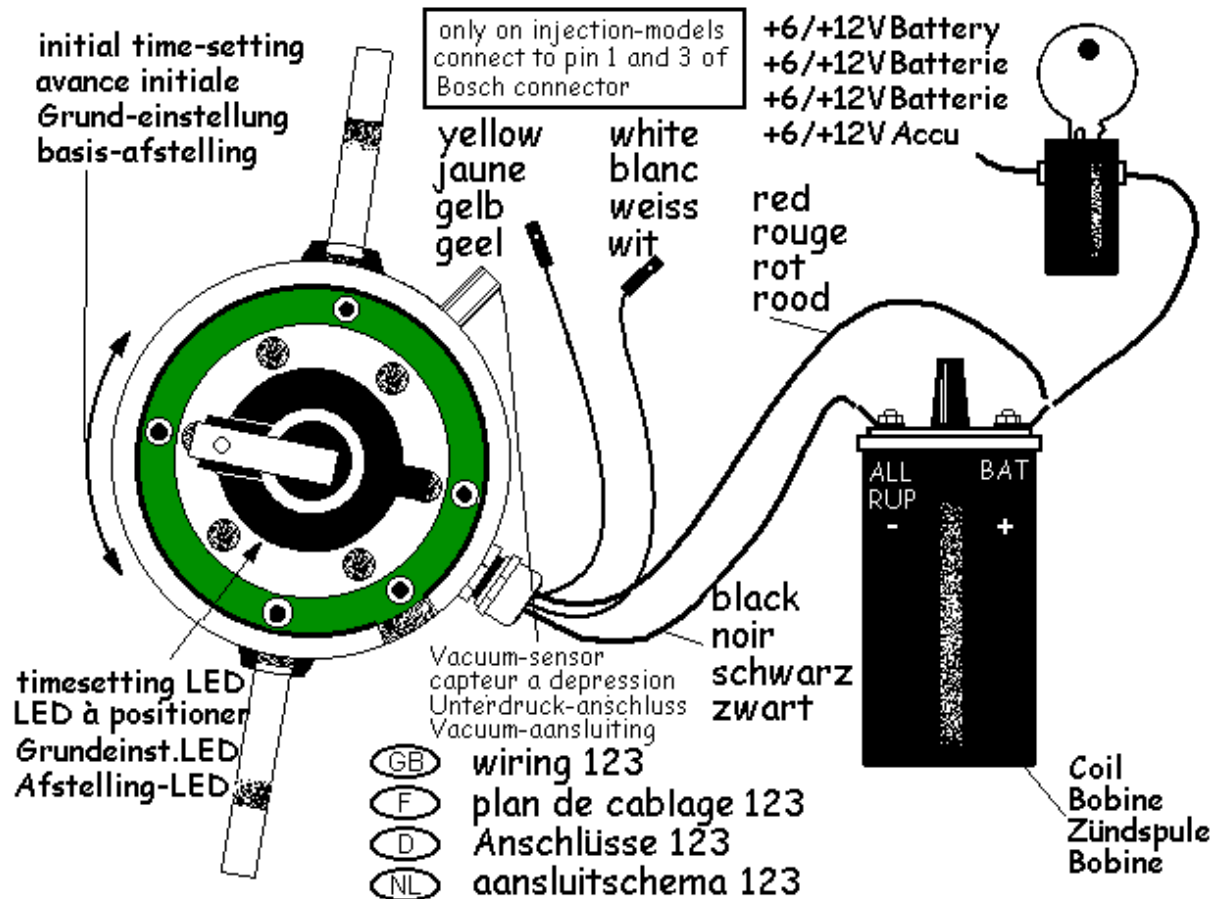


## Mounting instructions for the '123ignition'

type : 123\B30-R-V-IE

for : Volvo B30A, B30E, B30F, B30-Penta, engines in the 164,C303/306 VALP etc.  
( 6 or 12 Volt ; 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 clockwise direction, until the green LED just lights up.

The LED shines through one of the six holes in the aluminium disc below the rotor. While turning, also press the rotor in a 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'.

For fuel injected engines : connect the yellow and the white cable to pin 1 and 3 ( or 3 & 1 ) of the Bosch-connector, leaving the middle contact unconnected.

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 to the ignition.

## **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. ( If your car was fitted with a coil resistor, you could remove it to get a stronger spark, as long as the primary resistance is not 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. : 1.235.522.051 / 1.235.522.060 / 1.235.522.103 /  
1.235.522.109 /1.235.522.147

Bosch rotor ref. nr. : 1.234.332.024

### **Technical data**

Operating voltage 4,0 to 15,0 Volts  
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 all standard Volvo B30-engines, advance-curves selectable by a switch through the bottom of the housing.

Curve	replaces Boschnr	for engine	static* degr.	dyn.(max)* degr.
0	0231.142.001 0231.308.005	B30-A	10	33
1	0231.142.001 0231.308.005	B30-A optimised for LPG / E85	10	37
2	0231.302.010 0231.301.010	B30-E	10	31
3	0231.302.010 0231.301.010	B30-E optimised for LPG / E85	10	34
4	0231.170.087	B30-E with 'K'-camshaft	10	31
5	0231.170.087	B30-E with 'K'-camshaft for LPG/E85	10	34
6	0231.301.010 0231.301.014	B30-F	10	31
7	0231.301.010 0231.301.014	B30-F optimised for LPG / E85	10	34
8	0231.305.058	B30-VALP ; C303, C306 TGB11, TGB13, TGB303	10	35
9	0231.305.058	B30-VALP optimised for LPG / E85 C303, C306, TGB11, TGB13, TGB303	10	35
A	0231.121.008	B30-Penta Penta 165/250 ; 165A/250 ; 170A/250	10	30
B	0231.121.008	B30-Penta optimised for LPG / E85 Penta 165/250 ; 165A/250 ; 170A/250	10	33
C	0231.311.002	B30-Penta AQ165; AQ170; BB165; BB170	10	30
D	0231.311.002	B30-Penta, optimised for LPG/E85 AQ165; AQ170; BB165; BB170	10	30
E	0231.116.054 0231.116.060	B30-Penta B30-Penta , w.thick cylinder head gasket	10 15	30 35
F	0231.116.054 0231.116.060	B30-Penta, optimised for LPG/E85 B30-Penta , w.thick cylinder head gasket	10 15	30 35

\* degrees advance and enginespeed both relate to the crankshaft

vacuum-advance as specified for the original distributor  
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