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   9.4 AEB518N Setting
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   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
Chapter (1):

- Ignition types

  - Electronic Ignition system composed by:

    1) Distributor

    2) Ignition module

    3) Coil

    4) Injection control unit
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
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

Diagram:
- Check the ignition system
  - Mechanical ignition
    - Coil & distributor
      - Electronic ignition
        - Coil, distributor & ignition module
          - Dual coil or one coil for cylinder
            - Check the CKP sensor
              - CKP Sensor inductive type
                - Reprogrammable
              - CKP Sensor inductive hall effect type
                - Reprogrammable
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

![Diagram showing ignition module connections and instructions]

- **Red** connecting to **yellow-green** (to gas valve)
- **Blue** connecting to **ground**
- **Yellow-green** connecting to **brown**
- **Brown** connecting to **black**

**Cut the wire that run from the ignition module or petrol ECU to the primary circuit of the ignition coil.**
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

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![Diagram of TAP connections and settings](image-url)
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.
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.
Chapter (6):

- TAP for electronic ignition system with coil, distributor & ignition module – AEB515N reprogrammable
Chapter (6.1):

- AEB515N Installation

**Diagram:**
CUT THE WIRE THAT RUNS FROM THE PETROL ECU TO THE IGNITION MODULE

Key:
- Red
- Blue
- Blue-Yellow
- Black
- Pink-black
- Pink
- 12V IGNITION
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

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**Default Setting**

**Advance setting – Switches 1 – 2**

<table>
<thead>
<tr>
<th>Advance</th>
<th>Switches 1 – 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>12°</td>
<td>ON 1 2</td>
</tr>
<tr>
<td>6°</td>
<td>ON 1 2</td>
</tr>
<tr>
<td>9°</td>
<td>ON 1 2</td>
</tr>
<tr>
<td>15°</td>
<td>ON 1 2</td>
</tr>
</tbody>
</table>

**Advance activation – Adjusting trimmer**

Advance always activated

Advance activated according to TPS
Chapter (6.3):

- **AEB515N Configuration identification**

  **ONE ENGINE CYCLE (2 ENGINE REVOLUTIONS)**

  In case the ignition module signal is like in picture (A) use the configuration:

  **AEB515N - STANDARD**

  ![Diagram](image1)

  In case the ignition module signal is like in picture (A) use the configuration:

  **AEB515N-01**

  ![Diagram](image2)

  In case the ignition module signal is like in picture (A) use the configuration:

  **AEB515N-07**

  ![Diagram](image3)
Chapter (7):

- TAP for electronics ignition systems with dual coil or one coil per cylinder – AEB510N – AEB516N – AEB511N – AEB518N – 628458000 – Reprogrammable
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
Chapter (7.1):

- **CKP sensor signal finding**
  - 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

<table>
<thead>
<tr>
<th><strong>INDUCTIVE SENSOR SIGNAL TYPE</strong></th>
<th><strong>HALL EFFECT SENSOR SIGNAL TYPE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COBRA AEB510N</strong>&lt;br&gt;for inductive CKP sensor type; able to advance one CKP and one CAM shaft sensors*</td>
<td><strong>SPIDER AEB511N</strong>&lt;br&gt;for hall effect CKP sensor type; able to advance one CKP and one CAM shaft sensors*</td>
</tr>
<tr>
<td><strong>SHARK AEB516N</strong>&lt;br&gt;for inductive CKP sensor type; able to advance one CKP and two CAM shaft sensors*</td>
<td><strong>PANDA AEB518N</strong>&lt;br&gt;for hall effect CKP sensor type; able to advance one CKP and one CAM shaft sensor*</td>
</tr>
<tr>
<td><strong>PANDA 3H 628458000</strong>&lt;br&gt;for hall effect CKP sensor type and able to advance one CKP and two CAM shaft sensors*</td>
<td></td>
</tr>
</tbody>
</table>

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 synchronization.
• In case of Variable Valve Timing engines we suggest to use a newer TAP like AEB516N, AEB518N and 628458000
Chapter (7.3):

• 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
Chapter (7.4):

- 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

*Connect the CAM shaft sensors only if necessary (see pag 28)
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
Chapter (8.3):

- AEB516N Installation

- Connect the CAM shaft sensors only if necessary (see pag 28) & REPROGRAM THE TAP WITH THE CORRECT CONFIGURATION where the advance must be activated in one or both the cam shafts sensors
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
Chapter (9):

- TAP for CKP hall effect (AEB511N – AEB518N – 628458000 – Reprogrammable)
Chapter (9.1):

- AEB511N – Installation

* Connect the CAM shaft sensors only if necessary (see pag 28)
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

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**Default Setting**

Advance setting – Switches 1 – 2

Advance always activated

Advance activated according to TPS
Chapter (9.3):

- AEB518N – Installation

* Connect the CAM shaft sensors only if necessary (see page 28) & REPROGRAM THE TAP WITH THE CORRECT CONFIGURATION where the advance must be activated in the cam shaft sensor.
Chapter (9.4):

- **518N – Setting**

  1) **Main Connection**: connection of 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

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![Diagram](image)

**Default Setting**

- Advance setting – Switches 1 – 2
- Advance always activated

**Advance activation – Adjusting trimmer**

- Advance activated according to TPS
Chapter (9.5):

- 628458000 – Installation

*Connect the CAM shaft sensors only if necessary (see pag 28) & REPROGRAM THE TAP WITH THE RIGHT CONFIGURATION where the advance must be activated in one or both the cam shaft sensors.*
Chapter (9.6):

- 628458000 – Setting

1) Main Connection: connection fo 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