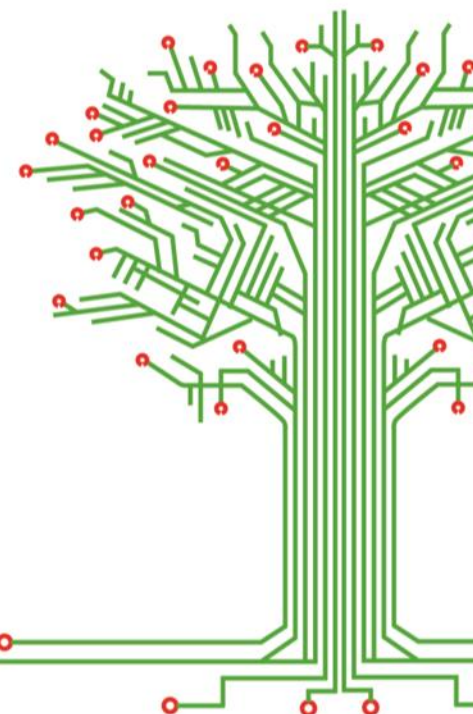




ALTERNATIVE FUEL ELECTRONICS



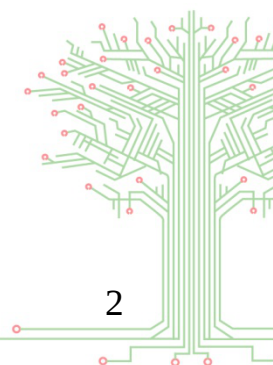
Timing Advance Processor Manual



Index

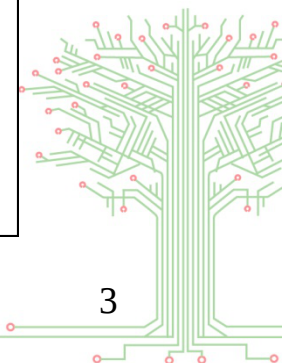
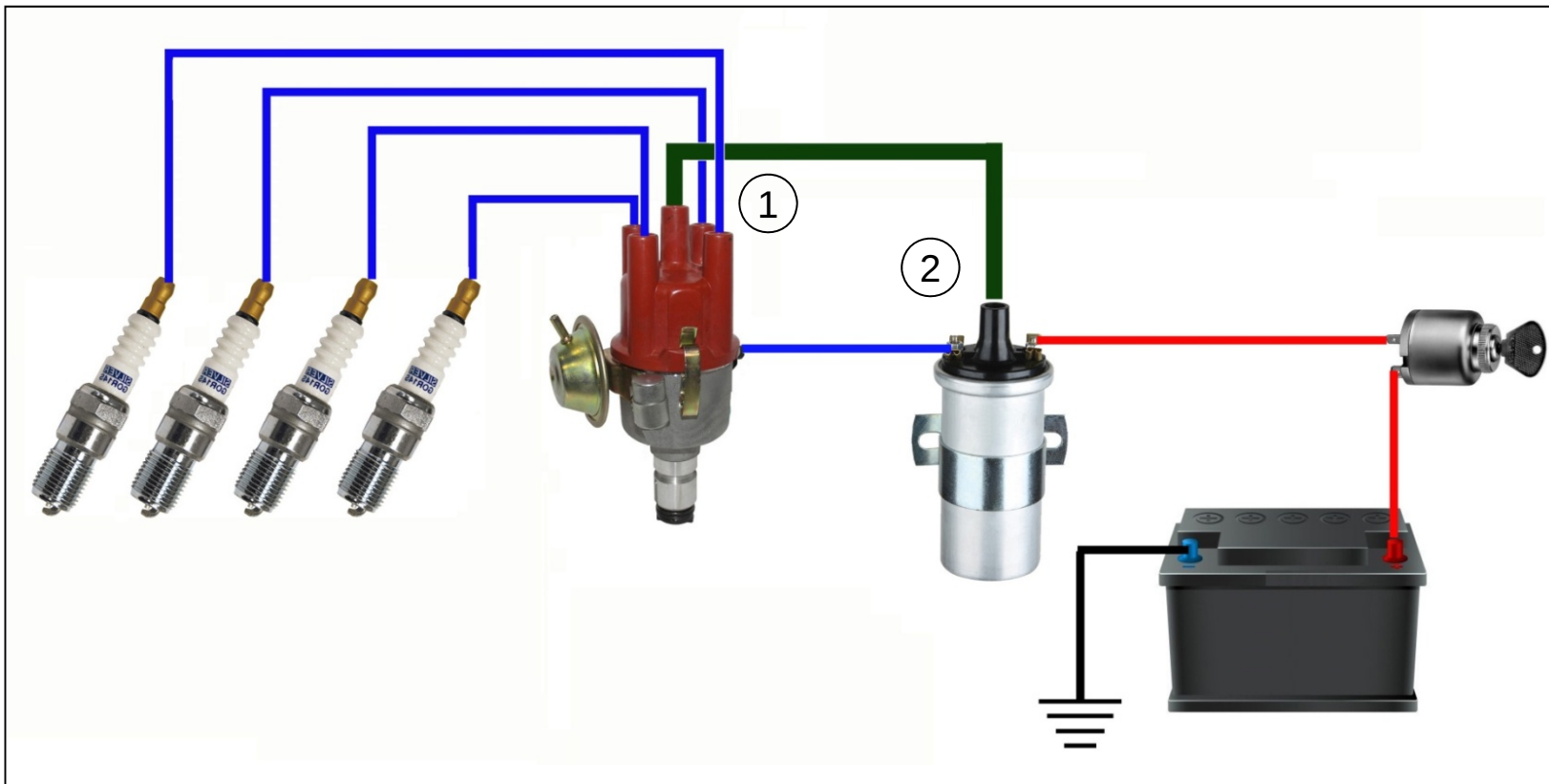


- 1 Ignition system types
- 2 Timing advance processor list (TAP)
- 3 TAP definition and selection
- 4 TAP for breaker points Ignition System
 - 4.1 AEB531 Installation
 - 4.2 AEB531 Setting
 - 4.3 AEB531 Checking
- 5 TAP for electronic ignition system with coil & distributor (AEB526N & AEB549N)
 - 5.1 AEB526N & 549N Installation
 - 5.2 AEB526N & 549N Setting
 - 5.3 AEB526N Checking
 - 5.4 AEB549N Checking
- 6 TAP for electronic ignition system with coil, distributor & ignition module (AEB515N Reprogrammable)
 - 6.1 AEB515N Installation
 - 6.2 AEB515N Setting
 - 6.3 AEB515N Configuration identification
- 7 TAP for electronic ignition system with dual coil or one coil for cylinder (AEB510N – AEB516N – AEB511N – AEB518N – 628458000 Reprogrammable)
 - 7.1 Signal checking and identification
 - 7.2 Sensor type identification & suitable TAP
 - 7.3 Specification of Crank shaft position sensor ,inductive type
 - 7.4 Specification of Crank shaft position sensor ,Hall effect type
- 8 TAP for CKP sensor inductive type (AEB510N – AEB516N – Reprogrammable)
 - 8.1 AEB510N Installation
 - 8.3 AEB510N Setting
 - 8.3 AEB516N Installation
 - 8.4 AEB516N Setting
- 9 TAP for CKP sensor Hall effect type (AEB511N – AEB518N – 628458000 – Reprogrammable)
 - 9.1 AEB511N Installation
 - 9.2 AEB511N Setting
 - 9.3 AEB518N Installation
 - 9.4 AEB518N Setting
 - 9.5 628458000 Installation
 - 9.6 628458000 Setting



Chapter (1):

- Ignition types
 - Mechanic Ignition system composed by:
 - 1) Distributor with Breaker Points
 - 2) Coil



Chapter (1):

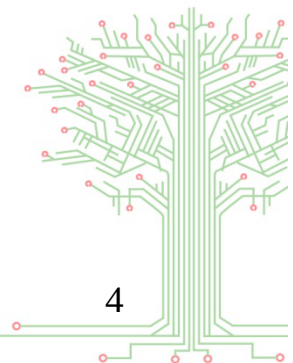
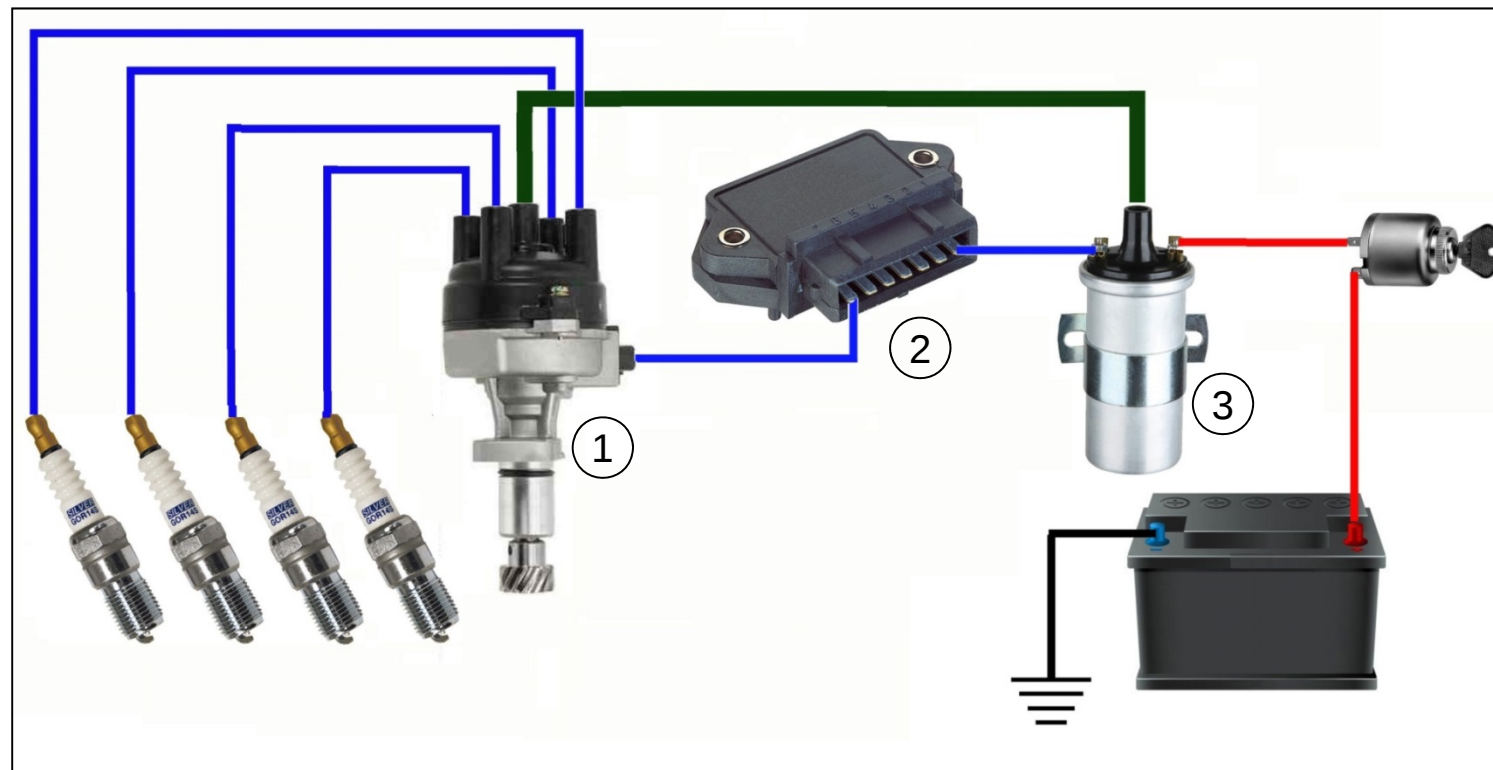
- Ignition types

- Electronic Ignition system composed by:

1) Distributor

2) Ignition module

3) Coil



Chapter (1):

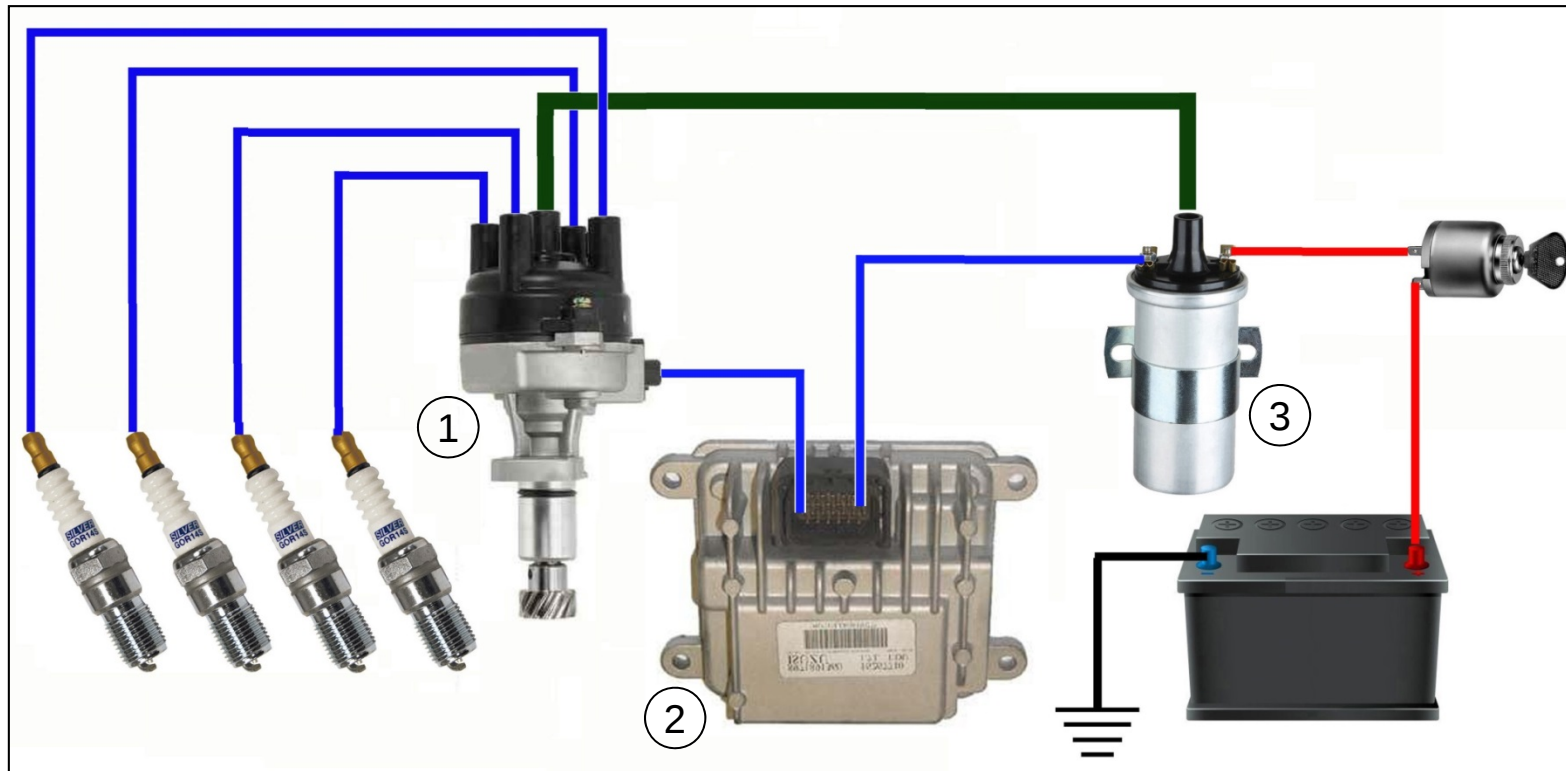
- Ignition types

- Electronic Ignition system composed by:

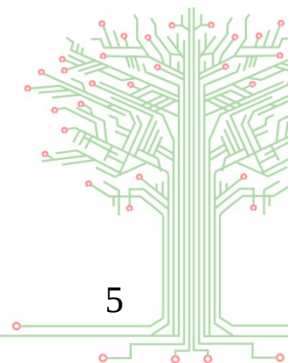
1) Distributor

2) Injection control unit

3) Coil



A/E/B



Chapter (1):

- Ignition types

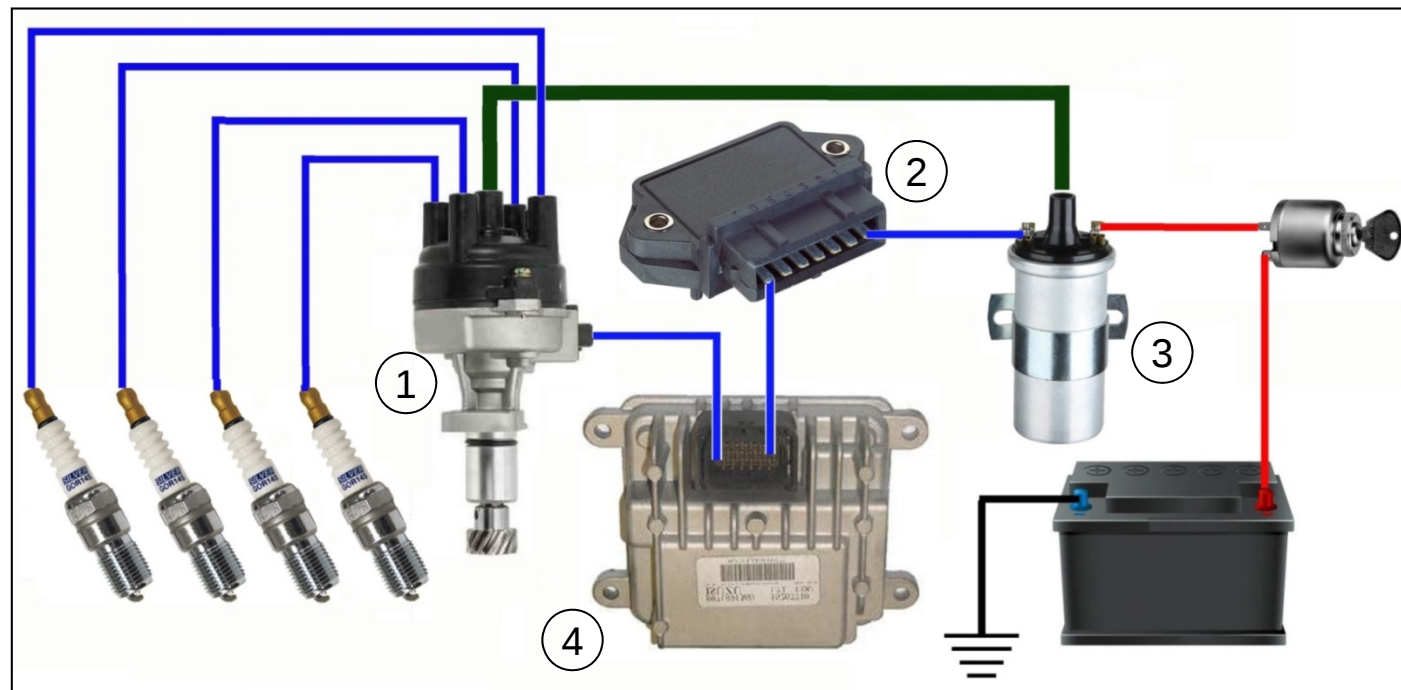
- Electronic Ignition system composed by:

1) Distributor

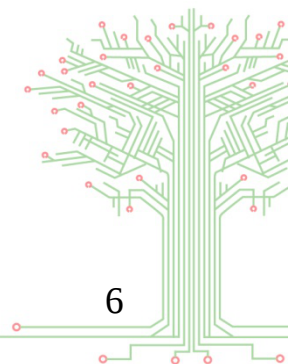
2) Ignition module

3) Coil

4) Injection control unit



A/E/B



Chapter (1):

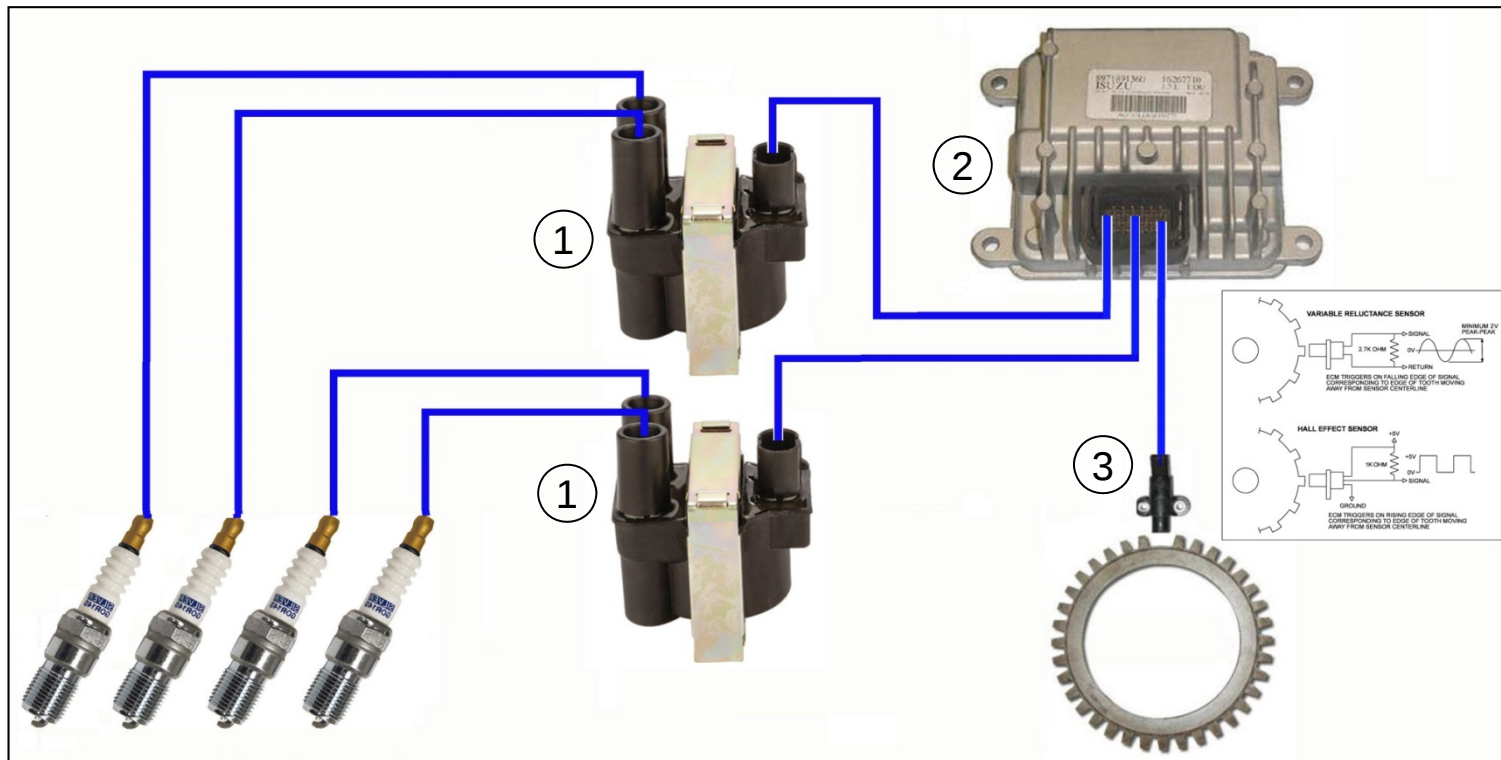
- Ignition types

- Electronic Ignition system composed by:

1) Dualcoil

2) Electronic Injection Unit

3) Crank shaft position sensor



Chapter (1):

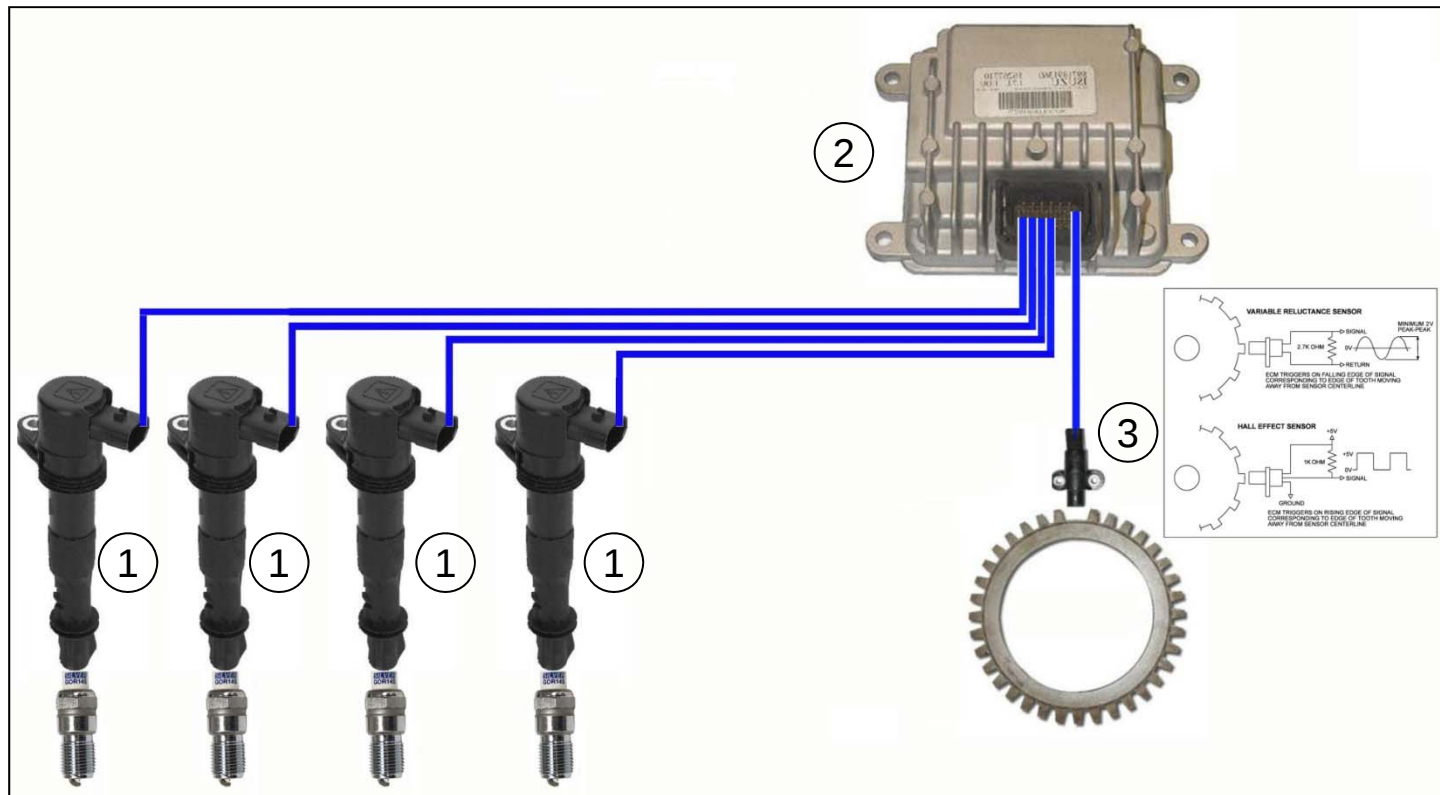
- Ignition types

- Electronic Ignition system composed by:

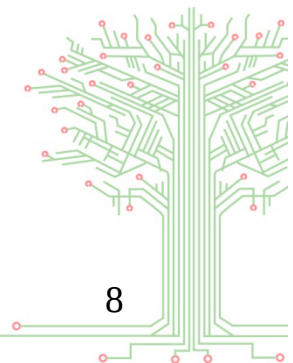
1) One coil per cylinder

2) Electronic Injection Unit

3) Crank shaft position sensor



A/E/B



Chapter (2):

- Timing advance processor list

PLATINOS Code AEB531

JOKER N Code AEB549N

WOLF N Code AEB526N

PUMA Code AEB515N (reprogrammable)

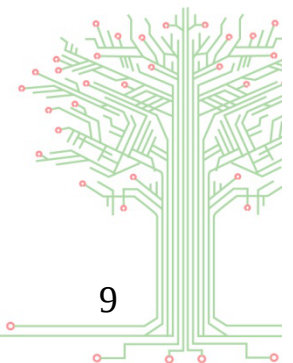
COBRA Code AEB510N (reprogrammable)

SPIDER Code AEB511N (reprogrammable)

SHARK Code AEB516N (reprogrammable)

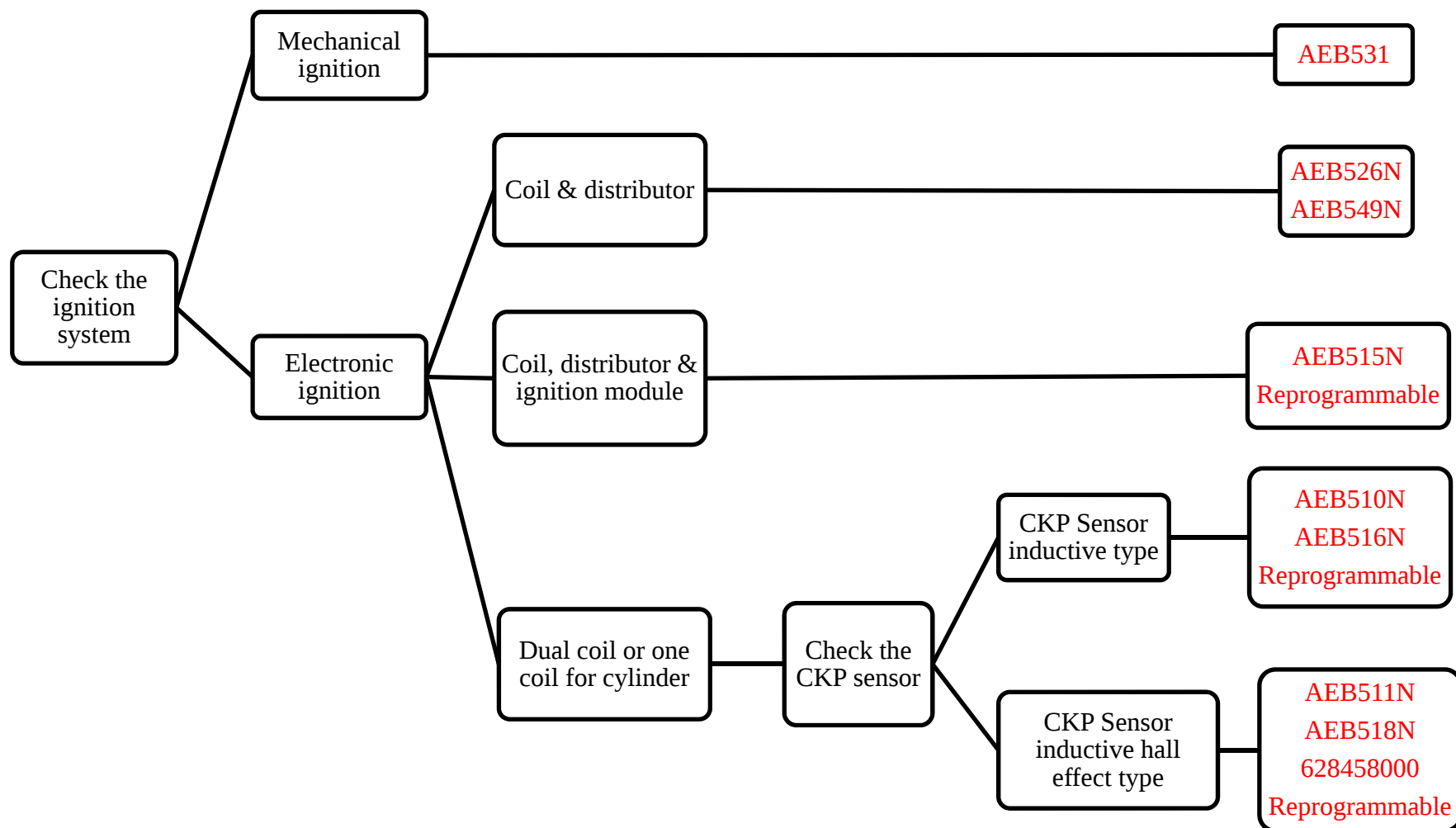
PANDA Code AEB518N (reprogrammable)

PANDA 3H Code 628458000 (reprogrammable)



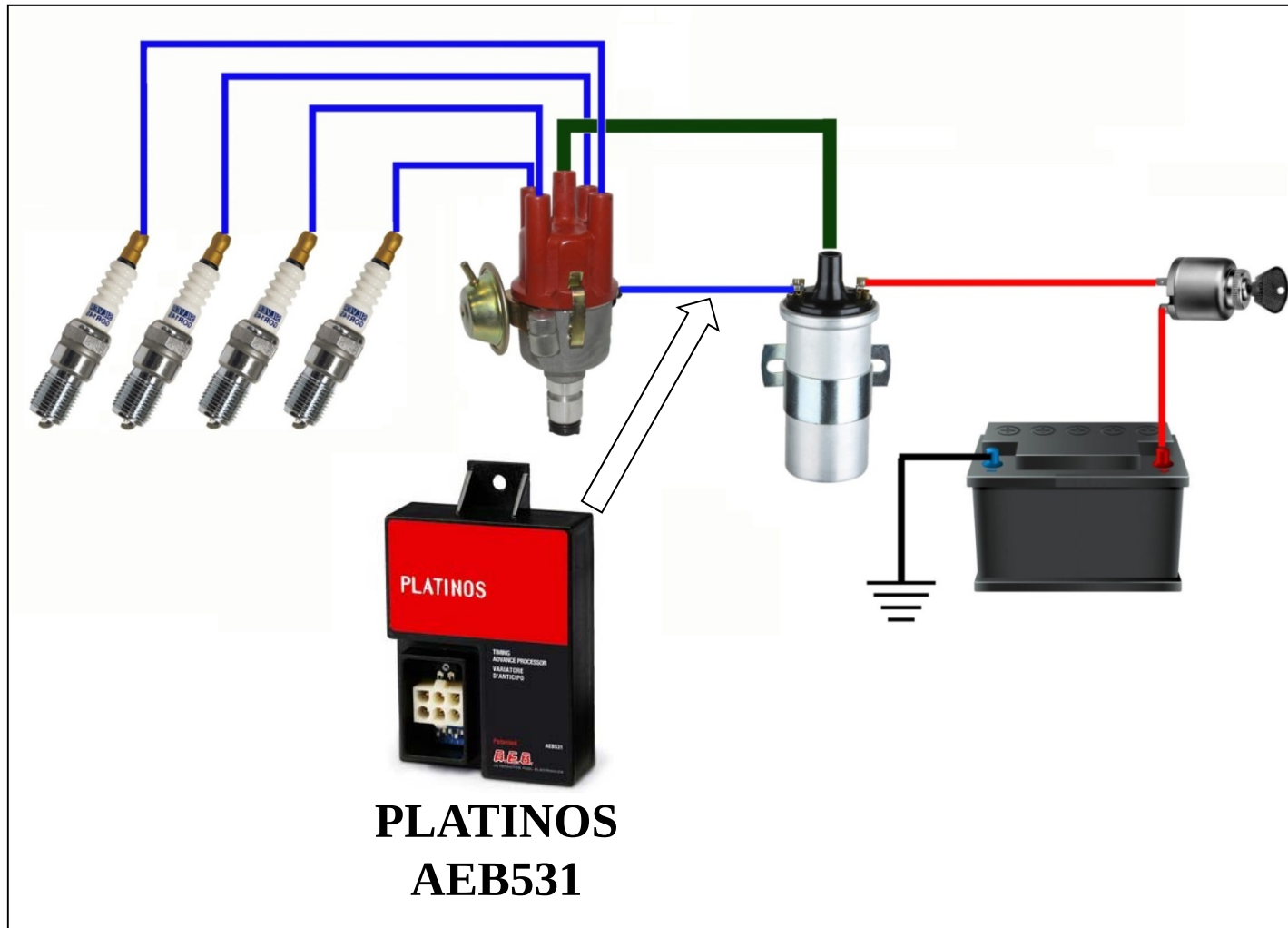
Capitolo (3):

- TAP definition & selection



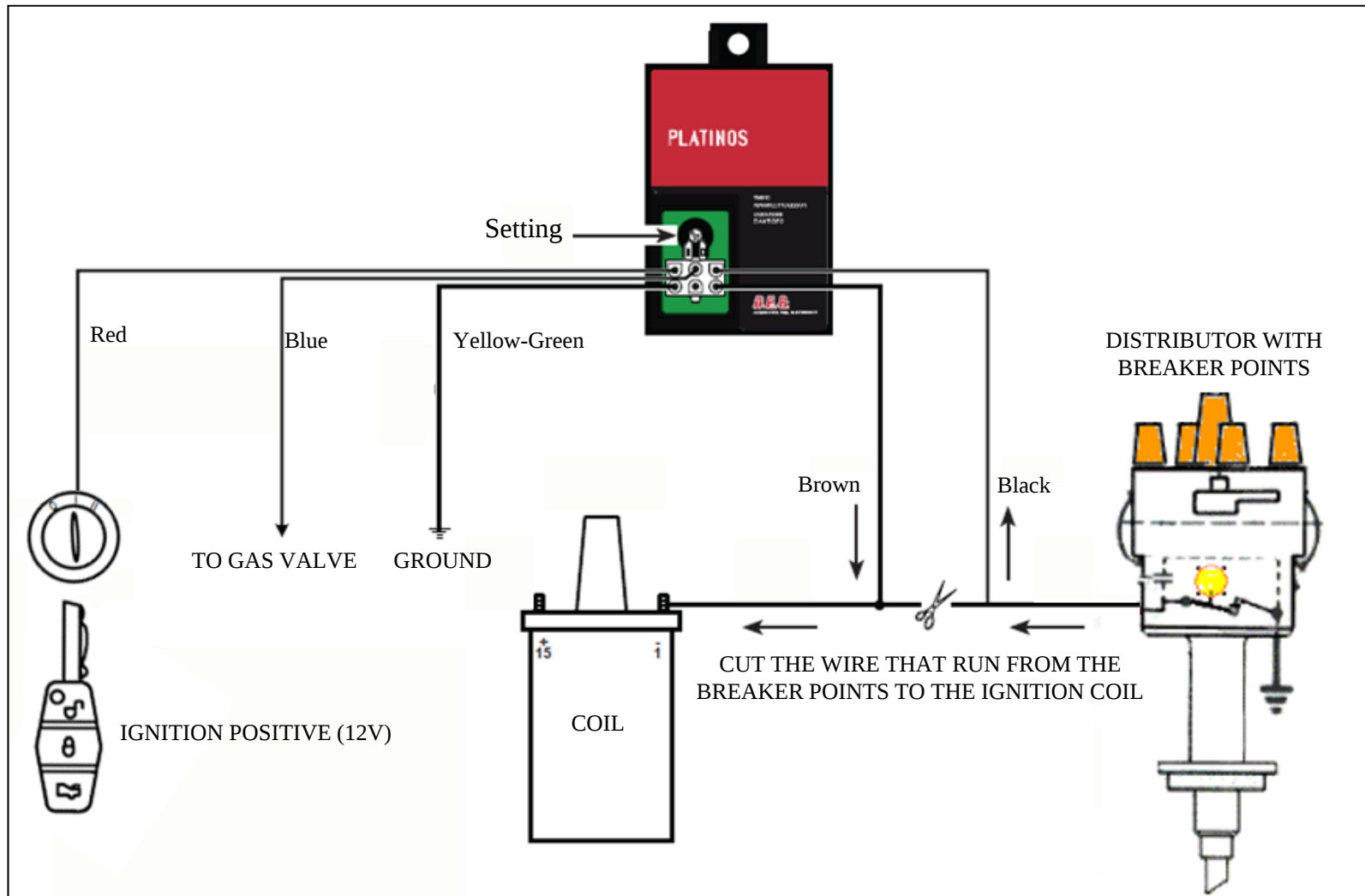
Chapter (4):

- TAP for breaker point ignition system – AEB531



Chapter (4.1):

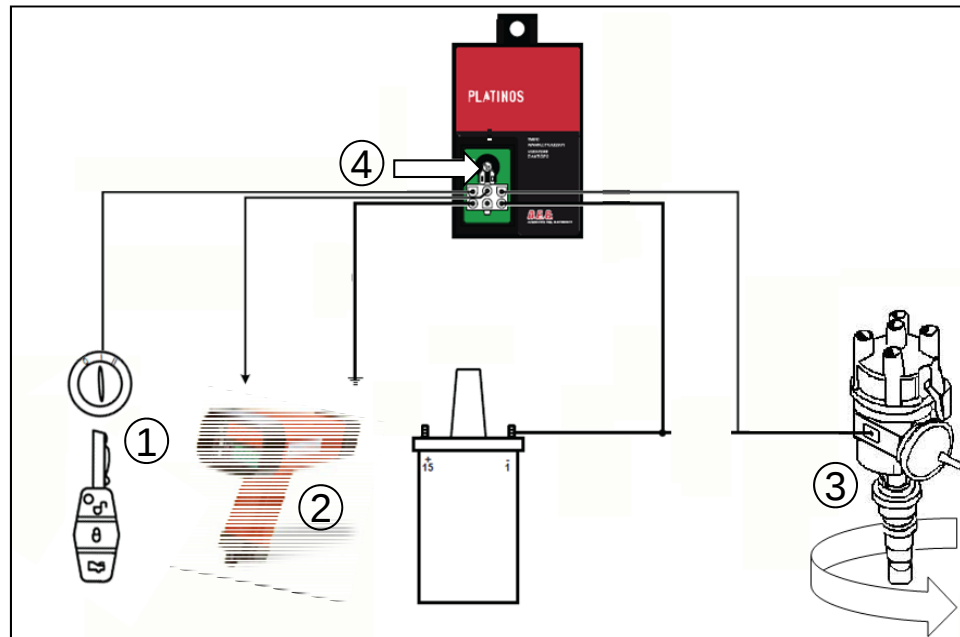
- AEB531 Installation



Chapter (4.2):

- AEB531 Setting
SETTING

- 1) Start the engine in GAS mode
- 2) By using a timing-gun check (2) the original Ignition Timing Advance and note it (I.e. Original Timing Advance 20°)
- 3) Manually rotate the Distributor (3) in order to advance the Ignition timing (Advance suggested: LPG 9° more than the original, CNG 12° more than the original)
- 4) Switch the vehicle in gasoline mode then, adjusting the Trimmer (4), take the Ignition Advance back to the original value (point 2) Check it by using the Timing-gun.



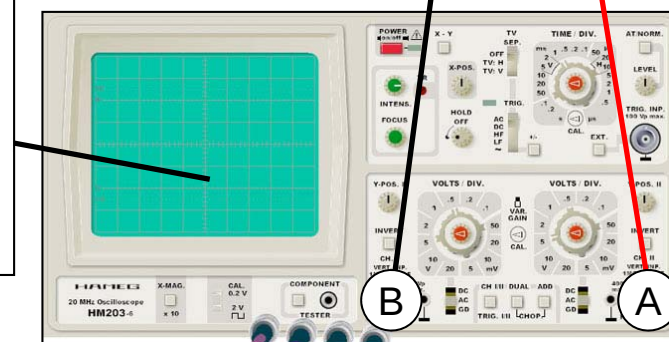
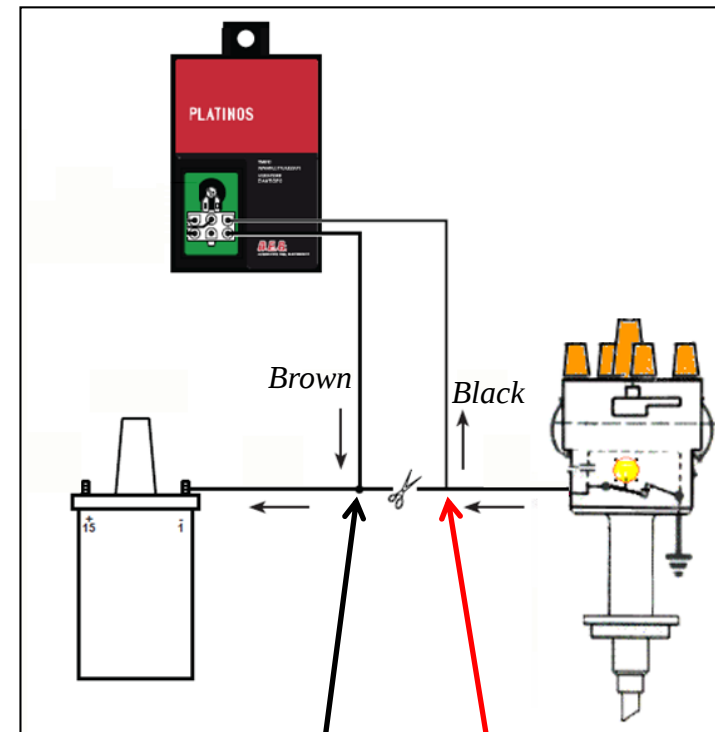
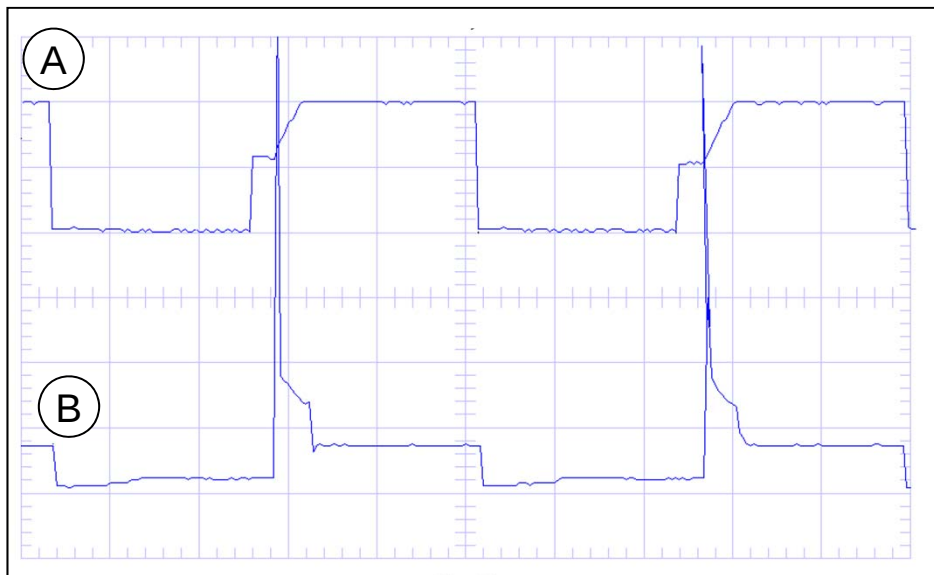
Chapter (4.3):

• AEB531 Checking

- Use an oscilloscope with 2 channels in gasoline mode:

A) Input signal

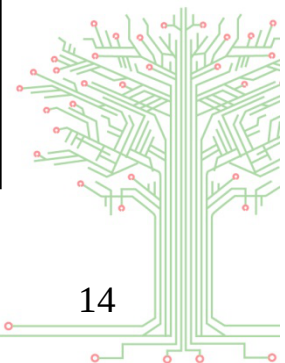
B) Output signal delayed in order to compensate the advance of the distributor



Scope setting

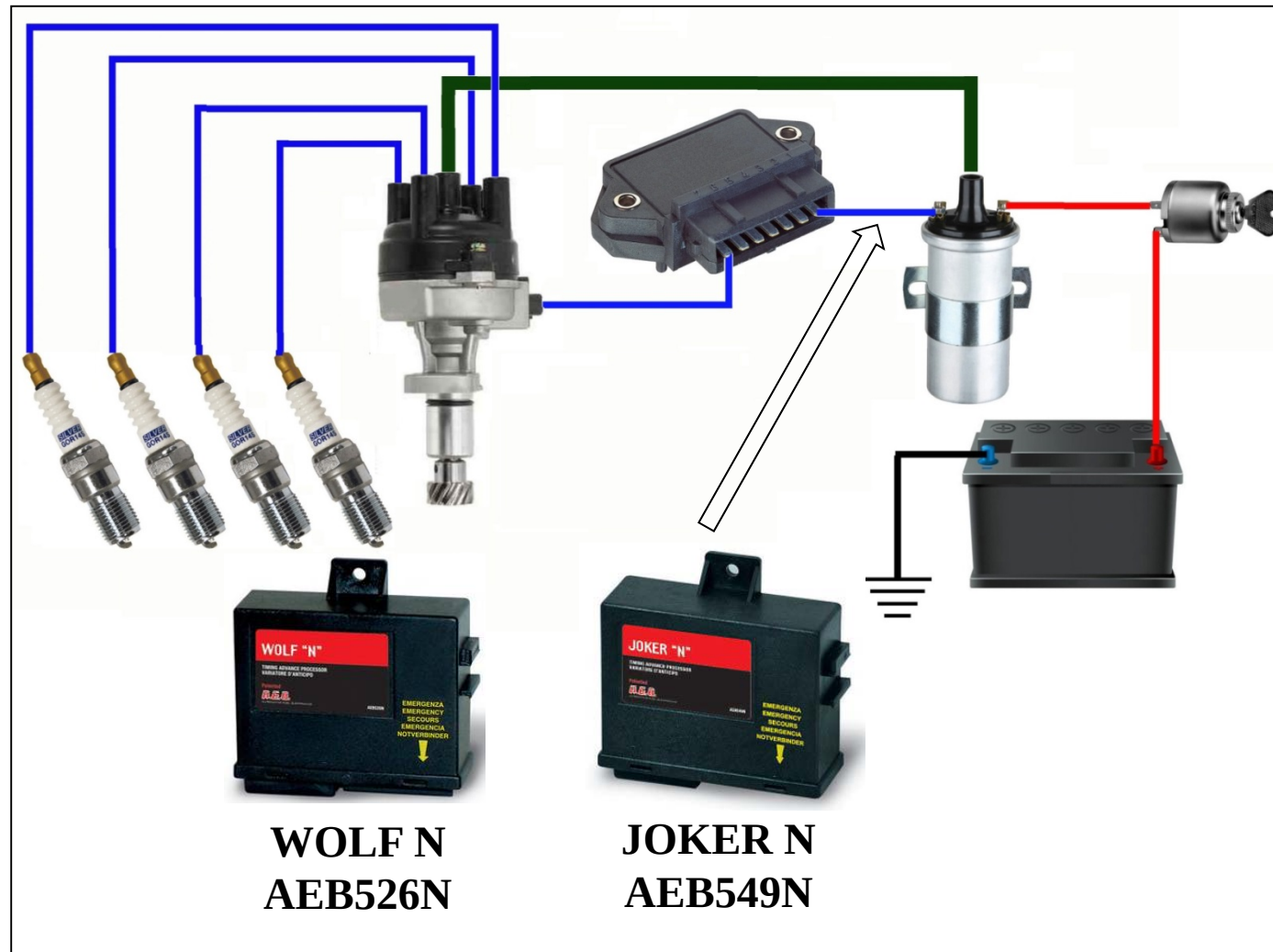
CH A: 5v/div

CH B: 10v/Div



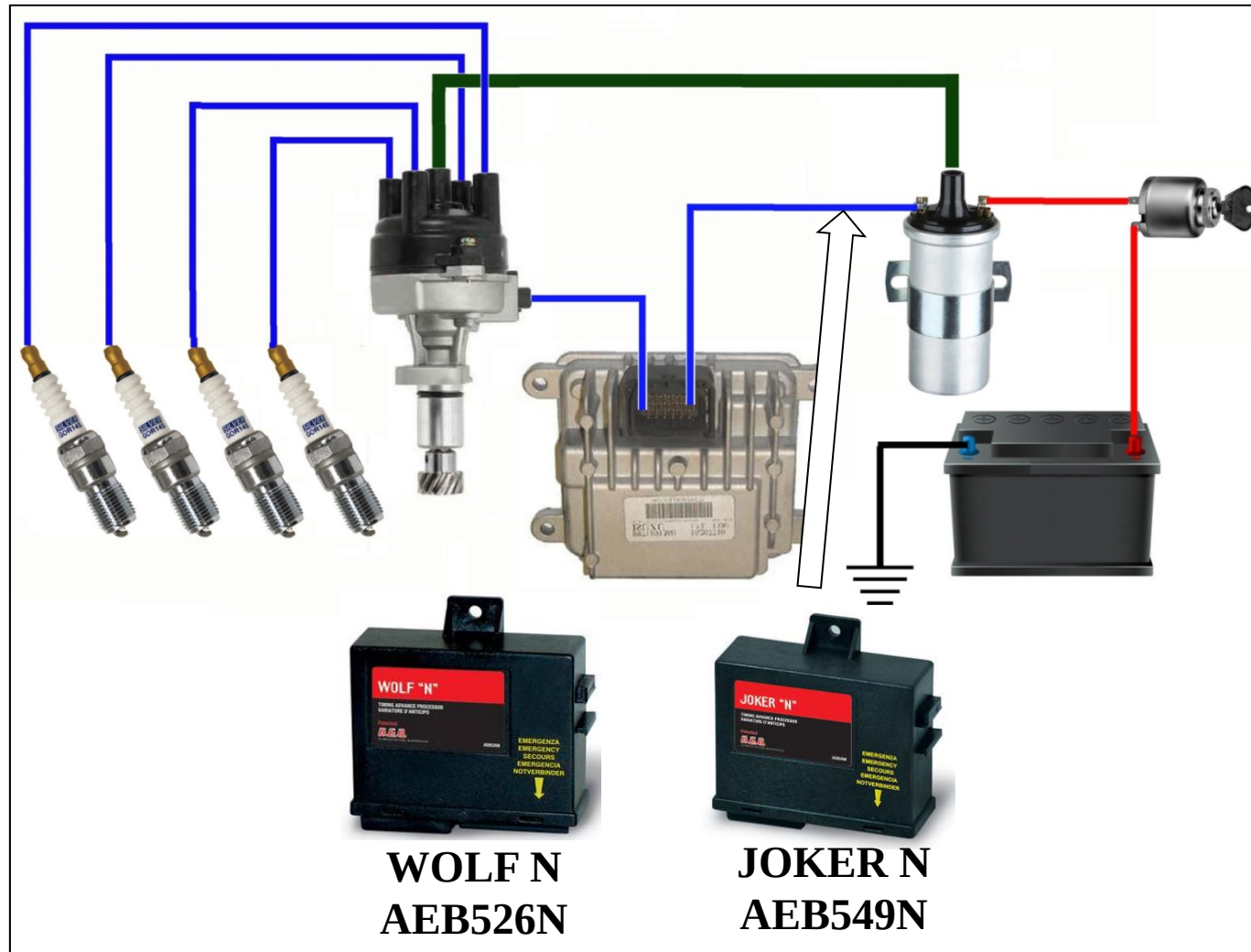
Chapter (5):

- TAP for electronic ignition system with coil & distributor – AEB526N & AEB549N



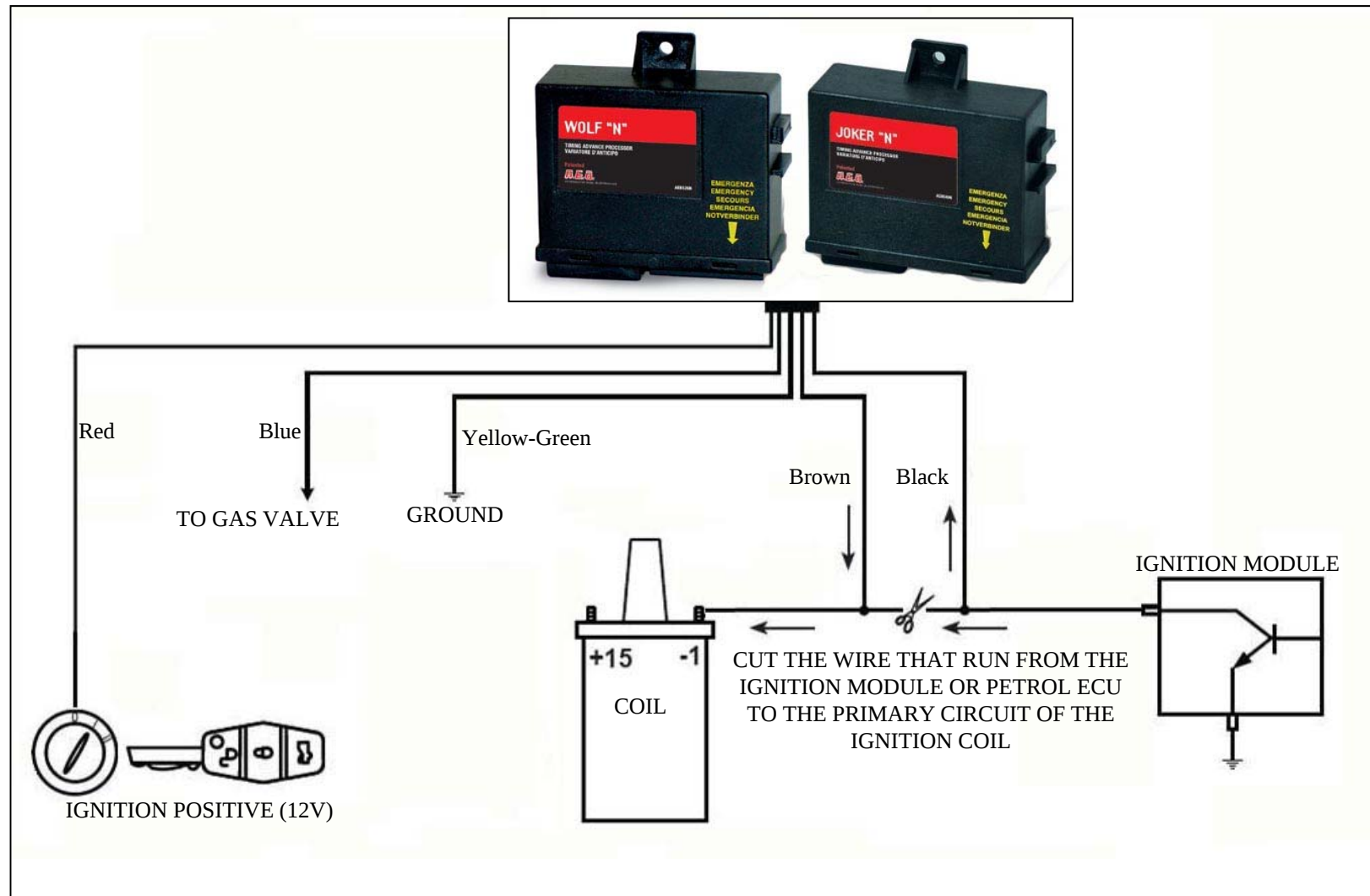
Chapter (5):

- TAP for electronic ignition system with coil & distributor – AEB526N & AEB549N



Chapter (5.1):

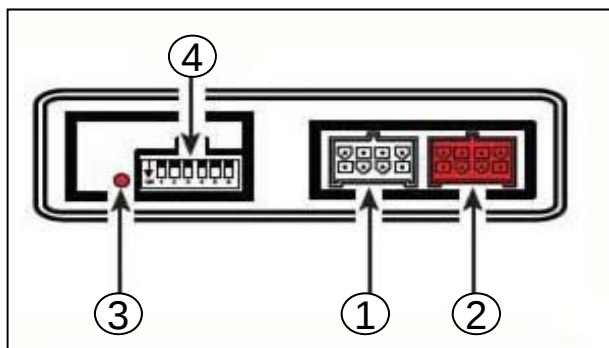
- AEB526N & AEB549N Installation



Chapter (5.2):

• AEB526N & AEB549N Setting

- 1) Main Connection: connect to the harness included in the kit
- 2) Emergency Connector: use to bypass the TAP in case of failure
- 3) Red Led: it is ON when the TAP is working in gas mode and advancing; it is OFF when the TAP is not working, the advance is disabled or the TAP is damaged
- 4) Microswitches: use to set the TAP



④ Deafult Setting

Number of cylinders setting – Switches 1 – 2

Advance setting – Switches 3 – 4

Advance activation – Switches 5 – 6

Advance on idle

Advance in Decelration

Chapter (5.3):

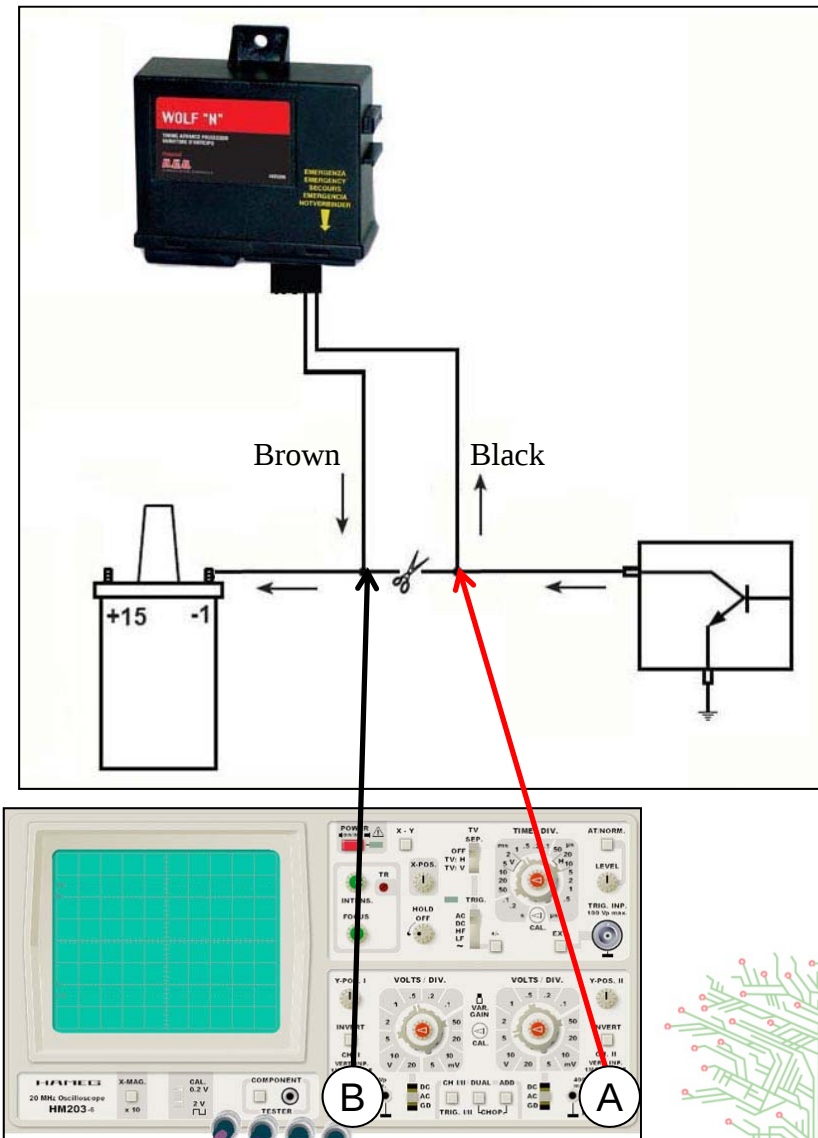
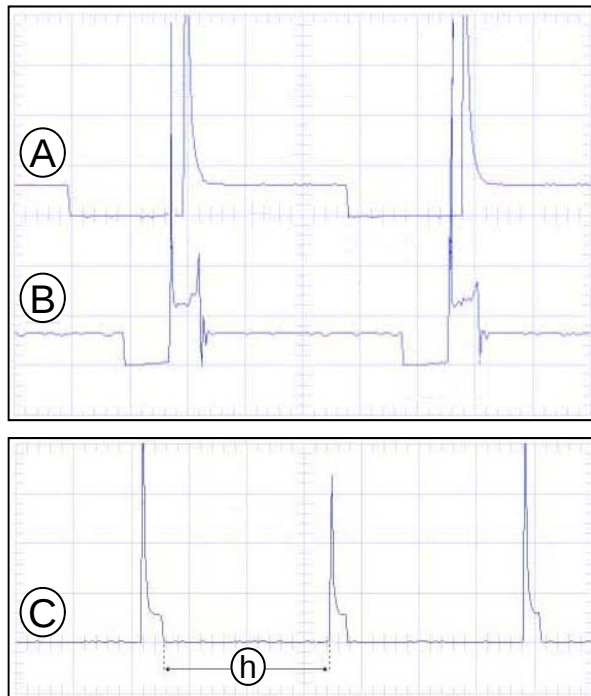
- AEB526N Checking

- Use an oscilloscope with 2 channels

A) Input signal

B) Output signal when AEB526N is suitable

C) Input signal when the AEB526N is not suitable. In this case the charging time H is longer than the 80% of the total period.



Scope setting

CH A: 20v/div

CH B: 20v/Div

Chapter (5.4):

• AEB549N Checking

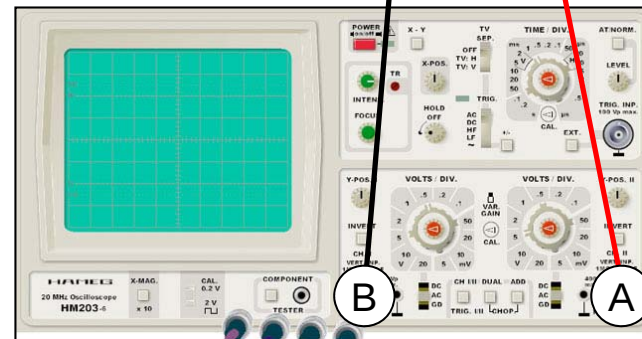
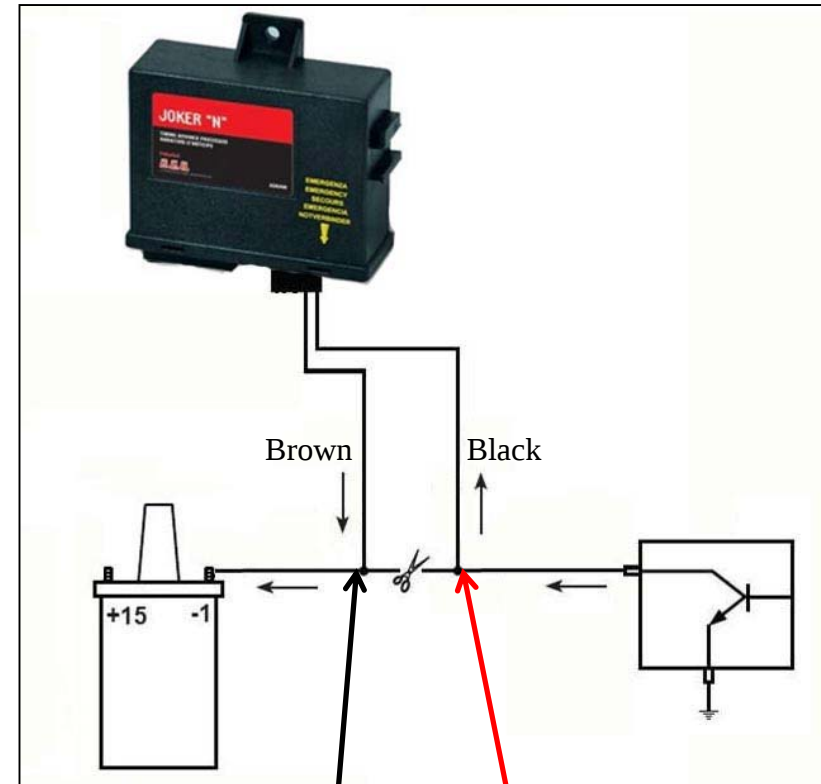
- Use an oscilloscope with 2 channels

A) Input signal

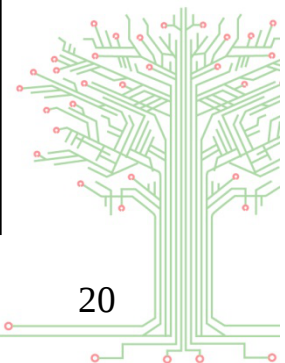
B) Output signal when AEB549N is suitable

C) Input signal when the AEB549N is not suitable. In this case the charging time H is longer than the 10% than the original.

D) Output signal when the AEB549N is not suitable; in this case the current limitation time is 10% longer than the original.

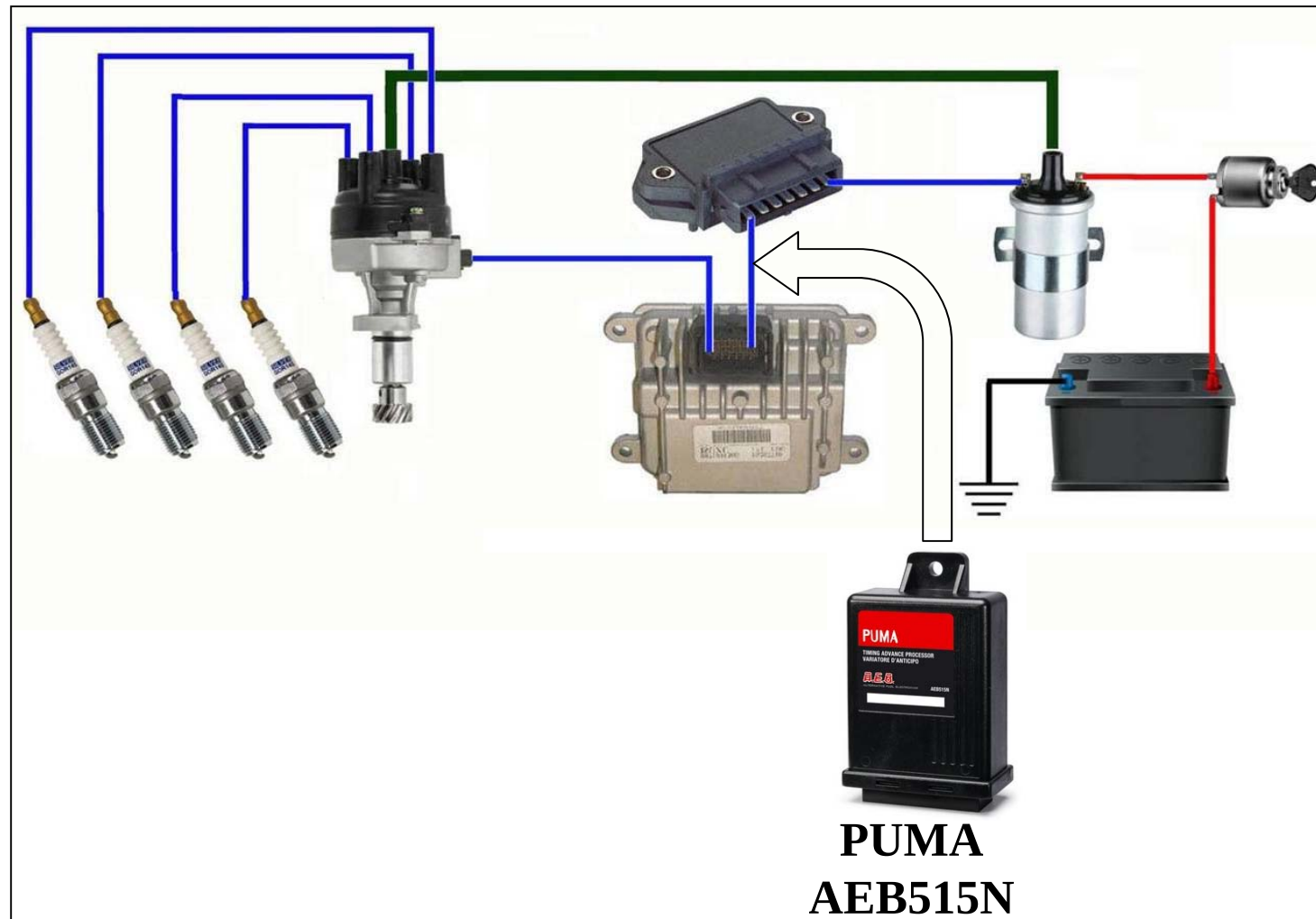


Scope setting
CH A: 20v/div
CH B: 20v/Div

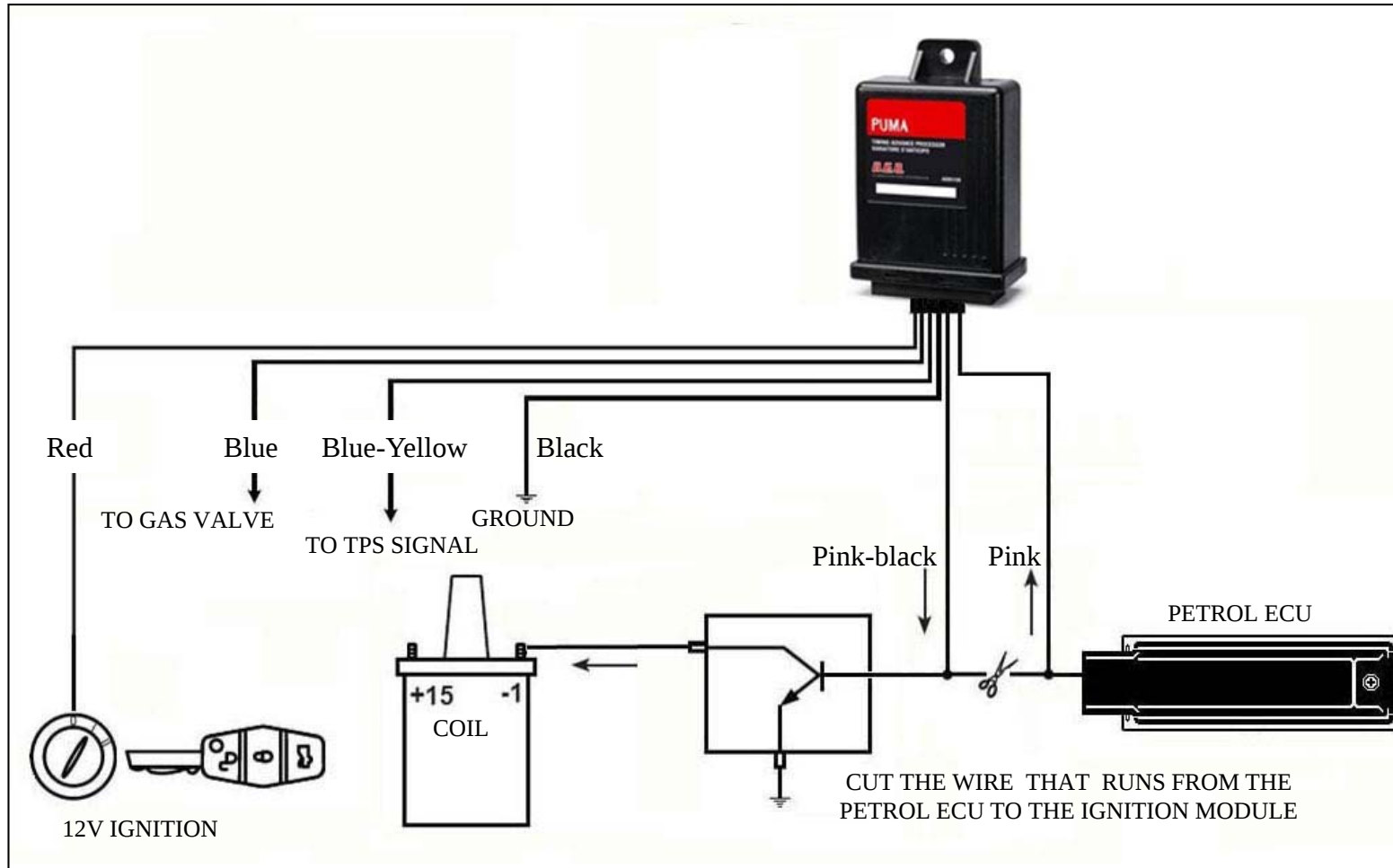


Chapter (6):

- TAP for electronic ignition system with coil, distributor & ignition module – AEB515N reprogrammable



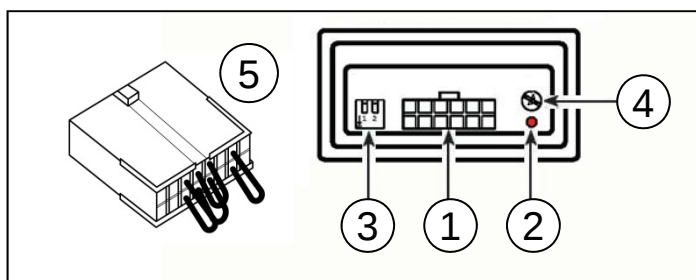
- AEB515N Installation



Chapter (6.2):

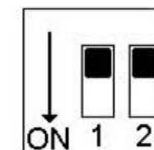
• AEB515N Setting

- 1) Main Connection: connection for the harness included in the kit
- 2) Red Led: it is ON when the TAP is working in gas mode and advancing; it is OFF when the vehicle is in petrol mode, the advance is deactivated, the TAP is not suitable or damaged
- 3) Microswitches : used to set the TAP
- 4) Trimmer: used to set the advance threshold according to the TPS signal
- 5) Emergency connector: used to bypass the TAP in case of failure

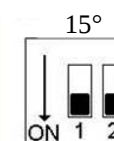
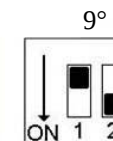
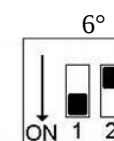
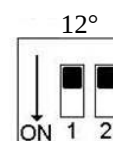


③

Default Setting



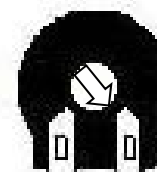
Advance setting – Switches 1 – 2



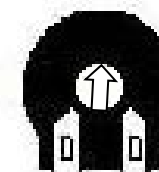
④

Advance activation – Adjusting trimmer

Advance always
activated

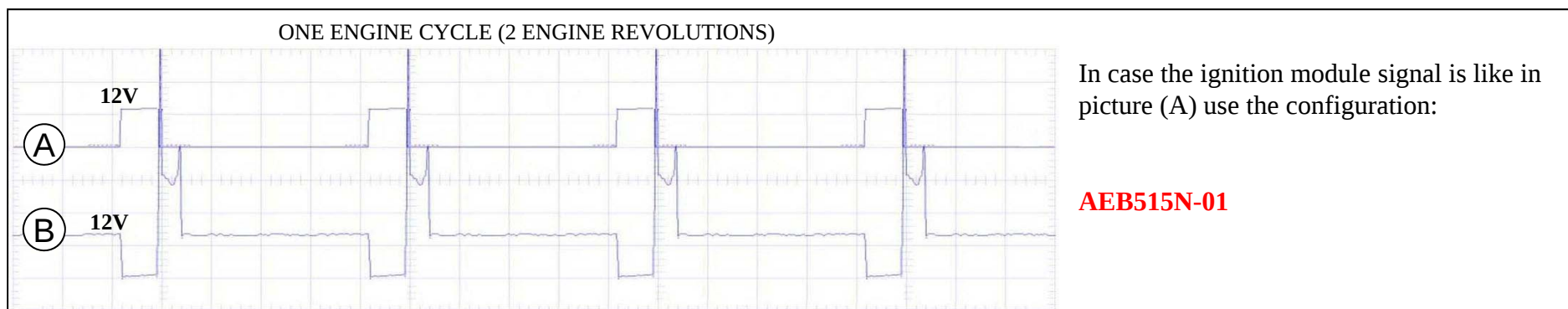
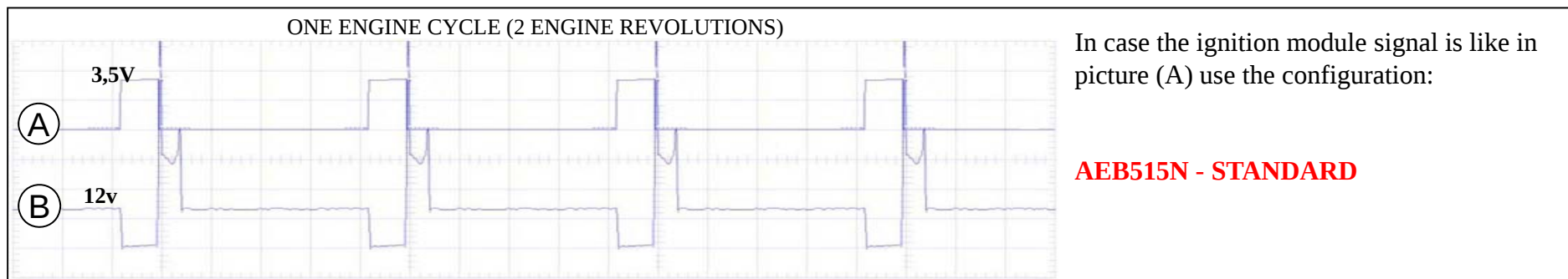


Advance activated
according to TPS



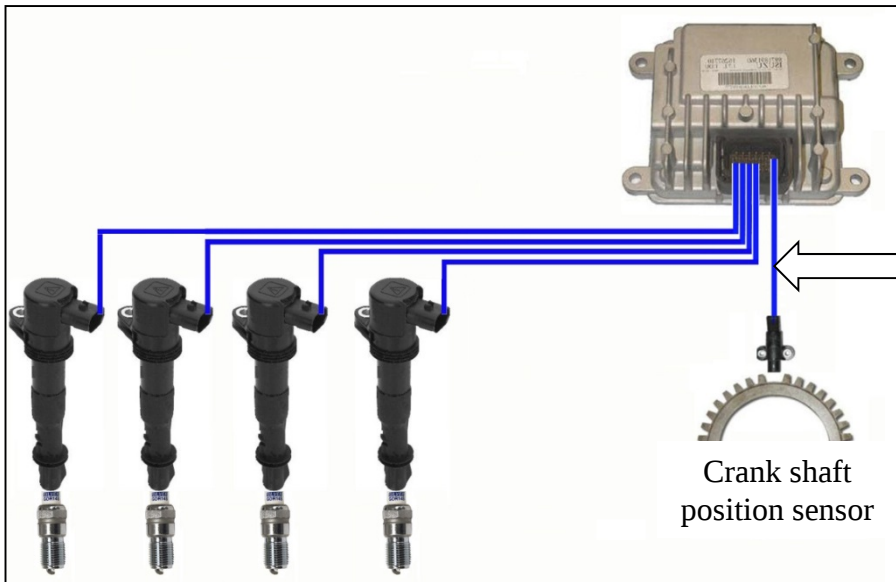
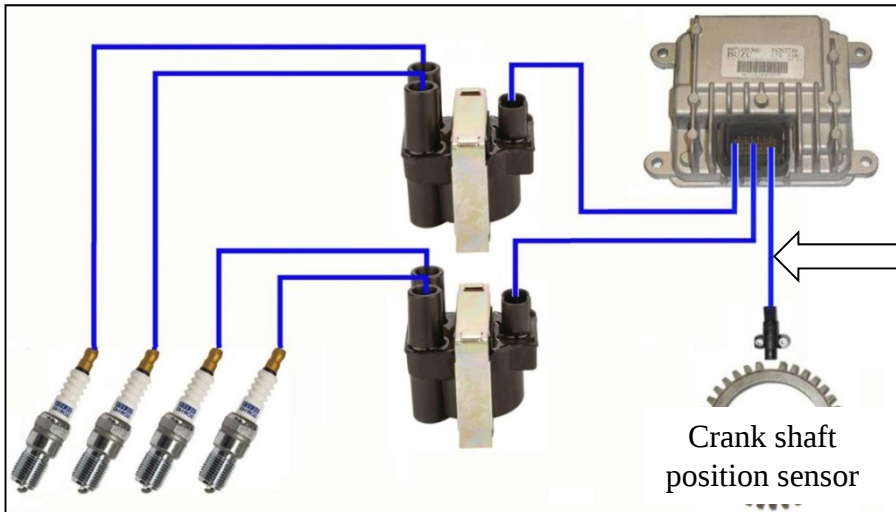
Chapter (6.3):

- AEB515N Configuration identification



Chapter (7):

- TAP for electronics ignition systems with dualcoil or one coil per cylinder – AEB510N – AEB516N – AEB511N – AEB518N – 628458000 – Reprogrammable



COBRA
AEB510N



SPIDER
AEB511N



SHARK
AEB516N



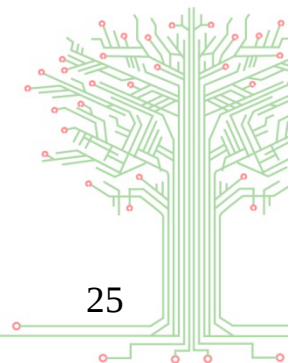
PANDA
AEB518N



PANDA 3H
628458000

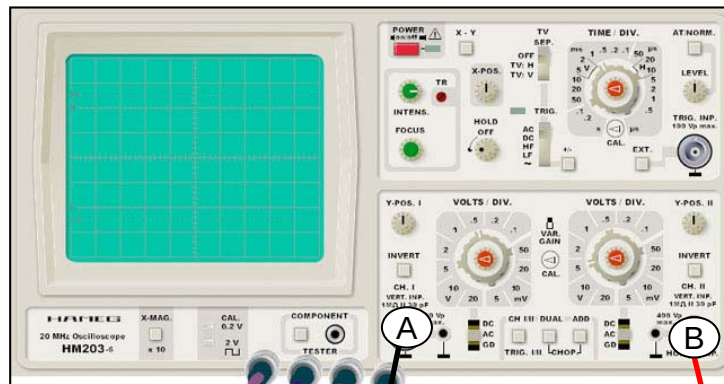


AEB

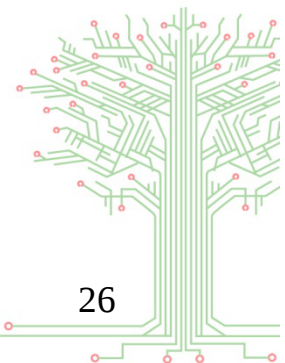
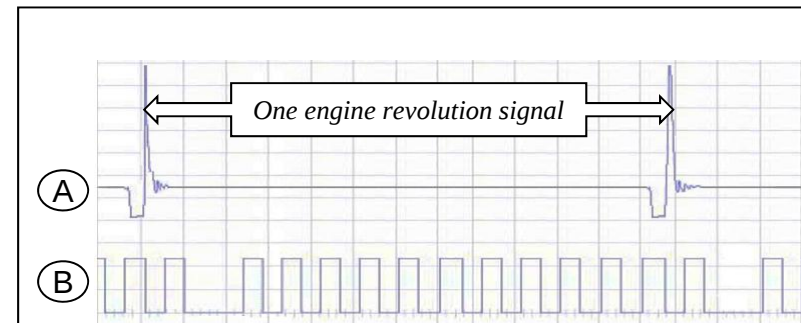
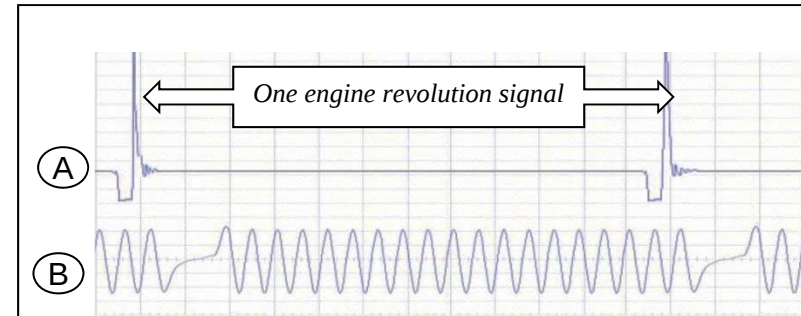
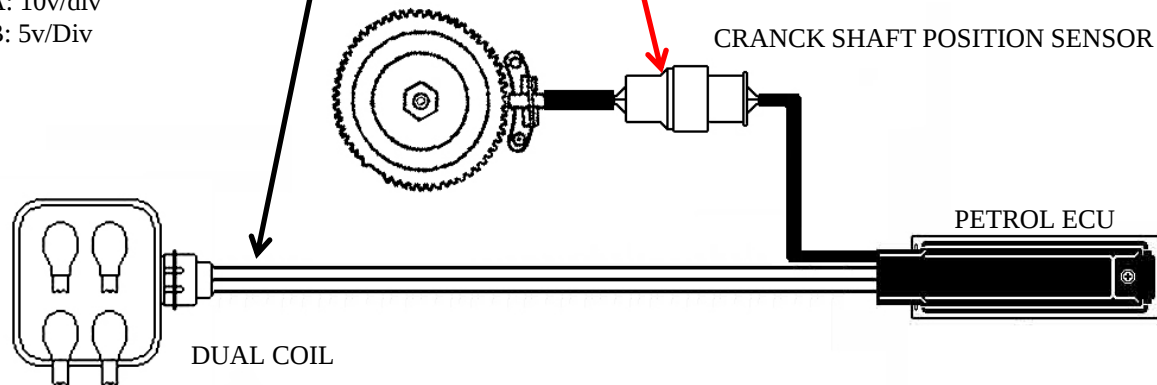


Chapter (7.1):

- CKP sensor signal finding
 - Use an oscilloscope with 2 channels
- A) Ignition coil signal (as a reference)
- B) Crank shaft position sensor signal



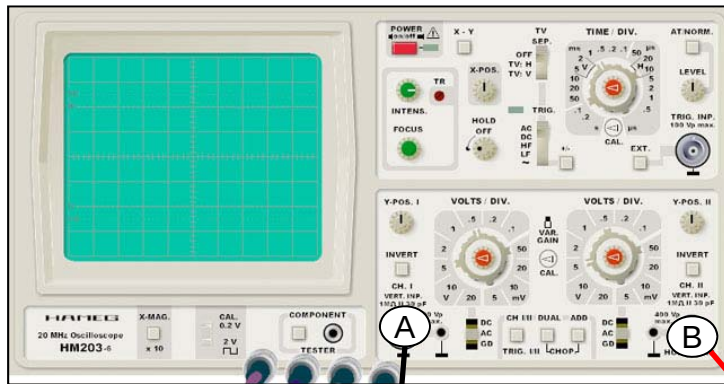
Scope setting
CH A: 10v/div
CH B: 5v/Div



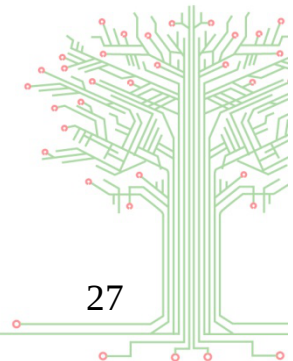
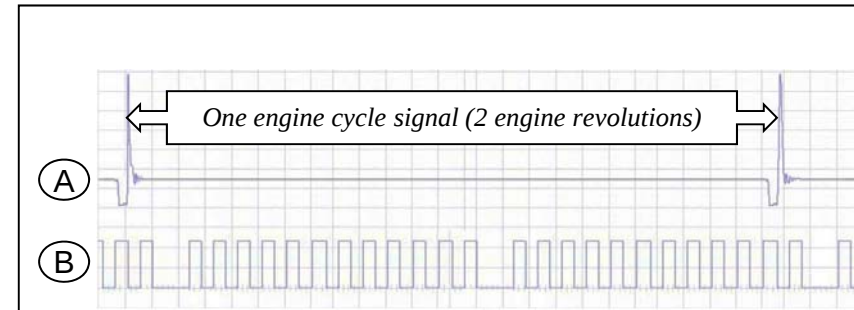
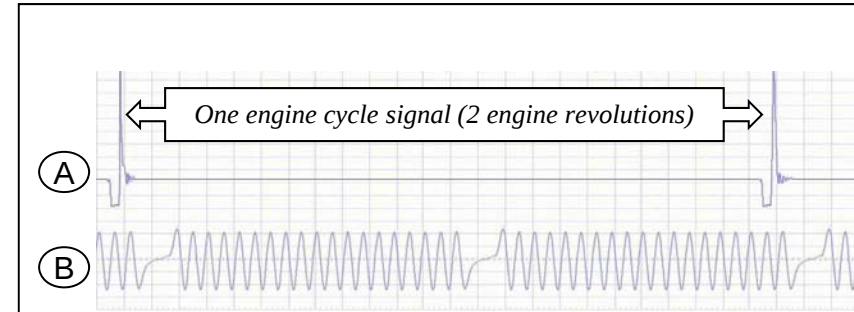
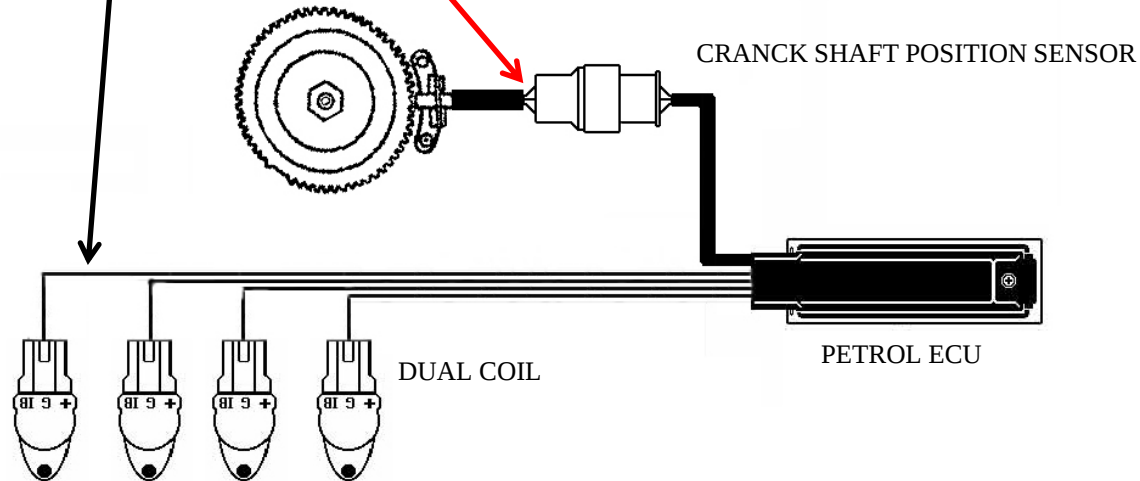
- Use an oscilloscope with 2 channels

A) Ignition coil signal (as reference)

B) Crank shaft position sensor signal



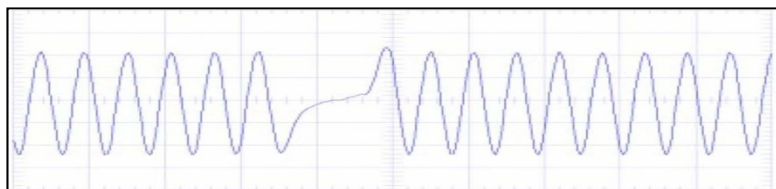
Scope setting
CH A: 10v/div
CH B: 5v/Div



Chapter (7.2):

- Sensor type identification & suitable TAP

INDUCTIVE SENSOR SIGNAL TYPE



COBRA
AEB510N

*for inductive CKP
sensor type; able to
advance one CKP
and one CAM shaft
sensors**



SHARK
AEB516N

*for inductive CKP
sensor type; able to
advance one CKP
and two CAM shaft
sensors**

HALL EFFECT SENSOR SIGNAL TYPE



SPIDER
AEB511N

*for hall effect CKP
sensor type; able to
advance one CKP
and one CAM shaft
sensors**



PANDA
AEB518N

*for hall effect CKP
sensor type; able to
advance one CKP and
one CAM shaft
sensor**



PANDA 3H
628458000

*for hall effect CKP
sensor type and able
to advance one CKP
and two CAM shaft
sensors**

The Cam shaft sensor connection is not mandatory. Do it only if:

- The CAM shaft sensor signal is HALL EFFECT type.**
- The gasoline ECU switches the MIL on and DTC is related to CAM & CKP sincronization.
- In case of Variable Valve Timing engines we suggest to use a newer TAP like AEB516N, AEB518N and 628458000

AEB

- Specification of the inductive Crank shaft position sensor

Sensor Description:

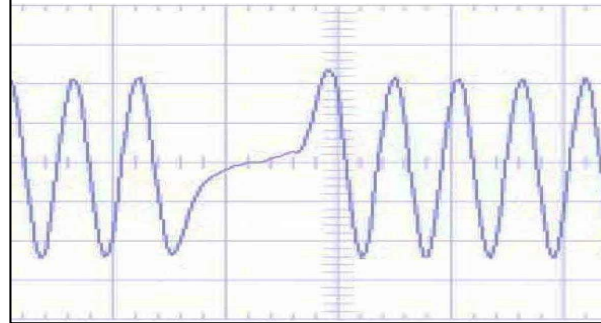
Two wires sensor

- Positive signal
- Negative signal
- Or
- Positive signal
- Ground

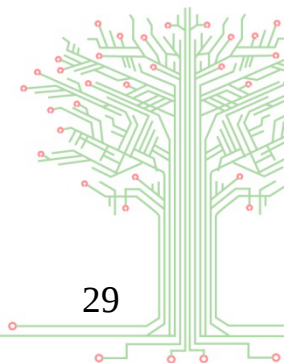
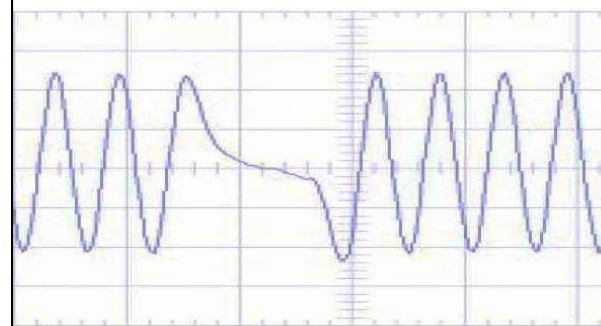
Three wires sensor

- Positive signal
- Negative signal
- Shield
- Or
- Positive Signal
- Ground
- Shield

POSITIVE SIGNAL



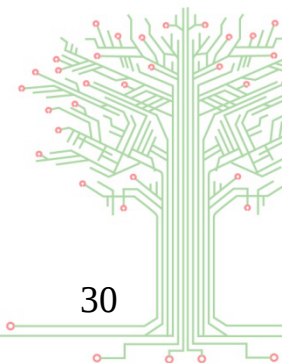
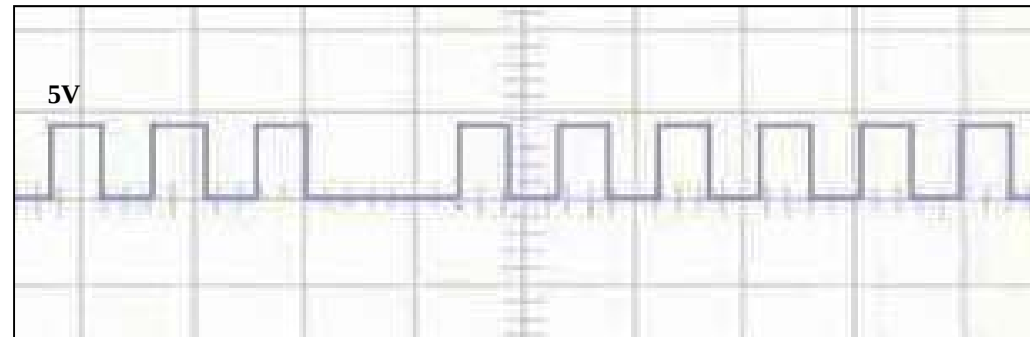
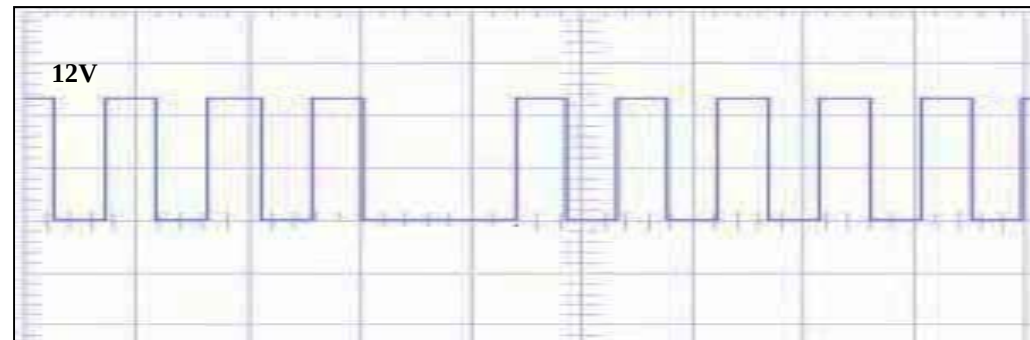
NEGATIVE SIGNAL



- Specification of the hall effect Crank shaft position sensor

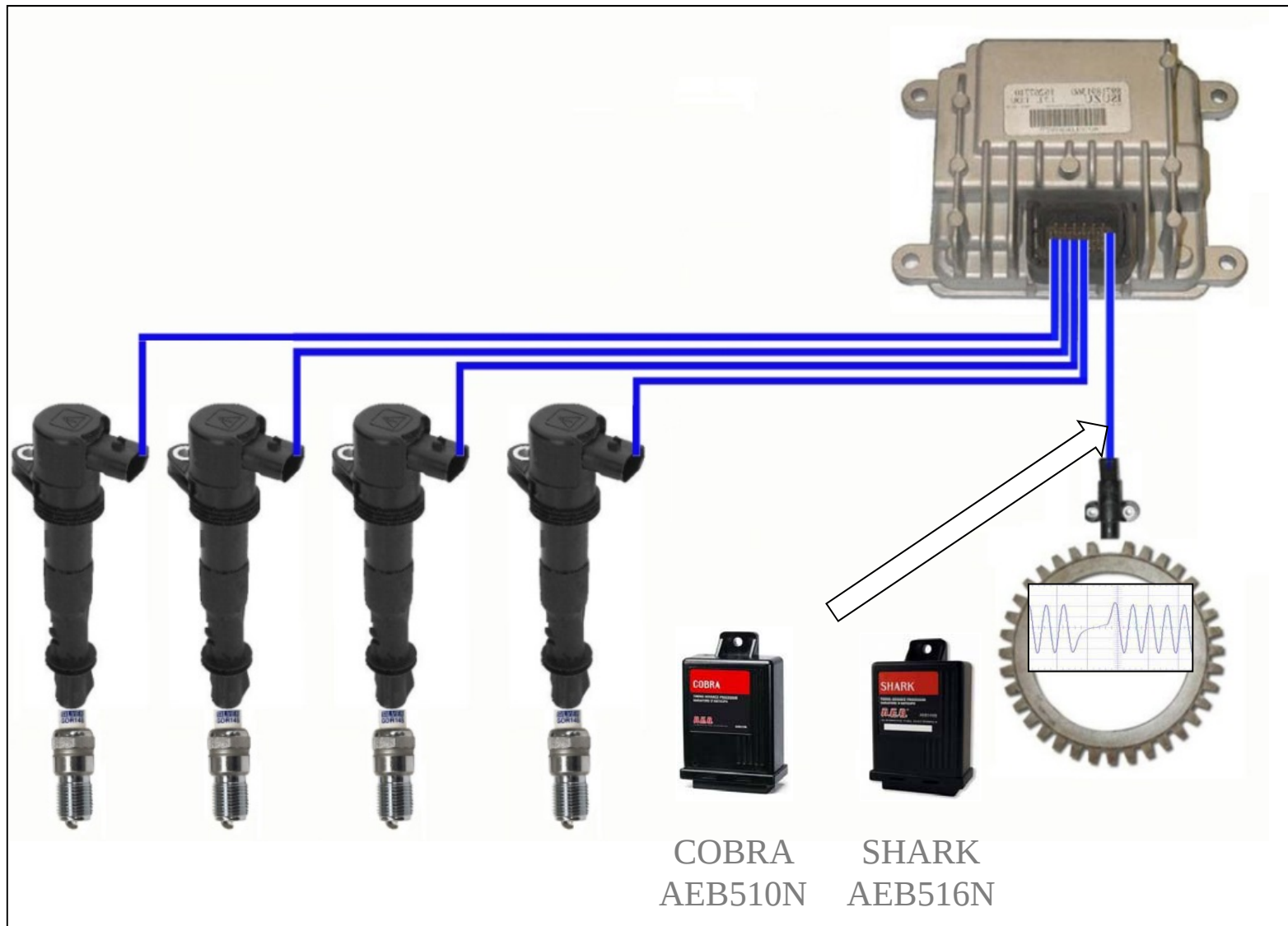
3 wires sensor

- Power Supply (it can be 12 or 5V)
- Ground
- Signal (it can be 12 or 5V)



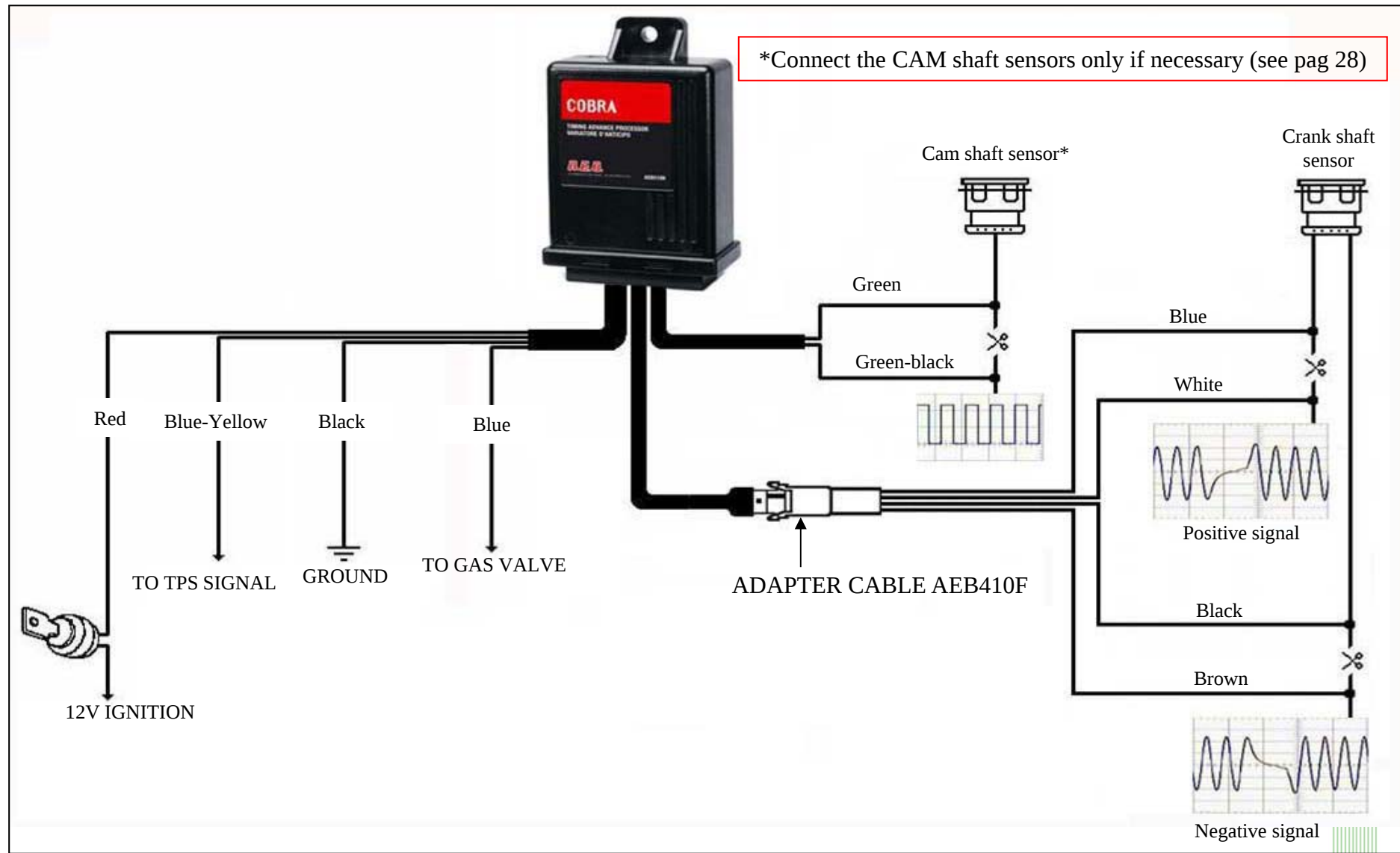
Chapter (8):

- TAP for CKP sensor inductive (AEB510N – AEB516N – Reprogrammable)



Chapter (8.1):

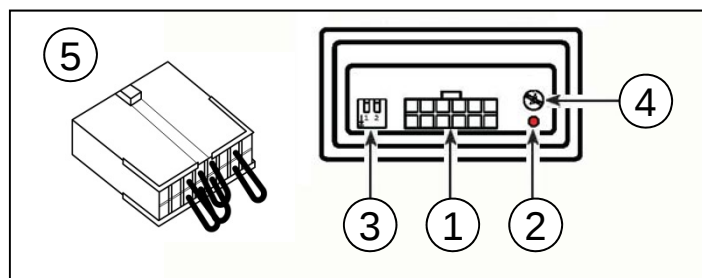
- AEB510N Installation



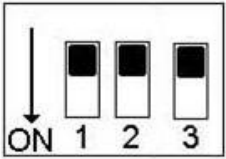
Chapter (8.2):

• AEB510N Setting

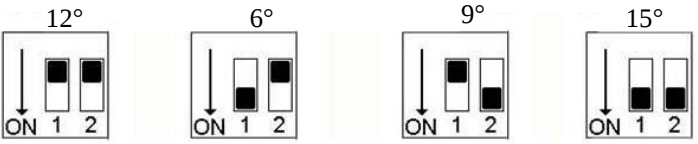
- 1) Main Connection: connection for the harness included in the kit
- 2) Red Led: it is ON when the TAP is working in gas mode and advancing; it is OFF when the vehicle is in petrol mode, the advance is deactivated, the TAP is not suitable or damaged
- 3) Microswitches: used to set the TAP
- 4) Trimmer: used to set the advance threshold according to the TPS signal
- 5) Emergency connector: used to bypass the TAP in case of failure



③ Default Setting



Advance setting – Switches 1 – 2

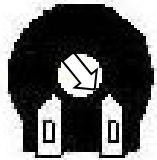


Vehicle type setting – Switch 3

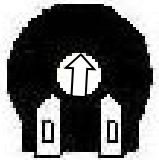


④ Advance activation – Adjusting trimmer

Advance always activated

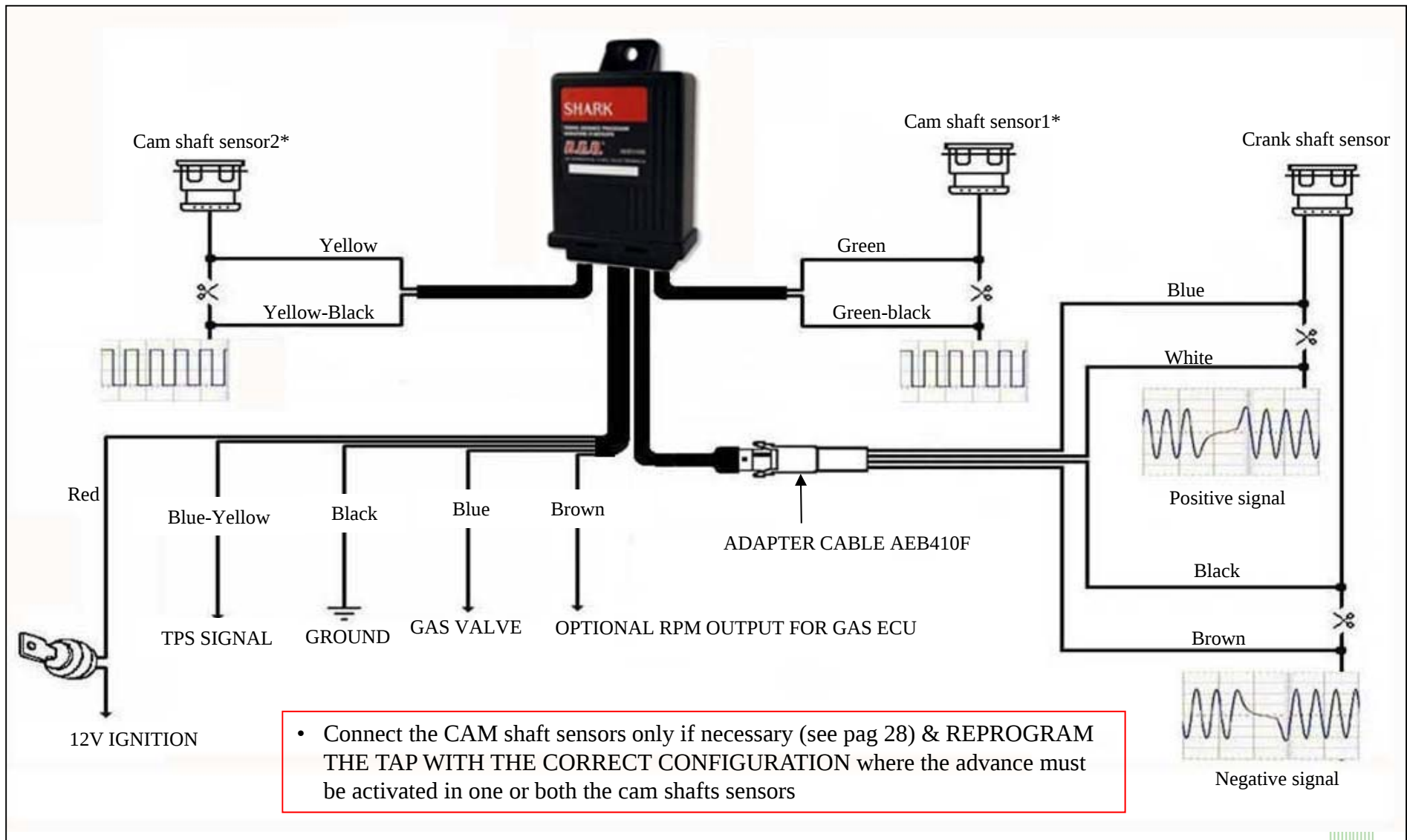


Advance activated according to TPS



Chapter (8.3):

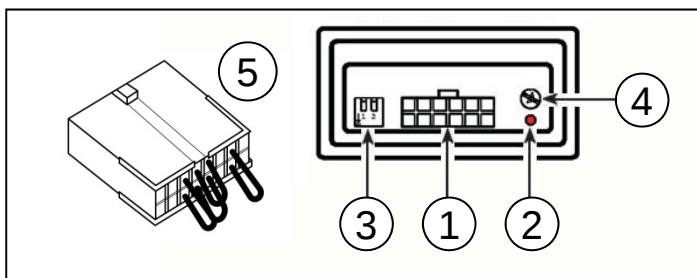
- AEB516N Installation



Chapter (8.4):

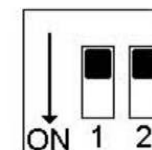
• AEB516N Setting

- 1) Main Connection: connection for the harness included in the kit
- 2) Red Led: it is ON when the TAP is working in gas mode and advancing; it is OFF when the vehicle is in petrol mode, the advance is deactivated, the TAP is not suitable or damaged
- 3) Microswitches: used to set the TAP
- 4) Trimmer: used to set the advance threshold according to the TPS signal
- 5) Emergency connector: used to bypass the TAP in case of failure

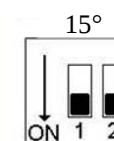
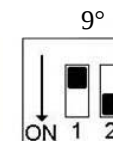
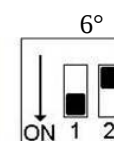
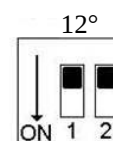


③

Default Setting



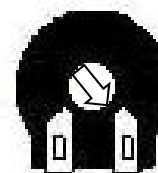
Advance setting – Switches 1 – 2



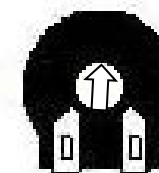
④

Advance activation – Adjusting trimmer

Advance always
activated

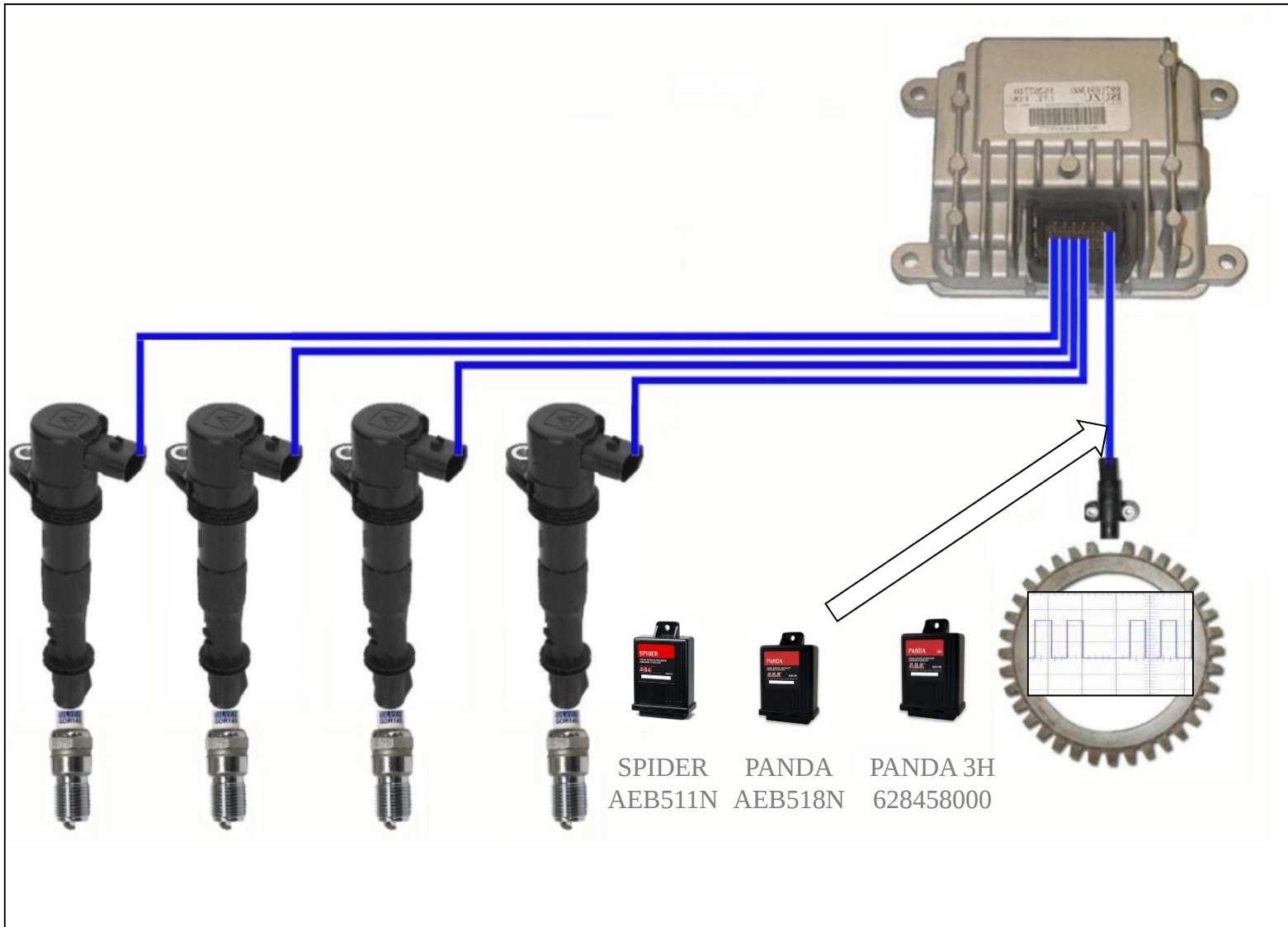


Advance activated
according to TPS



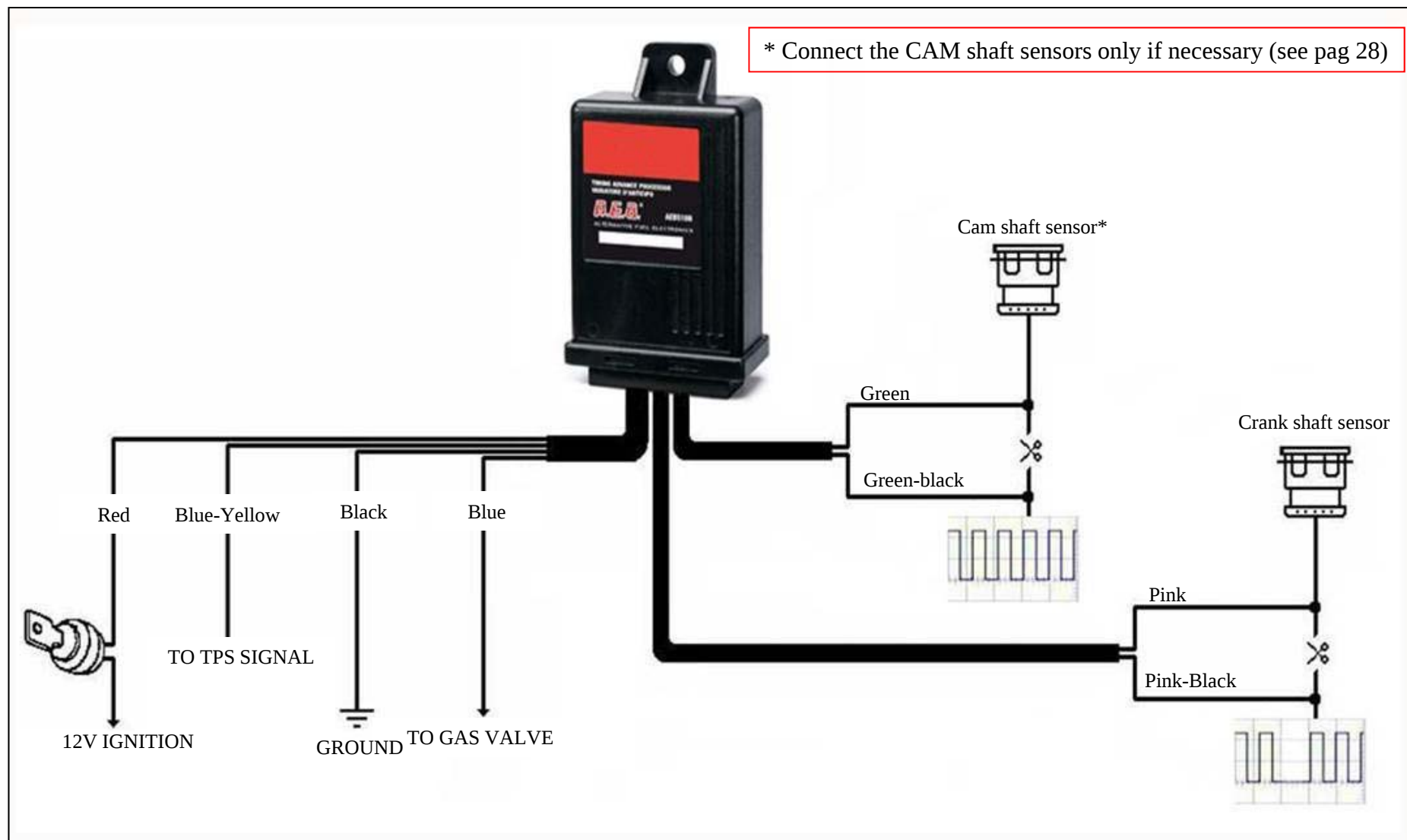
Chapter (9):

- TAP for CKP hall effect (AEB511N – AEB518N – 628458000 – Reprogrammable)



Chapter (9.1):

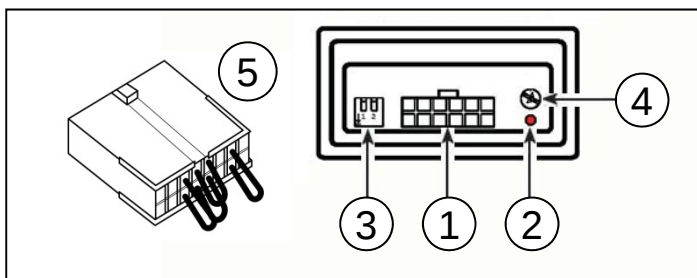
- AEB511N – Installation



Chapter (9.2):

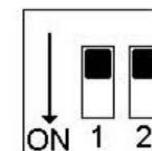
- AEB511N – Setting

- 1) Main Connection: connection for the harness included in the kit
- 2) Red Led: it is ON when the TAP is working in gas mode and advancing; it is OFF when the vehicle is in petrol mode, the advance is deactivated, the TAP is not suitable or damaged
- 3) Microswitches: used to set the TAP
- 4) Trimmer: used to set the advance threshold according to the TPS signal
- 5) Emergency connector: used to bypass the TAP in case of failure

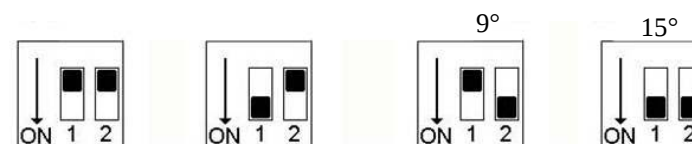


③

Default Setting



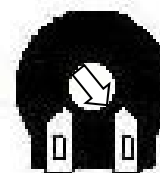
Advance setting – Switches 1 – 2



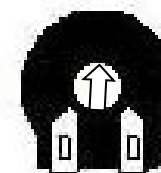
④

Advance activation – Adjusting trimmer

Advance always
activated

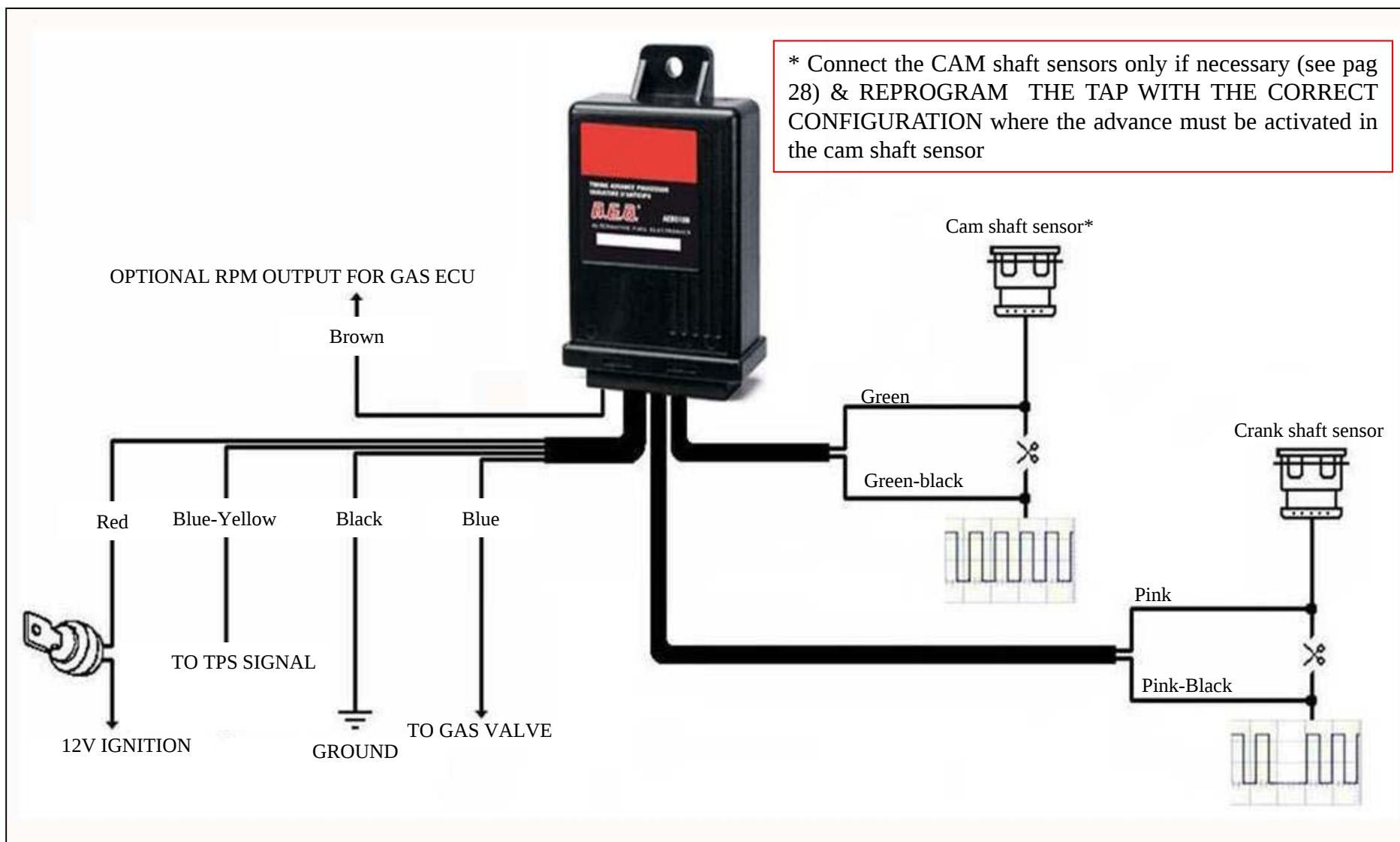


Advance activated
according to TPS



Chapter (9.3):

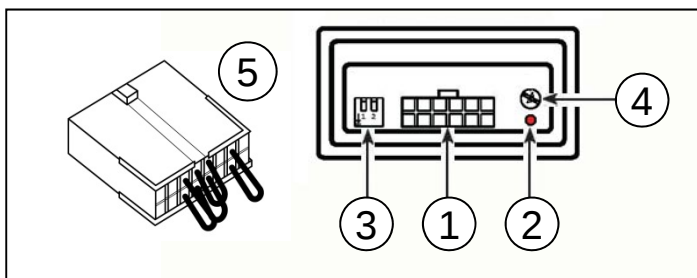
- AEB518N – Installation



Chapter (9.4):

• 518N – Setting

- 1) Main Connection: connection to the harness included in the kit
- 2) Red Led: it is ON when the TAP is working in gas mode and advancing; it is OFF when the vehicle is in petrol mode, the advance is deactivated, the TAP is not suitable or damaged
- 3) Microswitches: used to set the TAP
- 4) Trimmer: used to set the advance threshold according to the TPS signal
- 5) Emergency connector: used to bypass the TAP in case of failure



③ Default Setting

The diagram shows two switches, labeled 1 and 2, both in the 'ON' position. An arrow points down to the 'ON' label.

Advance setting – Switches 1 – 2

Four diagrams show different combinations of switches 1 and 2. The first two are 'ON' (arrow down). The next two are '9°' and '15°' (arrows pointing to the right). The switches are labeled 1 and 2, and the 'ON' label is present in each diagram.

④ Advance activation – Adjusting trimmer

Advance always activated

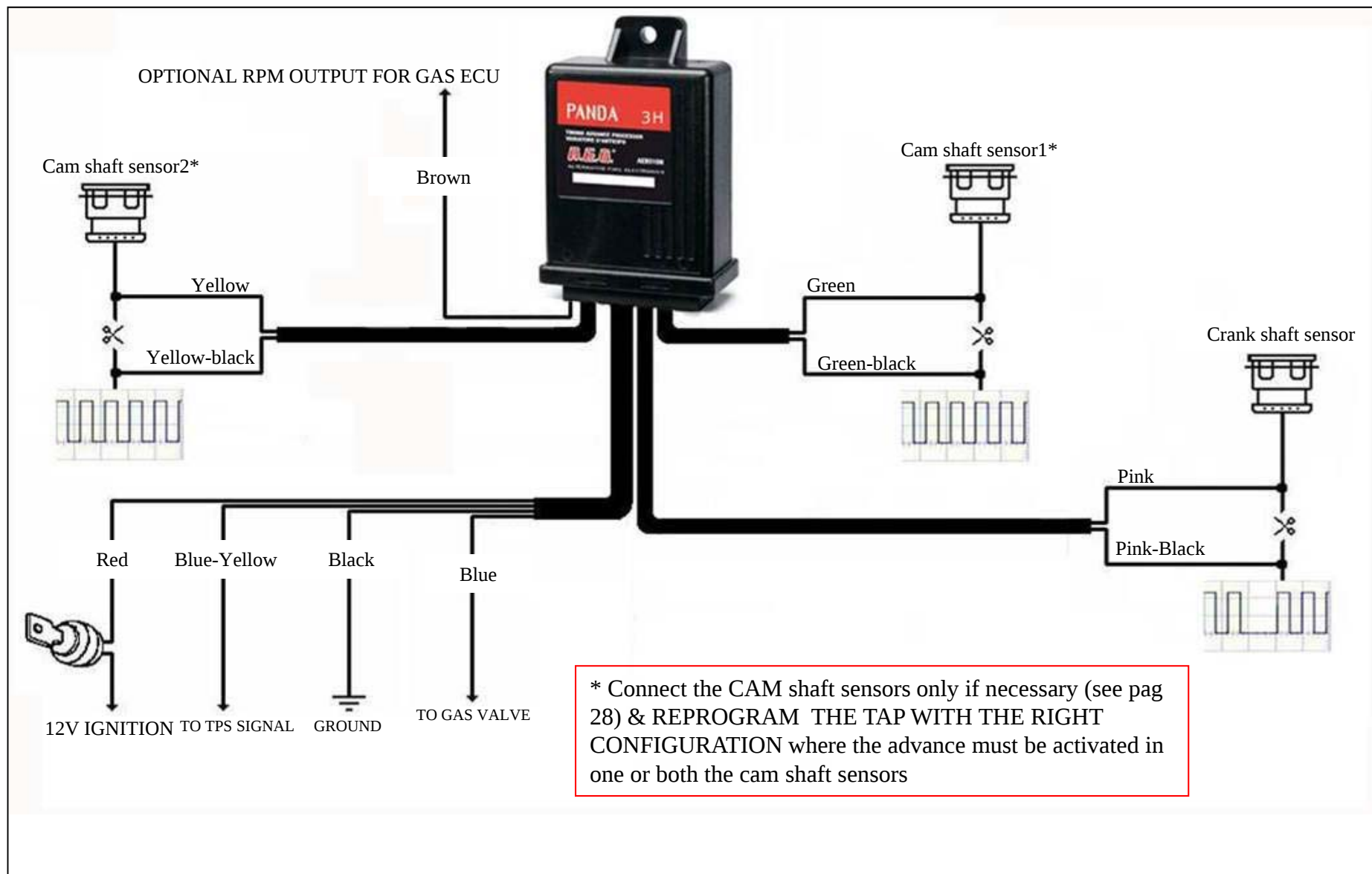
The diagram shows the trimmer potentiometer with a downward-pointing arrow, indicating the 'Advance always activated' setting.

Advance activated according to TPS

The diagram shows the trimmer potentiometer with an upward-pointing arrow, indicating the 'Advance activated according to TPS' setting.

Chapter (9.5):

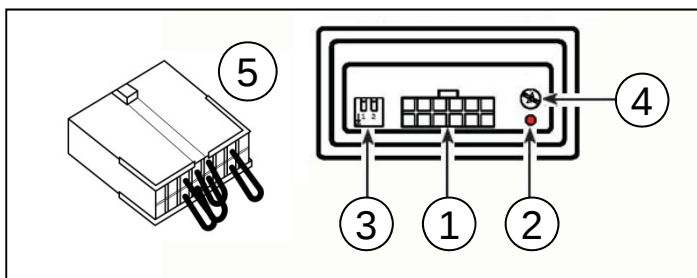
- 628458000 – Installation



Chapter (9.6):

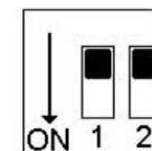
- 628458000 – Setting

- 1) Main Connection: connection for the harness included in the kit
- 2) Red Led: it is ON when the TAP is working in gas mode and advancing; it is OFF when the vehicle is in petrol mode, the advance is deactivated, the TAP is not suitable or damaged
- 3) Microswitches: used to set the TAP
- 4) Trimmer: used to set the advance threshold according to the TPS signal
- 5) Emergency connector: used to bypass the TAP in case of failure

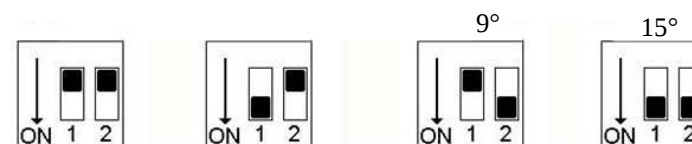


③

Default Setting



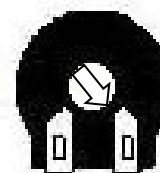
Advance setting – Switches 1 – 2



④

Advance activation – Adjusting trimmer

Advance always
activated



Advance activated
according to TPS

