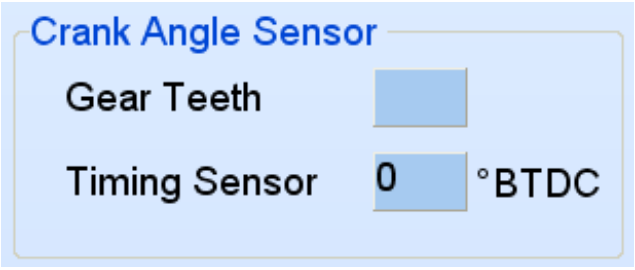
Software Sensor Timing



This setting, Timing Sensor °BTDC, will tell the software at what degrees the sensor is situated. The ECU will calculate from this position where to advance or retard the timing to ensure that the Map Timing is accurate with the actual timing on the engine.
In the PC software you must enter the Timing Sensor °BTDC for the specific distributor. If it has a standard magnetic pickup it usually is around 24 ° BTDC. Note however that if you are converting your distributor then a 0 or 1 ° fazing for the sensor is preferable.

To check if this setting is correct disconnect the injector fuses and crank the engine with a timing light. See if the light flashes between 5 and 10°. If not adjust the value till it does.
Now you can start the engine. It should start easy and run smoothly. Should the engine tend to stop during cranking, it means the timing is too fast. Increase this value 10° at a time. Should it sound as if it wants to start but dies, it means that the timing may be too slow. Decrease this value 10° at a time. If there is a misfire of any sort, stop immediately and do faultfinding. It may be that the magnetic pickup is wired wrong causing the spark to fire between the poles. If it is a hall or optic sensor the timing edge may be wrong. See edge setting under active sensors.

After the engine has started, check with a timing light that your engine timing correlates with the software timing block. If not adjust the Timing Sensor °BTDC value until they match. Now perform a normal timing adjustment according to the PC timing on the timing maps. Note that adjustable timing light can be misleading on wasted sparks system. Divide the timing light degrees by two.

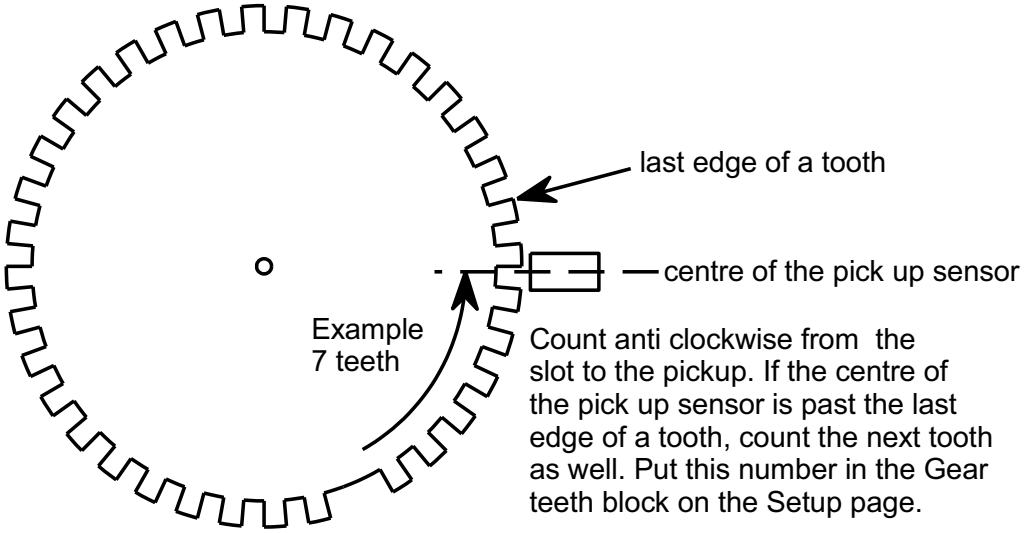
Listen for spark in the distributor cap. If you hear a spark then the fazing degrees are wrong and there is a gap between rotor and pole. An old cap with a hole across one of the poles can be used. Flash the timing light into the hole to check for correct rotor position. Incorrect fazing will also hang the Laptop and freeze the PC Software.

4.12.2 Setting Crank Trigger Timing

This trigger consist of a single sensor and some form of crank gear like 60-2 or 36-1 etc. This setup requires 2 kinds of settings. One is on which teeth after the slot, TDC is located. The other setting is a fine tune setting between the teeth to correctly align software timing with engine timing.
If you can see the gear put the engine on TDC. Count the number of teeth from the slot to the sensor in an anti-clockwise direction. If the trailing edge of the tooth under the sensor is past the sensor in a clockwise direction, count the next teeth as well. Enter this number of teeth in the software under Gear Teeth. Enter 0 in Timing Sensor °BTDC field. The car should start. Check with the timing light to see if the software timing correlates with the engine timing. If the difference is less than the tooth pitch degrees, adjustments can be made on the Timing Sensor °BTDC field. Otherwise add or subtract one tooth and try again. If you can't see the gear you can enter speculative values in Gear Teeth. Disconnect the injector fuses and crank with a timing light. Start with 4 and increase 2 at a time. When it flashes around 10 degrees save and proceed with starting.

If a magnetic pickup is used, ensure that the positive and negative of the magnetic sensor are correct. If they are connected wrong way round, the timing will retard instead of advance and the fazing will be wrong. Sometimes the engine will start but it may not rev up. You can also see this on the software if the rpm bar jumps erratic between two values not next to each other. There should also be error codes displaying at the bottom.

Note that with Venus 2.5 onward you may enter teeth up to the imaginary ones that are not there. For instance if the pickup sits in the slot you may enter 59 or 60 which is the 2 teeth missing. The ECU will calculate them as if they are there. It will then adjust the fazing of the coils and injectors with software. That means wiring will always be standard colors.



The trigger point of the sensor is the centre of the sensor to the last edge of the tooth or trigger plate (Trigger Edge 0°). On a 36-1 gear the pitch is 10 degrees. To adjust the Timing BTDC block you can guess a setting for the centre of the pickup between the trigger edges of the adjacent teeth. See the sketch below. When the engine is running, adjust it till the software correlates with the timing light.

