MDB1965A

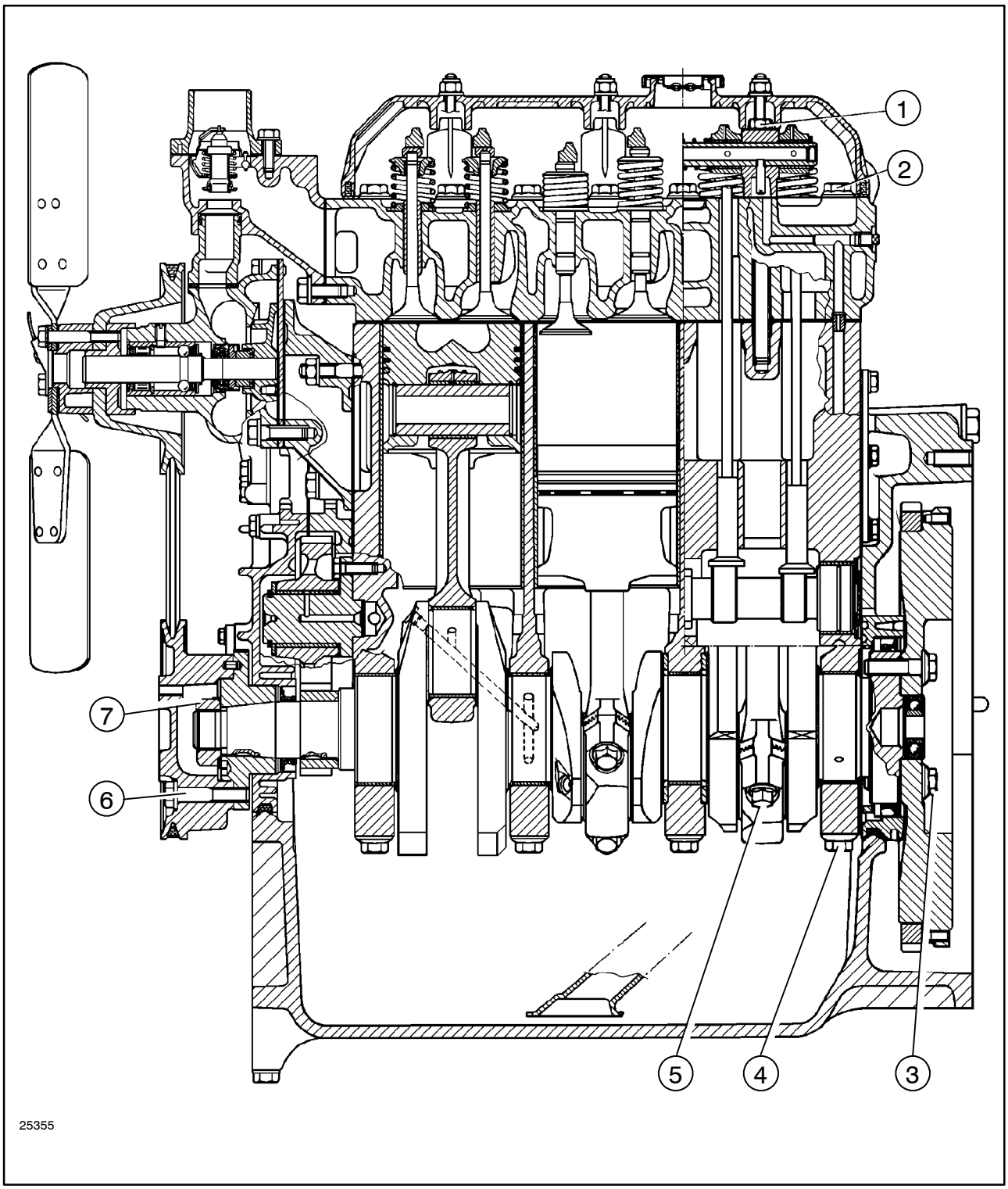
JX1060V – JX1070V – JX1075V – JX1070N – JX1075N TRACTORS SERVICE MANUAL

SECTIONS

T E C H N I C A L S U P P O R T

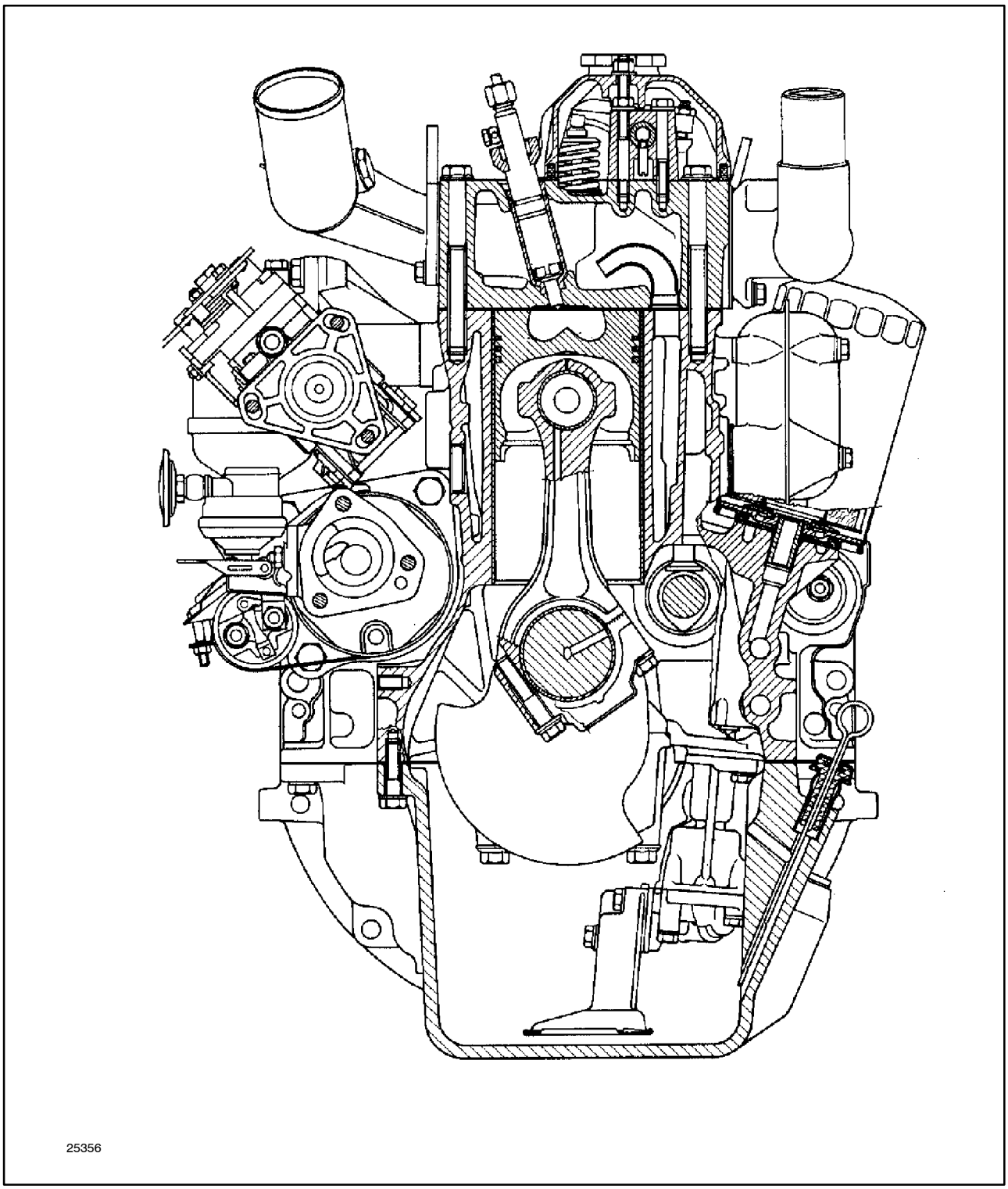
GENERAL SPECIFICATIONS	
Engine, technical type:	
- Mod. JX1060V - type 8035.05C.925/929 (BOSCH pump)	See data on page 6-7
- Mod. JX1070V and JX1070N - type 8035.25R.925/929 (BOSCH pump)	See data on page 8-9
- Mod. JX1075V and JX1075N - type 8035.25.925/929 (BOSCH pump)	See data on page 10-11
Cycle	diesel, 4-stroke
Fuel injection	direct
Number of cylinders in line	3
Cylinder liners	dry force-fitted in cylinder block
Piston diameter	
- Mod. JX1060V	4.0944 in. (104 mm)
- Mod. JX1070V and JX1070N	4.0944 in. (104 mm)
- Mod. JX1075V and JX1075N	4.0944 in. (104 mm)
Piston stroke	4.5275 in. (115 mm)
Total displacement:	
- Mod. JX1060V	178.84 in^3 (2931 cm^3)
- Mod. JX1070V and JX1070N	178.84 in^3 (2931 cm^3)
- Mod. JX1075V and JX1075N	178.84 in^3 (2931 cm^3)
Compression ratio for Mod. JX1060V, JX1070V and JX1070N	17:1 normally aspirated
Compression ratio for Mod. JX1075V and JX1075N	16.5:1 turbocharged
Maximum power:	
- Mod. JX1060V	43.5 kW (59 Hp)
- Mod. JX1070V and JX1070N	53 kW (72 Hp)
- Mod. JX1075V and JX1075N	55.5 kW (76 Hp)
Maximum power speed	2300 rpm
Maximum torque speed for Mod. JX1060V	1400 rev/min
Maximum torque speed for Mod. JX1070V and JX1070N	1400 rev/min
Maximum torque speed for Mod. JX1075V and JX1075N	1400 rev/min
Number of main bearings	4
Sump	structural, cast iron

(continued)



3

Longitudinal section of engine (mod. JX1060V).



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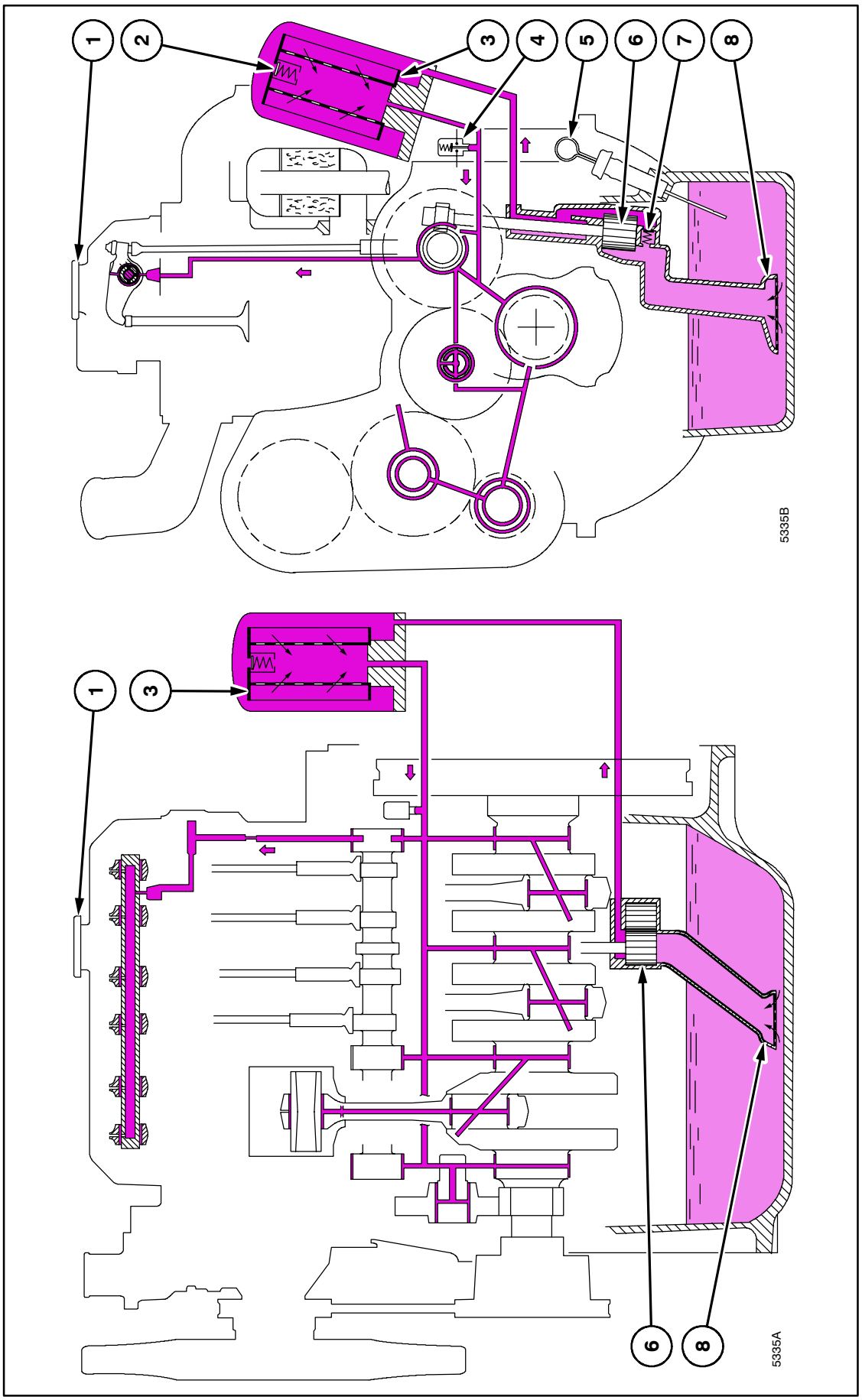
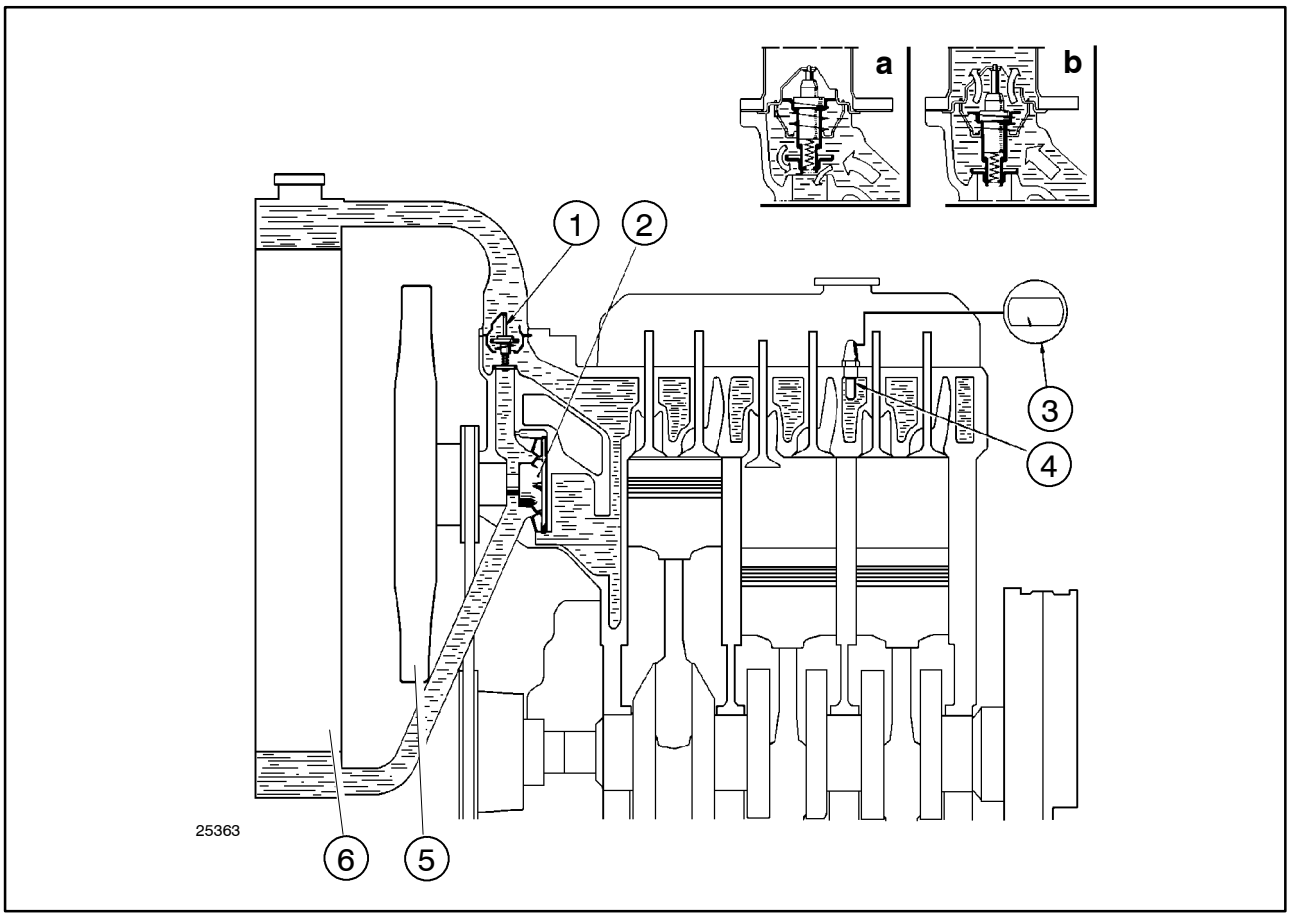
Cross-section of engine (mod. JX1060V).



5

Engine lubrication system diagram

1. Oil filler cap - 2. Filter safety valve (opens when oil pressure at filter inlet exceeds the outlet pressure by 1.5-1.7 bar/cm^2) - 3. Filter - 4. Engine lubrication oil low pressure indicator lamp switch (located on the dashboard) - 5. Dipstick - 6. Pump - 7. Oil pressure limiting valve - 8. Mesh filter on intake



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Engine cooling system circuit diagram.

A. Coolant circulation with thermostat valve closed
B. Coolant circulation with thermostat valve open
1. Thermostat
2. Pump
3. Electric thermometer for engine coolant temperature
4. Temperature transmitter
5. Fan
6. Radiator

Op. 10 001 10
ENGINE Removal-Installation

DANGER

Lift and handle all heavy parts using suitable lifting equipment.
Make sure that assemblies or parts are supported by means of suitable slings and hooks. Check that no one is in the vicinity of the load to be lifted.

CAUTION

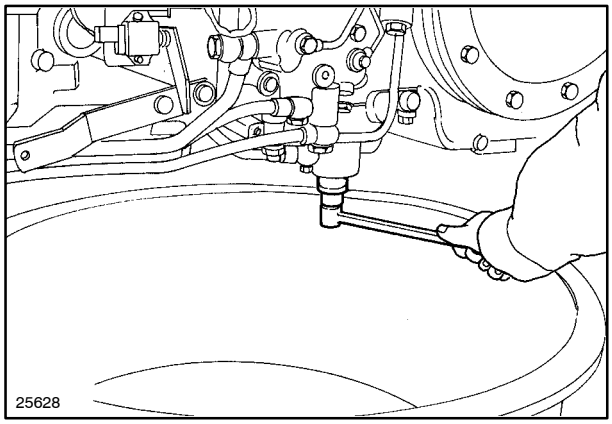
Always use appropriate tools to align fixing holes. NEVER USE FINGERS OR HANDS.

Proceed as follows.

1. Carry out operation **90 150 10** Cab with platform unit, only removal (see Sect. 90) (models with cab).

NOTE: *Make sure that the bracket* ***380001613*** *locking the front axle in relation to the engine is positioned and secured between the above.*

2. Carry out operation **90 110 36** Platform assembly only removal (see Sect. 90) (models with platform).
3. Carry out operation **90 114 20** Front roll bar, only removal (see Sect. 90) (models with platform).
4. Unscrew the plug and drain the oil from the rear transmission casing (the prescribed quantity is 11.09 US gal. (42 litres)).
5. Disconnect the electrical connections (2) and remove the front guard (1) by sliding forwards.



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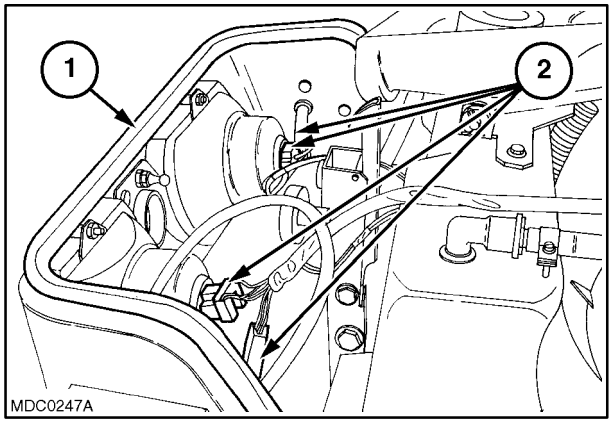

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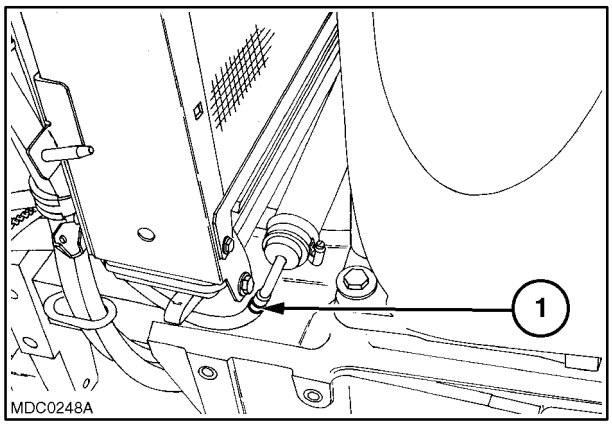
6. If the tractor is not fitted with an extra fuel tank, disconnect the piping (1) and drain the fuel from the main tank.

7. If the tractor is fitted with a platform the coolant must be drained.



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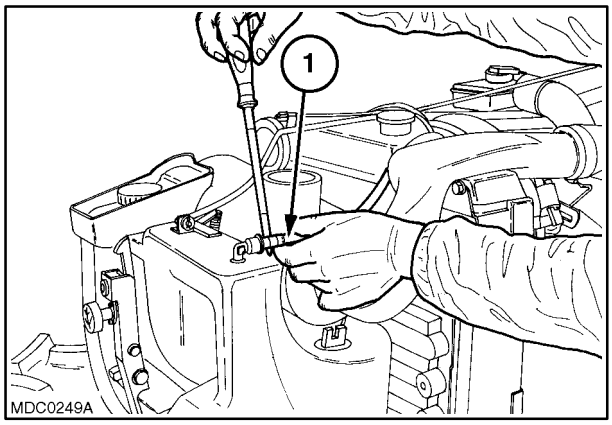
8. Disconnect the fuel return piping (1).



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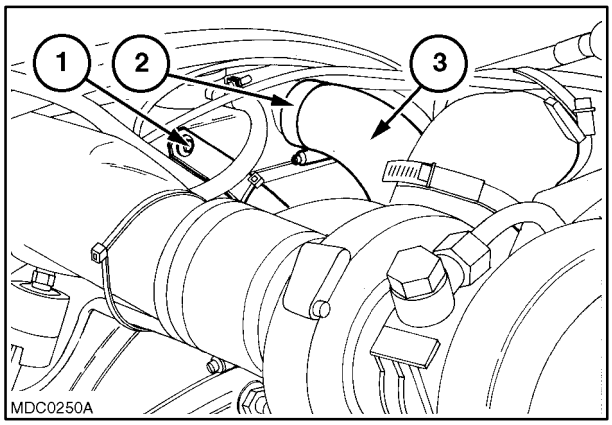
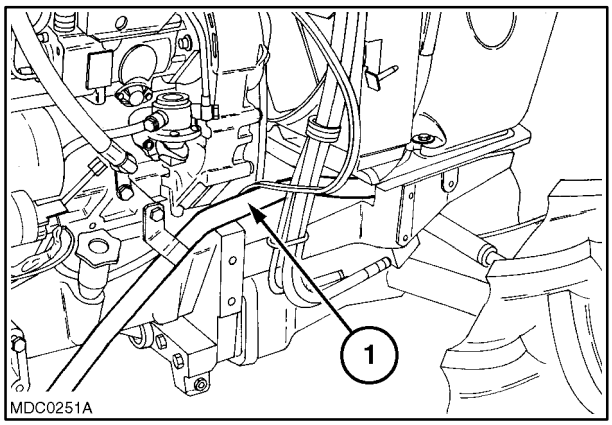
9. Remove the clamp (1) and detach the radiator sleeve (2), unscrew the radiator retaining bracket (3).



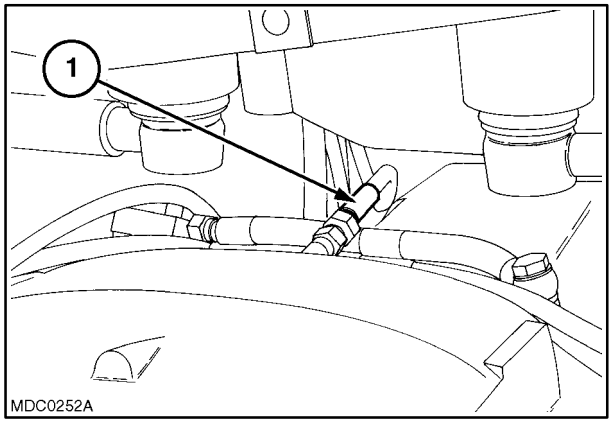
11

10. Disconnect the connecting pipe (1) between the main fuel tank and the extra fuel tank.



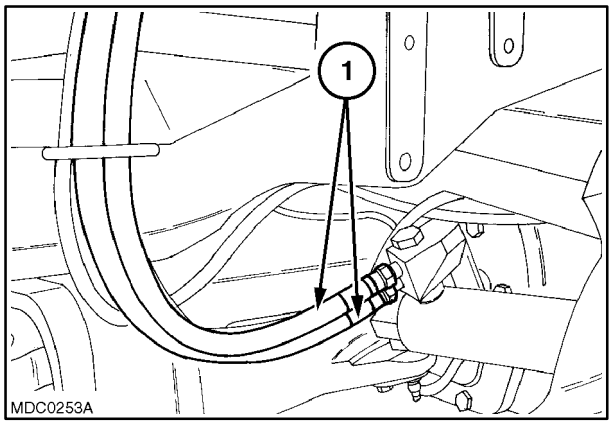
12

11. Unscrew the brake control piping (1) on the front axle.



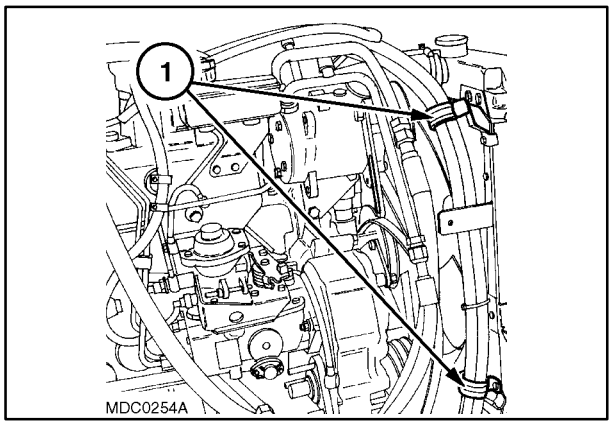
13

12. Disconnect the hydrostatic steering piping (1).



14

13. Disconnect the steering sensor wire, loosen the hose and wire retaining clamps (1) on the radiator.



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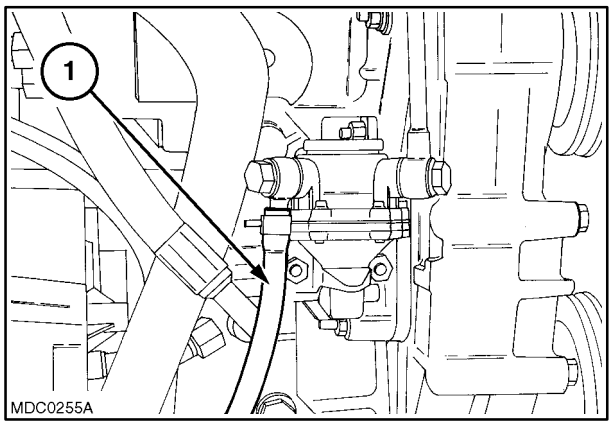
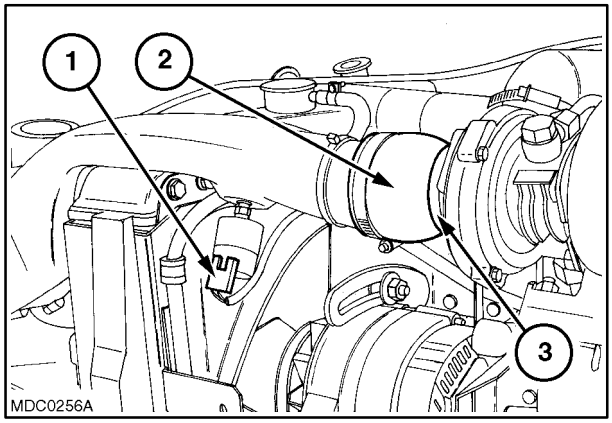
14. Loosen the clamp and disconnect the fuel injection pump hose (1).



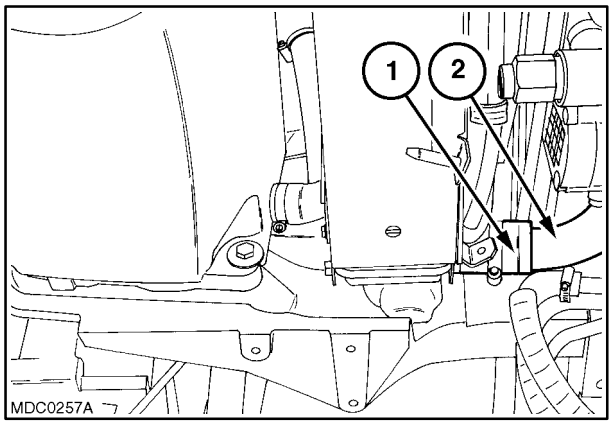
16

15. Unscrew the clamp (1) to release the sleeve (2) from the turbocharger.
16. Disconnect the electrical connections (1) on the clogged air filter sensor.



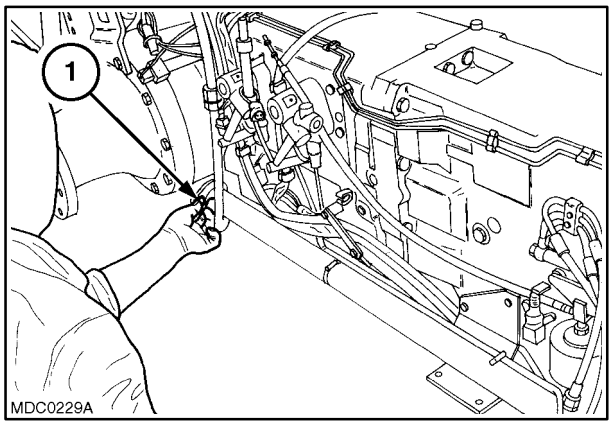
17

17. Unscrew the clamp and remove the sleeve (1) on the relative rigid pipe (2).



18

18. Loosen the hydraulic pump line piping bolts (1).



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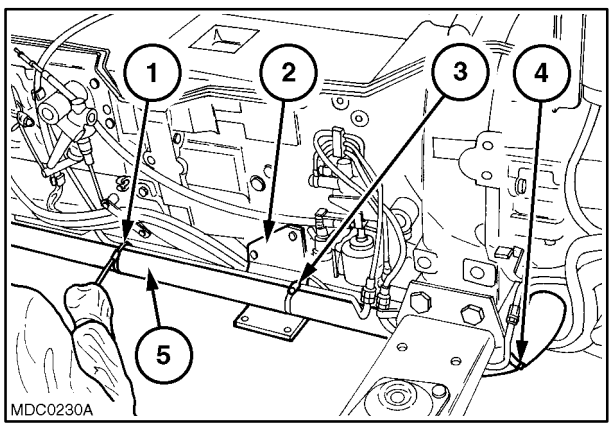
19. Loosen the clamps (1, 3 and 4), unscrew the bracket retaining bolts (2) and remove the hydraulic pump line piping (5).



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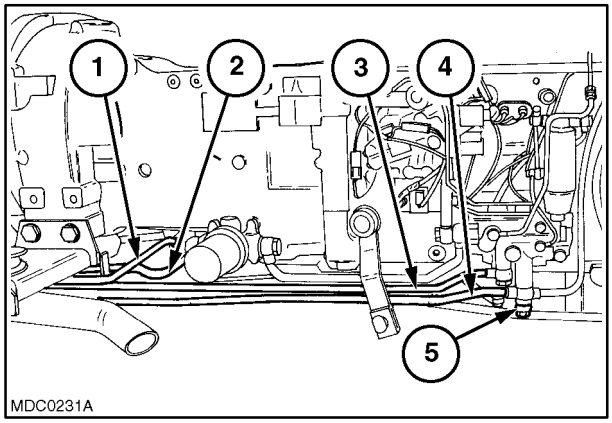
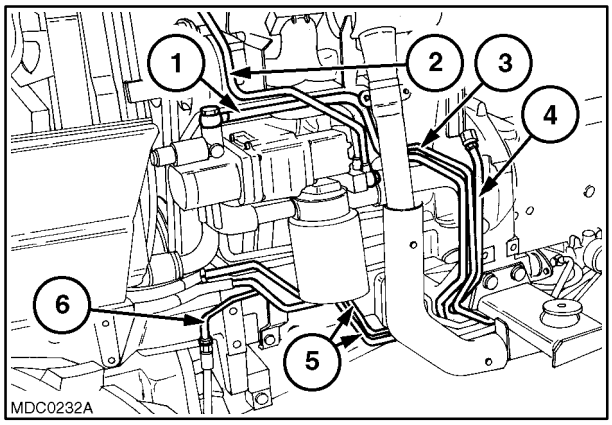
20. Unscrew the filter piping (1 and 2).
21. Unscrew the services distributor piping (3, 4 and 5).



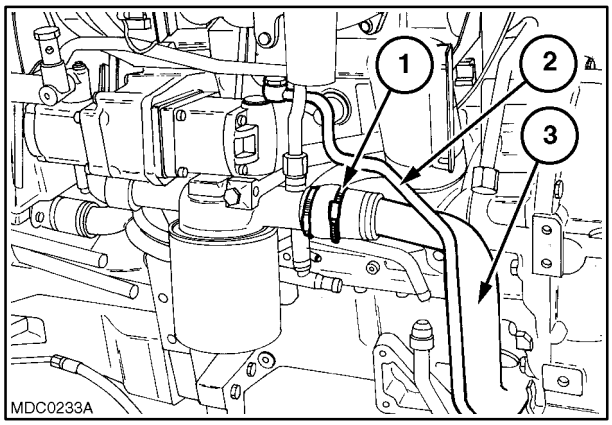
21

22. Disconnect and remove piping (1, 2, 3, 4, 5 and 6).
23. Carry out operation **10 254 44** Exhaust pipe, only removal (see Sect. 10).



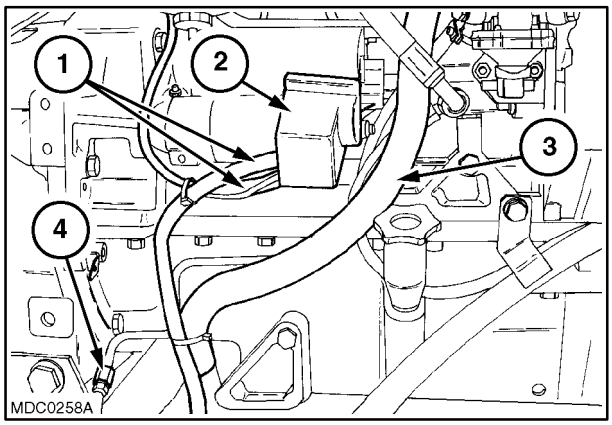
22

24. Disconnect the piping (2), unscrew the clamp (1), the piping/clutch housing retaining bolt, and remove piping (1 and 3).



23

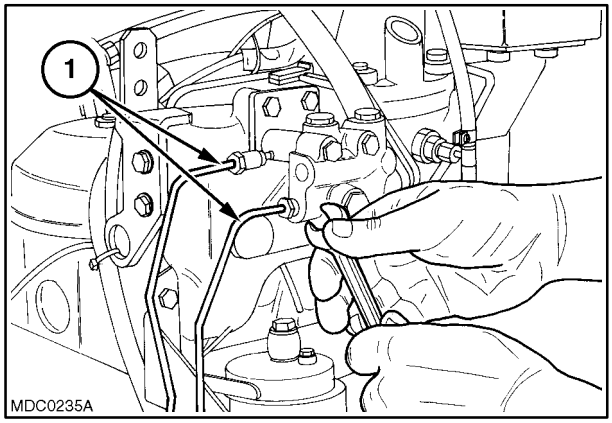
25. Remove the guard (2) and disconnect the starter motor wires (1), disconnect the pipe (4).
26. Remove the retaining clamp and disconnect the engine electrical wires, place the wires (2 and 3) on the clutch casing.



24

27. Disconnect the brake piping (1) from the block.

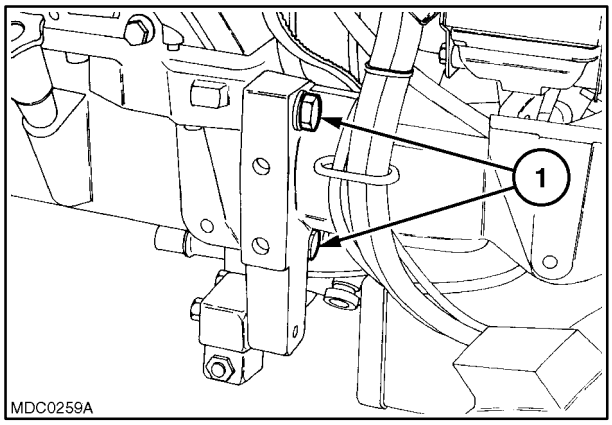
28. Carry out operation **23 101 26** Propeller shafts and guard, only removal (see Sect. 23).



25

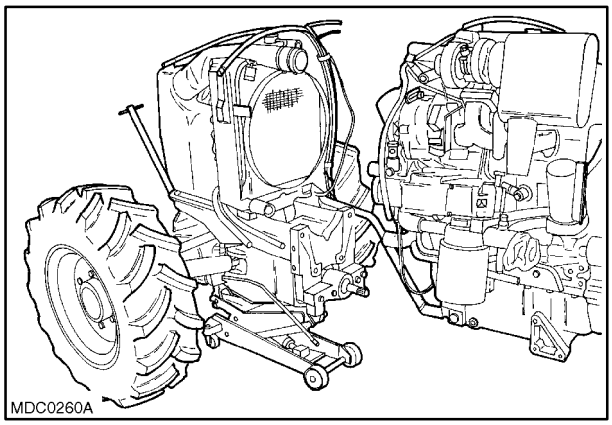
29. Position an hydraulic jack under the rear axle, attach the motor to a hoist, using a chain, and place a stand under the clutch casing.

30. Unscrew the front axle - engine retaining bolts (1).



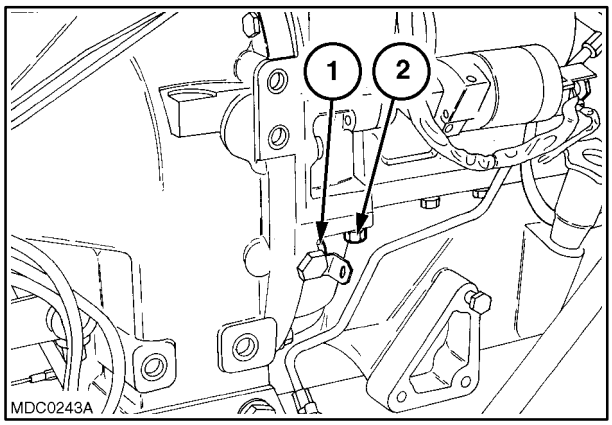
26

31. Remove the front axle, complete with support, tanks, radiator and air filter.



27

32. Unscrew the bolt (2) accessing the Allen screw (1) (on both sides).



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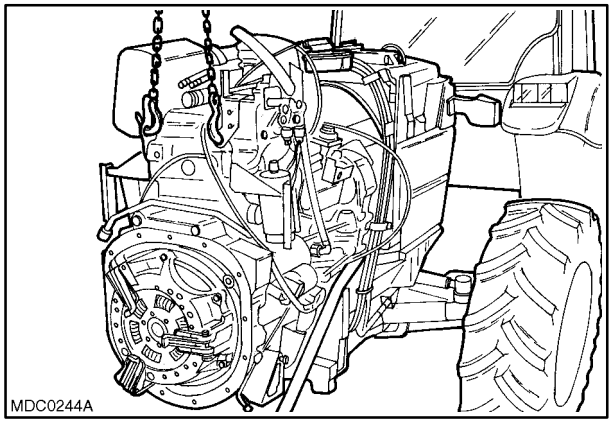
33. Unscrew all of the clutch casing - engine bolts and detach the engine.

34. To re-fit the engine, proceed as follows.

CAUTION

Always use appropriate tools to align fixing holes. NEVER USE FINGERS OR HANDS.

- Apply the torque settings listed on page 20.
- Before refitting the engine to the clutch box carefully clean the mating surfaces and apply sealing compound (0.0787 in. (2 mm) diameter), according to the diagram shown Section 21, Chapter 1, page 29.
- Fit the engine on the clutch casing.
- Re-fit the front axle support assembly on the engine.
- Carry out operation **23 101 26** Propeller shafts and guard, only installation (see Sect. 23).
- Connect the brake piping.
- Connect the wires to the starter motor and position the other wires on the engine.
- Assemble all hydraulic pipes and hoses.
- Carry out operation **10 254 44** Exhaust pipe, only installation (see Sect. 10).
- Assemble the hydraulic pump feed piping, complete with the relative support bracket.
- Connect the lower radiator sleeve to the rigid pipe.
- Place the inlet sleeve on the turbocharger and secure in position.
- Connect the electrical connections to the clogged air filter sensor.
- Connect the injection pump fuel supply piping.
- Connect the steering sensor wire.
- Fit the hydrostatic steering piping to the radiator.



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- Connect the hydrostatic steering piping.
- Connect the brake piping on the front axle.
- Connect and secure the main fuel tank/extra fuel tank piping.
- Connect the upper radiator sleeve.
- Attach the radiator bracket.
- Connect the fuel return piping to the fuel tank.
- Position the front guard and connect the headlamps and direction indicator electrical connections.
- Screw the plug on the rear transmission casing and fill up with oil (see page 6, Sect. 00 for prescribed products and quantities).
- Carry out operation **90 114 20** Removable front roll bar, only re-assembly (see sect. 90) (models with platform).
- Carry out operation **90 110 36** Platform assembly, only installation (see Sect. 90) (models with platform).
- Carry out operation **90 150 10** Cab with platform unit, only installation (see Sect. 90) (models with cab).
- Fill up the engine cooling system (see page 6, Sect. 00 for prescribed products and quantities).
- Fill up the fuel tank (see page 6, Sect. 00 for prescribed products and quantities).
- Bleed the brakes (see Sect. 33).

Op. 10 001 30 COMPRESSION TEST

In case of poor engine performance, in addition to checking the fuel injection system (injection nozzles and injection pump), also test the compression on each cylinder.

DANGER

Do not use matches, lighters, blowtorches or any form of naked flame as a source of light when inspecting the engine due to the presence of flammable fluids and vapour.

Compression ratio

The compression ratio is a measure of the quantity of air drawn into the cylinder, and provides an indication of the efficiency of the sealing elements in the cylinder (piston rings and valves).

Uniform compression in all the cylinders ensures that they all perform an equal amount of work, provided that each cylinder is injected with the same quantity of fuel at the right time.

Low compression not only reduces engine performance, it also causes incomplete fuel combustion due to the lack of available combustion air.

The engine therefore gives poor performance with excessive fuel consumption and, consequently, exhaust smoke and restriction of the exhaust passages.

As the compression ratio **also varies with the temperature of the engine** (cold engines produce lower compression values than hot engines), the compression should only be tested when the engine is at normal operating temperature.

Compression should be tested using the compression test kit **380000303**, as follows:

1) run the engine until it reaches normal operating temperature;

2) switch off the engine;

3) disconnect the lead from the engine stop electromagnet on the injection pump in order to close the valve and block the flow of fuel to the injectors;

4) remove the injector from the cylinder to be tested;

5) turn the engine over a few times with the starter motor in order to expel any carbon residue;

6) fit the dummy injector **380000617** in place of the injector removed previously, inserting the copper sealing washer;

7) connect the compression test instrument **380000303** and take readings while turning the engine over with the starter motor.

On engines in perfect working order, with the sump oil at approx. 104 °F (40 °C) at sea level (29.9212 in. (760 mm) mercury) and at an engine speed of 200 to 280 rpm, the compression should be 369.75 to 398.75 psi (25.5 to 27.5 bar).

8) Test the compression on the other cylinders, repeating steps 4–5–6–7, bearing in mind that:

The minimum permissible compression on a used engine is 313.2 psi (21.6 bar).

The maximum permissible compression difference between cylinders is 43.5 psi (3 bar).

Every 100 metres above sea level corresponds to a reduction in compression by approx. 1%.

CONSIDERATIONS:

Uniform compression

Although high compression is important, it is more important for smooth engine running that compression is uniform in all cylinders.

Low compression readings.

If extremely low pressure readings are obtained on one cylinder it is advisable to repeat the test.

Before testing this time, pour about a spoonful of engine oil into the cylinder through the injector bore.

Turn over the engine a few times to distribute the oil evenly over the cylinder walls, and then repeat the test.

If the second test readings are significantly higher, suspect worn piston rings, out–of–round or damaged pistons or liners.

If the second test readings are not higher, the problem will be the valves.

On the other hand, if the second test reading shows only a slight improvement, the problem will be due to both the valves and the rings.

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