H-6523A

Sediment Transport Channel Demonstrator

Purpose

The Hampden **Model H-6523A** Sediment Transport Demonstrator investigates suspended sediment in a moving stream and bed load movement. The moving stream can be controlled over a wide range to simulate fast flowing streams or slow moving rivers, demonstrating the various size and density of partial deposits. Slope is adjustable from 0-10%.

Description

The Sediment Transport Channel Demonstrator incorporates a base, water channel, head tank, discharge tank, screw jack, and variable speed pump. Also included is a model set and hook and point gauge.

This unit is a self-contained teaching apparatus used to demonstrate the development of various bedforms that arise from the flow of water in a channel. There are several variables that can be altered to analyze their effect on the system being studied, such as: flow rate, slope, distribution of sediment, and the introduction of flow obstacles. The channel can be used to study the mechanics of sediment transport as well as scour patterns, flow visualization, bedform hysteresis, smooth bed flow, mobile bed flow, observation of grain patterns and data collection and numerical evaluation.

Specifications

Bench Mounted Base:

- 2” (51 mm) Square mechanical tubing finished in instrument tan texture
- Levelers (2)
- Screw jack mounting bracket with fine thread screw, handwheel and channel yoke
- Pivot point assembly
- Discharge tank mounting assembly with pump mounting brackets
- 14-gauge control box finished in instrument tan texture
- 12-gauge control panel finished in instrument white enamel

Water Channel:

- Constructed of clear 3/8" (9.53 mm) thick polycarbonate sides mounted to a channel base assembly
- Channel is 60" (1524 mm) long, 12" (304 mm) high by 6" (153 mm) deep
- Head tank is manufactured of stainless steel with drain valve pump fitting and diffuser
- Tail tank is manufactured of stainless steel with drain ball valve and pump fittings
- Overfall discharge weir

Variable Speed Pump:

- Close coupled centrifugal bronze pump with variable speed drive

Control Panel:

- Main circuit breaker, ground fault interrupter
- Variable speed drive control

Slope Adjustment:

- 0–10% via screw drive w/slope indicator

Model Set:

- Bridge Pier
- Undershot Weir

Accessories:

- Hook and point gauge
- Grid matrix
- Bag of clean sand

Components Not Supplied:

- Dye injector
- Gravel

Dimensions and Weights:

Length: 72" (1829 mm)
Width: 8" (204 mm)
Height: 45" (1144 mm)
Weight: 550 lbs
Cu. ft.: 82

Services Required

Electrical:

- 120V AC 60Hz, single-phase
- 230V AC 50Hz, single-phase

Water:

Supply (fill water channel)
Waste Drain (drain water channel)

Experiment Capabilities

- Mechanics of Sediment Transport
- Scour Patterns
- Flow Visualization
- Bedform Hysteresis
- Smooth Bed Flow
- Mobile Sand-bed
- Observation and Grain Patterns
- Gravel-bed Flow
- Data Collection and numerical evaluation

All Hampden units are available for operation at any voltage or frequency

Hampden® ENGINEERING CORPORATION

091912

P.O. Box 563, East Longmeadow, MA 01028 • Tel 413-525-3981 • Fax 413-525-4741 • E-mail sales@hampden.com **800-253-2133**