

INSTRUCTION MANUAL WINTEX 1000

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| | |
|----------------------------|---|
| <u>Manufactured by:</u> | Wintex Agro Vilhelmsborgvej 8C 7700 Thisted Denmark |
| <u>Type designation:</u> | WINTEX 1000 |
| <u>Voltage:</u> | 12 volt DC |
| <u>Year of production:</u> | 2022 |





1. SAFETY

Please maintain a sufficient distance and stay clear of the working space **before** starting the soil sampler

When inspecting the soil sampler, you must always activate the emergency stop, and the vehicle must be turned off.

Every time you start the soil sampler you must **test the emergency stop**. Do not use the soil sampler if the emergency stop does not turn it off.

The soil sampler has moving, sliding and rotating parts. Keep your limbs away from the soil sampler unless it is turned off and stay away from the foot / the base of the soil sampler.

CAUTION required
at the following parts:

IMPORTANT:
Never disconnect the ground
connection to the control system!



2. MOUNTING GUIDELINES

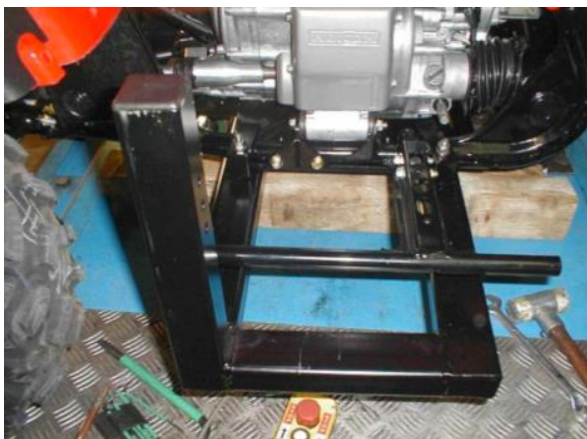
2.a. MOUNTING THE WINTEX ON AN ATV

Fitting the mounting frame

There are four brackets enclosed in the Wintex package which you need for mounting the soil sampler onto the frame.



Please note that it might be necessary to drill new holes for the brackets for mounting the WINTEX 1000 on different quads.



The mounting frame on the left side of a Honda ATV



Left side - showing where the angle brackets are mounted



The right side of a Honda ATV



The mounting frame must be placed as close as possible to the ATV.

Fitting oil pump and Honda GX160 engine on the rear rack

It is an advantage to mount the Honda GX160 engine and the oil pump on a hardboard plate or on another plate – for example a plate of aluminum. Hoses and wires must not get in touch with rotating parts and the warm engine of the ATV.

Important: Do only use Equivis ZS46 oil unless something else has been agreed on with Wintex Agro.



Oil pump and Honda GX160 engine

Mounting the start switch on the right handlebar

To get the necessary space for the start switch for the WINTEX 1000, it might be necessary to rearrange/adjust other accessories to make space for the start switch on the handlebar.



The start switch mounted on the right side of the handlebar – here on a Honda ATV

Mounting of 13-pole contact



Mounted on a Yamaha 700



Mount the bracket for the 13-pole plug in a suitable position near the soil sampler.

Mounting of foot contact



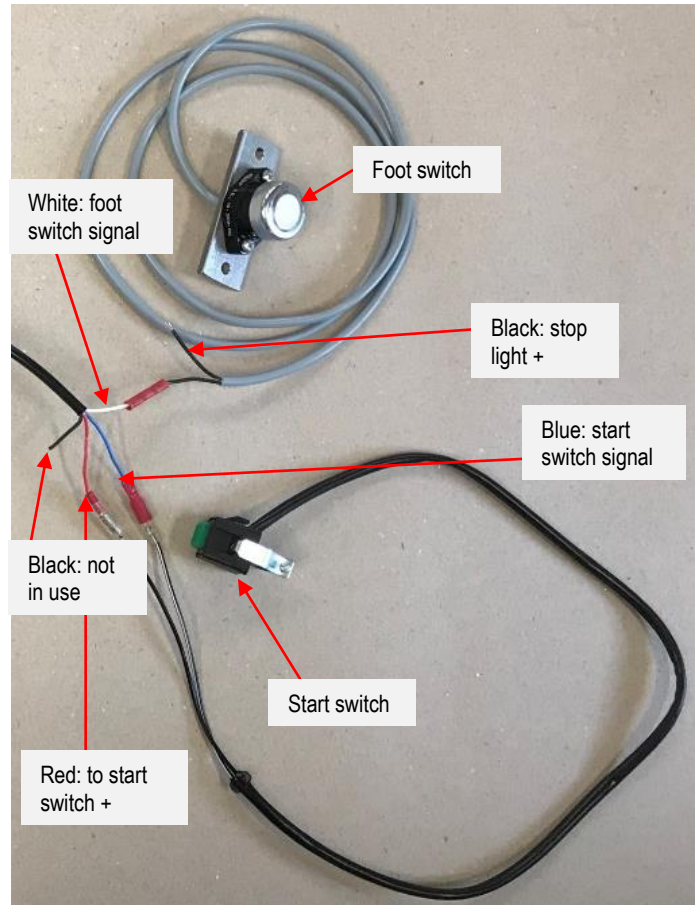
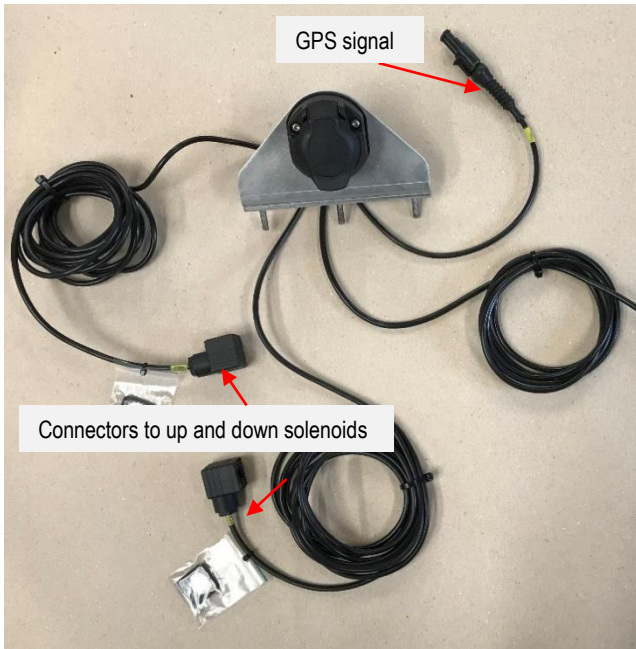
Foot contact mounted on a Honda TRX680

Mounting of stabilizer



The cable with the red plug must be connected to the battery of the ATV: red +, black -.

Connecting wires and cables



3. USING THE SOIL SAMPLER

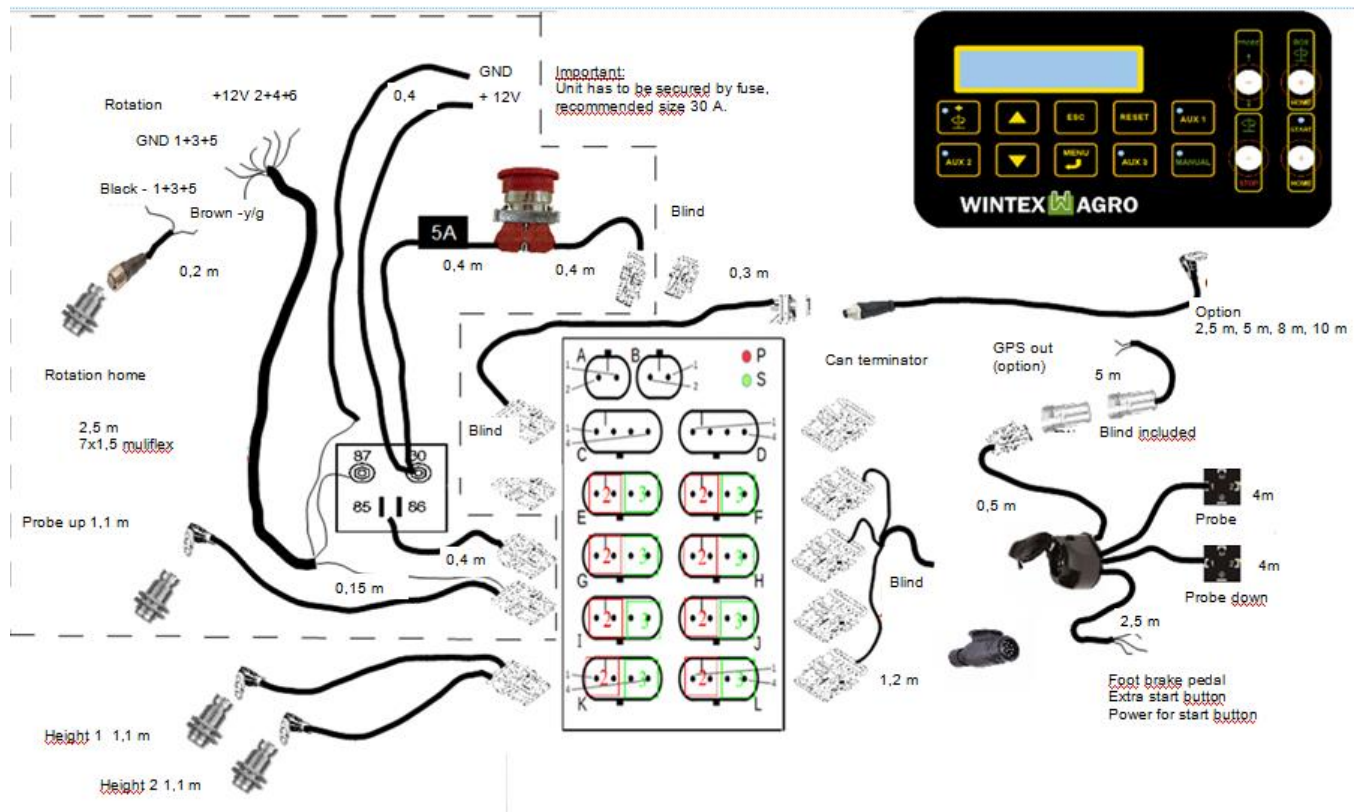
3.a. DESCRIPTION OF THE CONTROL SYSTEM



- | | |
|---------------------------------|-----------------------------|
| 1: Extra rotation / no rotation | 9: Operation mode |
| 2: Up / plus | 10: Not in use |
| 3: Preset depth | 11: Down / minus |
| 4: Escape | 12: Menu / ENTER |
| 5: Reset | 13: Not in use |
| 6: Not in use | 14: Enable manual functions |
| 7: Probe up / down | 15: Rotation + STOP |
| 8: Not in use | 16: START + HOME |

3.b. CONNECTION AND STARTUP

Connect all plugs and cables of the control system according to the diagram below.



13-pole plug

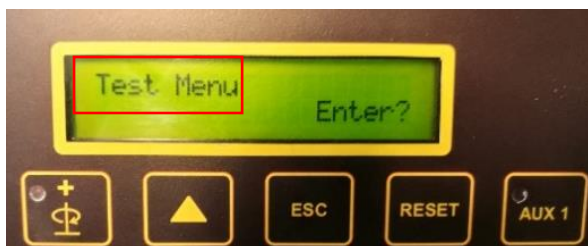
| | | | |
|-------------|-------------------------|--------------|------------|
| Pin no. 9: | Probe up GND | cable no. 9 | black wire |
| Pin no. 8: | Probe up | cable no. 6 | brown wire |
| Pin no. 6: | Probe down | cable no. 8 | brown wire |
| Pin no. 7: | Probe down GND | cable no. 7 | black wire |
| Pin no. 10: | GPS mark GND | cable no. 10 | black wire |
| Pin no. 11: | GPS mark | cable no. 11 | brown wire |
| Pin no. 4: | Power for "extra start" | cable no. 4 | red wire |
| Pin no. 3: | Foot brake pedal | cable no. 3 | white wire |
| Pin no. 5: | Extra start button | cable no. 5 | blue wire |

There is a jump wire between pin no. 1 and pin no. 2.

At the first startup of the Wintex 1000 after mounting the control system, take place on the driver's seat. Press "**MANUAL**" key and flip the "**PROBE**" switch **downwards** until the probe reaches the ground.



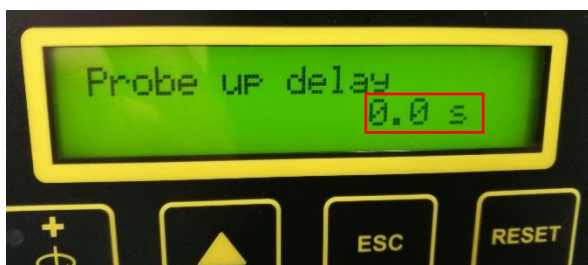
Go to the test menu by pressing the "**MENU**" key. The display will now show "Setup Menu". Press the arrow down key, and the "Test Menu" will appear. Move the soil sampler down until it barely touches the ground. You can now read the current depth (e. g. 56 cm) of the soil sampler. You need to remember this value for the next step.



Use the **arrow up** to go to the "Setup Menu". Scroll down to "**Offset**" and enter the value from the previous step (e. g. 56 cm). This will now be the base point for the sample depth.



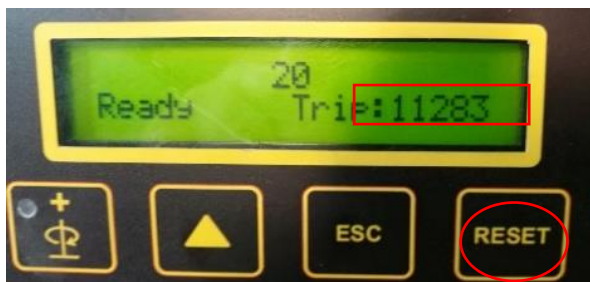
If the function extra rotation is activated and the probe does not end in the right position, you can delay the last rotation of the probe before it goes up again. Use the "**Probe delay**" function in the "Setup Menu" and enter the number of seconds for the delay.



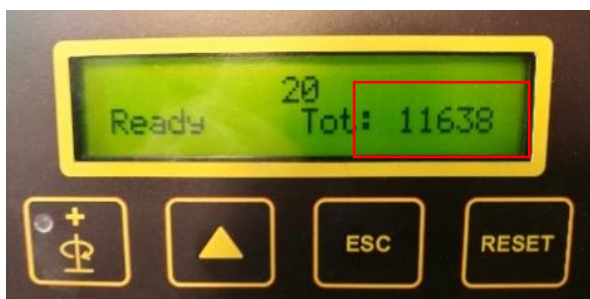
3.c. START SCREEN

Under normal use the display will show the current depth at the top line. The next line shows the operation mode of the soil sampler / what the soil sampler is currently doing - “probe up”, “probe down”, “rotation” or “ready” when the sampling process has ended.

There is a counter at the bottom on the right which counts the number of sticks in each sample. The counter can be reset to 0 by pressing “RESET”. You can get access to this function from the start screen, and then press the arrow down key.



You can also see the total amount of sticks taken. This value cannot be reset.



3.d. SETTINGS

In the “Setup Menu” you can preset and adjust a number of settings. Press “MENU”. The display will now show “Setup Menu”. Press “MENU” again to adjust the depth and / or the number of sticks for each sample.

You can **shift** between settings by using the arrow up and arrow down keys.

The settings can be **adjusted** by holding the “MENU” key down until the number of the display flashes. Then adjust the figure by using the arrow up or the arrow down keys. When you have entered the preferred number, press “MENU” (enter) again, and the setting is saved.

3.e. SETTINGS: DEPTH

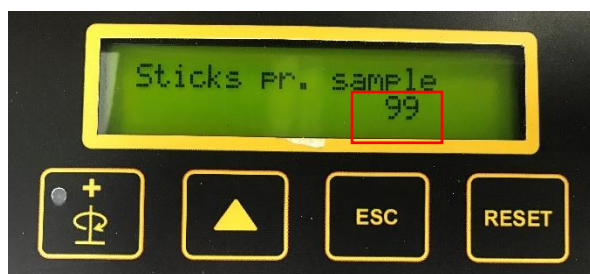
Go to the “Setup Menu”. Scroll down until the “Depth” appears on the display. Adjust the depth by using the **arrow up and down keys**. Once the correct depth is set, press “MENU”. The setting is now saved and will appear on the start screen.



3.f. SETTINGS: STICKS PER SAMPLE

Go to the “Setup Menu”. Scroll down until the “Sticks per sample” appears on the display. Enter the number of sticks for each sample by using the arrow keys (arrow up for rising the numbers, arrow down for lowering the numbers).

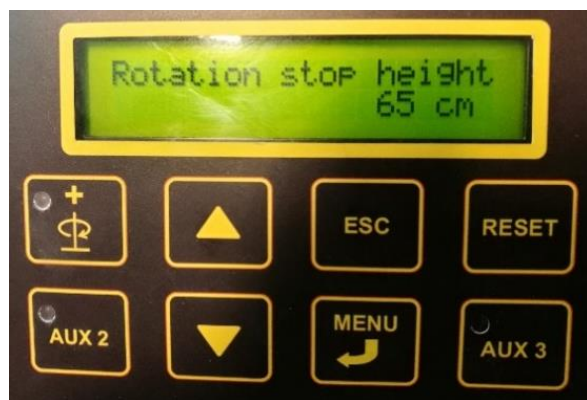
When the soil sampler has taken the entered number of sticks, it will not take another sample before you press “RESET” for a few seconds. By entering the number 99, you can disable this function, and the soil sampler will sample indefinitely.



3.g. ROTATION STOP

To make sure that the probe stops at the correct angle every time, you need to adjust the “Rotation stop height”. This is the point where the soil sampler gets the signal to stop rotation to make sure that the probe is in the right position before it reaches the soil box. This setting will differ according to the soil sampler, the hydraulics and the soil conditions.

Go to the “Setup Menu”. Scroll down to “Rotation stop height” and adjust the figure with the arrow keys.



3.h. ROTATION MODE

The standard setting of the soil sampler is that the probe goes down, rotates once and then goes up again. If you press the key with the rotation symbol, the LED of the key will light up. The probe will now carry out an extra rotation before going up. If you hold the key with the rotation symbol down for five seconds, the LED will blink slowly, and the probe will not rotate at all.



3.i. MANUAL USE OF THE WINTEX 1000

By pressing the “**MANUAL**” key with the green letters, you can access all functions in green letters at the flip switches (“probe up”, “probe down” and “rotation”) manually.



3.j. TAKE A SAMPLE

When all values are set, stay clear of the soil sampler, push the foot contact and flip the “**START / HOME**” switch towards “**START**”. The soil sampler will now take a complete soil sample.

Stop the soil sampler

If the soil sampler should fail to go down to the determined depth, or if you should encounter a problem during sampling, you can either activate the emergency stop, or you can flip any of the switches on the control unit to stop the soil sampler. When flipping the “**START / HOME**” switch to “**HOME**”, the soil sampler will return into the start position.

3.k. TEST MENU

By entering the test menu, you can see the current

- power supply
- depth of the probe, and

you can also monitor the control system's

- keys,
- flip switches
- LEDs.

Enter the test menu by pressing the "MENU" key. The display will now show "Set up Menu". Press the arrow down key, and the "Test Menu" will appear.



Press "MENU" again, and you will now have access to the above-mentioned content:

You can *shift* between the content by using the arrow up and arrow down keys.

In some cases, it seems like you only can see for example one of four (1/4) "pages" on the screen. To view the other "pages", press the "MENU / ENTER" key.



Current power supply and depth



Monitor keys



Monitor switches



Monitor LEDs

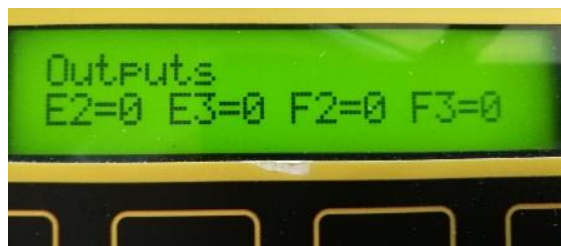
The next lines show the inputs and outputs. In the event of an issue, your local dealer might need this information to trouble shoot.



Digital inputs



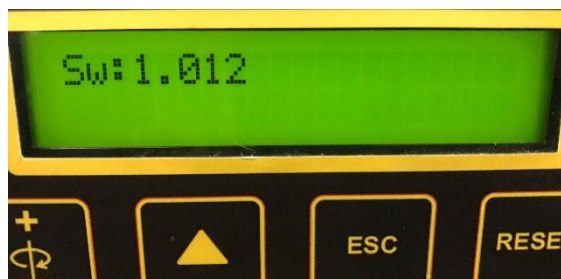
Analog inputs



Outputs



Current outputs



Software version

4.. MAINTENANCE

4.a. START THE WINTEX 1000

Start the ATV and deactivate the emergency stop. The red button must be up.



Activate the foot switch and the brake handle on the steering wheel, and shortly push the button at your right hand. Foot switch and brake lever must be activated during the entire process. If one of these switches is released, the process will stop.

Note: The emergency stop must always be activated at long stops, or the battery might be discharged.

4.b. INTERRUPT THE SOIL SAMPLING PROCESS

Due to various reasons it might be necessary to interrupt the process. In this case deactivate the foot switch, and the process will stop immediately. When reactivating the foot switch and the brake handle at the same time, the probe will go back into the start position.



4.c. REPLACING THE PROBE

The emergency stop must be activated, and the ATV must be turned off. Use two 27 mm keys to loosen the probe. The probe is mounted correctly when the slit of the probe points towards the soil box when the rotation stops.



4.d. ADJUSTING THE OIL PRESSURE

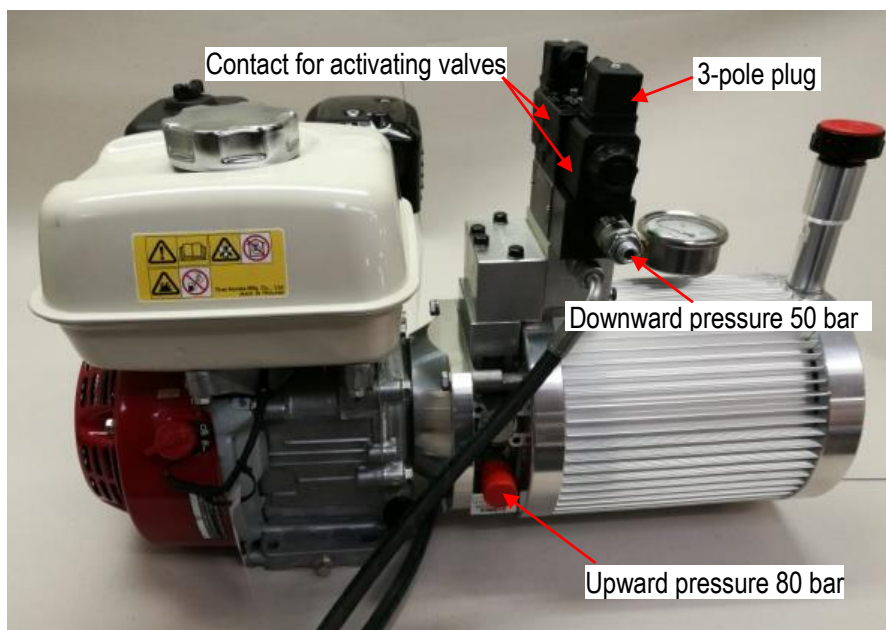
The oil pressure is pre-set at a lower limit of 50 bar and an upper limit of 80 bar. Adjusting the excess pressure valve can alter the pressure. For adjusting the pressure downwards loosen the lock nut with a 19 mm key and adjust the screw with a 6 mm Allen key. Increase the pressure by turning the screw clockwise.

To adjust the pressure upwards loosen the locknut with a 17 mm key and adjust the screw with a 5 mm Allen key. Increase the pressure by turning the screw clockwise. Read the pressure directly on the mounted pressure gauge.

The soil sampler can also be activated manually. Push the rubber button (see arrow) at the end of the solenoid valve, and the probe will move up. Push the button on the opposite side (see arrow), and the probe will go down.

Important:

The pressure for lowering the probe must not exceed 50 bar or the soil sampler will be damaged!



Filling with hydraulic oil:

Remove the screw lid at the top of the oil tank and replenish with hydraulic oil.

The WINTEX 1000 is pre-filled with Equivis ZS46 hydraulic oil.

Fuses:

There is one 5-amp fuse in the control box.

4.e. TIGHTENING AND ADJUSTING THE CHAIN

Make sure that the probe is up. Loosen the four 8 mm bolts at the front of the WINTEX 1000 with a 6 mm Allen key. Push the two upper 8 mm bolts down until the upper half of the chain is taut. Then tighten the bolts. Now push the lower 8 mm bolts up until the lower half of the chain is taut. This can be done by squeezing around the bolts with tongs. Then tighten the bolts. Make sure that the chain is taut now.



4.f. ADJUSTING THE SOIL BOX

Adjust the soil box so that it is perpendicular with the soil sampler and so that the drilling head can pass. Adjust the soil box by loosening the nut and by turning the eccentric with the Wintex special key.



4.g. ADJUSTING THE EJECTOR

When adjusting the ejector make sure to stop the probe approximately 10 cm from the start position. Turn off the WINTEX 1000 and activate the emergency stop. Loosen the six Allen screws (three at the top and three below). Then loosen the nut for the probe. Adjust the ejector so that it is placed in the middle of the hole of the probe. Tighten the screws and the nut again, and the probe will move back into the start position. If necessary, adjust the ejector by slightly bending it when it is free from the probe tube.



4.h. CHANGING OIL AND OIL FILTER

Plug the filling hole with a solid plug.



Remember the bolt under the tank.



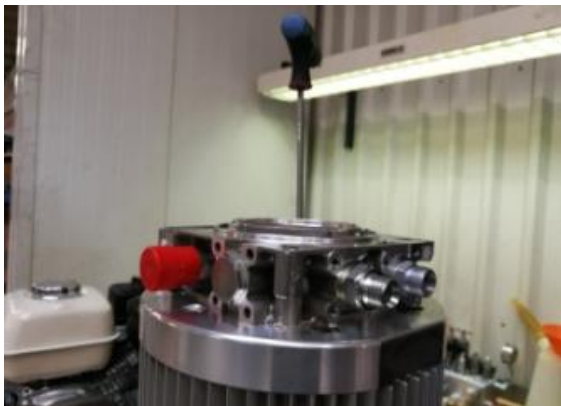
Remove both hoses. Unbolt the engine and the tank



Slide engine and tank out under the cooler bracket and unbolt the engine.



Move the tank into an upright position and unscrew the pump. Replace the filter with a new one. Clean the tank thoroughly.



Then remount pump, tank and engine.



4.i. MAINTENANCE SCHEDULE

Important: After the first eight hours of operation, screws, bolts and nuts must be tightened.

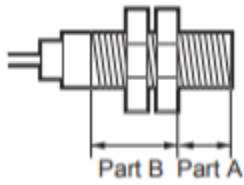
Daily:

- Lubricate chain with oil spray. Avoid the oil to get in touch with the aluminum rails.
- Lubricate the hinges of the soil box.
- Clean the ejector.
- Clean the chain for the rotation of the probe (is easily carried out with compressed air).
- Clean the parts where soil can be accumulated.

Weekly:

- Check and tighten vital parts.
- Check and if necessary change the ejector tip.
- Check and if necessary change the probe.
- Check the oil level of the hydraulics.

4.j. REPLACEMENT OF SENSORS



If a sensor needs to be replaced, do not tighten it with excessive force, and follow these instructions:

- If the nut is within part A which is 16 mm long, it must be tightened with 6 Nm.
- If the nut is within part B, it must be tightened with 15 Nm.

5. a. PROBLEM SOLVING

| PROBLEM | CAUSE | POSSIBLE SOLUTIONS |
|--|--|--|
| The WINTEX 1000 does not start. | <ol style="list-style-type: none"> 1) The fuse is blown. 2) The emergency stop is activated. 3) A switch is defect. 4) There is a lack of power supply. | <ol style="list-style-type: none"> 1) Put in a new fuse. 2) Deactivate the emergency stop. 3) Change the switch. 4) Charge the battery. |
| The probe does not rotate. | <ol style="list-style-type: none"> 1) The fuse is blown. 2) The chain is broken. | <ol style="list-style-type: none"> 1) Put in a new fuse. 2) Replace the chain. |
| The soil cannot be squeezed out of the probe. | <ol style="list-style-type: none"> 1) The ejector tip is worn. 2) The probe is choked up with soil. 3) The probe is bent. 4) The ejector is bent. | <ol style="list-style-type: none"> 1) Change the ejector tip. 2) Clean the probe for soil. 3) Exchange the probe. 4) Adjust the ejector. |
| The ATV is being lifted when the probe goes into the ground. | <ol style="list-style-type: none"> 1) The oil pressure is too high. | <ol style="list-style-type: none"> 1) Reduce the oil pressure. |
| The ejector cannot pass through the probe tube. | <ol style="list-style-type: none"> 1) The ejector is stuck. 2) The chain is dislocated. 3) The soil sampler's movement is blocked by soil. | <ol style="list-style-type: none"> 1) Adjust the ejector. 2) Adjust and tighten the chain. 3) Clean the soil sampler. |
| The probe does not stop spinning. | <ol style="list-style-type: none"> 1) The sensor not adjusted correctly. 2) A wire fell out of the sensor in the drilling head or the middle sensor. 3) The wires which are going to the conmirco are disconnected. | <ol style="list-style-type: none"> 1) Move the sensor in the drilling head closer to the hub for the probe or replace it. 2) Re-connect the wire. 3) Re-connect the wires (I4 or I6). |
| The drilling head will go down, but would not come up. | <ol style="list-style-type: none"> 1) The sensor is not adjusted correctly or the sensor is broken. 2) The hydraulic pressure on the Honda engine is too low. 3) Bad connection to the Honda engine. 4) A nut fell off between the hydraulic cylinder and slide for the soil box. 5) The battery of the ATV is weak and is not sending the full 12 volts. | <ol style="list-style-type: none"> 1) Move the bottom sensor closer to the drilling head, or replace the bottom sensor. 2) Adjust the pressure. 3) Check the connection to the Honda motor. 4) Re-place the nut. 5) Recharge or change the battery. |
| The drilling head hits the soil box. | | <ol style="list-style-type: none"> 1) Adjust the bucket bearing. |

| | | |
|---|--|---|
| The drilling head will not move down or up. | <ol style="list-style-type: none"> 1) There is not enough power to the soil sampler (12 volts needed). 2) One of the three sensors is broken or disconnected. 3) A fuse is blown. 4) The emergency stop is activated. 5) The hydraulic pressure of the Honda motor is too low. 6) A wire for the conmicro is disconnected. 7) The bottom sensor is broken. 8) The grey plug is not plugged in. | <ol style="list-style-type: none"> 1) Recharge or change the battery. 2) Replace or change the sensor. 3) Set in a new fuse. 4) Deactivate the emergency stop. 5) Adjust the pressure. 6) Re-connect the wire. 7) Exchange the bottom sensor. 8) Plug in the grey plug. |
| The probe gets stuck when going up or down. | <ol style="list-style-type: none"> 1) Dirt is stuck behind the ejector tip. 2) The probe is bent. 3) The chain is too loose and came off the sprocket. | <ol style="list-style-type: none"> 1) Remove the dirt. 2) Set in a new probe. 3) Set the chain back on the sprocket and tighten it. |
| The drilling head does not stop when coming up. | <ol style="list-style-type: none"> 1) There is a broken top or middle sensor. 2) The wire going to the sensor in the drilling head came loose. 3) The wire going to the conmicro came loose. | <ol style="list-style-type: none"> 1) Replace the broken sensor. 2) Tighten the wire. 3) Tighten the wire (I4 or I6). |
| The probe ejects the sample onto the ground. | <ol style="list-style-type: none"> 1) The chain in the drilling head came loose. 2) The probe is no longer aligned correctly. 3) The sensor is not adjusted correctly. | <ol style="list-style-type: none"> 1) Tighten the chain. 2) Re-align the probe to eject the soil into the soil box. 3) Move the sensor in the drilling head closer to the hub for the probe or replace it. |
| The drilling head has a lot of horizontal play. | <ol style="list-style-type: none"> 1) The screws holding the wearing plates came loose. 2) The wearing plates are worn. | <ol style="list-style-type: none"> 1) Tighten the screws. 2) Replace the wearing plates. |

For testing the brake contact, the start switch, and the foot switch just activate the ignition on the vehicle, but do not start the motor. If all switches work, the rotation will start. If the rotation does not start, there is an error in one of the switches.

5. b. DIAGNOSTIC SHEET

| Plug | Signal | Function | Out / in | Output | Trouble shooting |
|------|-----------|-------------------------|-------------|---|---|
| A | 12 V | Power supply | 12 V | | |
| B | - | - | - | | |
| C | Can | Terminal | - | | |
| D | - | - | - | | |
| E2 | - | - | - | | |
| E3 | - | - | - | | |
| F2 | Out | Probe up valve | 12 V, 1,7 A | | |
| F3 | Out | Probe down valve | 12 V, 1,7 A | | |
| G2 | Out | Function valve | 12 V, 1,7 A | | |
| G3 | - | - | 12 v, 1,4 A | | |
| H2 | Impulse | GPS | 12 V, 0,1 A | | |
| H3 | Power | Extra start | 12 V | | |
| I2 | In | Probe up sensor | 2,7 V, 10 V | 2,7 V = sensor is active 10 V = sensor is not active | 12 V indicates that the power supply for the sensor / cable is broken. 0 V indicates that the sensor / cable is shorted. |
| I3 | In | Rotation sensor | 2,7 V, 10 V | | |
| J2 | - | - | - | | |
| J3 | - | - | - | | |
| K2 | In | Height sensor 1 (lower) | 2,7 V, 10 V | | |
| K3 | In | Height sensor 2 (upper) | 2,7 V, 10 V | | |
| L2 | Analog in | Foot / brake pedal | 0- 10 V | | |
| L3 | Analog in | Extra start | 0- 10 V | | |