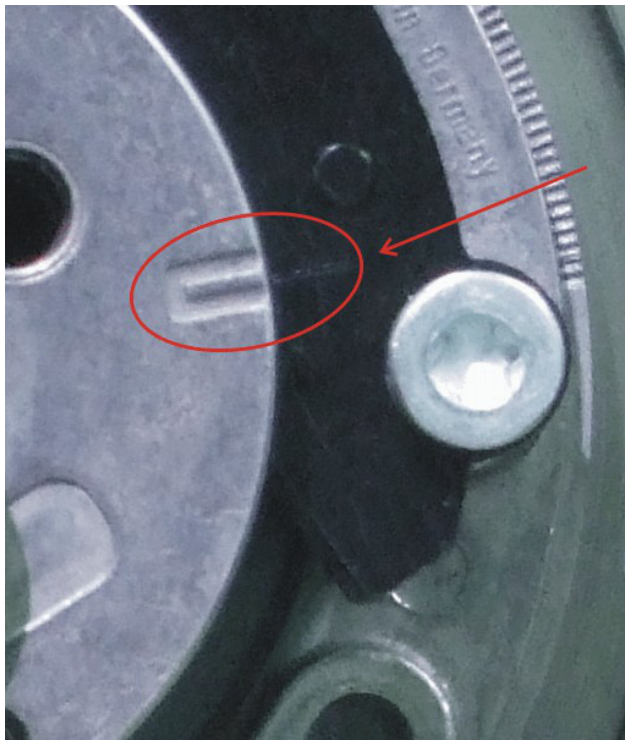


Setting Ignition Timing PSR-P02

PVL
50ohm, 1850 windings, stator 1419, 1424
171ohm, 4000 windings, stator 1443
58mm rotor

Setting ignition timing for the Counter-Clockwise rotated engine



Ignition timing needs to be set to 30deg, 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 30deg 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 are 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:

$\alpha = 30\text{deg}$

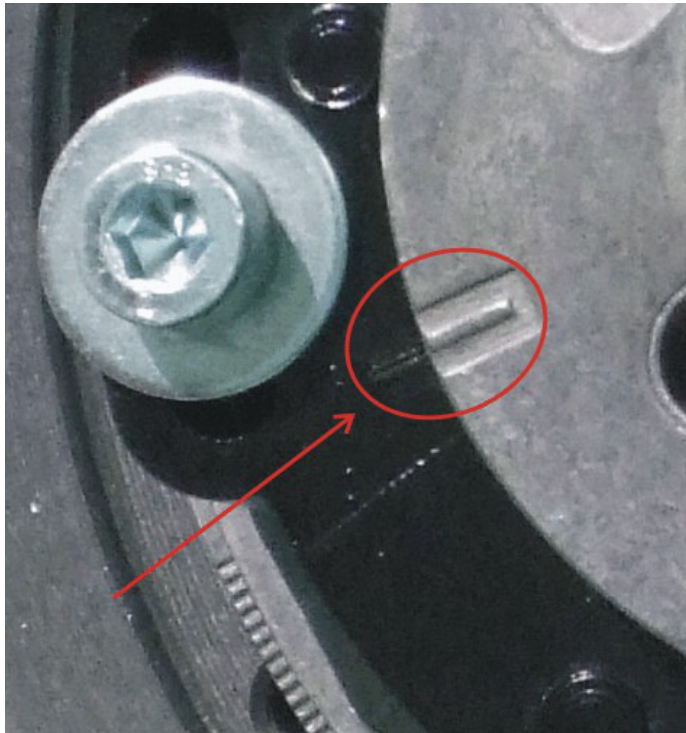
$R = 54,5 / 2 = 27,25\text{mm}$

$L = 108\text{mm}$

$$T = 108 + 27,25 \cdot (1 - \cos(30)) - \sqrt{108^2 - (27,25 \cdot \sin(30))^2} = 4,51\text{mm}$$

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 4,51mm). Make sure marks on the stator and rotor aligns and carefully fix rotor and stator.

Setting ignition timing for the Clockwise rotated engine



Ignition timing needs to be set to 30deg, 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 30deg. 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:

$\alpha = 30\text{deg}$

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

$L = 108\text{mm}$

$$T = 108 + 27,25 \cdot (1 - \cos(30)) - \sqrt{108^2 - (27,25 \cdot \sin(30))^2} = 4,51\text{mm}$$

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 4,51mm). Make sure marks on the stator and rotor aligns and carefully fix rotor and stator.

Compensation curves and maximum advances for PVL stators:

PVL 1419:

Compensation curve:

500rpm @ 5,0deg
1000rpm @ 5,0deg
2000rpm @ 2,2deg
3000rpm @ 1,0deg
4000rpm @ 0,0deg
5000rpm @ 0,0deg
6000rpm @ -0,5deg
7000rpm @ -1,0deg
8000rpm @ -2,0deg
10000rpm @ -5,5deg
12000rpm @ -7,0deg
14000rpm @ -7,0deg
16000rpm @ -6,5deg
18000rpm @ -6,0deg
20000rpm @ -5,0deg

Maximum programmable advance:

500rpm @ 32,0deg
1000rpm @ 36,8deg
2000rpm @ 38,6deg
3000rpm @ 38,4deg
4000rpm @ 38,5deg
5000rpm @ 38,0deg
6000rpm @ 38,0deg
7000rpm @ 37,7deg
8000rpm @ 37,8deg
10000rpm @ 37,5deg
12000rpm @ 37,0deg
14000rpm @ 37,0deg
16000rpm @ 36,5deg
18000rpm @ 36,0deg
20000rpm @ 35,0deg

PVL 1424:Compensation curve:

500rpm @ 4,5deg
1000rpm @ 4,5deg
2000rpm @ 1,0deg
3000rpm @ -0,6deg
4000rpm @ -1,5deg
5000rpm @ -2,0deg
6000rpm @ -2,5deg
7000rpm @ -3,1deg
8000rpm @ -4,0deg
10000rpm @ -7,5deg
12000rpm @ -9,0deg
14000rpm @ -8,4deg
16000rpm @ -7,5deg
18000rpm @ -6,8deg
20000rpm @ -6,0deg

Maxmum programmable advance:

500rpm @ 32,5deg
1000rpm @ 37,3deg
2000rpm @ 39,8deg
3000rpm @ 40,0deg
4000rpm @ 40,0deg
5000rpm @ 40,0deg
6000rpm @ 39,9deg
7000rpm @ 39,8deg
8000rpm @ 39,8deg
10000rpm @ 39,5deg
12000rpm @ 39,0deg
14000rpm @ 38,4deg
16000rpm @ 37,5deg
18000rpm @ 36,8deg
20000rpm @ 36,0deg

PVL 1443:Compensation curve:

500rpm @ 0,0deg
1000rpm @ 0,0deg
2000rpm @ 0,0deg
3000rpm @ 0,0deg
4000rpm @ 0,0deg
5000rpm @ 0,0deg
6000rpm @ 0,0deg
7000rpm @ 0,0deg
8000rpm @ 0,0deg
10000rpm @ 0,0deg
12000rpm @ 0,0deg
14000rpm @ 0,0deg
16000rpm @ 0,0deg
18000rpm @ 0,0deg
20000rpm @ 0,0deg

Maxmum programmable advance:

500rpm @ 37,0deg
1000rpm @ 41,8deg
2000rpm @ 40,8deg
3000rpm @ 39,4deg
4000rpm @ 38,5deg
5000rpm @ 38,0deg
6000rpm @ 37,4deg
7000rpm @ 36,7deg
8000rpm @ 35,8deg
10000rpm @ 32,0deg
12000rpm @ 30,0deg
14000rpm @ 30,0deg
16000rpm @ 30,0deg
18000rpm @ 30,0deg
20000rpm @ 30,0deg