FORE
TESTING EQUIPMENT
MANUFACTURING IND.
And INTERNATIONAL CO.INC.
“High Testing Technologies & R-D”

MOBILE
SOIL & AGRO
RESEARCH LABORATUARY

Device / System ORIGINS:
The technologies belongs to Turkey, USA and European Countries…

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MOBILE LABORATORY TESTING SYSTEM

Mobile Laboratory Systems are manufactured to get involved onsite by Fore Testing Equipments Inc. Our mobile labs are designed to allow users to experiment comfortably. The devices which are inside of labs are stored and used safely.

MOBILE LABORATORY – FORE MBL-LAB 01

Mobile labs are designed to test in distant worksites for soil, water, concrete, and etc. The laboratory which is equipped with the necessary equipments can operate in full capacity independently and efficiently.

MOBILE LABORATORY – FORE MBL-LAB 02 (PANELVAN)

In applications where experiments and / or observations are needed at different points, the panelvan which is with requested equipments is designed and equipped by Fore Testing Equipments Inc. Below are some examples.
The products are delivered to the end user with closed trucks.
LABORATORY INTERIOR TECHNICAL EQUIPMENTS

- Bottom side of the left wall of the laboratory furnishes with a cupboard and the top is shelf.
- Interior lighting is provided with 4 accessories from the ceiling.
- The top of counter is resistant to chemicals (20 mm special coating).
- Lower part of the cupboard has 4 drawers.
- There is a material box apparatus inside the cupboard.
- There is an office desk and a chair.
- There are 2 extra stools.
- There is a pure water system.
- There is a sink and a faucet on the counter.
- There are power outlets on the counter and on the work table.
- There is a 100 liters water tank.
- The floor is covered with PVC Laminated Floor Material (8 mm).
- There is a separated cooling and heated air conditioner.
- There are 2 special fire extinguishers.
- There is a mini refrigerator in lower part of the counter.
- There is a first aid kit.
- There is a 5 Kv portable generator and 50 Mt connection cable.
- There is an ambient temperature meter and humidity meter.
- There is a GPS system for vehicle tracking.
SOIL QUALITY TEST SYSTEM AND DEVICES

FR-Z-222 SOIL SAMPLING KIT

MOTORIZED SOIL SAMPLING KIT AND ACCESSORIES

The soil column cylinder auger has been developed to take undisturbed soil samples. This allows for a fast insight in the built-up of the soil profile, the possibilities for a root system, etc. The more insight in these matters, the more effective fertilization and treatment of the soil can be done.

- A smooth large sample with a small effort
- Low pull out friction due to loose cutting ring
- Ideal for serious studies on top 1 m of soil
- Limited to first meter of top soil
- Not for very hard soils (use smaller diameter)
The Soil Column Cylinder Auger

To execute general examination of the soil profile another method has been developed where samples are taken from the soil applying the soil column cylinder auger. Applying this system it is possible to take undisturbed samples with a length of 100 cm and a diameter of 93 mm, without digging a profile pit. The soil column cylinder auger is hammered into the soil applying a gasoline driven mechanical hammer (on special request an electrical driven hammer). The cylinder has a removable side, among other things, for checking and/or for sub-sampling of the soil column. In the standard set among other things there are a gasoline driven mechanical hammer, a stainless steel soil column cylinder, a hand auger, an extraction system and sample gutters.

SOIL CHEMICAL TEST KIT

Chemical test kit for the determination of commonly monitored parameters in soil testing. By using Soil Test Kit, it is possible to measure pH and the most important elements for plant growth: nitrogen (N), phosphorus (P), and potassium (K). This kit is equipped with all the necessary reagents and equipment to perform over 25 tests for each parameter. Pre-made reagents for ease of use. All reagents marked with expiration date and lot number for traceability. Soil test handbook provided The soil pH range from pH 5.5 to 7.5 is inclusive of most plants; however, some species prefer a more acidic or alkaline environment. Nevertheless, every plant thrives within a particular pH range. pH strongly influences the availability of nutrients and the presence of microorganisms and plants in the soil. The three macronutrients that are most needed by plants are nitrogen (N), phosphorus (P), and potassium (K). Other elements, the so-called microelements, are generally present in sufficient quantities in the soil as plants need them only in smaller doses.
SOIL FERTILITY TEST KIT

Using color disc and dip stick methods, provides an economical, simple, effective way to determine nitrogen, phosphorus, and potassium content of soil. Designed for economical on-site evaluations of soil fertility, the test kit provides a simple, effective way for analysts to determine nitrogen (0-40 mg/L), phosphorus (0-40 mg/L), and potassium content of the soil.

SIMPLE SOIL NITRATE KIT
The Simple Soil Nitrate Kit is a chemical test kit that uses the cadmium reduction method to measure nitrate. The kit is supplied complete with all of the reagents and equipment necessary to perform approximately 200 tests.

Pre-made reagents for ease of use. All reagents marked with expiration date and lot number for traceability. Checker disc for more accurate determination.

**FR-GL CAL-2 DIGITAL SOIL CALCIMETER KIT**

The Digital Soil Calcimeter with automatic temperature compensation (patented) offers dramatically improved levels of performance, productivity, reliability, ease of use and flexibility. The Digital Soil Calcimeter is the ideal tool for agriculture scientists and farmers. Testing soil every two years and applying frequent small amounts of lime can help farmers avoid top soil acidification. Calcium carbonate is an important parameter for Soil Science and Precision Agriculture (PA) or Site Specific Crop Management (SSCM).

\[(CaCO_3 + MgCO_3 \text{ etc}) + 2\ HCl \rightarrow (CaCl_2 + MgCl_2 \text{ etc}) + H_2O + CO_2↑\]
GENERAL SOIL pH TEST SYTEM

FR-GL 128 PROF. pH TEST KIT

pH Meter (Bench Type with Heat Probe and Stand)

Bench type pH meter which is designed for quality control laboratory areas contains a large LCD and status reporting. It has all the features of technology. The user interface can be managed quite easily. In the range of ion concentration and mV, it adds measurement for Oxidation-Reduction Potential (ORP). For this tool there is also a reading stability indicator used during the calibration and measurement memory / memory recall function. The pH measurements for both instruments are compensated by the temperature probe, either manually or automatically. This meter is equipped with an easy-to-read LCD that shows both primary reading and °C. 0 to 50 °C (32 °F 122); RH max 95%.

<table>
<thead>
<tr>
<th>Range</th>
<th>pH</th>
<th>-2.00 16.00 pH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mV</td>
<td>399.9 mV ±; ± 2000 mV</td>
</tr>
<tr>
<td>Sıcaklık</td>
<td>-20 °C 120.0</td>
<td></td>
</tr>
<tr>
<td>Solution</td>
<td>pH</td>
<td>0.01 pH</td>
</tr>
<tr>
<td></td>
<td>mV</td>
<td>0.1 mV; 1 mV</td>
</tr>
<tr>
<td>Sıcaklık</td>
<td>0.1 °C</td>
<td></td>
</tr>
<tr>
<td>Accuracy</td>
<td>pH</td>
<td>0.01 pH ±</td>
</tr>
<tr>
<td></td>
<td>mV</td>
<td>(399.9 mV ±) 0.2 mV ±; ± 1 mV (2000 mV ±)</td>
</tr>
<tr>
<td>Sıcaklık</td>
<td>± 0.4 °C (hariç prob hatası)</td>
<td></td>
</tr>
<tr>
<td>pH Calibration</td>
<td>Temperature</td>
<td>5 hafizaya tampon değerlerinde (pH 4.01, 6.86, 7.01, 9.18, 10.01) ile otomatik, 1 veya 2 nokta</td>
</tr>
<tr>
<td></td>
<td>Temperature</td>
<td>-9,9 120 °C ya da manuel (HI 7662 probu ile) otomatik</td>
</tr>
<tr>
<td>pH Electrode</td>
<td>Temperature</td>
<td>HI 1131B, cam gövdeli, tek kavşak, doldurulabilir, BNC, 1 m kablo (dâhil)</td>
</tr>
<tr>
<td>Temperature Probe</td>
<td>Temperature</td>
<td>HI 1 m (3.3’) ile 7662 kablosu (dâhil)</td>
</tr>
</tbody>
</table>
PALINTEST COMPLETE SOIL KIT

Protecting and managing soil health requires a focus on soil macronutrients and micronutrients. The Palintest Complete Soil Kit is the complete testing kit for professional soil management.

Managing soil health

The Soiltest 10 covers the 10 most critical water quality parameters, to manage your soil health and optimise your crop.

Macronutrients and micronutrients testing

Test protocols for macronutrients (soil pH, N/P/K), micronutrients and trace minerals including sulfur, manganese and magnesium.

Ideal for field use

Provided in robust carry cases for in field soil testing. Our test kits offer an economical and simple test solution which is ideally suited to in field testing.
The Palintest Complete Soil Kit, combining with Palintest soil testing methods, provides scientific agricultural experts and farmers with comprehensive and professional soil testing for macronutrients and micronutrients.

Direct measurement onsite makes it easier to understand the nutritional requirements of cultivated land.

It has different characteristics and is designed to work in all kinds of environmental conditions and in the field.

Simple and reliable test protocols for macronutrients (soil pH, N / P / K [Nitrate, Phosphate and Potassium]), micronutrients and trace minerals.

Waterproof Soiltest 10 photometer with Bluetooth for on-site laboratory precision.

Supplied with an IP67 hard carrying case containing all reagents for direct soil analysis on site.
## Soil Tests:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil pH</td>
<td>0 – 14</td>
</tr>
<tr>
<td>Lime Requirement</td>
<td>0 – 34 tonne/ha</td>
</tr>
<tr>
<td>Conductivity</td>
<td>0 – 19.9 mS/cm</td>
</tr>
<tr>
<td>Saltiness</td>
<td>0 – 1%</td>
</tr>
<tr>
<td>Nitrate Nitrogen</td>
<td>0 – 25 mg/l N</td>
</tr>
<tr>
<td>Phosphate Phosphor</td>
<td>0 – 150 mg/l P</td>
</tr>
<tr>
<td>Potassium</td>
<td>0 – 450 mg/l K</td>
</tr>
<tr>
<td>Magnesium</td>
<td>0 – 500 mg/l Mg</td>
</tr>
<tr>
<td>Calcium</td>
<td>0 – 2500 mg/l Ca</td>
</tr>
<tr>
<td>Aluminium</td>
<td>0 – 50 mg/l Al</td>
</tr>
<tr>
<td>Ammonia</td>
<td>0 – 75 mg/l N</td>
</tr>
<tr>
<td>Chloride</td>
<td>0 – 1000 mg/l Cl</td>
</tr>
<tr>
<td>Copper</td>
<td>0 – 25 mg/l Cu</td>
</tr>
<tr>
<td>Iron</td>
<td>0 – 25 mg/l Fe</td>
</tr>
<tr>
<td>Manganese</td>
<td>0 – 25 mg/l Mn</td>
</tr>
<tr>
<td>Sulphur</td>
<td>0 – 300 mg/l S</td>
</tr>
</tbody>
</table>

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**FR-GL 440 MOISTURE ANALYZER**

Moisture analyzers are measuring devices specially designed for determination of moisture content of relatively small samples of various materials. Moisture content is measured with
accuracy 0.01% (0.001% for samples up to 1.5g). Maximal drying temperature equals 160 degree C. Each moisture analyzer is equipped with aluminum weighing pan with dimensions ø 90mm. With a moisture analyzer and a special set it is possible to test permeability of water vapor through samples of different materials. 4 drying modes (standard, quick, step, mild).

Easy operation with backlit LCD display
Drying profiles (standard, moderate, step, fast)
End mode (manual, moisture stabilization, automatic, time defined
GLP / GMP outputs and reports
Standard and non-standard applications
Optimization study for halogen lamp mode
The maximum capacity is 50 g / 1 mg. Maximum drying temperature 160 ° C (Humidity detector option up to 250 ° C is available).

The moisture analyzer is equipped with an aluminum pan of ø 90mm diameter. It has the feature of determining the water vapor permeability with the specially designed kit.

<table>
<thead>
<tr>
<th>Max. Sampling</th>
<th>50 g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. Sampling</td>
<td>0.02 g ( 20 mg )</td>
</tr>
<tr>
<td>Tare Range</td>
<td>- 50 g</td>
</tr>
<tr>
<td>Precision</td>
<td>0.001 g ( 1 mg )</td>
</tr>
<tr>
<td>Accuracy</td>
<td>% 0.01 g</td>
</tr>
<tr>
<td>Drying Temperature</td>
<td>Max. 160° C (Selectivity 250° C)</td>
</tr>
</tbody>
</table>

**FR-AG922 HYGROSCOPIC MOISTURE**

With the complete set, you can measure quickly and reliably. The moisture content of cultivated materials such as sand aggregates and soil can be measured onsite.
FR-AG-D35 DIGITAL MOISTURE ANALYZER

Soil moisture meter is a professional soil moisture meter which has small size and easy to use. It can measure humidity, ambient temperature, light intensity simultaneously. Also, it has 1.2 m cable and sensor.

Special sensor provides precise and fast results. The probe does not rot over time and provides long-term use. It can be used without damaging plant roots. Measuring from -20 °C to 80 °C. Moisture reading is directly.
GRANULOMETRIC STRUCTURE OF SOIL

FR-GL107 SIEVE SHAKER

TS EN 932-5; ISO 565, 3310-1, 3310-2; ASTM E11, 323

The sieve shaker is frequency adjustable. The Sieve Shaker has a very effective clamping mechanism that allows the sieves to be firmly attached and removed and replaced quickly without overloading. The sieve time can be set up to 60 minutes. The Sieve Shaker is specially designed to operate at maximum sieve loading quantities specified in the relevant standards without loss of performance.

FR-GL 102 SIEVE SET

ISO 3310-1 Woven Wire Cloth Sieves

Sieve Sizes: 20 cm x 5 cm, 30 cm x 7.5 cm

125 mm, 100 mm (4"), 90 mm (3 ½"), 80 mm, 75 mm (3"), 63 mm (2 ½"), 56 mm, 53 mm (2.12"), 50 mm (2"), 45 mm (1 ¾"), 40 mm, 37.5 mm (1-¼"), 31.5 mm (1 ¼"), 26.5 mm (1.06"), 25 mm (1"), 22.4 mm (7/8"), 20 mm, 19 mm (¾"), 16 mm (5/8"), 13.2 mm (.530"), 12.5 mm (½"), 11.2 mm (7/16"), 10 mm, 9.5 mm (3/8"), 8 mm (5/16"), 6.7 mm (.265"), 6.3 mm (¼"), 5.6 mm (No. 3 ½), 5 mm, 4.75 mm (No.4), 4 mm (No.5), 3.35 mm (No. 6), 3.15 mm, 2.8 mm (No. 7), 2.5 mm, 2.36 mm (No.8), 2 mm (No.10), 1.7 mm (No. 12), 1.6 mm, 1.4 mm (No. 14), 1.25 mm, 1.18 mm (No.16), 1 mm (No. 18), 850 μm (No. 20), 800 μm, 710 μm (No. 25), 630 μm, 600 μm (No. 30), 500 μm (No. 35), 425 μm (No. 40), 400 μm, 355 μm (No. 45), 315 μm, 300 μm (No. 50), 250 μm (No. 60), 212 μm (No. 70), 200 μm, 180 μm (No. 80), 160 μm, 150 μm (No. 100), 125 μm (No. 120), 106 μm (No. 140), 100 μm, 90 μm (No. 170), 80 μm, 75 μm
(No. 200), 63 μm (No. 230), 53 μm (No. 270), 50 μm, 45 μm (No. 325), 40 μm, 38 μm (No. 400)

FR-Ö 87 ACCESSORY PARTS

- Tray (Stainless Steel)
- Specimen Scoop
- Digital Thermometer
- Brush
- Wire Brush
- Plastic Specimen Box

FR-Z 138 SOIL HYDROMETER KIT

Hydrometer Test Set is used to determine the particle size distribution of very fine-grained materials such as clay and silt. The 100 W power mixer has a pallet rotation speed of 13,000 rpm. The mixer operates automatically when the mixing bowl is installed. Hydrometer bath with 50 L capacity circulation unit, which can be placed 6 pieces graduated cylinders can operate between ambient temperature and 35 °C.

Hydrometer Test Set is supplied with:

- Fast Soil Mixer
- Hydrometer Bath
o Hydrometer, 151H, 1 piece
o Sodium Hexametaphosphate, 1 kg
o Sedimentation Graduated Cylinder, 1000 mL, 4 pieces
o Heater
o Circulation Pump
o Rubber Plug (for graduated cylinder)
o Beaker, 600 mL

FR-GL 1A SOIL TEST KIT (ONSITE)

DIGITAL pH DEVICE

It has a large LCD display for easy reading of temperature, humidity and pH. The display shows as dry, normal, wet. You can save battery power via the automatic power-off feature. The 20 cm long probe in the pH and humidity meter allows you to go deeper into the soil.
PORTABLE TYPE WATER & WASTE WATER PHOTOMETER

- Spectral range: 9 LEDs 380/ 430 / 470 / 500 / 520 / 560 / 610 / 700 / 810 nm
- Memory: For Up to 150 Methods, i.e.150 Different Reagent Curves From Different Reagent Manufacturers
- Housing: Waterproof Housing and Waterproofcuvette Shaft
- Operation: Simple to Operate with Just A Few Buttons
- Display: Highly Scratch-Resistant Display Cover Inmineral Glass, Graphic Display, 128x64 Pixels with Backlit Display of Results with 12 mm High Digits
- Data Output: With Infrared Interface, e.g. for IRDA for Laptops or Via Transmitter to USB
- Software: For Curve Generation and Reading of Up to 1250 Different Curves for Diverse Reagents
- Data Logger: With Memory for 250 Data Records for the Measurement Results / Measurement Parameters / Measurement Number / Measurement Location / Date / Time
- Accuracy: In the Range of 0.1 to 2.0 E±1.5% of the Measurement Value
- Large Extinction Range:-0.500 to 3.000
- Power Supply: From 4×AA NiCd Rechargeable Batteries
- Battery Charger for Built-In Accumulators, Software, Manual, 10 Round Cuvettes, 16 mm, 2 Dilution Tubes, Funnel for Cuvette, Cleaning Brush for Cuvettes, Cuvette Stand, Syringes 5 ml, USB Transmitter, 1 m Long Cable for USB Transmitter, Foam Material Interfacing in All Three Box Parts, Photometer
NECESSARY EQUIPMENTS AND CONSUMABLES FOR SOIL TESTS

FR-GL 112 SOIL DRYING OVEN
Digital soil drying oven with digital controlled and fan
Capacity: 50 liter, 200 °C
Interior Sizes: 50x50x50 cm
Steel Shelf: 2 pieces stainless steel

FR-GL PLASTIC GRADUATED CYLINDERS
1000 CC, 500 CC, 250 CC, 100 CC, 50 CC

FR-GL PLASTIC BEAKER KIT
1000 CC, 500 CC, 250 CC, 100 CC, 50 CC

FR-GL VOLUMETRIC FLASKS
1000 CC, 500 CC, 250 CC, 100 CC, 50 CC

FR-GL DIGITAL STOPWATCH

FR-GL TIN CONTAINERS

FR-GL SAMPLING CONSUMABLES
FR-GL LYSTER SACKS

FR-Ö 87 DIGITAL BALANCE
Digital Balance: 6 Kg – Readability 0,1 g
Pan Size: 15x24 cm
LCD display and stainless and durable quality

FR-Ö 89 DIGITAL BALANCE
Digital Balance: 220 g – Readability 0,001 g
LCD display and stainless and durable quality

FR-GL 155 SOIL CRUSHING MILL
The mill has a dynamically balanced rotor made of special alloy steel. The rotor is directly connected to the motor with the belt. The feed inlet of the grinder loading hopper measures 20x20 cm (± 5cm). It is mounted on a 2 mm sieve without the need for dismantling. It has a top feed for samples.
FR-GL SAND BATH

They are used in research laboratories, food, pharmaceutical, chemical, soil research and quality control laboratories to create a hot sand pool that can be adjusted to different temperatures from 50 °C to 300 °C. The heating plate of the device is made of heat-resistant aluminum plate to make the heat more homogeneous and faster.

REFERENCE COLOURS GLASSES SET / POCKET DIAL PENETROMETER / POCKET pH METER

EN 1744-1; ASTM C40

- 500 mL or 1000 mL Cylindrical Glass Bottle is used for determination of organic impurities as required in the EN standard.
- The Pocket Dial Penetrometer is ideal instruments to determine the penetration resistance of cohesive soil, especially when various range measurements are required. The Pocket Dial Penetrometer has 60 mm dial diameter and designed with Peak Hold Feature.
- Including pH 3, pH 7, and pH 14 solutions.
OMAX 40X-2000X Lab LED Bi // MICROSCOPE

- High resolution digital camera with 0.45X reduction lens and advanced software applications
- Two pairs of ocular WF10X and WF20X and four achromatic targets DIN 4X, 10X, 40X (S), 100X (S, Oil)
- Sliding display head with binoculars on both sides and coaxial coarse and fine focus buttons
- NA1.25 Abbe condenser with iris diaphragm and filter
- Variable LED intensity transmitted lighting
TV: Ultra HD, Smart TV, 32 inch (82 cm) Screen, 1920x1080 Pixels, USB&HDMI Input, Wi-Fi Connection.

PRINTER: Color, Laser, USB Input, Wi-Fi Connection

LAPTOP: 1 TB HDD, 15.6 inch Screen, 4 GB RAM, Intel Core i5, 1.6 GHz, Licensed Windows 10 & Licensed Microsoft Office