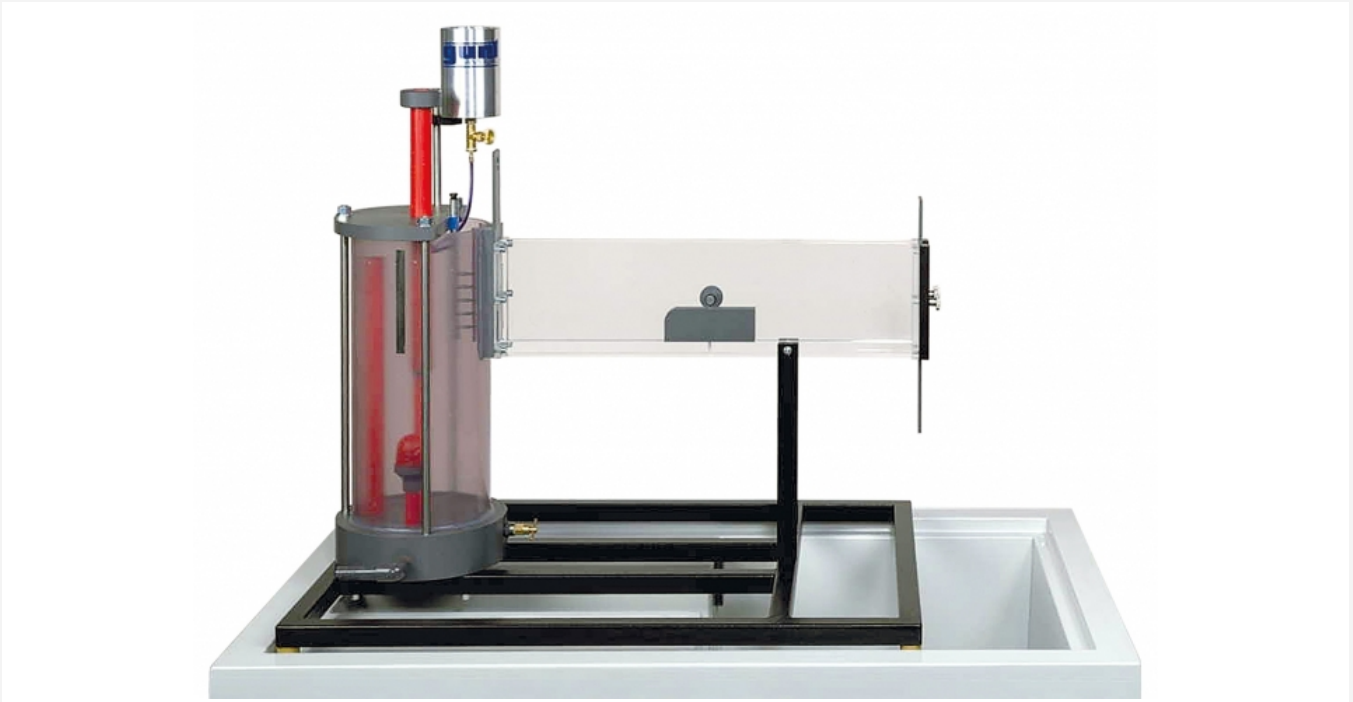


HM 150.21

Visualisation of streamlines in an open channel



Description

- flow around various drag bodies
- incident flow of different weirs
- ink as contrast medium for visualising the streamlines

HM 150.21 can be used to visualise flow around drag bodies and flow phenomena in open channels.

Either a drag body or weir is fixed in the experimental flume. The streamlines are made visible by injecting a contrast medium. The experimental flume is made of transparent material so that the streamlines and the formation of vortices can easily be observed. The water level in the experimental flume can be adjusted via a sluice gate at the inlet and via a weir at the outlet.

There are two weirs and four different drag bodies available for the experiments. A stabiliser ensures an even and non-vortical flow of water.

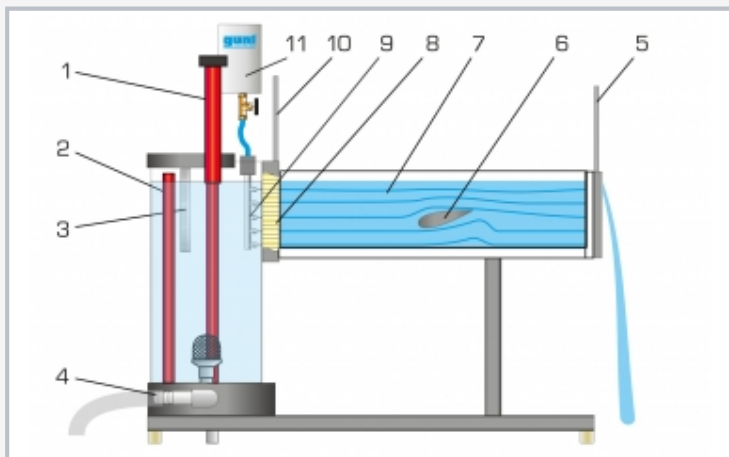
The experimental unit is positioned easily and securely on the work surface of the HM 150 base module. The water is supplied by HM 150. Alternatively, the experimental unit can be operated by the laboratory supply.

Learning objectives/experiments

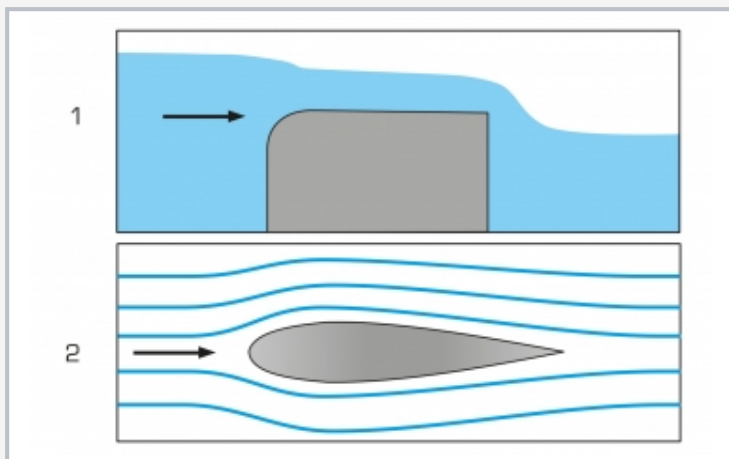
- how differently shaped weirs affect the flow
- visualisation of streamlines for flow incident to a weir
- visualisation of streamlines when flowing around various drag bodies

HM 150.21

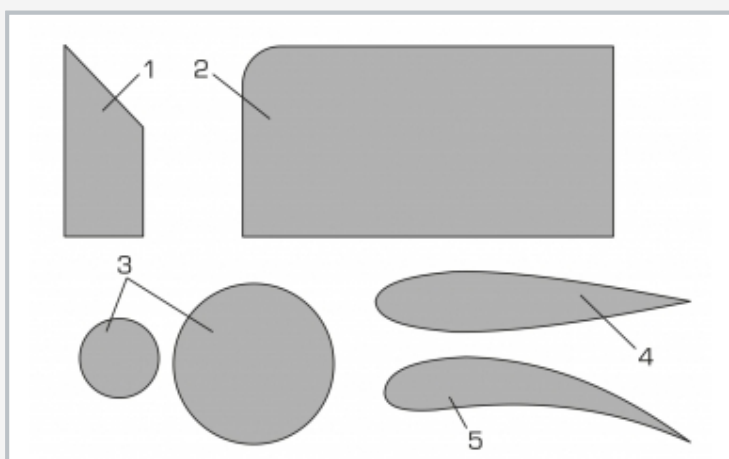
Visualisation of streamlines in an open channel



1 adjustable overflow, 2 tank, 3 scale, 4 water supply from HM 150, 5 weir at the water outlet, 6 drag body, 7 experimental flume, 8 flow straightener, 9 distributor for contrast medium, 10 sluice gate at the water inlet to the experimental flume, 11 tank for contrast medium



1 incident flow at the broad-crested weir, 2 flow around a streamlined body



Drag bodies and weirs supplied

1 sharp-crested weir, 2 broad-crested weir, 3 cylinders, 4 streamlined body, 5 guide vane profile

Specification

- [1] visualisation of streamlines during incident flow and flow around various weirs and drag bodies
- [2] transparent experimental flume
- [3] incident flow demonstrated on two weirs
- [4] demonstration of flow around four different drag bodies
- [5] contrast medium: ink
- [6] distributor for contrast medium with seven nozzles
- [7] water level in the experimental flume adjustable via sluice gate at the water inlet and weir at the water outlet
- [8] flow straightener for even, non-vortical water inlet
- [9] water supply using HM 150 base module or via laboratory supply

Technical data

Experimental flume

- LxWxH: 625x20x150mm

Contrast medium: ink

Injection of the contrast medium

- 7 nozzles

Tank for water: 12,5L

Tank for ink: 200mL

Drag bodies

- small cylinder, diameter: 35mm
- large cylinder, diameter: 60mm
- streamlined body
- guide vane profile

Weirs

- broad-crested weir
- sharp-crested weir

LxWxH: 895x640x890mm

Weight: approx. 24kg

Required for operation

HM 150 (closed water circuit) or water connection, drain

Scope of delivery

- 1 experimental flume
- 1 set of drag bodies and weirs
- 1 ink (1L)
- 1 set of tools
- 1 set of instructional material

HM 150.21

Visualisation of streamlines in an open channel

Optional accessories

070.15000

HM 150

Base Module for Experiments in Fluid Mechanics