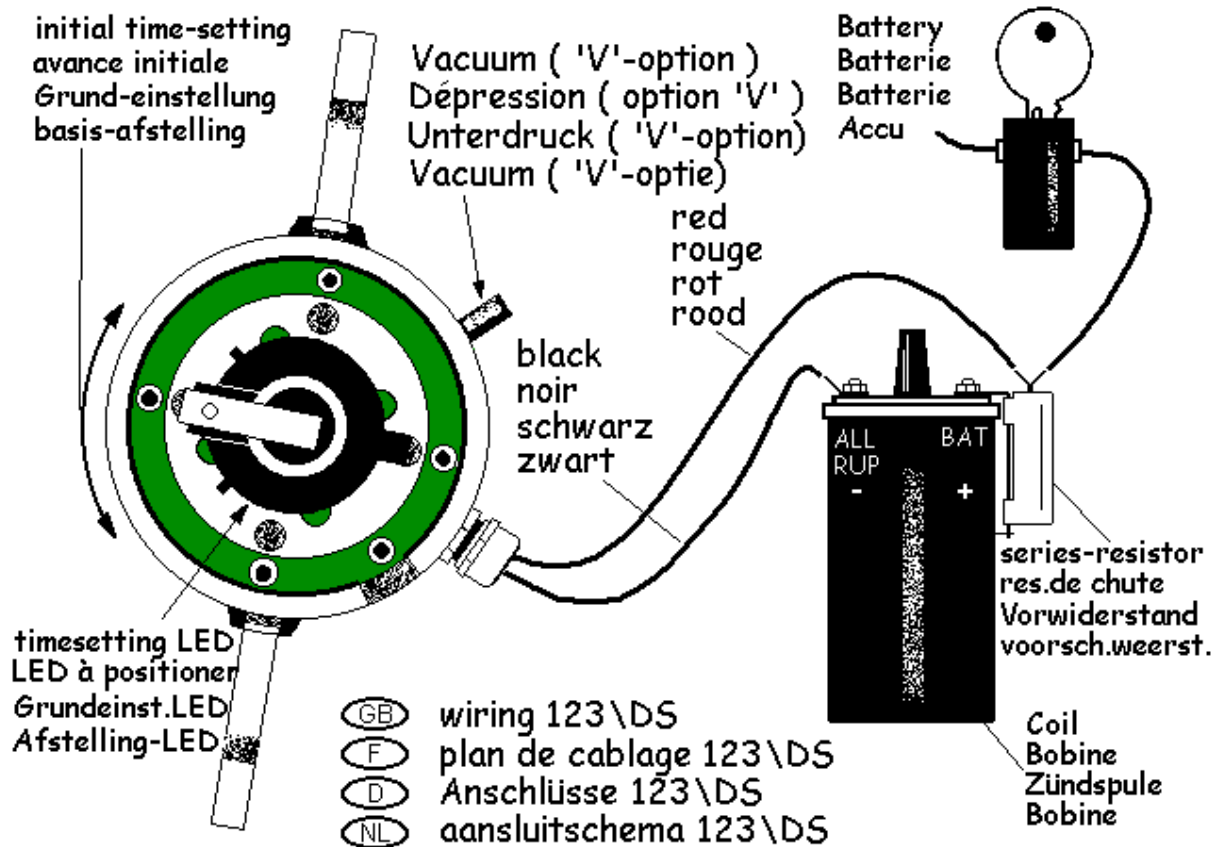


## Mounting instructions for the '123ignition'

type : 123\DS-R, 123\DS-A, 123\DS-R-V and the 123\DS-A-V  
 for : Citroen 4-cyl. injection engines in the ID/DS, HY and Traction



### 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

#### FOR ID/DS :

Manual 4 speeds gearbox and Citromatic (BVH) gearbox: remove the front license plate and insert the starting handle through the hole in the front valence to engage the starter dog in the front of the gear box.

Alternatively, and on manual 5 speed transmissions: jack up the left front wheel and put the car in 5th gear, so that the engine may be turned by turning the wheel.

On the old distributor, note the position of the ignition wire to the number one (front) cylinder. Remove the distributor cap and turn the engine so that the rotor points to the number one cylinder position, as previously noted. Insert a 6mm (15/64 inch) pin or drill bit into the timing hole on the left side of the clutch bell housing, below the alternator mounting bracket. Now carefully turn the engine until the pin engages the hole in the flywheel. The engine is now at the static timing point, near the end of the compression stroke for the number one cylinder. This point corresponds to 12

degrees before Top Dead Center on engines built before July 1st 1971, and to 0 (zero) degrees on engines built after July 1st 1971.

For ID/DS's from before 1965 it is necessary to make a direct connection between the 'minus' of the battery and the housing of the 123\DS, using one of the M5-trheaded holes in the 123\DS-housing.

REMOVE THE 6mm LOCATING PIN !!!

Go to **step 2**

**FOR CITROEN-HY and TRACTION AVANT :**

On the old distributor, note the position of the ignition wire to the number one cylinder. Remove the distributor cap and turn the engine so that the rotor points to the number one cylinder position, as previously noted. Insert a 6mm (15/64 inch) pin or drill bit into the timing hole. Now carefully turn the engine until the pin engages the hole in the flywheel. The engine is now at the static timing point, near the end of the compression stroke for the number one cylinder. This point corresponds to 12 degrees before Top Dead Center. Make a direct connection between the 'minus' of the battery, and the housing of the 123\DS, using one of the M5-trheaded holes in the 123\DS.  
( This is a MUST for these types! )

REMOVE THE 6mm LOCATING PIN !!!

Go to **step 3**.

## **STEP 2: Mark the static timing point**

Using a narrow line of white paint, mark the camshaft pulley at the point where the timing scale reads 0 (zero) degrees. If you don't have a timing scale, you have to make your own. For engines built after July 1971, turn the crankshaft 12 degrees backwards. The white line on the pulley now points at 6 degrees on the timing scale.  
( as the cam-shaft rotates at half the speed of the crankshaft, 12 degrees rotation of the crankshaft corresponds logically to 6 degrees of the camshaft )

## **STEP 3: 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 plug in the bottom face of the housing. Inside the hole you'll find a 16 position rotary switch, marked '0' to 'F'. Check the mode switch table below for the proper setting. Re-insert the plug and tighten securely.



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

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. Transfer the clamp plate from the old distributor to your new '123', and tighten the clamp gently so that the distributor can still be turned with some effort. Now remove the 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 4: 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' counter clockwise, 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 CCW direction, to remove any free play in the drive gear.

With the '123' in this position, adjust and tighten the collar of the clamp plate so that the hold down stud is in the middle of the adjusting slot of the clamp plate. Finally, tighten the hold down nut securely, as it

is also the electrical ground of the '123'. Turn off the ignition.

### **STEP 5: Finish the wiring**

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' counter clockwise, 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 CCW direction, to remove any free play in the drive gear.

With the '123' in this position, adjust and tighten the collar of the clamp plate so that the hold down stud is in the middle of the adjusting slot of the clamp plate. Finally, tighten the hold down nut securely, as it

is also the electrical ground of the '123'. Turn off the ignition.

### **STEP 6: Start and test drive**

DID YOU REMOVE THE PIN IN STEP 2? Then 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.

The slotted hole in the clamp plate facilitates fine-adjustment.

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 than 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 one will not be overheated anymore...
- Replace the cap and rotor every 30.000 km. Here is ordering info :  
Ducellier straight cap + rotor    VALEO item number "D104"  
Ducellier angled cap                VALEO item number "D805"  
Ducellier rotor                        VALEO item number "D911"

## Technical data

Operating voltage range	4,0 to 15,0 Volts, negative earth only.
temperature	600 to 7000 rpm
coil	-30 to 85 degrees Celsius
models	stock coil, or "High Energy"-coil, primary resistance <b>not</b> below 1 ohm.
engines	123\DS-R ignition with straight distributorcap 123\DS-R-V idem, with vacuum-option 123\DS-A ignition with 90 degree-angled distr.cap 123\DS-A-V idem, with vacuum-option
dwelling	all standard Citroen 4-cyl. engines, as used in the Traction Avant, ID/DS and Citroen 'HY', selectable by a mode-switch through the bottom of the housing.
current-timeout	microprocessor controlled, depending on coil current after +/- 1 second. If the engine is not running, the current is switched off to prevent overheating of the coil
spark balance wiring	software controlled, better than half a degree crankshaft red = +6 resp. +12 Volt black = 'minus'-pole of the coil

## Mode switch table

mode	type	engine	Citroen-curve	replaces
0	Traction	PERFO until 6/'55	11C2	SEV. / DUC.
1	Traction	11D	after 6/'55	11D
2	ID/DS	ID until 2/'64 incl.vac.	C2	DUC.3941A
3	ID/DS	DS 7/'59-9/'65 ID 2/'64-9/'64 incl.vac.	C3	DUC.3941B
4	ID/DS	ID 9/'64-9/'65	C4	DUC.4141A
5	ID/DS	DE 9/'65-9/'66	C5	DUC.3944A
6	ID/DS	DX/DJ/DXF/DJF until 10/'68	C6	DUC.4155B
7	ID/DS	DY/DL/DYF/DLF until 10/'68	C7	DUC.4169A
8	ID/DS	DV until 10/'68	C8	DUC.4173A
9	ID/DS	DX/DJ/DXF/DJF/DP until 9/'72	C9	DUC.4253A&B
A	ID/DS	DY/DL/DYF/DLF/DT/DV 10/'68-5/'69	C10	DUC.4254A
B	ID/DS	DY/DL/DYF/DLF/DT after 5/'69 DV after 9/'72	C11	DUC.4291A&B
C	ID/DS	DX/DJ/DXF/DJF after 9/'72, DV 5/'69 - 9/'72	C12	DUC.4254B&C
D	RESERVED		-	-
E	HY	H78	'H'	DUC 4134B
F	HY	H78	idem,	incl. rev.limiter