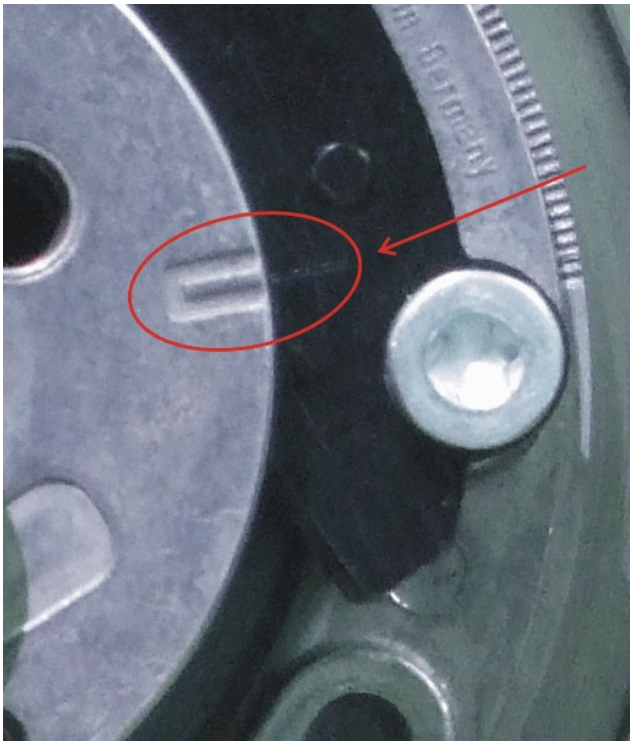
Setting Ignition Timing

PVL
50ohm stator 1424
58mm rotor

Setting ignition timing for the Counter-Clockwise rotated engine



Ignition timing needs to be set to 23deg, when marks on the rotor and stator are aligned.
Set ignition timing with dial gauge, or timing wheel.

Set ignition timing with degree wheel:
Find piston top dead centre (TDC). With help of timing wheel, rotate crankshaft clockwise for 23deg and carefully fix rotor and stator at that position.

Set ignition timing with dial gauge:
It is necessary to convert ignition timing from deg to millimetres. Information about engine stroke and conrod length is needed for calculation.
Use following equation:

α = ignition advance in degrees

T = ignition advance in mm

R = engine stroke divided by 2 in mm

L = conrod length in mm

$$T = L + R \cdot (1 - \cos\alpha) - \sqrt{L^2 - (R \cdot \sin\alpha)^2}$$

Example:

$\alpha = 23\text{deg}$

$R = 54{,}5 / 2 = 27{,}25mm$

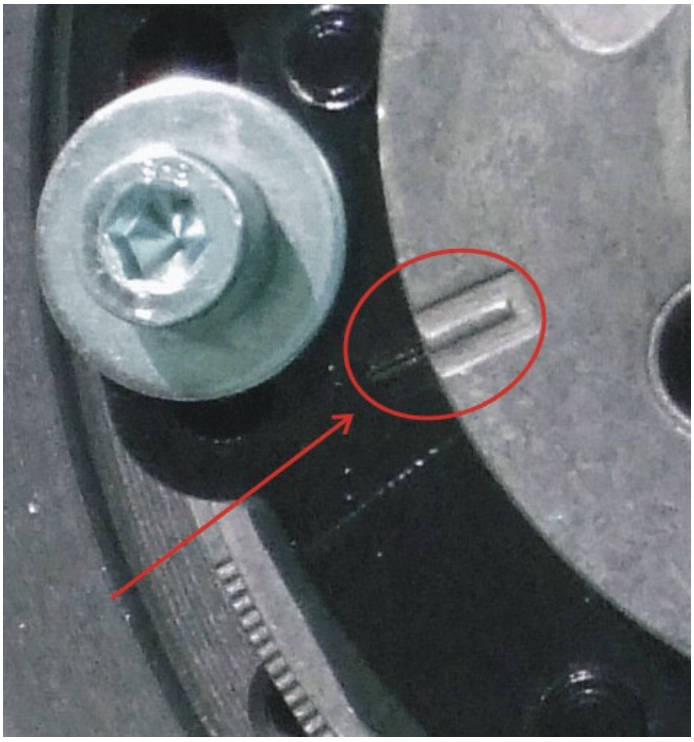
$L = 108\text{mm}$

$T = 108 + 27{,}25 \cdot (1 - \cos(23)) - \sqrt{108^2 - (27{,}25 \cdot \sin(23))^2} = 2{,}69mm$

Use dial gauge to find piston top dead centre (TDC) and rotate crankshaft clockwise to calculated ignition timing position in millimetres (in the example is 2,69mm). Make sure marks on the stator and rotor aligns and carefully fix rotor and stator.

For the counter-clockwise rotated engine, compensation curve is set by default to 0deg at all rev points.

Setting ignition timing for the Closkwise rotated engine



Ignition timing needs to be set to 23deg, when marks on the rotor and stator are aligned. Set ignition timing with dial gauge, or timing wheel.

Set ignition timing with degree wheel:

Find piston top dead centre (TDC). With help of timing wheel, rotate crankshaft counter clockwise for 23deg. Make sure marks on the stator and rotor are aligned and carefully fix rotor and stator.

Set ignition timing with dial gauge:

It is necessary to convert ignition timing from deg to millimetres. Information about engine stroke and conrod length is needed for calculation.
Use following equation:

α = ignition advance in degrees

T = ignition advance in mm

R = engine stroke divided by 2 in mm

L = conrod length in mm

$$T = L + R \cdot (1 - \cos\alpha) - \sqrt{L^2 - (R \cdot \sin\alpha)^2}$$

Example:

$\alpha = 23\text{deg}$

$R = 54{,}5 / 2 = 27{,}25mm$

$L = 108\text{mm}$

$$T = 108 + 27{,}25 \cdot (1 - \cos(23)) - \sqrt{108^2 - (27{,}25 \cdot \sin(23))^2} = 2{,}69mm$$

Use dial gauge to find piston top dead centre (TDC) and rotate crankshaft counter-clockwise to calculated ignition timing position in millimetres (in the example is 2,69mm). Make sure marks on the stator and rotor aligns and carefully fix rotor and stator.

For the clockwise rotated engine, following compensation curve need to be set:

1) 500rpm / 0deg
2) 1000rpm / 3,0deg
3) 2000rpm / 3,3deg
4) 3000rpm / 3,5deg
5) 4000rpm / 4,0deg
6) 5000rpm / 5,0deg
7) 6000rpm / 5,5deg
8) 7000rpm / 5,5deg
9) 8000rpm / 5,5deg
10) 10000rpm / 5,5deg
11) 12000rpm / 5,5deg
12) 14000rpm / 5,5deg
13) 16000rpm / 5,5deg
14) 18000rpm / 5,5deg
15) 20000rpm / 5,5deg