkills: vertical teaching of di- gital skills in complex learning projects

Technical data

5 prismatic models
- LxWxH: 40x30x50mm
- material: aluminium, surface anodised

4 cylindrical models
- ØxH: 40x50mm
- material: aluminium, surface anodised

1 transparent model
- LxWxH: 40x30x50mm
- material: acrylic

Room corner with 3 metal surfaces
- LxWxH: 100x100x100mm

LxWxH: 600x400x100mm (storage system)
Weight: approx. 3kg

Scope of delivery

1 set with 10 geometric models
3 metal surfaces for the setup of a room corner
1 rod for holding the models
1 paper punch
1 online access to the Media Center with instructional material, complete set of drawings included
1 storage system with foam inlay

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