

Trouble Shooting the Wintex 1000s, Wintex 2000, and Wintex 3000

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The key to trouble shooting the Wintex 1000s, Wintex 2000 and Wintex 3000 is to closely watch the process cycle. The soil sampler reacts to the input which it receives. Every time a soil sampling cycle has been completed a new process starts. If something appears to be wrong, it is most likely the previous process had failed. That means that if the soil sampler does not rotate, the problem would not be the rotation process but that the probe had not reached the full depth. Therefore, it is important always to consider what the soil sampler just did rather than what just happened. Experience tells us that most failures are based on electrical issues. Consequently, it is a good idea to test the hydraulic functions manually on the valves before starting to trouble shoot. If everything works properly you would have to look at the electrics. Below you will find a list of the most common issues.

1. Electrical or hydraulic issue?

Sometimes it can be difficult to determine if the electrics or the hydraulics cause the failure. We recommend testing the functions of the soil sampler by operating the valves manually. If the functions work correctly when testing the soil sampler manually, it is most likely that the valves did not receive the electrical signals. If the functions cannot be carried out manually the failure is caused by the hydraulics.

To operate the valve manually you first open the function you test and close the by-pass. If you just close the main valve the pressure will build up to the point where the Motor load will kill the engine.

The manual valves are hard to operate and need a lot of pull or pressure.

7. Activating the hydraulic valves manually



Soil sampler up/down:

The soil sampler goes down when pressing the valve. The soil sampler goes up when pulling the valve.

Probe up/down:

The probe goes down when pressing the valve. The probe goes up when pulling the valve.

Rotation:

Screw counter-clockwise to activate the rotation process. Then press the main switch. **IMPORTANT:** Re-set the button into start position after use.

Do always activate the main switch by pressing it down when activating the other functions.

2. The soil sampler does not react when pushing the start button or the soil sampler starts and stops

This can be caused by a variety of issues. The first step is to check if the power supply is sufficient. If the power of the battery drops below 11 volts, the logo (Figure 1) will stop working. The logo extensions red light will be on if there is a lack of power supply. If the green light is on, the supply is sufficient. If there is a bad connection between the battery and the logo, the logo will stop working. The logo extensions are mounted on and connected with small gray sliding slots. Those can over time be worn due to vibration, moisture and ageing. In this case one or both extensions will no longer be connected and a red light will appear. In some cases, you can slide the slot back and forth a couple of times which might clean the connectors. If this does not help it will be necessary to change the logo extension.

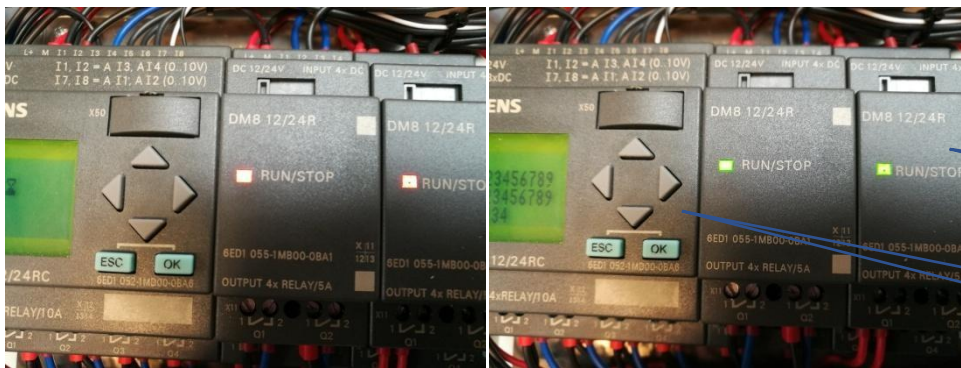


Fig. 1
The logo extensions' red and green light on

If the battery and the connections function satisfactory you have to check if the signal from both start switch and foot switch reach the logo. On the logo's screen you can see if the start switch and the foot switch activate terminal I2 and I3.

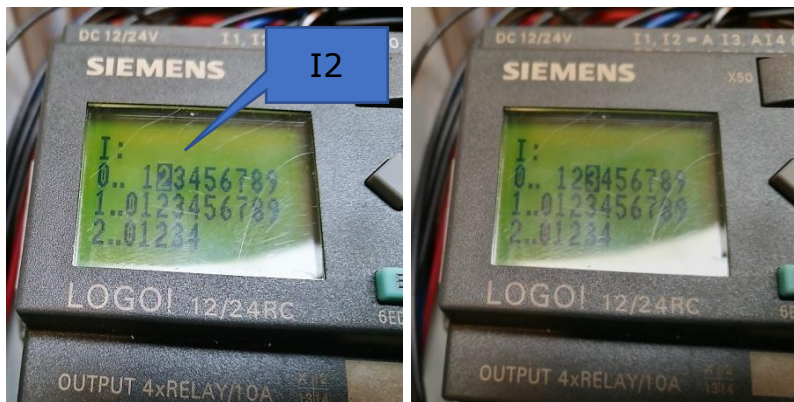


Fig. 2
The start switch (I2) and the foot switch (I3) are activated.

The electrical wiring diagram of the electricity box in the instruction manual shows how sensors and switches are connected to the logo.

If the logo receives the right signals and the soil sampler still does not start, you have to check the relays. Every hydraulic function has its own relay (Figure 3). The relay in question will light up when activated.



Fig. 3
The relay lights up red when it is activated.

If the logo receives the signal and the relay does not light up, there is either a bad connection between the logo and the relay or the logo is defective. Inside the logo there is a small relay that functions like a switch for the big relay. This small relay can over time fault due to moisture and vibration.

If the relay lights up and the machine still does not start, you have to check if the signal reaches the coil. The reason for not reaching the coil could be a bad connection in the wire or in the plug (Figure 4). Since the plug is exposed to vibration and weather the most common issue is corrosion to the wire, loos connection.

If the signal reaches the coil but does not activate the valve, the coil is either faulty or does not work. Try to operate the valve manually. If the valve works the coil is faulty. If it does not work the valve is faulty.



Fig. 4
The coils and connectors for the valves

Plug connected to Coil

If the hydraulics is activated when pushing the start switch but the soil sampler does not go down, it can be because the soil sampler starts to check if it is at the correct starting point before starting to sample (Figure 6). If the logo does not receive a signal from the inner sensor, it will try to raise the soil sampler. The soil sampler also needs a signal from both rotation sensors to make sure that the probe is in start position. Take a look at the logo when turning the soil sampler on to make sure that terminal I4, I15 and I16 are activated before starting sampling. If they are not activated a sensor or cable might be faulty or wrongly adjusted.

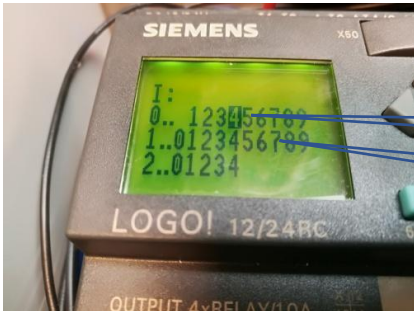


Fig. 5

The inner sensor (I4) is activated

I15 and I16 not activated

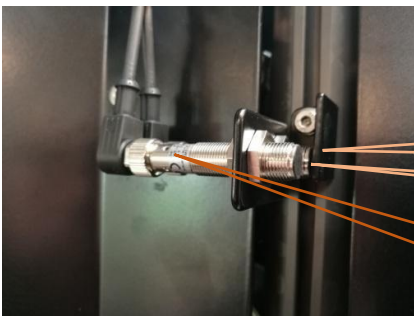


Fig. 6

The sensor is in top position.

Inner sensor is lit in home position

Outside sensor is lit in home position

Sensor lights

3. The soil sampler starts briefly and then it stops again

Check the power supply. Activating the soil sampler sometimes pushes the battery just below 11 volt and the logo stops. If the soil sampler does not use the battery the power raises above 11 volts, and the logo starts up again. Then the soil sampler will start and stop throughout the entire sample process. This can also be caused by a bad connection (see Fig. 1).

4. The soil sampler begins to move downward, but the hammer blows very fast

If it seems that the probe does not go into the ground the accumulator could be faulty. Either the nitrogen pressure in the accumulator is too low or the diaphragm inside is broken. Change or recharge the accumulator. You will find a guide for changing or refilling the accumulator in the instruction manual.

- Before you take off the accumulator, make sure the oil hoses are not caught on top on the wrong side of the hose guide holding up the sampler.
- If the Hydraulic oil is not changed on a regular basis, dirt might accumulate inside between the hammer pin and the hammer housing.

5. The soil sampler goes into the ground but keeps rotating

The soil sampler might not be receiving activation signals from the rotation sensors. This can be caused by wrongly adjusted sensors, a faulty sensor, a faulty cable or by a bad connection between the two logo extensions. The easiest way to determine if the signal reaches the logo is to look at the logo's screen while holding a thin piece of metal in front of the sensor (Figure 7 & 8). If the signal does not reach the logo a sensor or a cable is defective. Both sensors must have the same space (2-3 mm) towards the rotary sensor plate.

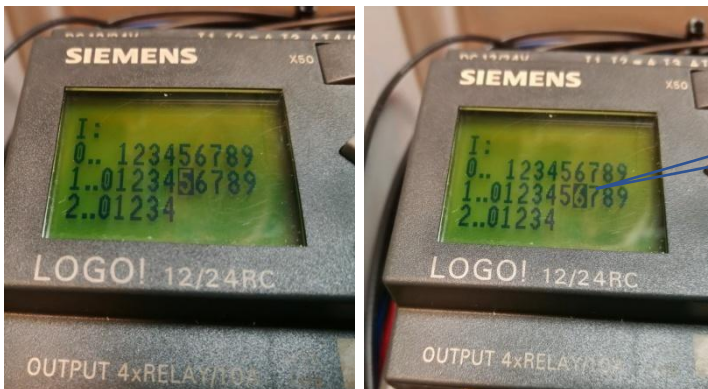


Fig 7: The upper sensor (I5) and the lower sensor (I6) are activated

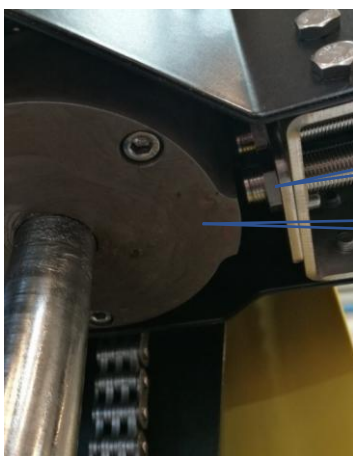


Fig 8

Sensors I5 & I6 for rotation

Rotary Sensor Plate

6. Incorrect sample

If the soil sampler goes into the ground, rotates and “jumps” 3-5 cm with the probe opening towards the first soil box and then rotates to the second box delivering the entire sample in that box the outer sensor I6 is defective. In some cases, this can be solved by switching the inner and outer sensor. Otherwise the sensor must be changed.

7. The probe gets stuck in the ground

There can be different reasons why the probe gets stuck in the ground. First of all, make sure that the bottom plate of the soil sampler is placed firmly on the ground before starting to sample. A slight movement of your vehicle or sampler when the platform is not firmly on the ground can cause the probe to bind in the bottom part of the Wintex. This can be adjusted in the logo and is described in the instruction manual. If the soil sampler stands firmly on the ground but raises from the ground during sampling, you can decrease the pressure of the probe on the hammer valve. If the soil sampler lifts off the ground while sampling, this can cause the soil sampler to move bit and that the probe gets locked in the hole.

Do not raise the pressure of the hammer/probe as it will only lift the soil sampler further from the ground.



Fig. 9
The hammer adjusting valve and the gauge to read the pressure of the probe when it goes down; note that you can only read the pressure while the hammer moves downward.

Grease the sampler grease fitting on a daily basis.

Over time, a worn scraper can make scratches or notches in the probe which might cause that the probe to get stuck. It might appear as if the probe gets stuck in the ground, but it is actually the scraper holding the probe which gets stuck. All scratches and notches in the probe must be removed and the sharp edges of the scraper must be slightly ground or replaced in order to prevent it to happen again.

8. Hydraulics

If the Honda engine is turned on and the main valve is activated, the pressure of the system should be 100-120 bars. During sampling the pressure can decrease to 80 bars which is perfectly normal. It is not possible to increase the pressure further as the engine would stall and the components of the soil sampler are not manufactured to withstand more than 120 bars.



Abb. 10
The gauge for showing the pressure of the system

The hydraulic system should be able to maintain a pressure of at least 80 bars when the oil has reached the operating temperature. If you activate the main valve and the pressure gradually decreases, the pump is worn out.

It is very important to make sure that the hydraulic system is clean of dirt and other debris. Change with the recommended oil and the oil filter according to the recommended intervals. Do also change the filter of the oil filler cap which is very important as it prevents dirt from entering the hydraulic system.

9. Honda Engine

Service the Honda engine on a regular basis as per manual. Most issues we see are due to not changing the Air filter or use fuel with more than 10% ethanol.