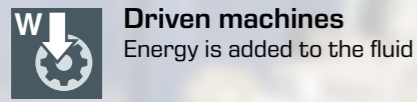


# Driven machines

Whenever a machine adds energy to a fluid, it is called a driven machine. In order to operate, driven machines require mechanical energy or work  $W$ . We distinguish between different types of driven machines, depending on the working medium:



Moreover, driven machines are distinguished depending on their mode of operation, the direction of flow of the fluid, or their design. Like the driving machines in chapter 2, driven machines are categorised into turbomachines and positive displacement machines.



**Turbomachines**  
Transfer of energy between the fluid and the machine by means of flow forces

- rotodynamic pumps
- fans and compressors

**Positive displacement machines**  
Transfer of energy between the fluid and the machine by means of a variable volume, generated by a displacement device

- positive displacement pumps
- piston compressors

## Real industrial applications...

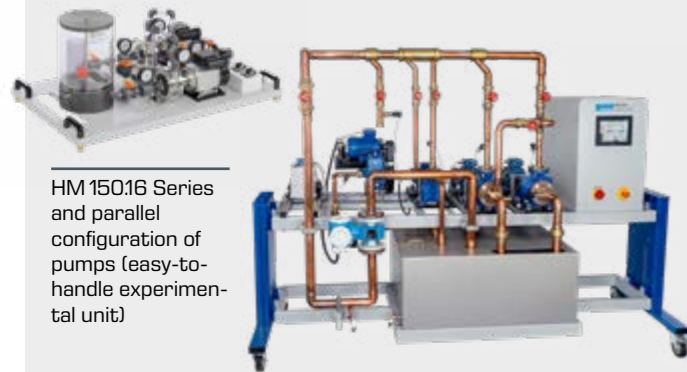


A centrifugal pump at a power plant



Positive displacement pump

## ...and the corresponding GUNT device



HM 15016 Series and parallel configuration of pumps (easy-to-handle experimental unit)

HM 362 Comparison of pumps (complex trainer)

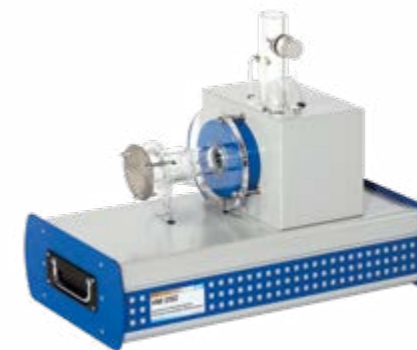


HM 365.21 Screw pump

The table below is an excerpt from a typical curriculum on fluid machinery at a technical university. As with the categorisation of fluid energy machines, the curriculum can be

adjusted depending on focus. The GUNT devices cover almost every aspect of the curriculum.

Driven machines	GUNT products
<b>Pumps</b>	
Centrifugal pumps	HM 150.04, HM 150.16, HM 283, HM 284, HM 299, HM 300, HM 305, HM 332, HM 362, HM 365.11, HM 365.12, HM 365.13, HM 365.14, HM 365.15, HM 450 C
Positive displacement pumps	HM 285, HM 286, HM 362, HM 365.16, HM 365.17, HM 365.18, HM 365.19, HM 365.20, HM 365.21, HM 365.22, HM 365.23, HM 365.24
Special types of positive displacement pump	HM 365.21 – HM 365.24
Rotary piston pumps	HM 286, HM 365.16, HM 365.18, HM 365.22, HM 365.24
Water jet pumps	accessories in experimental units from catalogues 4 and 5
<b>Compressors</b>	
Piston compressors	ET 513, HM 299, further experimental units in catalogue 3
Rotary compressors	HM 299
Radial compressors	HM 292
<b>Fans</b>	
Axial fans	HM 215, HM 282
Radial fans	HM 210, HM 280



HM 292 Experiments with a radial compressor



Industrial radial compressor