Title	Page
Introduction	1

The operations whiche make up the Planned Maintenance Programme listed below and the intervals refer to the Punto '97 range. In addition to the specific operations for the Punto '97 range the operations in the previous Planned Maintenance Programme are also described and these intervals are given in the Owner's Handbook which comes with the vehicle.

PLANNED MAINTENANCE PROGRAMME

N°	OPERATION	THOUSANDS OF KM												PAGE
		15	30	45	60	75	90	105	120	135	150	165	180	
1	Check tyre condition and wear	●	●	●	●	●	●	●	●	●	●	●	●	1
2	Check front disc brake pads	●	●	●	●	●	●	●	●	●	●	●	●	2
3	Check rear brake disc pad wear (turbo petrol)		●		●		●		●		●		●	2
4	Check rear drum brake linings for wear				●				●				●	3
5	Visually inspect vehicle exterior, rubber parts, etc.	●	●	●	●	●	●	●	●	●	●	●	●	3
6	Check condition and tension of various drive belts and adjust, if necessary (excluding 1242 16v engine)		●		●		●		●		●		●	4
6	Check condition and tension of various drive belts and adjust, if necessary (1242 16v engine only)		●		●		●		●		●		●	46
7	Check/adjust clutch pedal travel or height	●	●		●		●		●		●		●	7
8	Check/adjustment tappet clearance (excluding 1242 16v)		●		●		●		●		●		●	7
11	Checking exhaust gas emissions		●		●		●		●		●		●	12
13	Check anti-evaporation system				●				●				●	15
15	Replace fuel filter (petrol engines)		●		●		●		●		●		●	16
16	Replace fuel filter (diesel engines)	●	●	●	●	●	●	●	●	●	●	●	●	16
17	Replace air filter cartridge (1108 - 1242 SPI - 1242 MPI - 1372 Turbo engines)		●		●		●		●		●		●	17
17	Replace air filter cartridge (1242 16v engine)		●		●		●		●		●		●	47
18	Replace air filter cartridge (diesel engines)	●	●	●	●	●	●	●	●	●	●	●	●	19
19	Top up fluid levels (engine cooling, braking system, power st., w/screen washer, battery, etc.)	●	●	●	●	●	●	●	●	●	●	●	●	20/47
21	Check condition of timing belt (excluding 1242 16v engine)				●							●		27
21	Check condiion of timing belt (1242 16v engine only)				●								●	48
22	Replace spark plugs and check leads		●		●		●		●		●		●	29
23	Replace spark plugs and check leads (turbo petrol versions)	●	●	●	●	●	●	●	●	●	●	●	●	30
24	Check injection/ignition system (using autodiagnostic socket)		●		●		●		●		●		●	31
25	Check manual gearbox/differential oil level				●				●				●	32
26	Change engine oil (or every 18 months) (*)	●	●	●	●	●	●	●	●	●	●	●	●	32
27	Replace engine oil filter	●	●	●	●	●	●	●	●	●	●	●	●	32
29	Replace timing belt (excluding 1242 16v engine)							●						34
29	Replace timing belt (1242 16v engine only)								●					49
31	Change brake fluid (or every 24 months)				●				●				●	45
32	Change automatic gearbox oil (and filter)			●			●			●			●	55

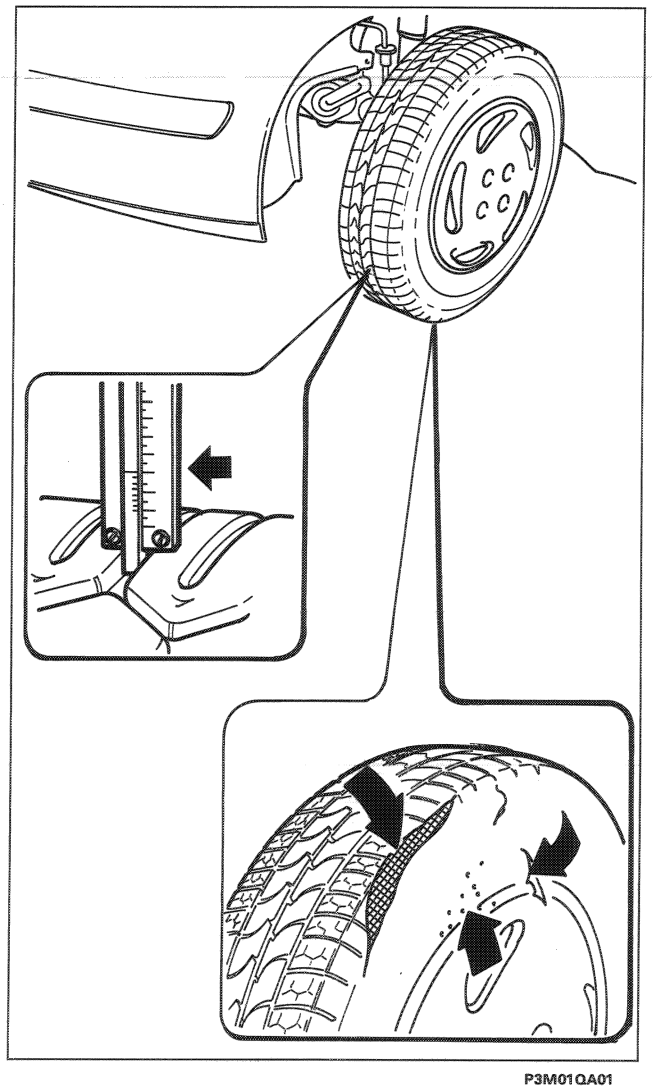
(*) every 7500 km for Diesel versions

Foreword

The maintenance operations consist of checking and restoring the efficiency of certain vehicle components subject to wear which may deteriorate during normal usage conditions.
This section describes the operations which should be carried out on the vehicle at the intervals set out in the Planned Maintenance Programme (on the previous page). Each operation is described independently, on account of which there is no pre-defined ideal operating cycle to be repeated at each interval. It is therefore necessary to ensure that those operations which require the same components to be dismantled are carried out at the same intervals in order to maximize the efficiency of the repair times.

If, when carrying out each operation, the need arises to carry out additional replacements or further repairs not envisaged in the Planned Maintenance Programme, prior approval must be obtained first from the Customer.

PLANNED MAINTENANCE OPERATIONS



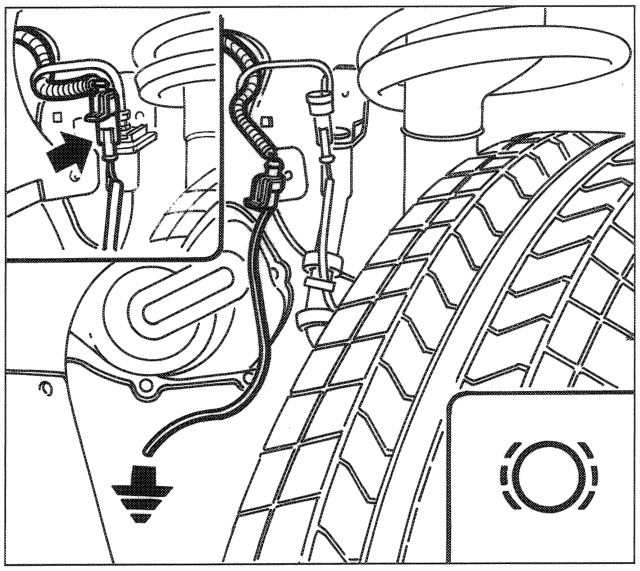
P3M01QA01

1 CHECK CONDITION OF TYRES AND WEAR

Check the condition of the tyres making sure, in particular, that there are no signs of ageing on the tread and the tyre walls, that the tyres are not excessively/unevenly worn, that there are no abrasions/burrs, porousness or cuts.

Check the depth of the tread using a special gauge, taking the measurement at the intersection between the transverse and longitudinal splining (at several points on the circumference). The minimum permissible depth is 1.6 mm. The difference between the depths of tread on the same tyre should not exceed 2 mm. The difference between the depths of tread on different tyres on the same axle should not exceed 5 mm.

If the tread wear is uneven, check the tyre inflations pressure and inform the Customer of the possible need to balance the wheels.



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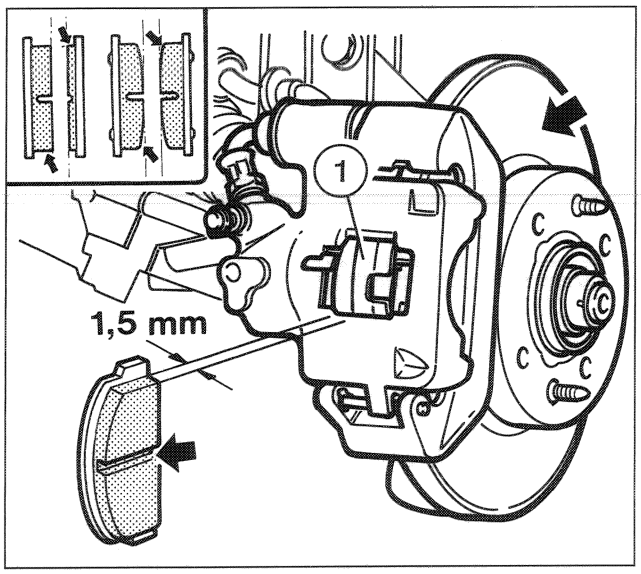
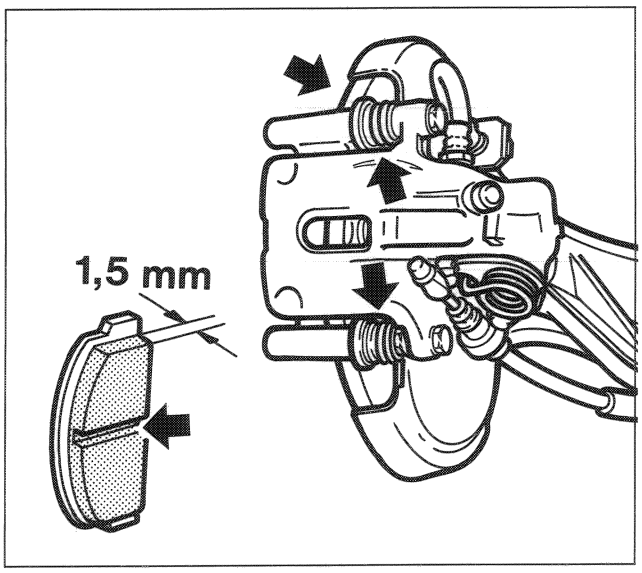


P3M02QA02

2 CHECK OPERATION OF FRONT DISC BRAKE PAD WEAR SENSOR

Disconnect the connector for the front disc brake pad wear sensor, place the terminal for the wiring side coupling to earth and check that the relevant warning light in the instrument panel comes on.

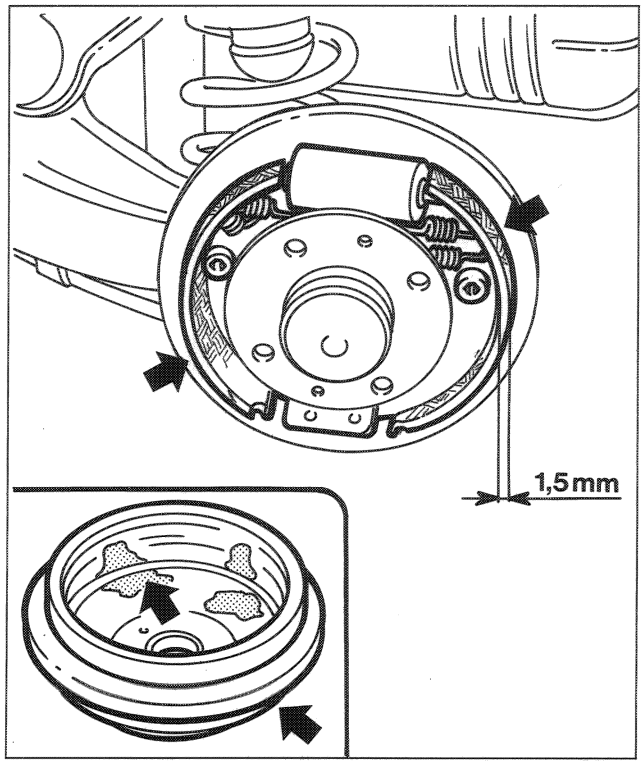
If there is no front brake pad wear sensor, it is necessary to remove one of the front wheels, remove the protective plate (1), if fitted, and check the thickness of the pad through the slit in the brake caliper; the minimum permissible thickness if 1.5 mm. Check that the surfaces of the pads are evenly worn. Visually inspect the condition of the brake caliper dust boots. Check the condition of the working surfaces of the brake discs (for wear or deep groves). Notify the Customer of the need to replace or regrind (in the case of a brake disc) one of the components which has been checked.



P3M02QA03

3 CHECK CONDITION OF REAR DISC BRAKE PADS (1372 Turbo)

Remove one of the rear wheels and check the thickness of the frcition material through the slit in the brake caliper; the minimum permissible thickness is 1.5 mm. Check that the wear of the pads is even. Visually inspect the condition of the brake caliper dust boots. Check the condition of the brake disc work surfaces (for wear or deep grooves). Notify the Customer of the need to replace or regrind (in the case of a brake pad) one of the components which has been checked.

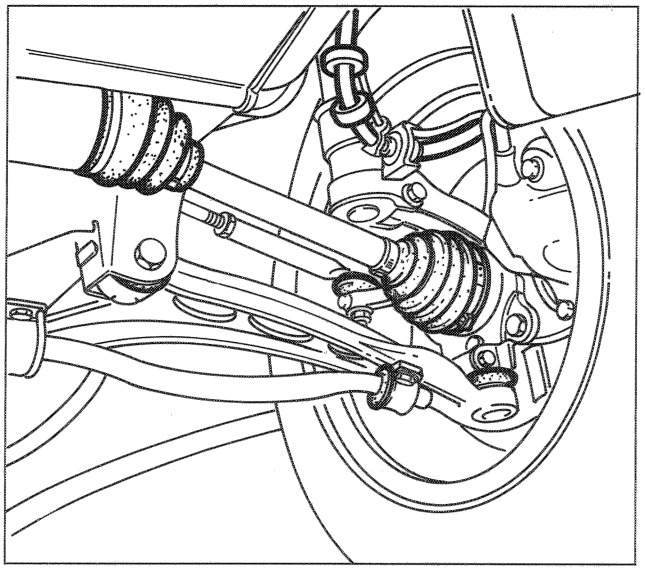


P3M03QA01

4 CHECK CONDITION AND WEAR OF REAR DRUM BRAKES

With one of the rear wheels removed, remove the brake drum. Check the thickness of the brake linings: the minimum permissible thickness if 1.5 mm. Also check that there is no fouling from oil or grease. Check the efficiency of the shoe return device and the automatic recovery of the clearance between the drum and the shoes. Check the efficiency of the wheel cylinders (sliding of pistons, condition of dust boots). Check the condition of the brake drum work surfaces (for wear or grooves). Notify the Customer of the need to replace or skim (in the case of brake drums) one of the components which has been checked.

If there is an inspection window in the brake drum it is possible to check the thickness of the brake linings without having to remove the actual drum.



P3M03QA02

5 VISUALLY INSPECT CONDITION OF: BRAKING AND FUEL SYSTEM FLEXIBLE PIPES, PIPES, RUBBER ELEMENTS

Position the vehicle on a lift. Visually inspect:

- for the presence of any fluid leaks from the following systems: lubrication, fuel, engine cooling, braking and power assisted steering;
- the condition of rubber elements: bushes, flexible (support) mountings and (protective) boots; check that the collars retaining the pipes and bushes have not loosened.

Check that the wires and cables for the retaining brackets in the engine compartment are correctly positioned.

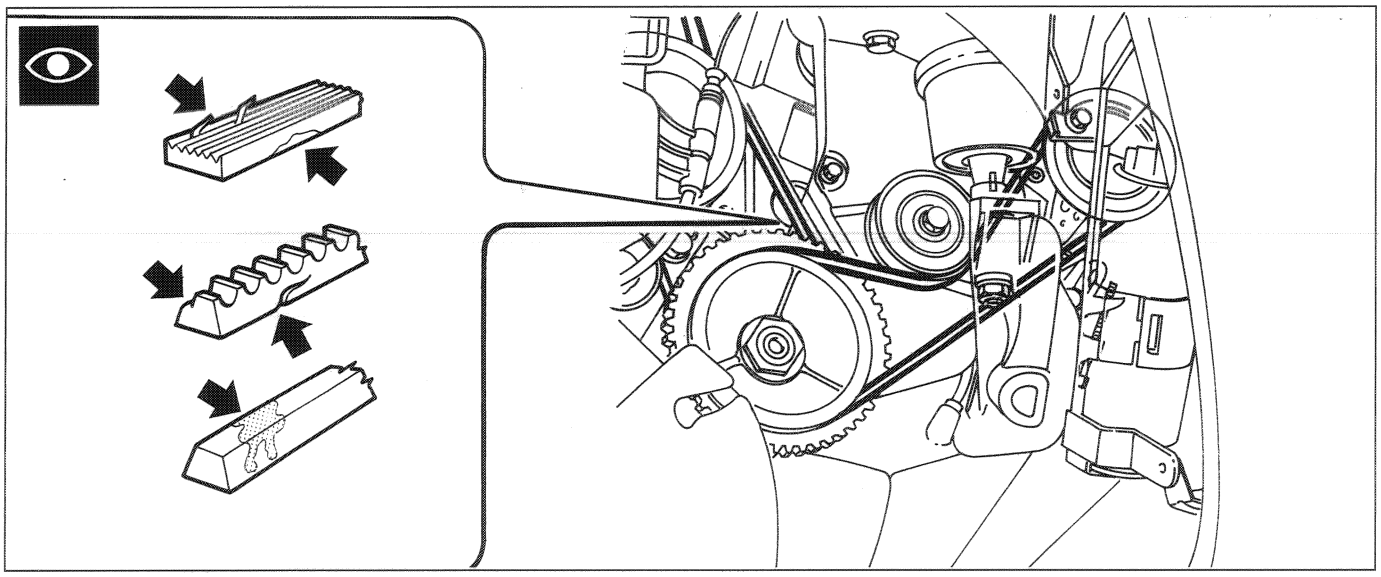
Also check for possible interference of the flexible brake pipes in all steering conditions including maximum steering.

6 CHECK CONDITION AND TENSION OF VARIOUS DRIVE BELTS AND ADJUST, IF NECESSARY

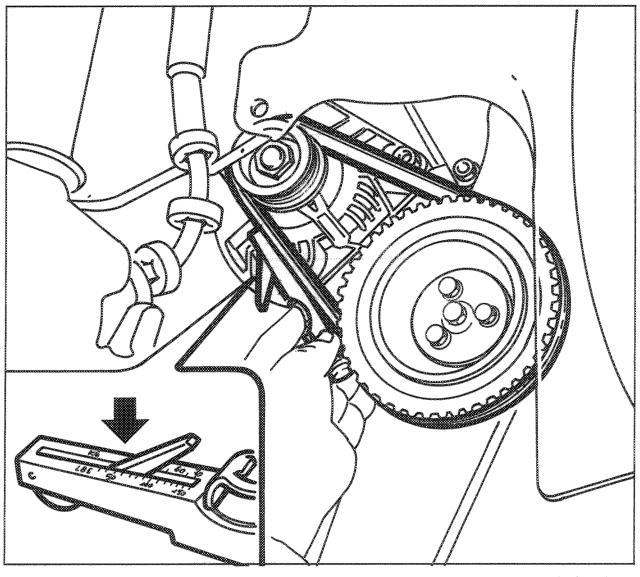
Check condition of various drive belts

- Disconnect the negative battery lead, remove the right front wheel, then remove the wheel arch lining to gain access to the auxiliary shaft drive belts.
- Insert a spanner in the nut fixing the damper flywheel, rotate the crankshaft and check the condition of the auxiliary shaft drive belts along the entire perimeter.

Check the condition of the belts, checking in particular that there are no: cracks, cuts, surface wear of the material (which would appear smooth and shiny), dry or hard sections with a consequent loss of grip.
Also check that the belts have not come into contact with oil or solvents which could adversely affect the elasticity of the rubber or the adhesion properties.
If one of the above faults is found, inform the Customer of the need to replace the belts.



P3M04QA01



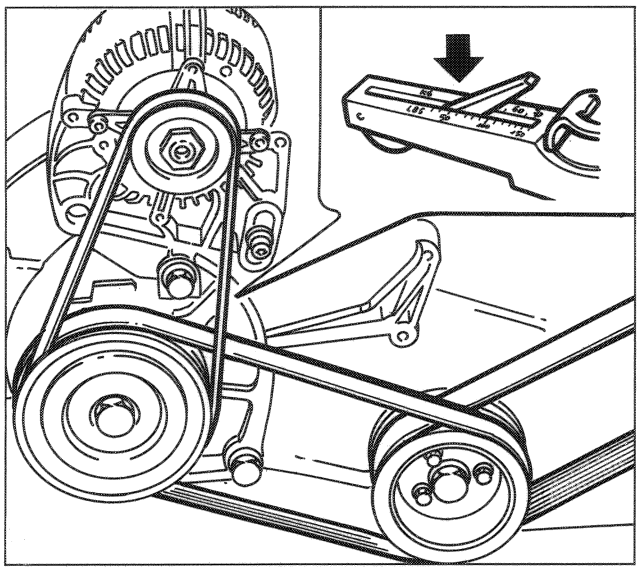
P3M04QA02

Check tension and, if necessary, adjust various drive belts

When the various drive belts are being checked also check the tension using tool 1895762000.

Punto 1108 - 1242 SPI

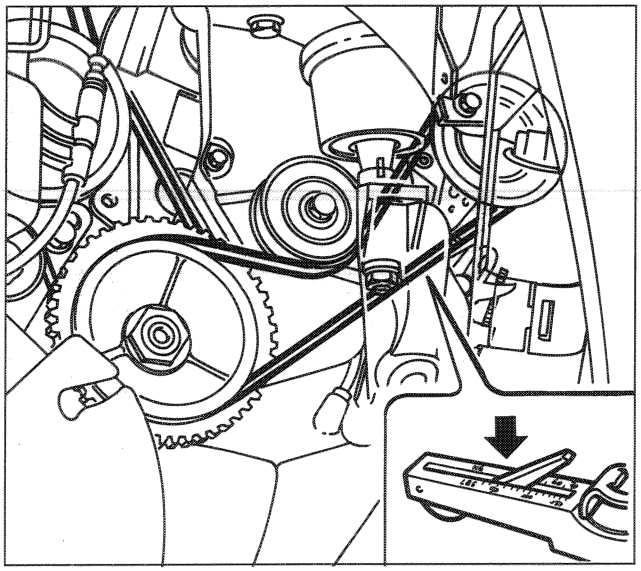
Check that tension values measured using the special tool are within the recommended figures given in the table at the end of this paragraph. If the belt tension values are not correct, adjust the bolt fixing the alternator until the correct tension value is obtained.



P3M05QA01

Punto 1242 MPI

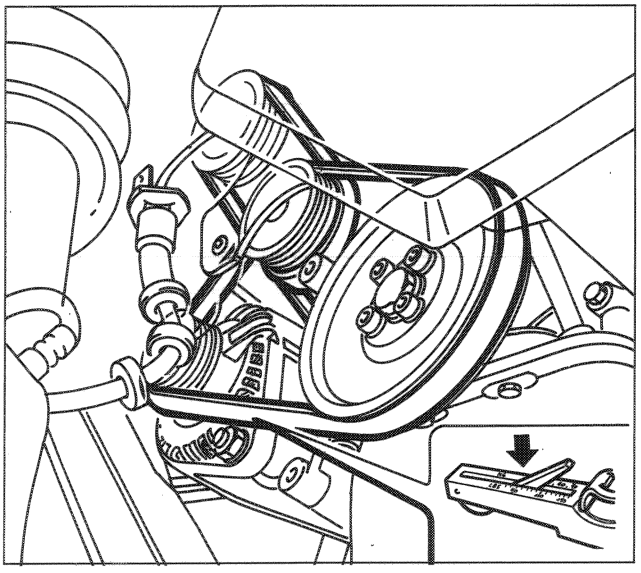
Check that the tension values measured using the special tool correspond to the recommended figures given in the table overleaf. If the belt tension values are not correct, adjust the bolts fixing the alternator until the correct tension value is obtained.



P3M05QA02

Punto 1372 Turbo - 1581

Check that the tension values measured using the special tool, correspond to the recommended figures, given in the table overleaf. If the tension values are not correct adjust the micrometric screw for the air conditioning compressor drive belt, the screw fixing the alternator drive belt tensioner and the screws fixing the power steering pump for the appropriate drive belt.



P3M05QA03

Punto 1698 TD

Check that the tension values measured, using the appropriate tool, correspond to the recommended figures, given in the table overleaf. If the tension values are not correct, adjust the bolts fixing the alternator for tensioning that drive belt and the micrometric screw to correct the tension of the power steering pump drive belt.

Tension figures for used belts

BELT SECTION			TENSION daN
AV 10	TYPE A	Not pre-run in	20 ÷ 29
	TYPES B and C	Not pre-run in	25 ÷ 35
		Pre-run in (*)	28 ÷ 37
AV 11	TYPES B and C	Not pre-run in	25 ÷ 35
AV 13	TYPE A	Not pre-run in	30 ÷ 40
	TYPES B and C	Not pre-run in	32 ÷ 43
POLY-V	3 ribs		23 ÷ 30
	4 ribs		30 ÷ 41
	5 ribs		38 ÷ 53
	6 ribs		45 ÷ 62
	7 ribs		54 ÷ 74

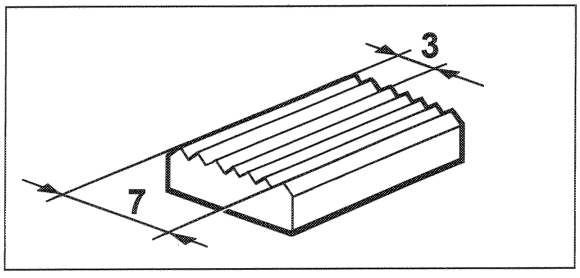
(*) 1698 TD

Tension figures for new belts

BELT SECTION		TENSION daN
AV 10	TYPE A	30 ÷ 40
	TYPE B and C	40 ÷ 55
AV 11	TYPE B and C	40 ÷ 55
AV 13	TYPE A	45 ÷ 55
	TYPE B and C	50 ÷ 65
POLY-V	3 ribs	36 ÷ 45
	4 ribs	48 ÷ 60
	5 ribs	60 ÷ 75
	6 ribs	72 ÷ 90
	7 ribs	84 ÷ 105

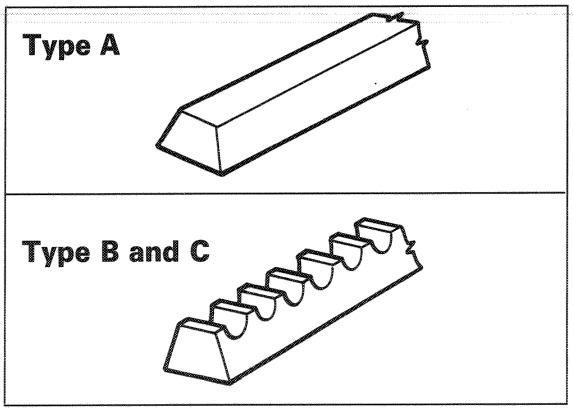
Poly-V type belts

In order to determine the number of ribs on the poly-v belt in question it is necessary to count the number of teeth (or points) from 3 - 7 on the actual belt, as illustrated in the diagram below.



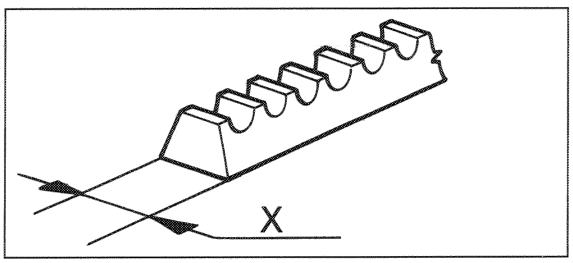
P3M06QA03

Trapezoid type belts



P3M06QA01

In order to determine whether the trapezoid belt in question is type AV 10 - AV 11 - etc., it is necessary to measure distance "X" on the back of the belt; if the figure is 10 mm then the beltis a type AV 10, if it is 11 mm then it is type AV 11 and so on.



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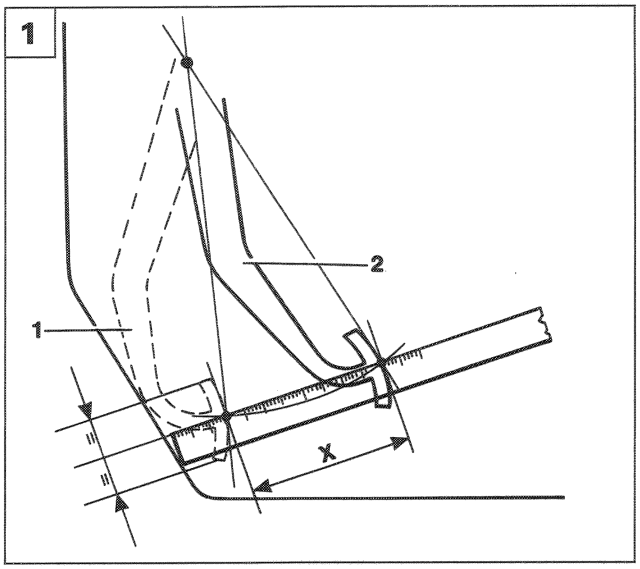

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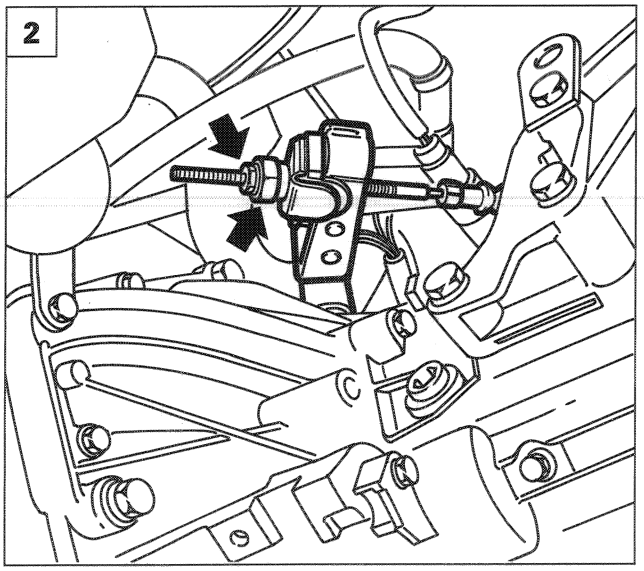


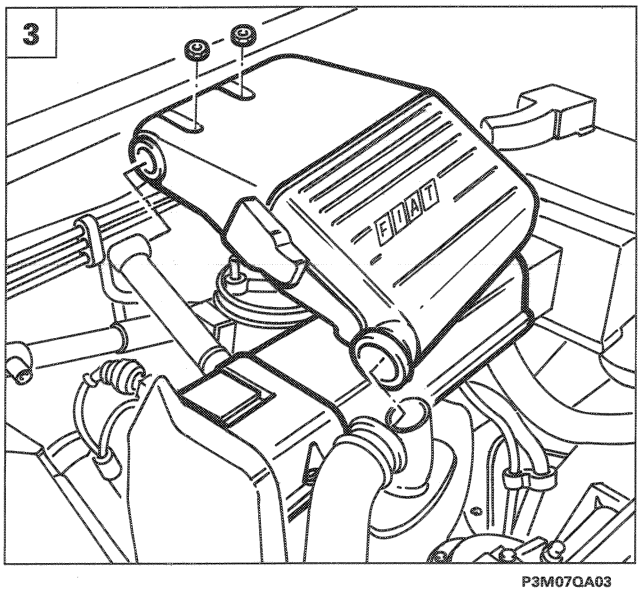
P3M07QA02

7 CHECK, ADJUST CLUTCH PEDAL TRAVEL OR HEIGHT

1. Measure the clutch pedal travel:
   1. Pedal in end of travel position
   2. Pedal in rest position
   X. Pedal travel:
   140 ± 5 mm (1108 - 1242)
   145 ± 5 mm (1372 Turbo-1698 Turbo D)

2. In order to adjust the clutch pedal in the rest position it is necessary:
   - to let the clutch operating mechanism bed in by fully depressing the pedal 2 or 3 times;
   - check that the travel "X" corresponds to the recommended figure. The travel is measured using a rule corresponding to the pedal centre line and is equivalent to the distance between the pedal in the end of travel position (pedal in contact with the bodyshell) and the pedal in rest position;
   - any adjustments to the travel are carried out via the nut and lock nut for the clutch cable, gearbox side.

NOTE *There should be no obstructions in the area under the pedals preventing the total travel of the pedals: take care, in particular, that any mats are lying flat and not interfering with the pedals.*



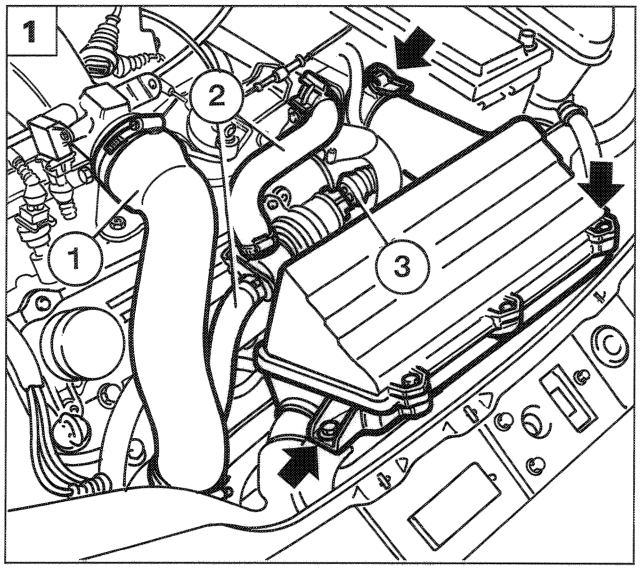
P3M07QA03

8 CHECK AND, IF NECESSARY, ADJUST TAPPET CLEARANCE

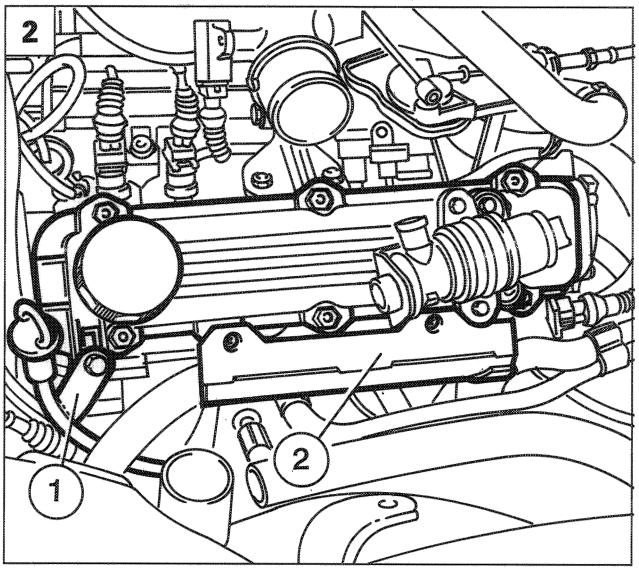
The following components must be removed in order to check and, if necessary, adjust the tappet clearance.

Punto 1108 - 1242 SPI e MPI

3. Remove the complete air filter acting on the fixings shown in the diagram, undo the bolts fixing the tappet cover and remove it. Then proceed with checking the tappet clearance.



P3M08QA01



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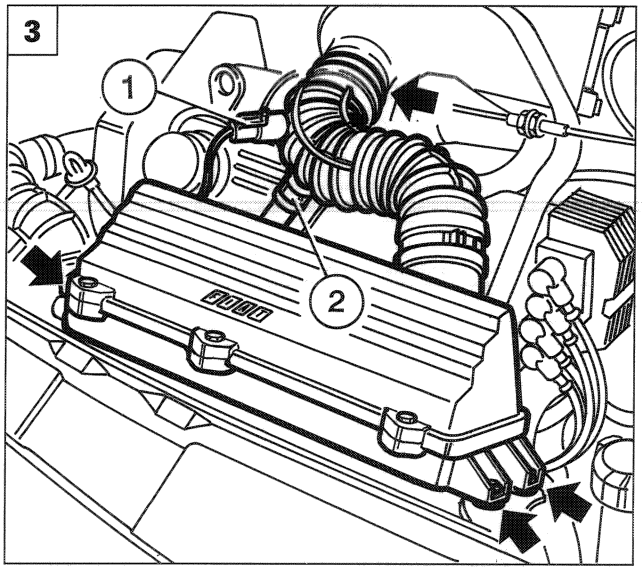

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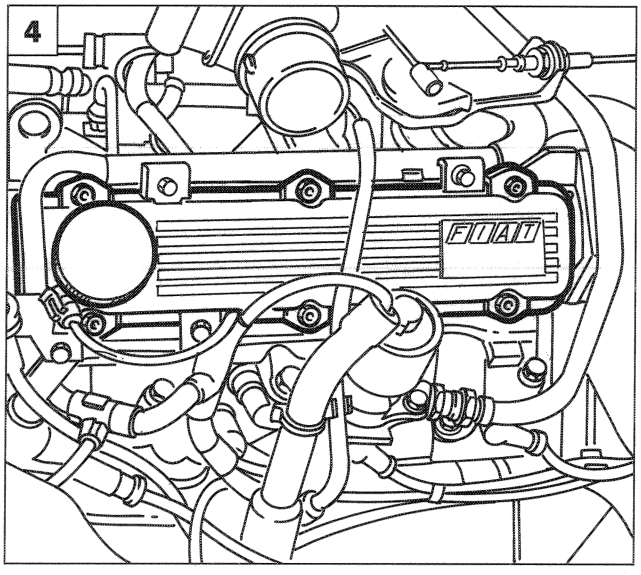


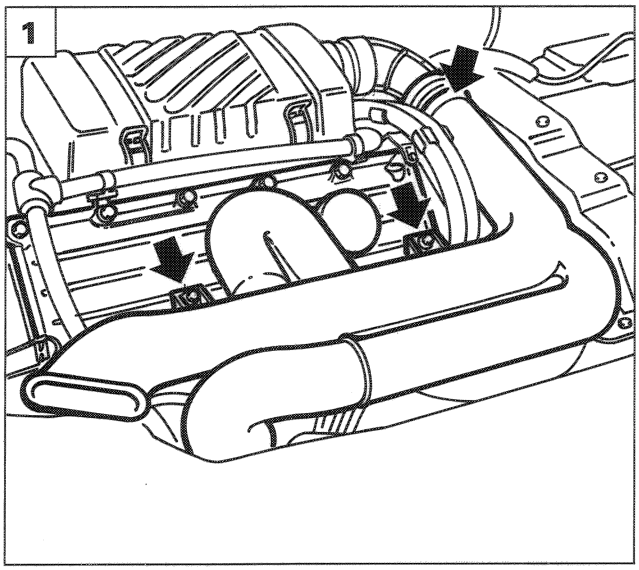
P3M08QA04

Punto 1372 Turbo

1. Remove the complete air filter, disconnect pipes (1) and (2) and the electrical connector (3).
2. Remove the tappet cover acting on the appropriate fixing bolts after having disconnected the engine oil dip stick (1) and the cable duct (2). Then proceed with checking the tappet clearance.

Punto 1581

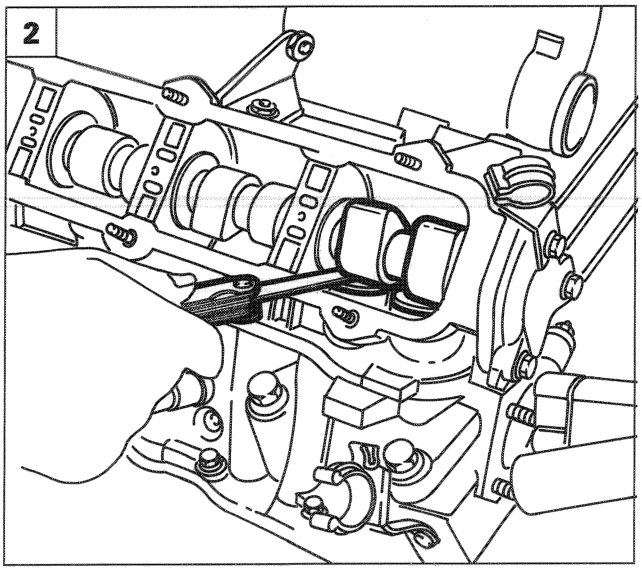
3. Remove the complete air filter, disconnect the electrical connector (1) and the oil vapour recovery pipe (2).
4. Remove the tappet cover acting on the relevant fixing bolts, then proceed with checking the tappet clearance.



P3M09QA01

Punto 1698 TD

1. Remove the air inlet pipe acting on the fixings shown, then undo the bolt fixing the tapper cover and proceed with checking the tappet clearance.



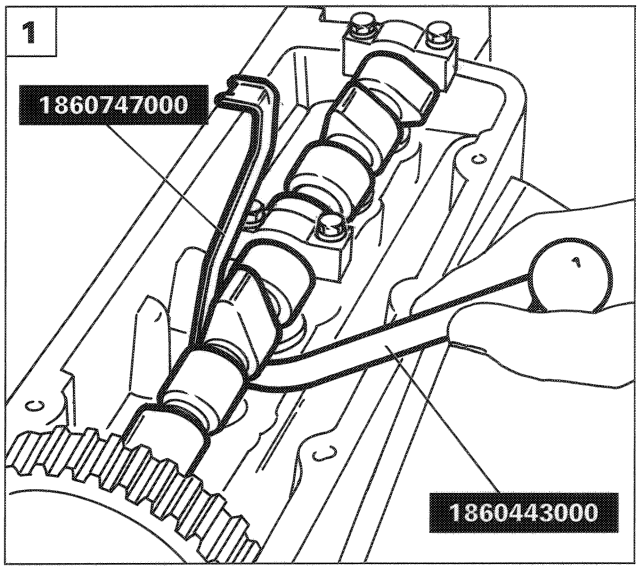
P3M09QA02

Check tappet clearance and adjust, if necessary

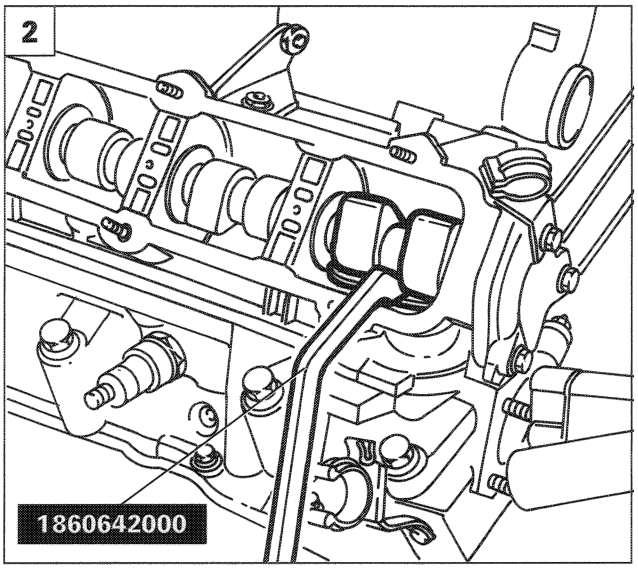
2. Rotate the camshaft so that the inlet and exhaust valves are in the closed position. With the engine cold, check the clearance between the cam recess radius and the tappet is within the recommended values using a feeler gauge.

Operating tappet clearance (when cold)

	1108 - 1242 SPI 1372 Turbo - 1581	1242 MPI	1698 TD
Inlet	0.40 ± 0.05 mm	0.40 ± 0.05 mm	0.30 ± 0.05 mm
Exhaust	0.50 ± 0.05 mm	0.45 ± 0.05 mm	0.35 ± 0.05 mm



P3M10QA01



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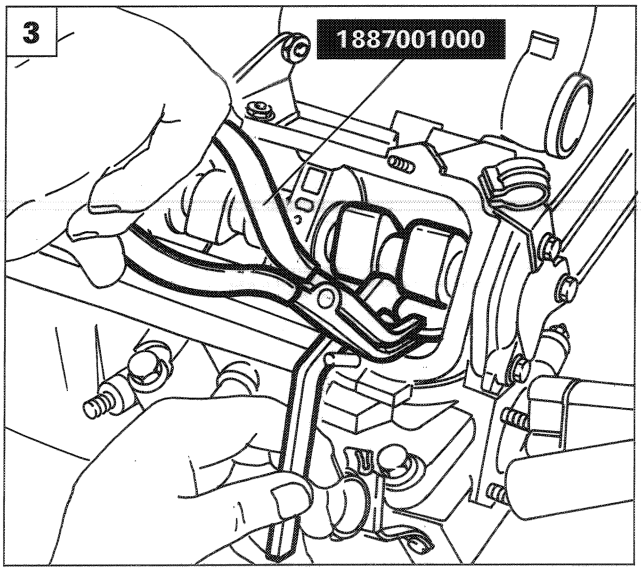


P3M10QA03

If the tappet clearance does not correspond to the recommended figures, proceed as follows:

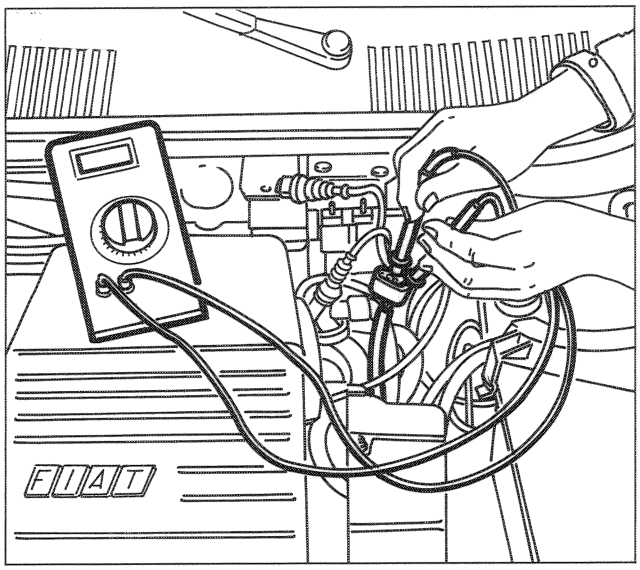
1-2. Using pressure lever 1860443000, lower the cup for the tappet concerned and insert tool 1860747000 for retaining tappets positioning the notches in the edge of the tappet in such a way as to facilitate the subsequent extraction of the shim to be replaced.
For the 1372 Turbo - 1581 and 1698 TD versions use tool 1860642000 for retaining a pair of tappets in the lowered position.

3. Lift up the shim to be replaced, working as appropriate, then remove it using pliers 1887001000.

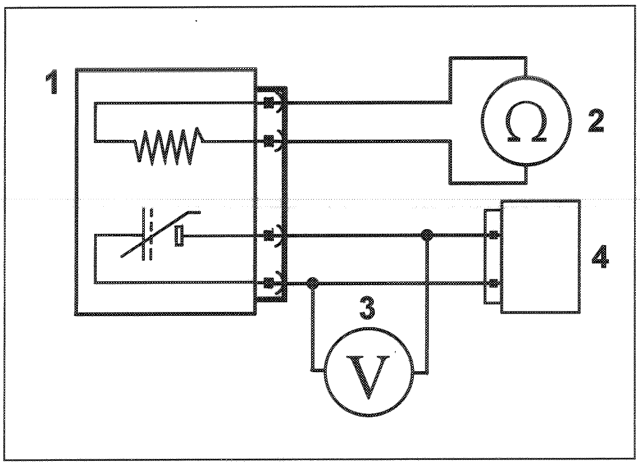
NOTE *Replace the shim removed with another one of the appropriate size to restore the correct valve clearance. Carry out the same operation for the other shim for the pair of valves being adjusted.*

9 CHECK TIGHTENING OF INLET/EXHAUST MANIFOLDS (petrol engines)

Visually/audibly check that the inlet and exhaust manifolds are correctly tightened checking that there are no gas leaks or breather noises due to imperfect seals. If there is a defect, tighten the manifolds or, if necessary, replace the seals in order to solve the problem.



P3M11QA01



P3M11QA02

1. Lambda sensor
2. Ohmmeter
3. Voltmeter
4. Injection/ignition control unit

10 CHECK OPERATION OF LAMBDA SENSOR

The Lambda sensor measures the oxygen content of the exhaut gases. The sensor output signal is sent to the electronic control unit for adjusting the air/petrol mixture in order to keep the mixture stoichiometric ratio as close as possible to the theoretical value.

It is important to check the operation of the Lambda sensor by checking the resistance of the heater and the sensor. Disconnect the connector, underneath the protective cover for the relays and fuses and connect it to an ohmmeter as shown in the diagrams.

Heater resistance (A)

Connect a digital multimeter (ohm function) as shown in the diagram and check that the resistance of the heater is less than 20 ohm.

Lambda sensor voltage

Connect a digital multimeter (volt function) as shown in the diagram; start up the engine and let it reach operating temperature (radiator cooling fan comes on once). Check that the reading for the sensor on the multimeter switches between 0 and 1 Volt.

The sensor can be rapidly put out of action by even small amounts of lead in the fuel.

Notify the Customer of the need to replace the Lambda sensor.
If the sensor is being replaced, grease should be applied to the new sensor fixing bolt to ensure good thermal coupling. ANTISEIZE MATERIA-BORON NITRIDE N.G.K. SPARK PLUG CO-LTD is recommended.

0.50 - 0.60 daNm

When tightening, do not apply force to the component or else it could be irreparably damaged.

11 CHECKING EXHAUST GAS EMISSIONS (petrol engines)

The electronic injection/ignition systems used are capable of automatically controlling the advance, the carbon monoxide (CO) content and the idle air flow rate, therefore no manual adjustment operations are required. However, a check on the content of the exhaust gases downstream of the catalyzer can provide useful indications on the injection/ignition system operating conditions and the engine and catalyzer parameters.

The concentration of carbon monoxide (CO), unburnt hydrocarbons (HC) and value λ, is measured with the catalyzer at operating temperature (300 - 350 °C) (we recommend driving hard along a section of road for around 5 to 10 minutes to ensure that the catalyzer reaches operating temperature), then insert a suitably calibrated tester sensor at least 30 cm into the end of the exhaust pipe as shown in the diagram overleaf.

If the shape of the end section of the exhaust pipe is such that the sensor cannot be fully introduced, add a special extension pipe ensuring the seal in the join area.

1. Check that the concentration of CO and the value λ during idling and accelerated idle, correspond to the values recommended in the government circular:

Engine measurement during idling: CO limit ⩽0.5% vol.

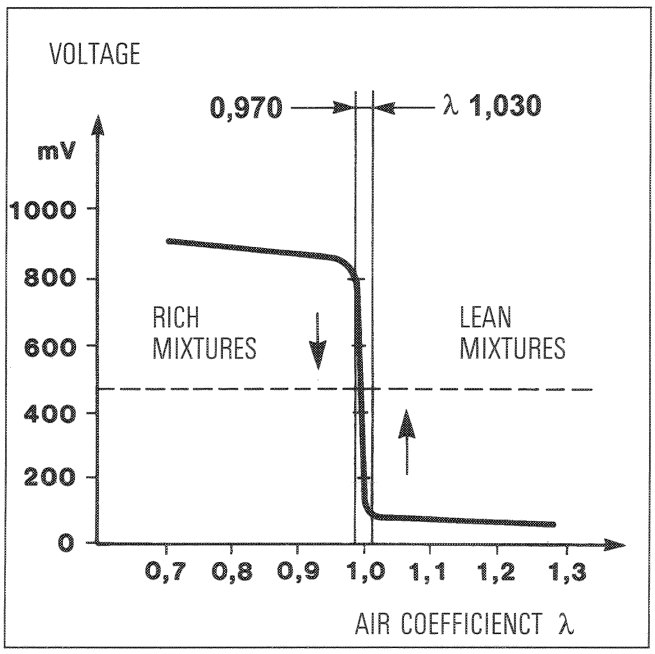
Measurement for accelerated idle (2000 - 2500 rpm): CO limit ⩽0.3% vol.

Lambda = 1 ± 0.03

If the values are not within the limits set out in the government circular, the Customer must be notified of the need to check:

- that the Lambda sensor is working properly using a multimeter;
- for the presence of air penetration in the area surrounding the Lambda sensor housing;
- the injeciton system, particularly the wear of the spark plugs.

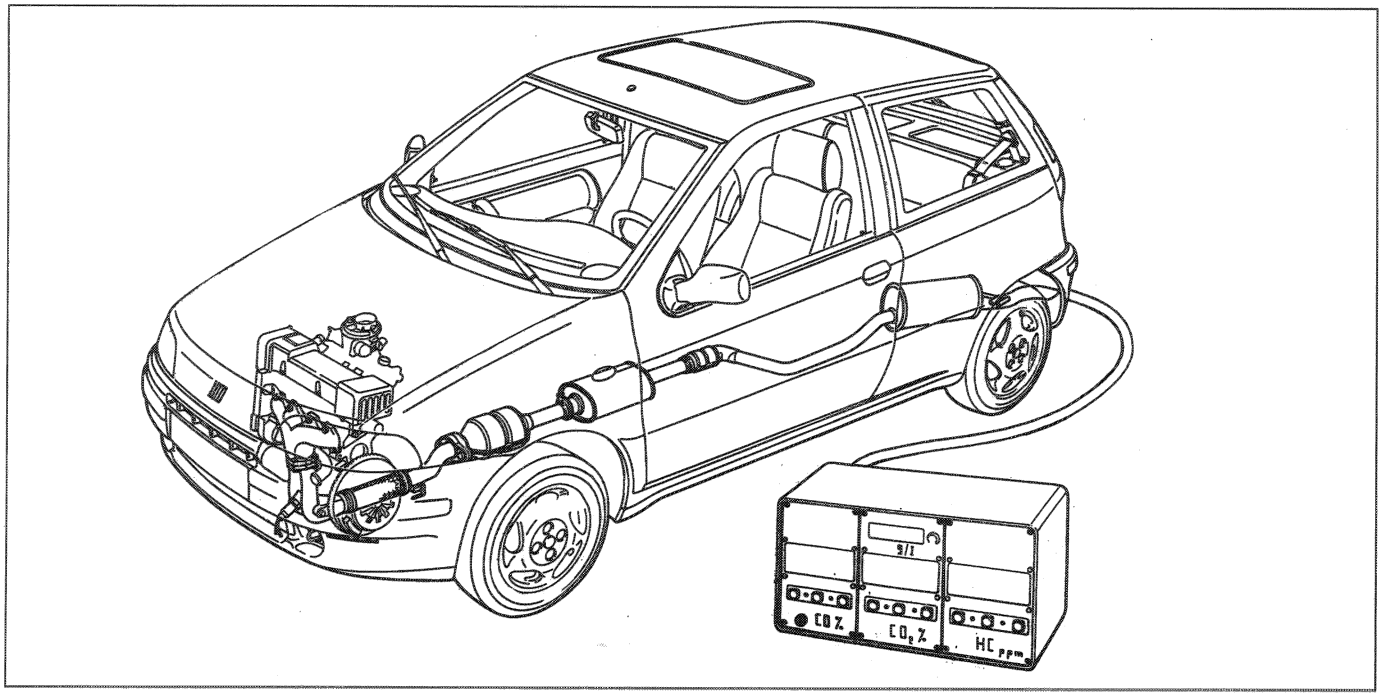
2. If the HC figure is more than 90 p.p.m., the cause of the problem should be sought in the engine timing or the decreased efficiency of the catalyzzer.



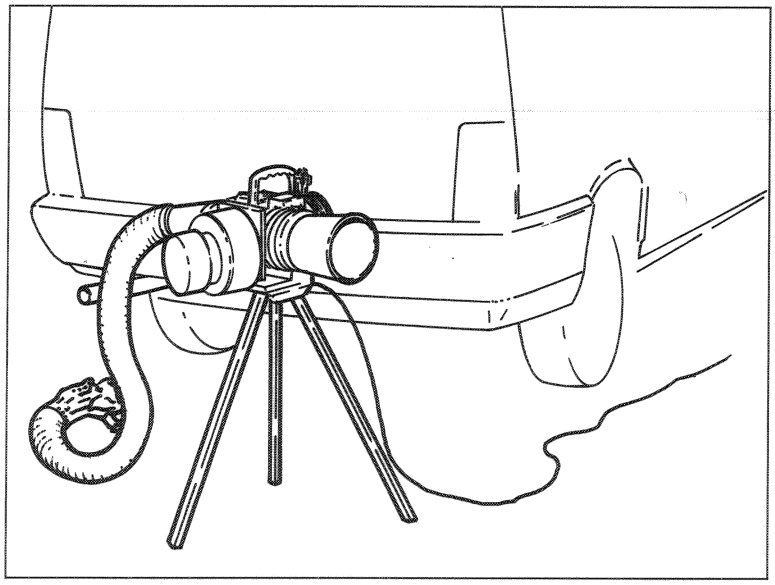
P3M12QA01

Factor λ is obtained from the ratio between the quantity of intake air and the theoretical quantity of air required to burn all the fuel injected.

To achieve an optimum mixture the quantity of fuel injected must be as close as possible to theoretical quantity required to be completely burnt in relation to the quantity of air drawn in by the engine. In this case the Lambda factor is equal to 1 (ideal mixture) and the CO content is within the legal limits. With λ ⩾ 1 (lean mixture), excess air, the CO tends to assume low values; with λ ⩽1 (rich mixture), lack of air, the CO values tend to be high.



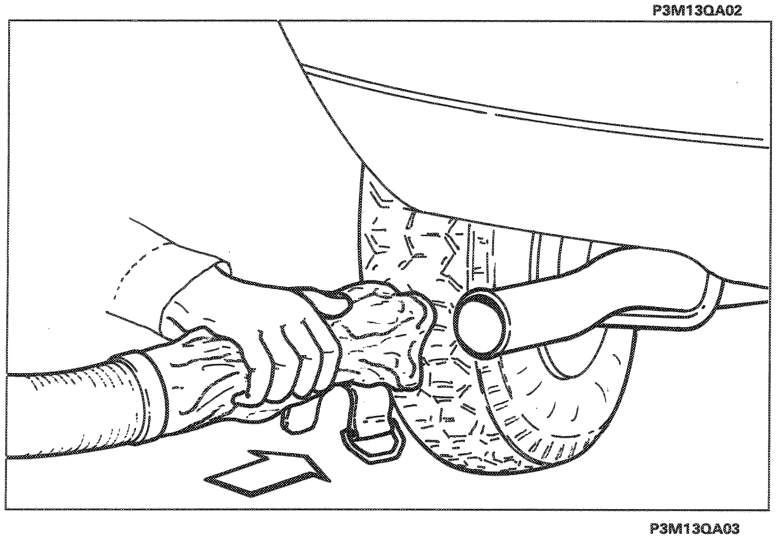
P3M13QA01



P3M13QA02

11 CHECKING EXHAUST GAS EMISSIONS (diesel engines using opacity meter)

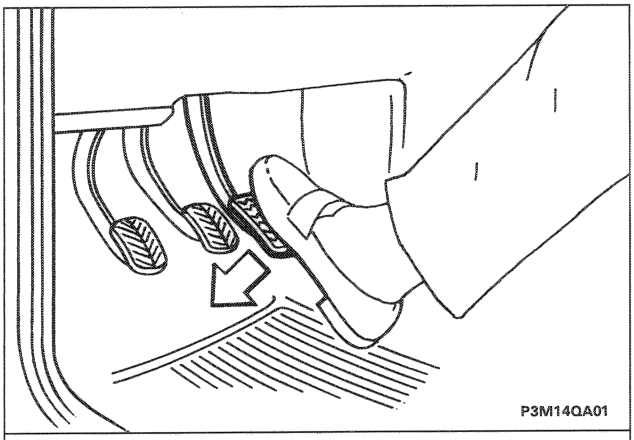
Start up the engine and let it reache operating temperature (radiator cooling fan comes on twice).
Place the opacity meter measuring unit in a stable position near the vehicle exhaust pipe (the opacity meter exhaust must be positioned against the wind).

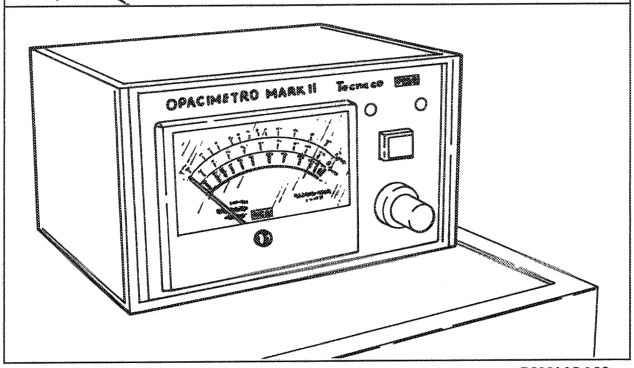


P3M13QA03

Connect the measuring unit flexible pipe with the vehicle exhaust pipe.

Carry out the equipment connections and adjustments in accordance with the Manufacturers' instructions.


P3M14QA01



P3M14QA02

Fully depress the accelerator three times in quick succession so that the engine revs limiter speed is reached.
Carry out measurements for five subsequent full accelerations.
Make a note of the maximum values reached.
To obtain the figure for the test, calculate the arithmetical average of the three closest values.
If there is more than one suitable trio, select the one which gives the highest average value.

Compare the values with the limit given on the plate on the vehicle conforming withthe EEC directive.

Where figures are not available, apply the following limits from directive 92/55/EEC:

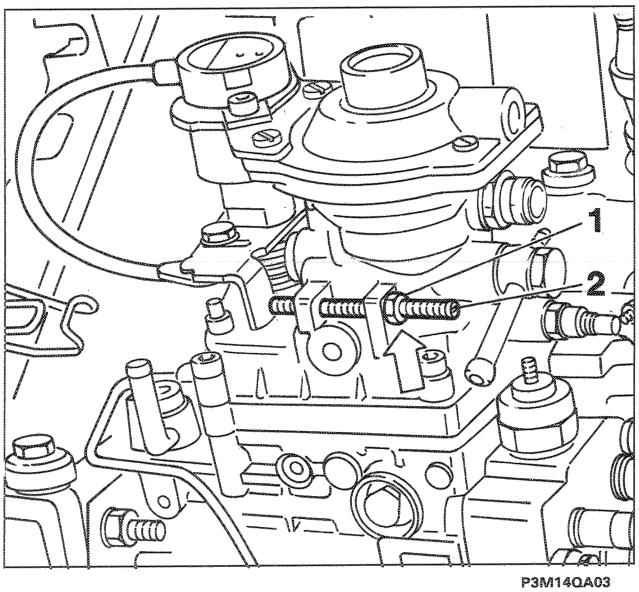
Naturally aspirated diesel engine:
K = 2,5 m ^{1}

Diesel engine with turbocharger:
K = 3 m $^{-1}$

If the figure for the exhaust fumes is more than 70%, notify the Customer of the need to carry out a series of tests on: the condition of the air filter, injection pump timing and flow rate, valve clearance and timing, injector calibration and cleanliness, compression ratio.

12 CHECK ENGINE IDLE, IF NECESSARY, ADJUST IDLE/CO CONTENT

Petrol engines
If the engine idle speed is not 900±50 rpm (1108 - 1242) or 850±50 rpm (1372 turbo - 1581) and the injection/ignition control unit is the self-regulating type, no adjustments can be carried out so it is necessary to check that the accelerator linkage is correctly adjusted and the fault should then be sought by carrying out a complete fault diagnosis using the Fiat/Lancia Tester.



P3M14QA03

Diesel engines
The idle speed is adjusted with the engine at operating temperature, i.e. when the cooling circuit fan has come on at least twice.

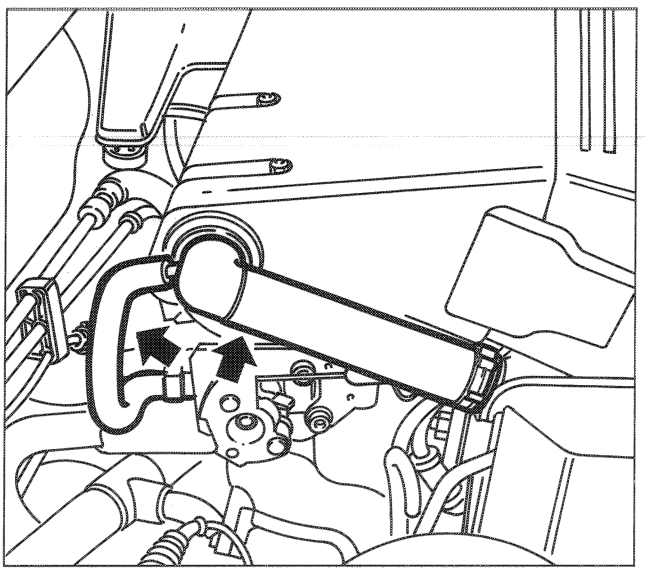
The idle is adjusted with the fan switched off and without any other consumers switched on (heated rear windscreen, air conditioning, headlamps, etc.).
If the fan comes on during the adjustment, do not proceed until it has completely stopped. Check that the engine idle speed is 900 ± 20 rpm. If this is not the case, loosen the lock nut (1) and adjust the screw (2) until the speed is correct, then tighten the lock nut.

13 CHECK ANTI-EVAPORATION SYSTEM

The anti-evaporation system prevents the petrol vapours, which form in the tank and the fuel system, from being discharged into the atmosphere and consequently releasing the light hydrocarbons (HC) which they contain, producing a pollutant effect.

It is therefore necessary to check that the anti-evaporation system pipes are correctly positioned in the engine compartment; also check their condition, making sure that there are no signs of cracks, cuts or leaks and that they are correctly fixed and not interfering with other components. Check the condition of the active charcoal filter. Position the vehicle on a lift and check the condition of the pipes under the floor of the vehicle.

14 CHECK CRANKCASE VENTILATION SYSTEM



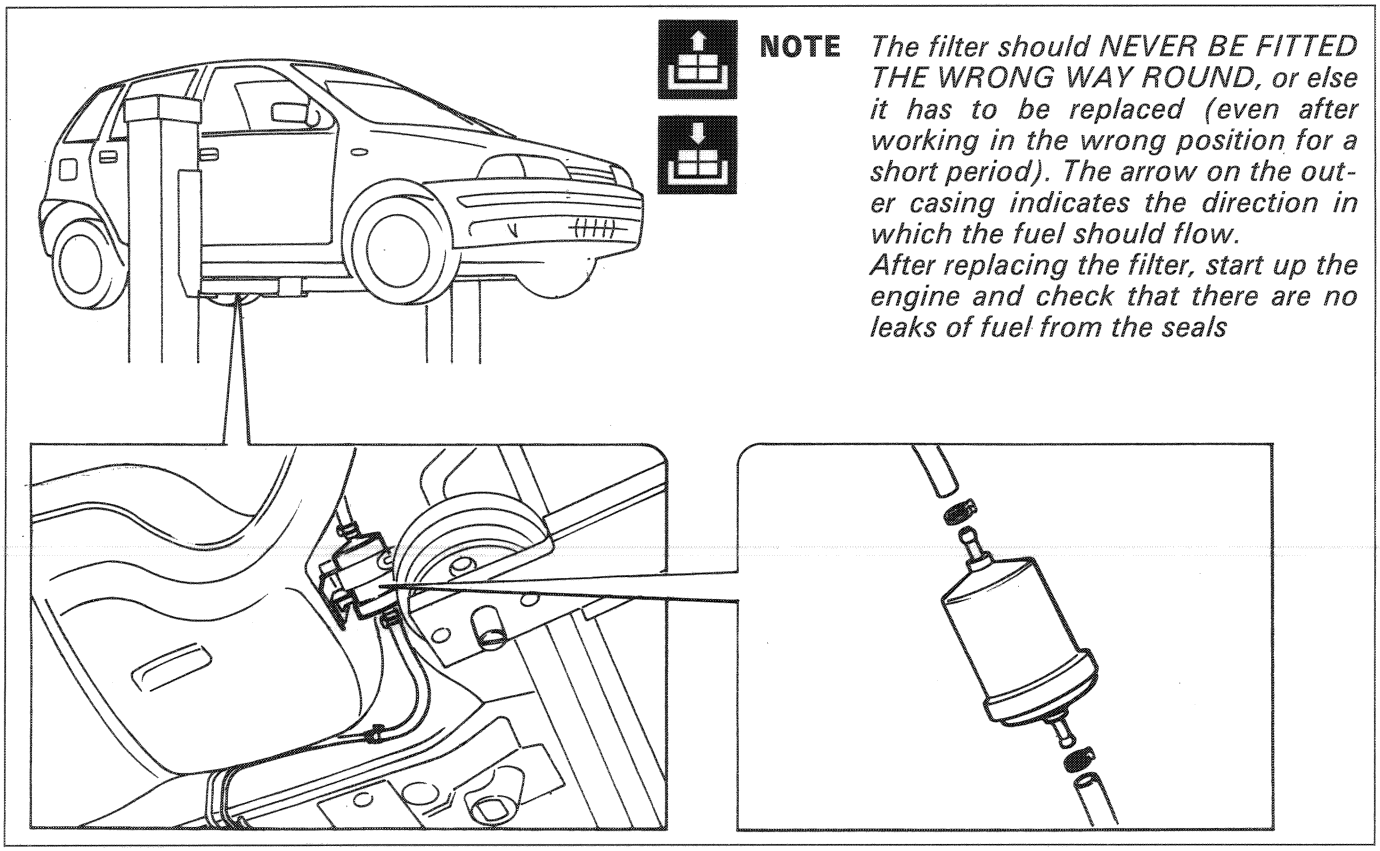
P3M15QA01

This system controls the emission, from the engine crankcase, of breather gases made up of air/petrol mixtures and unburnt gases which seep out of the piston seals in addition to lubricant oil vapours and recirculates them to the inlet.

Check the engine oil vapour breather pipes making sure, in particular, that they are not obstructed. Then clean the flame damper or replace it if it is obstructed (with the explicit consent of the Customer).

15 REPLACE FUEL FILTER (petrol engines)

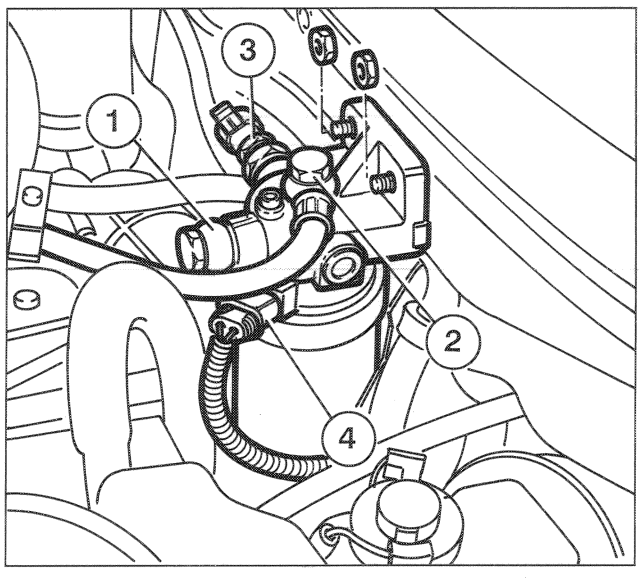
- Raise the vehicle;
- Undo the bolt fixing the fuel filter to the mounting bracket;
- Remove the bands, where fitted, or disconnect the rapid connectors fixing the fuel pipes to the filter;
- Collect the fuel which comes out during the operation in a suitable container.



NOTE *The filter should NEVER BE FITTED THE WRONG WAY ROUND, or else it has to be replaced (even after working in the wrong position for a short period). The arrow on the outer casing indicates the direction in which the fuel should flow.*
After replacing the filter, start up the engine and check that there are no leaks of fuel from the seals

P3M16QA01

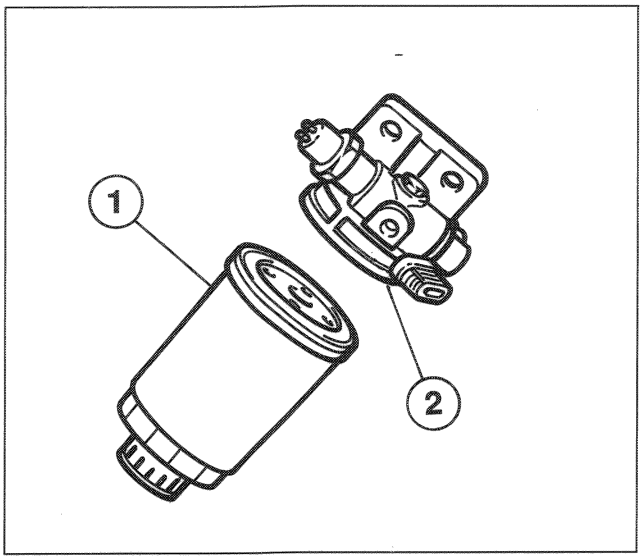
16 REPLACE FUEL FILTER (diesel engines)



P3M16QA02

To replace the fuel filter, after having disconnected the negative battery lead, proceed as follows:

- Disconnect the connector (1) for the fuel supply pipe from the tank from the filter;
- Disconnect the connector (2) for the fuel supply pipe to the injection pump from the filter;
- Disconnect the electrical connection (3) from the fuel pre-heating device sensor;
- Disconnect the electrical connection (4) supplying the fuel pre-heating device;
- Undo the two nuts fixing the partition between the passenger and engine compartments and remove the complete fuel filter.

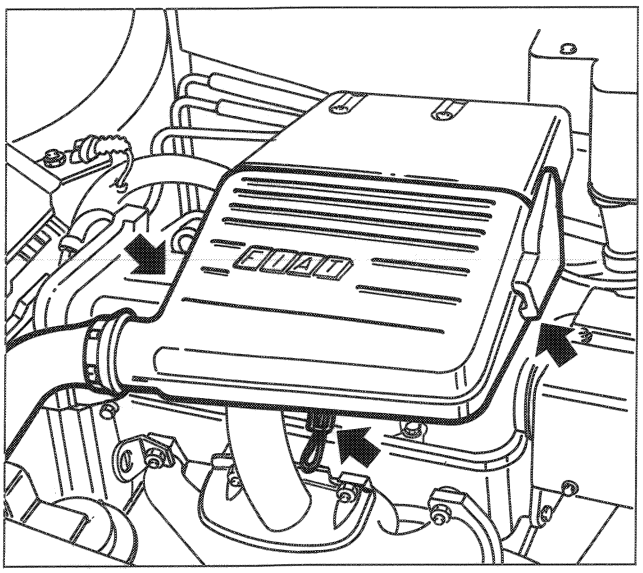


P3M17QA01

- At the bench, undo the fuel filter (1) with the seal from the support (2).

When refitting the fuel filter, proceed as follows:
- lubricate the rubber seal for the cartrdige;
- fill the filter cartridge with diesel fuel (in order to shorten the self-bleeding time);
- tighten the cartridge in contact with the support;
- close the cartridge by 3/4 of a turn (to achieve a tightening torque of 1.3 - 1.6 daNm).

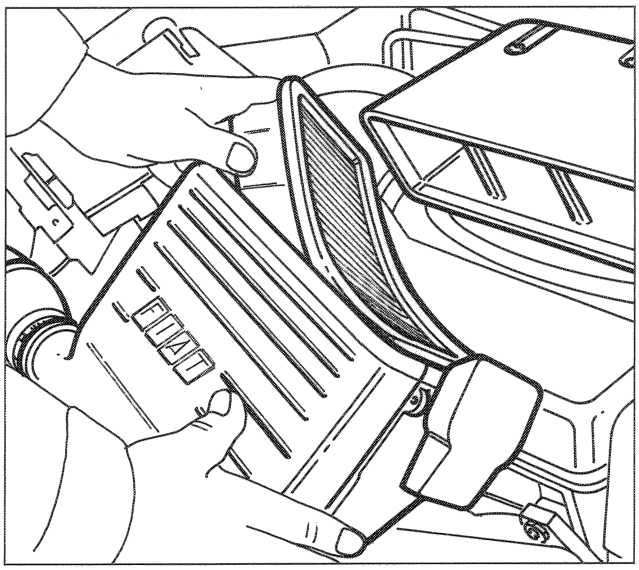
17 REPLACE AIR FILTER CARTRIDGE (petrol engines)



P3M17QA02

Punto 1108 - 1242

Release the springs shown in the diagram retaining the air filter cover.



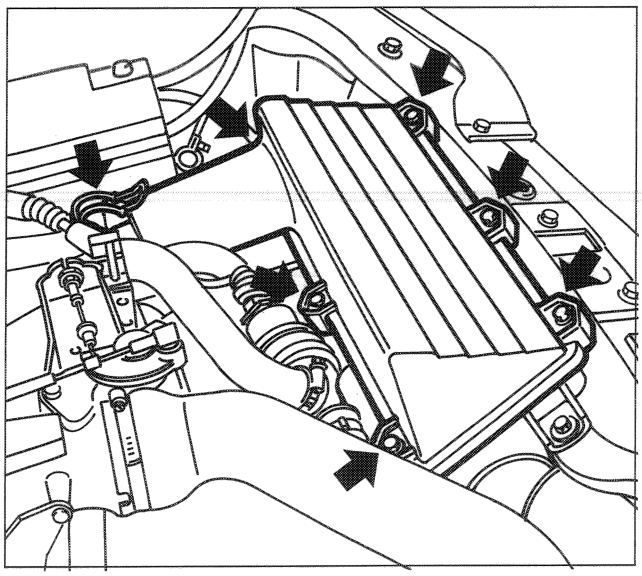
P3M18QA01

Move the air filter cover aside and extract the filter element.

Any cleaning operation could damage the filter and risk adversely affecting the operation of the engine fuel system.

Clean the air filter cartridge container carefully.
Replace the air filter, then refit the cover and fix it using the appropriate springs.

NOTE *If there are traces of oil in the filter, check for possible penetration throughout the air circuit.*



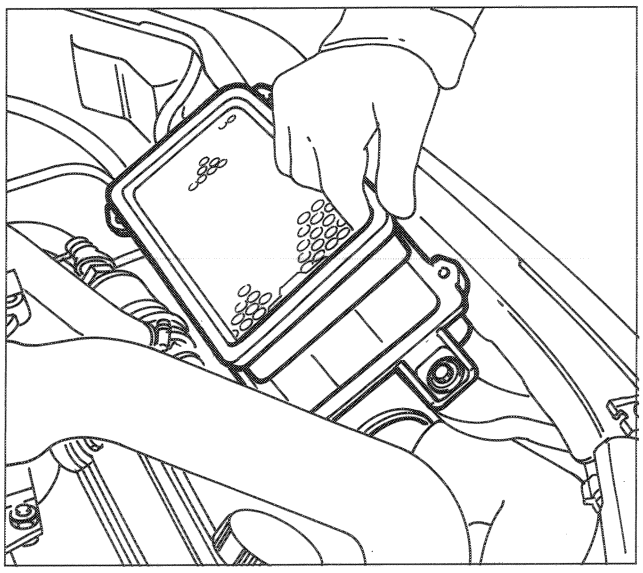
P3M18QA02

Punto 1372 Turbo - 1581

Undo the bolts fixing the air filter cover. In the case of the 1372 Turbo version the pipe connected to it must also be removed.

Lift up the air filter cover and extract the filter element.

Any cleaning operation could damage the filter and risk adversely affecting the operation of the engine fuel system.

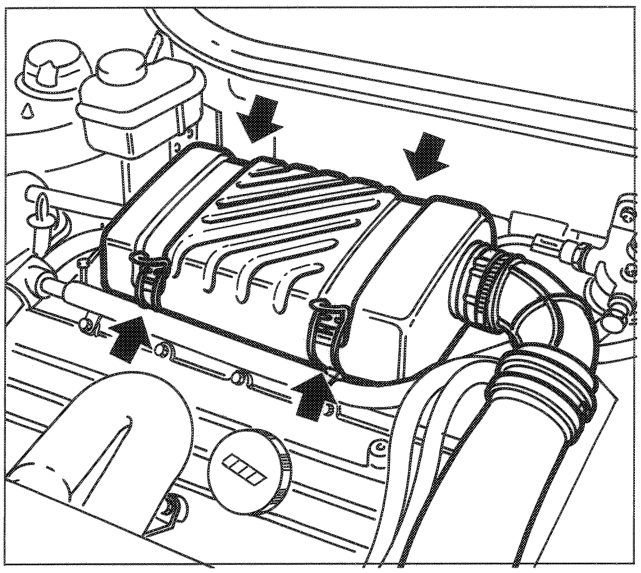


P3M18QA03

Clean the air filter cartridge container carefully.
Replace the air filter, then refit the cover and fix it using the appropriate bolts.

If there are traces of oil in the filter, check for possible penetration throughout the air circuit.

NOTE *If the vehicle is used on dusty roads, replace the air filter more often.*
If the Customer asks, provide them with suitable information concerning the optimum maintenance frequencies depending on the specific usage of the vehicle.



P3M19QA01

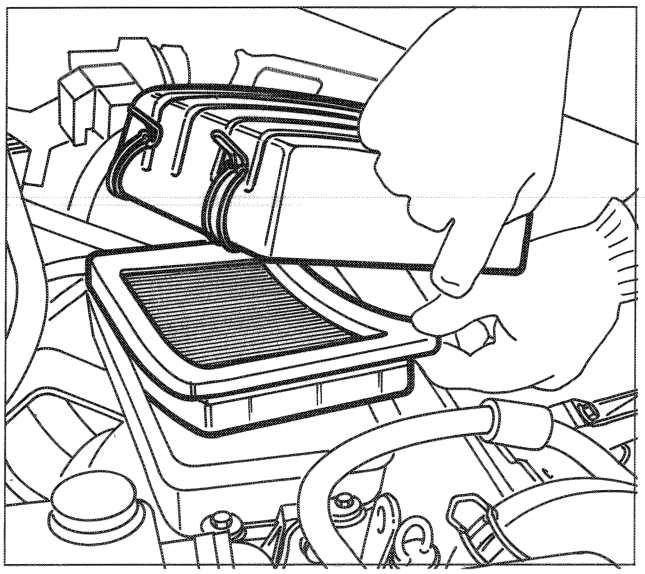
18 REPLACE AIR FILTER CARTRIDGE (diesel engines)

Punto 1698 TD

Release the springs retaining the air filter cover.

Lift up the air filter cover and extract the filter element.

Cleaning the filter could damage it and risk adversely affecting the operation of the engine fuel system.



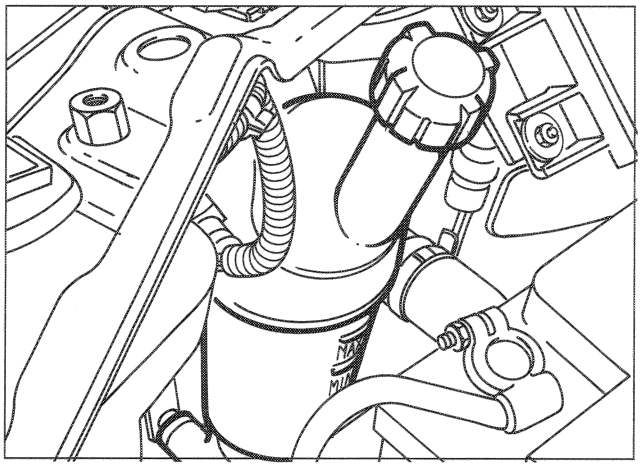
P3M19QA02

Clean the air filter cartridge container carefully.
Replace the air filter, then refit the cover and fix it using the appropriate springs.

NOTE *If there are traces of oil in the filter, check for possible penetration throughout the entire air circuit.*

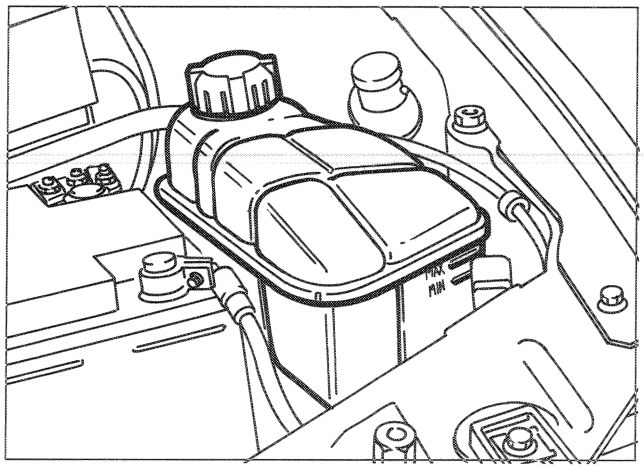
NOTE *If the vehicle is used on dusty roads, replace the air filter more often.*
If they ask, the Customer should be provided with suitable information on the optimum maintenance frequencies dependingon the specific usage of the vehicle.

19 TOPPING UP FLUID LEVELS



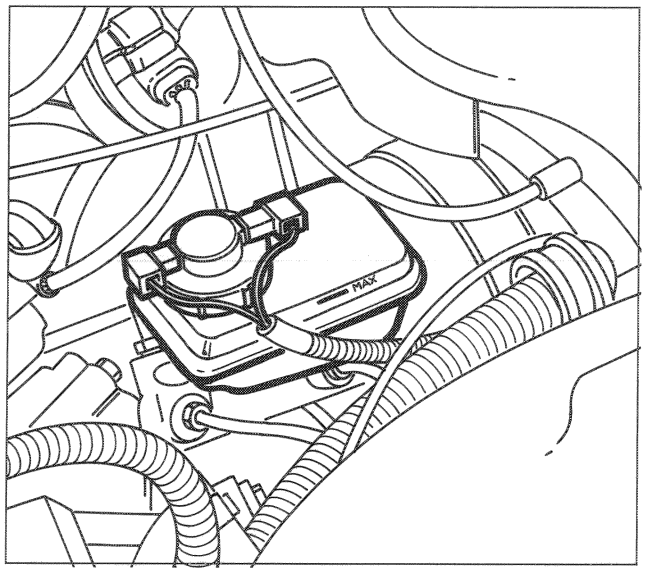
P3M20QA01

Punto 1108 - 1242 SPI - 1581

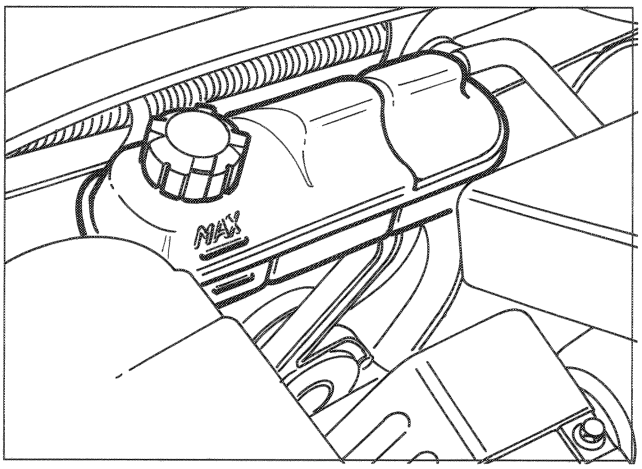


P3M20QA03

Punto 1372 Turbo - 1698 TD



P3M20QA04



P3M20QA02

Punto 1242 MPI

Engine coolant

Do not remove the radiator cap when the engine is very hot: there is a danger of being scalded.

The fluid level should be checked with the engine cold and it should not be below the MIN level on the tank.

If the level is too low, slowly pour a mixture of 50% distilled water and Fiat Lubrificanti Paraflu 11 through the filler.

NOTE *The addition of "Paraflu Formula Europa" to Paraflu 11 used originally means that it is not possible to check the efficiency of the anti-freeze using the regular test equipment. "Paraflu Formula Europa" is already mixed which means that water does not have to be added.*

Brake fluid level

The brake fluid level is checked with the vehicle on a flat surface.

Check that the level of the fluid in the tank corresponds tothe MAX reference on the tank.

It is normal for the brake fluid level to decrease over a period of time because this indicates that the brake pads are working properly.

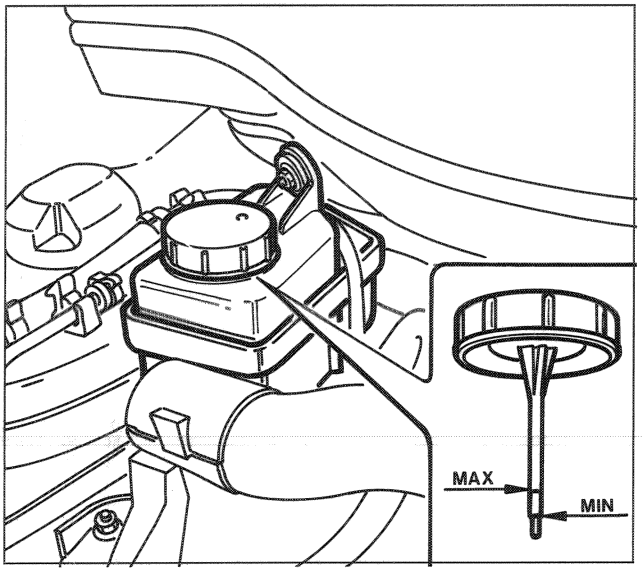
The level of the brake fluid should not exceed the MAX level in the tank.

Check the operation of the warning light in the instrument panel: when the cover of the tank is pressed (with the ignition in the ON position) the warning light (!) should come on.

If fluid has to be added, only use DOT4 classification. Tutela TOP4 270°C, which is used inititally, is particularly recommended.

Avoid the brake fluid, which is particularly corrosive, from coming into contact with the paintwork. If it does, was immediately with water.

The symbol (⬡), on the container, identifies synthetic type brake fluids, distinguishing them from mineral types. The use of mineral type fluids irreparably damages the rubber seals in the braking system.



P3M21QA01

Power steering fluid level

Check that, with the vehicle on a flat surface and the engine cold, the fluid level is between the MIN and MAX references on the dip stick in the tank cap.

In order to carry out the check, clean the dip stick, fully tighten the cap, undo it and check the level.

When the fluid is hot it may exceed the MAX level.

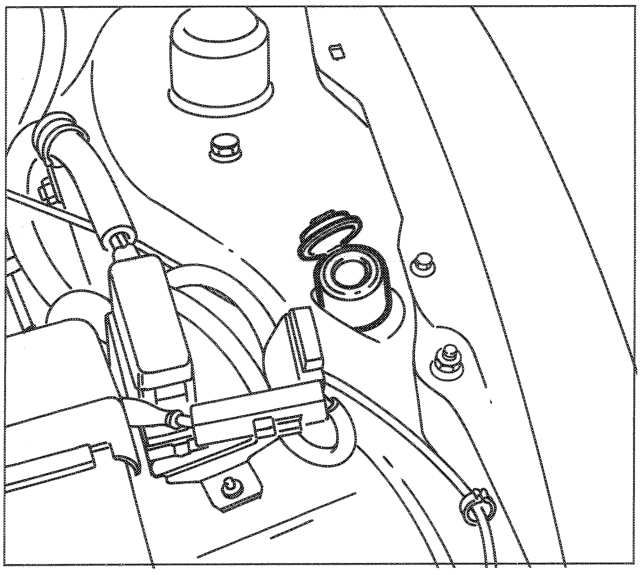
If necessary,, add fluid, making sure that it has the same characteristics as the fluid already present in the system.

Start up the engine and wait until the level of the fluid in the tank stabilizes.

With the engine running, turn the steering wheel completely to the right and to the left several times.

Top up until the level corresponds to the MAX reference, then retighten the cap.

Avoid power steering fluid coming into contact with the hot parts of the engine as it is inflammable.


P3M21QA02

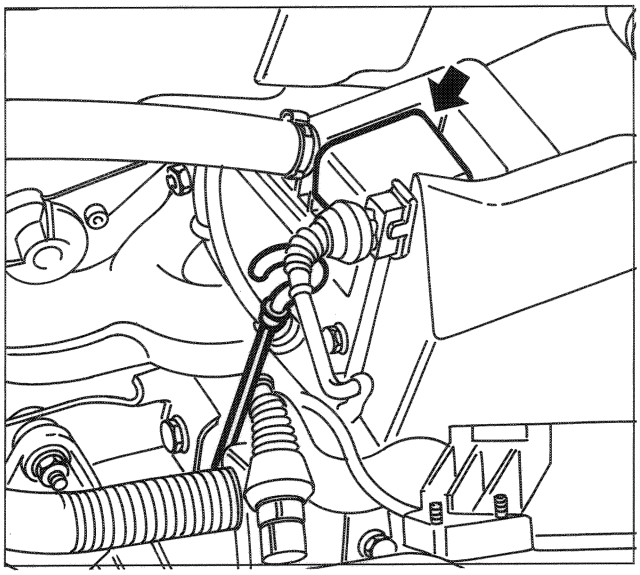
Windscreen/rearscreen and headlamps washer fluid level

In order to add fluid, lift up the cap, lift up the filter and pour a mixture of water and Arexons DPI fluid in the following percentages:

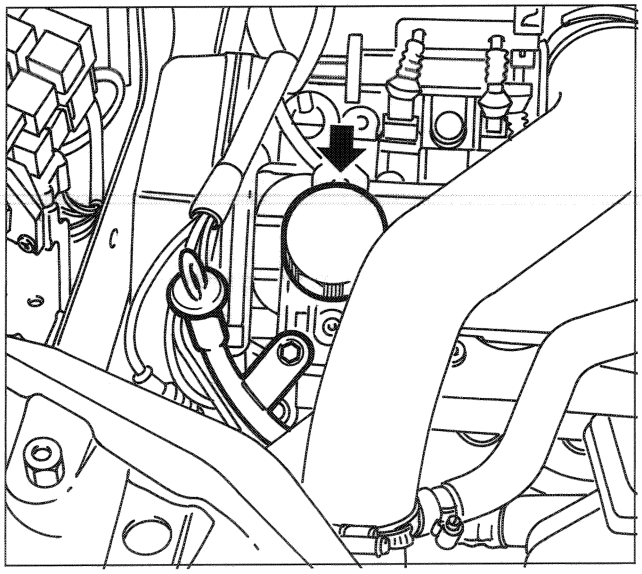
- 30% Arexons DP1 and 70% water in summer;
- 50% Arexons DP1 and 50% water in winter.

In the case of temperatures below -20 °C, use undiluted Arexons DP1.

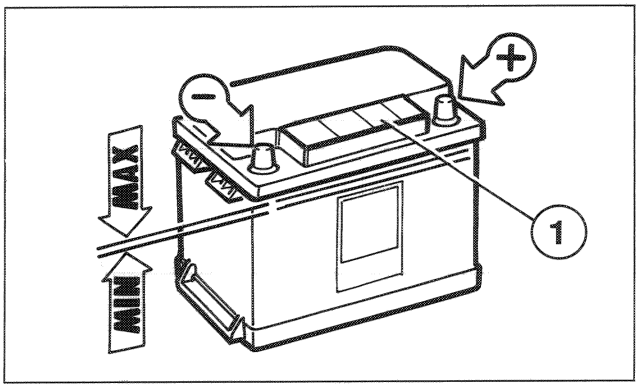
Versions with headlamp washers are fitted with a dip stick indicating the amount of fluid in the windscreen washer reservoir.



P3M22QA01



P3M22QA02



P3M22QA03

Check the level more often if the vehicle is mainly used for short journies or if it is equipped with consumers which absorp power permanently with the ignition switched off.

Engine oil level

The engine oil level is checked with the vehicle on a flat surface and the engine cold, or at least 10 minutes after the engine has been switched off.

The oil level should be between the MIN and MAX marks on the dip stick. The gap between the MIN and MAX levels corresponds to around 1 litre of oil.

If the level of the oil is close to or actually below the MIN reference, add oil through the filler until the MAX reference is reached.

The level of the oil should never exceed the MAX reference.

When topping up with oil take great care to avoid accidentally spilling engine oil in the alternator ventilation slits which could cause serious damage to the alternator and also represents a fire hazard.

Do not add oil with different characteristics from those of the oil used in the engine. Only the use of semi-synthetic oil guarantees the planned maintenance intervals.

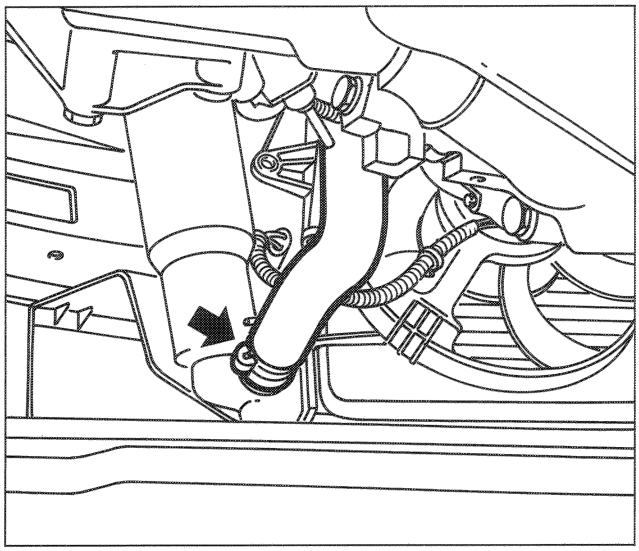
After having added oil, before checking the level, let the engine run for a few seconds and wait for several minutes after it has been switched off.

Battery fluid level

The battery is the "reduced maintenance" type: in normal usage conditions it does not need topping up with distilled water.
The level of the battery fluid (electrolyte), with the v ehicle on a flat surface, should be between the references on the battery. If the level is below the MIN mark, lift up the protective cover (1) and top up using distilled water.

The fluid contained in the battery is poisonous and corrosive. Avoid contact with the skin and eyes. Keep naked flames and possible sources of sparks away from the battery as there is a danger of explosion and fire.

20 CHANGING THE ENGINE COOLANT



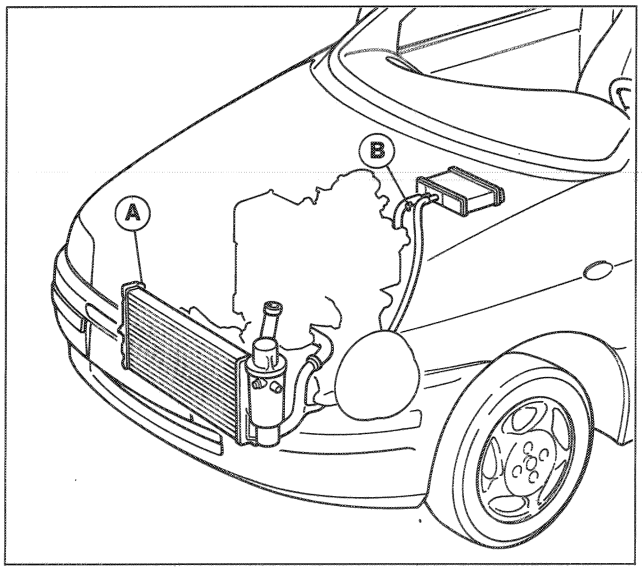
P3M23QA01

Undo and remove the expansion tank cap.

Do not remove the cap when the engine is very hot as there is a danger of being scalded.

Raise the vehicle, then drain the engine coolant, disconnecting the coolant outlet hose from the radiator and recovering the fluid in a suitable container.

Reconnect the hose to the radiator and all pipes which may have been disconnecting, checking the tightening of all bands, then carry out the procedure described below.

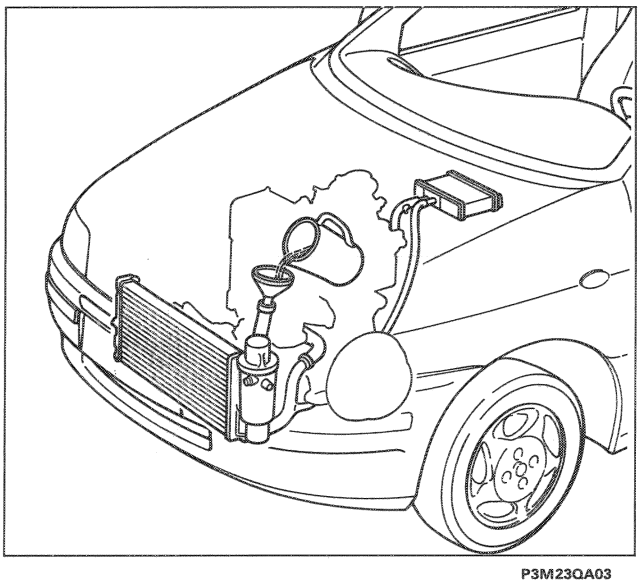


P3M23QA02

Instructions for filling cooling system

Punto 1108 - 1242 SPI - 1242 MPI

- Make sure that the cooling system is completely empty;
- open the bleed valves on the radiator **(A)** and on the heater inlet hose **(B)**;
- fill the system by slowing introducing coolant (50% Paraflu and 50% distilled water) until it comes out of the radiator bleed valve **(A)** ;
- close the bleed valve **(A)** located on the radiator;



P3M23QA03

Quantity of coolant

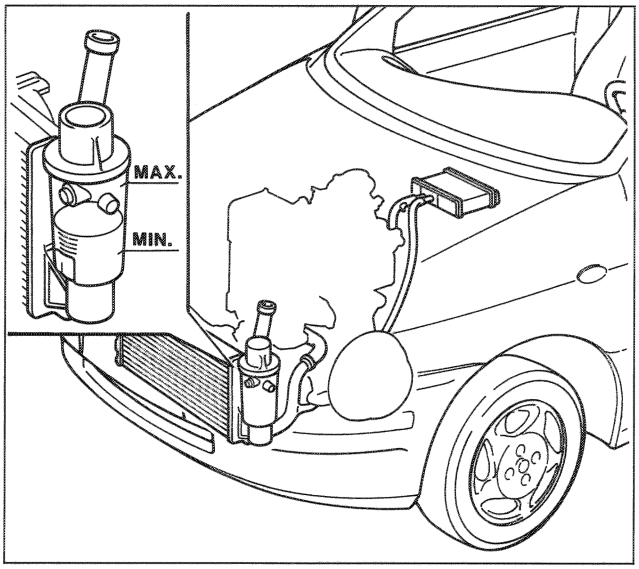
Punto 1108 = 4.60 litres

Punto 1242 SPI = 4.77 litres

Punto 1242 MPI = 4.88 litres

- continue filling until coolant comes out of the bleed valve **(B)** on the radiator hose (the MAX level in the expansion tank has been exceeded);

- close the bleed valve **(B)** on the heater hose;
- start up the engine, let it idle for 2-3 minutes, then activate the accelerator pedal every 30 seconds until 3/4 of the maximum power speed has been reached and the radiator cooling fan comes on for the first time;



P3M24QA01

- keep the engine idling for at least 5 minutes;
- switch off the engine;
- the coolant level should settle down between the MIN and MAX reference marks on the expansion tank.

NOTE *If during the filling operations with the engine running the coolant should boil, the filling should be halted; check that the bleeding operations have been carried out correctly and, if this is the case, search for the defective component which has caused this problem; notify the Customer of the need to replace the following component, then repeat the test when the fault has been repaired.*

Punto 1242 SPI - 1242 MPI (versions with air conditioning)

Quantity of coolant

1242 SPI = 4.60 litres

1242 MPI = 4.50 litres

- Make sure that the cooling system is completely empty;
- open the bleed valve located on the heater inlet hose;
- fill the system by slowly introducing coolant (50% Paraflu and 50% distilled water) until fluid comes out of the heater bleed valve;
- close the bleed valve;
- continue slowly introducing coolant into the expansion tank until the MIN reference is reached;
- carry out this operation until the radiator cooling fan comes on for the first time;
- keep the engine idling for at least 5 minutes;
- switch off the engine;
- top up, if necessary, until a level is reached midway between the MIN and MAX markts on the expansion tank; this operation should be carried out with temperature of the coolant below 25 °C.

NOTE *If the coolant boils during the filling operation with the engine running, stop the filling; check that the bleeding operations have been carried out correctly and, if this is the case, search for the defective component which has caused the problem; notify the Customer of the need to replace the following component, then repeat the test when the fault has been repaired.*

Punto 1581

Quantity of coolant = 5.40 litres

- Make sure that the cooling system is completely empty;
- open the bleed valve located on the heater;
- fill the system by slowly introducing coolant (50% Paraflu and 50% distilled water) until fluid comes out of the heater bleed valve;
- close the bleed valve;
- continue slowly introducing coolant into the expansion tank until the MIN level is reached;
- start up the engine, let it idle for 2-3 minutes, then activate the accelerator pedal every 30 seconds until 3/4 of the maximum power is reached and the radiator cooling fan comes on for the first time;
- keep the engine idling for at least 5 minutes;
- switch off the engine;
- top up, if necessary,, until a midway level between the MIN and MAX marks on the expansion tank is reached; this operation should be carried out with the temperature of the coolant below 25 °C.

NOTE *If the coolant boils during the filling operations with the engine running, the filling should be halted; check that the bleeding operations have been carried out correctly and, if this is the case, search for the defective component which has caused the problem; notify the Customer of the need to replace the following component, then repeat the test when the fault has been repaired.*

Punto 1372 Turbo

Quantity of coolant = 5.95 litres

- Make sure that the cooling system is completely empty;
- open the bleed valve locatedon the radiator;
- fill the system by slowly introducing coolant (50% Paraflu and 50% distilled water) until fluid comes out of the radiator bleed valve;
- close the bleed valve;
- continue slowly introducing coolant into the expansion tank until the MIN level is reached;
- carry out this operation until the radiator cooling fan comes on for the first time;
- keep the engine idling for at least 5 minutes;
- switch off the engine;
- top up, if necessary,, until a midway point between the MIN and MAX marks is reached in the expansion tank; this operation should be carried out with the temperature of the coolant below 25 °C.

NOTE *If the coolant boils during the filling operations with the engine running, the filling should be halted; check that the bleeding operations have been carried out correctly and, if this is the case, search for the defective component which has caused the problem; notify the Customer of the need to replace the following component, then repeat the test when the fault has been repaired.*

Punto 1698 TD

Quantity of coolant = 7.1 litres

- Make sure that the cooling system is completely empty;
- open the bleed valve located on the heater;
- fill the system by slowly introducing coolant (50% Paraflu and 50% distilled water) until fluid comes out of the heater bleed valve;
- close the bleed valve;
- continue slowly introducing coolant into the expansion tank until the MIN reference mark is reached;
- start up the engine, let it idle for 2-3 minuti, then activate the accelerator pedal every 30 seconds until 3/4 of the maximum power is reached at the same time introducing coolant into the expansion tank not exceeding the MIN level; this operation should be carried out until the radiator cooling fan comes on for the first time;
- keep the engine idling for at least 5 minutes;
- switch off the engine;
- top up, if necessary,, until a midway point is reached between the MIN and MAX levels on the expansion tank; this operation should be carried out with the temperature of the coolant below 25 °C.

NOTE *If the coolant boils during the filling operation, the filling should be halted; check that the bleeding operations have been carried out correctly and, if this is the case, search for the defective component which has caused the problem; notify the Customer of the need to replace the following component, then repeat the test when the fault has been repaired.*

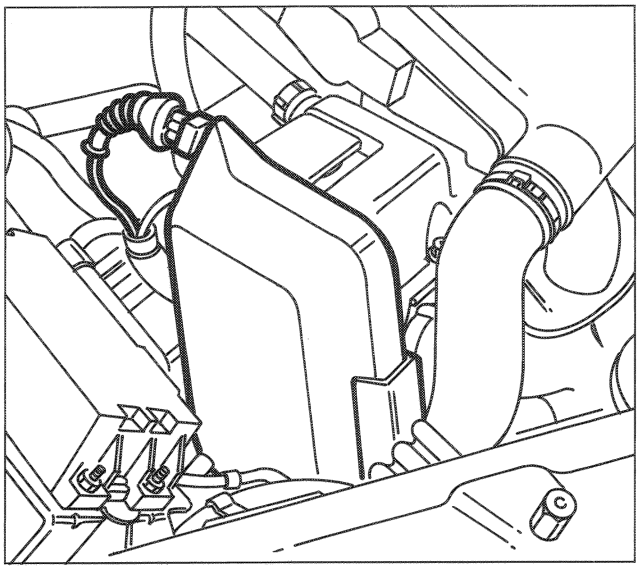
Punto 1698 TD (versions with air conditioning)

Quantity of coolant = 7.28 litres

- Make sure that the cooling system is completely empty;
- open the bleed valves on the radiator and the heater inlet hose;
- fill the system by slowly introducing coolant (50% Paraflu and 50% distilled water) until fluid comes out of the radiator bleed valve;
- close the bleed valve locatedon the radiator;
- continue filling with coolant until it comes out of the bleed valve on the heater hose;
- close the bleed valve on the heater hose;

- continue filling until the MIN level on the expansion tank is reached;
- start up the engine, let it idle for 2-3 minutes, then activate the accelerator pedal every 30 seconds until 3/4 of the maximum power is reached at the same time introducing coolant into the expansion tank, not exceeding the MIN level; this operation should be carried out until the radiator cooling fan comes on for the first time;
- keep the engine idling for at least 5 minutes;
- switch off the engine;
- top up, if necessary, until a midway point between the MIN and MAX levels on the expansion tank is reached; this operation should be carried out with the temperature of the coolant below 25 °C.

NOTE *If the coolant boils during the filling operation, the filling should be halted; check that the bleeding operations have been carried out correctly and, if this is the case, search for the defective component which has caused the problem; notify the Customer of the need to replace the following component, then repeat the test when the fault has been repaired.*



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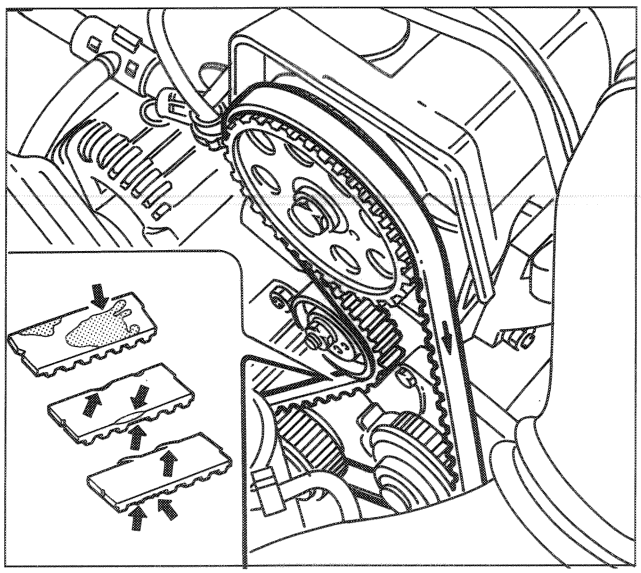

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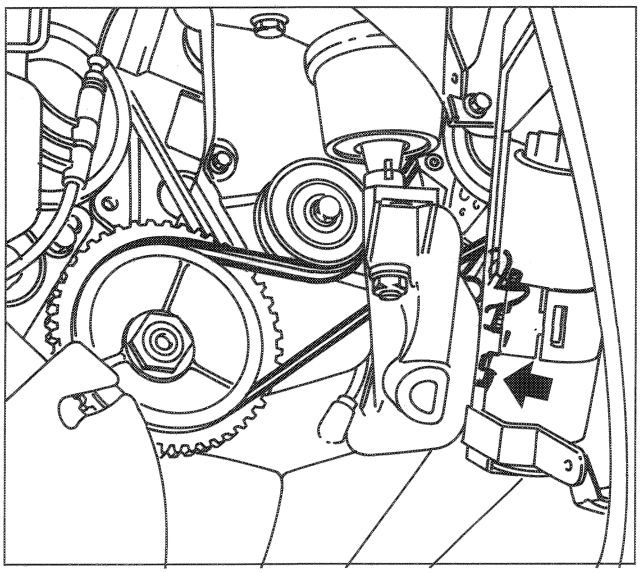


P3M27QA03

21 CHECKING CONDITION OF TIMING BELT

Check the condition of the belt making sure, in particular, that there are no cracks, cuts, surface wear on the material (which would appear smooth and shiny), dry or hardened sections with a consequent loss of grip.
Also check that the belt has not come into contact with oil or solvents which could adversely affect the elasticity of the rubber or the adhesion.
If one of the above defects is present, inform the Customer of the need to replace the belt. Also, if the belt is fouled by oil or other fluid, check for leaks and eliminate them once authorization has been obtained from the Customer.

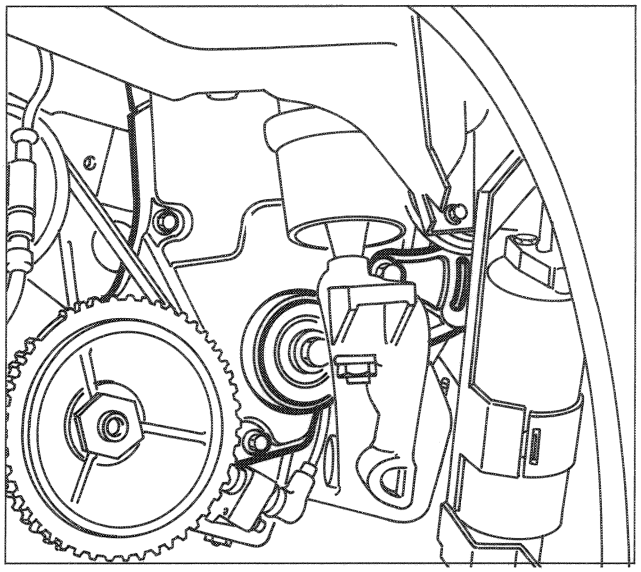
Punto 1108 - 1242 SPI - 1242 MPI

Position the vehicle on a lift, disconnect the negative battery lead, remove the right front wheel and the wheel arch liner. Remove the protective cover for the timing drive belt.

Insert a spanner in the nut fixing the flywheel damper, rotate the crankshaft and check the condition of the timing drive belt along the entire perimeter.

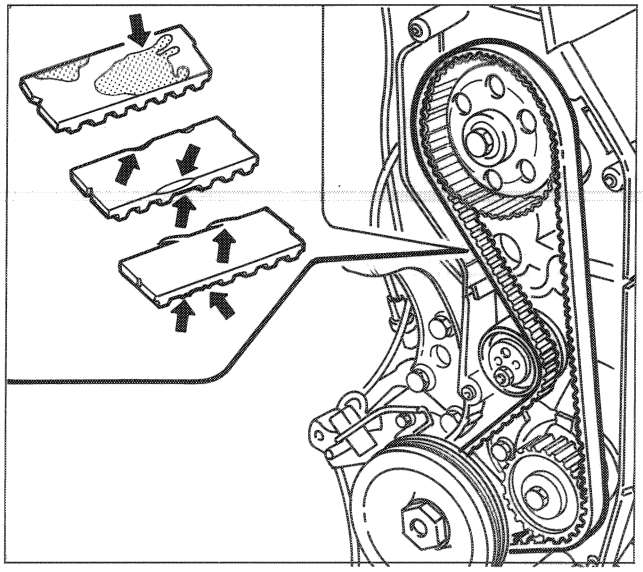
Punto 1372 Turbo - 1581

Position the vehicle on a lift, disconnect negative battery lead, remove the right front wheel and the wheel arch liner. Loosen the tension of the air conditioning compressor drive belt, acting on the tensioner micrometeric screw; remove the belt from the damper flywheel and leave it fitted on the compressor pulley.



P3M28QA01

Remove the air conditioning compressor drive belt tensioning device, complete with moving pulley. Undo the lower bolts fixing the protective cover for the timing drive belt and the two upper bolts, then remove the actual cover.

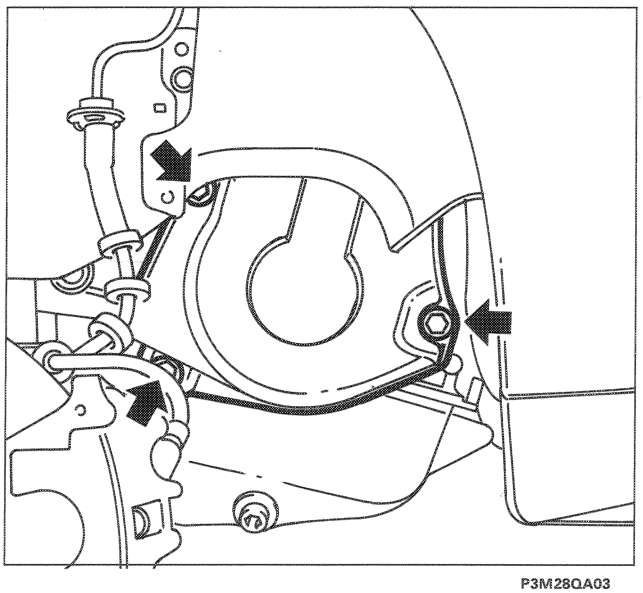


P3M28QA02

Insert a spanner in the nut fixing the flywheel damper, rotate the crankshaft and check the condition of the timing drive belt along the entire perimeter.

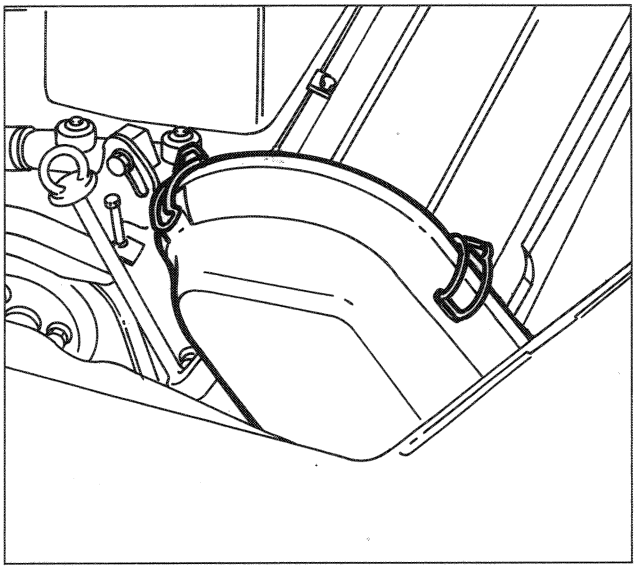
When refitting, suitably reverse the order of the operations described for the removal and re-tension the air conditioning compressor drive belt to the recommended value.

Punto 1698 TD



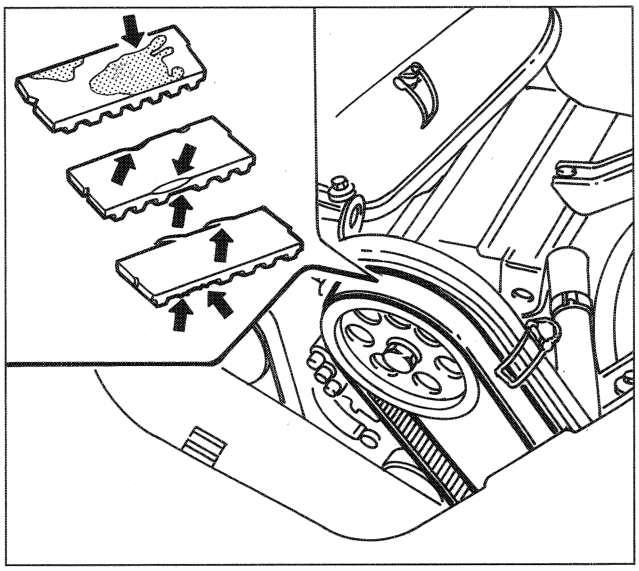
P3M28QA03

Position the vehicle on a lift, disconnect the negative battery lead, remove the right front wheel and the wheel arch liner. Remove the plastic protection for the flywheel damper shown in the diagram.



P3M29QA01

Remove the protective cover for the timing drive belt opening the retaining springs.



P3M29QA02

Insert a spanner in the nut fixing the damper flywheel, rotate the crankshaft and check the condition of the timing drive belt along the entire perimeter.

22 23 REPLACING SPARK PLUGS AND CHECKING LEADS

The following spark plugs are recommended:

	Spark plug type
1108 1242 SPI 1242 MPI	Fiat 9GYSSR Champion RC9YCC M. Marelli L7LCR
1242 16v	Fiat RA4HCC Champion RA4HCC
1581	Fiat 7GYSSR Champion RC7YCC
1372 Turbo	Fiat 7GBYSR Champion RC7BYC

The cleanliness and condition of the spark plugs are vital for the efficiency of the engine and in order to contain pollutant emissions.

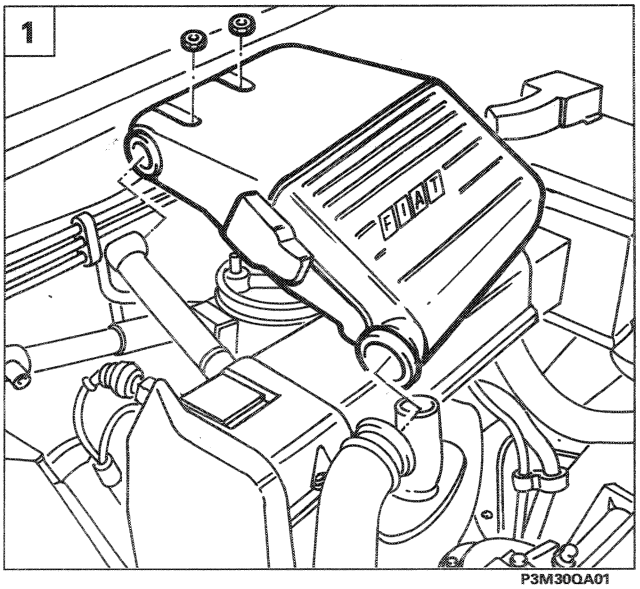
Only use recommended type spark plugs: if the heat rating is unsuitable, problems can occur.

Also check the condition of the supply cables, making sure there are not cuts, cracks or restrictions along the entire length.

NOTE *Carry out the following operations with the engine cold.*

Punto 1108 - 1242 SPI - 1242 MPI

1. Remove the complete air filter acting on the nuts shown in the diagram and disconnecting the pipes connected to it.



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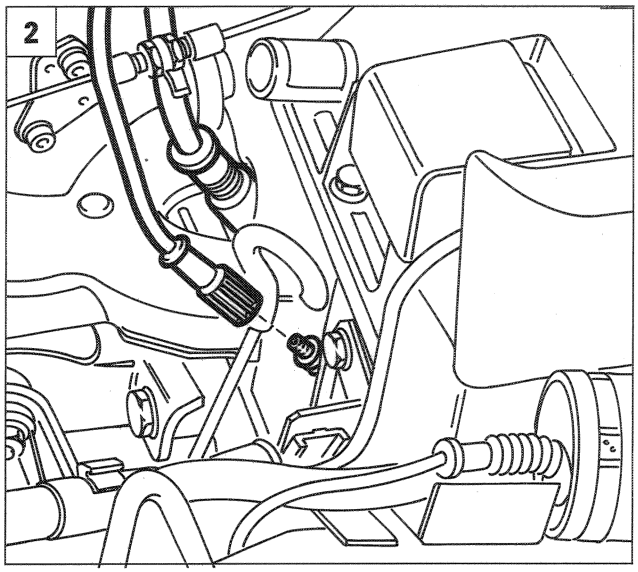

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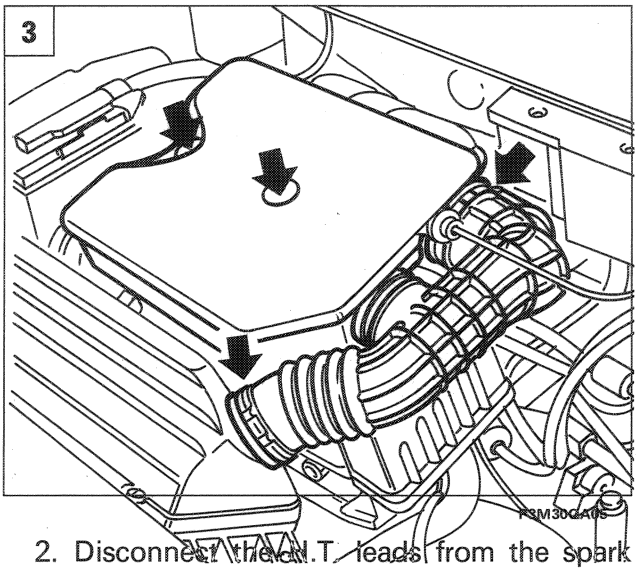
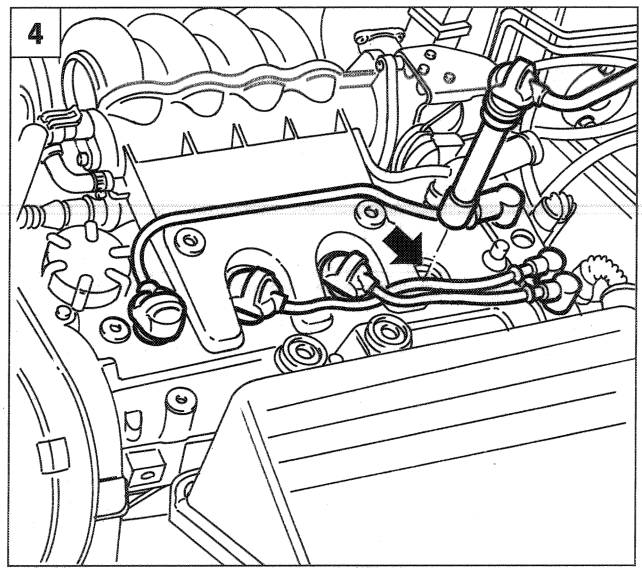


P3M30QA05

2. Disconnect the H.T. leads from the spark plugs taking great care when extracting the boots and remove and replace the spark plugs using a special spanner.



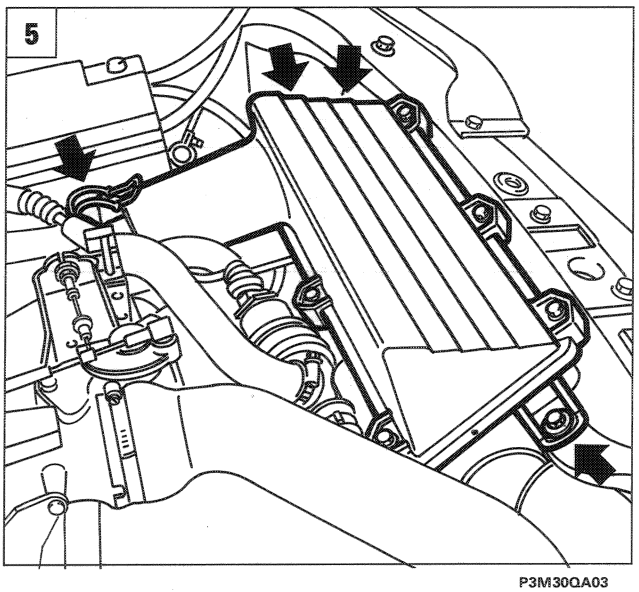
P3M30QA06

Punto 1242 16v

3-4. Remove the resonator complete with air inlet pipe. Disconnect the H.T. leads from the spark plugs taking great care when extracting the boots and remove and replace the spark plugs using a special spanner.

Punto 1372 Turbo - 1581

5-6. Remove the complete air filter acting on the fixing bolts. Disconnect the H.T. leads from the spark plugs taking great care when extracting the boots and remove the spark plugs using a special spanner.



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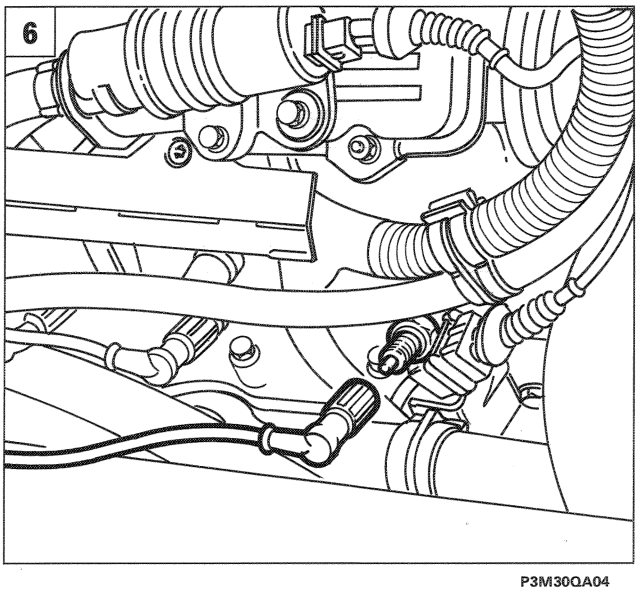


P3M30QA04

24 CHECKING INJECTION/IGNITION SYSTEM (using autodiagnostic socket)

A complete electronic fault diagnosis of the injection/ignition system can be carried out by connecting the Fiat/Lancia Tester or SDC or Examiner diagnostic stations for the diagnostic socket.

The system is also equipped with an autodiagnostic function which recognizes, memorizes and signals any failure.

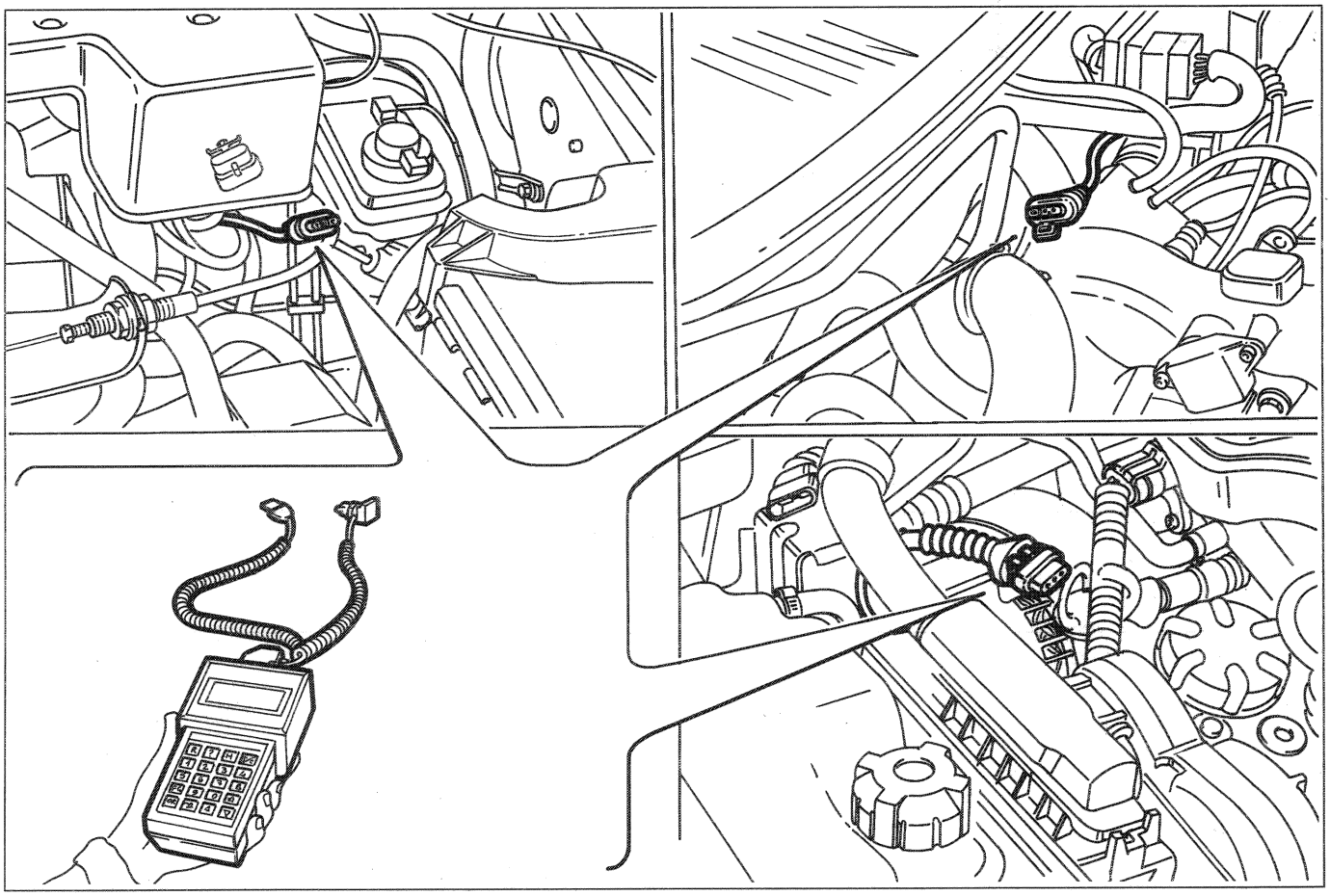
If a fault is detected and confirmed it is permanently memorized as well as the system sensor being excluded until proper operation is restored.

The detection of a fault which is confirmed usually involves the warning light in the dashboard coming on: it goes out when the fault disappears.

It is possible to carry out a complete fault diagnosis of the system, which consists of three stages, using the Fiat/Lancia Tester or SDC or Examiner:

1. display of a series of functional parameters,
2. display of the errors or their cancellation;
3. activation of certain actuators (active diagnosis).

Unlike the Fiat/Lancia Tester, the SDC or Examiner diagnostic stations use a "touch screen" type video which is easy to use and allows several parameters to be displayed simultaneously; a single CD ROM, which can be periodically updated, makes it possible to carry out the fault diagnosis for electronic systems on all Group models. In addition, if they are connected to a printer they can provide a certificate of the diagnostis results. As well as the diagnostic functions these stations have powerful integrated measuring instruments.



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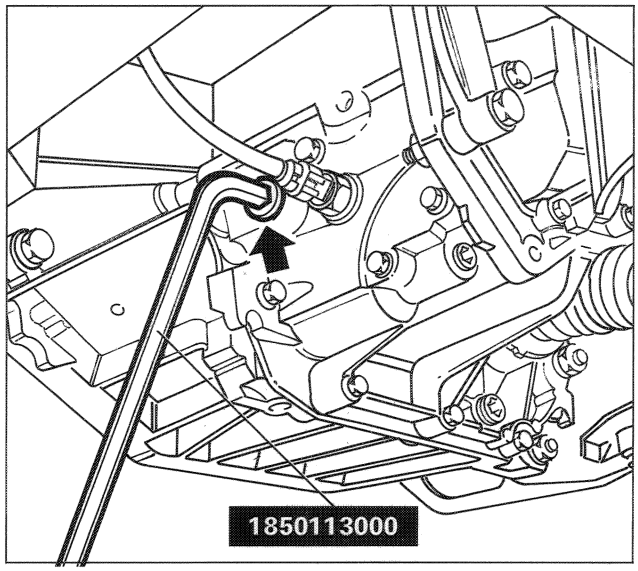
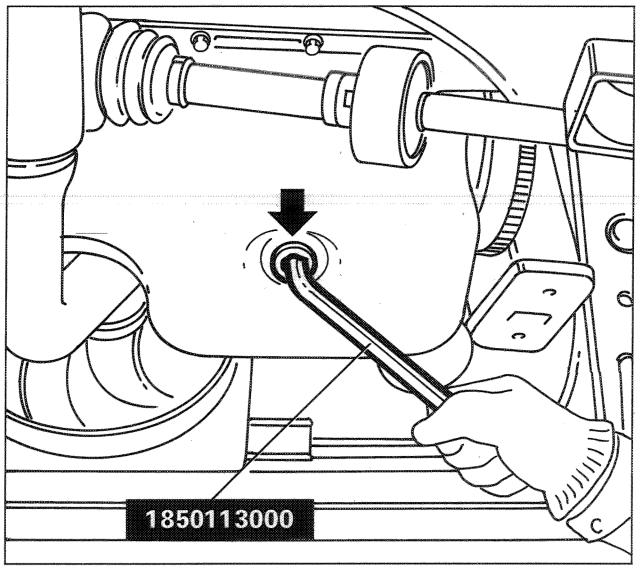


P3M32QA01

25 CHECKING GEARBOX/DIFFERENTIAL OIL LEVEL

Position the vehicle on a lift. Undo the filler plug using spanner 1850113000 and check that the level of the oil is close to the lower edge of the opening.

If necessary, top up so that the level is correct.
Retighten the filler plug, tightening it to a torque of 2.5 daNm (for the 1108 - 1242 - 1581) and to a torque of 4.6 daNm (for the 1372 Turbo and 1698 TD).



P3M32QA02

26 27 CHANGING ENGINE OIL AND FILTER

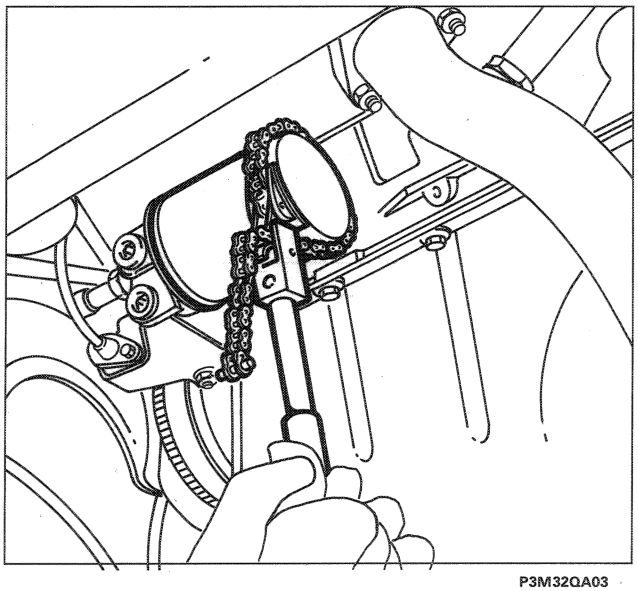
- With the engine hot, remove the oil filler plug;
- remove the dipstick.

With engine warm, act very carefully inside the engine compartment as there is a danger of being scalded. Remember that, with the engine hot, the fan may start moving with the risk of injury.

- Raise the vehicle and undo the drain plug using spanner 1850113000 and leave the oil to drain fully into a suitable container.

During the removal of the drain plug take great care as the oil could be very hot.

- Working from underneath the vehicle using a special tool, release the oil filter and remove it;
- clean the drain plug and tighten it, with the seal, to the recommended torque;
- lubricate the new filter seal with oil and tighten it fully by hand.
- lower the vehicle and introduce the correct amount of recommended oil;
- check that the oil level is correct using the dipstick;
- reposition the oil filler plug, let the engine idle for around 2 minutes, switch off the engine and wait for several minutes, then check the level of the oil and make sure there are no leaks.



P3M32QA03

NOTE

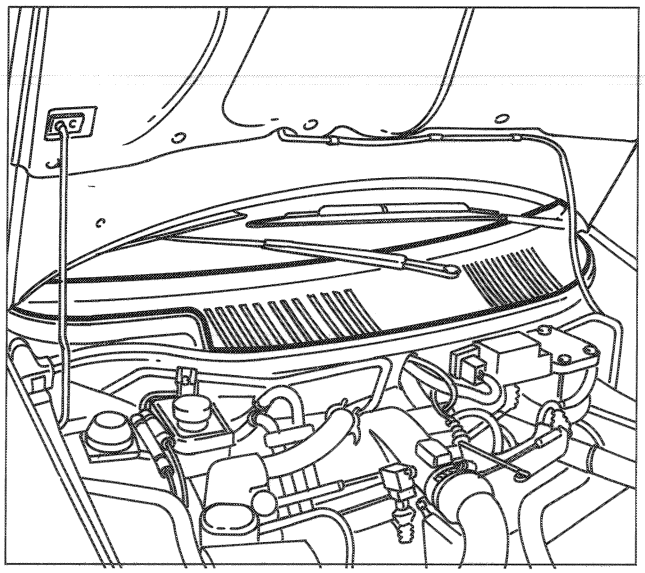
If the vehicle is mainly used in one of the following particularly harsh conditions:

- towing a trailer or caravan
- dusty roads
- short, repeated journies (less than 7-8 km) at sub-zero temperatures
- engine often idling or driving long distances at low speeds

notify the Customer of the need to change the oil more often than indicated in the Planned Maintenance Programme.

The engine oil used and the oil filter replaced contain substances which are dangerous to the environment. Used oil and filter should be deposted in special containers and then disposed of in accordance with the laws in force.

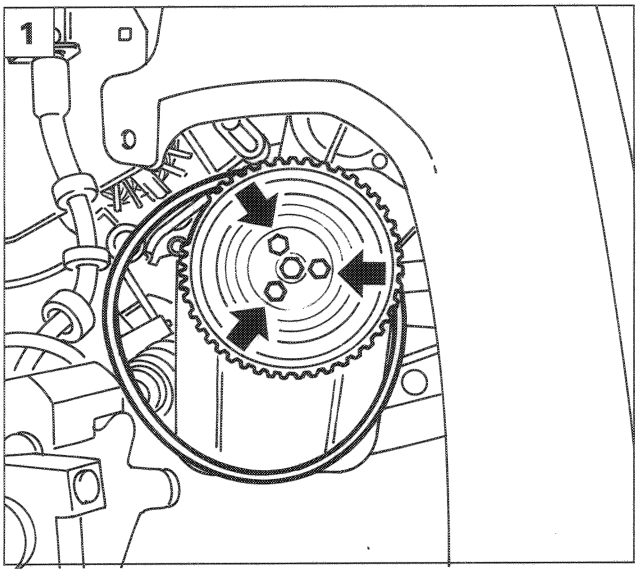
26 REPLACING THE POLLEN FILTER



P3M33QA01

To gain access to the pollen filter both of the windscreen wiper arms must be removed and the cover under the front windscreen. The filter is located on the right hand side.

NOTE *Failure to replace the filter can considerably reduce the efficiency of the climate control system*
If the vehicle is often used in dusty or strongly polluted areas, advise the Customer of the need to replace the filter element more often; it should especially be replaced if a decrease in the flow rate of the air introduced into the passenger compartment is noticed.



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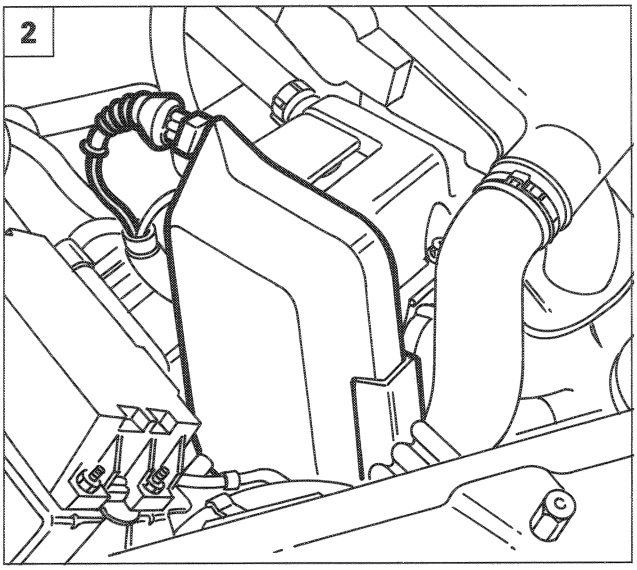

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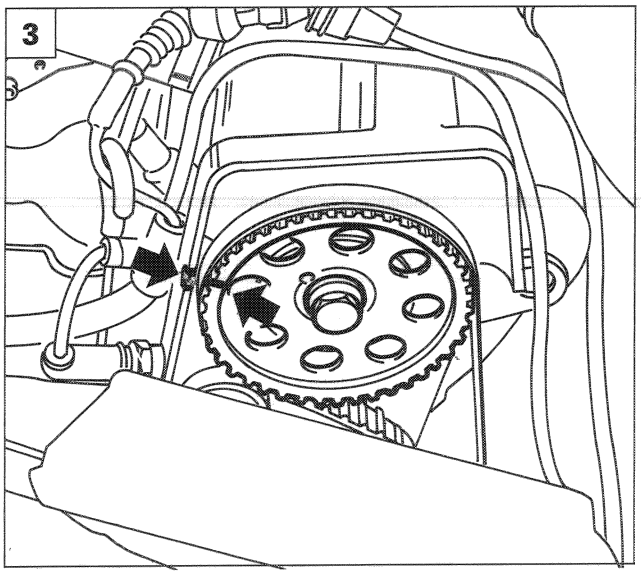

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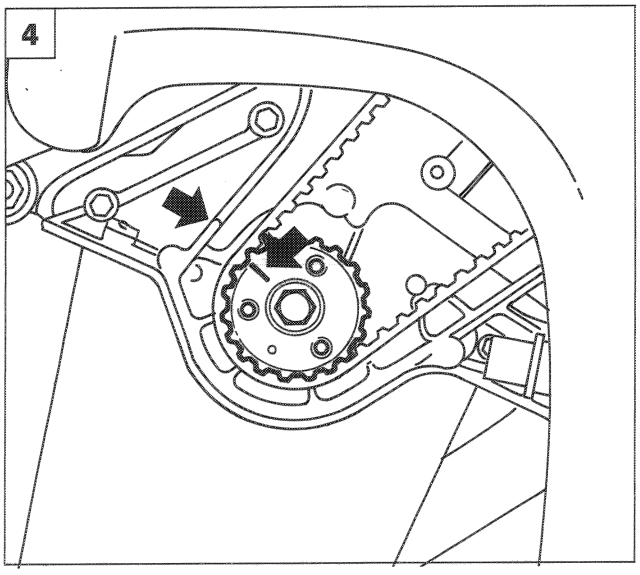


P3M34QA03

29 REPLACING THE TIMING BELT

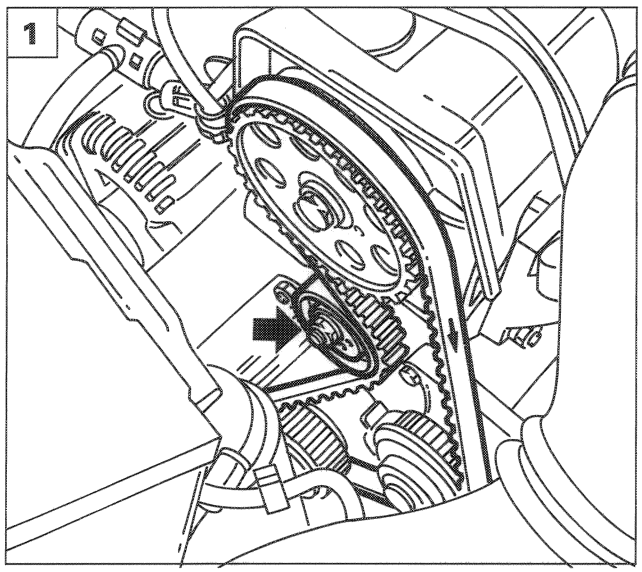
Punto 1108 - 1242 SPI - 1242 MPI

Position the vehicle on a lift, then:
- disconnect the negative battery lead;
- remove the right front wheel;
- remove the right wheel arch liner.

1. Loosen the bolts fixing the alternator to release the tension for the drive belt. Remove the belt from the alternator, remove the damper flywheel acting on the fixing bolts and extract the belt.

2. Remove the timing drive belt cover undoing the upper fixing bolts and the lower bolt. Disconnect the rpm and T.D.C. sensor from the cover, releasing the cable and remove the actual cover.

3-4. Rotate the crankshaft so that the reference mark on the timing driven gear is aligned with the reference on the cylinder head.
In this position, check the alignment of the reference on the crankshaft drive gear with the reference on the crankshaft front cover. Cylinder n° 1 will be at T.D.C. under these circumstances.



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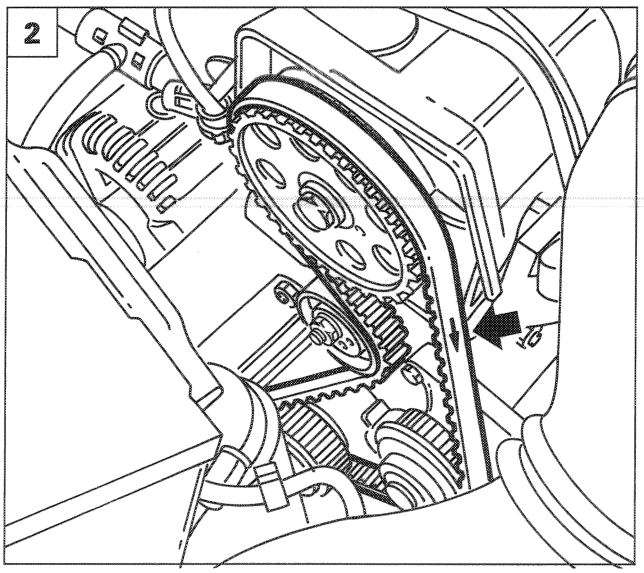
Loosen the nut fixing the tensioner and remove the timing drive belt.



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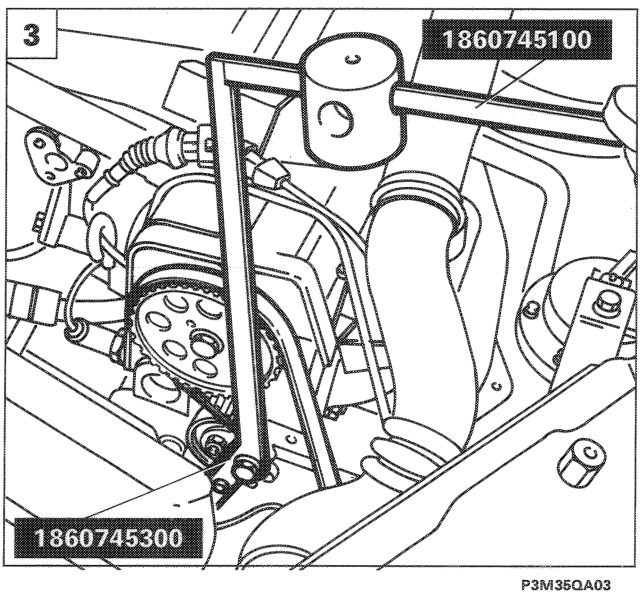
Fitting and tensioning the belt

1. Fit the timing drive belt (checking that the alignments for the removal have been maintained) starting from the crankshaft drive gear and proceeding in an anti-clockwise direction.

The belt should be fitted with the arrows pointing in the direction of rotation of the engine.

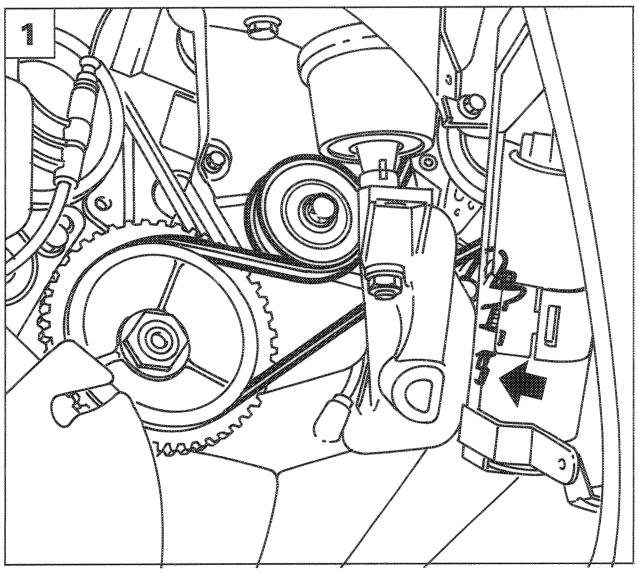


P3M35QA03

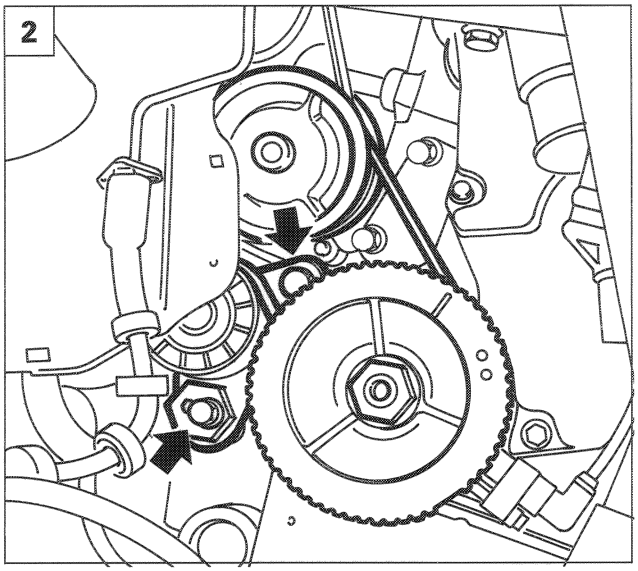
2. Fit part 1860745300 on tool 1860745100, then positionthe weight without the knurled part 65 mm away on the millimetric rod and lock it in place.
   Fit the tool produced in this way on the belt tensioner as shown in the diagram and, acting on the joint, position the millimetric rod on the horizontal plane and lock the joint fixing bolt. Let the belt bed in by rotating the crankshaft through two revolutions in its direction of rotation and lock the belt tensioner by tightening it to the recommended torque.

NOTE *During this last phase the millimetric rod may move away from the horizontal plane; if this is the case the joint must be adjusted again and the operation repeated.*

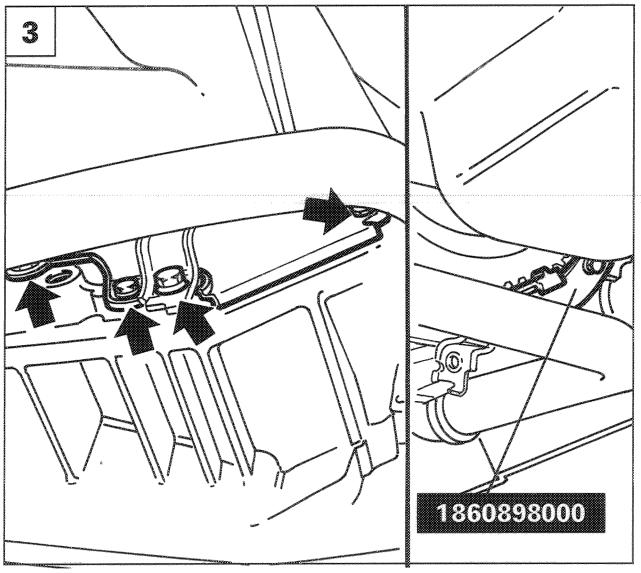
Refit the components removed previously, suitably reversing the order of the operations described for the removal.



P3M36QA01



P3M36QA02



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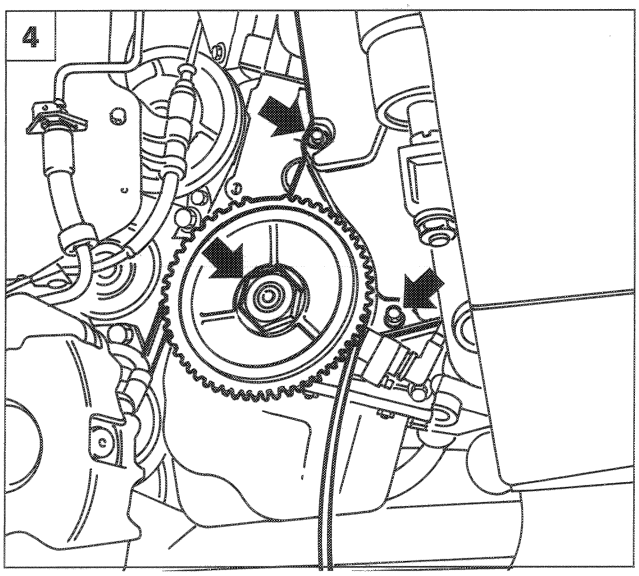


P3M36QA04

Punto 1372 Turbo

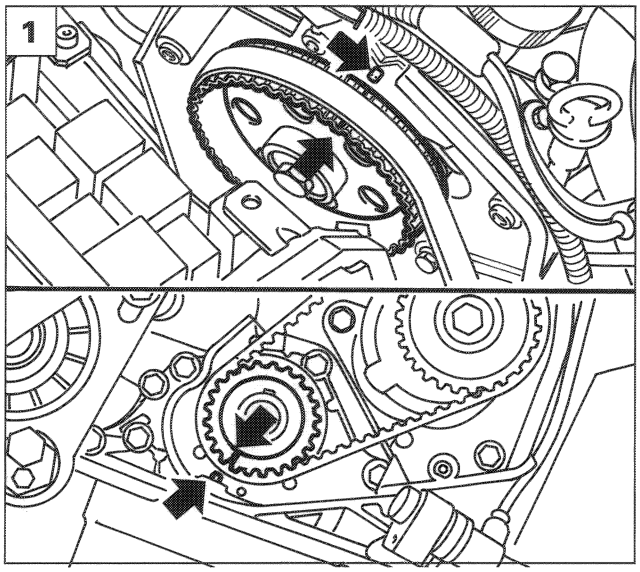
Position the vehicle on a lift, then:
- disconnect the negative battery lead;
- remove the right front wheel;
- remove the right wheel arch liner.

1. Loosen the tension for the air conditioning compressor drive belt, acting on the tensioner micro-metric screw; remove the belt from the damper flywheel and leave it fitted on the compressor pulley. Then remove the tensioning device for the compressor drive belt complete with moving pulley.

2. Loosen the tension for the alternator drive belt acting on the tensioning device, remove the belt from the alternator and leave it fitted on the damper flywheel.

3. Remove the shield on the bell housing and place flywheel lock 1860898000 in position.

4. Undo the nut fixing the damper flywheel, then remove the damper flywheel and the alternator drive belt. Undo the lower bolts and the two upper bolts fixing the protective cover for the timing drive belt and remove it.



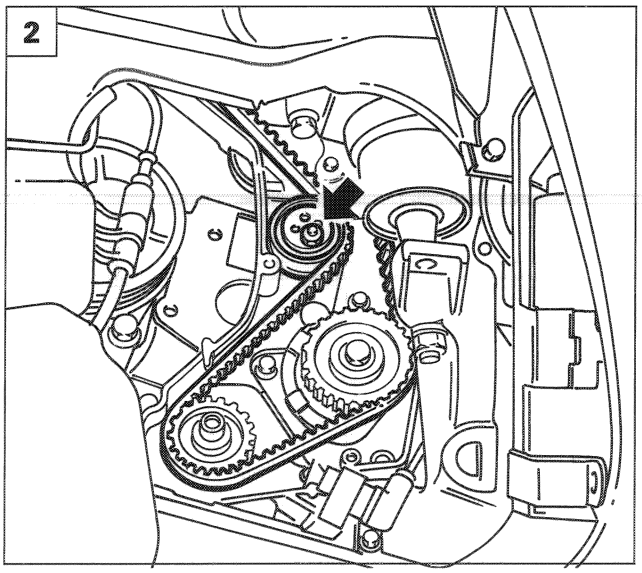
P3M37QA01

1. Remove the flywheel lock, then rotate the crankshaft so that the reference mark for the timing driven gear is aligned with the reference located on the timing belt rear cover.
   In this position, check the alignment of the reference on the crankshaft drive gear with the reference on the crankshaft front cover (vertical position). Under these circumstances cylinder n° 1 is at T.D.C.

2. Loosen the nut fixing the tensioner and remove the timing drive belt.

Fitting and tensioning the belt

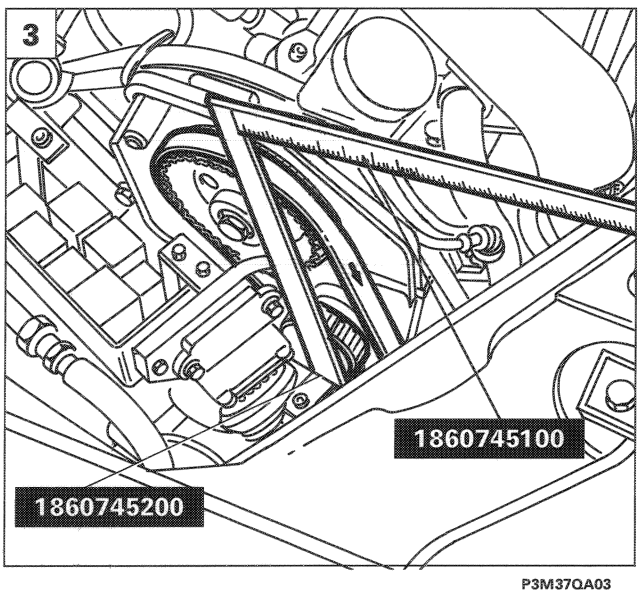
3. Fit the timing belt (checking that the alignments for the removal have been maintained) starting from the crankshaft drive gear and continuing in an anti--clockwise direction.



P3M37QA02

The timing belt should be fitted with the arrows pointing in the direction of rotation of the engine.

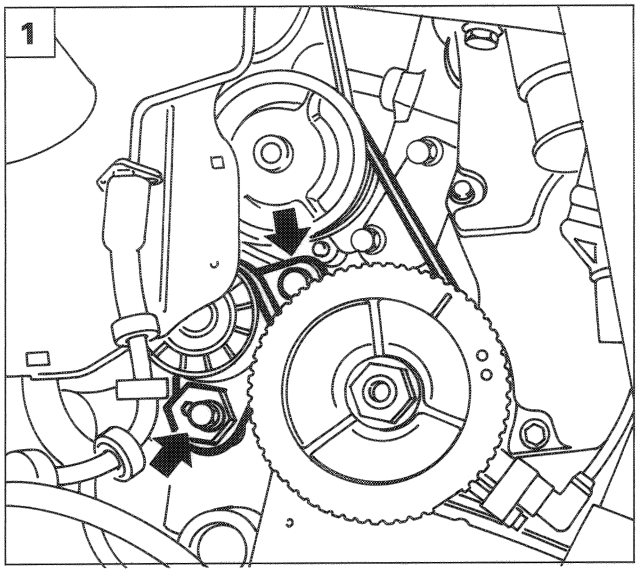
Fit part 186074520 on tool 1860745100. Fit the tool produced in this way on the belt tensioner as illustrated and, acting on the joint, position the millimetric rod on the horizontal plane and lock the joint fixing bolt. Let the belt bed in by rotating the crankshaft through two revolutions in its direction of rotation and lock the belt tensioner by tightening it to the recommended torque.



P3M37QA03

NOTE *During this last phase the millimetric rod may move away from the horizontal plane; if this is the case it is necesary to act once again on the joint and repeat the operation.*

Refit the components removed previously, suitably reversing the order of the operations described for the removal. Tighten the nut fixing the damper flywheel to a torque of 13.7 daNm (with the flywheel lock fitted).



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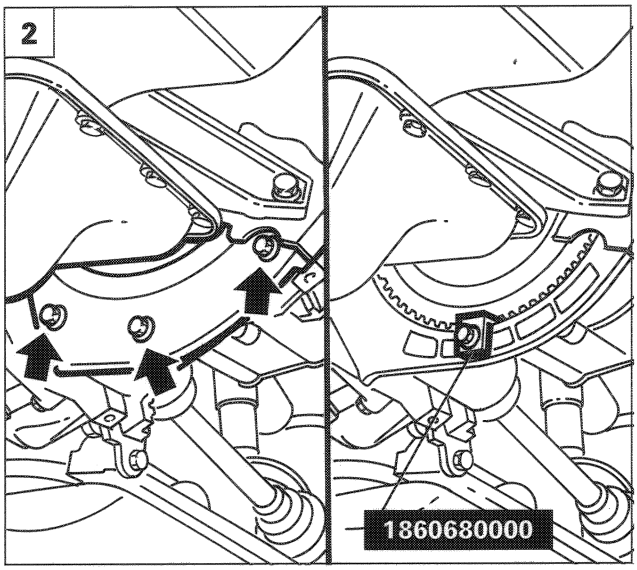

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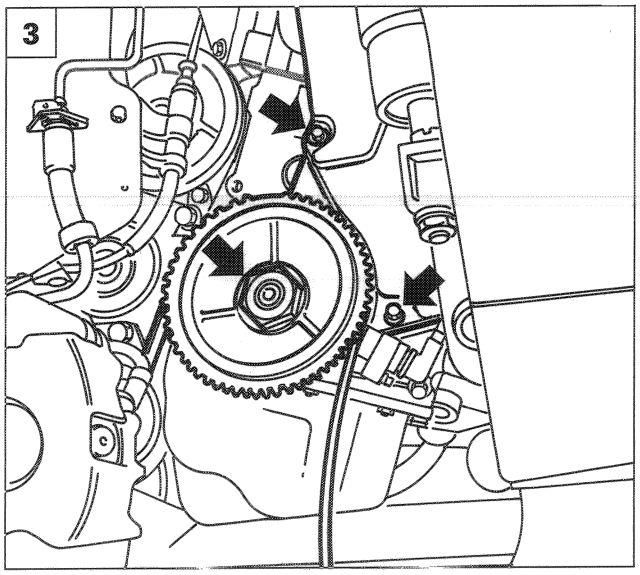
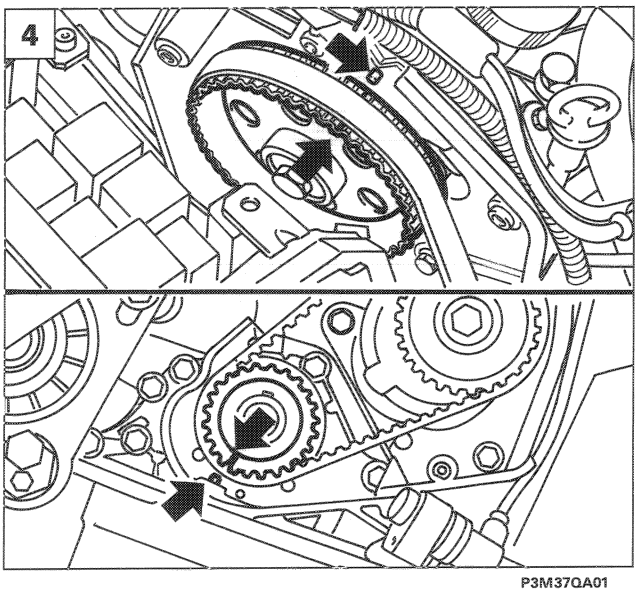


P3M36QA04



P3M37QA01

Punto 1581

Position the vehicle on a lift, then:

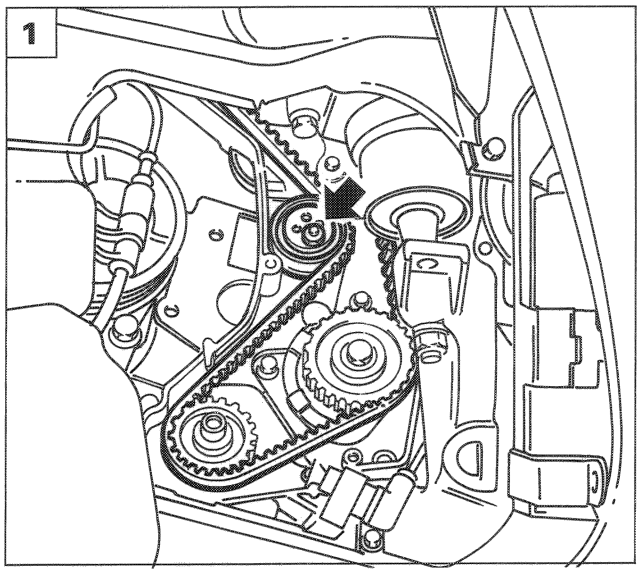
- disconnect the negative battery lead;
- remove the right front wheel;
- remove the right wheel arch liner.

1. Loosen the tension for the alternator drive belt by acting on the tensioning device, remove the belt from the alternator and leave it fitted on the damper flywheel.

2. Remove the shield on the bell housing and place flywheel lock 1860680000 in position.

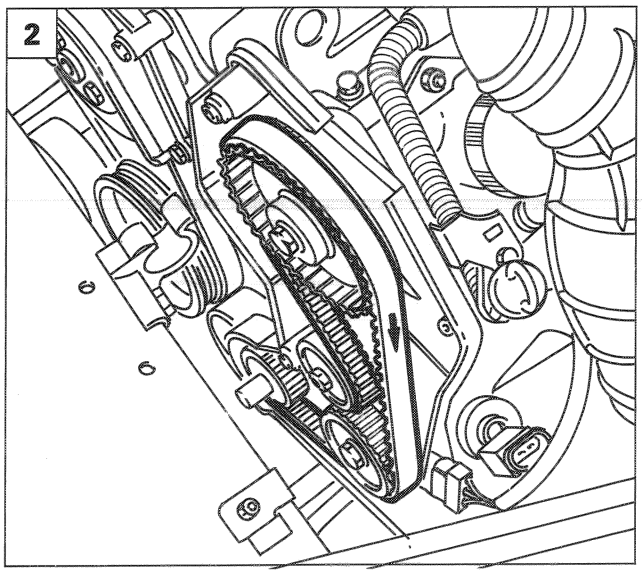
3. Undo the nut fixing the damper flywheel, then remove the actual damper flywheel and the alternator drive belt. Undo the lower bolts and the two upper bolts fixing the protective cover for the timing drive belt and remove it.

4. Remove the flywheel lock, then rotate the crankshaft so that the reference mark for the timing driven gear is aligned with the reference on the rear timing shield.
   In this position, check the alignment of the reference on the crankshaft drive gear with the reference on the crankshaft front cover (vertical position). Under these circumstances cylinder n° 1 is at T.D.C.



P3M37QA02

1. Loosen the nut fixing the tensioner and remove the timing drive belt.

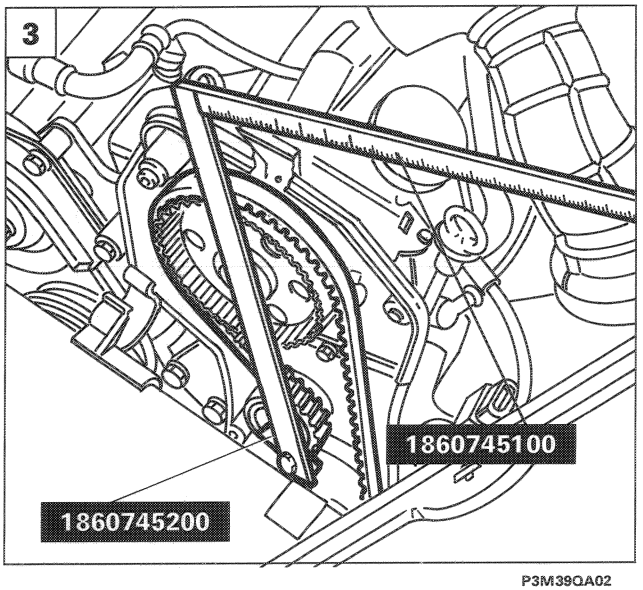


P3M39QA01

Fitting and tensioning the belt

2. Fit the timing drive belt (checking that the alignments for the removal have been maintained), starting from the crankshaft drive gear and continuing in an anti-clockwise direction.

The toothed belt should be fitted with the arrows pointing in the direction of rotation of the engine.

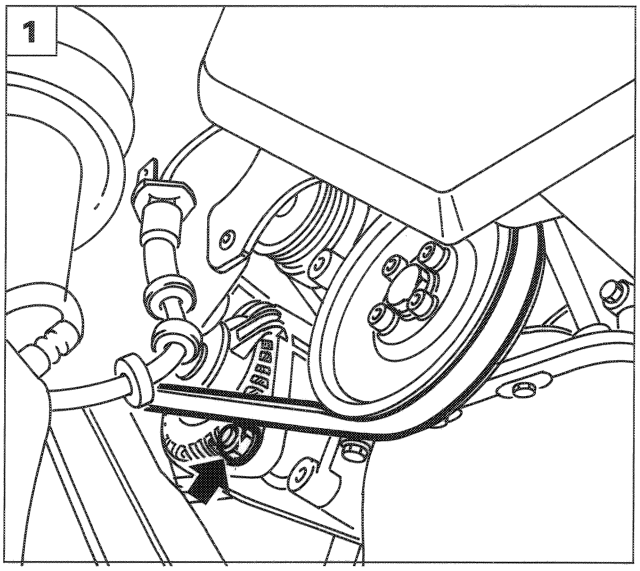


P3M39QA02

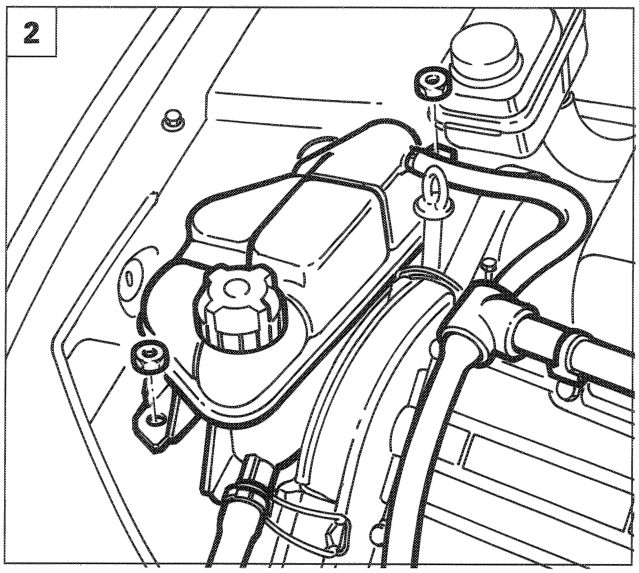
3. Fit part 1860745200 on tool 1860745100.
   Fit the tool produced in this way on the belt tensioner as illustrated and, acting on the joint, position the millimetric rod on the horizontal plane and lock the joint fixing bolt. Let the belt bed in by rotating the crankshaft through two revolutions in its direction of rotation and lock the belt tensioner by tightening it to the recommended torque.

NOTE *During this last phase the millimetric rod may move away from the horizontal plane; if this is the case, it is necssary to act once again on the joint and repeat the operation.*

Refit the components removed previously, suitably reversing the order of the operations described for the removal. Tighten the nut fixing the damper flywheel to a torque of 13.7 daNm (with the flywheel lock fitted).



P3M40QA01



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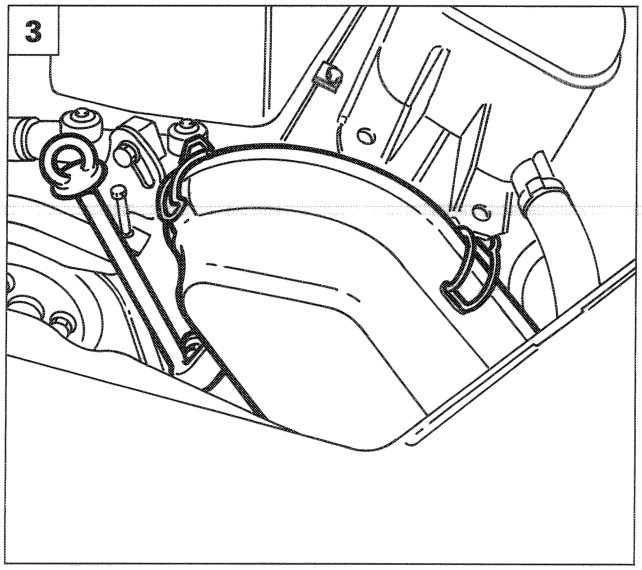

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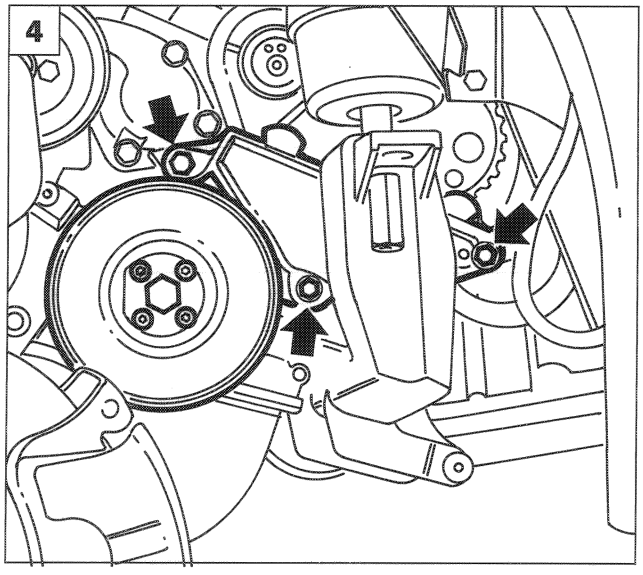


P3M40QA04

Punto 1698 TD

Position the vehicle on a lift, then:

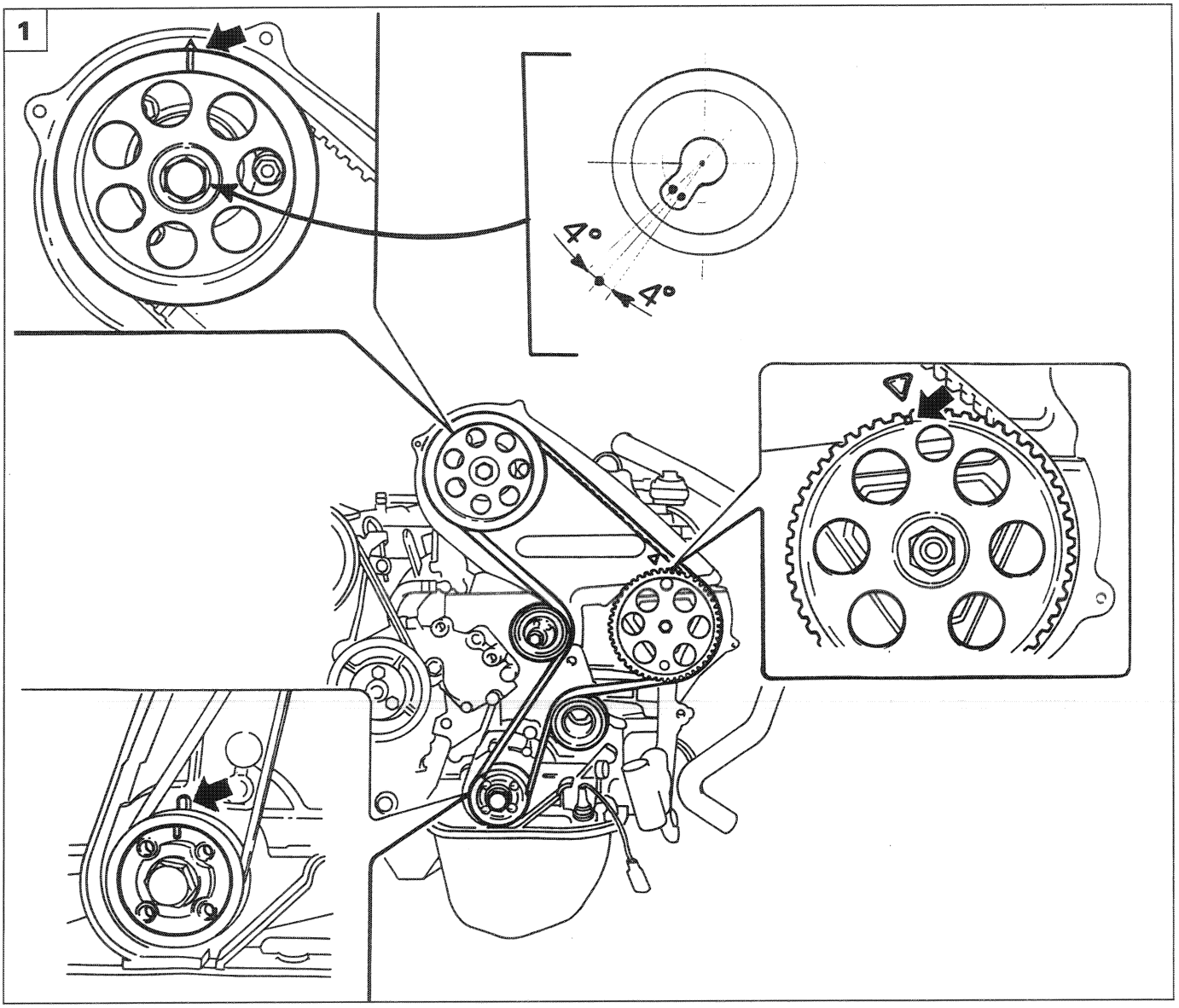
- disconnect the negative battery lead;
- remove the right front wheel;
- remove the right wheel arch liner.

1. Remove the lower protective shield for the alternator drive belt. Loosen the bolts fixing the alternator and remove the drive belt. If it is difficult to gain access tothe rear alternator fixing bolts, move the power assisted steering fluid reservoir aside, releasing it from the bodyshell fixings.

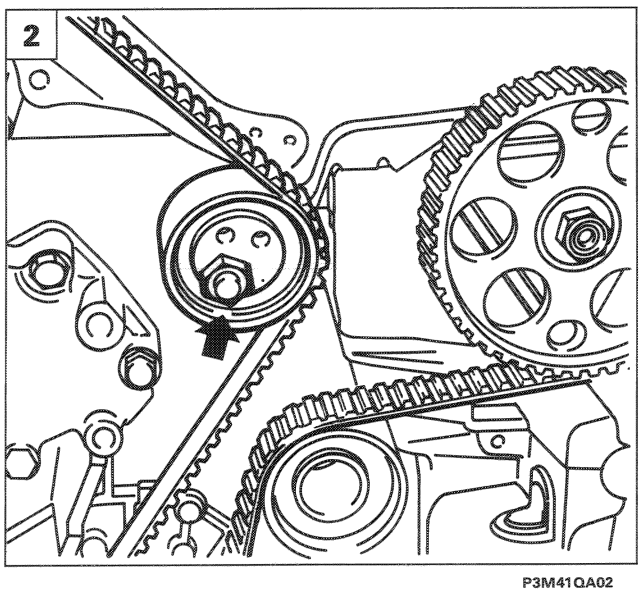
2. Undo the bolts shown in the diagram and move the expansion tank to the side, releasing the bands retaining the pipe located on the tappet cover.

3. Release the springs fixing the upper timing shield and remove it. Undo the bolt fixing the engine oil dip stick.

4. Remove the damper flywheel and lower timing shield.



P3M41QA01

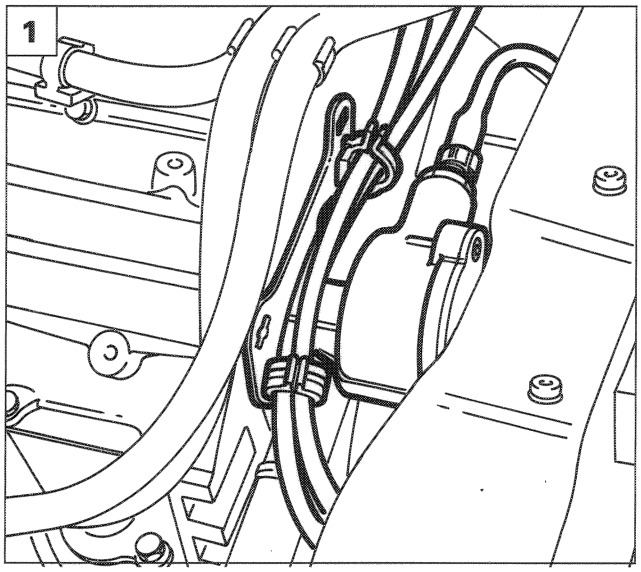


P3M41QA02

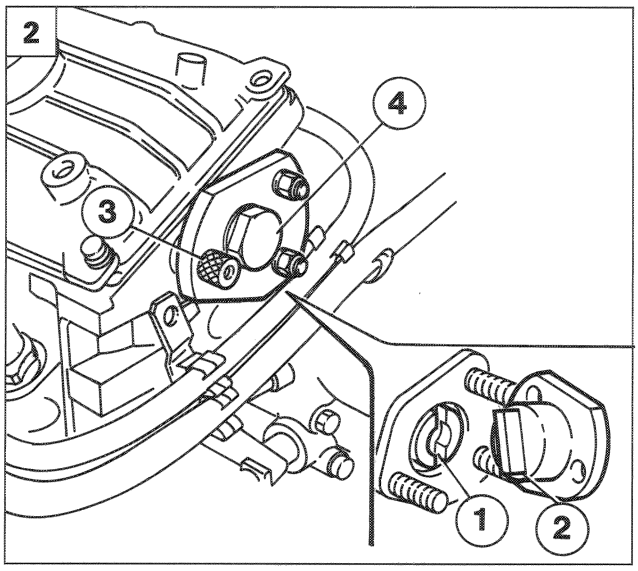
1. Rotate the crankshaft in its normal direction of rotation until the references on the crankshaft pulley and the injection pump drive pulley coincide with the fixed references on the engine. Cylinder no. 1 is at T.D.c. and the camshaft is timed for the explosion stroke in cylinder no. 1.

NOTE *The opening for fixing the camshaft drive pulley has a slot so that in this condition the reference does not coincide exactly with the fixed reference on the cover.*

2. Loosen the belt tensioner nut, then remove the timing drive belt.



P3M42QA01



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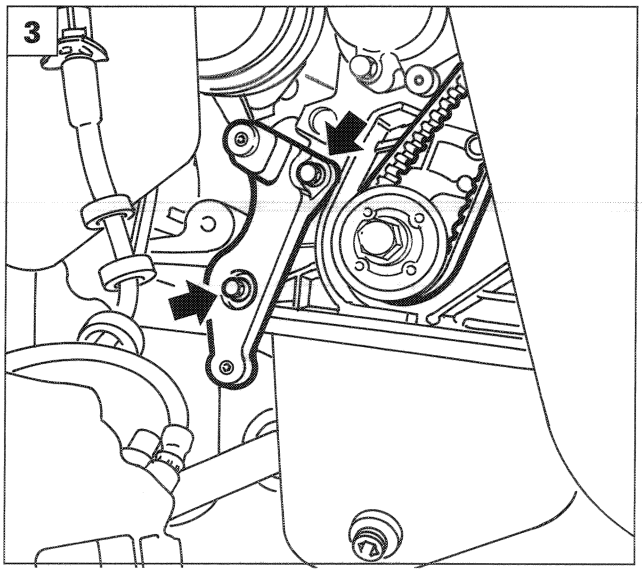

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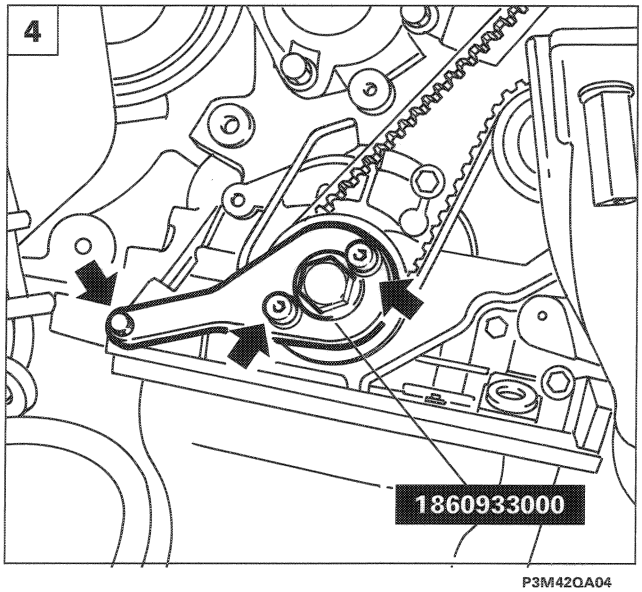


P3M42QA04

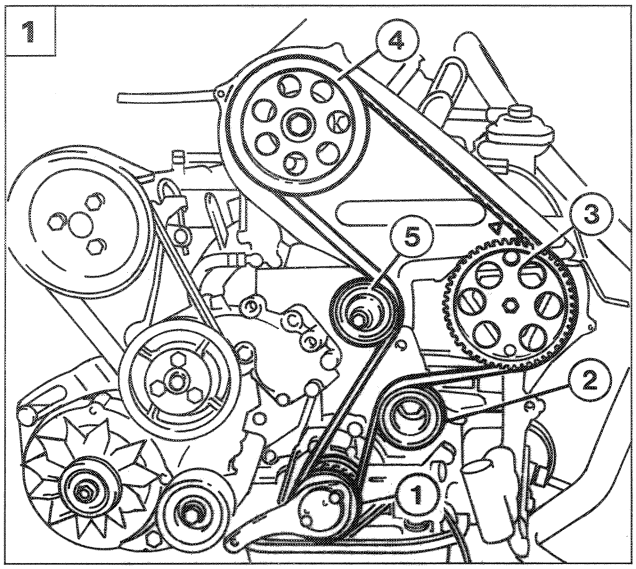
1. Remove the air inlet pipe, release the cables secured by the retaining bands, then undo the nuts fixing the brake servo vacuum pump to the cylinder head and remove it.

2. Position tool 1860932000 for timing the camshaft, matching the camshaft splining (1) with the projection (2) on the tool.
Fix the tool to the cylinder head positioning the centering dowel (3) as illustrated in the diagram. The dowel should be perfectly centered on the tool; if it is not, use a spanner (4) to make extremely small movements to centre the dowel on the tool.

3. Remove the part shown in the diagram, to allow the subsequent positioning of tool 1860933000 to determine T.D.C..
Only fit the timing drive belt on the crankshaft drive gear.

4. Position tool 1860933000 for accurately determining T.D.c. for cylinder n° 1. The tool should be perfectly fixed to the crankshaft drive gear using two bolts and to the crankshaft front cover through another bolt (by the bolt removed previously).
Then loosen the camshaft drive pulley fixing bolt using tools 1860831000 and 1860848000.

1



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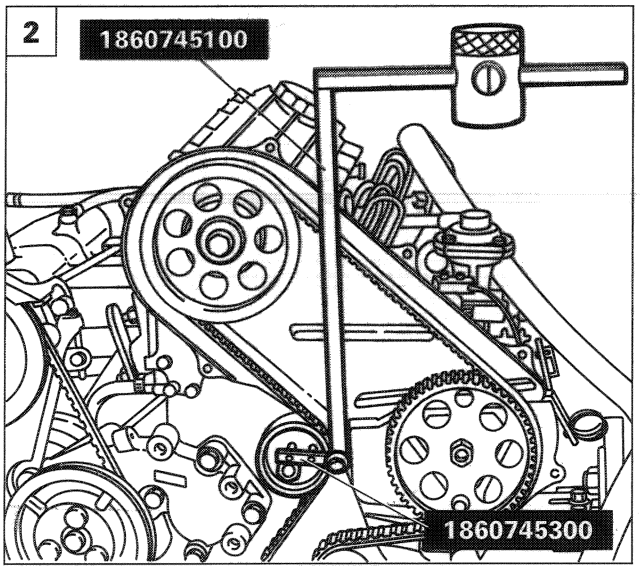
2



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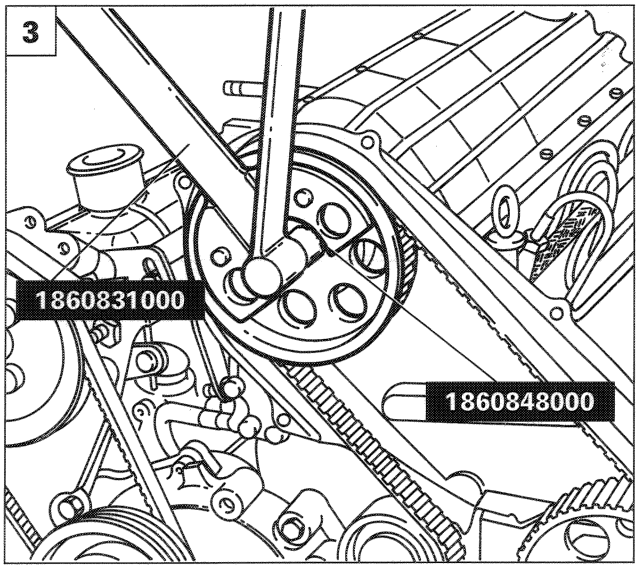
3



P3M43QA03

Fitting and tensioning timing drive belt

1. Complete the fitting of the timing belt observing the following order:
   1 Crankshaft gear;
   2 fixed pulley;
   3 injection pump pulley;
   4 timing pulley;
   5 belt tensioner.

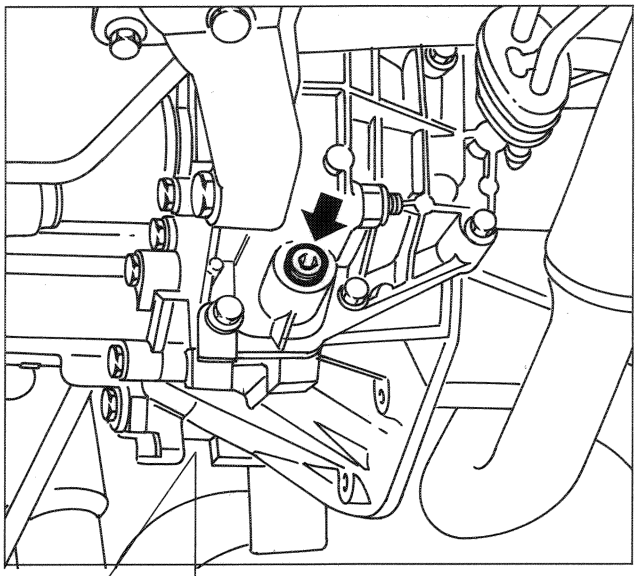
Check that the reference for the injection pump corresponds with the fixed reference on the rear cover.

2. Fit component 1860745300 on tool 1860745100, the position the weight with the knurled part 60 mm away on the millimectric rod and lock it.
   Fit the tool produced in this way on the belt tensioner as illustrated in the diagram and, acting on the join, position the millimetric rod horizontally and lock the fixing bolt on the join.

3. Tighten the bolt fixing the camshaft drive pulley to the recommended torque. Remove the tools positioned previously for measuring the timing and T.D.C.
   Let the belt bed in by rotating the crankshaft through two revolutions in its direction of rotation and tighten the nut fixing the belt tensioner to torque, then remove the tools used for tensioning.

NOTE *Whilst the belt is bedding in, the millimetric rod may move away from the horizontal position; if this is the case, the join must be adjusted again and the operation repeated.*

Refit the components previously removed reversing the procedure described for the removal.



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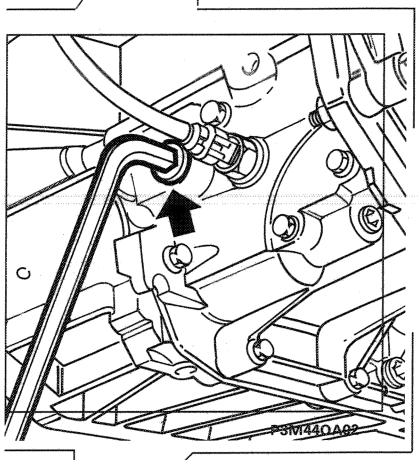

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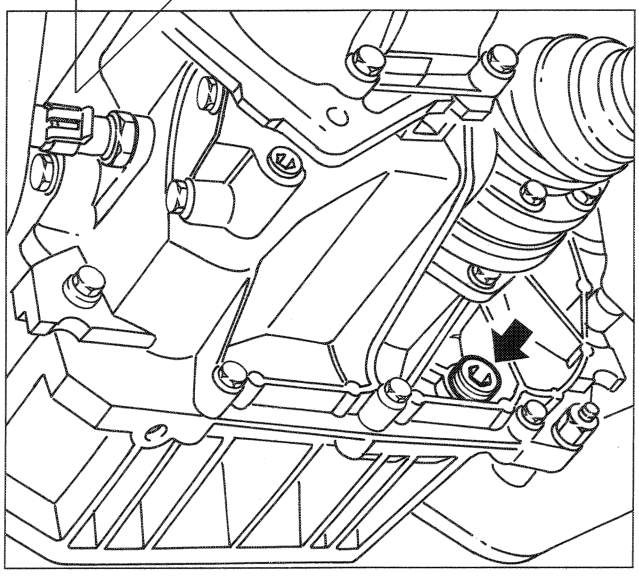


P3M44QA03

30 CHANGING MANUAL GEARBOX OIL

Position the vehicle on a lift, then undo the filler plug and the drain plug and leave the oil to drain completely.

Clean the drain plug and retighten it to a torque of 1.8 daNm (for the 1108 - 1242 - 1581 versions) and to a torque of 4.6 daNm (for the 1372 Turbo - 1698 TD versions).

Introduce the appropriate amount of recommended oil as shown in the table.

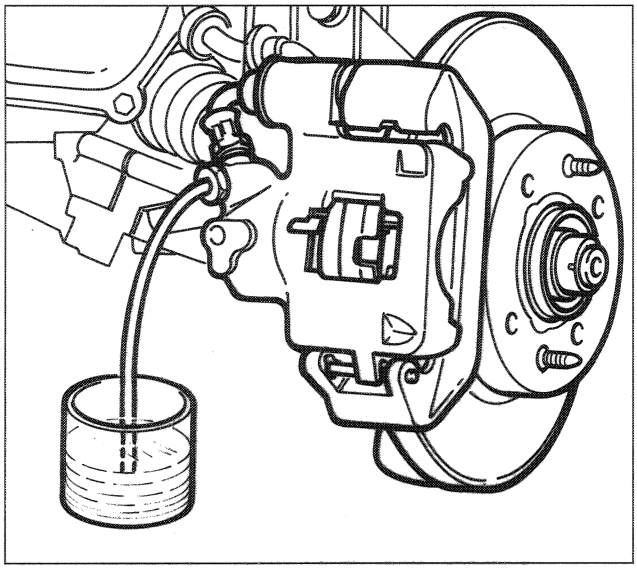
Oil: Tutela ZC 75 SYNTH

	Quantity	
	litres	kg
1108 1242 SPI 1242 MPI 1242 16v	1,65 (1,9)*	1,5 (1,7)*
1372 Turbo 1698 TD	1,98	1,8

* For the 1108 6 speed version

Check that the level is around the lower edge of the opening, then clean the filler plug and retighten it to a torque of 2.5 daNm (for the 1108 - 1242 - 1581 versions) and to a torque of 4.6 daNm (for the 1372 Turbo - 1698 TD versions).

If it is excessively difficult to undo the filler and drain plugs, use an extension for tool 1850113000 (for the 1372 Turbo - 1698 TD versions). Percussion tools must be avoided, under all circumstances, as the vibrations could damage the seat belt pre-tensioners.



P3M45QA01

31 CHANGING BRAKE FLUID

The brake fluid is hygroscopic, i.e. it absorbs humidity. To prevent problems with braking, the brake fluid should be changed every two years, irrespective of the mileage.

- Raise the vehicle and, if necessary, remove the wheels;
- connect a flexible pipe to the bleed screws on the brake calipers (for the rear drum brakes to the bleed screws on the cylinders), loosen them and, acting on the pedal, drain the fluid into a suitable container.

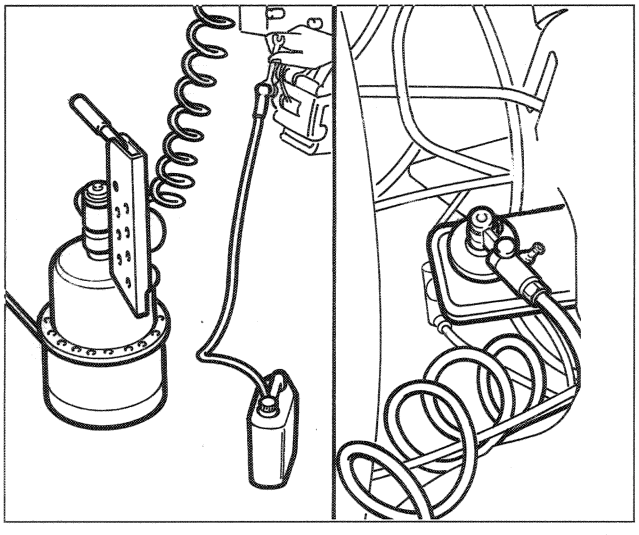
- remove the plug from the brake fluid resevoir and (at the same time as draining the oil fluid) introduce the recommeded fluid into the system. Continue introducing new fluid until it starts coming out of the bleed screws, then tighten them.

Avoid the brake fluid, which is extremely corrosive, coming into contact with the paintwork. If this does happen, wash immediately with water.

The symbol ⬡, present on the container, identifies synthetic types of brake fluid, distinguishing them from mineral types. The use of mineral type fluids irreparably damages the rubber seals in the braking system.

- Bleed the system kkeping the flexible pipe connected to the bleed screw and the opposite end immersed in a transparent container contining the same fluid as the circuit.
- loosen the bleed screw and simultaneously press the brake pedal letting it return slowly; repeat the operation until all air bubbles have escaped;
- with the pedal fully depressed, tighten the bleed screw and remove the pipe. Carry out this operation separately for each wheel starting at the rear (the furthest from the brake fluid reservoir).

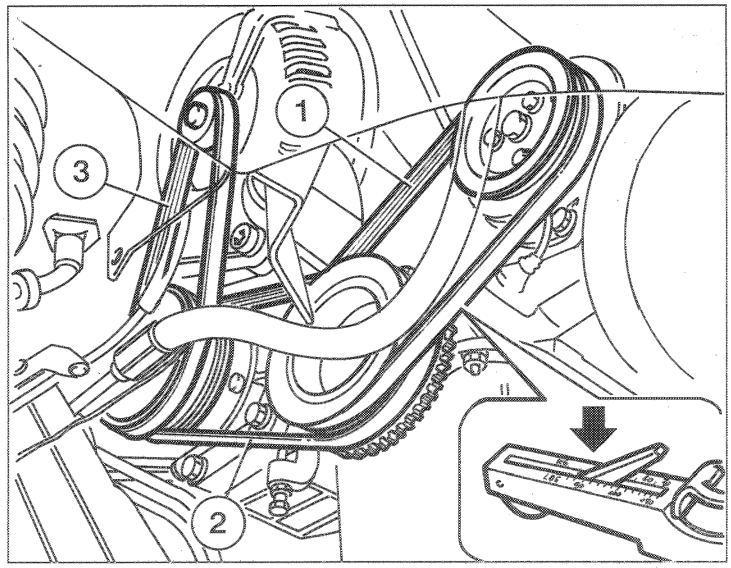
During the bleeding operation keep the level of the fluid in the reservoir above the MIN reference.
Do not reuse the hydraulic fluid drained during the bleeding procedure.



P3M45QA02

- Restore the level of the fluid in the reservoir and refit the plug;
- check the efficiency of the braking system.

The operation of bleeding can also be carried out using the "Jollyfren" equipment. This equipment allows the hydraulic braking system to be bled quickly. The bleeding operation is carried out simultaneously for both wheels by a single operator with a considerable time saving.



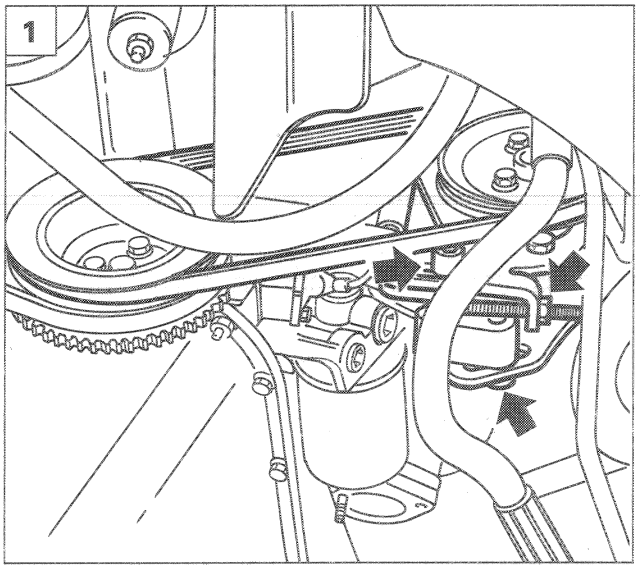
P3M46QA01

6 CHECK CONDITION AND TENSION OF VARIOUS DRIVE BELTS AND ADJUST, IF NECESSARY (1242 16v engine)

In order to check the condition of various drive belts, refer to the previous description for the other engine types.

Checking tension and, if necessary, adjusting various drive belts

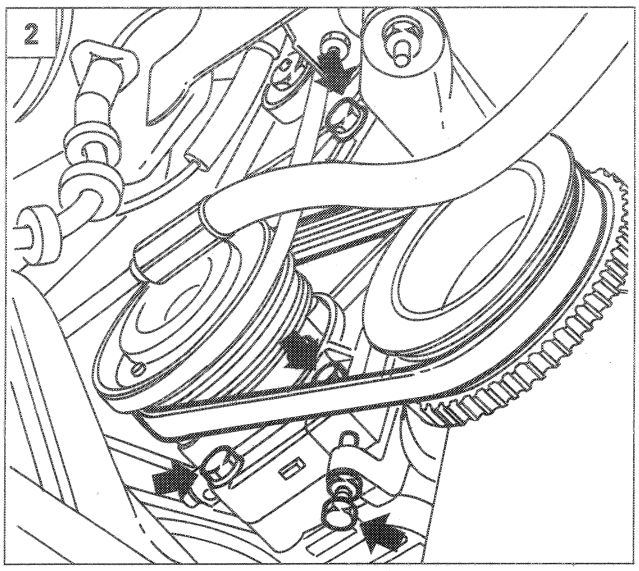
When checking the condition of the various drive belts it is also a good idea to check the tension using tool 1895762000.
1. Power steering pump drive belt - 2. Air conditioning compressor drive belt - 3. Alternator drive belt



P3M46QA02

Check that the tension values measured using the special tool, correspond to the recommended figures, given in the table on page 6. If the belt tension values are not correct:

1. Act on the bolts fixing the power steering pump mounting bracket to adjust the tension of the power steering pump drive belt.
2. Act on the bolts fixing the air conditioning compressor mounting bracket to adjust the tension of the compressor drive belt.
3. Act on the bolts fixing the alternator to adjust the tension of the relevant drive belt.



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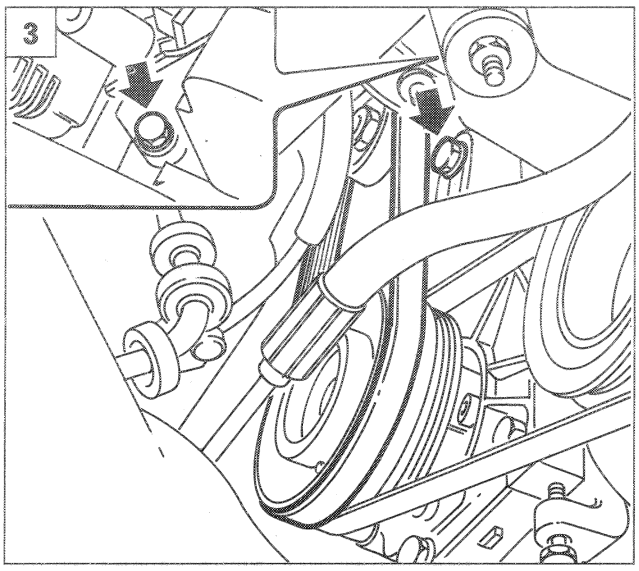

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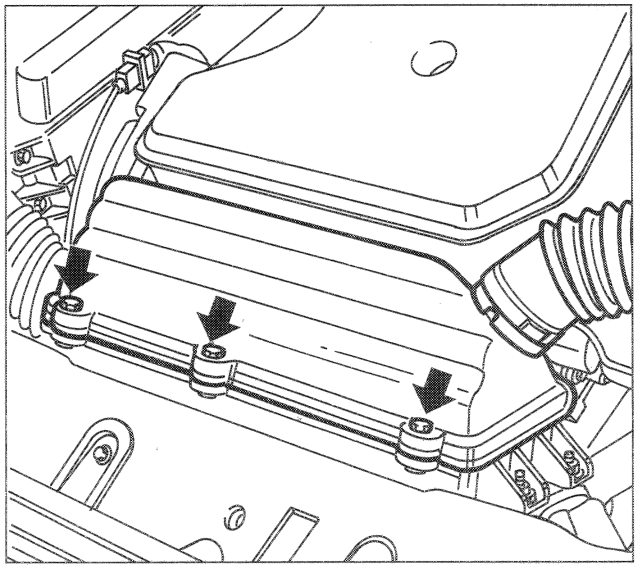

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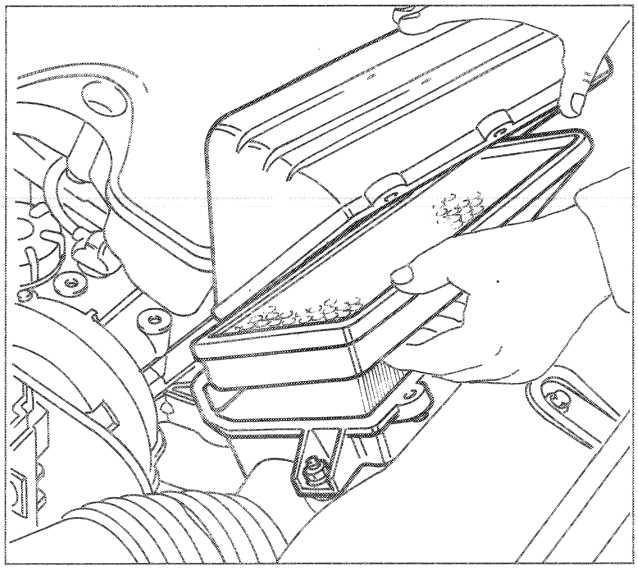

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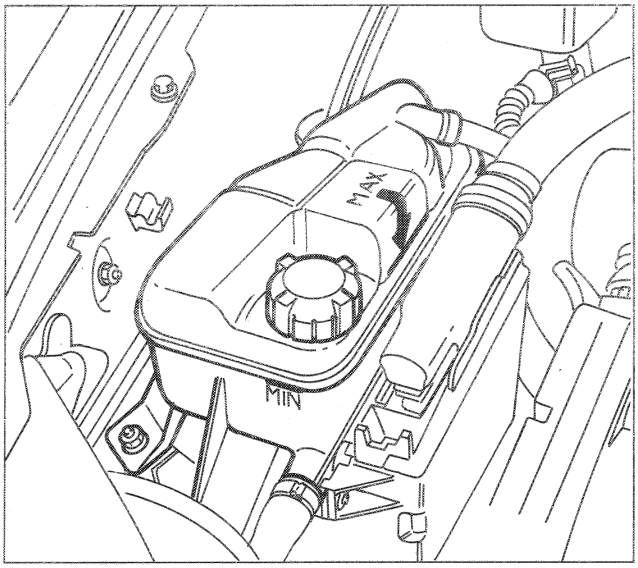


P3M47QA03

17 REPLACING AIR FILTER CARTRIDGE (1242 16v engine)

Undo the bolts fixing the air filter cover, lift it up by releasing it from the rear retainers and extract the filter element.

Any operations which involve cleaning the filter can damage it risking the operation of the engine fuel system being adversely affected.

Carefully clean the air filter cartridge container.
Replace the air filter, then refit the cover and fix it using the appropriate bolts.

If there are traces of oil in the filter, check for possible penetration throughout the entire air circuit.

NOTE *If the vehicle is used on dusty roads replace the air filter more often.*
If the Customer asks then they should be provided with suitable information concerning the optimum maintenance intervals according to the specific usage of their vehicle.

19 TOP UP FLUID LEVELS (1242 16v engine)

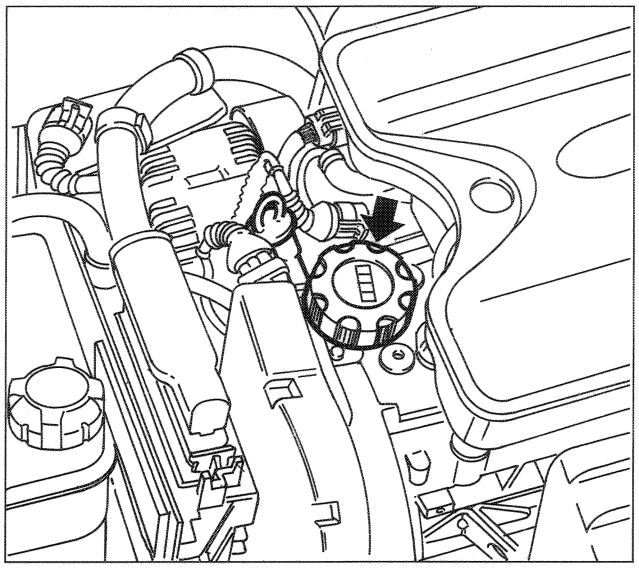
There follows the differences compared with the information given on page 20 onwards. For the checks on the levels not given, refer to the previous description.

Engine coolant

Do not remove the expansion tank cap when the engine is very hot as there is a risk of injury.

The level of the fluid should be checked with the engine cold and it should not be below the MIN reference on the tank.
If the level is too low, slowly pour a mixture of 50% distilled water and Fiat Lubrificanti Paraflu 11 through the tank filler.

NOTE *The addition of "Paraflu Formula Europa" fluid where Paraflu 11 has been used previously means that it is not possible to check the efficiency of the anti-freeze using the normal test equipment.*
"Paraflu Formula Europa" is already mixed which means that water does not have to be added.



P3M48QA01

Engine oil level

The oil level should be checked with the vehicle on a flat surface and the engine cold, or at least 10 minutes after the engine has been switched off.

The oil level should be between the MIN and MAX marks on the dipstick. The distance between MIN and MAX corresponds to around 1 litre of oil.

If the level of the oil is close to or just below the MIN reference, add oil through the filler until it reaches the MAX reference.

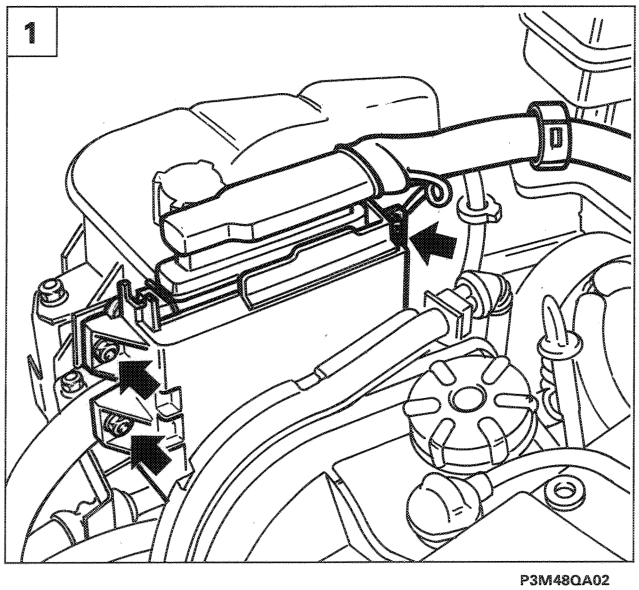
The level of the oil should never exceed the MAX reference.

When topping up with oil, take great care to avoid engine oil accidentally going into the alternator ventilation slits which could cause serious damage and even present a fire hazard.

Do not add oil with different charactertics from the oil used in the engine. Only the use of semi-synthetic oil guarantees the intervals in the maintenance programme.

After having added oil, before checking the level, let the engine run for several seconds and wait several minutes after it is switched off.

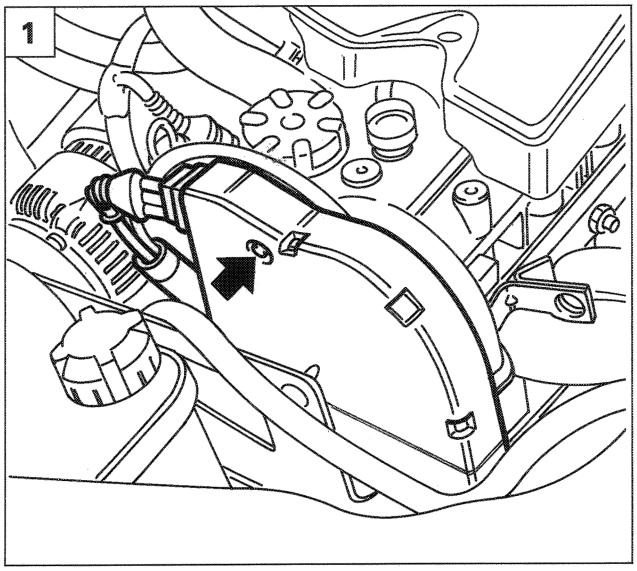
1



P3M48QA02

21 CHECKING TIMING BELT CONDITIONS (1242 16v engine)

1. Position the vehicle on a lift, disconnect the negative battery lead, then undo the nuts fixing the injection control unit to the mounting bracket. Place the control unit at the side without disconnecting the supply connector to facilitate the subsequent operation of removing the upper belt shield.

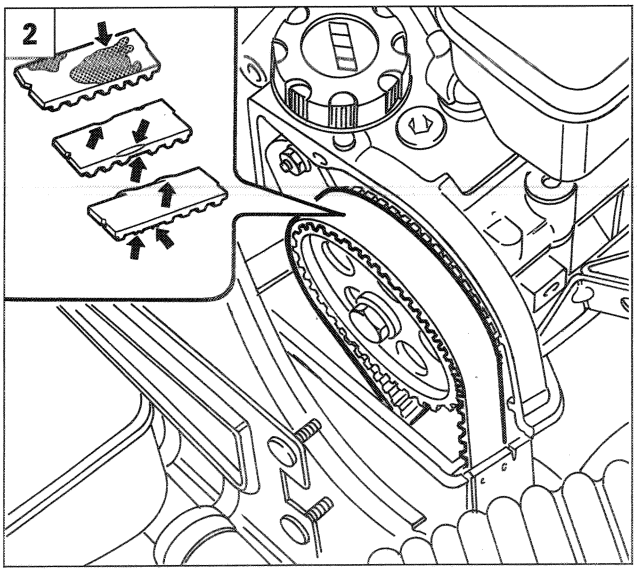


P3M49QA01

1. Undo the bolt, shown in the diagram, fixing the upper timing drive belt shield.

2. Move the upper shield aside and proceed with checking the entire perimeter of the timing drive belt.

Check the condition of the belt making sure, in particular, that there are no: cracks, cuts, surface wear of the material (which would appear smooth and shiny) and dry or hard sections which would result in a loss of grip.
Also check that the belt has not come into contact with oil or solvents which could affect the elasticity of the rubber of the actual belt or reduce the adhesion.
If one of the above defects is present, notify the Customer of the need to replace the belt. Also, if the belt has been fouled by oil or other fluids, check for any leaks and, with the Customer's authorization, eliminate the cause of the leak.



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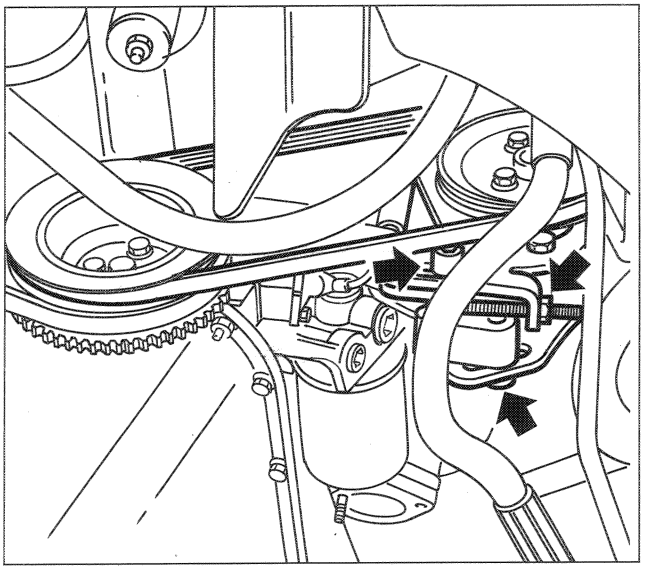


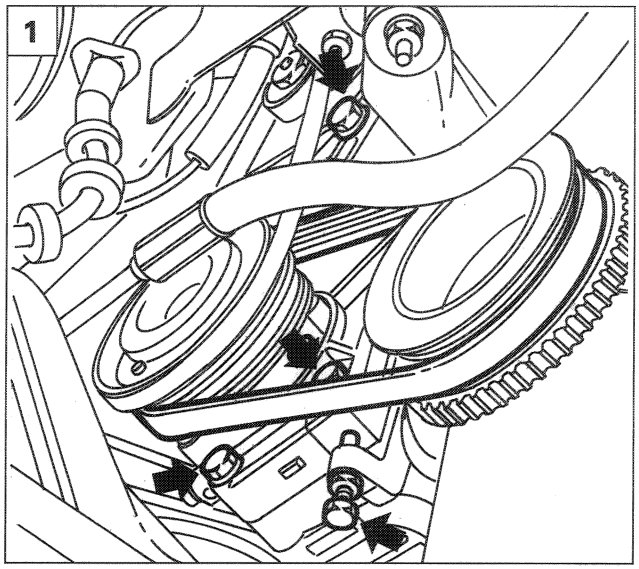
P3M46QA02

29 REPLACING TIMING DRIVE BELT (1242 16v engine)

Position the vehicle on a lift, then:

- disconnect the negative battery lead;
- remove the right front wheel;
- remove the right wheel arch liner.

Loosen the tension of the power steering pump drive belt acting on the bolts shown, then remove the belt from the damper flywheel leaving it fitted on the power steering pump pulley.



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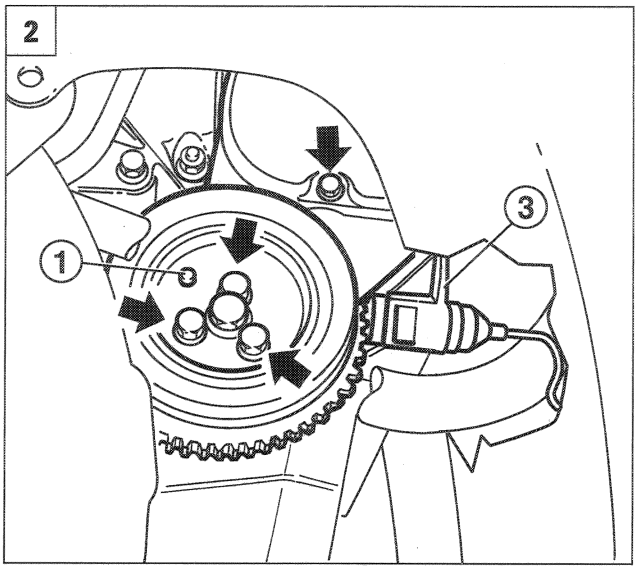

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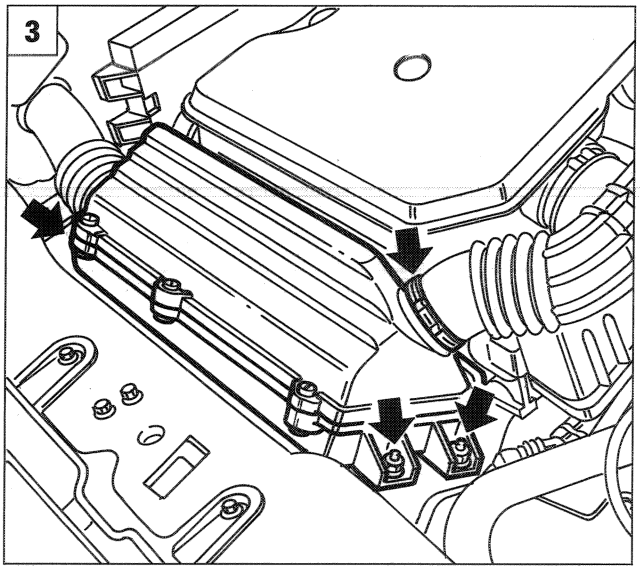

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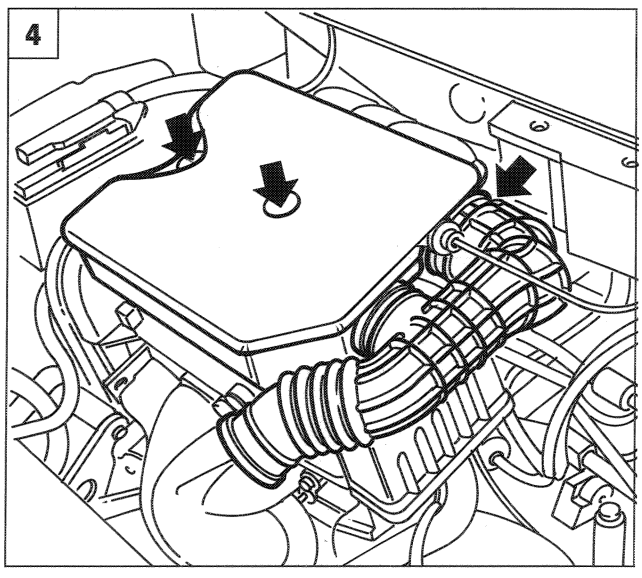


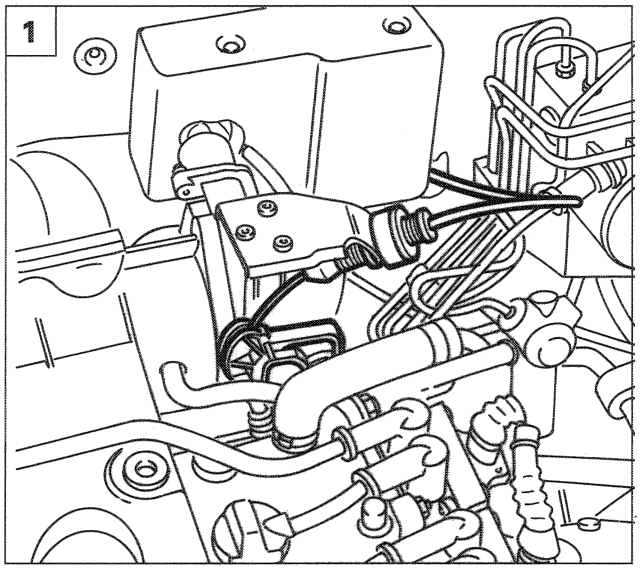
P3M50QA03

1. Loosen the tension of the air conditioning compressor drive belt, acting on the bolts shown in the diagram and on the alternator fixing bolts. Move the compressor aside and remove the drive belt from the damper flywheel.

2. Rotate the damper flywheel (auxiliary shaft drive pulley) in its normal direction of rotation until the dowel (1) is opposite the rpm and TDC sensor (3), then undo the fixing bolts and remove it. Also undo the bolts for the lower timing belt shield.

3. Remove the complete air filter casing acting on the fixing nuts and the band shown.

4. Remove the resonator complete with air inlet hose disconnecting the band shown from the butterfly casing and undoing the fixing bolts. Also disconnect the oil vapour recovery pipe from the lower part of the resonator.



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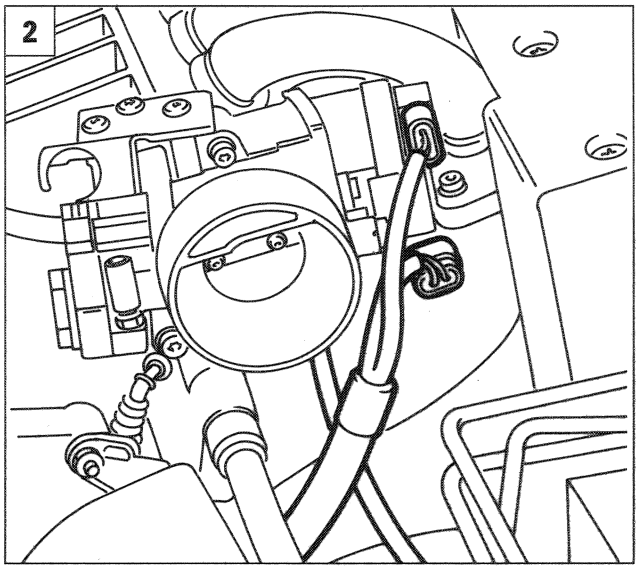

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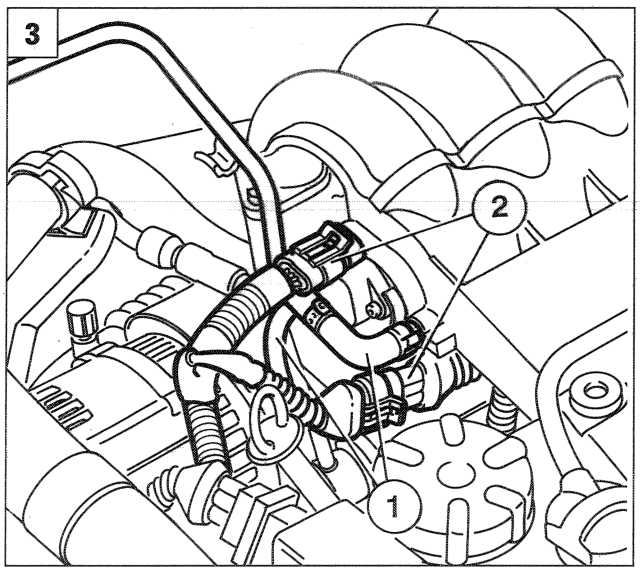

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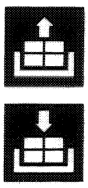
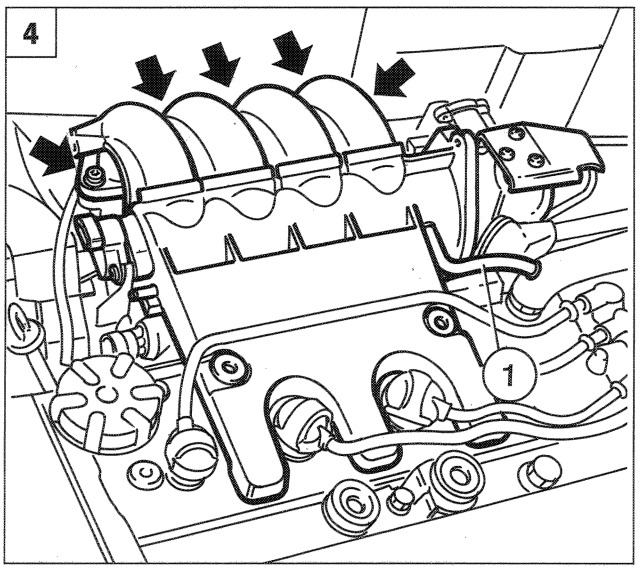


1. Disconnect the accelerator cable.
2. Disconnect the connections shown from the butterfly casing and the vacuum pipe from the brake servo.
3. Disconnect the pipes (1) and the connections (2) from the upper part of the inlet manifold.
4. Remove the fixing bolts for the upper part of the inlet manifold using a USAG TX 27 spanner or the equivalent, disconnect the oil vapour recovery pipe (1) and remove the manifold from the vehicle complete with butterfly casing.
5. Undo the bolts fixing the fuel manifold, remove it complete with injectors and position it at the side away from the working area.



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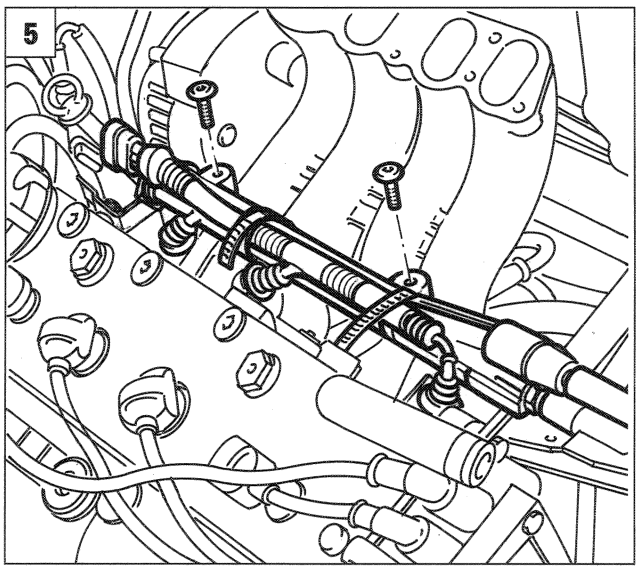

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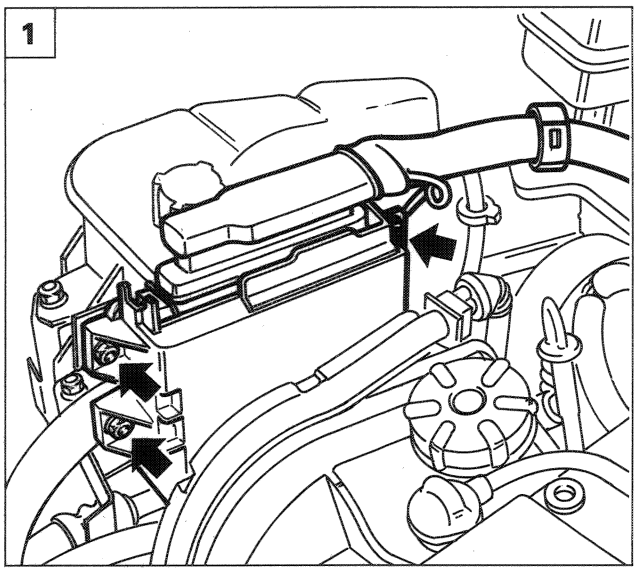

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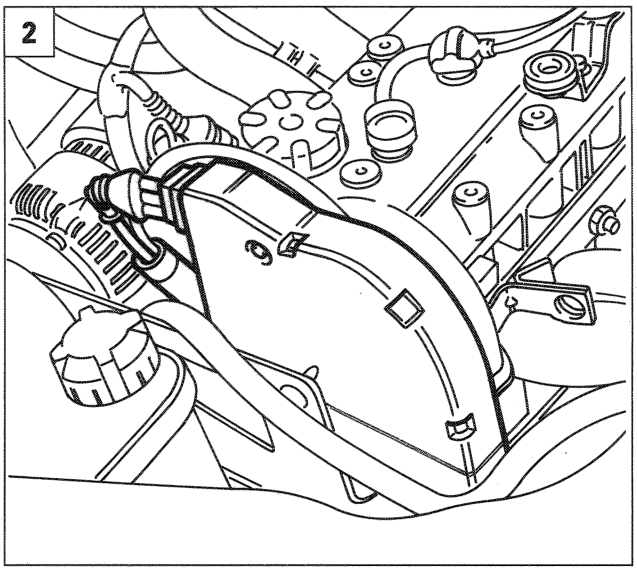

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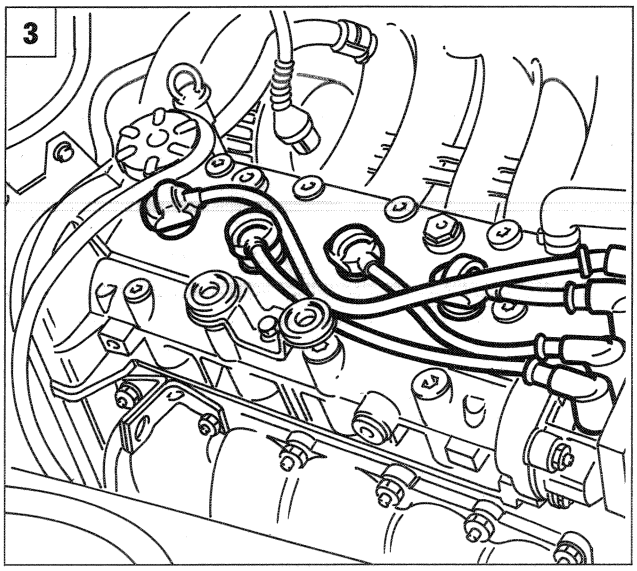

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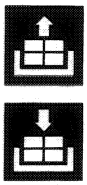
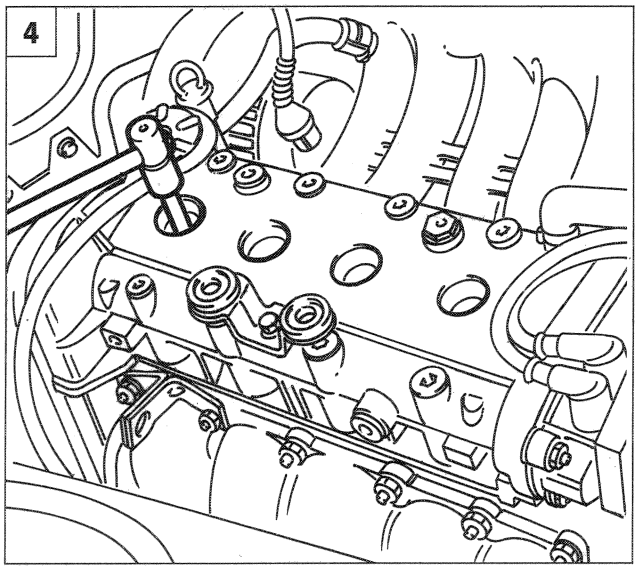


1. Undo the bolts fixing the injection control unit to the mounting bracket, then position it to the side without disconnecting the supply connector.
2. Undo the bolts fixing the timing belt upper shield; disconnect the connector for the rpm and TDC sensor, then remove the upper and lower shields (whose bolts have already been removed previously) for the timing drive belt.
3. Disconnect the H.T. leads from the spark plugs
4. Remove the spark plugs using the USAG 279 MG spanner or an equivalent spanner.
5. Remove the two sealing plugs illustrated in the diagram from the camshaft housing.

4



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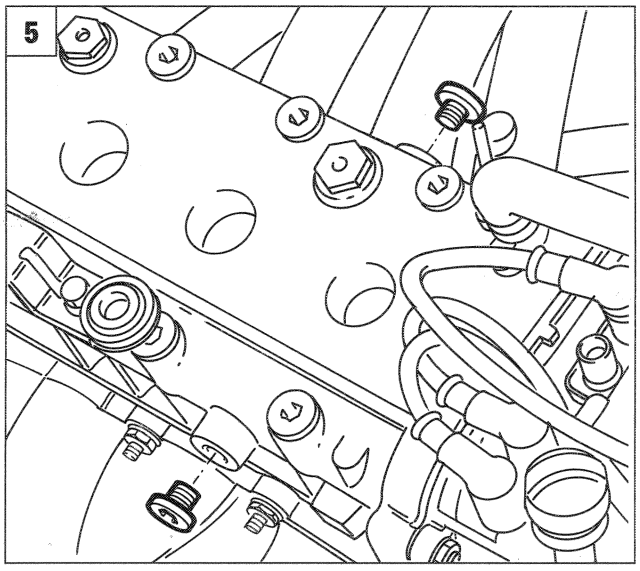

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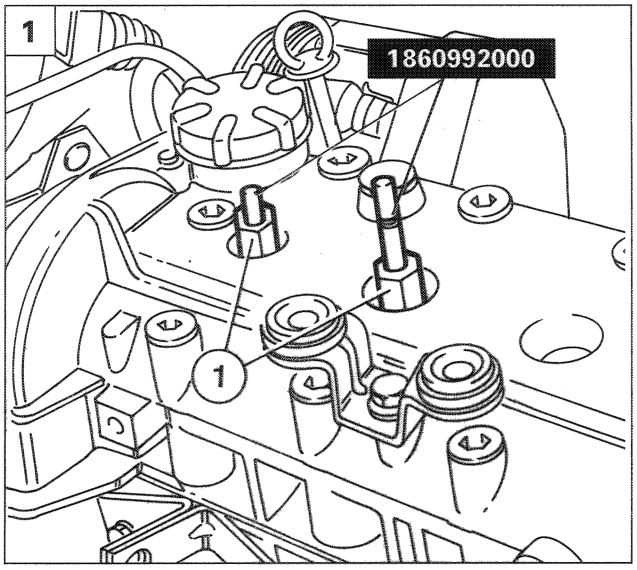
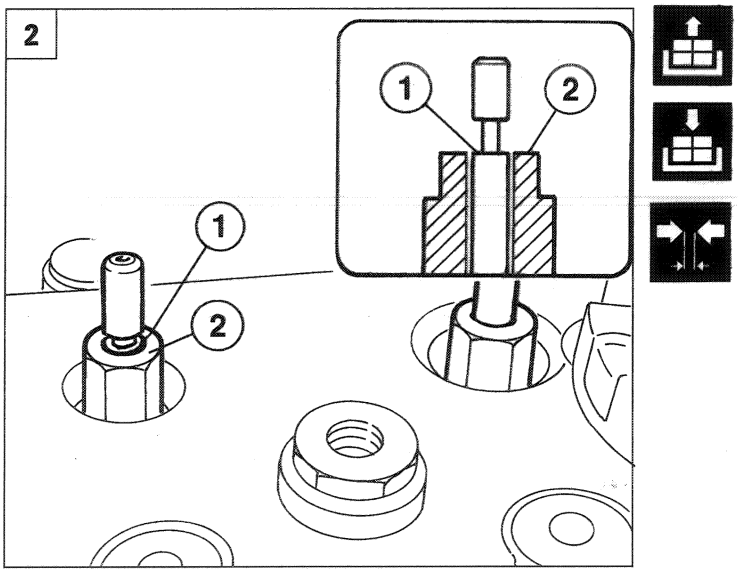


P3M53QA01

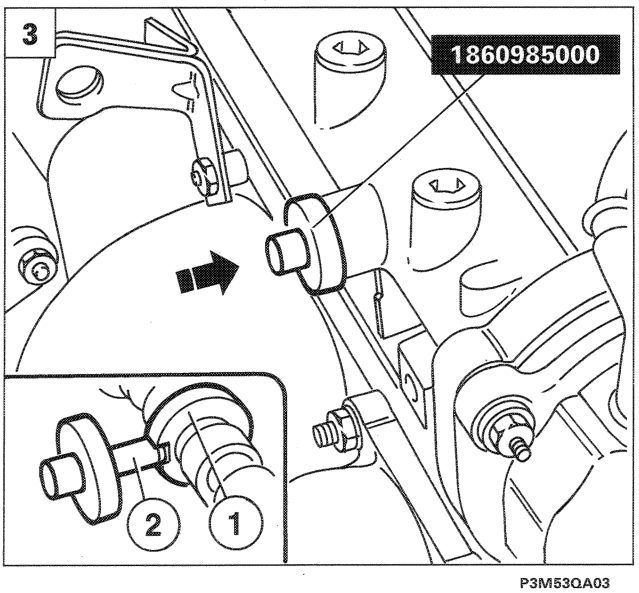
1. Position the tools 1860992000 in the housings for the spark plugs for the 1st and 2nd cylinders tightening the tool components (1) manually to a maximum torque of 0.5 daNm.



P3M53QA02

2. The timing is set with the four pistons in line, therefore the crankshaft must be rotated until the surface (1) of the moving part of the tool is in line with the plane (2) of the fixed component in the spark plug housing.
When both tools positioned in the spark plug housings are in these conditions the engine pistons will be in line with the 1st piston during the descending (inlet) stroke.

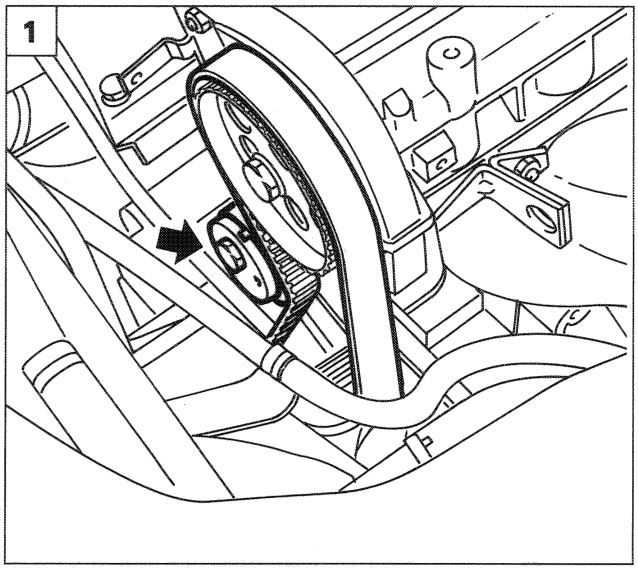
NOTE *The condition where the pistons are aligned is also achieved at 180° from the correct position. Once the pistons are aligned check that the pin on the crankshaft gear is approximately opposite the rpm and TDC sensor.*



P3M53QA03

3. Via the plug seats visually inspect that the splining (1) on the camshafts are near the actual seats; if this is not the case, rotate the crankshaft through 360°, restore the exact alignment of the pistons, with tool 1860992000, then position tool 1860985000 in the plug seats inserting the pin (2) for the tool in the splining (1) on the camshafts. The engine timing will then be correct.

Tool 1860985000 can be used as a reaction tool to loosen the fixing bolts for the camshaft rear gears (if they have to be adjusted).



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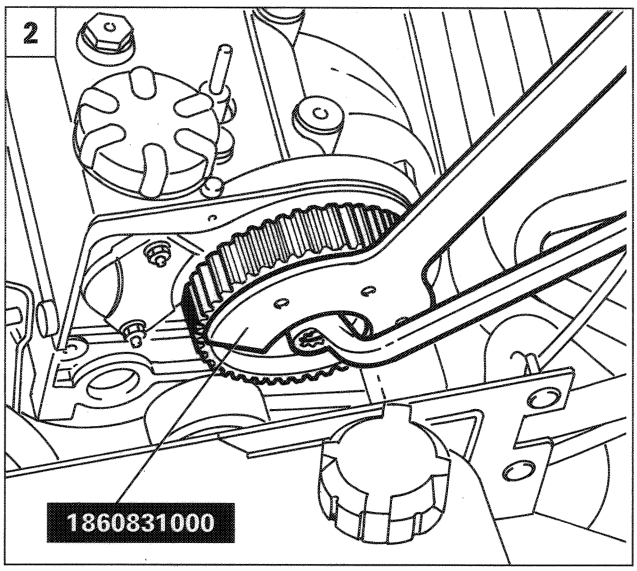

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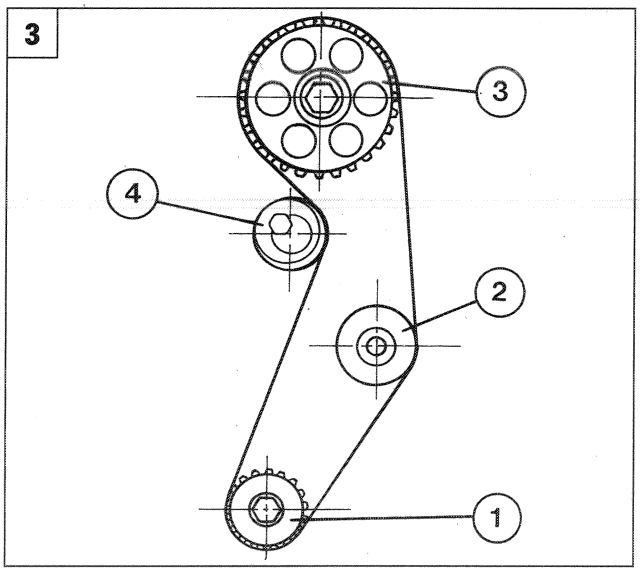

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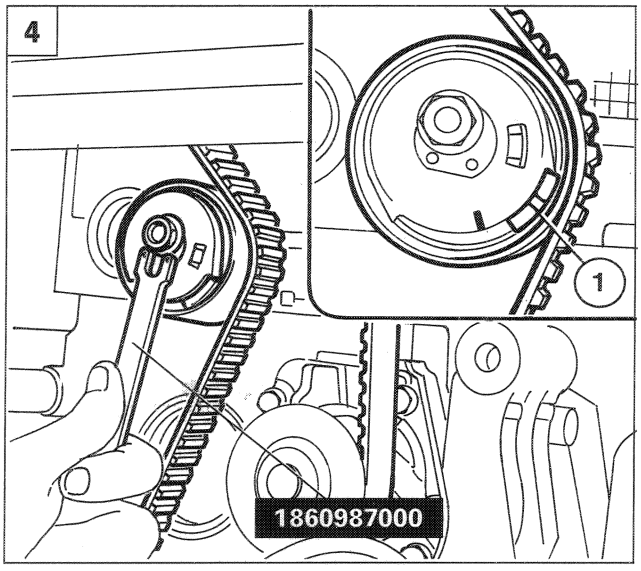


P3M54QA04

1. Loosen the nut fixing the tensioning device for the timing drive belt, then remove the actual belt.

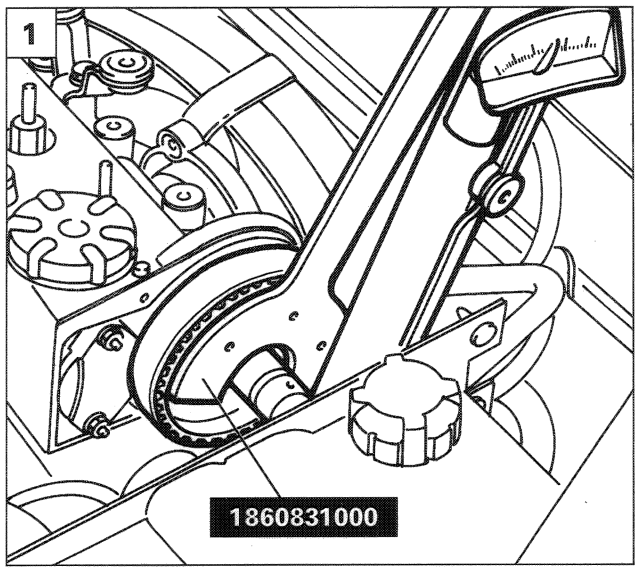
Fitting and tensioning timing drive belt

2. The camshaft drive pulley has a slot; to facilitate the correct matching of the pulley and timing belt teeth, loosen the bolt fixing the actual pulley using tool 1860831000.

3. Before fitting the timing belt make sure that the camshafts are timed and locked using tool 1860985000 and that the pistons are aligned checking the position of the tool 1860992000 pins as described previously. Then fit the timing drive belt following the order given below:

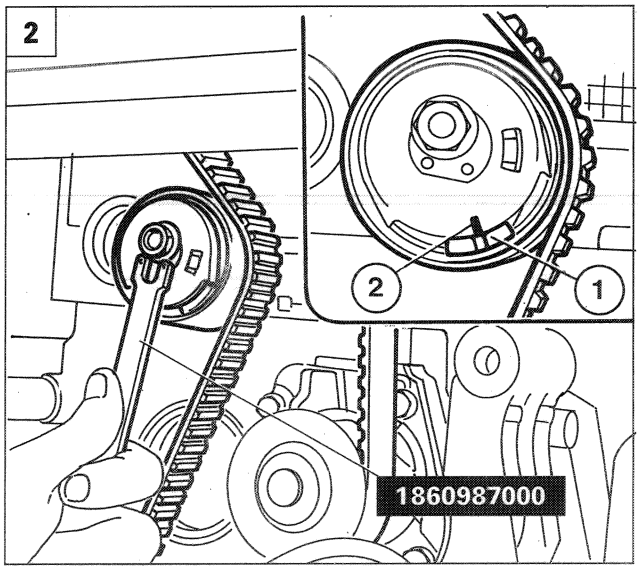
   1. Crankshaft drive gear
   2. Water pump gear
   3. Camshaft drive pulley
   4. Belt tensioner pulley.

4. Position tool 1860987000 and acting on it place the automatic tensioner in the maximum tension position, i.e. with the moving reference (1) as illustrated in the diagram, then lock the nut fixing the tensioner to the support.



P3M55QA01

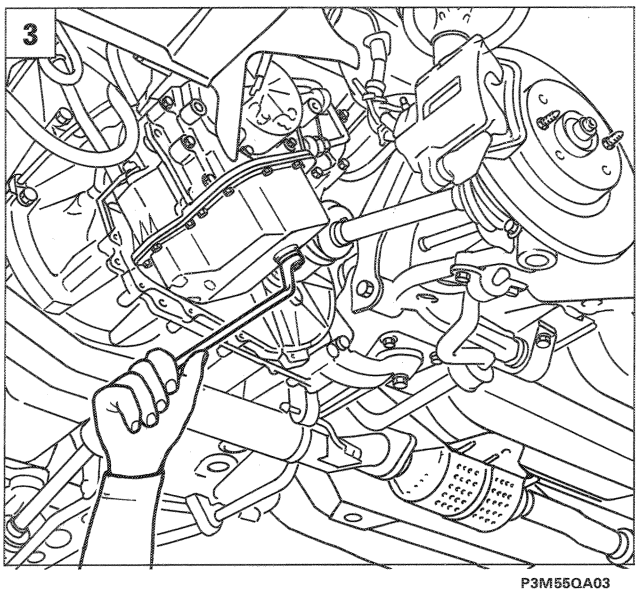
1. Using spanner 1860831000, tighten the timing pulley on the inlet side to the recommended torque. Remove the tools positioned previously for timing and locking the camshafts and rotate the crankshaft through two revolutions in its normal direction of rotation.



P3M55QA02

2. Loosen the nut fixing the tensioner and ensure that the moving reference on the tensioner (1) coincides with the fixed reference (2), then tighten the nuts fixing the tensioner to the recommended torque. Rotate the crankshaft through a further two revolutions in its normal direction of rotation then position the tools for timing the engine illustrated previously and check that the engine is correctly timed.

Fit the remaining components reversing the order of the operations described for the removal. Then tension the auxiliary shaft belts following the values given in the tables on page 6.



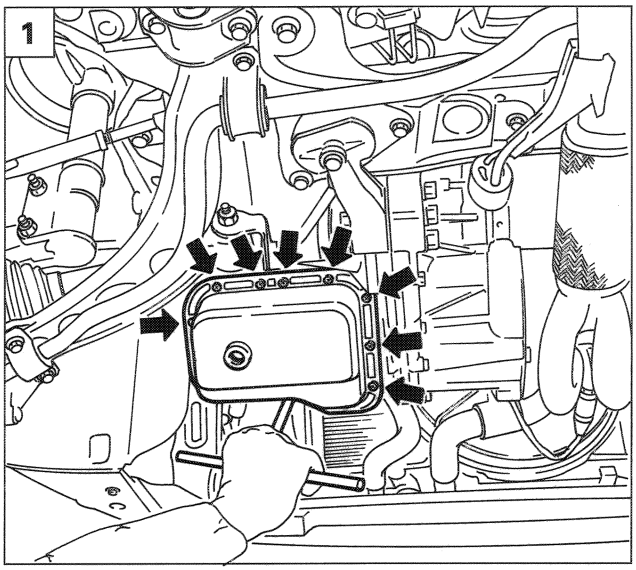
P3M55QA03

32 CHANGING AUTOMATIC GEARBOX OIL AND FILTER

The oil used in the automatic transmission does not only have the function of lubricating the moving mechanical components, but its main task is to safeguard the hydraulic operation of the actual gearbox. The oil is therefore an essential part of the gearbox and it is therefore extremely important to check the level and condition and change it if necessary.

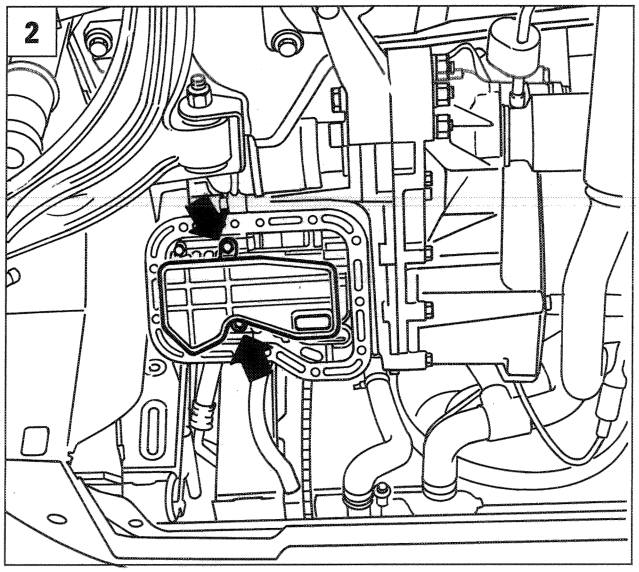
3. Undo the bolt shown and leave the oil to drain for at least ten minutes.

NOTE *The colour of the oil and the presence of impurities can give useful indications on the gearbox operating conditions. Notify the Customer of the need to overhaul the actual gearbox.*



P3M56QA01

1. Remove the gearbox oil sump acting on the bolts shown in the diagram.

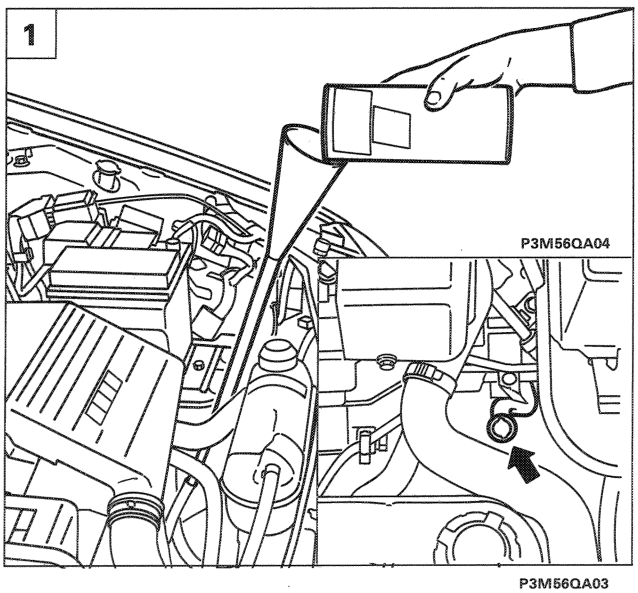


P3M56QA02

2. Undo the bolts shown and remove the gearbox oil filter.

NOTE *Each time the gearbox oil is changed the filter should also be replaced.*

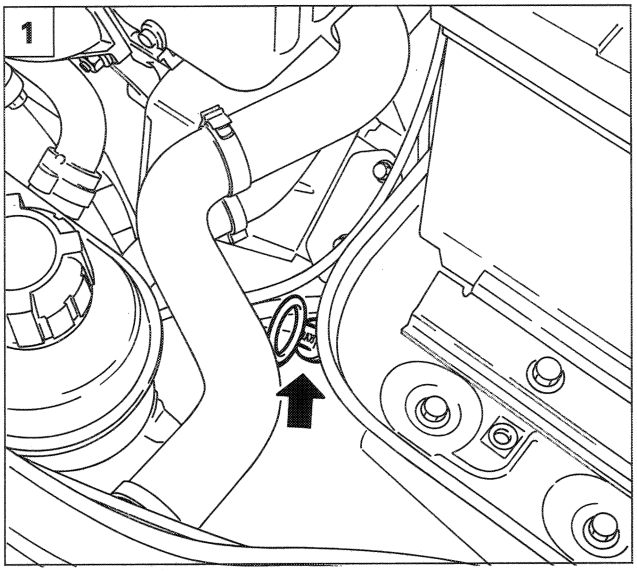
3. Place the new filter and the engine oil sump in position; tighten the drain plug on the sump making sure that it is clean. Introduce the oil via the housing in the dipstick (shown in the inset) using a special funnel. At the end of the operation check that there are no leaks.



P3M56QA03

When changing the oil use TUTELA CVT Universal, a synthetic based, mild EP, mineral oil containing anti-wear and friction modifier additives in the quantity of 1.98 litres (1.8 Kg).

If the automatic transmission is subject to particularly heavy usage: taxi service, towing a trailer, etc., notify the Customer of the need to change the gearbox oil more often than stated in the Planned Maintenance Programme.



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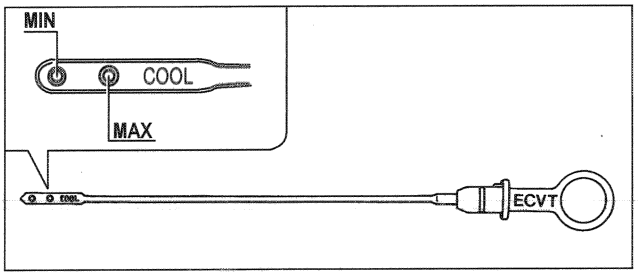

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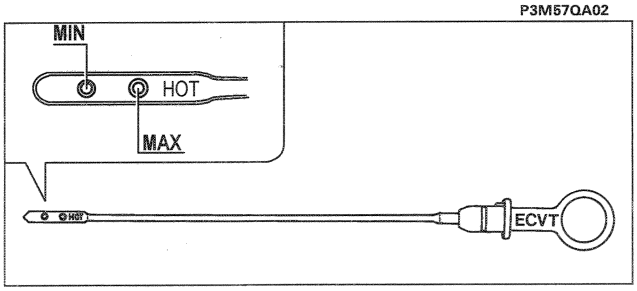

P3M57QA03

1. Then, using the dipstick, with the engine idling, the vehicle on a flat plane and the selector lever in "P", check the level of the automatic gearbox oil. There are min and max references on both sides of the dipstick for the following conditions:

COOL for the check when cold (20°-40°C), before setting off.

HOT for the check when hot (60°-80°C), after having driven at least 10 Km.

Only use cloths which do not leave loose threads or other impurities to clean the dipstick because they could obstruct the gearbox hydraulic valves.