

RENAULT

Technical Note 3570A

XXXX

Developments in elastomer seals

This note cancels and replaces Technical Note 2007A

77 11 309 282

NOVEMBER 2001

EDITION ANGLAISE

The repair methods given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The methods may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which his vehicles are constructed*.

All copyright reserved by RENAULT.

Copying or translating, in part or in full, of this document or use of the service part reference numbering system is forbidden without the prior written authority of RENAULT.

© RENAULT 2001

Contents

Page

10A

ENGINE AND PERIPHERALS

Overhauling the engine

General information	10A-1
Tooling required for fitting old type elastomer seals	10A-2
Method for fitting old type elastomer seals	10A-4
Tooling required for fitting new type elastomer seals	10A-5
Tooling required for removing new type elastomer seals	10A-5
Method for removing elastomer seals	10A-6
Method for fitting new type elastomer seals	10A-7

DXX engines

Camshaft elastomer seal (timing end)	10A-8
Crankshaft elastomer seal (timing end)	10A-10
Crankshaft elastomer seal (flywheel end)	10A-12

FXX engines

Crankshaft elastomer seal (timing end)	10A-14
Crankshaft elastomer seal (flywheel end)	10A-16

KXX engines

Camshaft elastomer seal (timing end)	10A-17
Crankshaft elastomer seal (timing end)	10A-18
Crankshaft elastomer seal (flywheel end)	10A-20

G9X engines

Camshaft elastomer seal (timing end)	10A-22
Relay shaft elastomer seal	10A-24
Crankshaft elastomer seal (timing end)	10A-26
Crankshaft elastomer seal (flywheel end)	10A-28

GENERAL INFORMATION

Developments in engine elastomer seals (fitted to the camshafts, relay shaft and crankshaft).

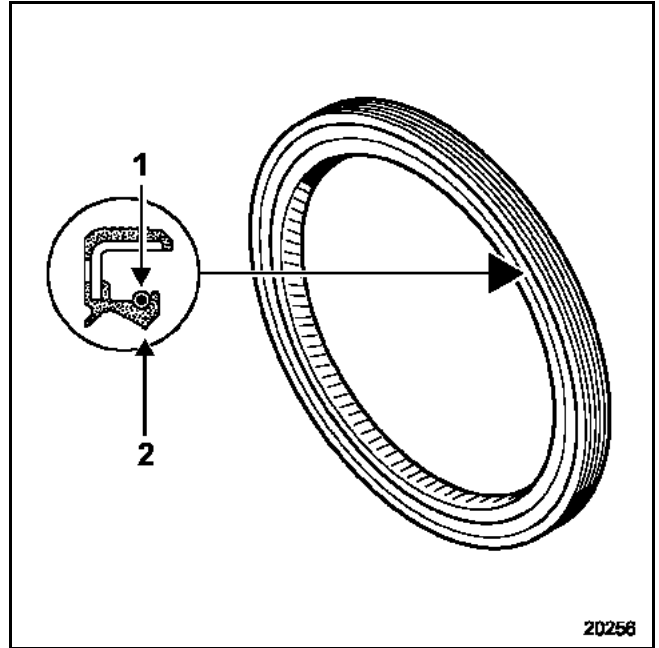
Fitting and removing the new type elastomer seal from the engine requires new tools and precautions compared to the old type seal.

The old and new type of seal can both be used on the same engine. They are not interchangeable. Old type seals must be replaced with old type seals (still available from the Parts Department), and a new type seal with a new type seal.

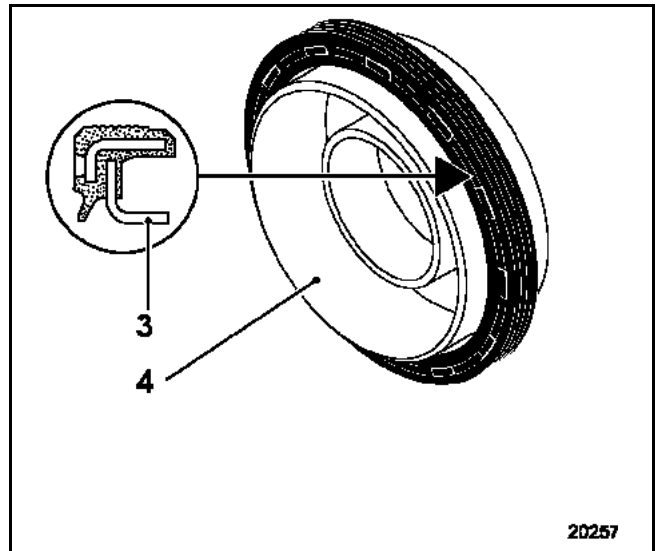
Old type seals may be replaced with new type seals if the crankshaft, relay shaft or camshaft(s) are replaced. This is possible if the vehicle is so fitted during production (eg.: G9, F9, K9, K4, D7 and D4 engines).

Old and new seals are easily recognized.

The old elastomer seal is fitted with a spring (1) and has a "V"-shaped sealing lip (2).



The new elastomer seal has a flat sealing lip (3) and a protector (4) which also assists in fitting the seal to the engine.



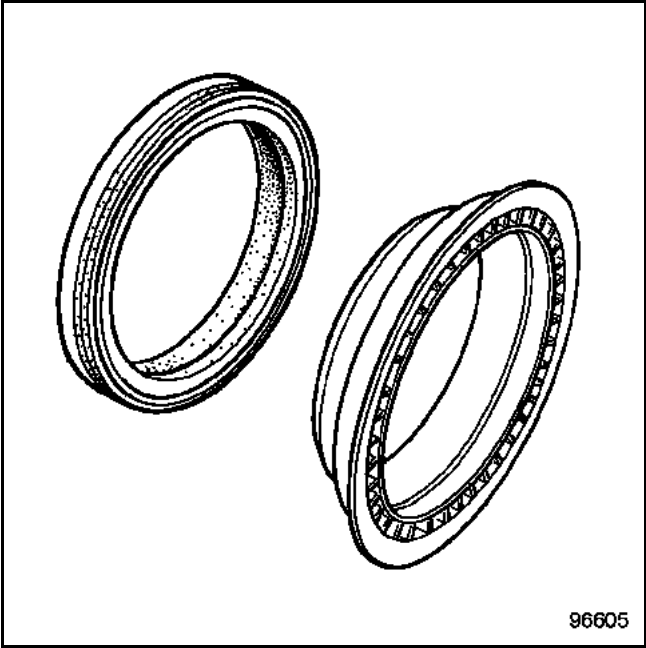
Tooling required for fitting old type elastomer seals.

Engine type	Tool for the camshaft seal		Tool for the relay shaft seal	Tool for the crankshaft seal	
	Timing end	Flywheel end		Timing end	Flywheel end
CXX	-	Mot. 500-03	-	Mot. 964 (O) or Mot. 1158 (P)	Mot. 131-02 Mot. 1129-01 Mot. 1129-02
D7X (U)	Mot. 1356	-	-	Mot. 1355	Mot. 1354
D4X (U)	-	-	-	Mot. 1355	Mot. 1354
EXX	Mot. 1127-01	-	-	Mot. 1128-01	Mot. 1129-01
FXX	Mot. 988-02	Mot. 1010-01	Mot. 989	Mot. 990-02 (Q) or Mot. 990-03 (R)	Mot. 991-01
F4X F5R	Mot. 1512 or Mot. 1517 (S)	-	-	Mot. 990-03	Mot. 991-01
G8T	Mot. 1315	-	-	Mot. 1314	Mot. 1313
G9X	Mot. 1562 and Mot. 1628-A	-	Mot. 1561 and Mot. 1628 - B	Mot. 1560 and Mot. 1628 C	Mot. 1313
JXX	Mot. 1300 or Mot. 1157 (T)	-	Mot. 1299	Mot. 1298	Mot. 1297

- O With welded collar on the timing cover.
P Without welded collar on the timing cover.
Q Engine fitted with relay shaft
R Engine not fitted with relay shaft
S Only for engine with camshaft dephaser.
T Only for 12 valve J engine.
U This engine has the tools for removing the various seals. These tools are:
● **Mot. 1374** for the crankshaft seal timing end,
● **Mot. 1377** for the crankshaft seal flywheel end,
● **Mot. 1381** for the camshaft seal timing end.

Engine type	Tool for the camshaft seal		Tool for the relay shaft seal	Tool for the crankshaft seal	
	Timing end	Flywheel end		Timing end	Flywheel end
KXX	Mot. 1127-01	-	-	Mot. 1385	Mot. 1129-01
K4X	Mot. 1491	-	-	Mot. 1385	Mot. 1129-01
K9X	Mot. 1632	-	-	-	-
L	Mot. 1432	-	-	Mot. 1434	Mot. 1433
NXX	Mot. 1343	Mot. 1344 or Mot. 1344-01 (A)	-	Mot. 1342	Mot. 1346
SXX (B)	Mot. 913	-	Mot. 1298	Mot. 911	Mot. 1297
ZXX	-	Mot. 965	-	Mot. 658	Mot. 1129-01

A Only for N7U engine
B Some S engine seals are fitted with a ring enabling them to be fitted directly onto the engine



Method for fitting old type elastomer seals

The seal lip is very delicate, so be careful when fitting. Do not oil the external diameter of the ring before fitting.

There are two scenarios:

- the tool has a spring in its housing with a retractable mandrel; by lightly tapping on the end of the tool, the mandrel fits flush with its matched face.
- the tool has no spring and retractable mandrel. The seal is fitted using a screw in the centre of the tool. Tighten this until the tool fits flush against its matched face.

Tooling required for fitting new type elastomer seals

Engine type	Tool for the camshaft seal		Tool for the relay shaft seal	Tool for the crankshaft seal	
	Timing end	Flywheel end		Timing end	Flywheel end
DXX	Mot. 1587	-	-	Mot. 1626	Mot. 1625
FXX	-	-	-	Mot. 1636	Mot. 1635
K4X	Mot. 1632	-	-	Mot. 1586	Mot. 1585
K9X	Mot. 1632	-	-	Mot. 1586	Mot. 1585
G9X	Mot. 1562	-	Mot. 1561	Mot. 1560	Mot. 1564

Tooling required for removing new type elastomer seals

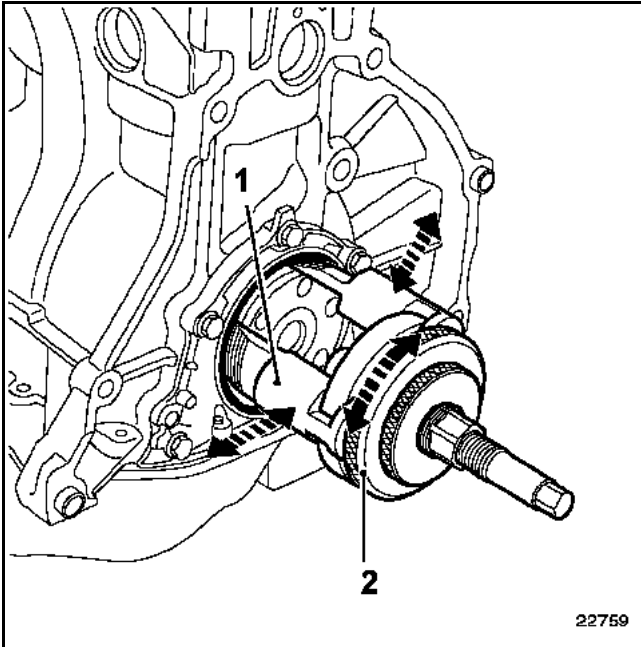
Engine type	Tool for the camshaft seal		Tool for the relay shaft seal	Tool for the crankshaft seal	
	Timing end	Flywheel end		Timing end	Flywheel end
DXX	Mot. 1381	-	-	Mot. 1374	Mot. 1377
FXX	-	-	-	Mot. 1577	Mot. 1579
KXX	Mot. 1577	-	-	Mot. 1577	Mot. 1579
GXX	Mot. 1577	-	Mot. 1578	Mot. 1578	Mot. 1579

Method for removing elastomer seals

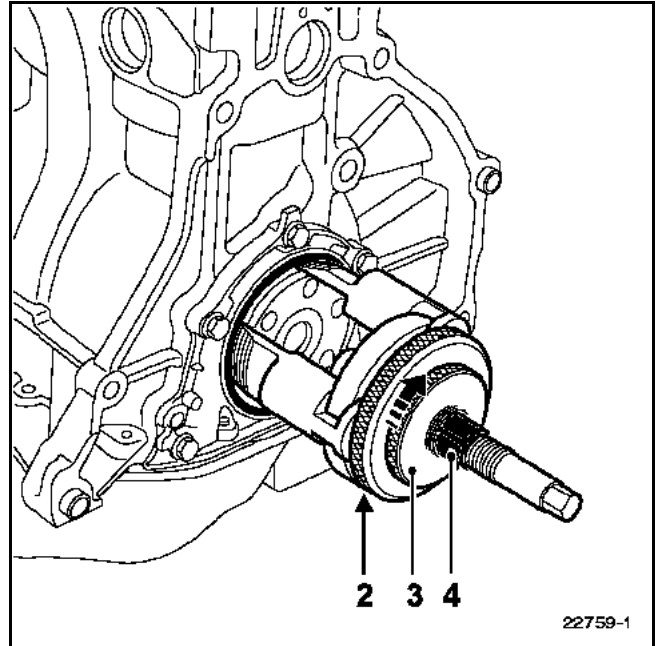
This method can be used for the following seals:

- camshaft,
- relay shaft,
- crankshaft.

Fit the extractor tool onto the shaft by adjusting plungers (1) to the shaft diameter with knurled back-plate (2).

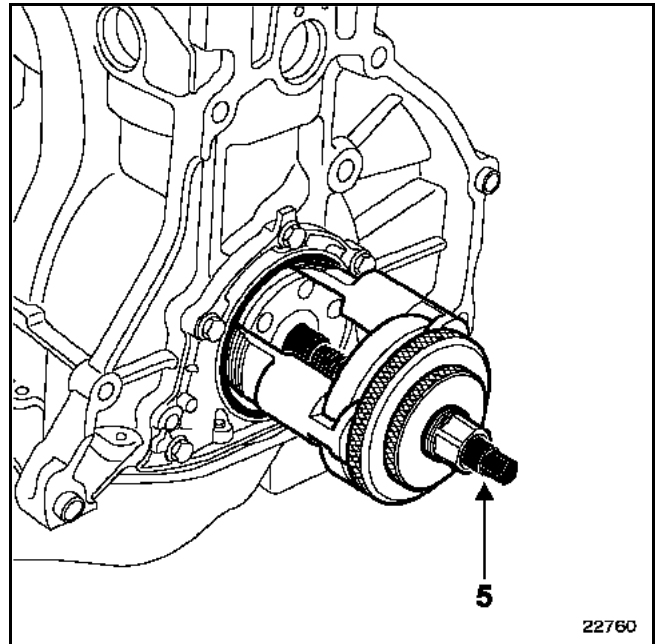


Tighten knurled back-plate (3) until it locks on knurled back-plate (2) to keep the plungers correctly adjusted on the shaft.



Screw extractor tool into the seal using hexagon bar (4).

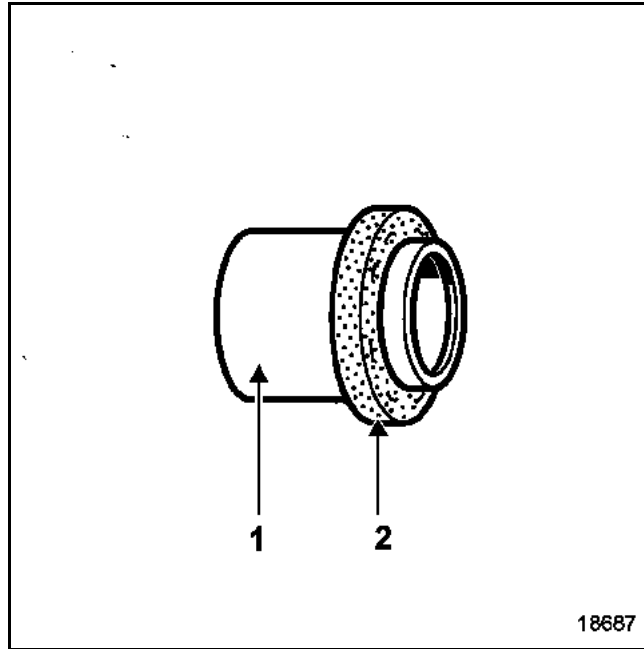
Extract the seal by tightening threaded rod (5).



Method for fitting new type elastomer seals.

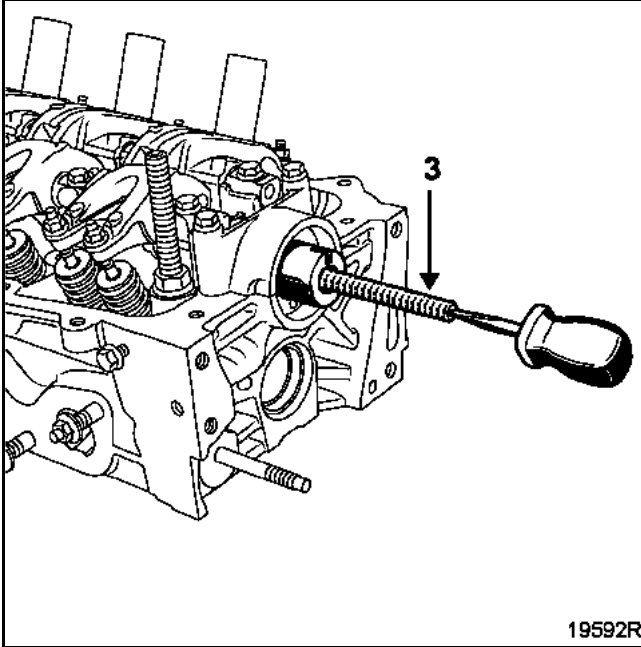
IMPORTANT: this type of seal is extremely **FRAGILE**. Only touch protector part (1) when handling the gasket. It is strictly forbidden to touch seal (2). This is to ensure that there will be no oil leaks once the gasket is fitted on the engine.

This new seal **must be fitted using the tooling previously described.**

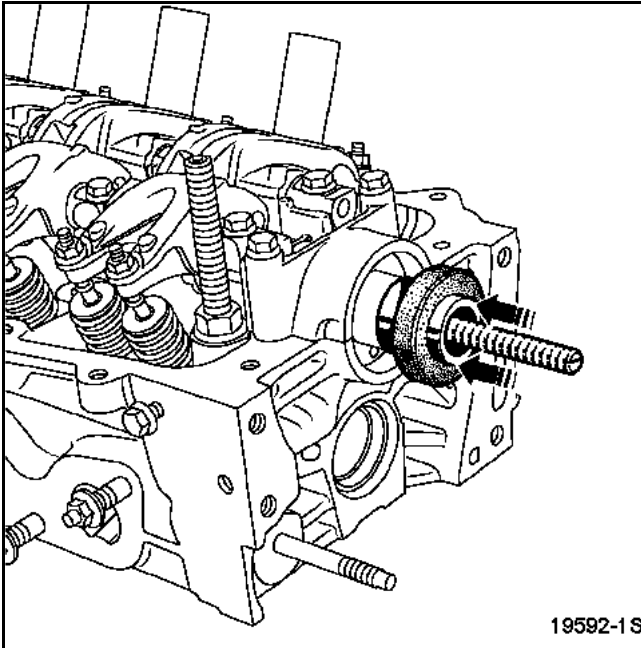


Camshaft elastomer seal (timing end)

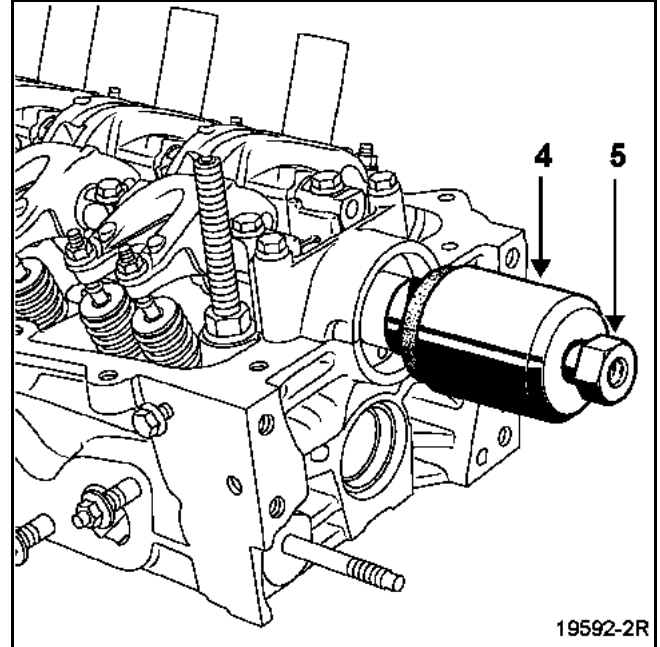
Screw the threaded rod (3) from tool **Mot. 1587** into the camshaft.



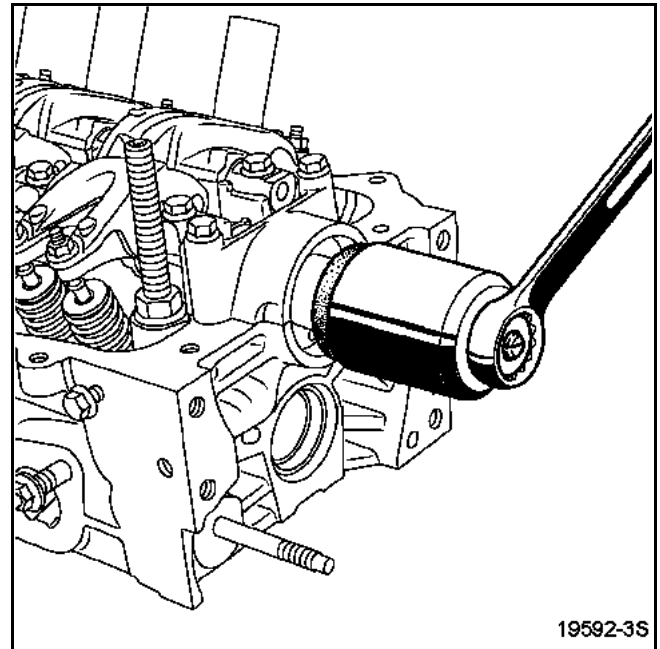
Fit the seal gasket and protector on the camshaft. Be careful not to touch the seal.

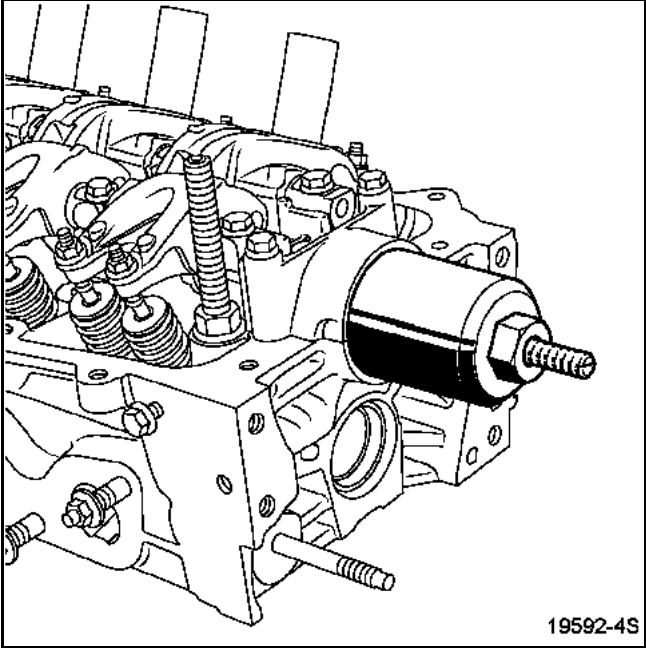


Fit cup (4) and collar nut (5) from **Mot. 1587**.

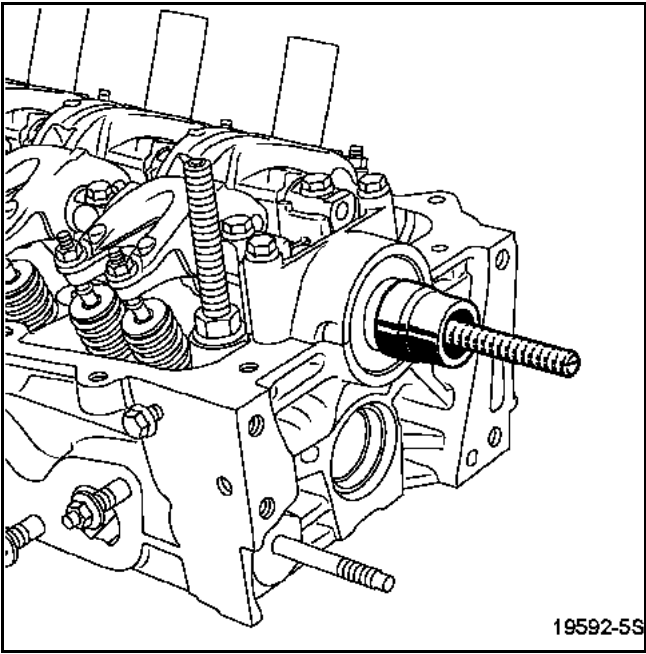


Tighten the collar nut until the cup touches the cylinder head.



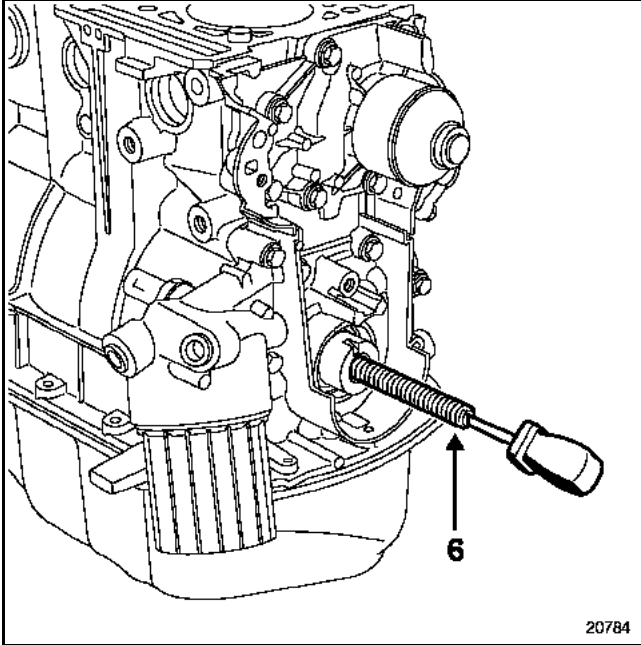


Remove the nut, the cup, the protector and the threaded rod.

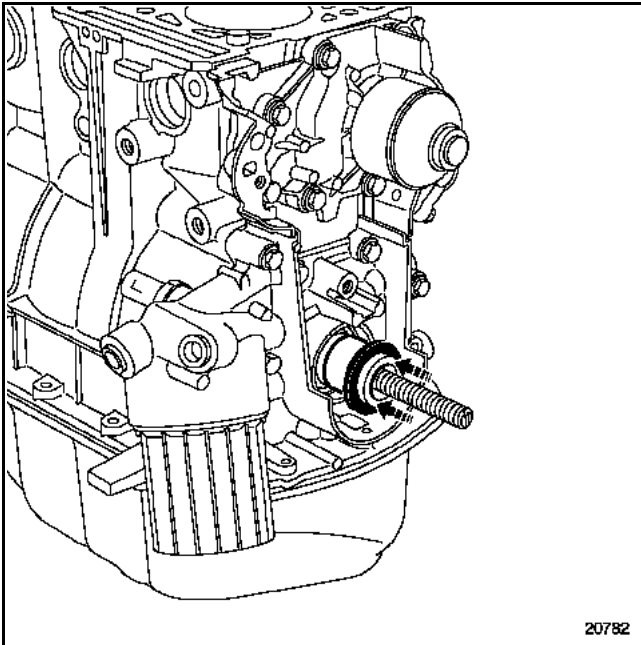


Crankshaft elastomer seal (timing end)

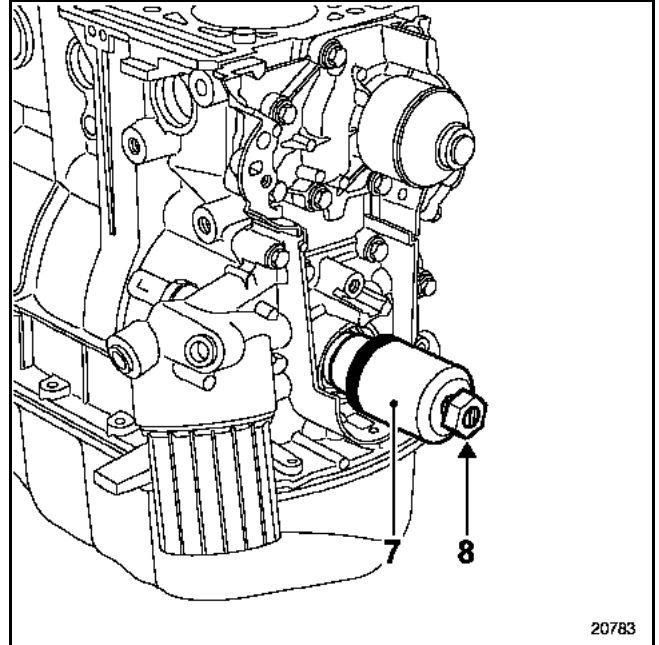
Screw threaded rod (6) of **Mot. 1626** into the crankshaft.



Fit the seal and protector on the crankshaft, taking care not to touch the seal.



Fit cup (7) and collar nut (8) from **Mot. 1626**.



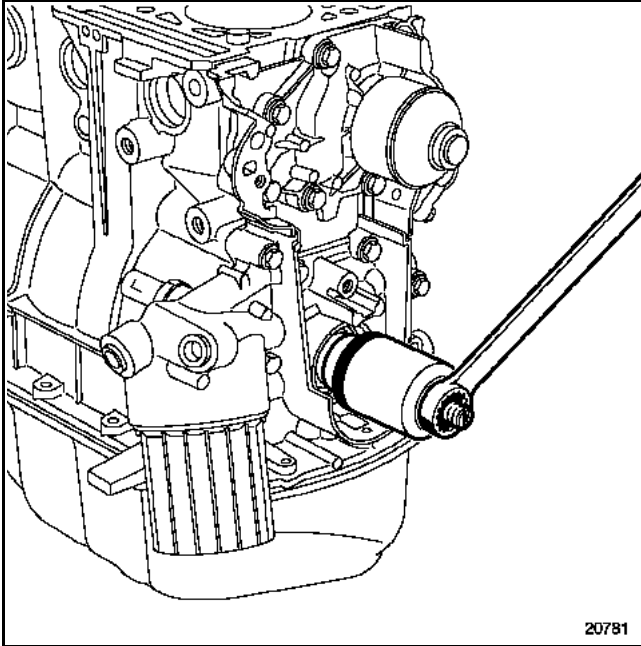
ENGINE AND PERIPHERALS

Overhauling the engine

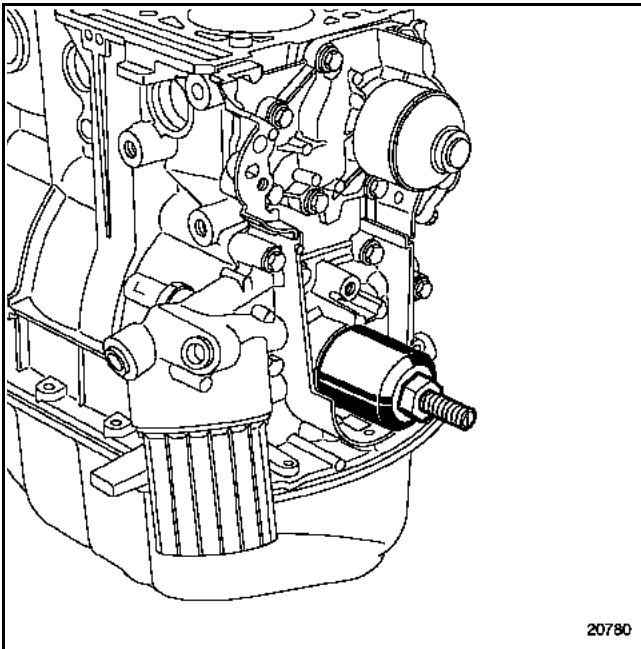
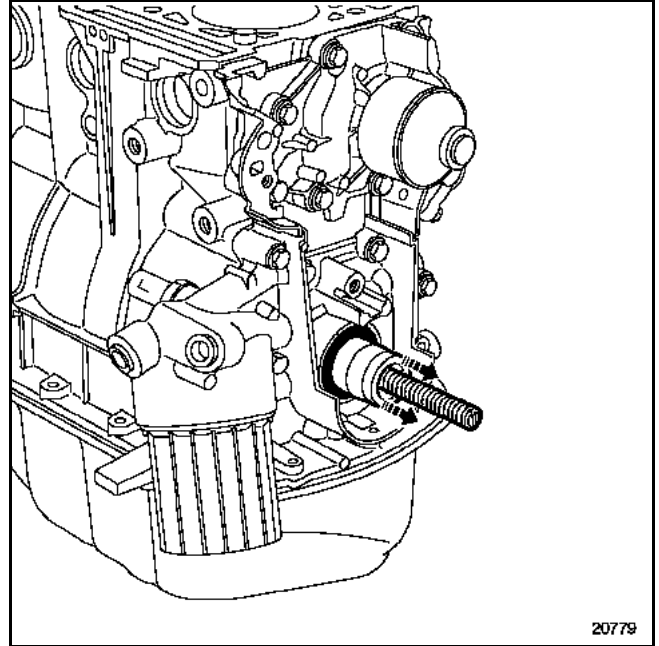
DXX ENGINE

10A

Tighten the collar nut until the cup touches the crankshaft locking panel.

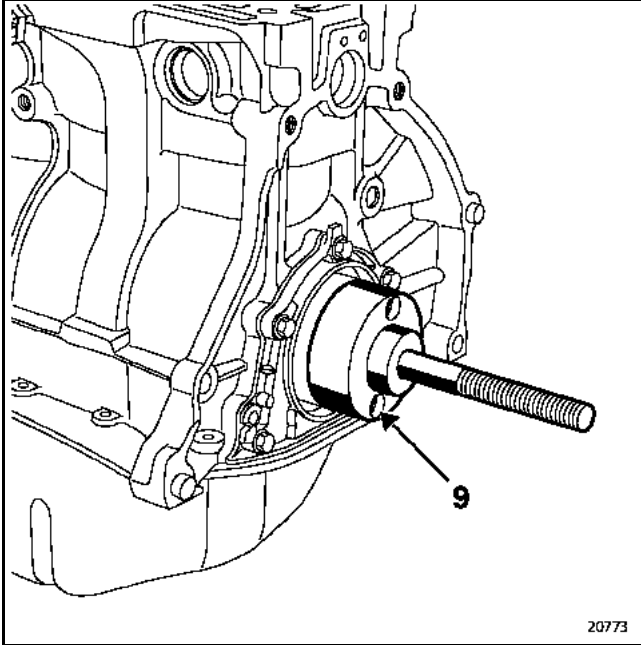


Remove the nut, the cup, the protector and the threaded rod.

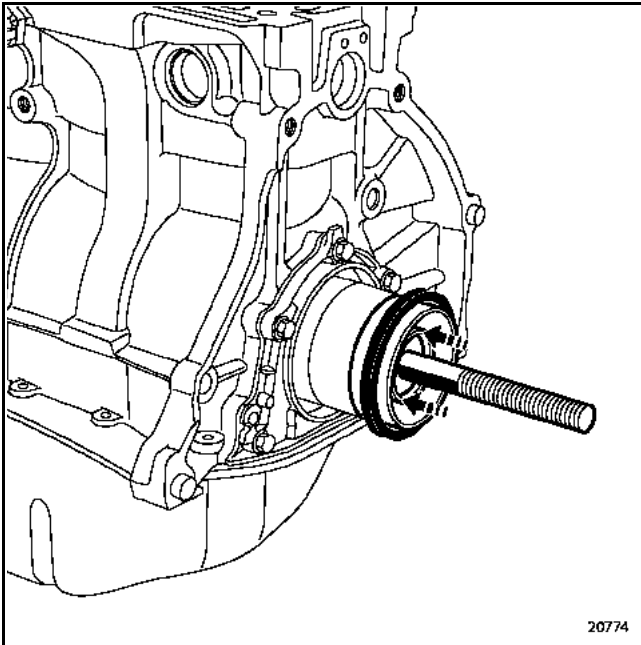


Crankshaft elastomer seal, flywheel end

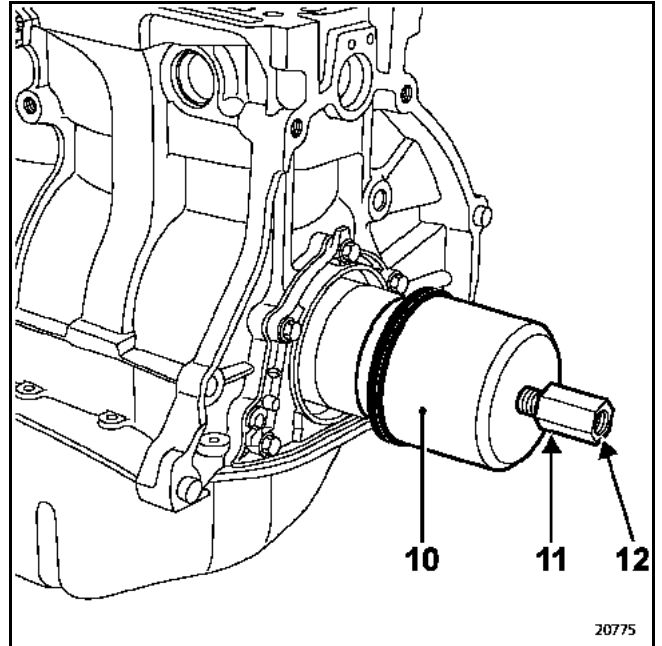
Install tool **Mot. 1625** on the crankshaft, attaching it with bolts (9).



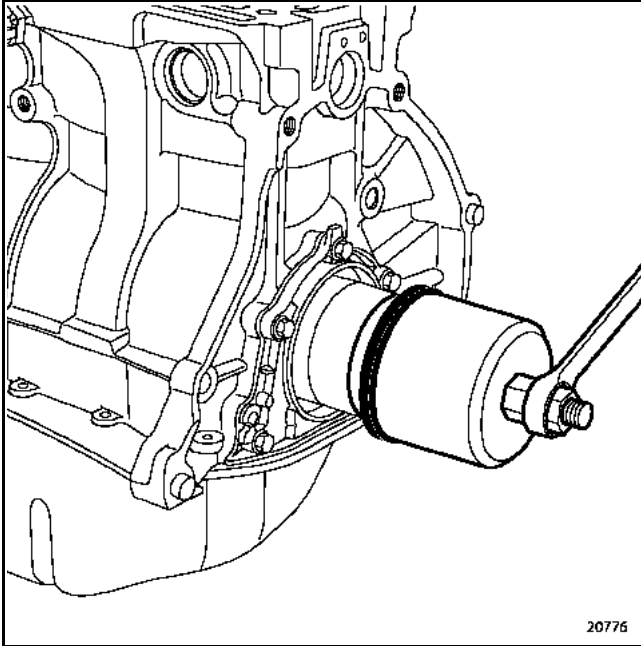
Put the protector complete with the seal on tool **Mot. 1625**, being careful not to touch the seal.



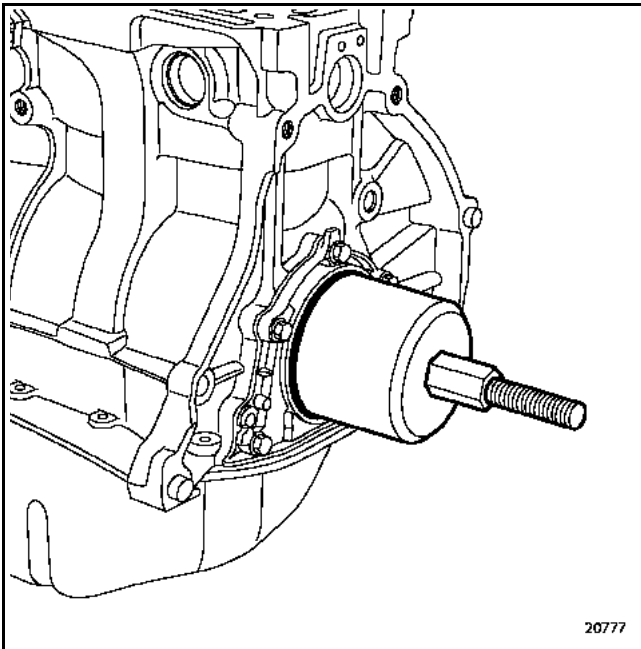
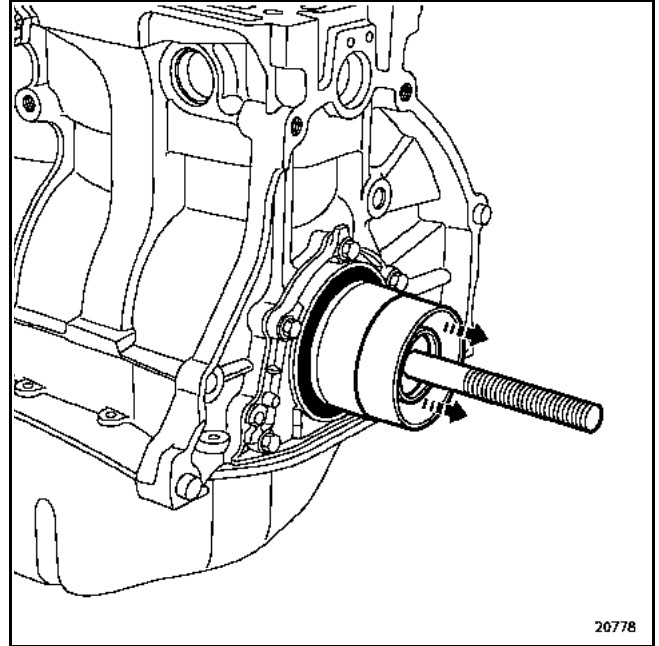
Fit cup (10) and nut (11) (putting threaded hole (12) of the nut on the side facing away from the engine) of **Mot. 1625**.



Tighten the nut until the cup makes contact with the cylinder block.

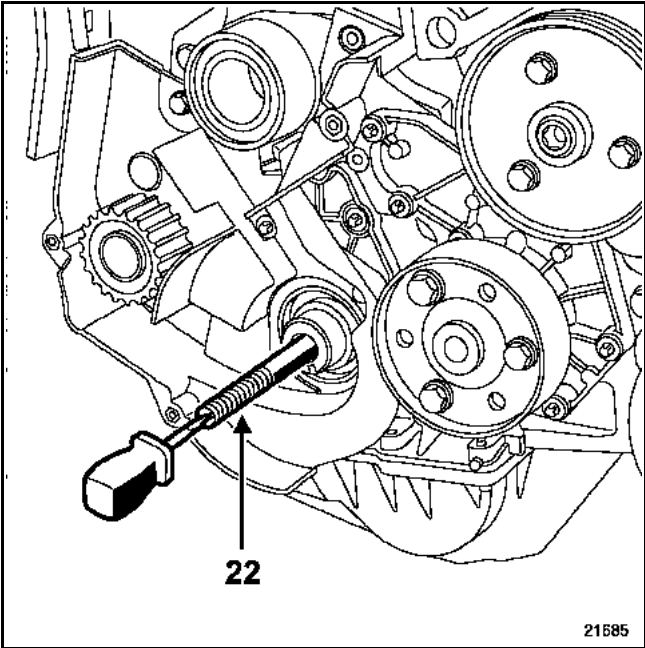


Remove the nut, the cup, the protector and the base plate.

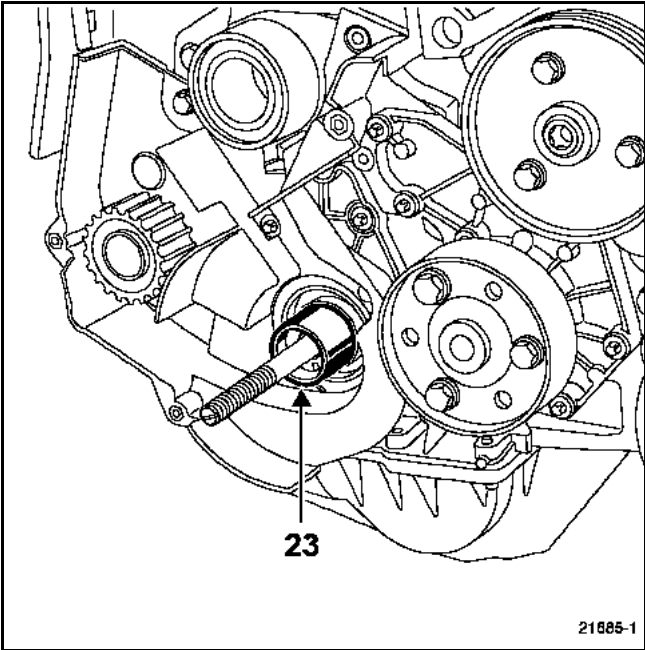


Crankshaft elastomer seal (timing end)

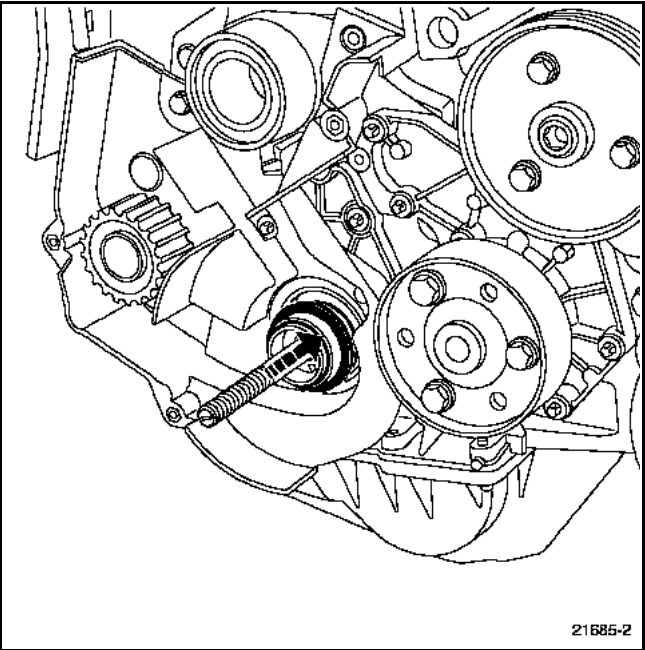
Screw threaded rod (22) of **Mot. 1636** into the crankshaft.



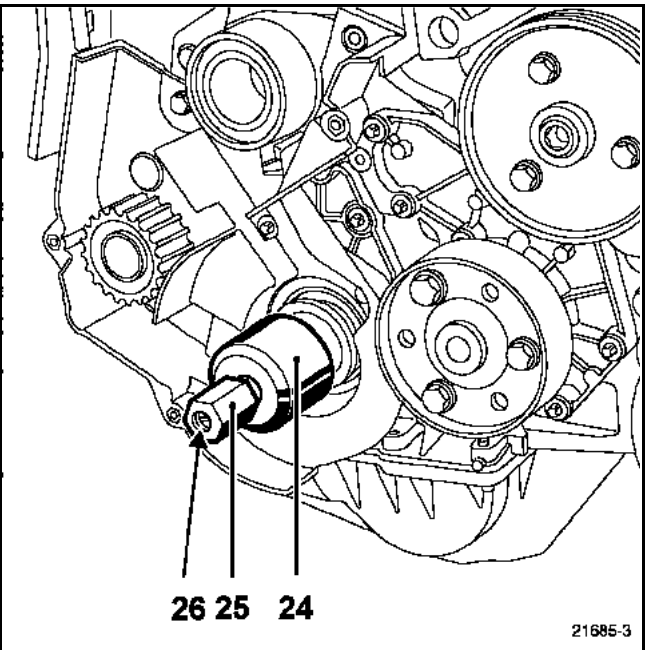
Fit spacer (23) to the crankshaft **Mot. 1636**.



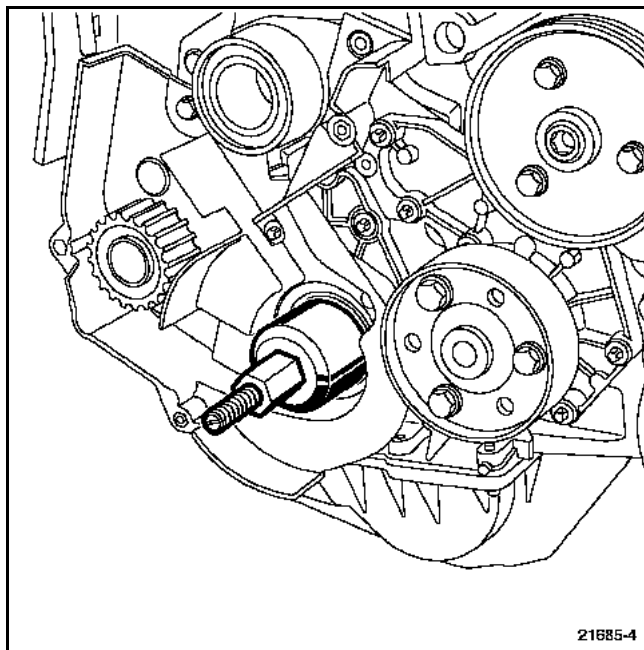
Fit the protector complete with the seal onto the spacer, taking care not to touch the seal.



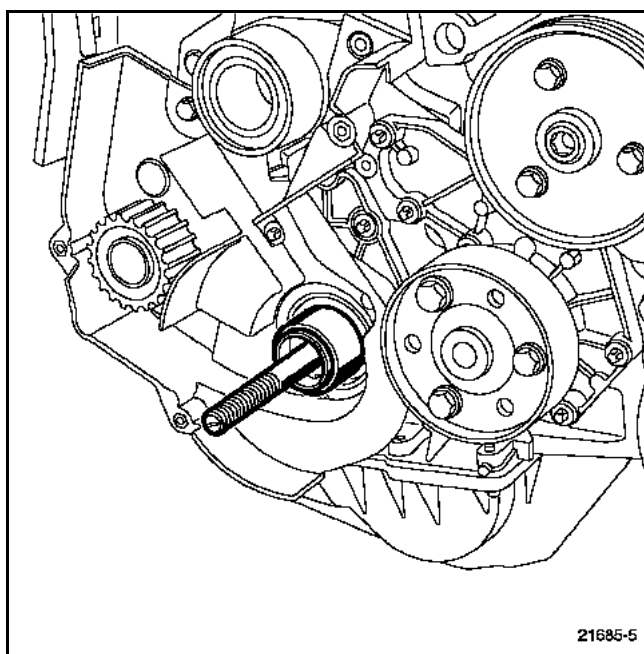
Fit cup (24) and nut (25) (putting threaded hole (26) of the nut on the side facing away from the engine) of **Mot. 1636**.



Tighten the nut until the cup touches the spacer.

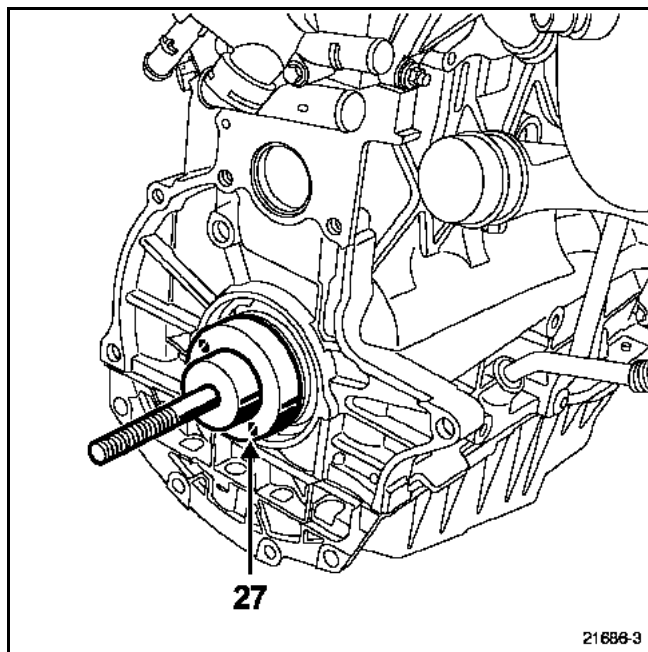


Remove the nut, the cup, the protector, the spacer and the threaded rod.

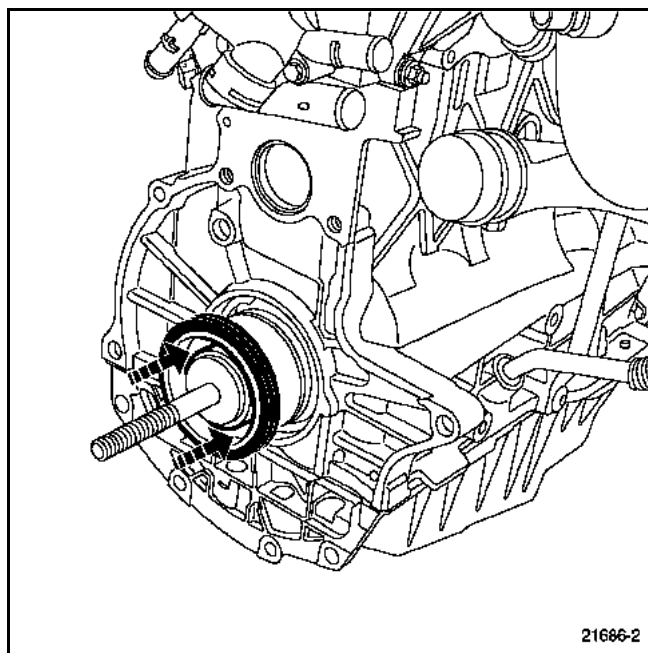


Crankshaft elastomer seal, flywheel end

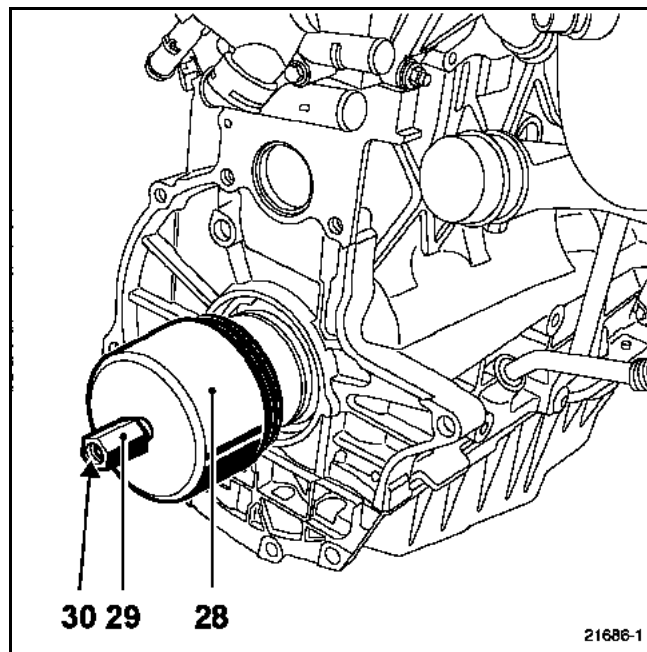
Install tool **Mot. 1635** on the crankshaft, attaching it with bolts (27).



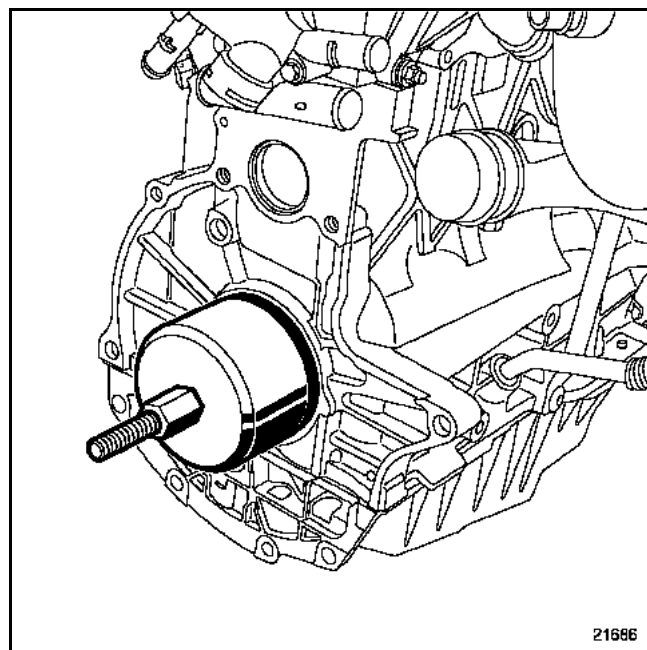
Fit the protector complete with the seal onto tool **Mot. 1635**, being careful not to touch the seal.



Fit cup (28) and nut (29) (putting the threaded hole (30) of the nut on the side facing away from the engine) of **Mot. 1635**.



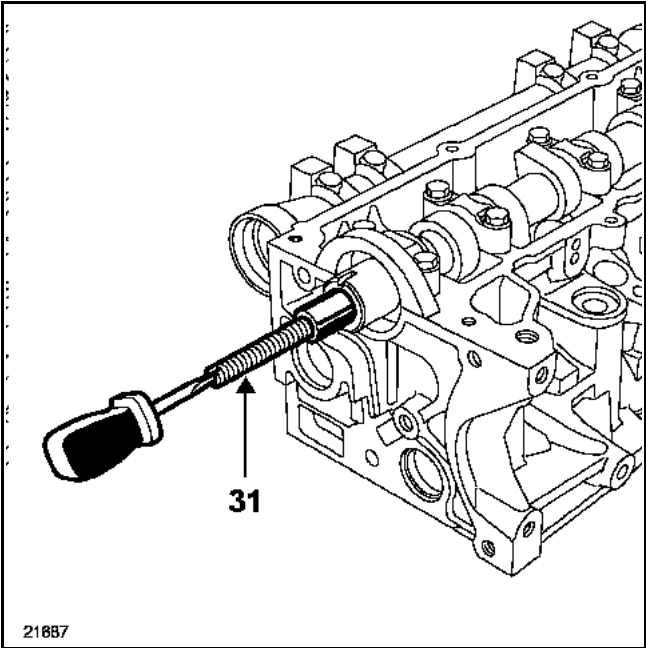
Tighten the nut until the cup makes contact with the base plate of **Mot. 1635**.



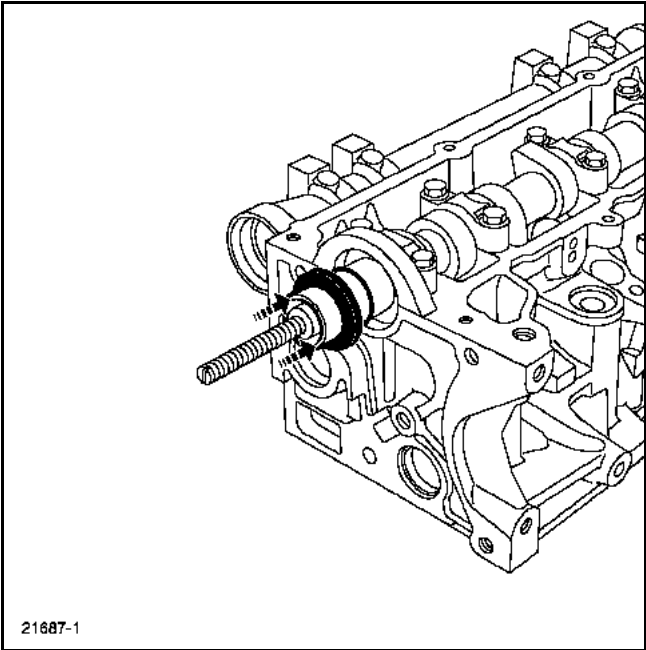
Remove the nut, the cup, the protector and the base plate.

Camshaft elastomer seal (timing end)

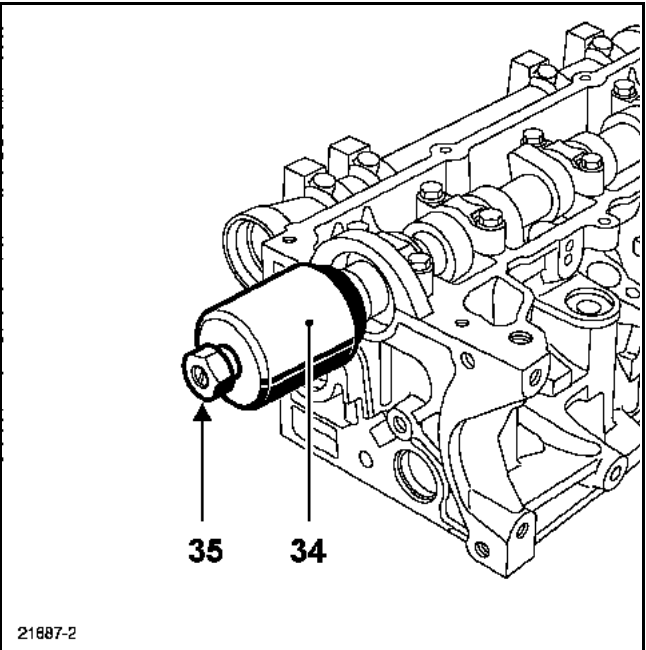
Tighten stud (31) of tool **Mot. 1632** onto the camshaft.



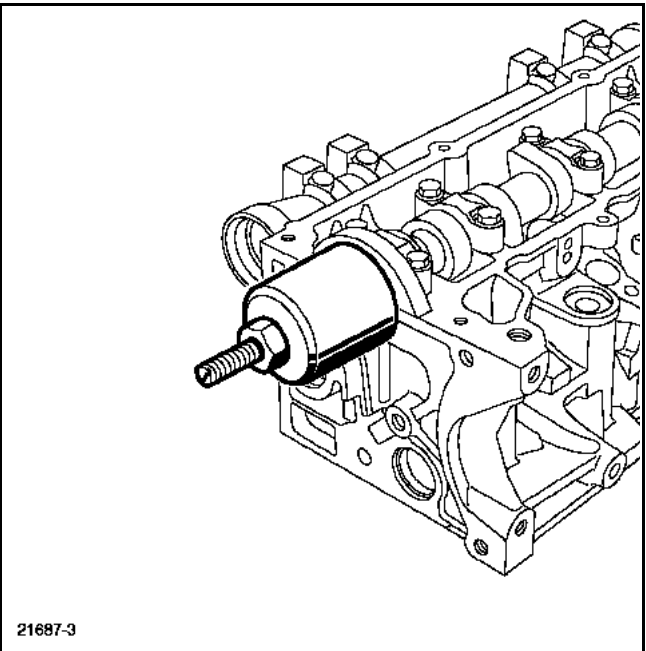
Fit the seal gasket and protector on the camshaft. Be careful not to touch the seal.



Fit cup (34) and collar nut (35) from **Mot. 1632**.



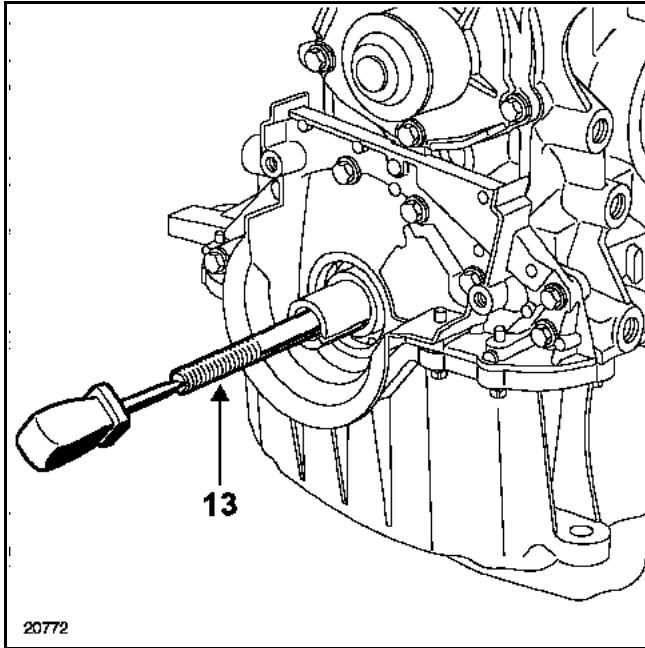
Tighten the collar nut until the cup touches the cylinder head.



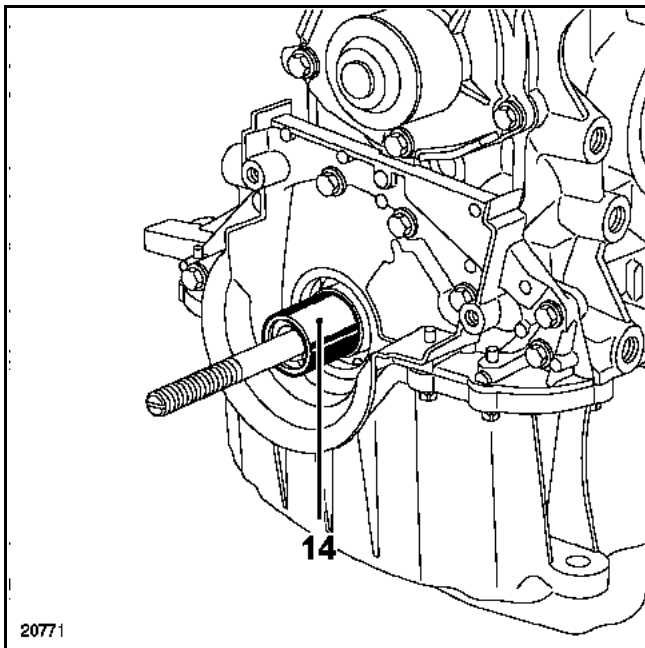
Remove the nut, the cup, the protector and the threaded rod.

Crankshaft elastomer seal (timing end)

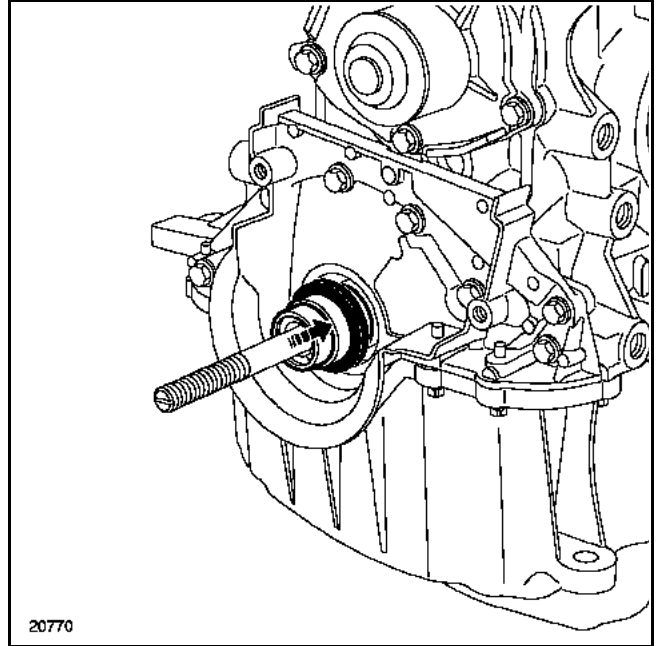
Screw threaded rod (13) of **Mot. 1586** into the crankshaft.



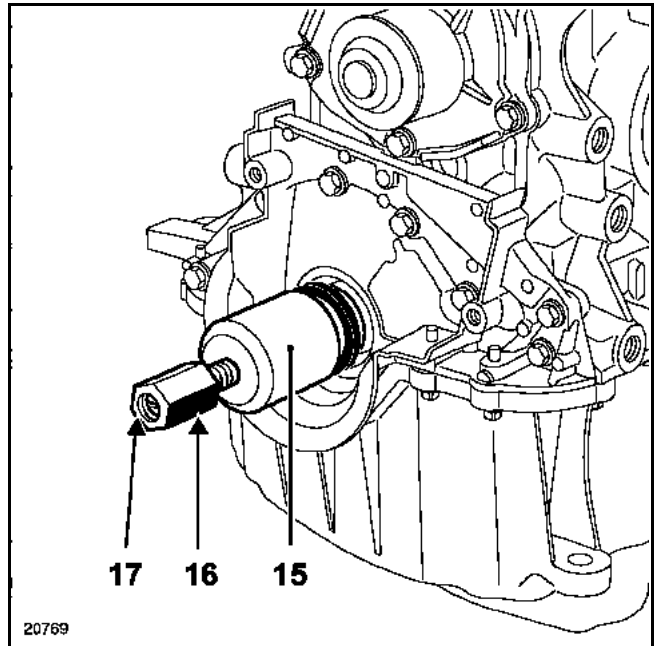
Position the spacer (14) of tool **Mot. 1586** on the crankshaft.



Fit the protector complete with the seal onto the spacer, taking care not to touch the seal.



Fit cup (15) and nut (16) (putting threaded hole (17) of the nut on the side facing away from the engine) of tool **Mot. 1586**.



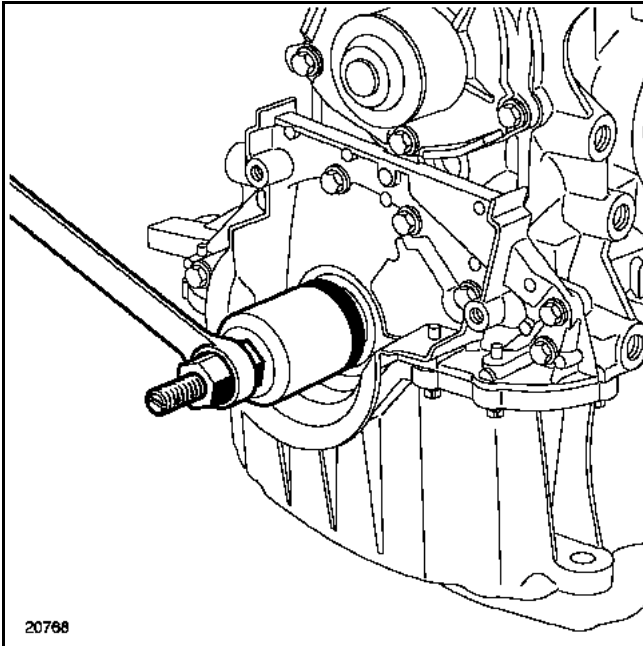
ENGINE AND PERIPHERALS

Overhauling the engine

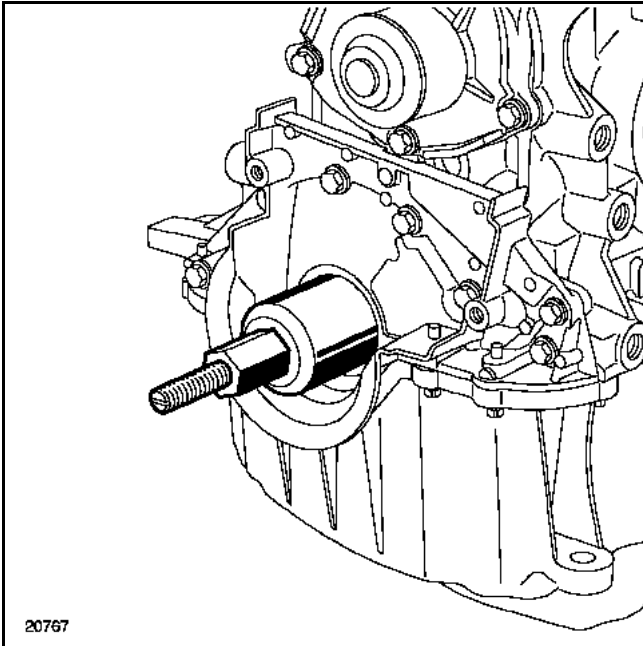
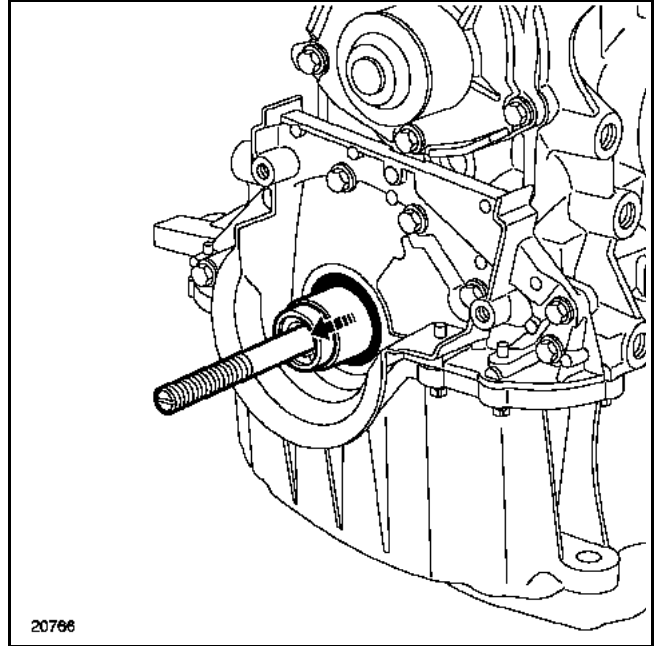
10A

KXX ENGINE

Tighten the nut until the cup touches the spacer.

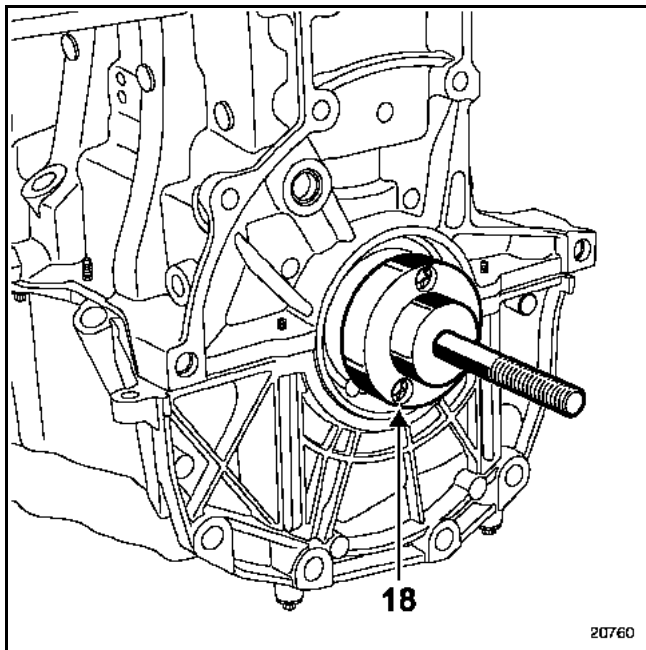


Remove the nut, the cup, the protector and the threaded rod.

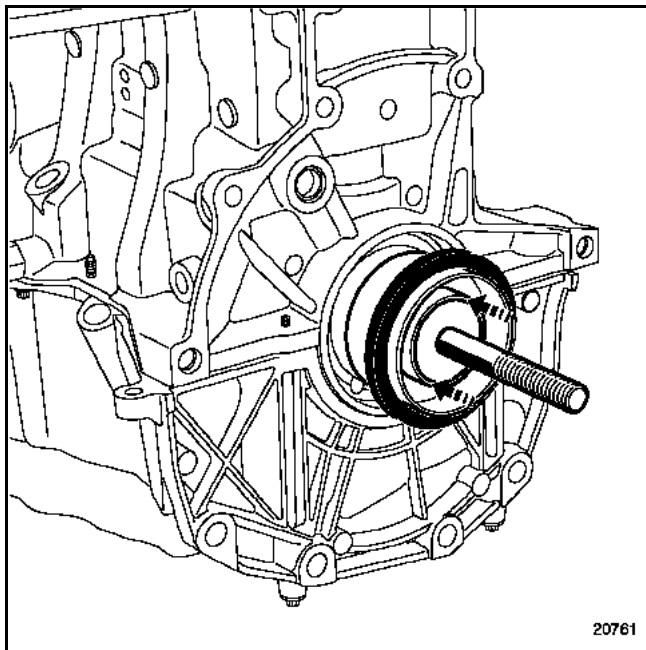


Crankshaft elastomer seal, flywheel end

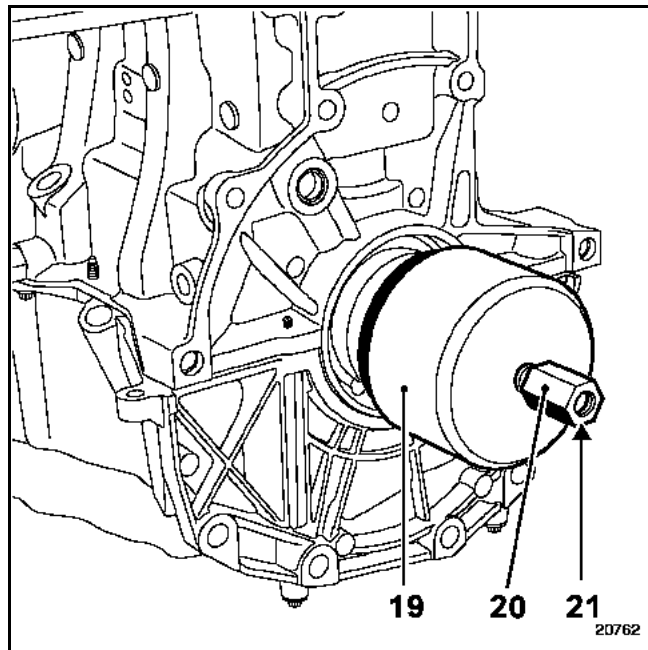
Install tool **Mot. 1585** on the crankshaft, attaching it with bolts (18).



Put the protector complete with the seal on tool **Mot. 1585**, being careful not to touch the seal.



Fit cup (19) and nut (20) (putting threaded hole (21) of the nut on the side facing away from the engine) of tool **Mot. 1585**.



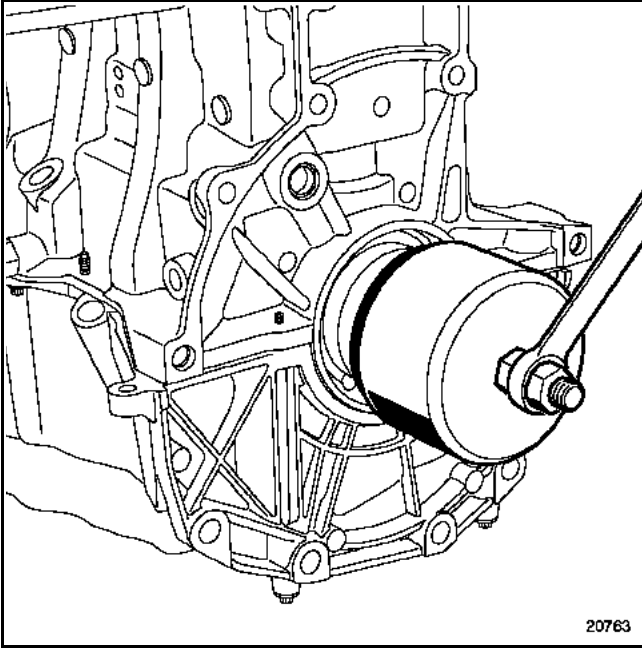
ENGINE AND PERIPHERALS

Overhauling the engine

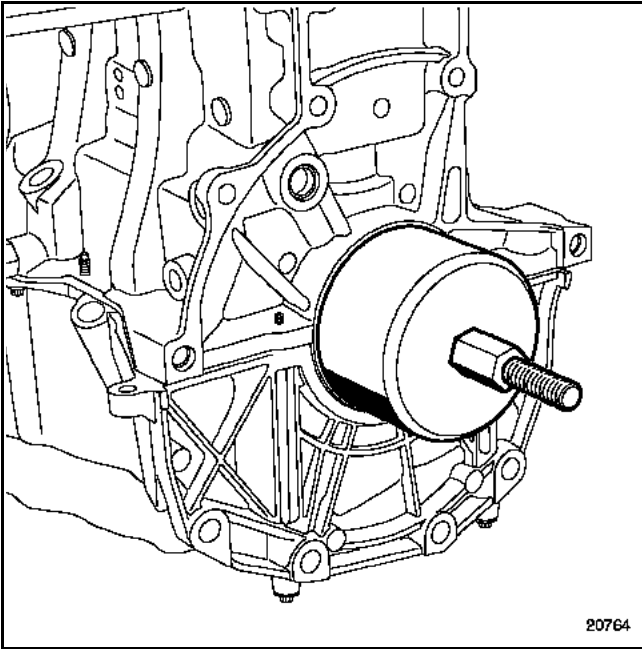
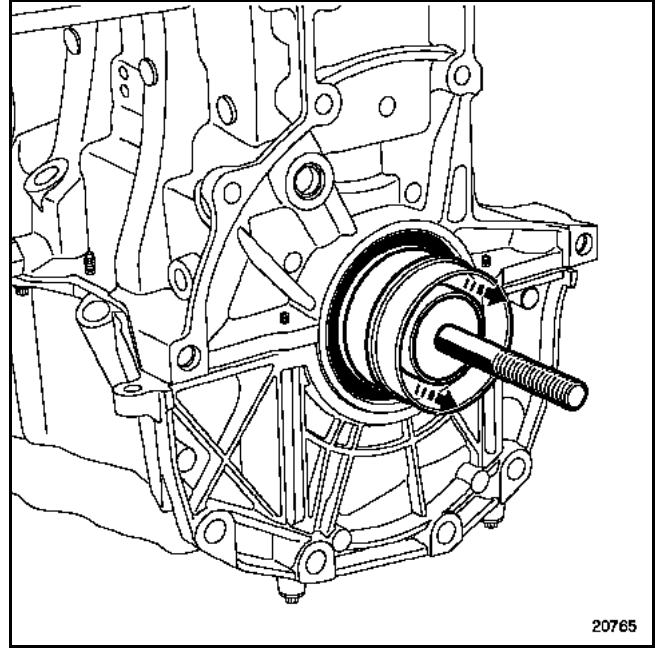
KXX ENGINE

10A

Screw the nut until the cup makes contact with the cylinder block.

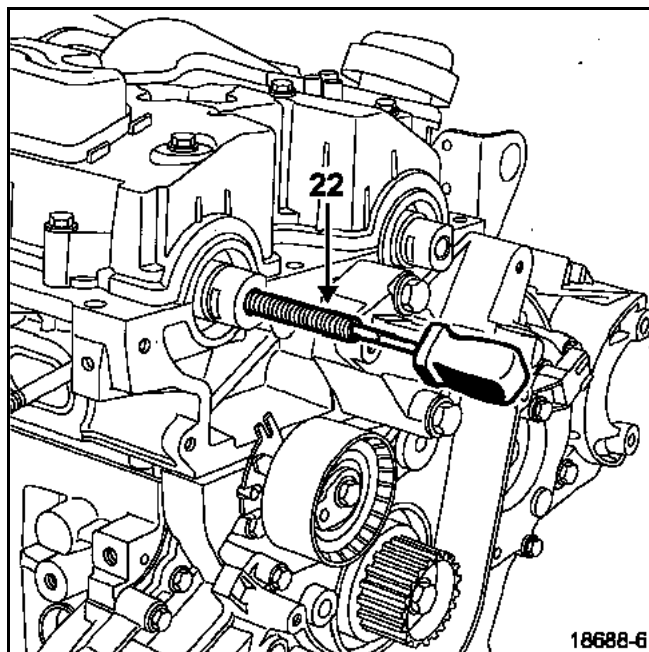


Remove the nut, the cup, the protector and the base plate.

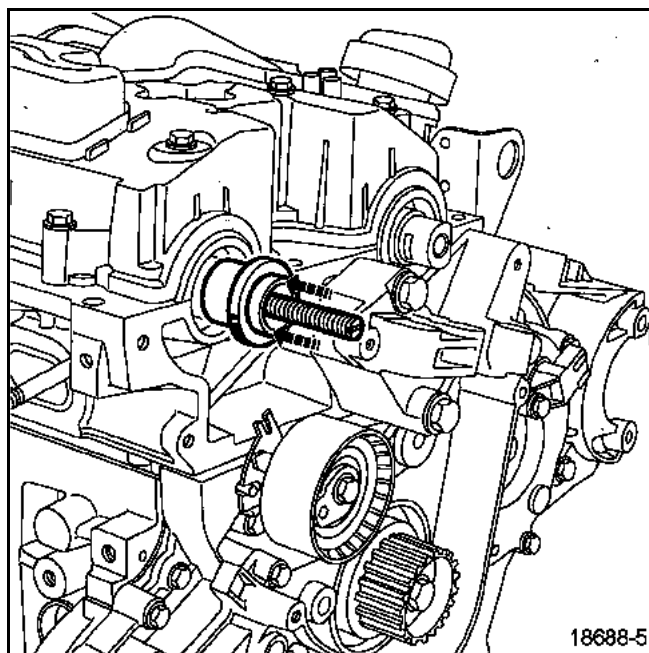


Camshaft elastomer seal (timing end)

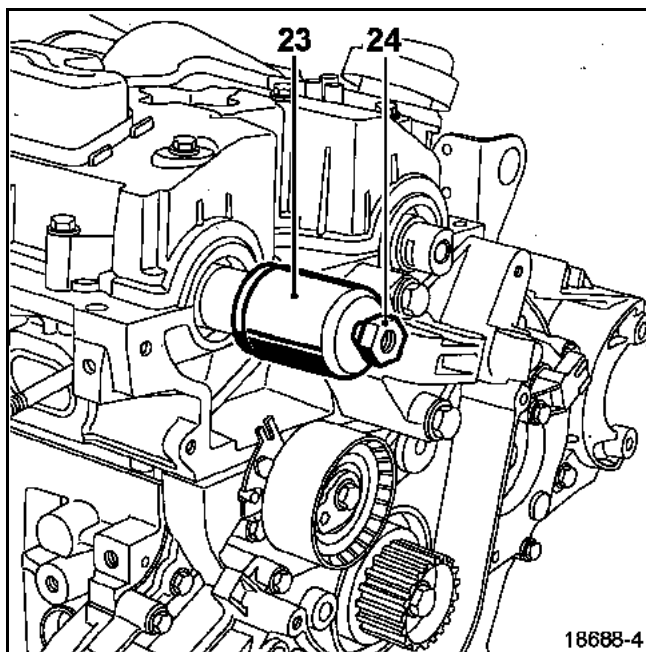
Screw the threaded rod (22) of tool **Mot. 1562** into the camshaft.



Fit the seal gasket and protector on the camshaft. Be careful not to touch the seal.

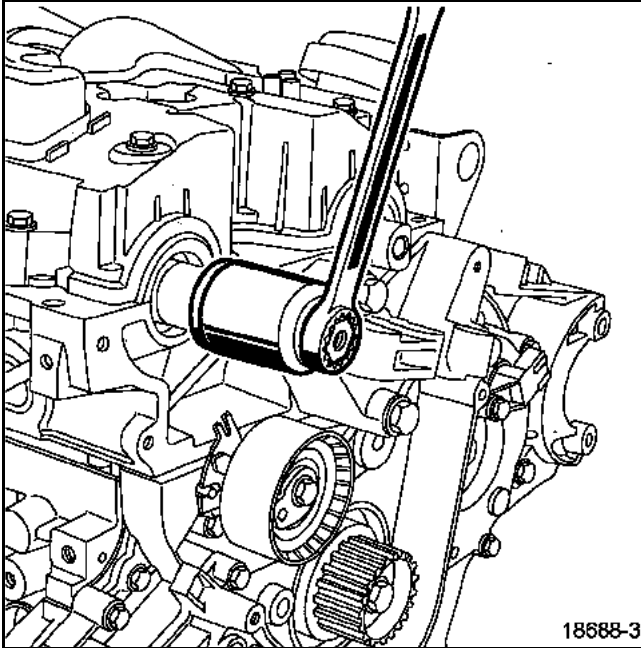


Fit the cup (23) and the collar nut (24) from **Mot. 1562**.



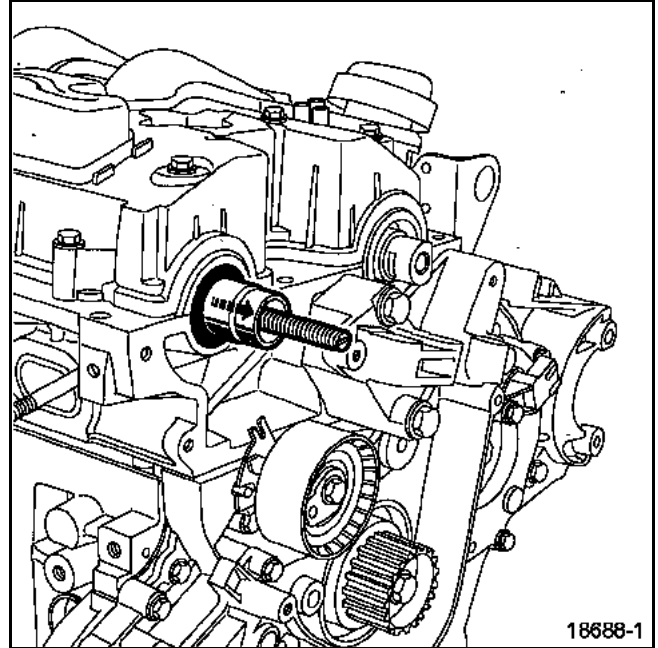
Overhauling the engine

Screw the collar nut until the cup touches the cylinder head.

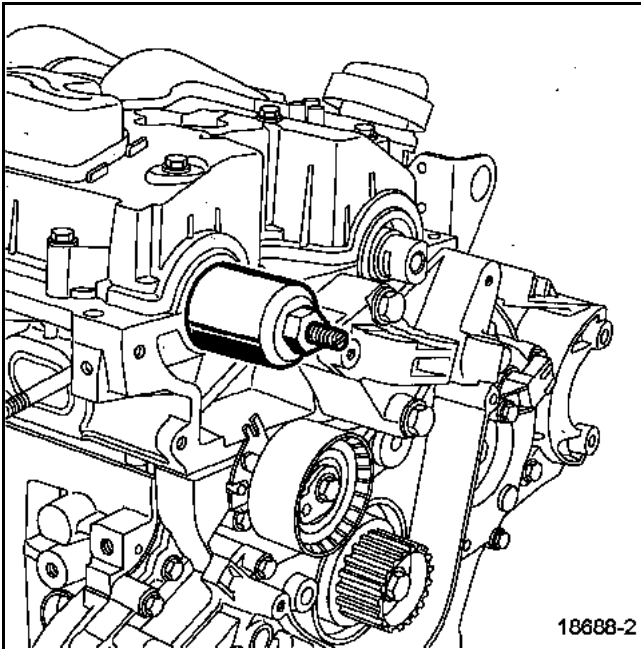


18688-3

Remove the nut, the cup, the protector and the threaded rod.



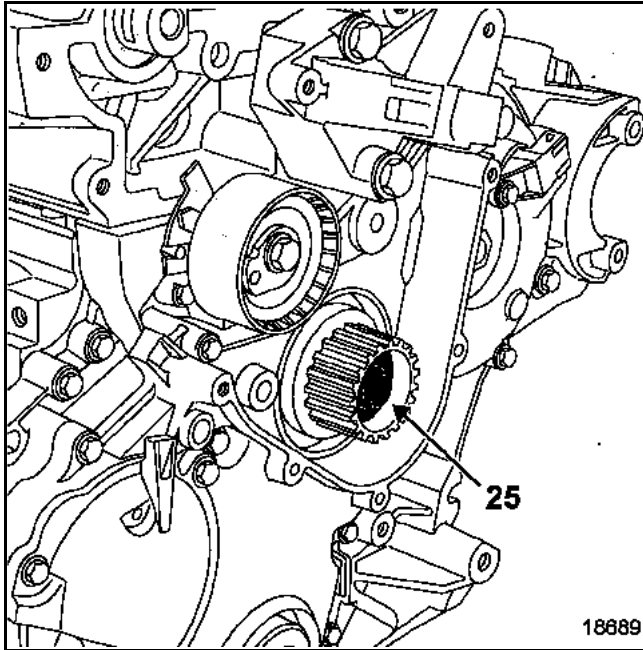
18688-1



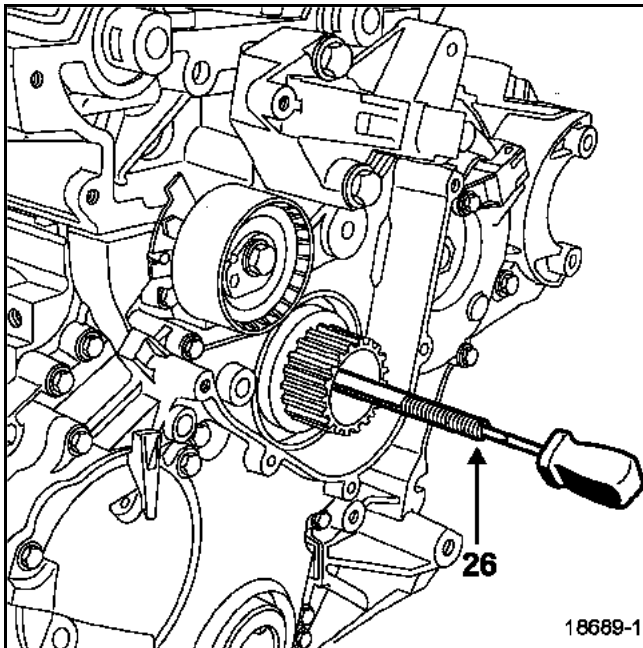
18688-2

Relay shaft elastomer seal

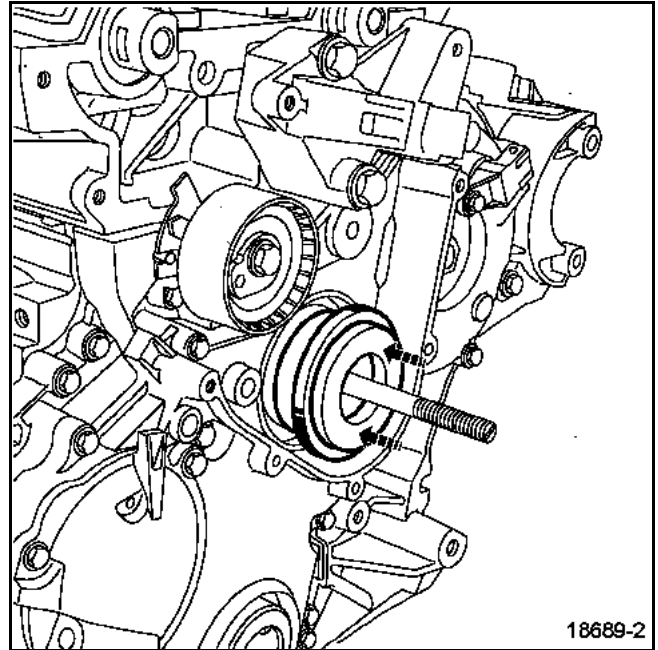
Remove the bolt (25).



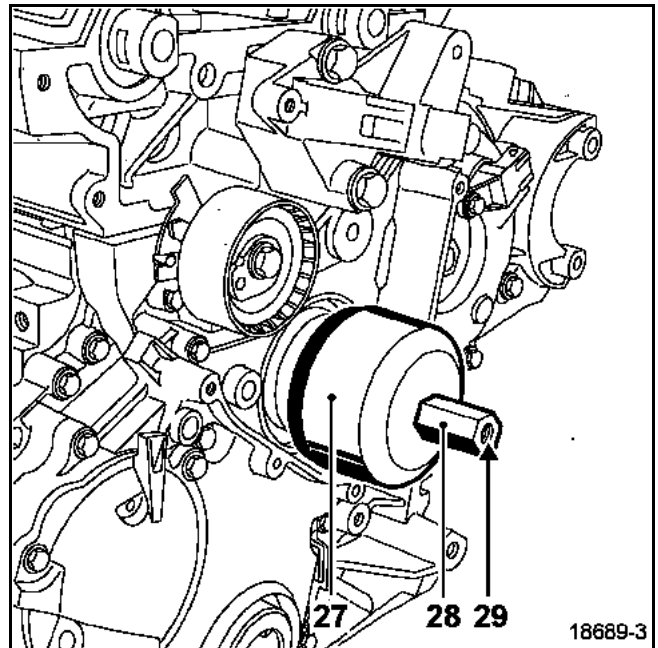
Screw threaded rod (26) of **Mot. 1561** into the relay shaft.



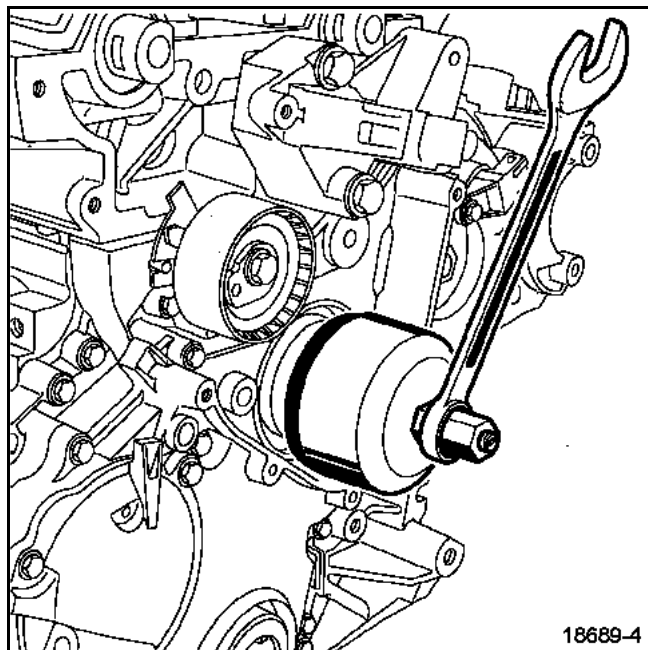
Fit the protector complete with seal on the relay shaft, taking care not to touch the seal.



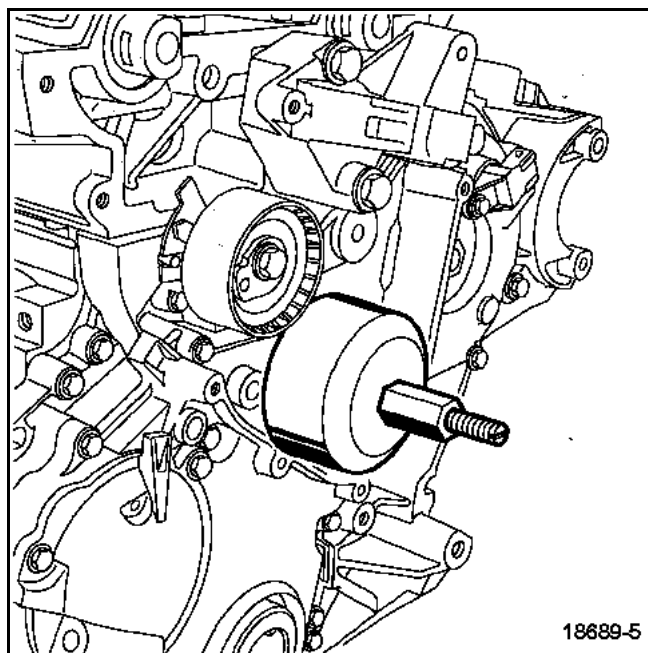
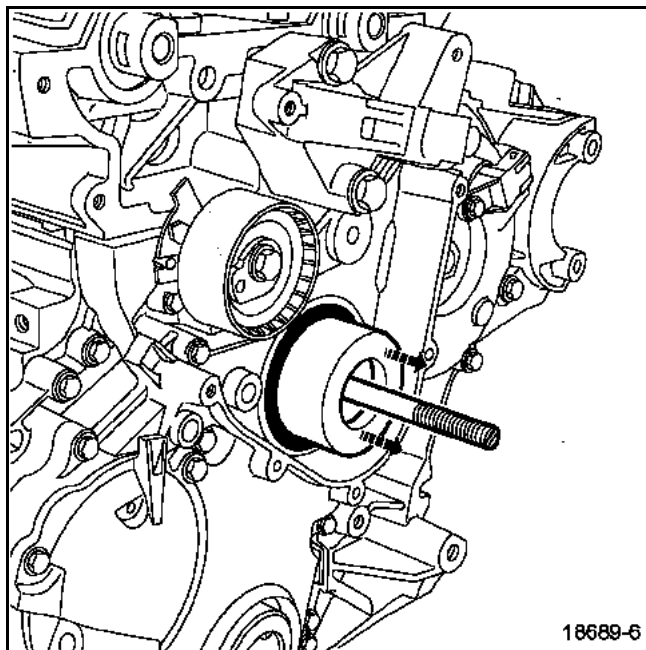
Fit the cup (27) and nut (28) (putting the threaded part (29) of the nut on the side facing away from the engine) of **Mot. 1561**.



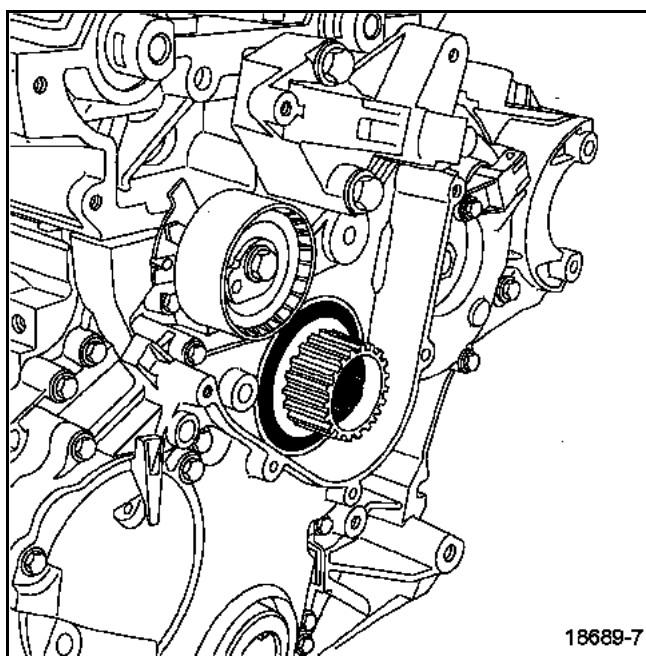
Screw in the nut until the cup makes contact with the timing cover.



Remove the nut, the cup, the protector and the threaded rod.

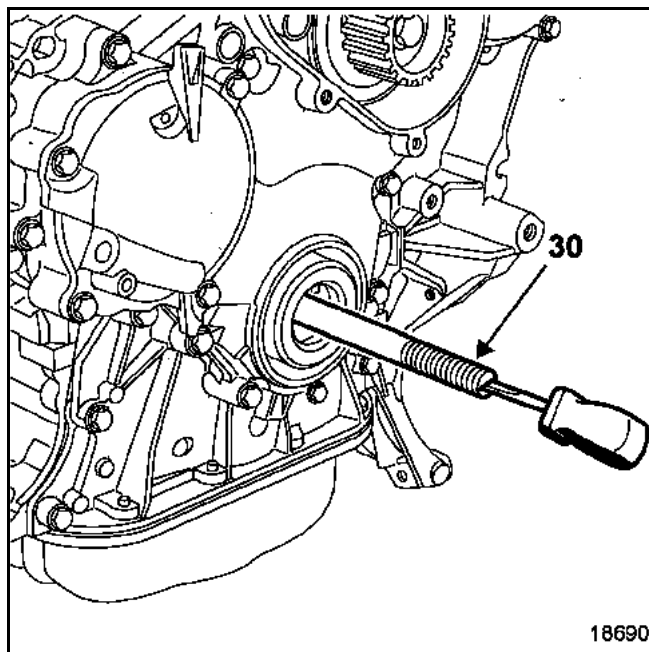


Refit the sprocket and tighten to torque.

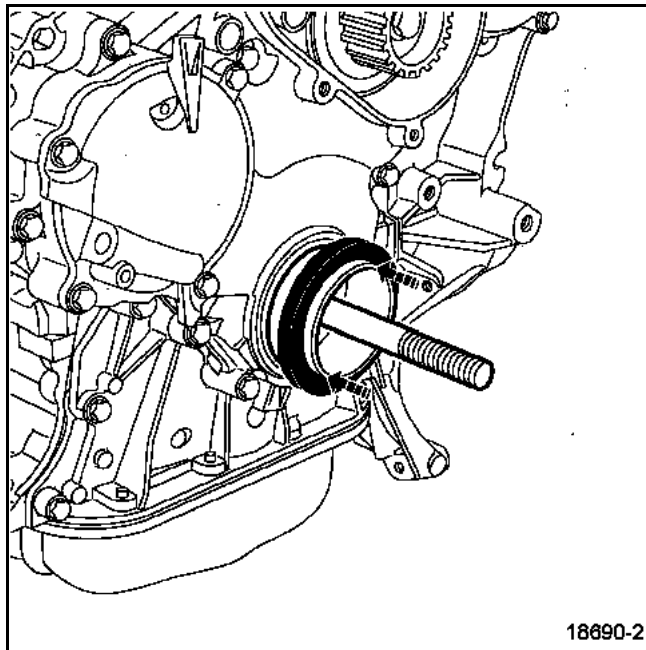
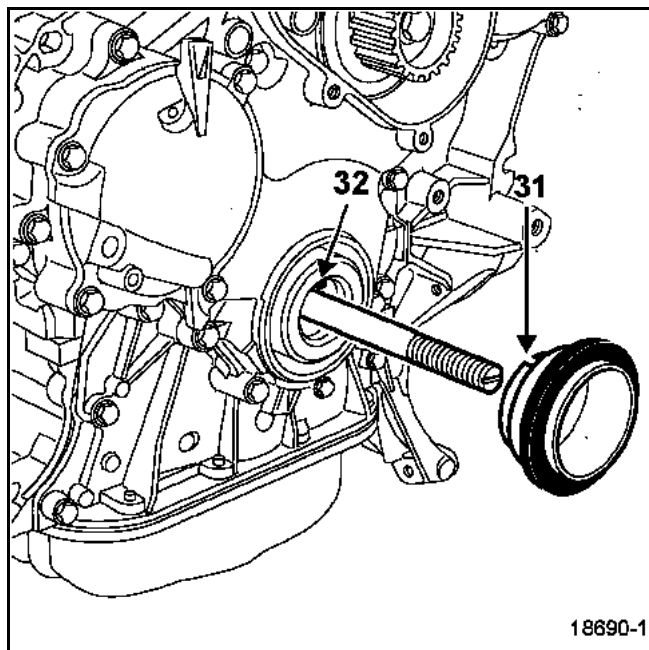


Crankshaft elastomer seal (timing end)

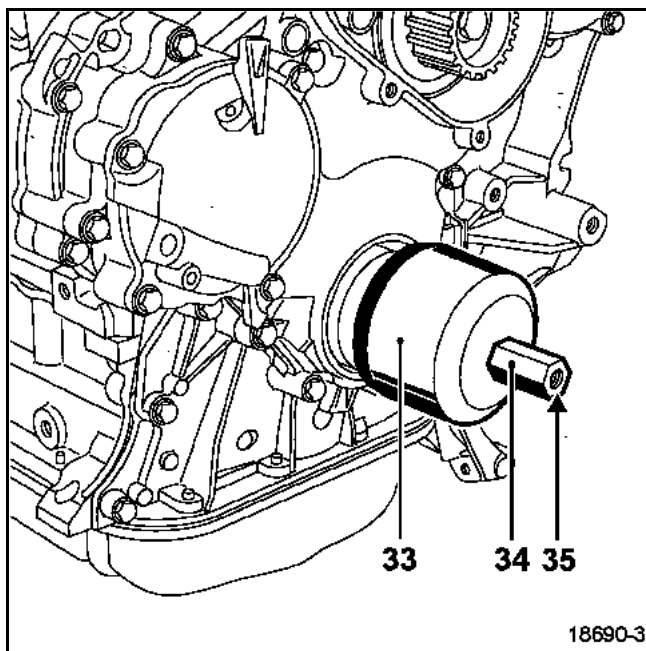
Screw the threaded rod (30) of **Mot. 1560** into the crankshaft.



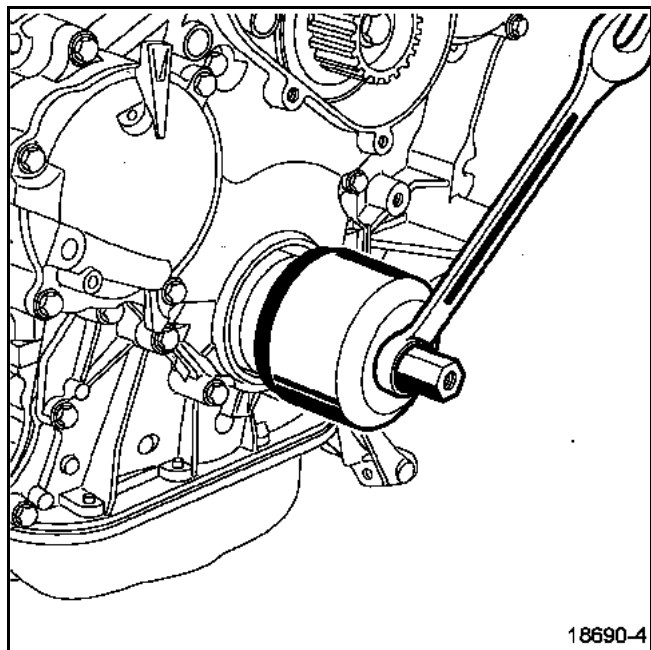
Put the protector complete with seal on the crankshaft, taking care not to touch the seal, and also position groove (31) of the protector opposite the key of the crankshaft sprocket (32).



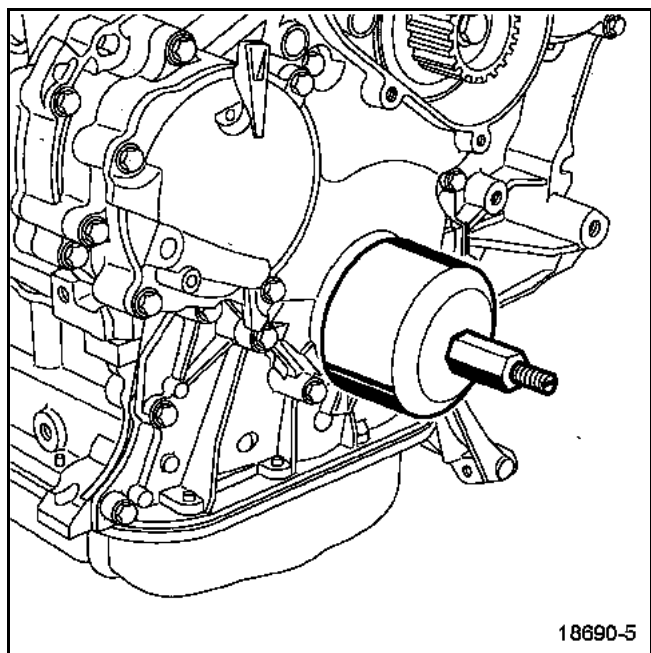
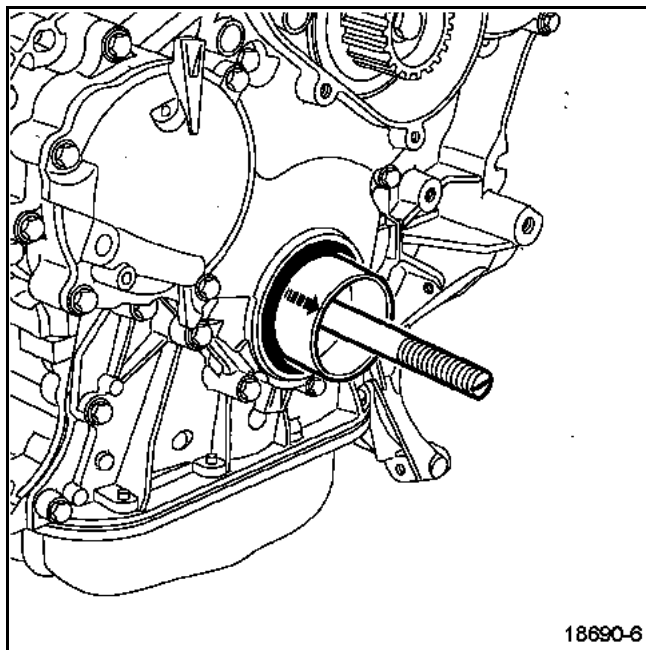
Fit the cup (33) and nut (34) (putting the threaded part (35) of the nut on the side facing away from the engine) of **Mot. 1560**.



Screw in the nut until the cup makes contact with the timing cover.



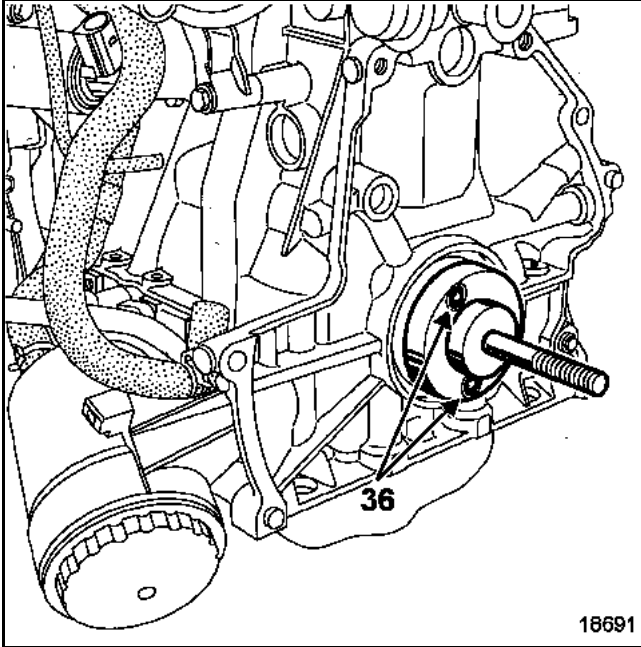
Remove the nut, the cup, the protector and the threaded rod.



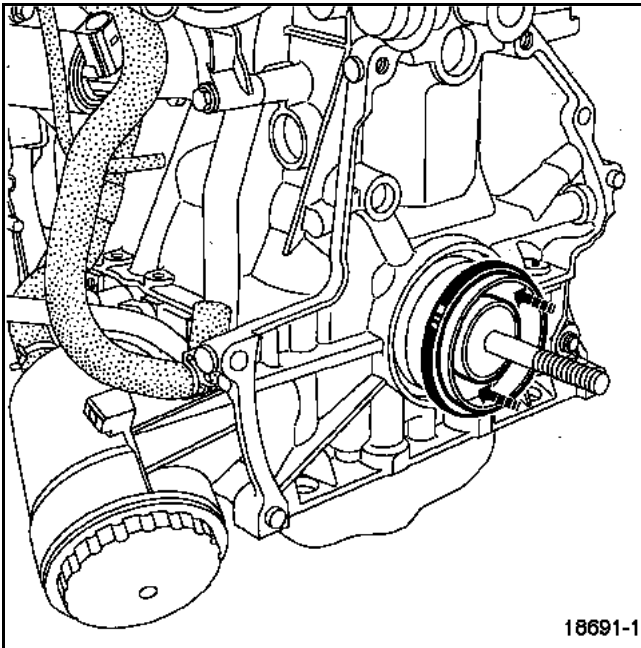
Overhauling the engine

Crankshaft elastomer seal, flywheel end

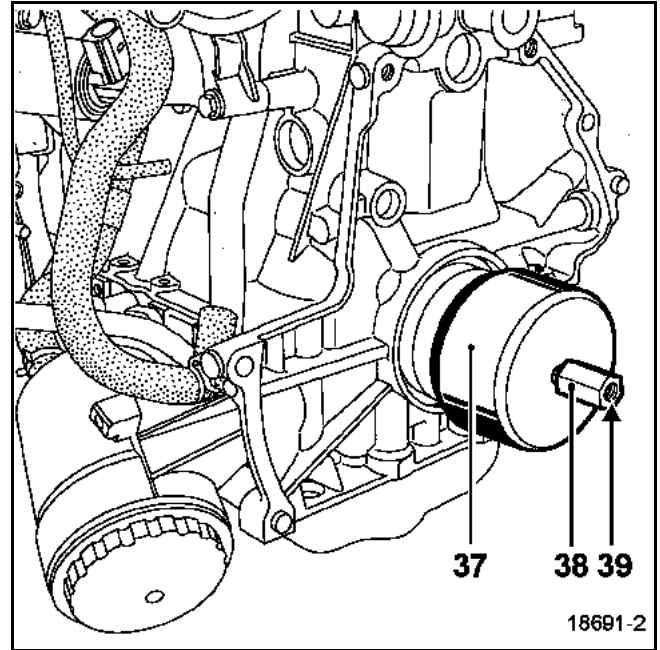
Install tool **Mot. 1564** on the crankshaft, attaching it with bolts (36).



Put the protector complete with seal on tool **Mot. 1564**, being careful not to touch the seal.



Fit cup (37) and nut (38) (putting the threaded hole (39) of the nut on the side facing away from the engine) of **Mot. 1564**.



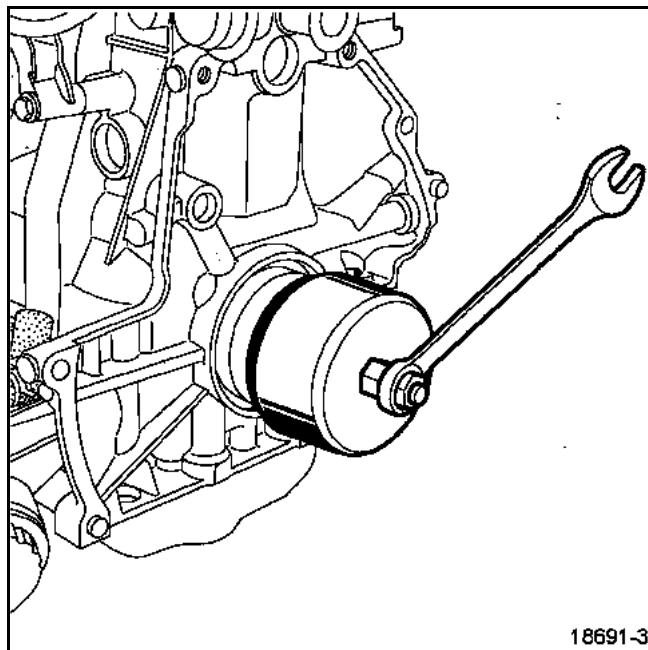
ENGINE AND PERIPHERALS

Overhauling the engine

G9X ENGINE

10A

Screw the nut until the cup makes contact with the cylinder block.



Remove the nut, the cup, the protector and the base plate.

