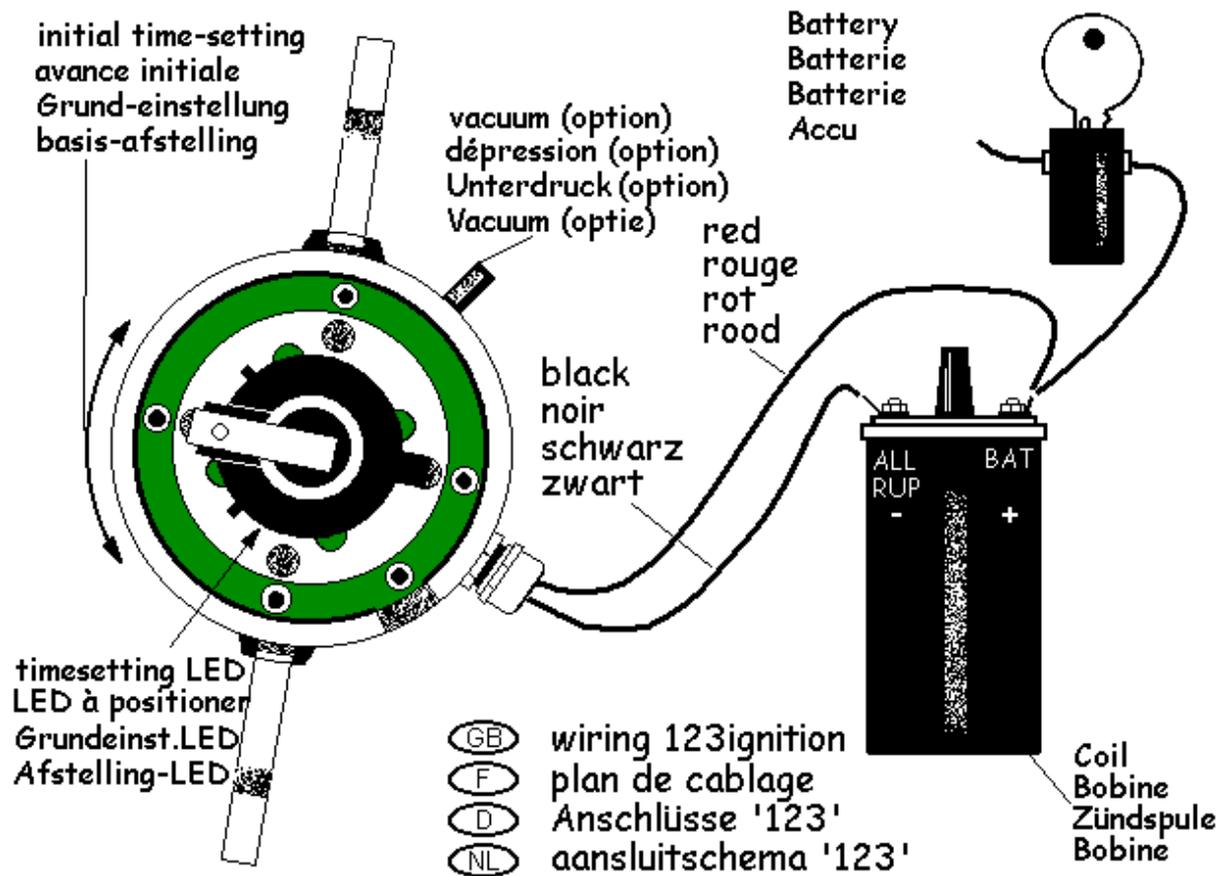


Installation instructions for the '123ignition'

type : 123\VW-R & 123\VW-R-V
for : VW types 1,2&3,181,Porsche 356, Porsche 912 & tuning engines
for 6 or 12 Volt cars, negative earth only.



IMPORTANT

Please read the entire instructions before you begin installation. If after reading you are unsure of the procedure to be followed, please ask someone who knows. Remember to work safely.

STEP 1: Find the static timing point

On the old distributor, note the position of the ignition wire to the number one cylinder. Remove the distributor cap and turn the engine in its normal direction so that the rotor almost points to the number one cylinder position. Now carefully turn the engine further until the static timing point

(check the 'technical data') is indicated on the pulley.

The engine is now at the static timing point, near the end of the compression stroke for the number one cylinder.

STEP 2: Out with the old, in with the new

You may wish to verify that the correct advance curve has been selected in your '123' : using a 5mm Allen wrench remove the hexagonal plug in the bottom face of the housing. Inside the hole you'll find a 16 position rotary switch. ('0' to 'F')



curve selector '0' to 'F'
sel. de courbe d'avance '0' à 'F'
Kurve-schalter '0' bis 'F'
Curve-schakelaar '0' tot 'F'

Check the technical data for the proper setting. Select the curve of your choice ; re-insert the plug and tighten securely.

Now remove the spark plug wires and coil wire from the old distributor-cap and remove the old cap. Disconnect the points wire from the coil. Unscrew the hold down nut at the base of the distributor and pull the old unit out.

Now remove the distributor-cap from the '123' and carefully insert the '123' in the hole, turning the rotor until the drive gears mate and the unit falls into place. Rotate the housing of the '123' so that the cables come out conveniently. If necessary, the drive gear can be repositioned on the shaft to accommodate a different rotational position. To do this, remove the '123' and carefully remove the retaining spring from the drive gear, then use a small punch to tap out the pin and re-assemble at an angle more suitable to your needs.

STEP 3: Static timing the '123'

Connect the red wire to the BAT-terminal of the coil, according to the schematic. For now, do NOT connect the black wire. Turn on the ignition.

Slowly turn the housing of the '123' in a counter-clockwise direction, until the green LED just lights up. The LED shines through one of the four holes in the aluminium disc below the rotor. While turning, also press the rotor in a counter-clockwise direction, to remove any free play in the drive gear. Finally, tighten the '123' securely, as it is also the electrical ground of the '123'.

Turn off the ignition.

STEP 4: Finish the wiring

Connect the black wire to the RUP-terminal of the coil, according to the schematic.

Connect the spark plug leads in the proper sequence to the cap, starting with the wire for the number one cylinder at the position pointed to by the rotor of the '123'.

Also connect the high voltage wire from the coil to the center position of the cap. Attach the cap to the distributor. Keep the red and black wire well away from the high voltage leads and away from moving parts, using tie-wraps or other suitable means.

Connect the vacuum-tube from the carburettor to the ignition (only for a 123\VW-R-V)

STEP 5: Start and test drive

You can now start your engine. If you have worked accurately, your ignition should be adjusted well enough to take a test drive. To achieve ultimate accuracy a fine adjustment using a stroboscope should be performed. (check the dynamic timing data in 'technical data')
Disconnect the vacuum-tube whilst fine-tuning. Enjoy your 123ignition!

TIPS

- Do NOT disconnect ANY electric wire, when the engine is running. This is bad practice when using high-tech electronic systems, such as the 123ignition.
- Sparks are much stronger with a 123ignition : use good quality sparkplug leads, and a good coil. The primary resistance should **not** be lower then 1 ohm.
- Resistor-core silicone ignition-leads are the better choice!
- Mistrust old coils : they all look alike, but you can't see if they have been overheated many times! Buy a new one, now you know that this will not be overheated anymore...
- Replace the cap and rotor every 30.000 km. Here is the ordering info :

Bosch cap ref. nrs. : 1.235.522.050 / 1.235.522.058 / 1.235.522.059 / 1.235.522.145

Bosch rotor ref. nr. : 1.234.332.024

Technical data

Operating voltage	4,0 to 15,0 Volts , negative earth only
range	600 to 7000 rpm
temperature	-30 to 85 degrees Celsius
coil	stock coil, or "High Energy"-coil, primary resistance not below 1 ohm.
engines	(see below), 16 advance-curves selectable by a switch through the bottom face of the housing.

curve	replaces Bosch distributor	vacuum	remark
0	0.231.170.034 / 043.905.205A / 043.905.205C	100/200/10	one-fits-all-curve
1	as curve 0, optimised for LPG/E85	100/200/10	
2	0.231.170.034 / 043.905.205A / 043.905.205C	100/200/10	w. 123spark TM*
3	as curve 2, optimised for LPG/E85	100/200/10	w. 123spark TM*
4	--		
5	0113.905.205AC / 021.905.205F / 0113.905.205AE	075/225/10	
6	0113.905.205AJ / 0211.905.205R / 0311.905.205AJ	125/225/10	
7	0113.905.205AK		125/225/10
8	0113.905.205AA / 0113.905.205P		075/225/10
9	0113.905.205AL / 0211.905.205S/021.905.205G&J	075/200/10	
A	0113.905.205AN / 0211.905.205Q/0113.905.205AH	125/175/06	
B	0181.905.205 / 311.905.205T	100/200/10	
C	VE4BRS383 / VJ4BR9 / VJ4BR18 /VJR4BR18	100/200/10	Porsche 356**
D	0231.129.022 / J FR 4 [R]	100/200/10	Porsche 912**
E	0231.129.031	100/200/10	tuning engines***
F	0231.129.009	100/200/10	tuning engines***

* Note that some rev.-counters cannot handle this multi-spark-feature. Select curve 0 or 1 instead.

** Check the Porsche workshop-manual for correct timing

*** The '031' advances max. 30 degrees at 3200 rpm. **excl.** static advance. The '009' advances max. 21 degrees at 2600 rpm. **excl.** static advance.

dwell	microprocessor controlled, depending on coil current
current-timeout	after +/- 1 second. If the engine is not running, the current is switched off to prevent overheating of the coil
spark balance	software controlled, better then half a degree crankshaft
wiring	red = +6 resp. +12 Volt black = '-' of the coil

TYPE	ENGINE-NRS.	123-CURVE	STATIC	AT IDLE	MAX AT RPM
1/1200	5000001 up ; D0095050 up	0	-7,5	-10	31 @ 3900
1/1300	F0000001 up	0	-7,5	-10	31 @ 3900
1/1300M9	F1462059 up	5	-7,5	-10	29,5 @ 3900
1/1300	AB0000001 up	6	-7,5	-10	31 @ 3900
1/1300	AB0313346 up	0	-7,5	-10	31 @ 3900
1/1300M9	AB0000002 up	7	-7,5	-10	31 @ 3900
1/1300M9	AB0313346 up	0	-7,5	-10	31 @ 3900
1/1500	H0204001 - H0879926	0	-7,5	-10	31 @ 3900
1/1500M9	H0879927 - H1124670	8	0	-2,5	31,5 @ 3600
1/1500M9	H1124670 up	5	-7,5	-10	29,5 @ 3900
1/1500M157	H5000001 - H5077365	0	-7,5	-10	31 @ 3900
1/1500M157M9	H5077366 up	8	0	-2,5	31,5 @ 3600
1/1600	AD0000001 - AD0360022	6	-7,5	-10	31 @ 3900
1/1600	AD0360023 up	0	-7,5	-10	31 @ 3900
1/1600M9	AD0000002 - AD0360022	7	-7,5	-10	31 @ 3900
1/1600M9	AD0360023 up	0	-7,5	-10	31 @ 3900
1/1600M157	B6000001 up	0	-7,5	-10	31 @ 3900
1/1600M157	AE000001 - AE558000	6	-7,5	-10	31 @ 3900
1/1600M157	AE558001 up	A	-7,5	-10	31 @ 3900
1/1600M157	AK120009 up	0	-7,5	-10	31 @ 3900
1/1600M157M9	B6000002 up	5	-7,5	-10	29,5 @ 3900
1/1600M157M9	AE000002 up	A	-7,5	-10	31 @ 3900
1/1600M157M9	AH090024 up	0	-7,5	-10	31 @ 3900
181	H1130500 up	0	-7,5	-10	31 @ 3900
181	AG0000001 - AG002699	6	-7,5	-10	31 @ 3900
181	AG002700 up	9	-7,5	-10	30 @ 3900
181, 181M157	AL000001 up	0	-7,5	-10	31 @ 3900
181M63	H1130501 up	B	-7,5	-10	32,5 @ 3200
2/1200	5000002 up	0	-7,5	-10	31 @ 3900
2/1500	G0143443 up / H0000001 up	0	-7,5	-10	31 @ 3900
2/1600	B0000001 up	0	-7,5	-10	31 @ 3900
2/1600	AD0000002 - AD0290640	6	-7,5	-10	31 @ 3900
2/1600	AD0290641 up	9	-7,5	-10	30 @ 3900
2/1600M157	B5000001 up	0	-7,5	-10	31 @ 3900
2/1600M157	AE0000002 up	A	-7,5	-10	31 @ 3900
2/1700	CA017215 up	9	-7,5	-10	30 @ 3900
2/1700M249	CE000001 up	5	-7,5	-10	29,5 @ 3900
2/1700M157	CB060640 up	9	-7,5	-10	30 @ 3900
3/1500	K0000001 up / K0059861 up	0	-7,5	-10	31 @ 3900
3/1500S	R0255001 up	0	-7,5	-10	31 @ 3900
3/1600	T0000001 up	B	-7,5	-10	32,5 @ 3200