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**Apparatebau GmbH**

## **Operating Instruction for Sediment Corer Catalogue No. 437 400**



**Operation Manual**  
Edition 11/12

## Scope of delivery

1	Tube Holder	Fig. 1 F
1	Plexiglass Core Tube	Fig. 1 I
2	Locking Ropes	Fig. 1 H
1	Plastic Top	Fig. 2 L
1	Sealing Cap	Fig. 1 K
1	Piston Rod	Fig. 2 N

included spare parts:

3	O-Rings No. 234	Fig. 1 G
1	O-Ring No. 337	Fig. 1 D
1	O-Ring No. 231/Sh 50	Fig. 1 E
1	O-Ring 80 x 5 / Sh 50	Fig. 1 J
1	Locking Rope	Fig. 1 H
1	O-Ring 60 x 5 / Sh 50	Fig. 2 M

Figures to be found on page 6 and 7.

## General Description

The SEDIMENT CORER is designed to obtain samples from soft, sandy and medium-hard bottoms. It is not suitable for liquid sludge, gravel, clay, stony or other hard bottoms.

The SEDIMENT CORER consists of an exchangeable transparent core tube (Fig. 1 I) with an inner diameter of 70 mm and a standard length of 600 mm and a tube holder made of stainless steel (Fig. 1 F).

The weight of the SEDIMENT CORER is approx. 6 kg.

The instrument is easy to handle and can be operated manually in shallow waters by means of the transverse bar or a push rod as well as in greater water depths by using a rope.

When the corer is dropped into the water, the plastic valve flap on the top of the transparent plexiglass tube is held open and ensures free flow of the water through the core tube.

The corer is pushed by hand into the sediment (using the offered transverse bar or a rod) or penetrates into the bottom by its own weight (by using a rope or wire).

When the desired sample has been taken and the corer is lifted out of the sediment, the water pressure onto the valve flap closes the tube during heaving. Upward movement creates a vacuum so that the sediment sample is retained in the tube and cannot get lost as the corer is retrieved.

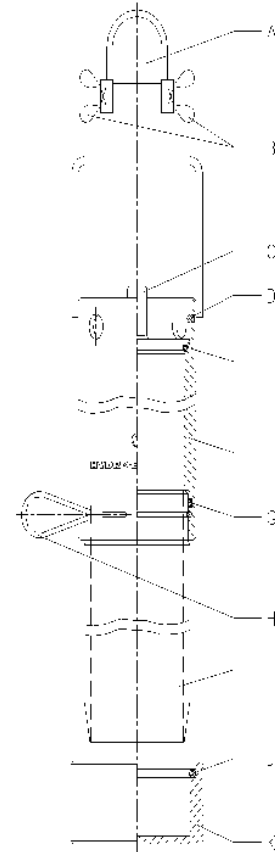
After raising the corer out of the water, the supplied piston is put into the lower end of the tube. The cage with rope stirrup is taken off and the tube with the core sample is placed onto the piston.

When the tube is now pressed onto the piston, the core sample can be removed for examination.

## Preparations for use

The SEDIMENT CORER is delivered in several pieces and must be assembled for operation:

1. Fasten a rope, which is as long as necessary for the sampling depth, to the tube holder (Fig. 1 F), the diameter of the rope should not be less than 8 mm.
2. For use in depths up to approx.2 metres, fasten a rod with a diameter of 20 mm by the two wing-screws (Fig. 1 B) to the sleeve (Fig. 1 A).
3. In water depths up to approx.1 metre, the SEDIMENT CORER can be pushed into the sediment by hand using the Transverse Bar (Cat.No. 437 410).
4. In order to prepare the instrument for operation, insert the transparent core tube (Fig. 1 I) carefully into the lower opening of the tube holder(Fig. 1 F). Thus, the O-Ring No. 234 (Fig. 1 G) guarantees the sealing between transparent core tube (Fig. 1 I) and tube holder (Fig. 1 F).
5. Insert the core tube up to the stop; then slide the locking rope (Fig. 1 H) completely into the boring, so that only the handle loop is visible. Thereby the transparent core tube is connected with the tube holder.



## Operation

While the instrument is lowered in the water, the valve flap (Fig. 1 C) is held open and ensures free flow of the water through the core tube.

The Sediment Corer is pushed by hand into the sediment (using the transverse bar or a rod) or penetrates into the bottom by its own weight (using a rope or wire).



## After Sampling

1. When the sample has been taken and the SEDIMENT CORER is lifted out of the sediment, the water pressure onto the valve flap (Fig. 1 C) with its O-ring Nr. 231/Sh 50 (Fig.1 E) closes the tube during heaving. Upward movement creates a vacuum, so that the sediment sample is retained in the tube and cannot get lost as the corer is retrieved.
2. After raising the sediment corer out of the water, the sealing cap (Fig. 1 K) is put onto the lower end of the core tube in order to retain the sediment sample. It is important to avoid a sloping position so that the sediment will not be mixed with the water at the upper end of the core sample. In order to make a first examination of the sediment sample, the outside of the plexiglass tube should be cleaned.
3. Then pull the locking rope (Fig. 1 H) out of the tube holder (Fig. 1 F) and remove the plexiglass tube (Fig. 1 I). This work should be carried out by two persons, if possible.
4. It is advisable to put the tube holder into a bucket of water for cleaning.
5. Now put the plastic top (Fig. 2 L) onto the upper end of the core tube and fix it by the locking rope. Then remove the sealing cap (Fig. 1 K), insert the piston rod (Fig. 2 N) from the lower end into the core tube and press the sediment sample out of the tube. The sediment can be separated at the plastic top (Fig. 2 L) by using a sharp knife.

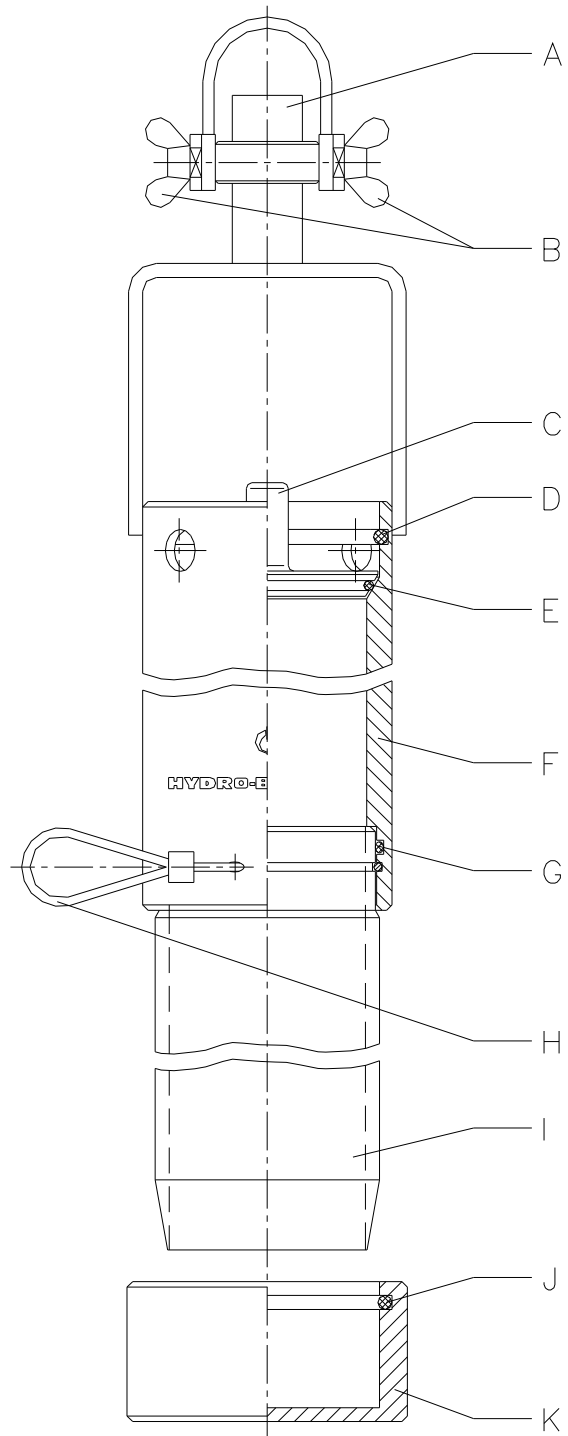
Some experience in handling the sediment corer is required to obtain good sediment samples.



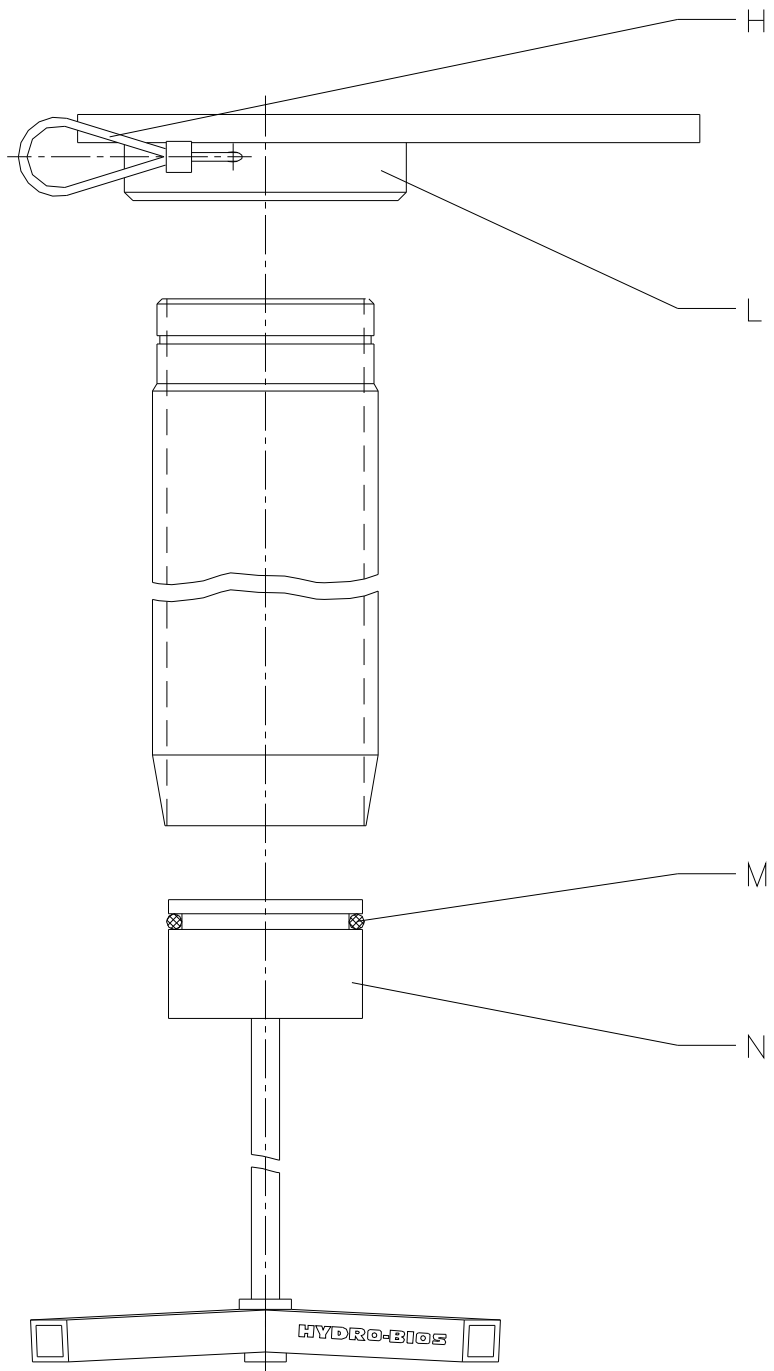


## Cleaning

1. The tube holder (Fig. 1 F) with its valve flap should be carefully cleaned after use. Therefore we recommend to put the tube holder into a bucket of water to avoid drying and caking of the sediment rests.
2. Remove the O-ring No. 337 (Fig. 1 D) before cleaning the valve flap; this O-ring can easily be taken out of its setting by pressing with a finger through the borings of the tube holder.
3. Then the valve flap (Fig. 1 C) can be taken out. The O-ring 231/Sh 50 (Fig. 1 E) has to be removed from the groove by using a blunt object (e.g. a ball point pen cartridge or a match). The O-ring has to be cleaned and also the groove must be free from sediment remains.
4. After cleaning the tube holder can be reassembled by proceeding in reverse order.



**Fig. 1**



**Fig. 2**