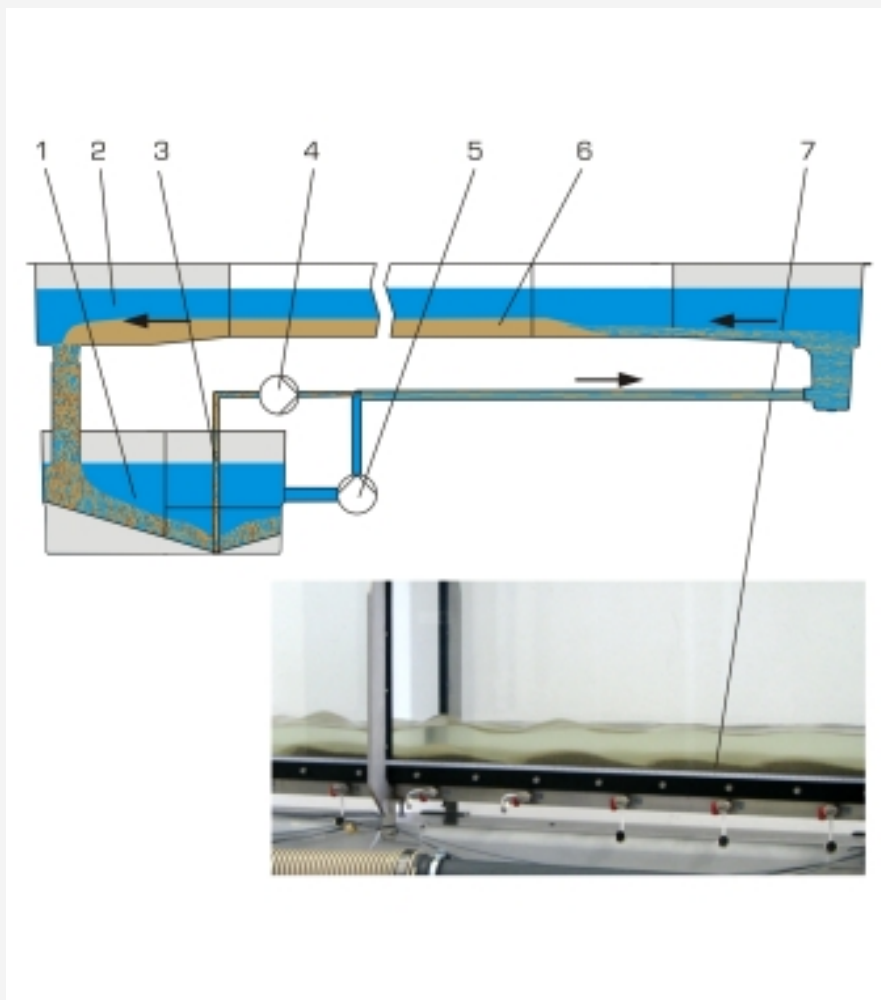


HM 161.71

Closed sediment circuit



1 outlet tank of HM 161 with sediment trap, 2 outlet element of HM 161, 3 suction lance, 4 pump water/sand mixture, 5 pump of HM 161, 6 sediment bed, 7 dune migration

Description

- **bed-load transport in open channels**
- **operation of the sediment pump via touch screen in HM 161**

Flows in rivers, canals and coastal areas are often associated with sediment transport. Bed-load transport is the main transport. During bed-load transport, solids are moved along the flume bottom.

HM 161.71 considers the bed-load transport and consists of a suction lance and a pipe system with pump.

At the beginning of the experiment, a sediment bed is made in the experimental section without flowing water. Then, the water circuit is switched on. The accessory is automatically identified by the PLC. The sediment pump is operated via the touch screen of the PLC of HM 161.

The flowing water transports the sediment close to the bottom along the experimental section. This bed-load transport can be observed clearly.

The outlet tank of HM 161 is designed as sediment trap. The suction lance is inserted in the outlet tank. A pump delivers the mixture of water and sediment from the bottom of the outlet tank to the water feed of the experimental section.

HM 161.71 is not suitable for suspended load transport.

HM 161 can be extended with HM 161.71 at any time.

Learning objectives/experiments

- observation of bed-load transport along the flume bottom
 - ▶ rolling and saltation bed-load transport
- formation and migration of ripples and dunes
- together with HM 161.29 or HM 161.46
 - ▶ fluvial obstacle marks

Specification

- [1] bed-load transport with closed sediment circuit for the experimental flume HM 161
- [2] closed sediment circuit with outlet tank of HM 161 as sediment trap, suction lance, pipe system, and pump
- [3] pump with pipe system for transporting the water/sand mixture from the trap to the water feed of the experimental section
- [4] automatic identification of the accessory in the PLC
- [5] operation of the sediment pump via touch screen of the PLC in HM 161
- [6] HM 161 can be extended with HM 161.71 at any time

Technical data

Pump

- power consumption: 1,1kW
- max. flow rate: 33m³/h
- max. head: 9,5m

Suction lance made of PVC

400V, 50Hz, 3 phases
 400V, 60Hz, 3 phases
 Dxh: 90x2400mm (suction lance)
 Total weight: approx. 30kg

Required for operation

sediment: sand (1...2mm grain size)

Scope of delivery

- 1 suction lance
- 1 pump
- 1 set of accessories
- 1 manual

HM 161.71

Closed sediment circuit

Required accessories

HM 161 Experimental flume 600x800mm

Optional accessories

HM 161.29 Sluice gate

HM 161.46 Set of piers, seven profiles