

WORKSHOP MANUAL

504



PEUGEOT

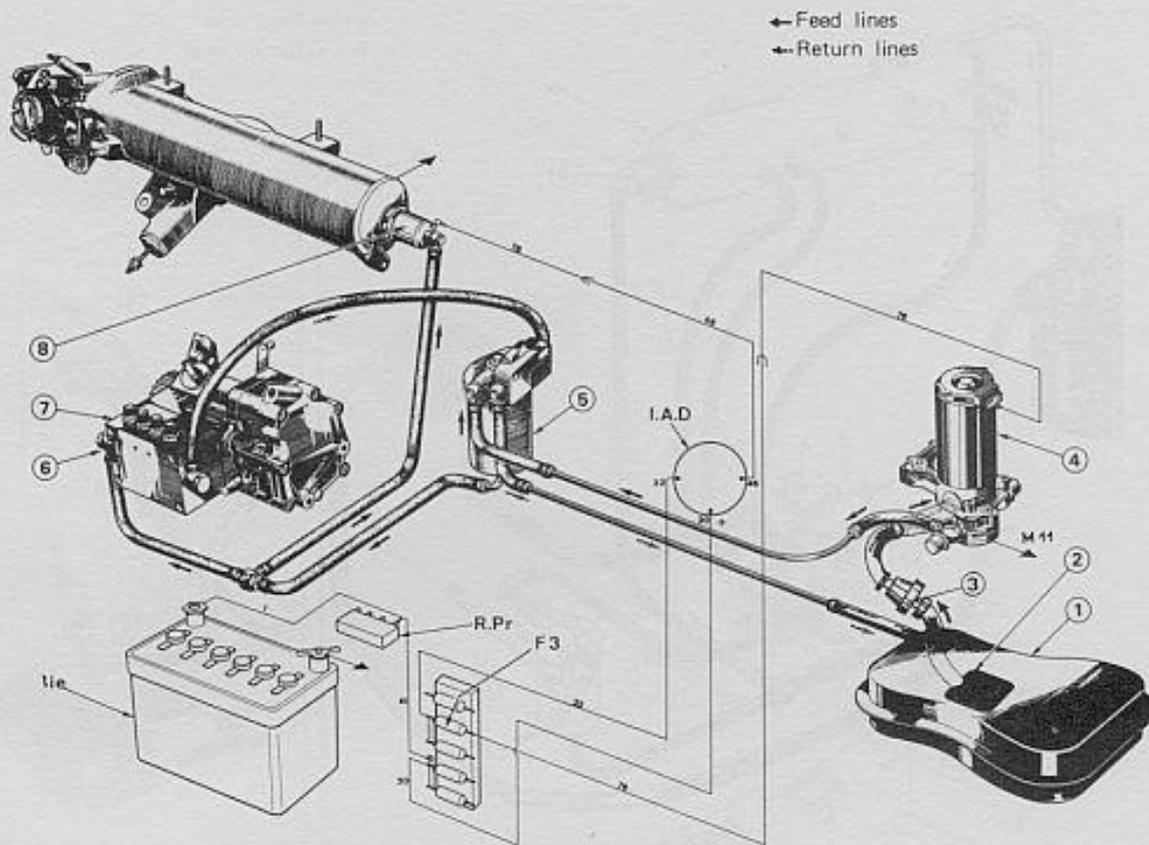
PETROL INJECTION ENGINE

FEED CIRCUIT - KF 6 ENGINE

1

1251

Feed circuit



DESCRIPTION

WIRING

- Bie - Battery
- R.Pr. - Relay
- F3 - Fuse
- I.A.D. - Ignition switch

HYDRAULIC CIRCUIT

- 1 - Fuel tank
- 2 - Fuel strainer
- 3 - Pre-filter
- 4 - Electric lift pump
- 5 - Degassing filter (water trap)
- 6 - Injection pump filter
- 7 - Injection pump
- 8 - Electrovalve.

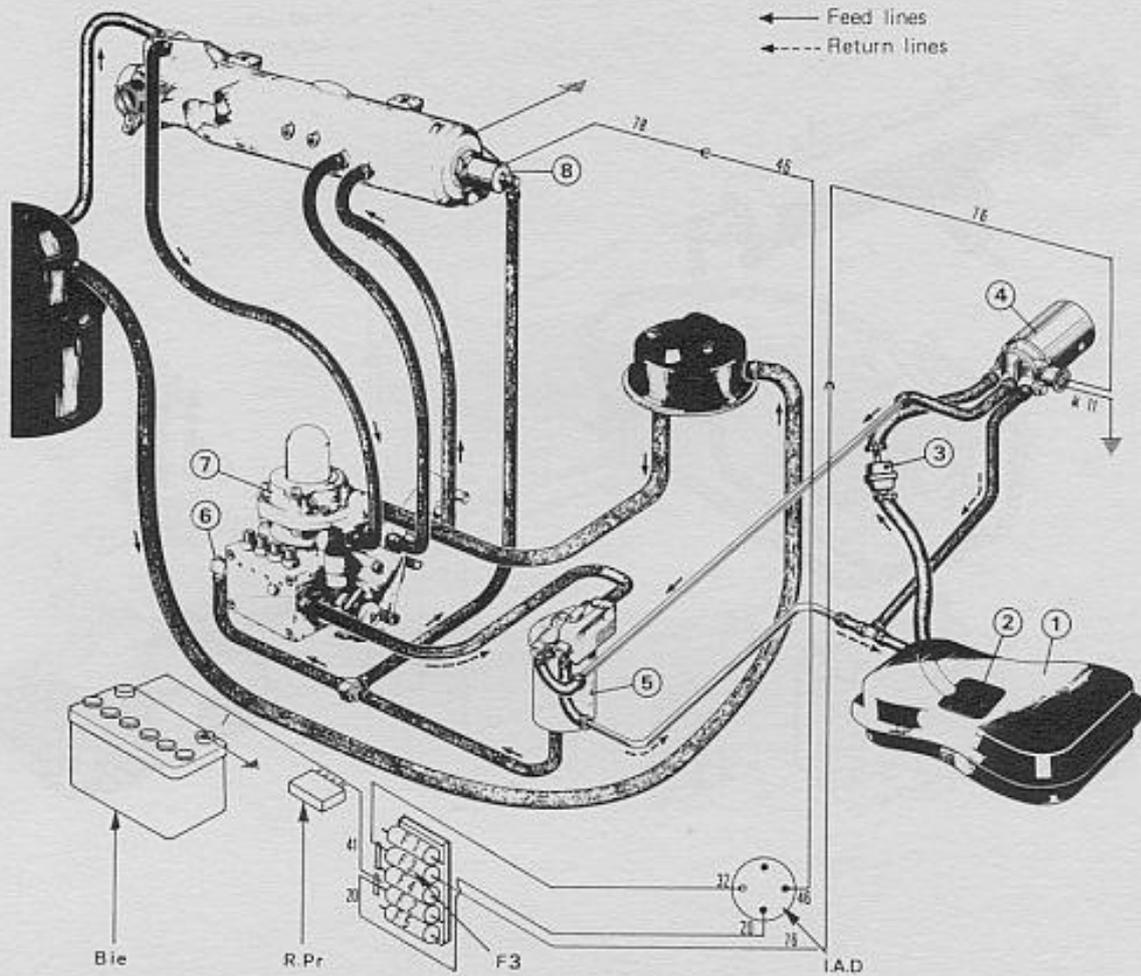
PEUGEOT

1252

1

PETROL INJECTION ENGINE
FEED CIRCUIT - KF 5 AND XN 2 ENGINES

Feed circuit



DESCRIPTION

WIRING

- Bie - Battery
- R.Pr. - Relay
- F3 - Fuse
- I.A.D. - Ignition switch

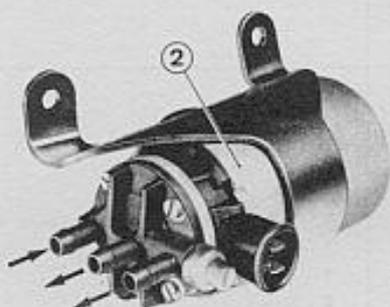
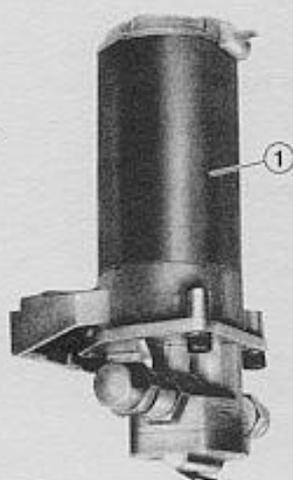
HYDRAULIC CIRCUIT

- 1 - Fuel tank
- 2 - Fuel strainer
- 3 - Pre-filter
- 4 - Electric lift pump
- 5 - Degassing filter (water trap)
- 6 - Injection pump filter
- 7 - Injection pump
- 8 - Electrovalve

PETROL INJECTION ENGINE

LIFT PUMPS

1 12 53



LIFT PUMPS

IDENTIFICATION

KF 6 engine

PLF 6 pump (1)

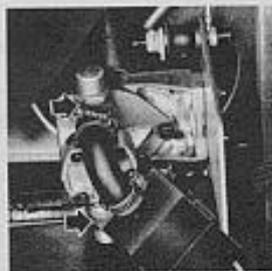
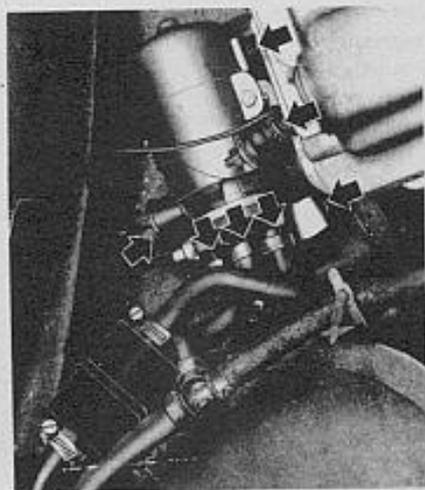
- Hydraulic part : Kugelfischer
- Electric part : A.E.G.

KF 5 and XN 2 engines

Bosch pump (2)

Characteristics

- Feed voltage : 12 V
- Current absorbed : 2.3 A
- Output : 50 litres/hour at 1.2 bars



REMOVAL

- Disconnect
 - the wires
 - the fuel lines (seal them off).
- Remove the pump

REFITTING

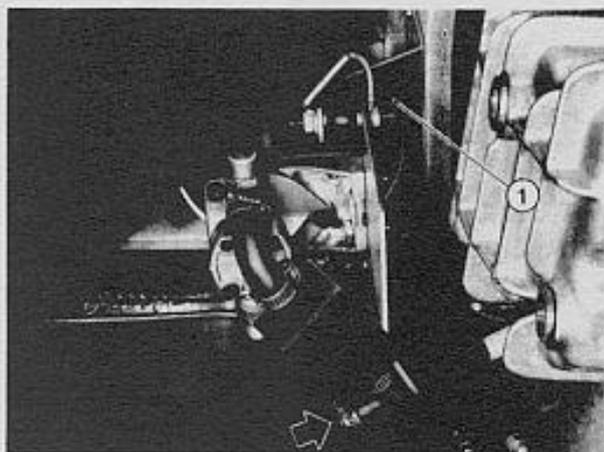
- Replace all the copper union seals on PLF 6 pumps.

1254

1

PETROL INJECTION ENGINE

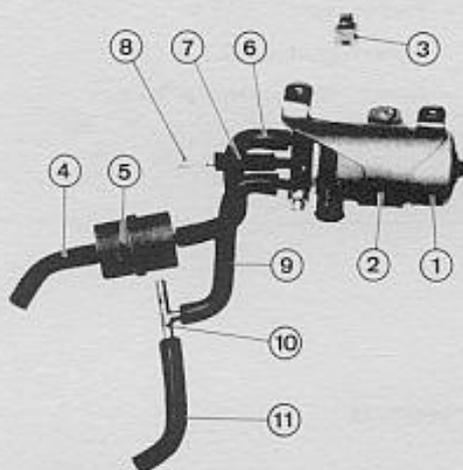
LIFT PUMPS



ADAPTING A BOSCH PUMP

Removing the PLF6 pump

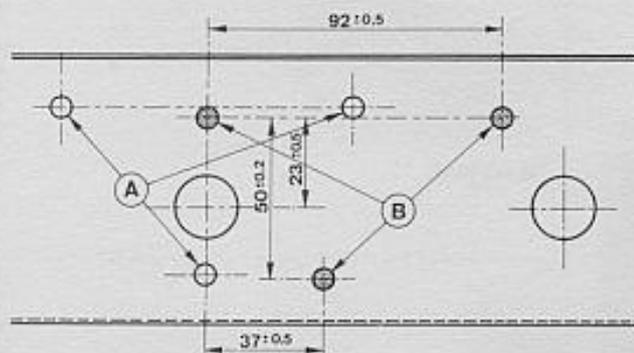
- Disconnect the wires.
- Remove the pump and the bracket (1).
- Seal of the fuel lines.



Fitting the Bosch pump.

The following components must be used :

- 1 - Lift pump
- 2 - Bracket
- 3 - Support plate
- 4 - Feed line
- 5 - Pre-filter
- 6 - Line between pre-filter and pump
- 7 - Pump outlet line
- 8 - Two way union
- 9 - Fuel return line
- 10 - " T " union
- 11 - Fuel return line,



Bosch pump mounting holes

- Drill 3 holes (\varnothing 7.2 mm) in the rear floor reinforcement (see drawing opposite).

A - PLF 6 pump mounting holes

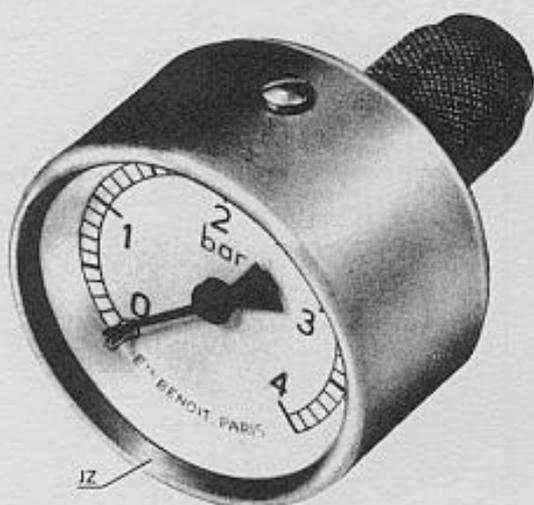
B - Bosch pump mounting holes

N.B. - The positions for the 3 holes are marked with a punch from body N° 156 995.

PETROL INJECTION ENGINE

LIFT PUMPS

1 1255

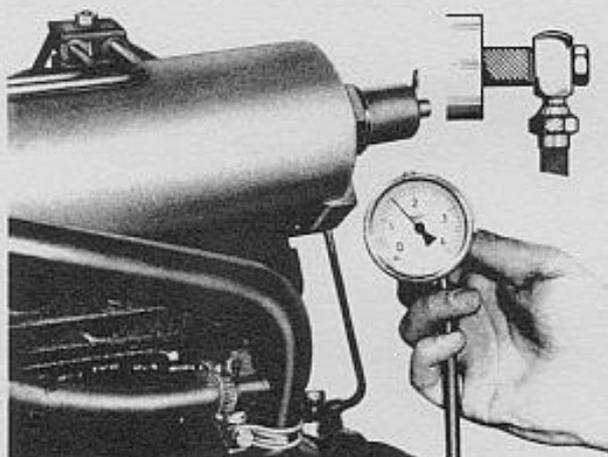


CHECKING THE FEED PRESSURE

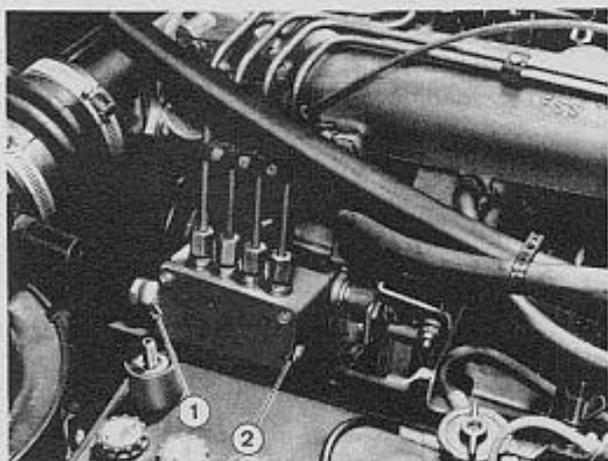
Tools to be used.

8.0112 W - Petrol injection engine tool chest

JZ - Pressure gauge.



- Install the pressure gauge as shown opposite.
- Switch on the ignition.
- The pressure must be between 1 and 2,5 bars.



- If the pressure is lower than 1 bar, check :
 - the amount of fuel in the tank,
 - the fuel line connections on the tank,
 - the pump feed voltage : $12\text{ V} \pm 0,1$,
 - the circuit for leaks,
 - the condition of the pre-filter and the degassing filter cartridge.
- Repeat the check and, if necessary, replace the pump.
- If the pressure is higher than 2,5 bars, check :
 - the pump intake filter (1),
 - the jet (2) in the hydraulic head, after removing the union,
 - the return lines.

N.B. - A pressure of slightly more than 2,5 bars will have no ill effect on the operation of the injection pump.

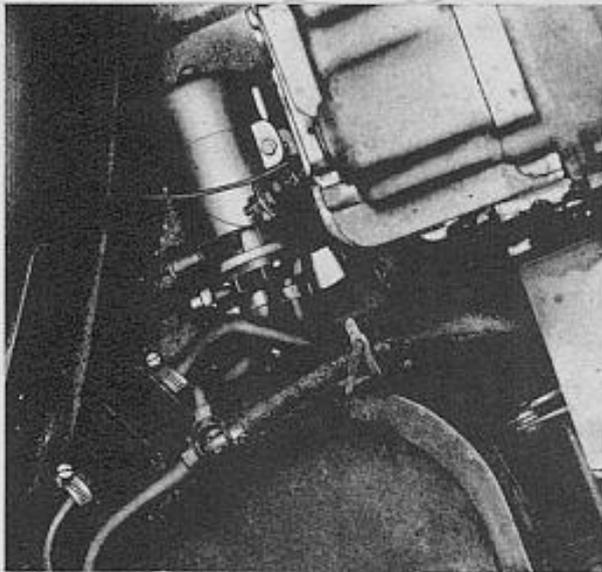
- Reconnect the fuel line to the electrovalve, using new sealing washers.

1256

1

PETROL INJECTION ENGINE

LIFT PUMPS

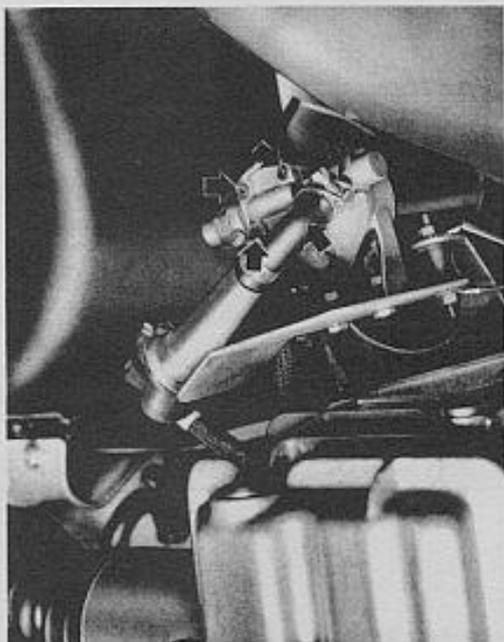


- Install the pump and realise the various connections.
- Start up the engine.
- Make sure that there are no leaks.

PETROL INJECTION ENGINE
ELECTROVALVE

1

1257



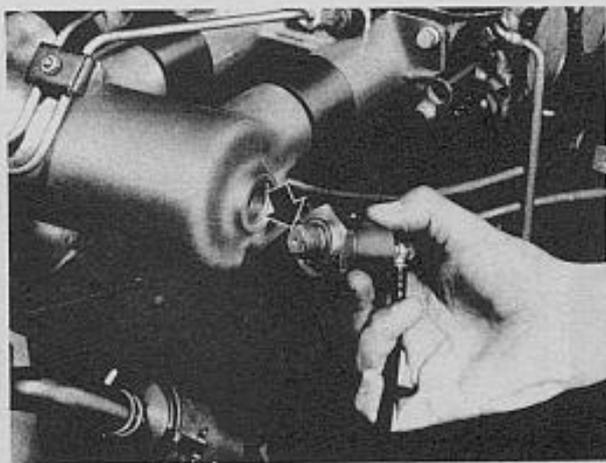
CHECKING FOR LEAKS

Feed circuit.

There should be no apparent leakage from the pump body and unions.

If there are, check the tightness of the allen screws on the pump body.

If the unions leak, replace the seals rather than tighten the screws.



Electrovalve

- Remove the electrovalve.
- Refit the petrol feed union.
- Reconnect the feed wire.
- Switch on the ignition.

The valve should not leak. If it does, change the unit.

- When refitting replace the seals.

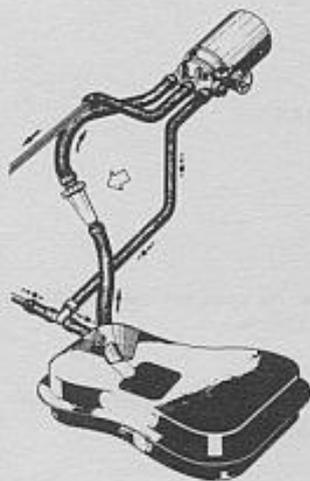
1258

1

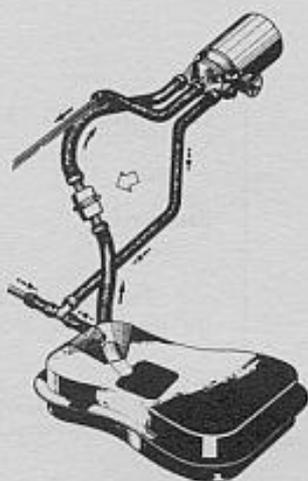
PETROL INJECTION ENGINE

FILTERING

1st Fitting



2nd Fitting

**FILTERING****Pre-filter****1st Fitting**

– A.M.F.G. filter.

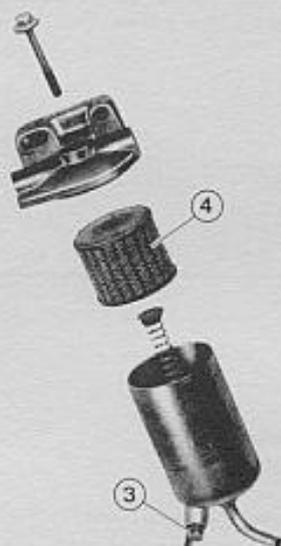
2nd Fitting

– Bosch filter.

Maintenance

- Replace the filter every 15,000 km.
- Never blow it clean with compressed air.

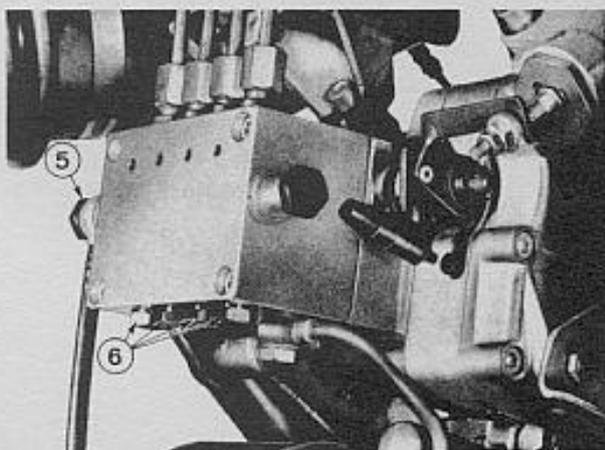
N.B. - In the event of replacement, only use the 2nd fitting filter (Bosch).

**BLEEDING**

- Place a recipient under the filter.
- Bleed the filter through screw (3).

WARNING - If more than 10 c.c. of water are recovered :

- remove the filter bowl and clean it,
- drain the fuel tank,
- blow through the fuel lines,
- replace the C113 cartridge (4), if necessary.



– Check :

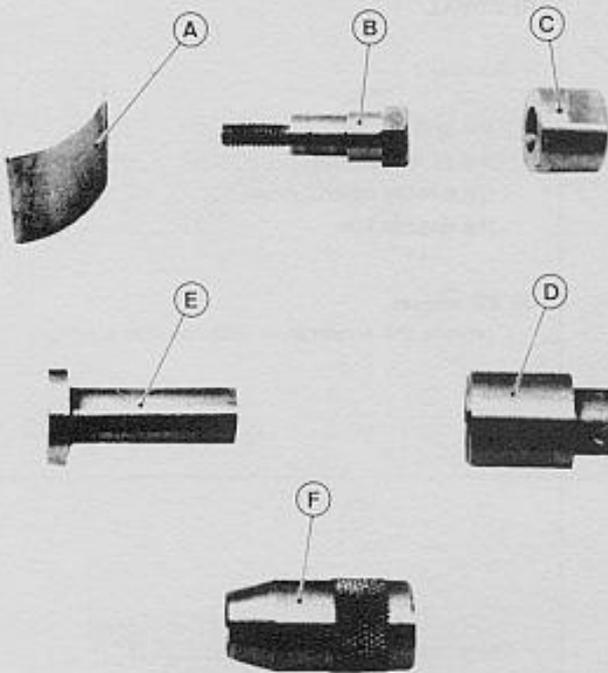
- the pump intake filter (5),
- the suction valve filters (6),
[see page 13 14, class 1].

PETROL INJECTION ENGINE (KF 5 - XN 2)

REPLACING THE THROTTLE FLAP SPINDLE

1

1303



TOOLS TO BE REALISED 0.0143

(see page 01 01, class 15).

A - Nut for installing the DU bush

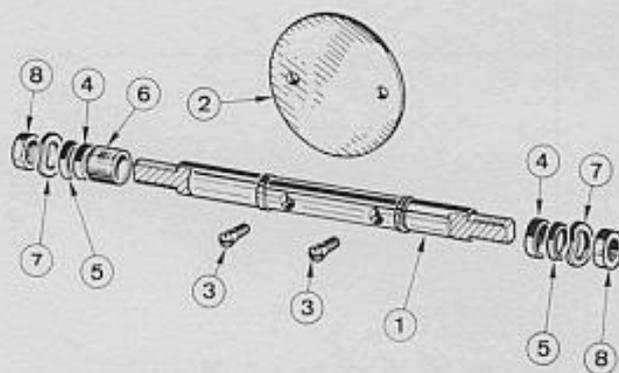
B - Draw bolt

C - Throttle spindle retaining nut

D - Guide for the 2nd bush

E - Drift for the 2nd bush

F - Drift for the seals.



REPAIR KIT

1 - Throttle spindle

2 - Throttle flap

3 - Throttle flap screws

4 - DU bush - 10 x 12 x 10 mm

5 - Nylon seal

6 - Spacer

7 - Onduflex washer (Ø 8 mm)

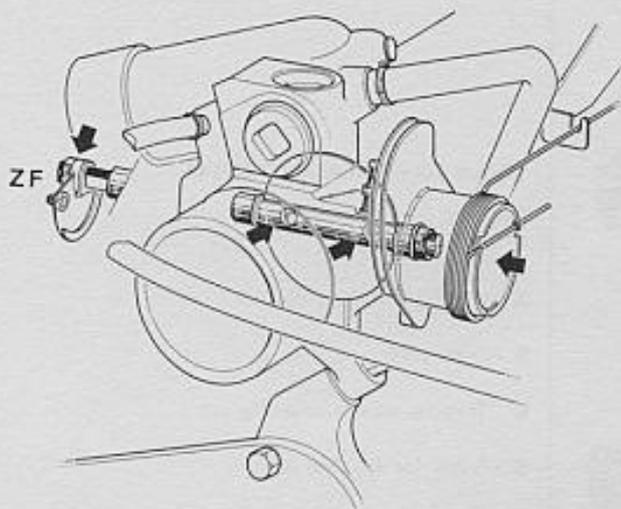
8 - Nut

1304

1

PETROL INJECTION ENGINE (KF 5 - XN 2)

REPLACING THE THROTTLE FLAP SPINDLE

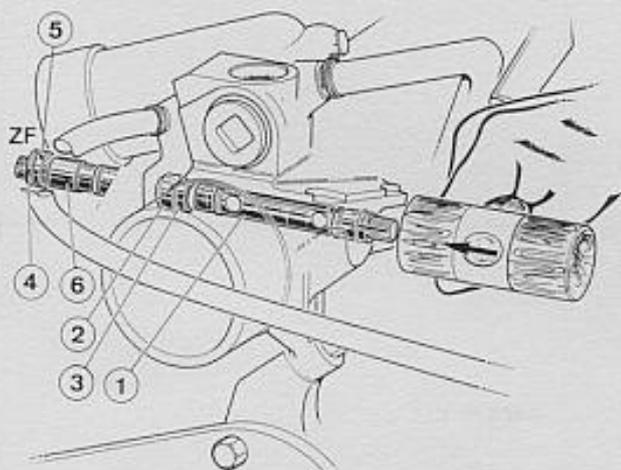


REMOVAL

- Remove :
- the ignition coil,
- the air intake hose,
- the throttle control drum,
- the throttle flap.

On ZF engines

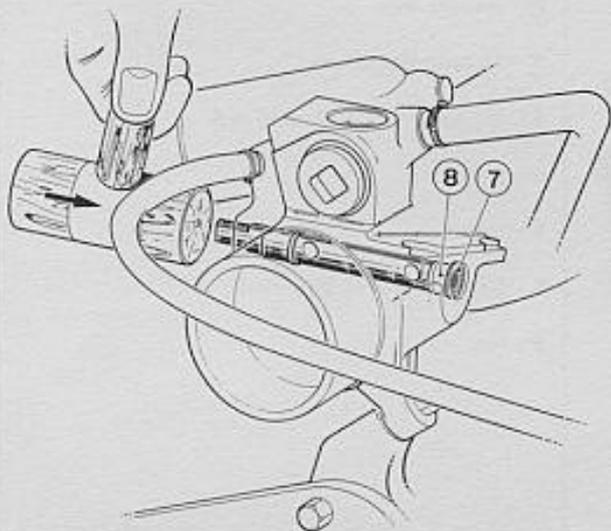
- remove the acceleration cable control quadrant.



- Using the spindle (1), drive out :
- the plug (2) and the bush (3).

On ZF engines

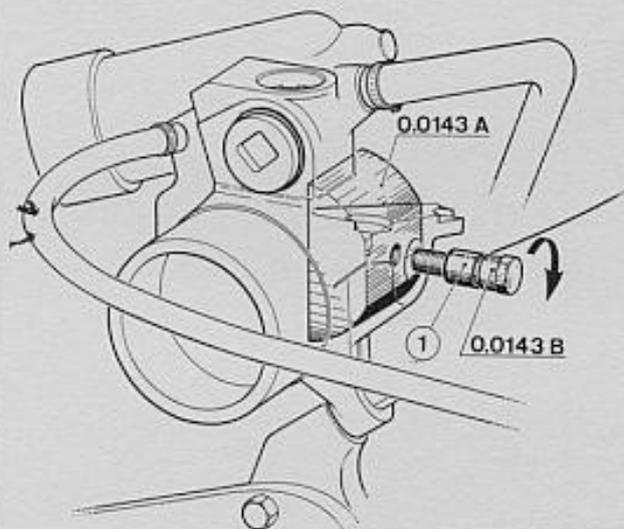
- the seal (4) the spacer (5) and the bush (6).



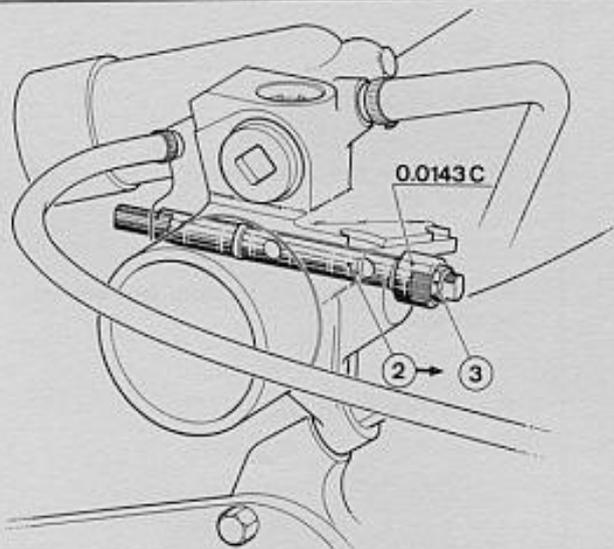
- Drive out :
- the seal (7) and the bush (8).

REASSEMBLY

- The air distribution chamber must be in perfect condition and spotlessly clean.
- Use all the parts in the repair kit.



- Fit the bush (1) on the throttle drum side.
- Tighten the draw bolt (B) until it abuts.



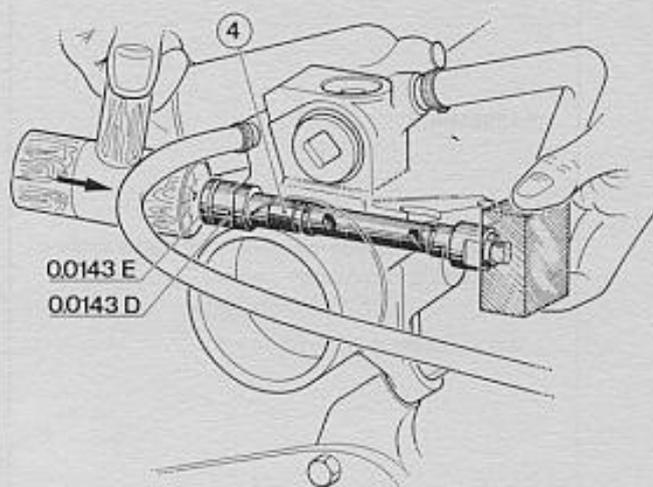
- Lock the spindle (2) using the nut (C), with the flats facing away from the housing (short threaded end on the drum side).
- Tighten the lock nut (3), whilst holding the nut (C) with a 17 mm spanner.

1306

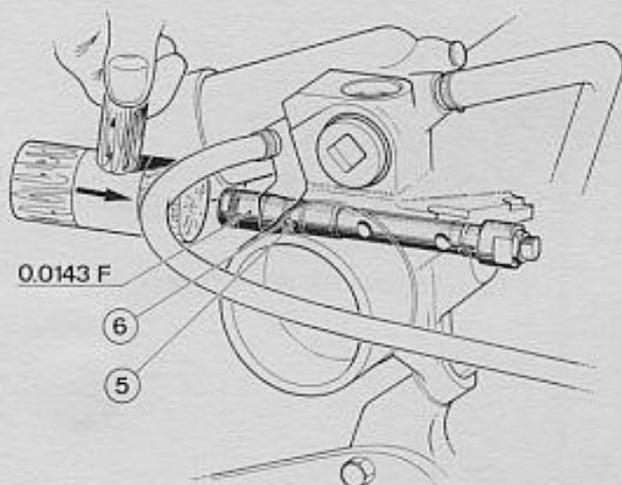
1

PETROL INJECTION ENGINE (KF 5 - XN 2)

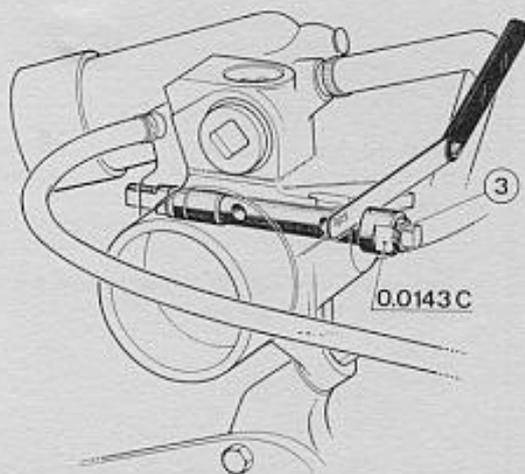
REPLACING THE THROTTLE FLAP SPINDLE



- Install the bush (4), with the spindle in place, bearing against a lead block.



- Fit :
 - the spacer (5),
 - the seal (6).



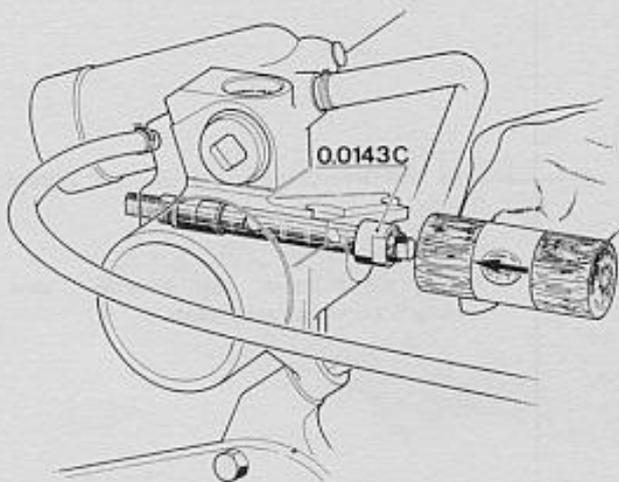
- Slacken the lock nut (3).
- Place a 0,05 mm feeler between the nut (C) and the housing.
- Screw the nut (C) down, by hand, until it abuts on the feeler.
- Tighten the lock nut (3).

PETROL INJECTION ENGINE (KF 5 - XN 2)

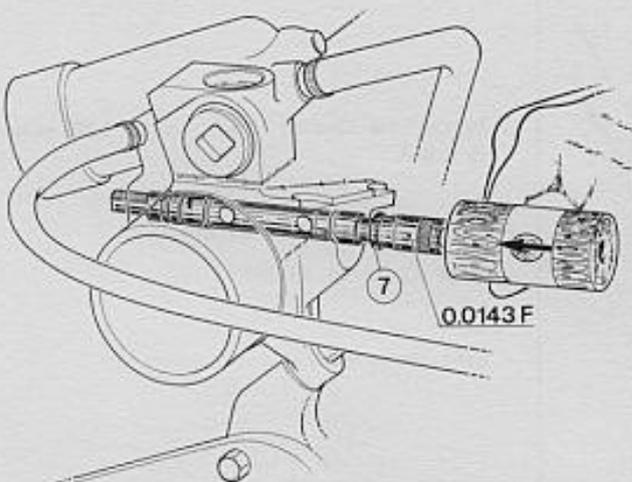
REPLACING THE THROTTLE FLAP SPINDLE

1

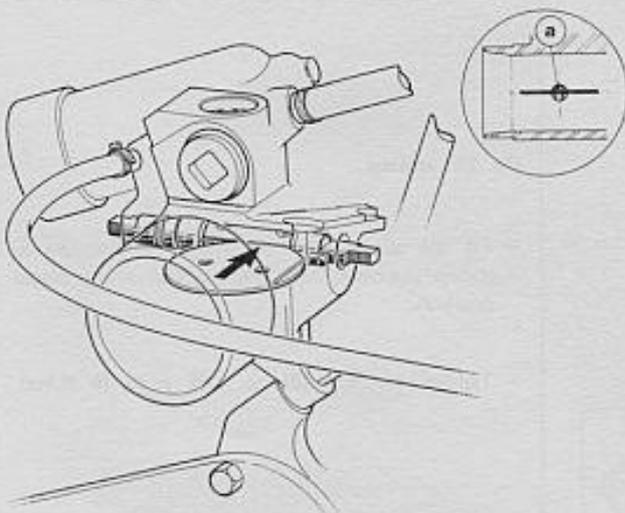
13 07



- Bring the nut (C) up against the housing by tapping on the end of the spindle.
- Remove the lock nut (3) and the nut (C).



- Make sure that the spindle rotates freely with an end float of approximately 0.05 mm.
- Fit the nylon seal (7).



- Position the spindle with the countersunk holes (a) facing up.
- Insert the throttle flap in the slot as shown, opposite.
- Make sure that it is centered by snapping the throttle shut a number of times.

1308

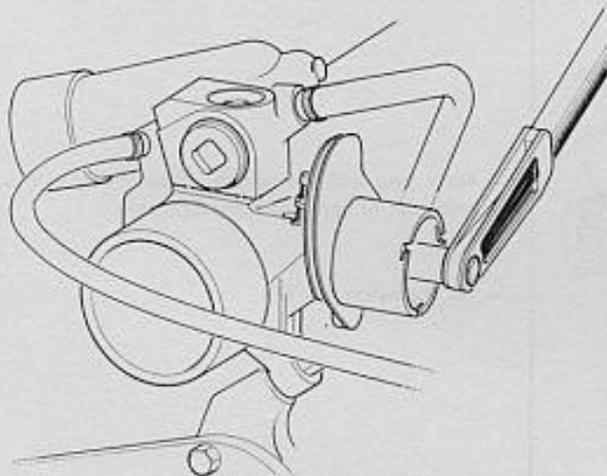
1

PETROL INJECTION ENGINE (KF 5 - XN 2)

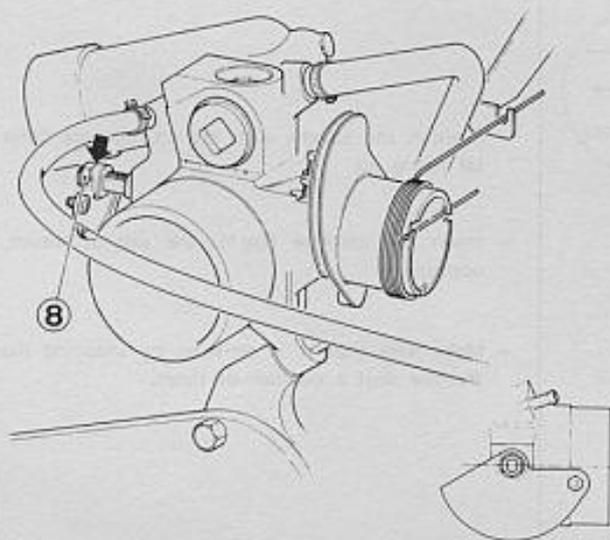
REPLACING THE THROTTLE FLAP SPINDLE



- Hold the throttle closed, firmly but without forcing.
- Tighten the 2 screws, after smearing " weak holding " Loctite on the threads.



- Tighten the throttle drum nut to **1.25 m.kg (9 ft.lbs)**.
- Carry out the various adjustments (page 13 31 to 13 36).
- Refit the accessories.

**On ZF engines**

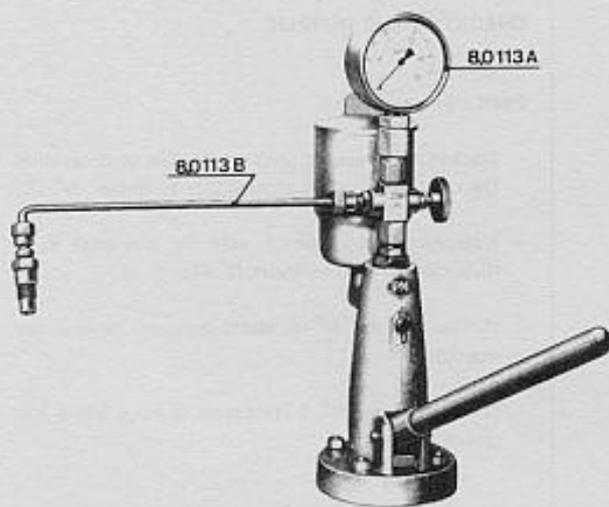
- Fit the acceleration cable control quadrant as shown opposite, with the throttle in the closed position.
- Tighten the nut (8) to **1.25 m.kg (9 ft.lbs)**.

PETROL INJECTION ENGINE

INJECTORS

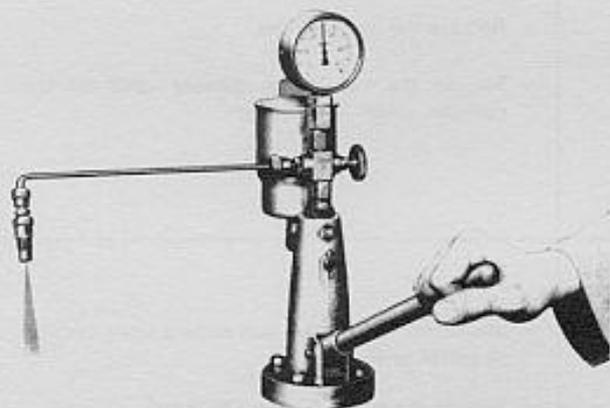
1

1309



TOOLS TO BE USED

- Apparatus : PM : type 22,41,01,0002 or Bosch ref : 068,1143,013.
- Pressure gauge, 0 to 50 bars : **8.0113 A.**
- Injector support tube : **8.0113 B.**



CHECKS

- Remove the injector.

Before checking, flush the injector thoroughly by several rapid strokes of the pump.

- Pressure

Initial : 30 to 38 bars
Minimum : 15 bars
(no possible adjustment).

- Sealing

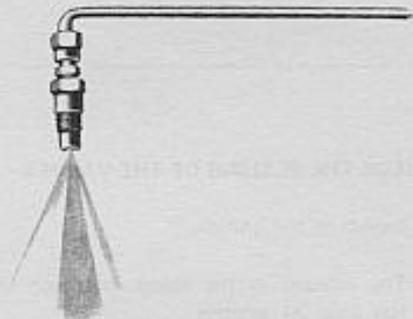
No formation of drops after 5 seconds at 15 bars.

- Shape of the jet

Fine conical jet with no splashing

- Refit the injector :

- tighten the injector to **2 m.kg (14,5 ft.lbs).**
- tighten the injector line to **2,5 m.kg (18 ft.lbs).**



PETROL INJECTION ENGINE

DELIVERY VALVES

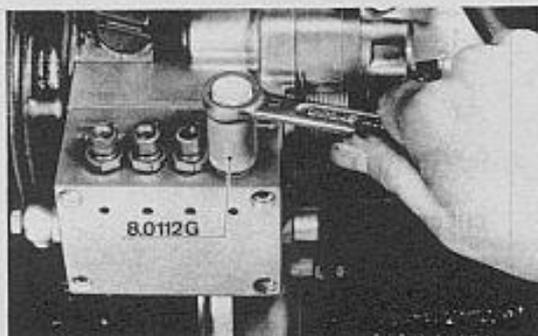


CHECKING THE OUTPUT

ACIROS

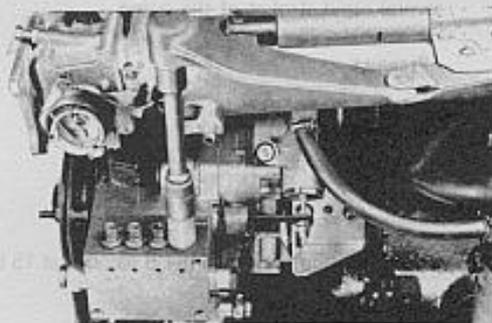
Fault : irregular idling.

- Slacken the injector lines one by one to determine the cylinder which is missing (for example : N° 3).
- Interchange the injector with the one next to it (cylinder N° 3 to cylinder N° 4).
- If the cylinder N° 4 starts missing, replace the injector.
- If the cylinder N° 3 continues to miss, bleed the delivery valve.

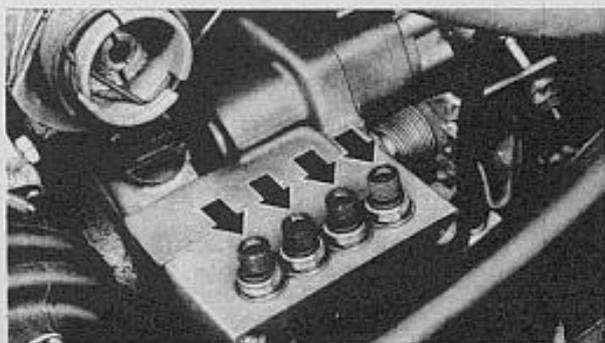


BLEEDING A DELIVERY VALVE

- Remove the injector lines.
- Slacken the nut of the delivery valve for the cylinder which is missing.



- Switch on the ignition and allow a small amount of petrol to flow.
- Tighten the nut to **5 m.kg (36 ft.lbs)**.
- Refit the injector lines :
 - tighten to **2.5 m.kg (18 ft.lbs)**.
- Check that the lines do not leak.



CHECK THE SEALING OF THE VALVES

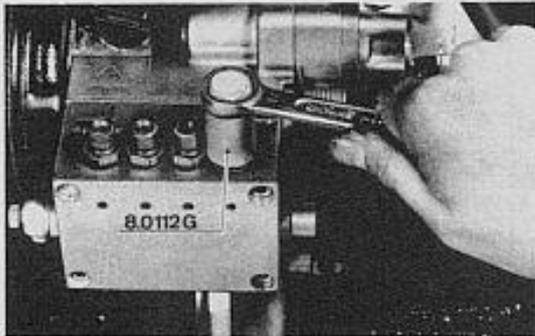
- Switch on the ignition.
- The recesses in the valves must not fill up in less than 30 seconds.
- If they do, replace the defective ones.

PETROL INJECTION ENGINE

DELIVERY VALVES

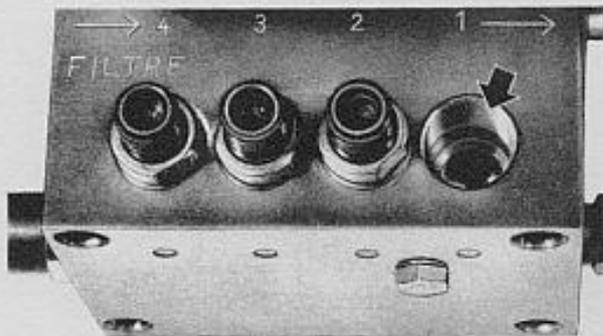
1

1311

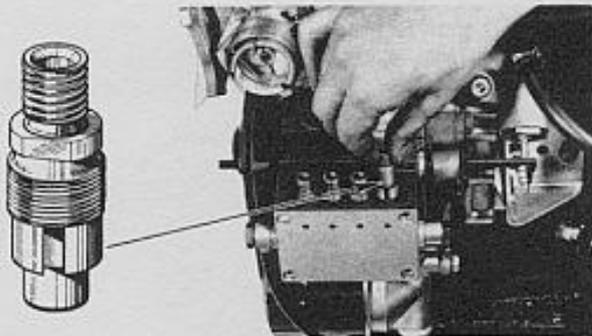


REPLACING A DELIVERY VALVE

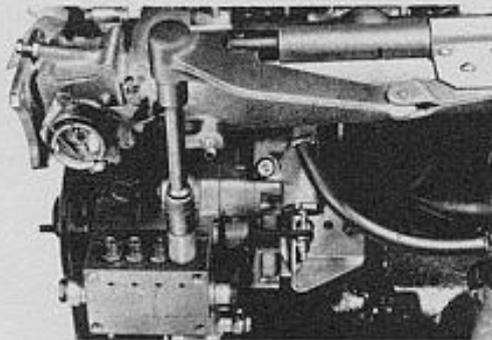
- Clean the top of the hydraulic head thoroughly to prevent dirt getting into the pump.
- Remove the delivery valve.



- Blow out the inside of the valve recess and pour a few drops of oil in.



- Fit the new valve fitted with its spacer, as shown opposite.



- Tighten the nut to 5 m.kg (36 ft.lbs).
- Refit the injector lines :
 - tighten the unions to 2.5 m.kg (18 ft.lbs).
- Check the sealing.

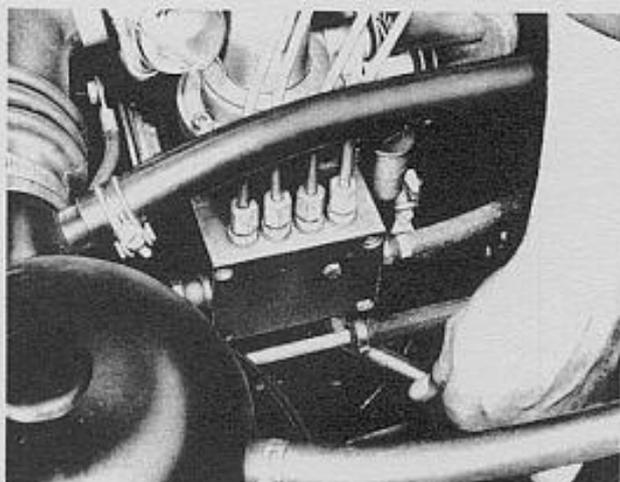
PEUGEOT

13 12

1

PETROL INJECTION ENGINE

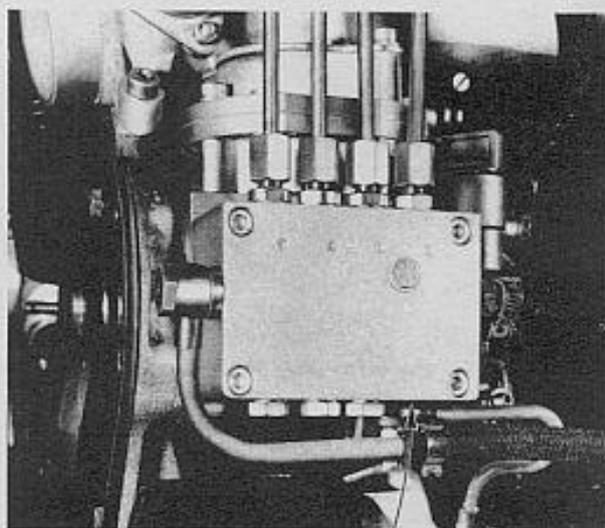
SUCTION VALVES



REPLACING A SUCTION VALVE

Removal

- Clean the hydraulic head thoroughly.
- Remove :
 - the suction valve with its O-ring,
 - the filter.

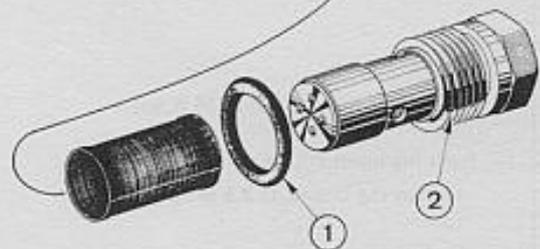


Refitting

- Clean the new valve assembly (valve body, O-ring, filter) thoroughly.
- Lightly oil :
 - the O-ring (1),
 - the thread (2).
- Fit the valve (hand tighten only).

BLEEDING

- Operate the lift pump.
- Slacken off the suction valve until petrol is flowing from it.
- Tighten the valve to **2.5 m.kg (18 ft.lbs)**.
- Bleed the corresponding delivery valve (page 13 10, class 1).
- Make sure that the hydraulic head does not leak.

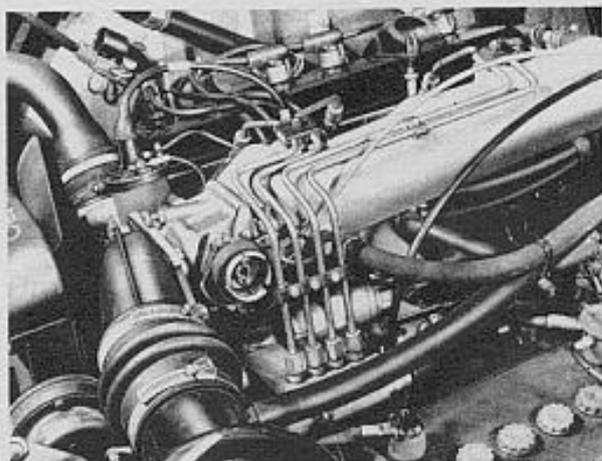


PETROL INJECTION ENGINE

INJECTION PUMP

1

1315

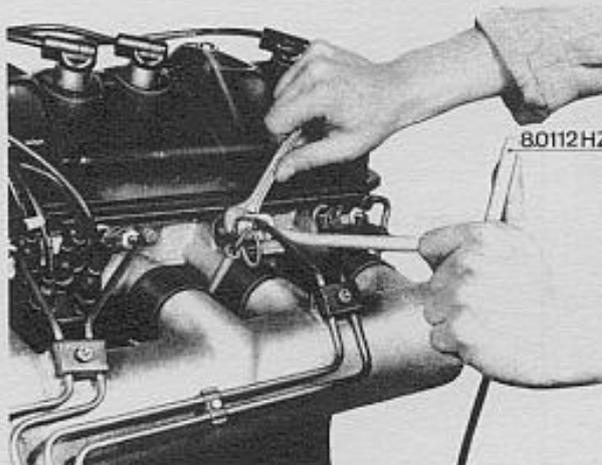


REMOVAL OF THE INJECTION PUMP

- Remove :
- the battery,
- the air intake hose from the air chamber.

On KF 6 :

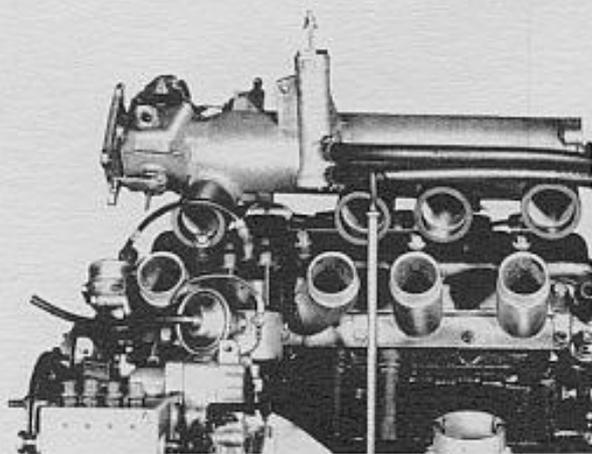
- Remove :
- the oil vapour recirculation hose (from the filter end),
- the vacuum lines (distributor and Master-Vac),
- the electrovalve petrol line and feed wire,
- the throttle cable.



- Remove the injector lines.
- Protect the pump and injector unions.
- Disconnect :
- the fuel feed and return lines from the pump.

On KF 5 and XN 2 :

- Disconnect the return line from the degassing filter (to avoid dismantling the Staubli collar).



On KF 5 and XN 2 :

- Disconnect :
- the four chamber/manifold rubbers,
- the two hoses from the thermostat (secure them pointing upwards so as not to drain off the water).

- Remove :
- the oil line (oil filter to pump).

On KF 6 :

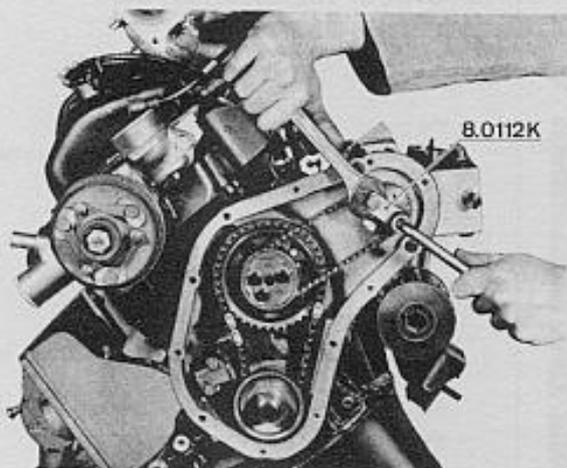
- Remove the air chamber and turn it over, to rest it on the rocker cover.

1316

1

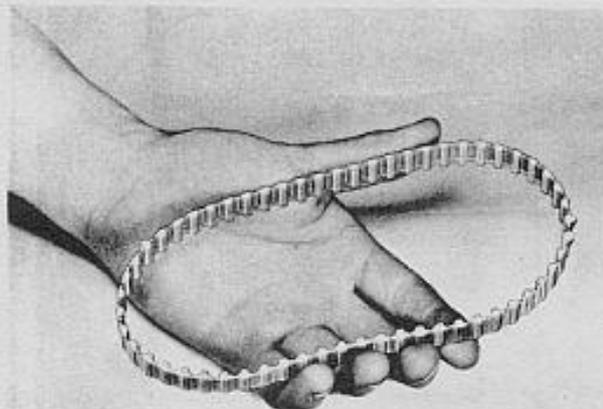
PETROL INJECTION ENGINE

INJECTION PUMP



— Remove :

- the fan belt and alternator drive belt,
- the crankshaft pulley,
- the timing cover,
- the injection pump pulley with the drive belt in place,
- the injection pump.



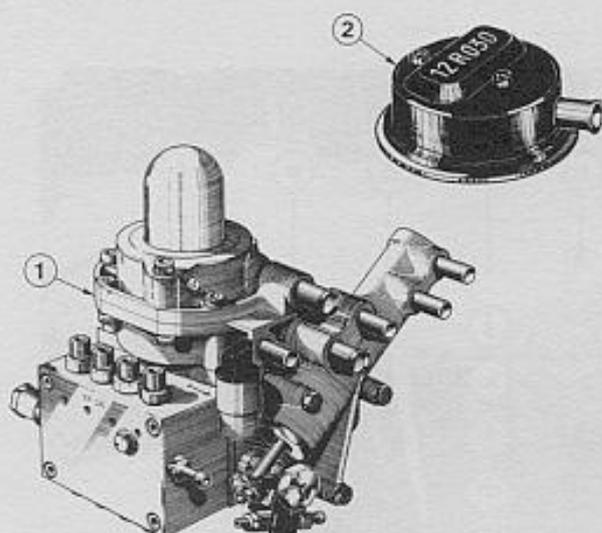
WARNING - Never bend the belt, once removed, to form an arc of less than 20 mm in diameter.

PETROL INJECTION ENGINE

INJECTION PUMP

1

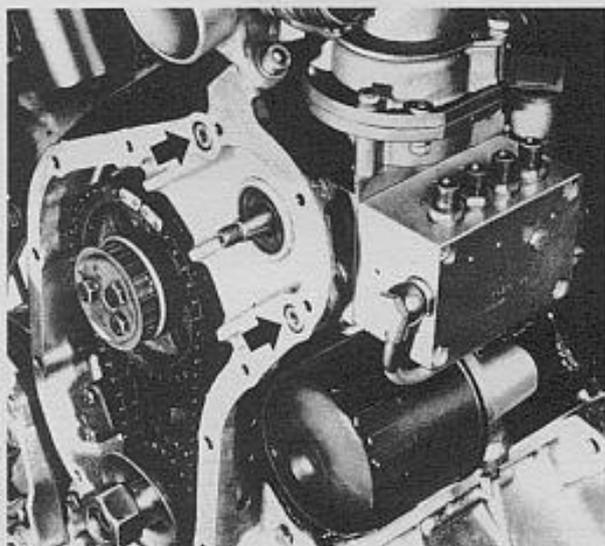
1317



REFITTING THE INJECTION PUMP

WARNING - KF 5 and XN 2 - the injection pump (1) and the altitude corrector (2) form an inseparable unit.

A defect in one or other of these parts entails replacement of both of them.



- Smear sealing compound on the mating face of the pump.

- Secure the pump to the timing housing. Tighten to 2 m.kg (14.5 ft.lbs).

On KF 5 and XN 2:

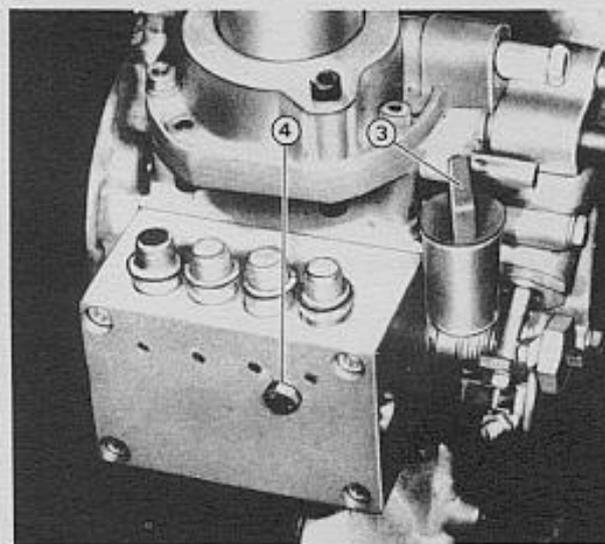
- Secure the rear bracket between pump and oil filter. Tighten to 2 m.kg (14.5 ft.lbs).

On KF 6 :

- Secure the rear mounting bracket to the block while holding it up tight against the rear of the pump. Tighten to 2 m.kg (14.5 ft.lbs).

- Fit the two support bolts in the rear of the pump. Tighten to 0,75 m.kg (5,5 ft.lbs).

WARNING - If difficulty is encountered, slacken the two allen screws on the front and, after retightening them, tighten the rear bolts.



- Check the oil level in the pump.

- Top up, if necessary, using ESSOLUBE 10 W. Pour the oil in through the orifice (3) until it flows from the level hole (4). Refit the two plugs.

N.B. - On KF 6 pumps, the level is checked with the dipstick in the plug (3).

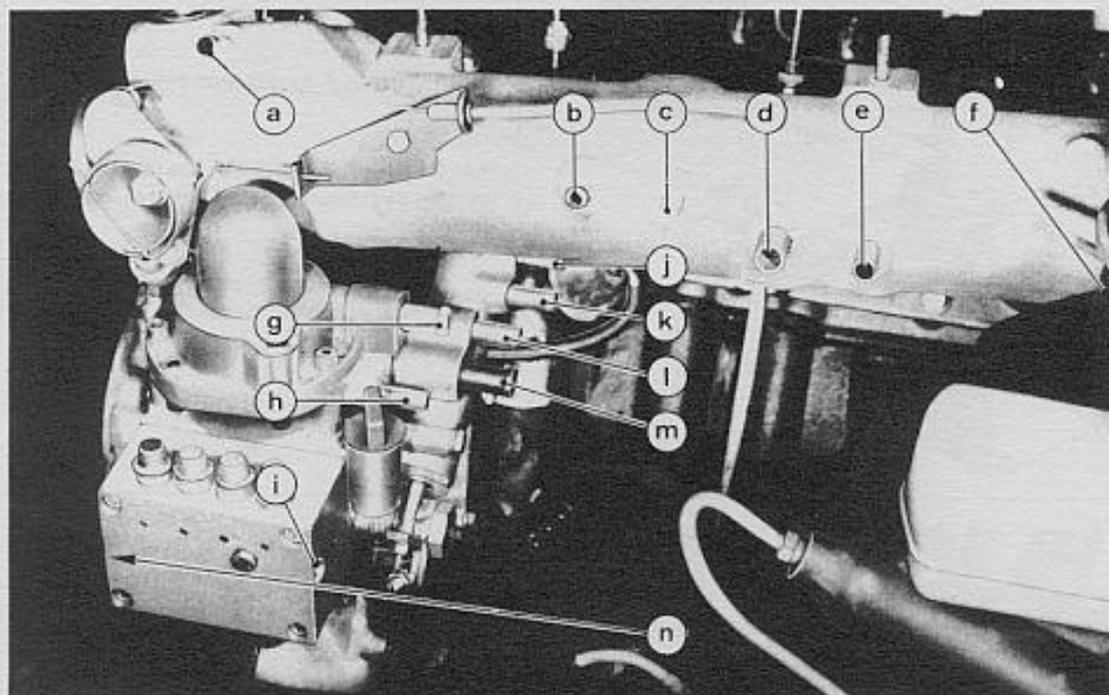
- Pump capacity :

- KF 6 - 0.4 litres (0.7 pints),

- KF 5 - XN 2 - 0.15 litres (0.26 pints).

PETROL INJECTION ENGINE

INJECTION PUMP



CONNECTING THE VARIOUS HOSES TO THE PUMP (KF5 - XN2)

The connections must be realised in the following order.

From	To	Identification
Cylinder head	(j)	Thermostat intake
Water pump	(k)	Thermostat outlet
Air chamber (e)	(l)	Fast idling air intake (Ø 10 mm)
Air chamber (d)	(m)	Counter pressure line (Ø 13 mm)
Corrector (f)	(g)	Altitude correction line (Ø 13 mm)
Air chamber (a)	(h)	Pneumatic governing line (Ø 10 mm)
Air chamber (b)		Master-Vac vacuum line*
Air chamber (c)		Oil vapour recirculation line*
	(n)	Fuel feed
	(i)	Fuel return

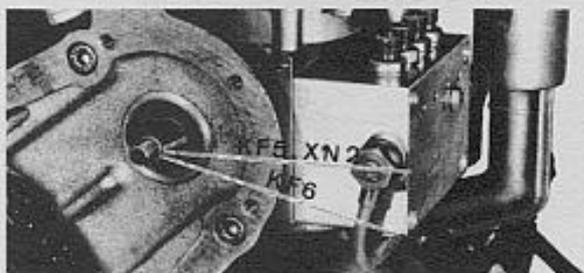
* The removal of these lines is not essential.

PETROL INJECTION ENGINE

INJECTION PUMP

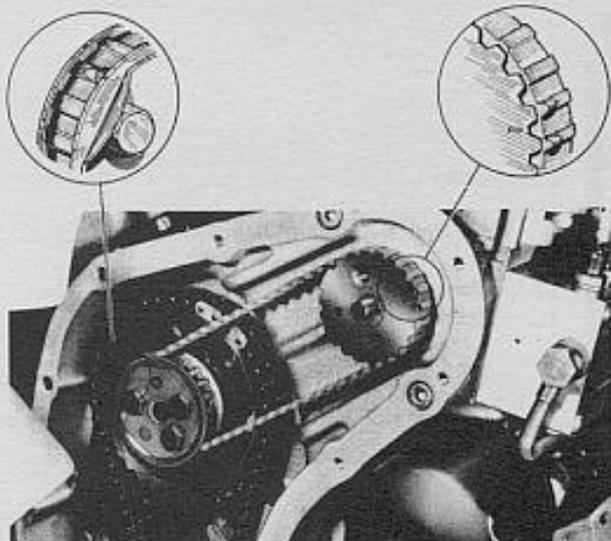
1

1319



SETTING THE INJECTION PUMP

- Fit the crankshaft pulley nut temporarily.
- Rotate the crankshaft to position the rotor arm contact between N° 1 and N° 3 HT terminals.
- Position the injection pump pulley keyway as shown opposite.

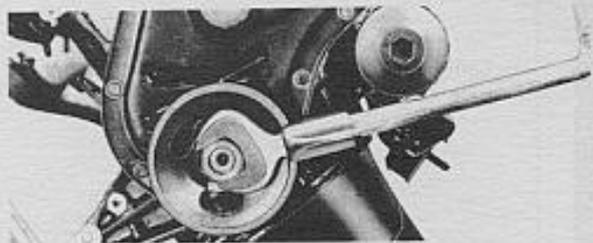


- Mount the drive belt on the camshaft pulley and pump pulley, lining up the reference marks.
- Locate the pulley on the pump shaft.
- Rotate the crankshaft backwards through one turn and then check by rotating it through one turn in the normal direction of rotation.
- Tighten the pump pulley nut to **3.5 m.kg (25 ft.lbs)** and lock it.



- Fit :
 - the timing cover (centering it),
 - the crankshaft pulley,
 - the tab washer and nut,
- Tighten to **17 m.kg (123.5 ft.lbs)** and lock the nut.

On KF 6



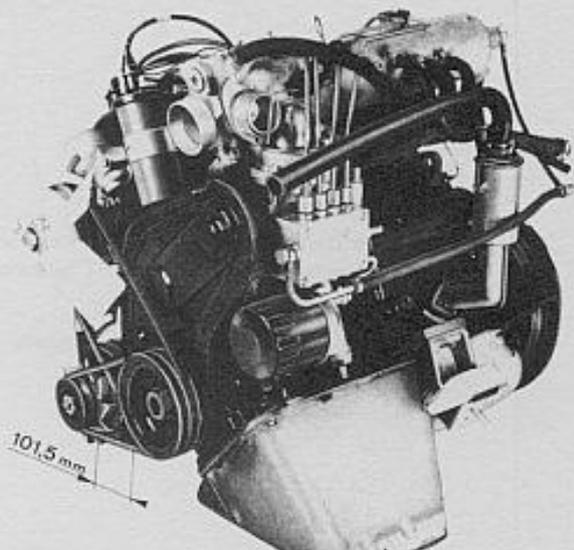
- Fit the air distribution chamber making sure that the thermostat rod engages in the groove in the enrichener lever.
- Secure the chamber. Tighten the allen screws on the pump body to **2 m.kg (14.5 ft.lbs)**.

13 20

1

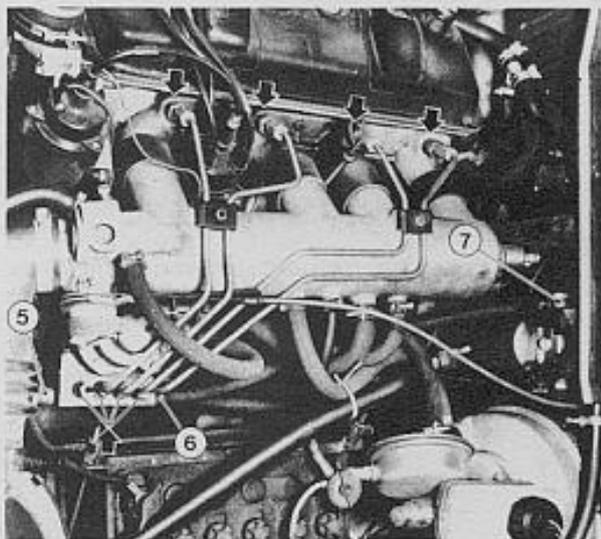
PETROL INJECTION ENGINE

INJECTION PUMP

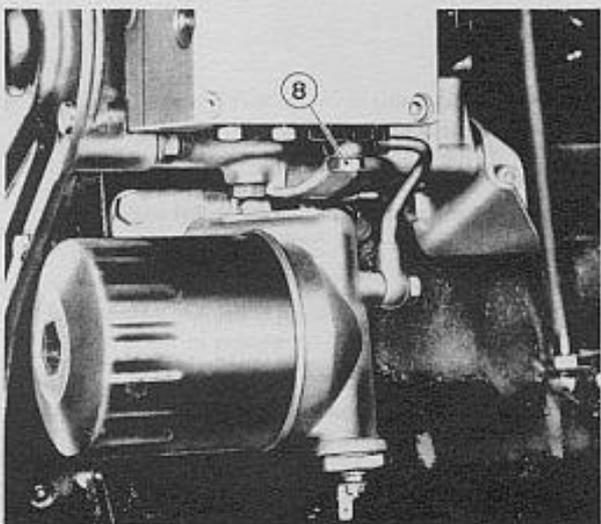


Refit and reconnect the different components in the reverse order to removal, making sure of the following :

- Tighten the alternator belt,
- Mark two lines on the belt, 100 mm apart,
- Stretch the belt to obtain a distance between them of :
 - 101.5 mm on KF5 and XN2,
 - 103.5 mm on KF6.



- Tighten :
 - the fuel feed union (5) to 2 m.kg (14.5 ft.lbs),
 - the return union (6) to 1.75 m.kg (13 ft.lbs) and (7) to 2 m.kg (14.5 ft.lbs),
 - the injector line unions to 2.5 m.kg (18 ft.lbs).



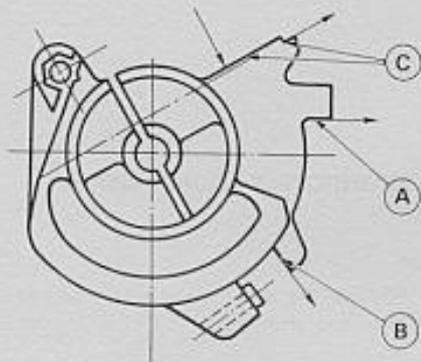
- Bleed the oil line (8) after starting up the engine.
- Make sure that the fuel lines, water hoses and oil lines do not leak.
- Carry out the checks and adjustments given on page 13 31 to 13 36, class 1.

PETROL INJECTION ENGINE (KF 6)

INJECTION PUMP

1

13 21

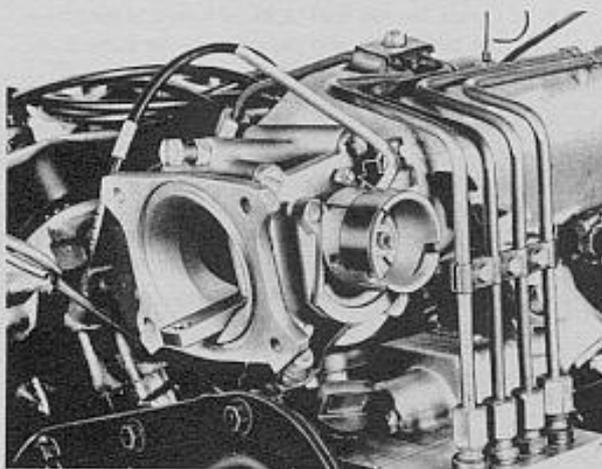
*ADJUSTMENTS***CONTROL QUADRANT**

The throttle drum incorporates the quadrant which enables the setting of the various throttle flap positions.

Position **A** - throttle open at 43° - 1st adjustment.

Position **B** - throttle open at 94° (fully open)
2nd adjustment.

Position **C** - throttle open at 10° or 12° (minimum opening) - 3rd adjustment.



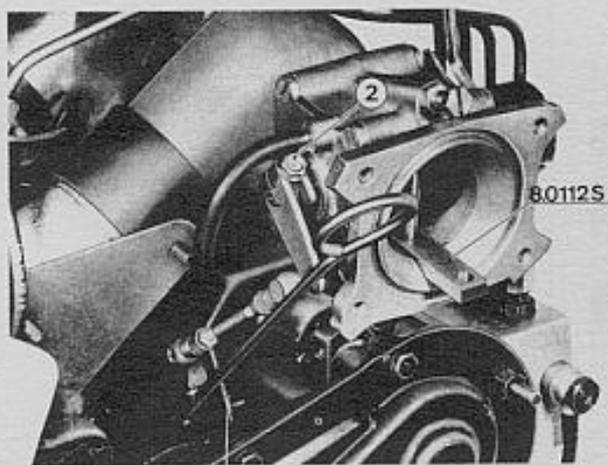
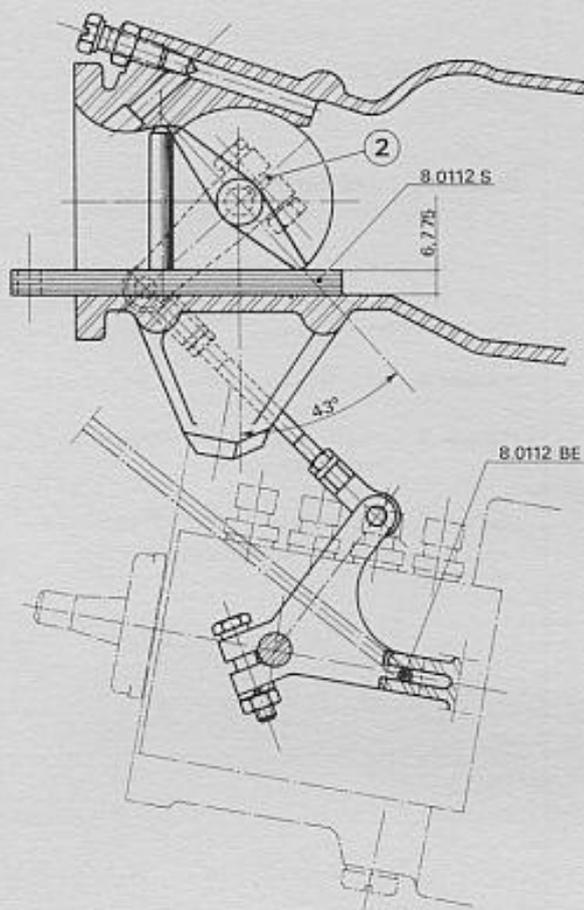
The throttle drum is secured to the spindle by an allen screw, which is accessible after removal of the return spring.

1322

1

PETROL INJECTION ENGINE (KF 6)

INJECTION PUMP

*1st ADJUSTMENT***PUMP-THROTTLE COORDINATION**

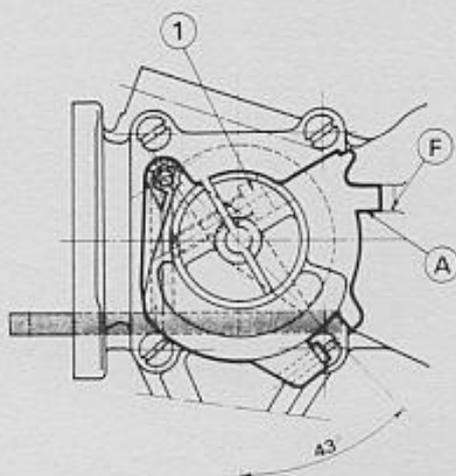
- Remove the sheet metal sleeve between the air filter and chamber,
- Remove the pump/throttle link,
- Check the centre to centre distance of the ball heads ($97,3 \pm 0,1$ mm) using the gauge **8.0112/R** ; adjust, if necessary, after slackening off the lock nuts,
- Tighten the lock nuts,
- Refit the link,
- Locate the rod **8.0112/BE** ($\varnothing 5$ mm) in the hole in the pump lever and the recess in the pump body,
- Slacken the bolt **(2)** and remove the lever,
- Insert the gauge **8.0112/S** in the groove in the bottom of the air chamber inlet so that the rod on the gauge abuts on the throttle flap. The hole in the gauge should be facing outwards,
- Refit the lever and tighten the bolt **(2)** making sure that the setting has not altered and leaving a clearance of 2 mm between the lever and the housing (hold the gauge **8.0112/S** under tension while tightening the bolt **(2)**).

PETROL INJECTION ENGINE (KF 6)

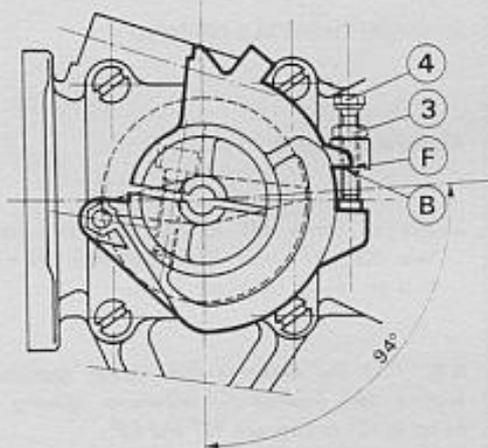
INJECTION PUMP

1

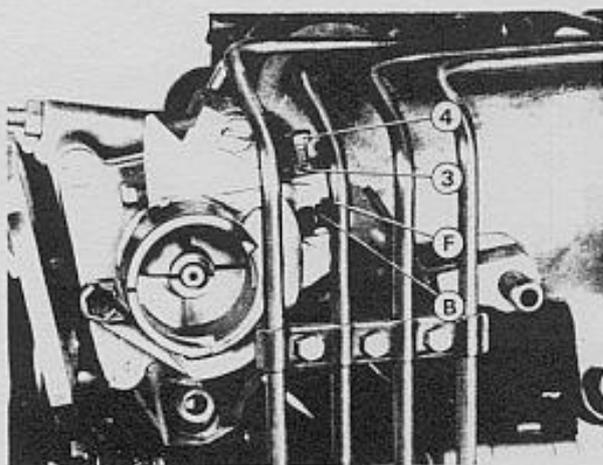
1323



- Unhook the throttle return spring - slacken the allen screw (1).
- Line up the reference face (A) (43°) with the lower face (F) of the boss on the air chamber.
- Tighten the allen screw (1), making sure that the setting has not altered - leave a clearance of 1 mm between the drum and the housing.
- Withdraw the gauge 8.0112/S and the rod 8.0112/BE.

*2nd ADJUSTMENT***MAXIMUM THROTTLE OPENING**

- Engine switched off, accelerator at end of stroke.
- Slacken the lock nut (3).
- Act on screw (4) to bring the reference face (B) (94°) into line with the lower face (F) of the boss on the housing.
- Tighten the lock nut (3), making sure that the setting does not alter.
- Refit the return spring.
- Check the maximum opening by depressing the accelerator pedal.



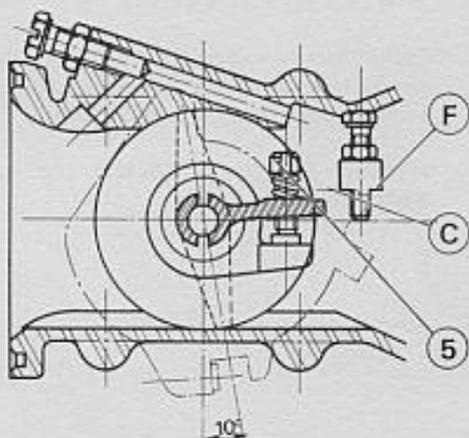
PEUGEOT

1324

1

PETROL INJECTION ENGINE (KF 6)

INJECTION PUMP



3rd ADJUSTMENT

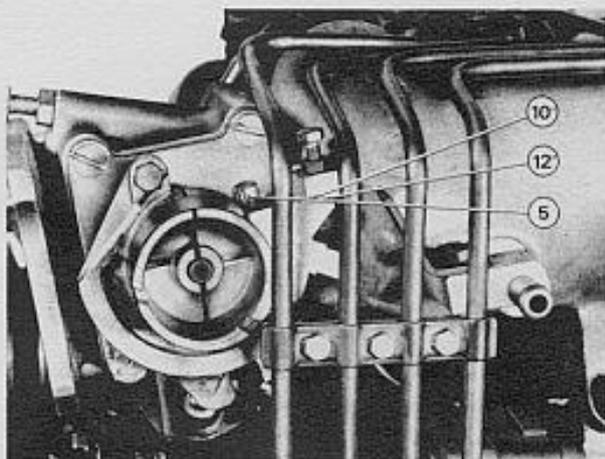
MINIMUM THROTTLE OPENING

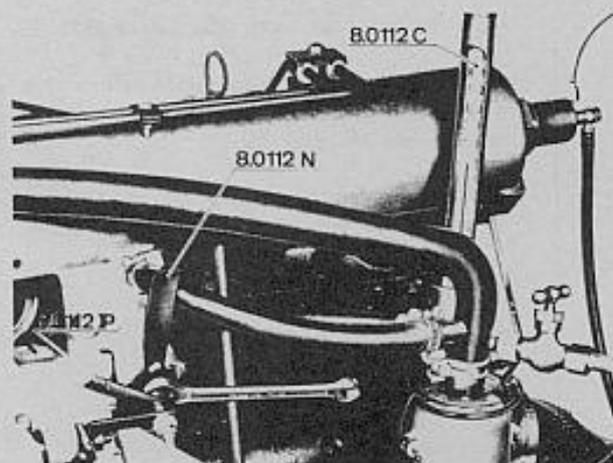
Accelerator released.

- Act on screw (5) to line up the reference face (C) (10°) with the lower face (F) of the boss on the air chamber.

N.B. - If the idling is not regular (particularly with a new engine) the minimum opening may be set at 12° or between 10° and 12° .

However, if backfiring occurs when the minimum setting is at 12° , a position of approximately 11° should be obtained.





4th ADJUSTMENT

ENRICHENER

- Install the thermometer* 8.0112 C with the tap open, in the water return circuit (hose going to the water pump).
- Start up the engine and unscrew the idling air bleed screw to obtain an engine speed of more than 1,000 r.p.m.
- Slow down the rise in temperature by decreasing the flow of water around the thermostat (by closing the tap slightly) to stabilise the temperature at 50°C.

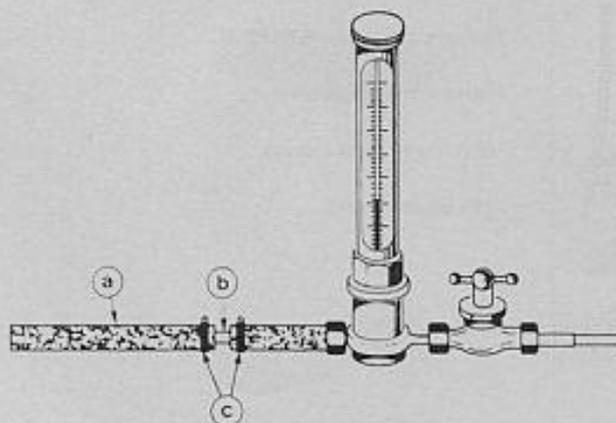
N.B. - Never close the tap completely as the cooling down of the thermostat element will render the setting inexact.

- Adjust the air valve immediately, whilst making sure that the temperature remains stable at 50° C.

* The hose on the thermometer 8.0112 C must be lengthened by 200 mm to enable installation.

To realise this, use :

- a - a Diesel hose (7 x 16 mm - P.N. 1559.10).
- b - a copper tube (ext. Ø 8 mm).
- c - 2 collars (P.N. 1565.09).

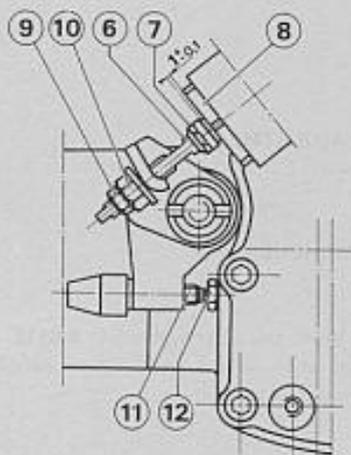


1326

1

PETROL INJECTION ENGINE (KF 6)

INJECTION PUMP

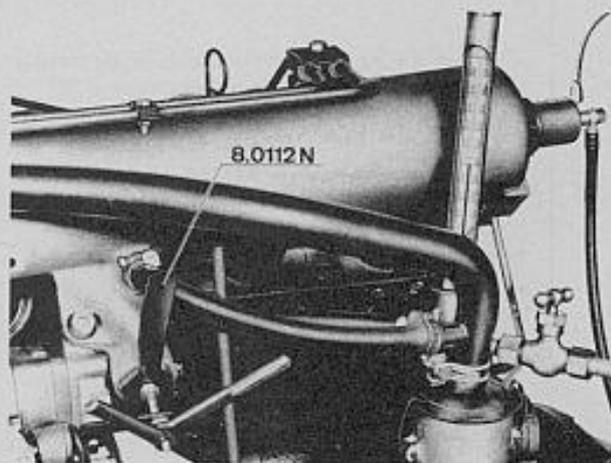


ADJUSTING THE AIR VALVE

- Hold the rod (6) using the key 8.0112 P.
- Slacken the nut (7) (10 mm spanner) to enable insertion of the feeler 8.0112 N between the nut (7) and the plug (8).
- Tighten the nut to obtain the clearance of $1 \text{ mm} \pm 0,1 \text{ mm}$, determined by the feeler.
- Leave the feeler 8.0112 N in place.
- Withdraw the key 8.0112 P.
- Stop the engine.
- Close the tap on the thermometer.

ADJUSTING THE ENRICHENER

- Slacken the lock nut (9) (8 mm spanner).
- Slacken the nut (10) (10 mm spanner) to free off the lever (11) so that it comes into contact with the stop (12) on the injection pump body.
- Screw up the nut (10) until it just touches the enrichener lever.
- Tighten the lock nut (9).
- Remove the feeler 8.0112 N.
- Remove the thermometer.
- Refit the air intake sleeve.
- Start up the engine.

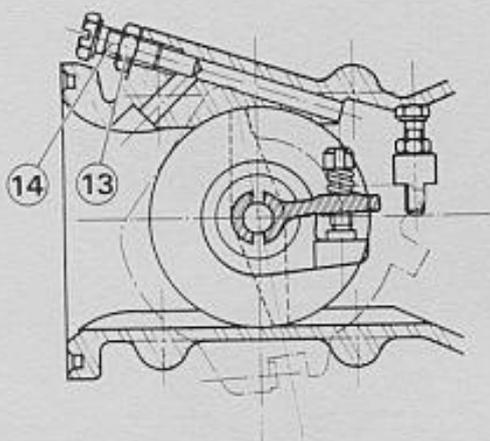


PETROL INJECTION ENGINE (KF 6)

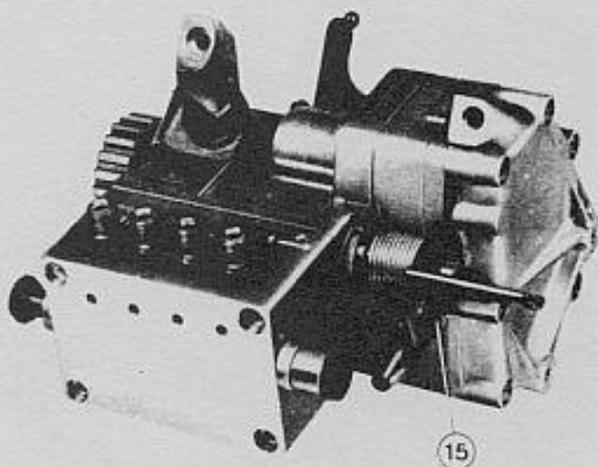
INJECTION PUMP

1

13 27

*5th ADJUSTMENT***ADJUSTING THE IDLING**

- This adjustment is to be realised with the engine at its normal operating temperature (electromagnetic fan engaged).
- Slacken the lock nut (13).
- Act on the air bleed screw (14) to obtain an engine speed of 800 to 850 r.p.m.
- Screw it in to decrease the engine speed.
- Screw it out to increase the engine speed.
- Retighten the lock nut (13).



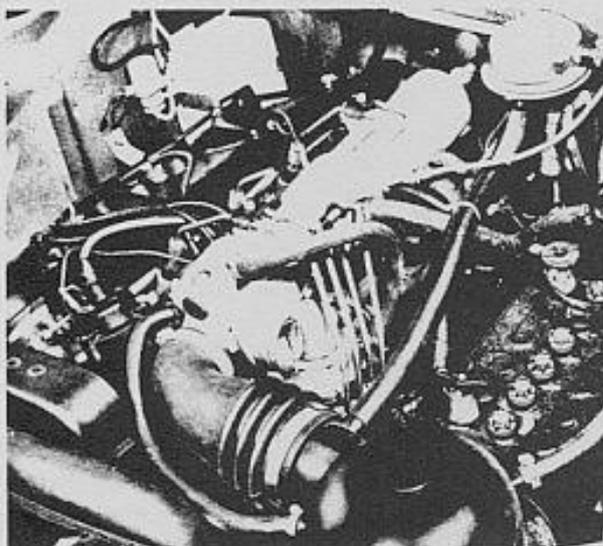
WARNING - The 0.5 mm thick flat washer (15) situated under the enricher stop (which serves to slightly richen the mixture during the running in) must be removed after the first 1,000 km of operation of a new or rebuilt engine.

PETROL INJECTION ENGINE (KF 5 - XN 2)

INJECTION PUMP

1

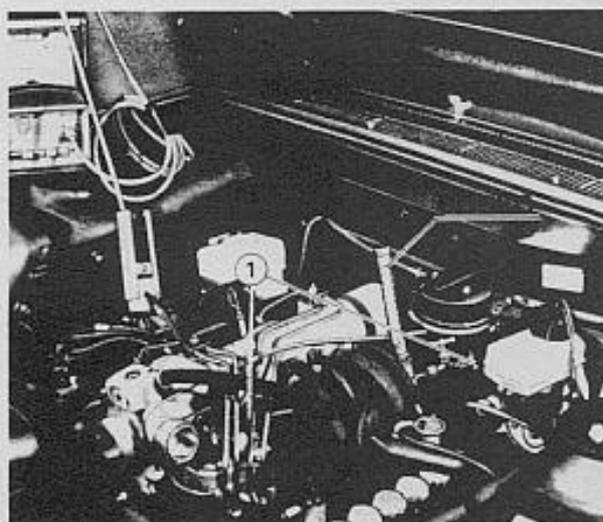
1331



ADJUSTMENTS

WARNING - Even the very slightest air leak will cause poor engine operation (idling difficult to set). Before carrying out any adjustments check :

- that all lines connected to the air chamber are air tight,
- the condition of the air cleaner,
- the engine compression,
- the condition and setting of the ignition (distributor/spark plugs).



PREPARATION

- Disconnect :
 - the oil vapour recirculation line from the air filter,
 - the air intake hose from the air chamber,
 - the water return hose (1) from the thermostat (lower hose),
- Install the thermometer*.

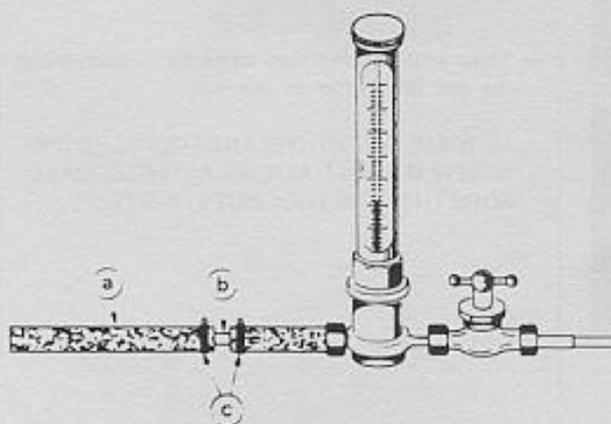
N.B. - Pass the return hose behind the degassing filter to connect it to the thermometer.

- Install the rev-counter.

* To enable installation of the thermometer 8,0112 C, the hose must be extended by 140 mm.

Use :

- a - an 8 x 16 mm hose - 140 mm long,
- b - a copper tube : ext. Ø 8 mm,
- c - two collars,

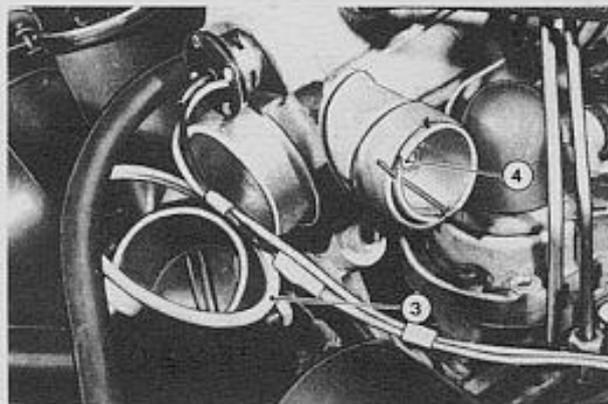
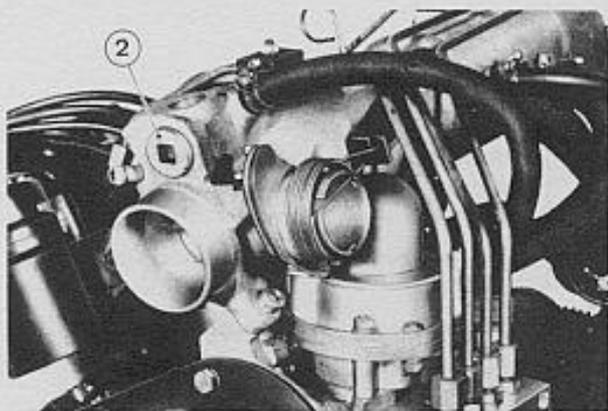


1332

1

PETROL INJECTION ENGINE (KF 5 - XN 2)

INJECTION PUMP

*1st ADJUSTMENT*

- Remove the plug (2).
- Insert the lamp in the bore and connect it to the battery.
- Place a mirror (3) in front of and below the air chamber intake so that the top edge of the throttle flap is clearly visible.
- Make sure that the nut (4) is tightened to 1.25 m.kg (9 ft.lbs).

**Checking the 1st adjustment.**

- Engine stopped
- A small strip of light must appear as soon as the throttle flap is moved slightly.
- Make sure that the stop screw (5) is bearing on the pad (6) on the air chamber,

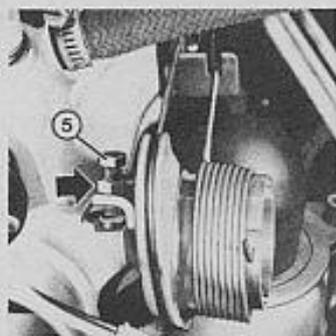
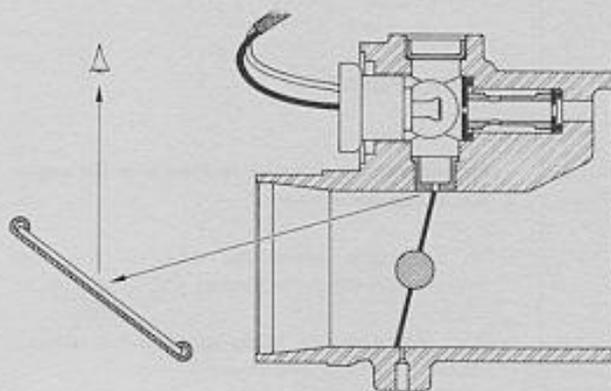
IF THESE CONDITIONS ARE FULFILLED THE SCREW (5) MUST NOT BE ALTERED. MAKE SURE THAT THE LOCK NUT IS TIGHT.

PETROL INJECTION ENGINE (KF 5 - XN 2)

1

1333

INJECTION PUMP



If the check shows an incorrect setting (too much light or none at all).

- Slacken the stop screw (5) until a thin strip of light is apparent above the top edge of the throttle flap.
- Slacken the screw off slowly until the light just disappears. Screw it back in one tenth of a turn **maximum** to obtain a slight clearance (the strip of light should **just** reappear).
- Retighten the lock nut.



- Make sure that the correction jet is in place (washer with a 2.5 mm hole (KF5), or 2.3 mm hole (XN2), made of tin-foil).
- Tighten the plug (2), oiled and fitted with a new O-ring, to 2 m.kg (14.5 ft.lbs).
- Refit the air intake hose on the air chamber.

1334

1

PETROL INJECTION ENGINE (KF 5 - XN 2)

INJECTION PUMP



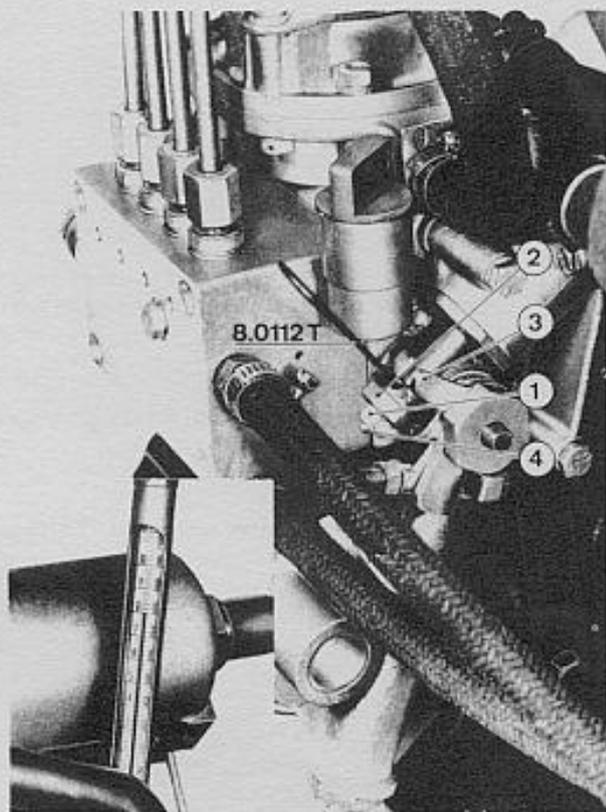
8.0112 P



8.0112 T

*2nd ADJUSTMENT*

- This adjustment is to be realised with the engine hot, temperature rising.
- On an engine which has been running, wait until the temperature reaches 65° C maximum.
- Make sure that the idling speed is not below :
 - 900 r.p.m. for a new engine,
 - 850 r.p.m. for a "run-in" engine.
- If necessary, adjust the idling speed by acting on the air bleed screw.
- Set aside :
 - a 17 mm open end spanner for the thermostat valve,
 - a 10 mm open end spanner for the lock nut,
 - the key for holding the thermostat rod,
 - the gauge,



- Slacken the lock nut (1) and the nut (2).
- Start up the engine and run it at idling speed.
- Prepare the gauge to insert it between the nut (2) and the enricher lever (3).

When the temperature reaches 80° C on the thermometer,

SWITCH OFF THE ENGINE

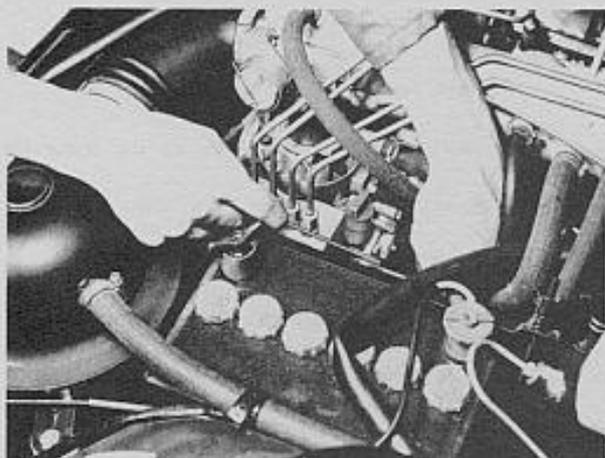
The mechanic has approximately 2 minutes to carry out the adjustment by acting on the nut (2) while holding the rod (4) with the key.

PETROL INJECTION ENGINE (KF 5 - XN 2)

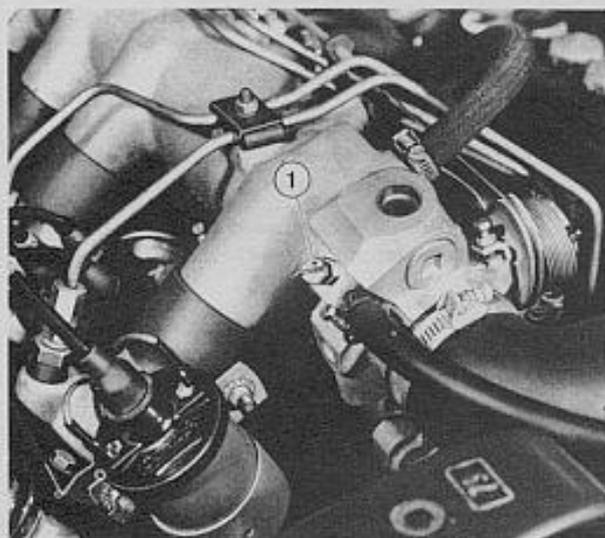
INJECTION PUMP

1

1335



- If the temperature drops to below 75° C the engine should be warmed up again from 70° C.
- Repeat the check with the gauge at 80° C and adjust if necessary taking care to work rapidly in order to complete the setting before the temperature drops to 75° C.

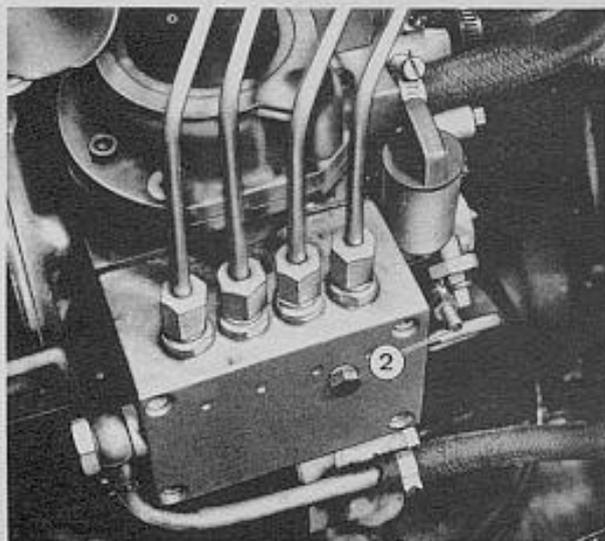
**3rd ADJUSTMENT**

Air/petrol metering at idling speed.

- The idling setting is obtained by acting on the following two screws :
 - air bleed screw (1) to meter the air,
 - enricher stop screw (2) to meter the petrol.

N.B. - By screwing (2) in, the mixture becomes richer ; by unscrewing it, the mixture becomes leaner.

The optimum mixture is determined by a "richness" test while checking the engine speed.

**Adjusting the idling :**

- To be carried out with the engine hot (approximately 80° C).
- Disconnect the exciter wire from the alternator.
- Adjust screw (1) to obtain :
 - 900 r.p.m. on a new engine (less than 5,000 km),
 - 850 r.p.m. on a "run-in" engine (more than 5,000 km).

1336

1

PETROL INJECTION ENGINE (KF 5 - XN 2)

INJECTION PUMP

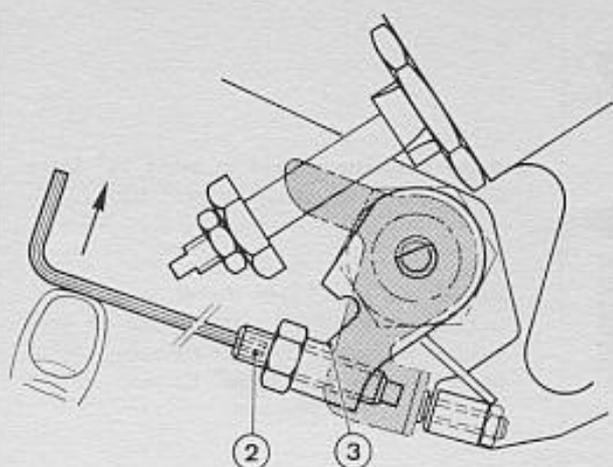


Fig. I

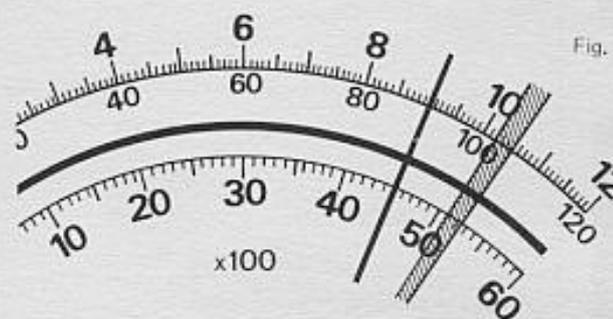
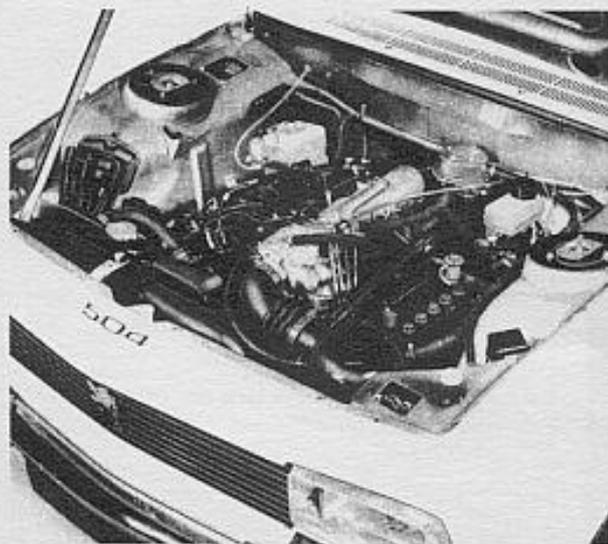
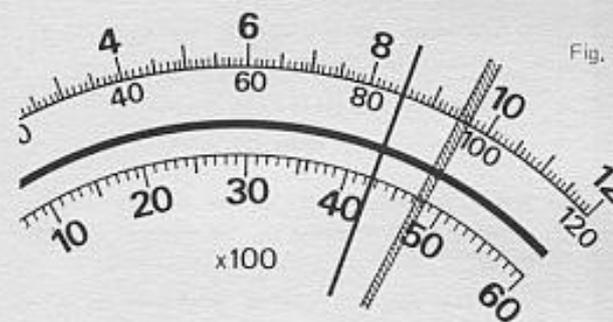


Fig. II

**Richness Test**

- Insert a 3 mm Allen key in the screw (2)
- Raise the enricher lever (3) slowly.
- Check the rev-counter.
- If the engine speed increases, make sure that it is between :
 - 1,020 and 1,050 r.p.m. (new engine) fig. I.
 - 950 and 970 r.p.m. ("run in" engine) fig. II.

Resetting

- If the engine speed exceeds 1,050 (or 970) r.p.m. the mixture is too lean. Screw in the stop (2) one quarter of a turn.
- If the engine speed is less than 1,020 (or 950) r.p.m. the mixture is too rich. Unscrew the stop (2) one quarter of a turn.

WARNING - The idling speed of 900 (or 850) r.p.m. must be reset using screw (1) after each adjustment of the stop (2).

It is also necessary to check the richness after each alteration of the air bleed screw (1), until the engine speeds given above are obtained.

- Reconnect the water return hose.
- Top up the radiator.
- Make sure that the cooling system is not leaking.
- Reconnect the exciter wire to the alternator.