

36-1 Trigger Wheel Alignment

The crank sensor needs to be positioned such that, with the engine at 90° BTDC on cylinder #1. The centre line of the sensor will be pointing at the missing tooth **trailing edge** - diagram 1.

The clearance between the sensor and the trigger wheel teeth wheel should be 0.89mm ± 0.11mm (35thou ± 5thou).

Although the position of the gap can be 0° – 360° without affecting the injector/ ignition timing, it is recommended that the reference position should not be at TDC for any cylinder. For the most reliable detection, the reference position should be 60° – 120° BTDC. The default reference position is 90° BTDC. Any slight error in the reference point position can be corrected using the control software.

From the “Setup” dropdown menu, select “distributor/ HT Pickup”. With the ECU connected and powered, the current reference and ignition timing lock settings are displayed. These values can be changed by clicking in the box and using the +/- keys to advance/ retard the settings.

Clicking “Lock ignition Timing” will instruct the ECU to run at a fixed timing advance regardless of engine speed, load or map settings. This allows you to compare the set ignition advance timing with the actual ignition advance timing measured with timing light. If you measure an error, click the “Reference” box and adjust this with the up/ down arrow keys until the timing light shows the engine running with the ignition advance that the ECU is locked at. Click the OK or “Unlock Ignition Advance” buttons to return to the mapped ignition settings.

As it may be difficult to find 90° BTDC on the engine, you can put the engine at TDC and count back the number of teeth to the sensor. In the example below (diagram 2), the missing tooth has passed the sensor by 9 teeth (9 teeth will give you, $9 * 360/360 = 90^\circ$, the ECU’s “Current Reference”).

As a check, with the engine at TDC, the sensor will be pointing at the trailing edge of a tooth. The trailing edge of the (imaginary) missing tooth will then be positioned exactly 90° (9 teeth) away in the direction of rotation. Any error can be corrected in the software as mentioned previously. (Diagram 3).

Diagram 1

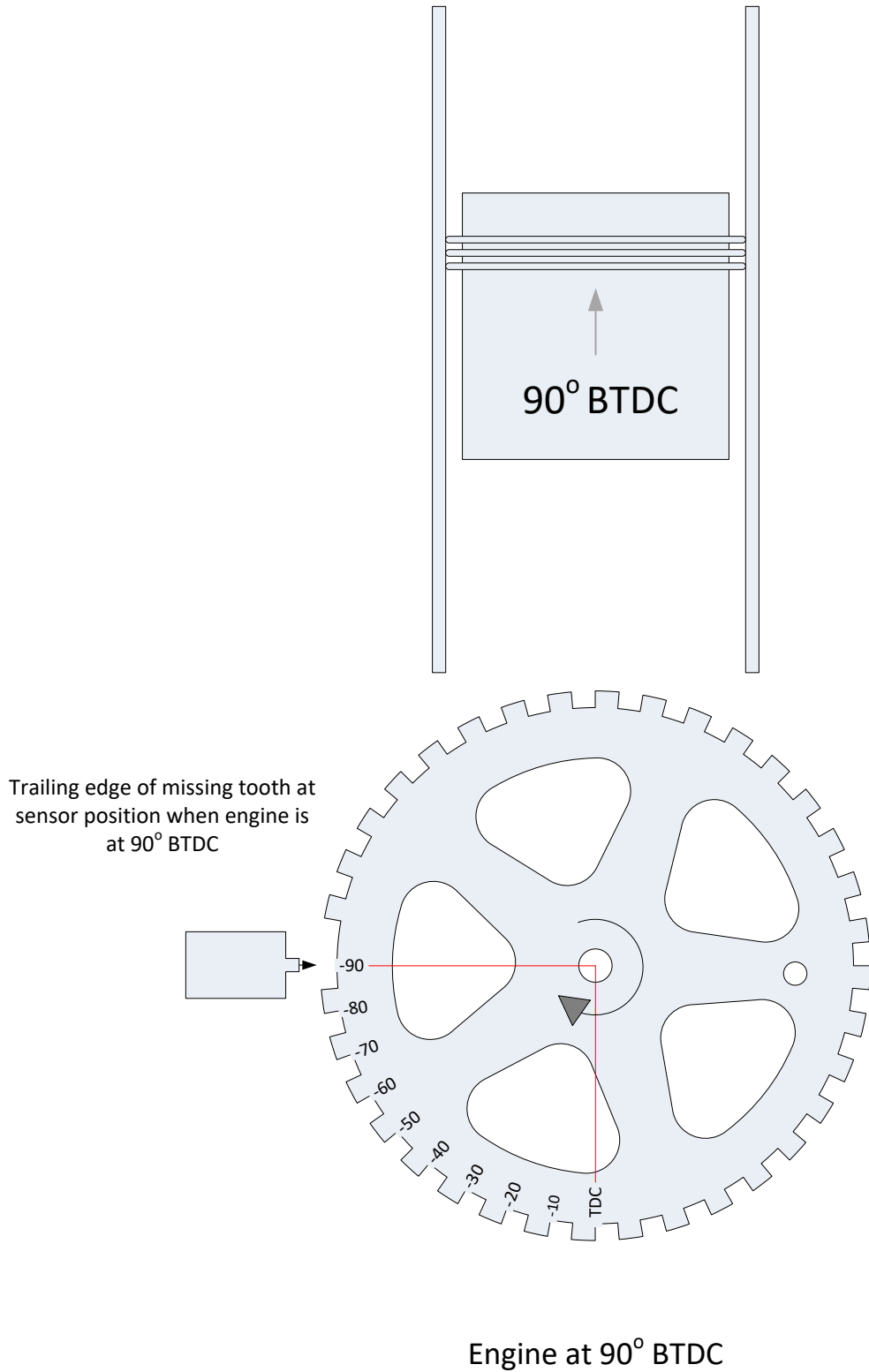
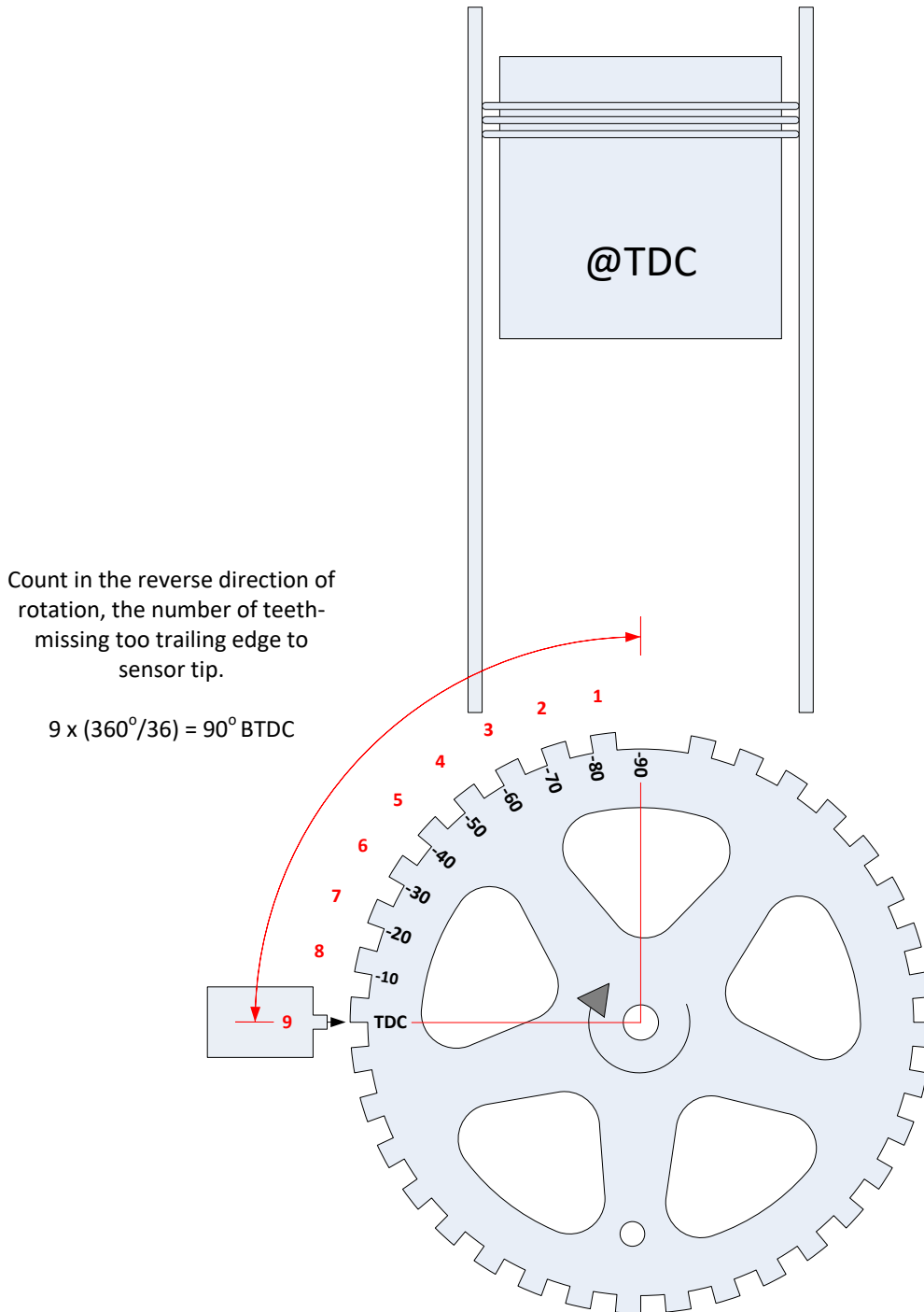
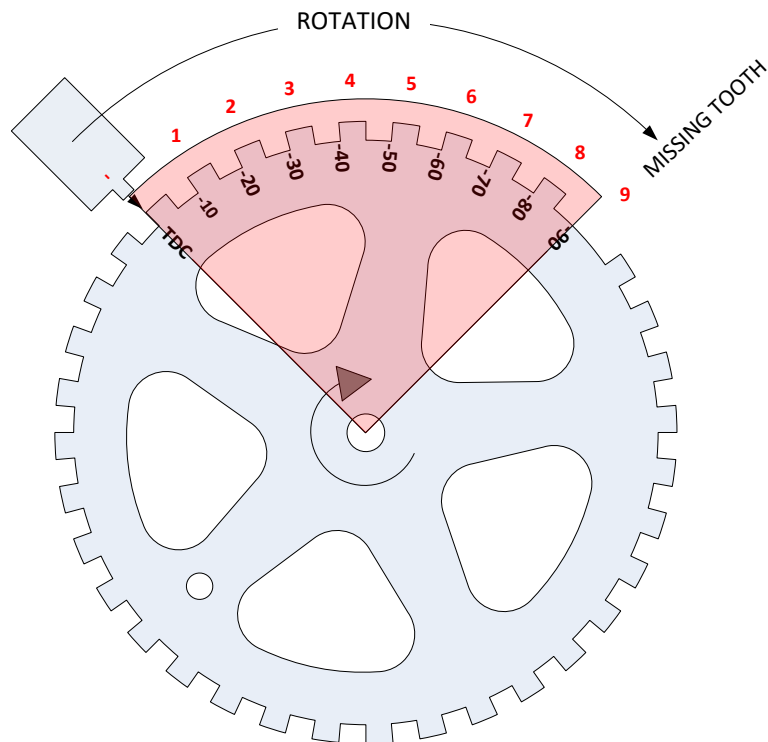


Diagram 2



Engine at TDC

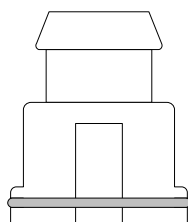
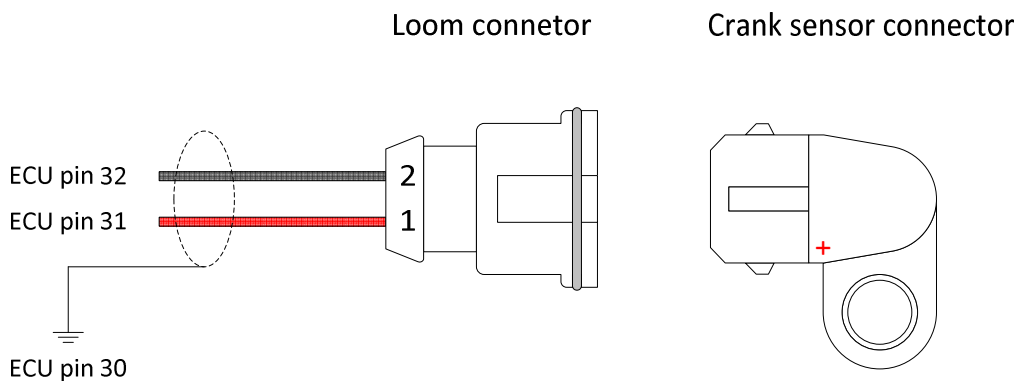
Diagram 3



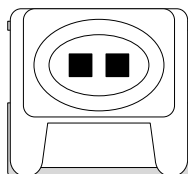
Engine at TDC

With the engine at TDC, cylinder No. 1: the missing tooth trailing edge is 9 teeth away from sensor.

**Ford
Inductive Crank Sensor**



1 2



View from cable entry

Terminal	Function	EMR Colour	K6 ECU	NOTES
1	Signal	Red	31	
2	Signal ground	Black	32	
	Screen	Slate	30	

Screen connected to ground at ECU end ONLY

NOTE: ECU pin 32 is common to both Crank Position and Cam Position sensors