

HM 163.41

Wave generator



The illustration shows HM 162.41

Description

- generation of surface waves
- operation via touch screen in HM 163

Surface waves are generated by a paddle that swings back and forth. A motor with frequency converter and a crank mechanism are used to drive the paddle. The stroke of the crank mechanism can be adjusted continuously. The motor is placed on the experimental section of the experimental flume HM 163 and fixed in place using bolts. The paddle is fixed to the bottom.

The accessory is automatically identified by the PLC. The frequency of the paddle is set and directly displayed on the touch screen of the PLC on the experimental flume HM 163.

Two wave absorbers reduce the reflection of waves at the front sides of the experimental flume. When flowing through the wave absorbers, the wave heights are reduced. Experiments on waves are only performed without flow.

Learning objectives/experiments

- observation of waves: different wave shapes
- together with accessories:
 - ▶ absorption and reflection of wave forces at different beaches (HM 163.80)
 - ▶ behaviour of waves at piers (HM 163.46)

Specification

- [1] wave generator for the experimental flume HM 163
- [2] automatic identification of the accessory in the PLC
- [3] generation of surface waves via paddle swinging back and forth
- [4] drive of the paddle via crank mechanism and motor with gear
- [5] motor with variable speed via frequency converter
- [6] stroke of the crank mechanism manually infinitely adjustable
- [7] frequency of the crank mechanism continuously adjustable via touch screen of the PLC in HM 163
- [8] two wave absorbers reduce the reflection of waves

Technical data

Motor

- power output: 0,55kW
- speed: 1375min⁻¹
- output speed: 0...110min⁻¹

Crank mechanism

- stroke: 60...200mm
- frequency: 0,18...1,83Hz

2 wave absorbers with 8 perforated plates each

400V, 50Hz, 3 phases
 400V, 60Hz, 3 phases
 230V, 60Hz, 3 phases
 UL/CSA optional
 LxWxH: 1220x380x930mm (wave generator)
 LxWxH: 440x220x590mm (wave absorber)
 Weight: approx. 80kg

Scope of delivery

- 1 wave generator
- 2 wave absorbers
- 1 set of accessories
- 1 manual

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Required accessories

HM 163 Experimental flume 409x500mm

Optional accessories

Wave absorption

HM 163.80 Set of beaches

Other experiments

HM 163.46 Set of piers, seven profiles