

Curve

CURVE	ADVANCE STARTS [RPM CRANKSHAFT]	MAX. ADVANCE [RPM]	[DEGR. CRANKSHAFT]	VAC. ADV. STARTS [MMHG]	MAX. VAC. ADV. [MMHG]	[DEGR.]	REPLACES	REMARK
0	1000	6100	31	120	307	10	BOSCH 0 231 159 001	Porsche 911/T&L 2.0L '66-'68
1	700	6600	36	120	307	10	BOSCH 0 231 121 006	Porsche 911 2.0L '64-'65
2	800	6600	22	120	307	10	BOSCH 0 231 159 002	Porsche 911S 2.0L '66-'68
3	1000	6400	32	120	307	10	BOSCH 0 231 159 006 ... 007	Porsche 911E/S 2.2L '68-'71
4	1200	6400	40	120	307	10	BOSCH 0 231 159 008	Porsche 911T 2.0/2.2L '66-'71
5	1000	6800	28	87	120	9	BOSCH 0 231 169 001	Porsche 911T&L 2.0L '68-'69 NEG.VAC!
6	1200	6000	30	93	140	10,0*	BOSCH 0 231 169 003 ... 004 ... 005	Porsche 911E/T/S 2.4L '71-'72 NEG.VAC!
7	1200	6000	30	93	140	10,0*	BOSCH 0 231 169 008 ... 009 ... 010	Porsche 911E/T/S 2.4L '72-'73 NEG.VAC!
8	1000	5700	25	73	120	10,0*	BOSCH 0 231 169 011	Porsche 911 Carrera 2.7L '72-'73 NEG.VAC!
9	1200	6000	30	107	140	10,0*	BOSCH 0 231 184 001/002/003/007	Porsche 911E/T/S 2.4L 2.7L '73-'77 NEG.VAC!
A	1400	5800	25	73	120	10,0*	BOSCH 0 231 184 004	Porsche 911 Carrera 2.7L '73-'75 NEG.VAC!
B	1200	6000	30	107	140	10,0*	BOSCH 0 231 184 005 ... 006	Porsche 911 Carrera 3.0L '75-'77 NEG.VAC!
C	500	3400	22	100	180	20,0*	BOSCH 0 237 301 001 ... 002	Porsche 911 Turbo Carrera (USA) '75-'77 NEG.VAC!
D	1000	6100	31	120	307	10	BOSCH 0 231 159 001	Porsche 911/T&L 2.0L '66-'68
E	1000	6100	31	120	307	10	BOSCH 0 231 159 001	Porsche 911/T&L 2.0L '66-'68
F	1000	6100	31	120	307	10	BOSCH 0 231 159 001	Porsche 911/T&L 2.0L '66-'68

* Vacuum
retard

Vacuum retard / negative vacuum installation and information

Some classic cars have a mechanical ignition distributor with vacuum retard. In these systems, the ignition timing is retarded at idle. The initial advance timing is only applied when the throttle is pressed, meaning the engine is under load.

In short: at idle, the engine fires close to top dead center (TDC). When the engine is under load, the initial advance timing is applied.

How to set up a 123ignition with a negative vacuum curve?

1. Set the engine to top dead center (TDC) on cylinder 1 during the compression stroke.
2. Install the 123ignition according to the manual, but do not yet place the distributor cap.
3. Turn on the ignition. Rotate the distributor housing against the rotor's direction of rotation:
 - If the rotor turns clockwise (CW) when the engine runs, turn the housing counterclockwise (CCW).
 - If the rotor turns counterclockwise (CCW), turn the housing clockwise (CW).
4. Slowly and carefully rotate the housing until the green LED lights up, then stop precisely at that point. This point corresponds to 0 degrees for the 123ignition.
5. You have now set the 123ignition's 0-degree point to top dead center. The ignition will now fire at TDC during startup.
6. Secure the distributor, turn off the ignition, and connect the black wire to the coil.

Why do some ignition distributors have vacuum retard?

Due to stricter environmental regulations, vehicles needed to produce fewer harmful emissions at idle. When an engine idles with advance, it can generate higher emissions of pollutants.

To counteract this, vacuum retard distributors were developed. These retard the ignition timing at idle, making the exhaust gases cleaner. However, ignition advance is still needed under (partial) load, so the retard function is only active when the engine is idling.

How does vacuum retard / negative vacuum work in the 123ignition?

The 123ignition with a single vacuum port does not have a second connection for a vacuum retard hose. Instead, a special method is used:

- The 123ignition is set at top dead center (0 degrees).
- At idle, when vacuum is high, the programmed curve ensures that no advance is applied, meaning the engine fires near TDC.
- At partial or full load, the vacuum decreases, and the 123ignition adds a certain number of degrees of advance—the same amount as the original, initial advance timing.
- Centrifugal advance is then added on top of this initial advance timing.