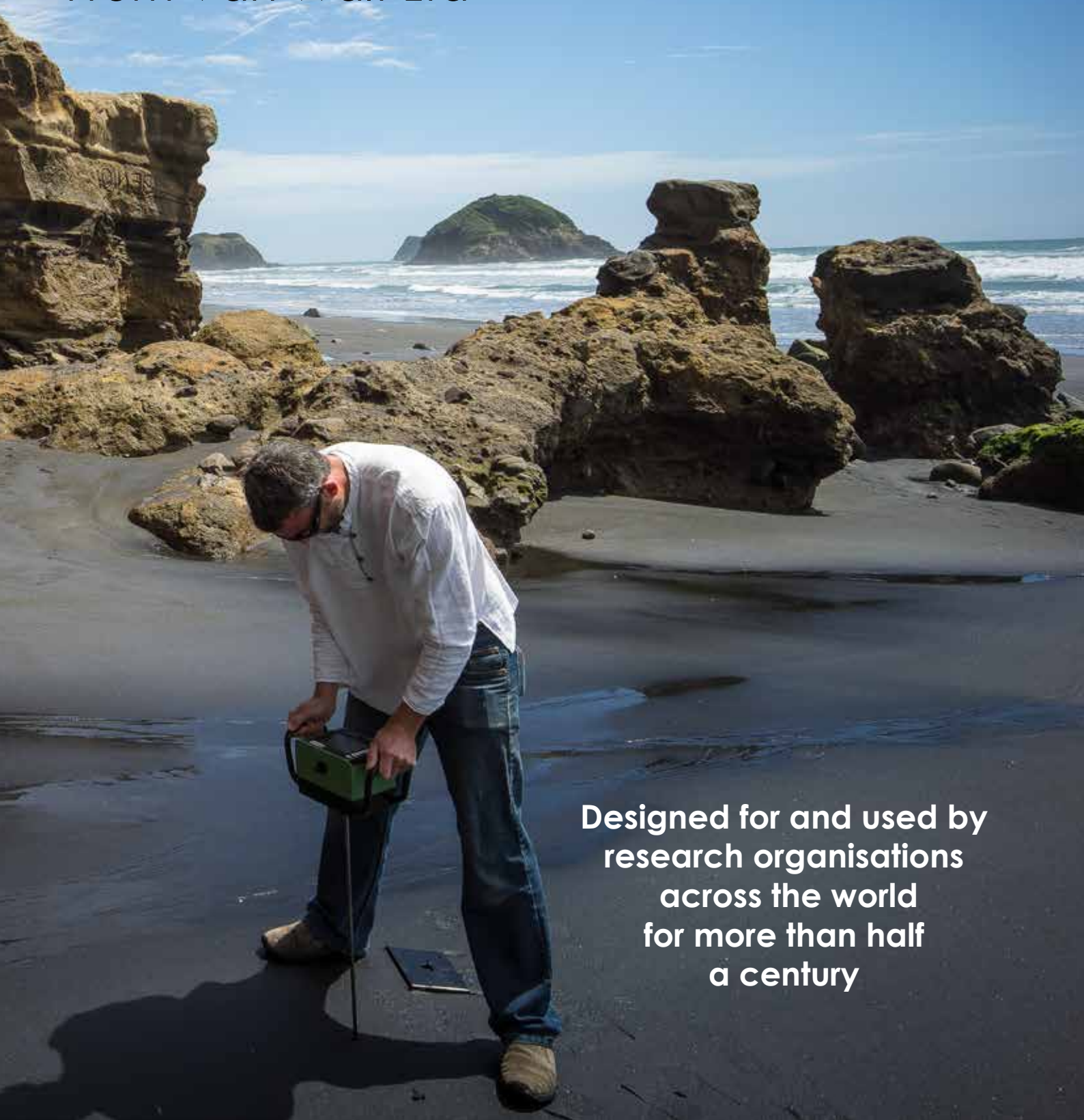




VAN WALT
monitoring your needs

Soil Research Equipment

From Van Walt Ltd



**Designed for and used by
research organisations
across the world
for more than half
a century**

Window Sampling



Window Sampling Set

A powerful, non destructive, low disturbance site investigation tool. It uses laser cut, high entry efficiency samplers in our unique, robust, no maintenance, left hand thread RD32 connection. It is ideal for sampling and research in sites with restricted access, where there is the potential for contaminated samples or for exploration of base metals and mineral deposits, like gold and other precious metals.

- Custom sets available to cater for your needs
- On-site training provided with every set
- Ideal for restricted access
- Requires little maintenance & high reliability
- Perfect for taking metre long undisturbed samples
- Suitable for contaminated sampling
- Non-destructive sampling technique
- Very mobile and relatively light weight
- Relatively low cost.

Applications:

- Soil profile description and classification
- Soil sampling above groundwater table
- Soil sampling below groundwater table
- Environmental soil research
- Undisturbed sampling.

Available:

- Workshops
- Site visit
- On-site training
- Case studies.

Lost Cone

A fast and efficient way to install a 1 inch monitoring well when there is no need to take a sample. It is particularly relevant for stony soils or gravels. A specially designed cone is mechanically hammered into the soil to produce a very straight bore hole. Using this equipment makes it easier to reach depths up to 10m and the friction on extracting the casing is reduced. After drilling the 'lost' cone is left in the soil. This has no environmental impact as the construction material of the cone is found in soils naturally.

Principle of operation:

A hollow casing is fitted with a lost point and hammered, meter by meter, into the ground until the installation depth for the well is reached. Your choice of 1" well is then lowered through the casing and the casing retrieved to leave the well in place. The well can then be sampled and purged in the usual way.

- Ideal for inserting groundwater monitoring wells in stony soils and gravels
- Non-toxic, environmentally neutral lost cone point that can safely be left in the soil
- A fast and efficient drilling method
- Available as a complete set
- Easy to transport
- Drilling diameter of 7 cm
- The special shape of the lost cone ensures there is less friction when the casing is inserted and extracted again
- Ideal and safe for making holes for the installation of explosives in mining.



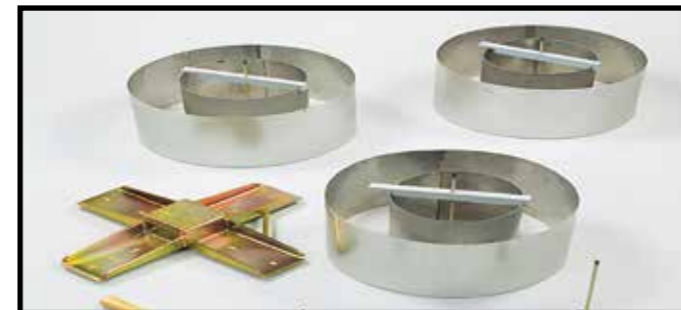
Laboratory Soil Analysis



Wet Sieving Apparatus

To determine the resistance of soil structure against mechanical or physicochemical destructive forces.

- Ease of operation. No spoil of samples
- Mechanical and electronic components are built-in for safety
- The electric motor is a 12/24 Volt DC motor with external adapter, so is very safe in wet conditions
- Worldwide universal adapter complete with interchangeable mains plugs
- Optional sieve cans with different size meshes are available.



Double Ring Infiltrometer

To determine the rate of infiltration of water into the soil & so the capacity for irrigation, drainage, determining the intensity of artificial precipitation & the effect of different treatments of the soil.

- Ideal for infiltration measurement of top soil
- Perfect for flood / furrow irrigation advice
- Triple rings for a representative average
- Stainless steel rings will last forever
- Helps improve the yield of crops and minimises erosion.

Permeameter

To establish the permeability of soil for irrigation & drainage systems, well pumping, subsidence investigations, predicting the spread of polluting fluids, soil improvement & maintenance advice.

- Gives accurate information on the presence of disturbed soil layers which might prevent a speedy outflow of precipitation
- Establishes the correlation between permeability & other soil properties such as porosity, granular composition etc
- Gives vertical & horizontal permeability
- Is available as an open or closed system.



Calcimeter

An accurate measurement of the carbonate content of soil to determine its fertility.

- A very stable and gas-proof system
- Compact, ergonomic design
- Less vulnerable glass parts
- No drying oven required or any additional chemicals
- No long waiting periods for results, easy to control, adjust & move around the lab
- Complies with standards NEN 5757 & DIN 19682 an 19684.



Micro Rhizon

For repeated and reliable sampling of all dissolved components in the soil solution.

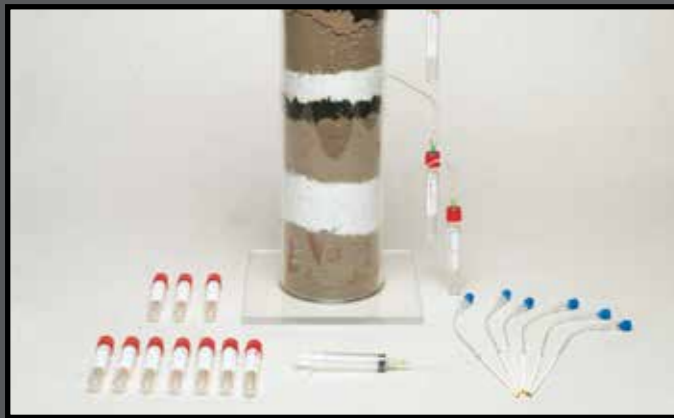
- Mini samplers ideal for pots & containers
- Used for all types of lab & field research
- Small diameter, 2.5 mm
- Frost resistant
- Cost effective for large scale use
- Simple syringes act as pumps & samplers
- Can be used to 1 meter depth
- Minimal disturbance to the soil.



Macro Rhizon

For soil moisture sampling in the field when successive soil solution samples are needed from the same volume of soil.

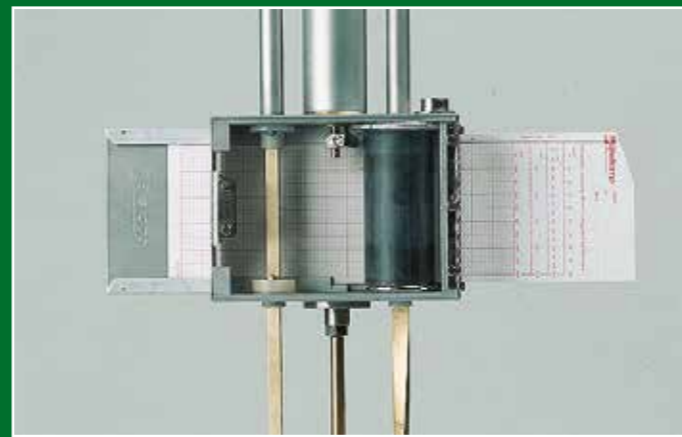
- Minimal disturbance of hydraulic properties of the soil, sampling with a syringe.
- Minimal ion exchange capacity (less than soil)
- Inexpensive
- pH is not changed by sampling
- Sample is filtered & can be analysed directly.



Samplers with ceramic cup

Soil moisture samplers with ceramic cup ideal for sampling low interaction chemicals like nitrates.

- Good value & simple to use
- Sampling to different depths
- Sturdy so suitable for long term installation
- Collects a large amount of soil moisture in a relatively short period of time
- Sample stored in body, no separate jars
- Available in various lengths & diameters



Penetrograph

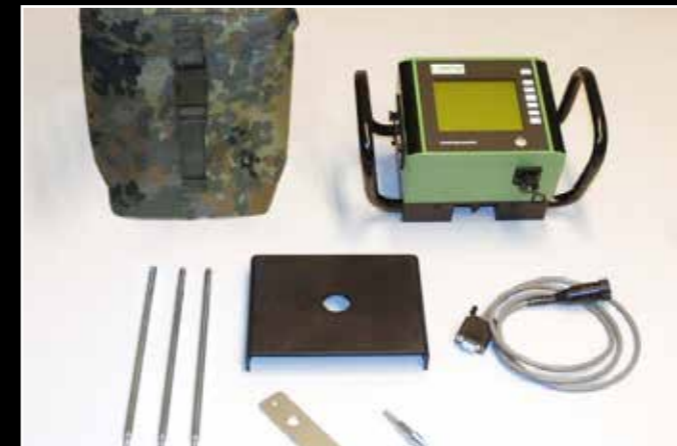
An instrument for the determination of the penetration resistance of the ground.

- Self recording of continuous measurements plotted on a chart
- Clearly shows disturbed layers
- Will proof compaction situation
- Weather proof charts
- One-push measurement
- Ideal for contractors and agronomists
- Weather proof body.

Penetrologger CBR

A penetration test for evaluation of the mechanical strength of road subgrades & basecourses.

- User-friendly & easy operation
- Accurate measurement principle
- Display background lighting & GPS
- Compact design, detachable handles
- For geotechnical engineers, military & civil
- Ultrasonic depth measurement.



Hand penetrometer

Used to determine the resistance of soil for general research, including foundations, checking the artificial compaction and tracing compacted layers in the soil.

- A very compact and complete set which includes all rods and cones
- Easy to operate
- Low or no maintenance
- Accurate hydraulic reading dial
- Includes augers to remove hard layers.



Penetrologger

For measuring the load bearing capacity of soil to a depth of 80 cm.

- Ergonomic design, easy to use, light weight & splash-water proof
- Large measurement range (0-10MPa)
- Accurate depth registration measured by ultrasound
- Easy and flexible programming of the field work that can be executed
- Data is presented graphically or numerically for further data processing.



Penetrometer for Top Layers

A handheld penetrometer for the determination of the penetration resistance of top layers

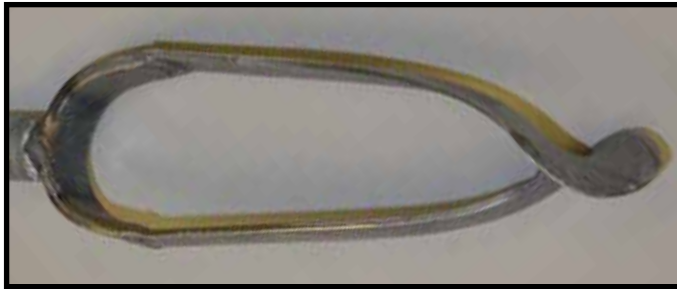
- Small cones allow for shallow measurements
- Clear readout, durable construction
- Measurement depth 10cm
- Factory calibrated exchangeable springs.

Hand Augers

Single and Extendable Augers

Available in single units or a tailored set can be made using auger heads, handles & extension rods to suit your specific soil sampling requirements. Ideal for soil mapping; suitability reviews; root, fertilisation, clay and paleontological research – all with minimal disturbance.

- Variety of Auger heads available for different soil types
- Will take samples in the toughest of soils
- Fast and easy to use
- Will cut through bricks & withstand stones
- Virtually undisturbed profile for analysis
- Made from non-toxic high tensile strength steel
- Easy to clean and very strong
- Supplied in various lengths & diameters
- Available in sets or individually depending on budget/need.
- Available with a range of ergonomic handles to help you drill more comfortably
- Not suitable for sludges and sediments.



Clay Auger

Clay soils are very cohesive. Therefore the blades of the clay auger can be narrow, having the advantage that they meet with little resistance.



Edelman Combination Auger

The combination auger type gets a reasonably good hold of sandy material while clayey material can be fairly easily removed from the auger body.



Sand Auger

Sandy soils are not cohesive. To keep the sample inside the auger, this type has broad blades.

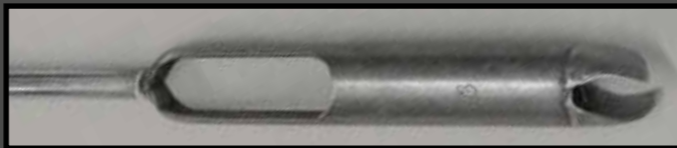
Coarse Sand

Coarse sand soils and extremely dry sand soils have little or no cohesion at all. The blades of this auger are extended with extra wings, thus forming an almost closed auger.



Riverside Auger

This design is very suitable for augerings in hard, stiff soils, mixed with fine gravel both above and below the ground water level. The very sharp extremities of the auger bits point at an angle downwards. This design makes the auger go through the soil easily.



Stony Soil Auger

For soils with a large gravel content. The auger body for stony soils consists of a heavy steel strip, vaulted all along, which is bent double by forging. The pointed cutting bits of the strip are bent outward, thus creating a hole wider than the average body diameter. Used when the Riverside auger is not yielding adequate results in coarse gravel soils.



Auger Sets



Standard Hand Auger Set

A standard auger set for environmental research containing a selection of the most essential auger heads for a variety of soils.

- Standard set for augering in a variety of soils up to 7m
- Strong and solid equipment
- Excellent value
- Light weight
- Includes a heavy duty shoulder bag
- Minimal training required.



Ergonomic Auger Set

Used to carry out manual drilling & sampling in a variety of soils types. Can help prevent back, neck & shoulder problems which can be associated with repetitive augering.

- Adjustable height settings
- Ratchet system enables easier augering & ensures good posture
- Quicker, simpler & physically less exerting
- Universal bayonet connection
- An Auger head for most soil types
- Strong & easy to clean.



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Bailer Boring Hand Auger Set

A complete set for exploratory soil augering & sampling, particularly suitable for use in nature reserves or water catchment areas.

- Suitable for most soils
- Works above and below water level
- For well installation as well as samplings, reaches required depth very quickly
- Durable, sturdy light weight casings
- Special bailers allow bailing stony sand layers
- Non-contaminating components.



Comprehensive Hand Auger Set

An efficient, fast & accurate equipment set which is solid & strong for soil extraction & analysis. Used for drilling above the water table to depth of 5 meters.

- High tensile strength forged auger bodies
- Perfect auger body shapes for optimal drilling
- Non toxic steel for all types of analyses
- Rapid connectible extension rods
- Wide selection of auger types - a complete set.



Single & Extendable Gouges

Single & extendable gouges for use in cohesive soils. For quick, undisturbed soil profiles down to 10 metres.

- Very fast and easy to sample
- Push, twist, pull - that's it!
- Will take samples in the toughest soils
- Virtually undisturbed profiles in lengths of 50cm or 1m
- Greater profile survey because of longer head
- Easy to clean and very strong
- Ideal for peat soils.



Gouge Auger Set

Often used in cohesive soils to take undisturbed soil profiles down to 10 metres.

- Very fast and easy way to sample
- Undisturbed profiles in lengths of 50cm or 1m
- Shaped from flat steel to give the cleanest, sharpest sample
- Easy to clean and very strong
- Available in sets or individually
- Mini gouge augers are available for smaller top layer samples
- Specially hardened Gouges are available for harder soils
- Ideal for peat soils.



Peat Probes

A 120cm probe to determine the depth of peat.

- Light and easy to use
- Strong & flexible
- Available with extension rods
- Easy to store and transport
- Multiple applications.



Peat Sampler Set

Easy to operate, manual corer for sampling at different depths in sediment & wet soils, including below the groundwater level.

- Samples both saturated & unsaturated material
- Stainless Steel construction for use in all soil types
- Simple gouge with flap principle
- No loss of sediment
- Takes point samples at any depth
- Easy to operate and clean
- Complete with T-handle, extension rods, Edelman auger, Peat Sampler, push/pull handle, tools, maintenance kit & fibre glass utility probe & aluminium case.



Flap Gouge Auger

For sampling in dry or wet material to a depth of 2 metres. Sample volume: 47 ml

- Slender construction allows for ease of penetration in top layers of sludges, sediments, powder, grain, granulates & pastes.
- Ideal for taking samples in drums, tanks & bags.

Arable Land Augers

To take samples from arable land for chemical analysis for fertiliser requirements.

- Slim auger bodies for ease of insertion
- Suitable for medium to harder soils
- For sampling top layers, suitable for most sampling jobs. Perfect for chemical sampling in the root zone
- Made from non toxic steel
- Available in sampling lengths of 25 to 60cm
- Quick and easy analysis
- Sampler is graduated in 5cm increments.



Soil Column Cylinder Auger

To take a large, undisturbed soil sample without the need to dig a profile pit.

- Sample size-100cm by 90mm
- Easily, mechanically hammered into any soil type
- Saves time, minimises disturbance, so can even be used between crops
- Easy extraction of the sample
- After one sample the total soil profile can be analysed
- Very portable & simple to operate
- Sample size allows for easy sub-sampling.



Root Auger

To obtain virtually undisturbed, uniform soil samples for root system analysis to determine the depth and density of root systems, to a depth of 2 metres.

- Minimal ground disturbance
- Undisturbed soil sample retrieval
- Can be hammered so suitable for all soil types
- Strong, robust construction
- Equal samples for accurate comparisons
- Sample depth 200 cm; volume 740 ml; diameter 80 mm and length 150 mm



Grass Plot Samplers

Particularly suitable for research in grassland farming, horticulture, parks, public gardens and sports turf.

- Take samples while walking
- Ideal for shallow root zone sampling
- Suitable for soil sampling of air-borne deposits
- Quick and easy analysis of the top layer in grassland and horticulture
- Sampling in the top 5 to 10cm
- Made from tough, non toxic stainless steel
- Available in 5 cm or 10 cm lengths.

Single and Extendable Gouges



For soil mapping, suitability reviews, root, fertilisation, clay & paleontological research with minimal disturbance.

- Sampling in the toughest of soils
- Fast and easy to use
- Cuts through bricks & withstand stones
- Virtually undisturbed profile for analysis
- Non-toxic high tensile strength steel
- Easy to clean and very strong
- Supplied in various lengths & diameters
- Available in sets or individually.

Single Gouge Auger Sets

For core sampling tougher layers with minimal disturbance of soil for mapping, suitability reviews, root, fertilisation, clay & paleontological research.

- Will take samples in the toughest of soils
- Fast & easy to use
- Cuts through bricks & withstand stones
- Virtually undisturbed profile for analysis
- Non-toxic high tensile strength steel
- Easy to clean and very robust
- Available in 50cm, 100cm lengths, 30mm diameter.



Comprehensive Gouge Auger Sets

For quick & virtually undisturbed sampling in soils.

- Non toxic high tensile strength steel
- Available in 3 different lengths & diameters
- Good for soil profiling & surveys to depths of 5m.
- Easy to use, clean and very robust
- Virtually undisturbed sample
- Can be hammered into the ground
- Suitable for sludges, sediment and peat.



Stepwise Sampling Set

For the determination of mineral nitrogens with no cross contamination among the samples.

- Made from non toxic high tensile strength steel
- Quick and virtually undisturbed sampling of mineral nitrogens
- Three augers with different diameters
- No cross-contamination of samples
- Easy to use as auger can be pushed or hammered into the soil.



Heavy or Light Lifting Set

Heavy Lifting Set used in conjunction with heavier hand operated drilling equipment for water wells. Light Lifting Set used for deeper hand drilling, removing casing tubes, lowering/lifting equipment, installing wells & general hoisting activities.

- Light weight construction, Strong & solid
- Easy to use & easy to transport
- Requires virtually no maintenance
- Allows for more efficient use of manpower and equipment.



Popular: Soil Sample Ring Kits

For the collection of undisturbed soil samples in rings of uniform dimensions for analysis in the laboratory.

- Different sets available for different soil types
- Low disturbance, samples can be collected from the surface, bore hole or profile pit, above and under the groundwater level
- Accurately machined stainless steel rings
- Rings allow for the collection of a very accurate volume of soil.
- Different ring diameters available
- System can be easily cleaned
- The sample can be protected with a closed ring holder
- Elements of the kits (soil rings) are available separately and can be tailormade to your requirements



Bent Spatula

For multiple applications in soil analysis.

- Easy to use
- Strong & flexible
- Available in two widths
- Multiple applications.



Geologist Hammers

For multiple applications in soil classification.

- Easy to use & strong
- For the rough indication of the hardness of soil or rock
- Available with a pointed or blade end
- Useful for the removal of fossils, scrapping stones and emptying gouges
- Multiple applications.



'A' Frame Extraction System

For the extraction of samplers & casing tubes.

- Easy to use & strong construction
- Extracts samplers with small effort
- Available as part of a set or independently
- Multiple uses.



No-Loss Soil Corer

For taking exact 16ml samples of soil for testing volatiles using both the Methanol & Cooling methods.

- Soil is sampled above ground from any regular soil sampler or auger
- Soil coring rings can be used again
- Coring ring not damaged by stones; device can be hammered
- Corer & rings can be field sterilized with a flame for biological activity samples
- Takes sample not at, but just below the ambient air exposed surface
- Easy decontamination of coring rings.



Soil coring kit for chemical research

For the determination of very volatile components such as benzene, toluene, xylene & chlorinated hydrocarbons volatiles.

- Prevents loss of volatiles during sampling as no exposure of the sample to air
- Easily sealed so prevents loss of volatiles during transportation
- Made from stainless steel
- Easily cleaned and decontaminated
- Can be hammered into hard soils
- Sub-samples can be taken from sample tube, samples can be taken in position to a depth of 5 metres.

Split tube sampler for top layers

An undisturbed sampler for top layers for research on root systems, fertiliser, chemical and soil biology.

- Rapid undisturbed sampling of the top layer
- Ideal for surface sampling
- Can be hammered
- Easy opening by split tube system
- Made from stainless steel
- Easily cleaned
- Easily decontaminated.



Liner Sampler Sets

For soil fertility, structure, volume weight, granular composition and technical determination in either soft or hard soils to a depth of 7m.

- Liner allows easy removal of sample
- Sample can be viewed directly in the field, can be analysed without touching
- Can be hammered into position
- Made from stainless steel
- Easily cleaned and decontaminated.



Van Veen Grab

An easy to use surface sampler for river & lake beds.

- Easy to use & deploy as suspended by wire
- Quick identification of sample type
- Inert stainless steel construction
- Can be operated from a bridge, raft or boat
- Available in different sizes
- Surface sample only
- Can change heads to sample less cohesive materials
- Easy to clean and very strong.



Beaker Sampler

A very sophisticated sediment sampler.

- Virtually undisturbed sample
- With extension rods, capable of sampling to 5 metres
- Fast and clean samples that can be sampled layer by layer
- Clear sample tubes with visible profiles
- Original stratification of the sample is maintained
- Inflatable bladder in cutting shoe ensures even liquid samples are retained
- Easy to clean and very strong.



Multi Sampler

A specialised sampler for sludges and sediments.

- Lightweight
- Easy to use
- Fast and clean and accurate mixed samples in one procedure
- Clear sample tubes to view samples
- Excellent value for money
- Open cutting head for undisturbed sample
- Can change heads to sample less cohesive materials
- Easy to clean and very strong.

Soil Moisture



HydraProbe

A rugged soil sensor with patented technology that provides continual, consistent accuracy to measure three soil parameters simultaneously - moisture, salinity and temperature.

- Long track record of accuracy, consistency and durability
- Used in the top 90% of USA national climate reference networks
- Installed in over 50% of all international Soil Moisture Networks
- Patented Sensor Technology: "Coaxial Impedance Dielectric Reflectometry" that provides consistent long-term accuracy in any soil type.



HydraGO

The HydraGO is a portable, wireless sensor-to-smartphone for soil moisture data collection. Rugged, accurate and easy-to-use, handheld sensor from Stevens Water.

- Uses the same patented soil sensor as the HydraProbe
- Ergonomically designed with a detachable pole to help with insertion
- Suitable for those applications where a permanent soil monitoring system is not required
- Communicates wirelessly with Apple or Android devices using Bluetooth
- Free, downloadable HydraMON app
- Easy to use, simply insert the probe into the soil and tap the "Sample" button in the app.

GroPoint Profile

A multi-segment Soil Moisture Profiling Probe for the cost-effective measurement of volumetric water content over multiple depths using a single probe.

- Simplify the measurement of Soil Moisture at different depths with multiple readings from a single probe
- Scientific grade accuracy with long-term stability
- Repeatable Accuracy
- Low power consumption, so suitable for remote, independent installations
- Eliminates need for multiple sensors & cabling systems
- Eliminates need for soil excavation to position multiple sensors placed at different depths.



HydraGO Field Version

Wireless sensor-to-smartphone interface for HydraProbe soil moisture sensors. Simply insert the probe into the soil, and tap on the "Sample" button in the HydraMon app. The HydraGO Field Version communicates wirelessly with your smartphone or tablet using an ad-hoc wi-fi network created by the device itself.

The HydraGO Field Version is available with and without a survey-quality, sub-meter GPS receiver.



Soil Moisture



PICO 64

Ideal for irrigation control systems and on-site soil moisture monitoring.

- Very accurate TDR technology
- Integrated soil temperature sensor
- Interchangeable rods
- An ideal probe for maximum accuracy in materials with bulk electrical conductivity of up to 12dS/m.
- Burying capability for both horizontal and vertical orientation
- Measures soil electrical conductivity.



Soil Profile Probe

For the precise measurement of soil moisture given as a percentage by volume.

- Ideal for the development of soil-water balance models, irrigation control & salt content testing at different soil depths
- Continuous & gap-free measurements
- Measures electrical conductivity in a soil
- Simple modular configuration
- Calibration curves for different soil types
- Rugged & waterproof design for long-term monitoring in harsh environments.

Data Collection

Data by Telemetry

We have developed a versatile, secure, flexible, sophisticated and accurate web-based groundwater; water level; water quality and soil moisture telemetry system, which allows data collected by the vanwaltDataHub or vanwaltDataSlave onsite, to be accessed from your desktop via our vanwaltCONNECT service.



- Designed and developed in-house
- Self-powered, flexible system of data collection
- Instructs, powers, interrogates and collects data from a multitude of onsite sensors
- Distributes data through on-board memory, radio frequency, GPRS or Satellite portals
- Connect sensors singly or in daisy chain using Modbus, SDI-12, Analog or digital I/O protocols
- Data stored on non-volatile memory; backed up for redundancy & convenience
- Download data by cable, radio frequency transceiver, GPRS, satellite transmission or removal of SD card
- Logs parameters like water level, pH, EC, Redox, Electrical Conductivity, Temperature, Dissolved Oxygen, Rainfall, Hydrocarbons, Water Flow and Soil Moisture
- Performs as a standalone datalogger
- Interfaces seamlessly with our proven and highly flexible data collection systems
- Standard supply with on-board non-volatile logging memory, industrial SD Card memory, 2G/3G/4G connectivity, batteries & solar panel
- Optional: Radio Frequency or Satellite Transceiver
- Available for OEM applications.



VAN WALT
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