

HM 162.41

Wave generator



Learning objectives/experiments

- observation of waves: different wave shapes
- together with accessories:
 - ▶ absorption and reflection of wave forces at different beaches (HM 162.80)
 - ▶ behaviour of waves at piers (HM 162.46)

Specification

- [1] wave generator for the experimental flume HM 162
- [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 162
- [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: 340x220x490mm (wave absorber)
 Weight: approx. 65kg

Scope of delivery

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

Description

- generation of surface waves
- operation via touch screen in HM 162

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 162 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 162.

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.

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Required accessories

070.16200	HM 162	Experimental flume 309x450mm
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Optional accessories

Wave absorption

070.16280	HM 162.80	Set of beaches
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Other experiments

070.16246	HM 162.46	Set of piers, seven profiles
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