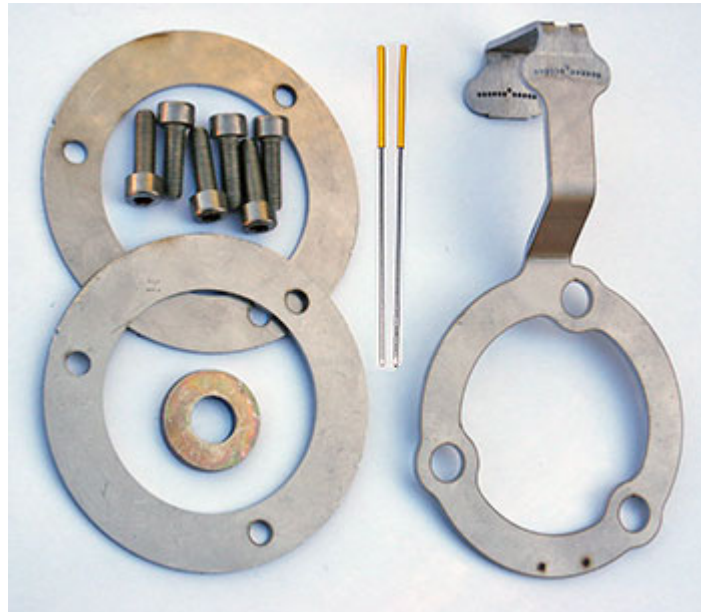


PORSCHE 928

32 VALVE TIMING INDICATOR INSTRUCTIONS



Zweiunddreißigventilsteuerzeitenanzeiger

1.0

cams@mrtubby.net

Tools

Breaker bar with 27mm socket

3/8" torque wrench with 17mm socket

17mm, 32mm wrenches

4mm allen key

Conventions used in text

Left is USA drivers side, right is passenger side.

Author assumes that reader has access to workshop manuals and has the basic knowledge, tools, and skills to change a timing belt.

Notes are in italic font.

Warnings

Do not run engine with indicator or spacer installed!

Always counter hold the cam bolt shoulder washer with 32mm wrench while loosening or tightening cam bolt.

Turn crankshaft clockwise.

For off road use only!

Initial Reference Position

Draw a vertical line to indicate the initial measurement for: right cam | left cam. Also write the amount of advance or retard indicated. *One hole is one cam degree. Advance is left of zero, retard right, the opposite of the crankshaft balancer.*





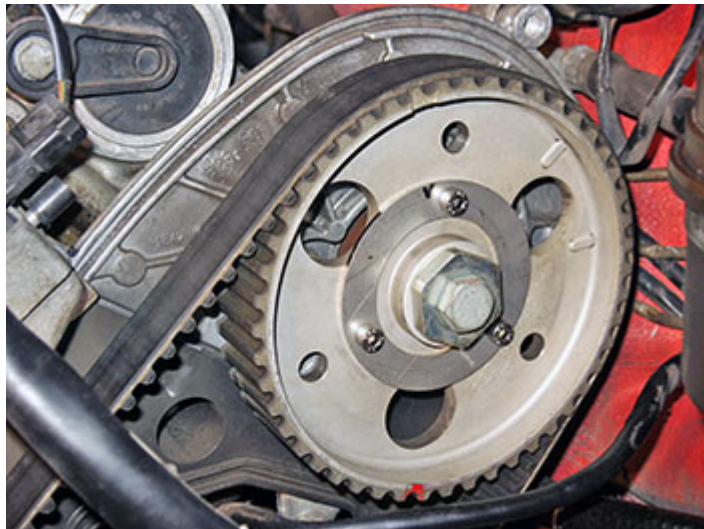
Rotate the crank clockwise using the crank bolt, until the balancer indicates cylinder #1 Top Dead Center (**0 | T**).

The large cast indentation on the front of the cam gear and/or small notch on the rear, should be pointing upwards near the 'V' notch cast in the aluminum of the rear timing belt cover.

If the indentations/notches on the cam gears are pointing downward, then the engine is at cylinder #6 TDC.

Install clamp rings with 5mm allen head bolts on both left and right cam gears.

One bolt is offset, so the clamp rings will fit in one position only.



Slip indicator holder over clamp ring bolts.



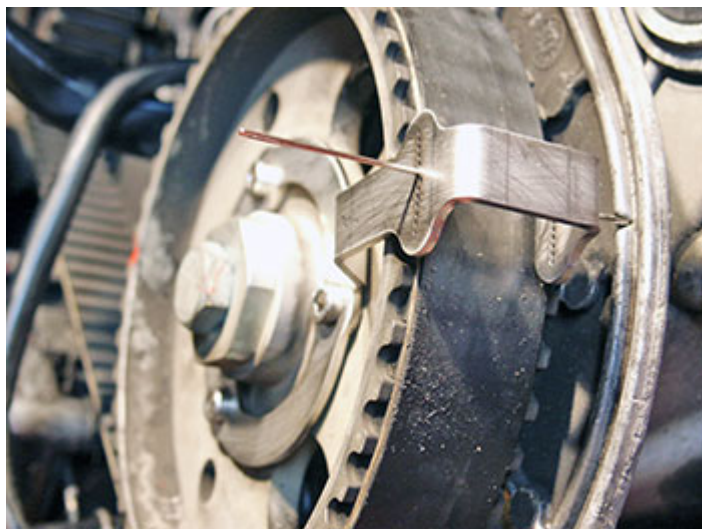
Insert indicator into hole that most closely fits into the housing indentation 'V'.

Each hole is one cam degree (two crank degrees). Left of zero is advance, right retard.

It is possible that the needle will not rest in the absolute center of the 'V'.

If this is the first measurement for this engine, I suggest using the drawing on page 1 to show precisely where the indicator hits in the 'V' for each side cam, so you have a precise reference point.

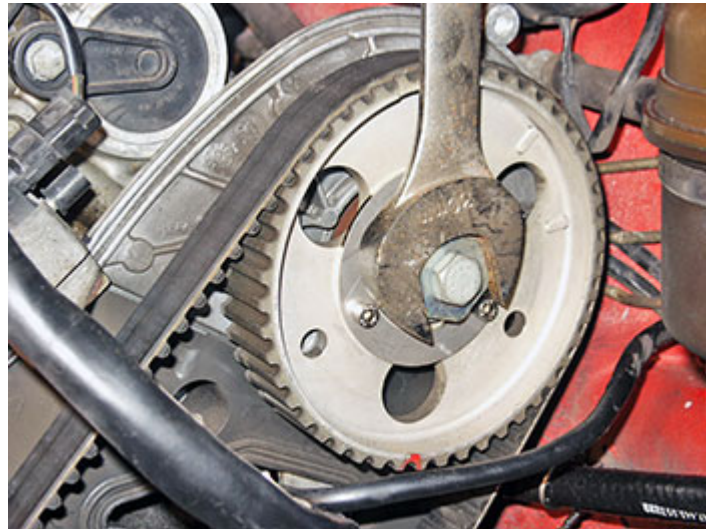
This is hereafter called the 'Initial Reference Position' or IRP.





Tighten clamp ring bolts.

Counter hold cam bolt washer
and loosen cam bolt.



Reinstall cam bolt with spacer.

Counter hold cam bolt washer,
tighten cam bolt to specification
using torque wrench.



For advancing, or clockwise adjustment, slide indicator into the hole that corresponds to the amount of advance desired, with crankshaft at #1 TDC (0 | T).

Loosen the clamp ring bolts and using a wrench on the cam bolt, rotate the cam bolt clockwise until the indicator is at the IRP.

For retarding, or counter-clockwise adjustment, there is too much valve spring pressure to use the cam bolt to rotate the cam.

Remove indicator holder and rotate the crankshaft clockwise using the crank bolt until 20 degrees before #1 TDC (2|0).

Replace indicator holder, and slide indicator into the hole that corresponds to the amount of retard desired.

Rotate crank clockwise using the crank bolt until the indicator is at the IRP.

Loosen the clamp ring bolts, and while holding the cam bolt with a wrench, rotate the engine clockwise to #1 TDC (0 | T).



While still holding cam bolt with wrench, tighten clamp ring bolts. Remove indicator.

Counter hold cam bolt washer, loosen and remove cam bolt. Reinstall cam bolt without spacer. Counter hold cam bolt washer, tighten cam bolt to specification using torque wrench.

Using crank bolt, rotate crankshaft again to #1 TDC (0 | T). Use indicator to recheck cam position.

When a consistent reading is attained after rotating crankshaft, recheck cam bolt torque using torque wrench, and remove clamp ring. *Confirm that spacer is not installed!*