

Beta 1461/C11A



EN

INSTRUCTIONS FOR USE

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IMPORTANT: Please always refer to the manufacturer's workshop manual to keep up-to-date about the related exact procedures and data.

Applications:

RENAULT

Laguna III (07-), Megane, Scenic, Velsatis, Espace, Koleos, Trafic.

NISSAN

Quashqui, X-Trail, Primastar.

VAUXHALL/OPEL

Vivaro.

Kit Contents:

Number	Item	Description
1	P01	Camshaft locking/alignment tool
2	P04	Driving shaft locking pin
3	P02	Driving shaft pulley locking tool
4	P03	Flywheel locking tool
5		Two-piece camshaft alignment gear
6	P05	4-mm camshaft locking pin
7	P07	3-mm offset hex key wrench
8	P06	Bolt M6
9	P08	Chain tightener locking key

Special Precautions:

Always disconnect the earthing cable of the battery.

Turn neither the driving shaft nor the camshaft if the distribution chain has been removed.

Remove the glow plugs to make it easier for the engine to run.

Always run the engine in the normal direction of rotation (unless otherwise instructed).

Do not turn the engine while working on the camshaft or any other pinions.

If available: before disassembly, mark the position of the driving shaft position sensor.

Keep to all the recommended driving torques.

Valve Timing Procedures:

1. To remove/install the distribution chain, please take the following steps:

- Remove both the engine and the gearbox:
- Make sure that the engine is at the TDC of cylinder n°. 1.
- Make sure that the driving shaft locking pin has been fitted in [1].
- Make sure that the groove [2] on the exhaust camshaft is in the horizontal position with the large section on the groove turned upwards.
- Make sure that the timing notch on the induction camshaft gear [4] is in the 12 o'clock position and aligned with the protuberance on the head cover [5].
- Make sure that the slot for the driving shaft key is in the 12 o'clock position [6].
- Lock the distribution chain tightener in a retracted position:

Press the chain tightener blade [7].

Insert a 3-mm offset hex key wrench to lock the chain tightener piston [8].

- Align the copper-coloured link with driving shaft pinion timing notch [9].
- Align the copper-coloured link with the camshaft pinion timing notch [10].
- Take off the 3-mm offset hex key wrench to remove the piston from the chain tightener after installation [8].
- Install the camshaft locking/alignment tool [11].
- Fix the tool by means of bolt M6 [12].

NB: The camshaft locking/alignment tool can be installed only if the valves have been timed correctly.

- Install some new bolts on the exhaust camshaft pinion.

Driving torque: 10Nm+40°. Tolerance: $\pm 6^\circ$.

- Remove the driving shaft locking tool [1].
- Install a new central bolt on the driving shaft pulley.
- Driving torque: 50 Nm+85°. Tolerance: $\pm 6^\circ$.

2. Remove the gears from the camshaft:

NB: If the gear and the pinion of the exhaust camshaft have been removed, during installation make sure that the bolts are not at the ends of their grooves [13].

- Make sure that the engine is at the TDC of cylinder n°. 1.
- Make sure that the driving shaft locking pin has been fitted in [1].
- Make sure that the groove [2] on the exhaust camshaft is in the horizontal position with the large section on the groove turned upwards [3].
- Make sure that the timing notch on the induction camshaft gear [4] is in the 12 o'clock position and aligned with the protuberance on the head cover [5].
- Remove the exhaust camshaft pinion and the distribution chain.
- Lock the two-piece induction camshaft gear with the 4-mm pin [14].
- Remove the exhaust camshaft gear.
- Remove the two-piece gear from the induction camshaft.

3. Reinstall the camshaft gears:

- Make sure that the groove [2] on the exhaust camshaft is in the horizontal position with the large section on the groove turned upwards [3].
- Make sure that the groove on the induction camshaft [15] is in the 12 o'clock position and aligned with the protuberance on the head cover [5].
- Align the two-piece induction camshaft gear and lock it by means of the 4-mm pin [14]. For this operation use item xxx.
- Install the two-piece induction camshaft gear.
- Install the exhaust camshaft gear.
- Remove the 4-mm locking pin [14] from the two-piece induction camshaft gear.
- Install the exhaust camshaft pinion and the distribution chain, making sure that the marked links [9] and [10] are aligned.
- Install the camshaft locking/alignment tool [11].
- Fix the tool by means of bolt M6 [12]

NB: The camshaft locking/alignment tool can be installed only if the valves have been timed correctly.

- Install some new bolts on the exhaust camshaft pinion.

Driving torque: 10Nm.+40°. Tolerance: $\pm 6^\circ$.

- Install a new bolt on the induction camshaft gear.
- Driving torque: 20Nm + 35°. Tolerance: $\pm 6^\circ$.

