



# Percussion drilling equipment

from Eijkelkamp Agrisearch Equipment

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All it takes for environmental research



With the percussion drilling equipment of Eijkelkamp Agrisearch Equipment, soil sampling can be carried out into hard soil, whether or not there are top layers of rubble or stones. The percussion drilling equipment is mobile and can overcome diverse problems which cannot be attempted by hand-operated drilling equipment. During a percussion drilling, the gouges, which have a hardened cutting shoe, are driven into the soil by a percussion hammer. This must be done stepwise in order to make the insertion and withdrawal of the gouges easier and also to avoid contamination as much as possible. The percussion gouge goes through rubble and can therefore also be used at rubbish dumps and in urban areas. The percussion gouges can be used both above and below the water table.



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## Clean sampling

Samples cut by a percussion gouge sustain very little damage. By the quick and simple method of taking samples it is possible in a relatively short space of time to achieve a compact sampling pattern. Furthermore, the ergonomics have been improved by the use of extension rods with a length of either 50 cm or 100 cm.

## Applications

A percussion gouge set is a complete and versatile sampling system for taking samples to a depth of around 5-10 m in almost all soil types. The percussion gouge can be applied in the following surveys:

- Soil pollution
- Particle size distribution
- General soil classification
- Profile descriptions
- Archaeological research

## Strong

Eijkelkamp Agrisearch Equipment's percussion gouges are extremely strong due to the choice of materials used, the method of production and their special design. Thanks to this special design the percussion power of the hammer is passed on optimally to the percussion gouge, resulting in a higher drilling speed. The percussion gouges are simple to empty and clean because of their design.

## Models

Percussion gouges can be supplied in different lengths and diameters:

- Length 50 cm, diameter 100 mm
- Length 100 cm, diameter 100, 75, 60, 50 or 40 mm
- Length 200 cm, diameter 60, 50 or 40 mm





## RD32 connection

An RD32 connection, where RD stands for Round Thread ("Ronde Draad" in Dutch), was chosen because it also works well in hard, dry soil. In this situation the percussion gouges and extension rods are screwed together with a coupling sleeve. These can be attached and separated very quickly. The great advantage here is that the solid extension rods can maintain the same diameter along the entire length, which makes them very strong. A standard extraction system can be used for the extraction, whereby the casing and rod puller clamp needs a filling ring.

## Core sampler

In addition to ordinary percussion gouges, a core sampler may be used with a synthetic sampling tube. This tube is transparent so that visual research may be carried out directly in the field. The sampling tube with the undisturbed sample can be closed off for purposes of transport to the laboratory. The special cutting shoe is supplied with an exchangeable core catcher to prevent loss of the sample and sample contamination.

## Foil insertion kit for core sampler

For years it has been a difficult and fiddly process retrieving a sample out of a sampling tube by cutting or sawing. For this reason, Eijkelkamp has come up with the foil insertion kit. With the foil insertion kit, the core samplers of a percussion drilling set are provided with thin polythene sample foil. The transparent synthetic sampling tube is replaced by a long strip of plastic foil. The advantages are clear: much lighter material, an easily removable foil, equally good results and, last but not least, it is much cheaper. The foil insertion kit can only be used in combination with the 63 mm core sampler which is supplied with left hand screw thread and RD32 couplings.



## Percussion drilling sets with RD32 connection

### 04.19.SC Percussion drilling set for heterogeneous soil types with Cobra TT petrol percussion hammer

The standard set is equipped for drilling down to 5 m in depth. The complete set contains at least the following: a petrol percussion hammer with accessories in a wooden transport case, various extension rods, coupling sleeves, percussion gouges in various diameters and lengths, a core sampler with accessories for PVC sampling tubes, a mechanical rod puller, a universal casing and rod puller clamp, a rod puller extension for pulling of the first gouge, handles for the rod puller, accessories for emptying and cleaning the percussion gouge, a lifting jack with lever and chain, a utility probe for safely detecting underground cables, a stepladder for use with the percussion hammer in the field, etc. and aluminium transport cases.



### 04.19.SD Percussion drilling set for heterogeneous soil types with light electrical percussion hammer (HM 1400)

### 04.19.SE Ditto, with heavy electrical percussion hammer (HM 1800)

In these sets, an electrical percussion hammer, with respectively 33.7 and 36.4 J power, is used for the insertion of the percussion gouges. The advantage of an electrical percussion hammer is that there are no petrol and exhaust fumes directly above the sample. The sets include the following: an electrical percussion hammer with accessories, an aggregate (2500 W continuously), an insulation guard, various extension rods, coupling sleeves, percussion gouges in various diameters and lengths, a core sampler with accessories for PVC sampling tubes, a mechanical rod puller, a universal casing and rod puller clamp, a rod puller extension, handles for the rod puller, accessories for emptying and cleaning the percussion gouge, a lifting jack with lever and chain, a utility probe for safely detecting underground cables, a stepladder, etc. and aluminium transport cases.





## Extraction systems

The gouges can be extracted rather easily from the soil by using extraction systems (available in various models).

### Rod puller

The first gouge may be easily extracted with the help of a rod puller which is supplied with a synthetic rod puller extension which can be dismantled. If the gouge is still partly lodged in the top soil layer, it can be removed with the help of a lifting jack with lever.

### Mechanical rod puller

With the following (deeper) gouges, the mechanical rod puller can be placed directly on the ground. The mechanical rod puller is supplied in models for operation by either 1 or 2 persons. The 1-person rod puller model has a pulling force of 20 kN and a useful length of stroke of around 70 cm. The 2-person model has a pulling force of 40 kN. The handgrips, with a length of 1.9 m, are supplied separately. Once the gouge is completely free it can be pulled up out of the bore hole with the help of the ball clamp, diameter 32-35 mm, with handgrips (max pulling force 40 kN).



### Universal casing and rod puller clamp

The universal casing and rod puller clamp for use with clamping jaw has a diameter of 22-80 mm. Clamping jaws with a diameter of 32-45 mm can be used in order to clamp the extension rods or gouges securely. By using a special filling ring, a universal casing and rod puller clamp can also be used in combination with the mechanical rod pullers.

### Hydraulic extraction equipment

Hydraulic extraction equipment is available for extremely heavy conditions. The hydraulic equipment, with a pulling force of 80 kN, is supplied with an extracting cylinder (diameter 65 mm) and hydraulic aggregate with electromotor and tube set. A baseplate (with handgrip) and a ball clamp are needed as well in order to extract the gouges and rods. The maximum service pressure of the hydraulic pump is 700 bar. The total weight of the pump and extraction cylinder together is 75 kg.



### Complete hydraulic percussion gouge rig with caterpillar tracks for all terrains

With adjustable (750-1050 mm) caterpillar tracks for all terrains, this drilling rig is especially suited to difficult terrains, where it is very flexible. A Honda GX 390-15 HP petrol engine powers all the hydraulic functions (including the transport). The machine is fitted with a hydraulic percussion hammer and a hydraulic jack (pulling force 12 tonnes). The standard rig can be used in combination with our standard percussion gouges and may also be used for dynamic sounding tests and standard penetration tests (SPT). It complies with the European standards EN and STM.



In case you need more information on percussion drilling or other equipment, please contact Eijkelkamp Agrisearch Equipment or fill in the reply form.