Eijkelkamp
Soil & Water

Foil sampler set B

Manual

Meet the difference

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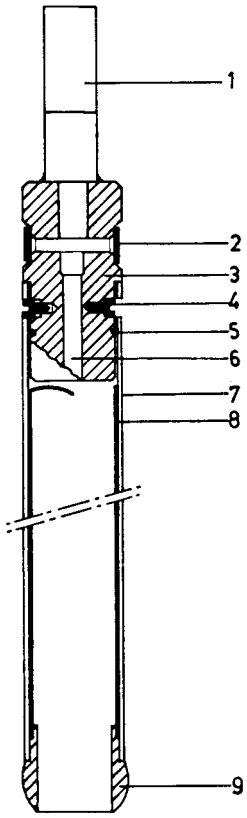
Description of the liner sampler

For taking undisturbed soil samples, for instance for laboratory research, use is made of a stainless steel core apparatus (see figure).
A stainless steel sample tube (7) with a length of 35 cm and a diameter of 50 mm (art. no.: 04.15.12) is pushed over the bottom part of a core sampler. At the bottom of the sample tube a cutting head (9) is fastened.

A rubber O-ring (5) at the top cares for air tight closure, while a socket head screw (4) keeps the sample tube in place. In the upper part of the core apparatus is a discharge opening to be closed by a rubber tyre (2).

Removing an, undisturbed, sample often presents a problem. This type of corer uses a sample liner tube inside the sample tube; this facilitates removal of the sample.

The apparatus is brought to the desired depth with aid of the extension rods and the handle; with conical screw thread connections.
The push/pull handle is very useful in bringing the sampler into the soil (or pulling it out).
The down the hole hammer can only be used to hammer the apparatus with conical screw thread connection into the soil.

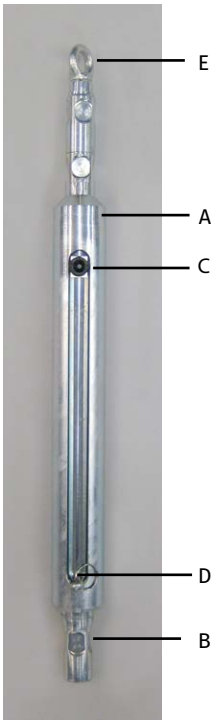


Cross section liner sampler
1. *Conical screwthread connection*
2. *Rubber closing tyre*
3. *Body cutting apparatus*
4. *Socket head screws*
5. *Rubber O-ring*
6. *Discharge opening*
7. *Sample tube*
8. *Sample liner (foil or tube)*
9. *Cutting head*

How to use the liner sampler

If sampling is not done right from the surface, pre-augering must be done with an Edelman auger, after which the bore hole must be flattened with a Riverside auger.
The liner sampler is prepared for use (see figure) by inserting a liner tube in the sample tube (7).
By pushing the liner tube with the cutting head further a correct placing in the tube is secured. Lock the cutting head in the tube by a turn to the right. Now push the sample tube over the core sampler and fasten it with the socket head screws (4) by turning these with a socket head wrench to the left (out off the apparatus).
The head of the socket head screws must be even with the sample tubes ‘s outside.
Fasten the sampler to an handle, if need be after placing the extension rods. Place the apparatus on the surface respectively on the bottom of the bore hole and press the sample tube vertically into the layer to be sampled.
When sampling in heavier soils the handle with beating head and impact absorbing hammer may be used to hammer the apparatus in the soil. Turn al little to the right during hammering to prevent the connections to get loose.

The sample tube attached to the coring apparatus can also be driven into the ground using a down-the-hole hammer. During pounding the upper/outer part (A), a heavy-duty tube with beating head, plummets, thereby causing the impact of the lower/inner part (B) to drive the sample tube into the soil. An M12 socket cap (C) sliding through the lower/inner part into a slot in the upper/outer part prevents any twisting movement and limits the impact to 29 cm.
A cotter pin (D) locks the hammer. If necessary a wire eye (E) can be attached to the hammer.




A sample is removed from the tube

During sampling air and/or water will escape from the tube via the discharge opening, the rubber tyre (2) prevents re-entry.

Prior to hoisting the apparatus, it is turned half a turn clockwise to break the sample from the subsoil. It is advised to pull out right turning. The push/pull handle is very useful in pulling out the sampler.

In lifting the sample the closing tyre shuts the discharge opening. If the sample would fall from the liner, a counter pressure will form above the sample so that the sample will nevertheless remain in place.
On the surface the full sample tube is disconnected by screwing the socket head screws in the corer to the right. The cutting head is removed by a turn to the left, after which it loosens from the sample tube. Do not pull of the cutting head as soil will loosen from the tube.
Remove the liner sample tube with the sample carefully out of the sample tube (see photo).
The liner tube with sample is then pushed into the plastic container. For another sampling the procedure is repeated.
To obtain representative samples, thoroughly cleaning of the apparatus is recommended. Especially so for samples for chemical analysis. Cleaning will prevent furthermore that soil particles will collect between foil and sample tube.
When sampling continuously in one and the same hole take account of soil that remains in the cutting head and is not therefore in the liner (2 to 3 cm). Use the Riverside auger after every sampling to auger and flatten the hole.

Using the down-the-hole hammer

Wear work gloves

There are three methods of using the down-the-hole-type hammer:

1. On top of the extension rods. The steel hammer is fitted with an upper part (after removing the locking pin) so as to allow free vertical movement. Re-attach the pin before hoisting the hammer and rods.
2. Between the extension rods and the coring apparatus. This is the recommended method. It relieves the rods and yields more effective force of impact. However, the hammer should be able to pass through the borehole.
3. Between a cable or cord and the apparatus to drive in. To that purpose attach a wire eye to the steel hammer. Persistent hammering will drive the sample tube solidly into the soil. Withdraw with care. Use a strong steel cable or a 6-mm non-stretch cord made of kevlar, twaron, dyneema or aramide to make sure the coring apparatus does not unexpectedly slip out of the borehole.