FARMALL 65C, FARMALL 75C, FARMALL 85C, FARMALL 95C REPAIR MANUAL COMPLETE CONTENTS

The following pages are the collation of the contents pages from each section and chapter of the Farmall 65C, Farmall 75C, Farmall 85C, Farmall 95C Repair manual. Complete Repair part # 87758598.

The sections used through out all Case IH product Repair manuals may not be used for each product. Each Repair manual will be made up of one or several books. Each book will be labeled as to which sections are in the overall Repair manual and which sections are in each book.

The sections listed above are the sections utilized for the Farmall 65C, Farmall 75C, Farmall 85C, Farmall 95C Tractors.

87758605 10/08
1st Printing

SECTION 00 - GENERAL

Chapter 1 - General

CONTENTS

WARNING

All maintenance and repair work described in this manual must be performed exclusively by CASE IH service technicians in strict accordance with the instructions given and using any specific tools necessary.

WARNING

Anyone who performs the operations described herein without strictly following the instructions is personally responsible for resulting injury or damage to property.

WARNING

The Manufacturer and all organizations belonging to the Manufacturer's distribution network, including but not restricted to national, regional or local distributors, will accept no responsibility for personal injury or damage to property caused by abnormal function of parts and/or components not approved by the Manufacturer, including those used for maintenance and/or repair of the product manufactured or marketed by the Manufacturer. In any case, the product manufactured or marketed by the Manufacturer is covered by no guarantee of any kind against personal injury or damage to property caused by abnormal function of parts and/or components not approved by the Manufacturer.

GENERAL INSTRUCTIONS

IMPORTANT NOTICE

All maintenance and repair operations described in this manual should be carried out exclusively by the authorized workshops. All instructions detailed should be carefully observed and special equipment indicated should be used if necessary.

Everyone who carries out service operations described without carefully observing these directives will be directly responsible for resulting consequences.

SHIMMING

At each adjustment, select adjusting shims, measure them individually using a micrometer and then sum up recorded values. Do not rely on measuring the whole shimming set, which may be incorrect, or on the rated value indicated for each shim.

ROTATING SHAFT SEALS

To correctly install rotating shaft seals, observe the following instructions:

- Let the seal soak into the same oil as it will seal for at least half an hour before mounting;
- Thoroughly clean the shaft and ensure that the shaft working surface is not damaged;
- Place the sealing lip towards the fluid. In case of a hydrodynamic lip, consider the shaft rotation direction and orient grooves in order that they deviate the fluid towards the inner side of the seal;
- Coat the sealing lip with a thin layer of lubricant (oil rather than grease) and fill the gap between the sealing lip and the dust lip of double lip seals with grease;
- Insert the seal into its seat and press it down using a flat punch. Do not tap the seal with a hammer or a drift;
- Take care to insert the seal perpendicular to its seat while you are pressing it. Once the seal is settled, ensure that it contacts the thrust element, if required;
- To prevent damaging the sealing lip against the shaft, place a suitable protection during installation.

O RINGS

Lubricate the O rings before inserting them into their seats. This will prevent the O rings from roll over and twisting during mounting, which will jeopardize sealing.

SEALERS

Apply silicone/gasket eliminator over the mating surfaces marked with an X.
Before applying the sealer, prepare the surface as follows:

- remove possible scales using a metal brush;
- thoroughly degrease the surfaces using one of the following cleaning agents: trichlorethylene, diesel fuel or a water and soda solution.

BEARINGS

It is advisable to heat the bearings to 80° to 90°C (176° to 194°F) before mounting them on their shafts and cool them down before inserting them into their seats with external tapping.

SPRING PINS

When mounting split socket spring pins, ensure that the pin notch is oriented in the direction of the effort to stress the pin.

Spiral spring pins should not be oriented during installation.

GENERAL INSTRUCTIONS

PRECAUTIONARY NOTICE

Only authorized workshops should carry out maintenance and repair operations on the tractor, or tractor components. Carefully observe all instructions, safety precautions, and the use of equipment such as special tools, as detailed in this manual. Damage to the tractor, or injury to personnel is the direct responsibility of anyone who fails to observe these precautions.

EQUIPMENT NOTICE

The equipment proposed in this manual is:

- Designed and studied expressly for use on Case IH tractors
- Necessary for adequate and reliable repair of the tractor
- Strictly tested for the efficient and long lasting life cycle of the tractor

SPARE PARTS NOTICE

Genuine CASE IH spare parts guarantee the same quality, safety and life cycle as original components. These parts bear the logo.

GENERAL NOTICES

In this manual, the description 'FRONT', 'REAR', 'RIGHT-HAND' and 'LEFT-HAND' refer to the view seen by the operator while in the operator's seat, looking in the direction in which the tractor normally moves.

Wear limits detailed in this manual, although advised, are not binding.

HEALTH AND SAFETY

CONTENTS

HEALTH AND SAFETY PRECAUTIONS

Many of the procedures associated with vehicle maintenance and repair involve physical hazards or other risks to health. This section lists, alphabetically, some of these hazardous operations and the materials and equipment associated with them. The precautions necessary to avoid these hazards are identified.

The list is not exhaustive and all operations and procedures and the handling of materials, should be carried out with health and safety in mind.

ACIDS AND ALKALIS - see Battery acids, e.g. caustic soda, sulfuric acid.

Used in batteries and cleaning materials.

Irritant to the skin, eyes, nose and throat. Causes burns.

Avoid splashes to the skin, eyes and clothing. Wear suitable protective gloves and goggles. Can destroy ordinary protective clothing. Do not breathe mists.

Ensure access to water and soap is readily available for splashing accidents.

ADHESIVES AND SEALERS - see Fire

Highly Flammable and combustible.

Generally should be stored in "No Smoking" areas; cleanliness and tidiness in use should be observed, e.g. disposable paper covering benches; should be dispensed from applicators where possible; containers, including secondary containers, should be labelled.

Solvent based Adhesives/Sealers - See Solvents.

Follow manufacturers instructions.

Water based Adhesives/Sealers

Those based on polymer emulsions and rubber lattices may contain small amounts of volatile toxic and harmful chemicals. Skin and eye contact should be avoided and adequate ventilation provided during use.

Follow manufacturers instructions.

Resin based Adhesives/Sealers - e.g. epoxide and formaldehyde resin based.

Mixing should only be carried out in well ventilated areas as harmful or toxic volatile chemicals may be released.

Skin contact with uncured resins and hardeners can result in irritation; dermatitis and absorption of toxic or harmful chemicals through the skin. Splashes can damage the eyes.

Provide adequate ventilation and avoid skin and eye contact. Follow manufacturers instructions.

Anaerobic, Cyanoacrylate and other Acrylic Adhesives

Many are irritant, sensitizing or harmful to the skin. Some are eye irritants.

Skin and eye contact should be avoided and the manufacturers instructions followed.

Cyanoacrylate adhesives (super-glues) must not contact the skin or eyes. If skin or eye tissue is bonded cover with a clean moist pad and get medical attention. do not attempt to pull tissue apart. Use in well ventilated areas as vapors can cause irritation of the nose and eyes.

For two-pack systems see Resin based adhesives/sealers.

Isocyanate (Polyurethane) Adhesives/Sealers - see Resin based Adhesives.

Individuals suffering from asthma or respiratory allergies should not work with or near these materials as sensitivity reactions can occur.

Any spraying should preferably be carried out in exhaust ventilated booths removing vapors and spray droplets from the breathing zone. Individuals working with spray applications should wear supplied air respirators.

ANTIFREEZE - see Fire, Solvents e.g. Isopropanol, Ethylene Glycol, Methanol.

Highly Flammable and Combustible.

Used in vehicle coolant systems, brake air pressure systems, screenwash solutions.

Vapors given off from coolant antifreeze (glycol) arise only when heated.

Antifreeze may be absorbed through the skin in toxic or harmful quantities. Antifreeze if swallowed is fatal and medical attention must be found immediately.

SECTION 10 - ENGINE

Chapter 1 - Engine

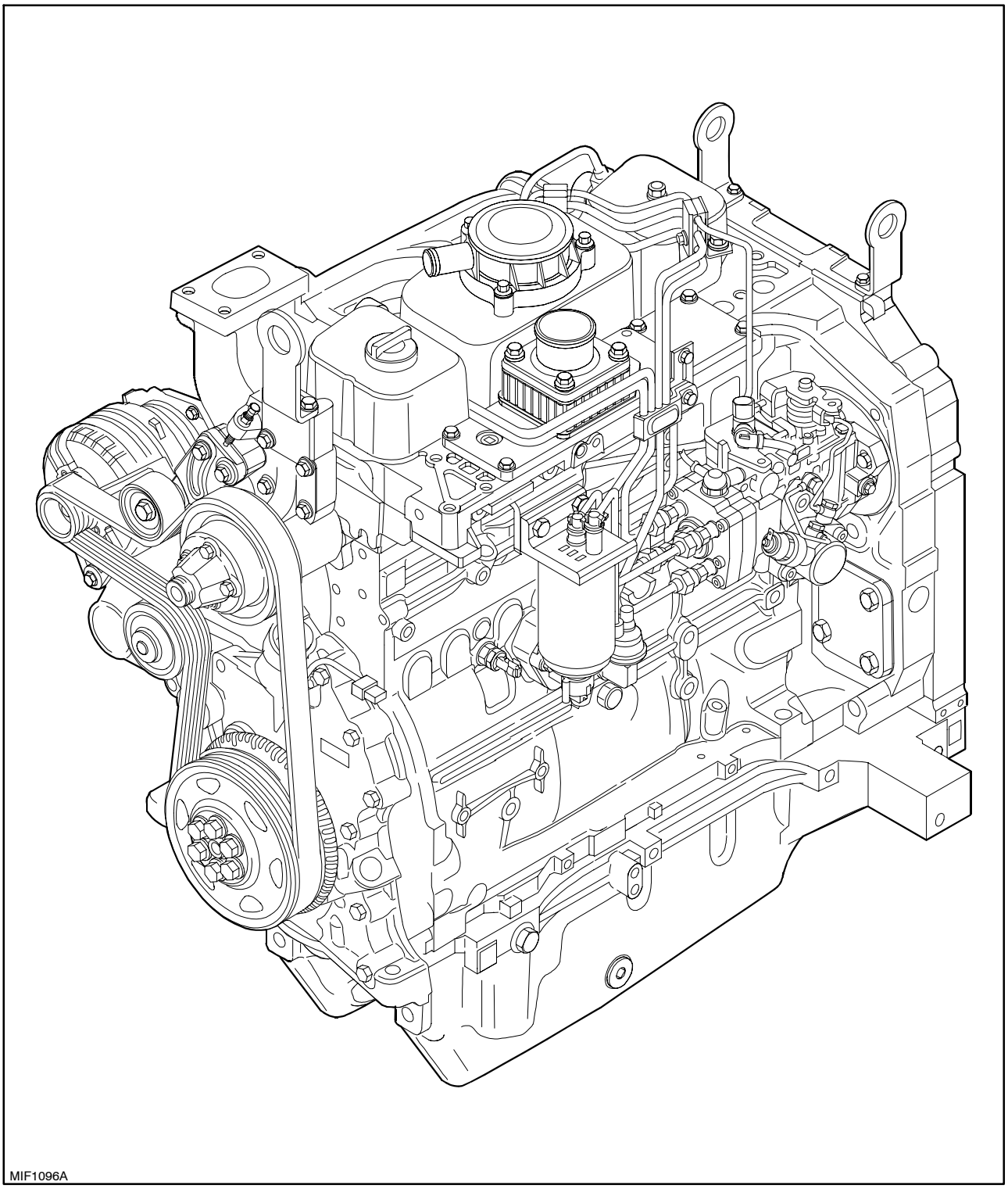
CONTENT

SPECIFICATIONS

GENERAL SPECIFICATIONS	
Engine, technical type:	
- mod. 85C type 44STA/MNG (BOSCH pump)	
- mod. 95C - type 44STA/MND (BOSCH pump)	
Cycle	diesel, 4-stroke
Fuel injection	Direct
Number of cylinders in line	4
Piston diameter	104 mm (4.09 in.)
Piston stroke	132 mm (5.20 in.)
Total displacement	4485 cm^3 (274 cu. in.)
Compression ratio	16.5:1
Maximum Power Output:	
- mod. 85C - type 44STA/MNG	63 kW (86 Hp)
- mod. 95C - type 44STA/MND	71 kW (97 Hp)
Maximum power speed	2300 rpm
- Maximum torque: mod. 85C - type 44STA/MNG	370 Nm (273 ft-lbs)
- Maximum torque: mod. 95C - type 44STA/MND	418 Nm (308 ft-lbs)
Maximum torque speed	1300 rpm
Number of main bearings	5
Sump pan	structural, cast iron
Lube	forced, with lobe pump
Pump drive	from crankshaft
Engine speed/oil pump speed ratio	1:1
Oil filtration	mesh screen on oil pick-up and filter cartridge in delivery line
Normal oil pressure with motor warmed-up	
at slow idling	1.2 bar (17.40 psi)
at fast idling	3.9 bar (56.56 psi)

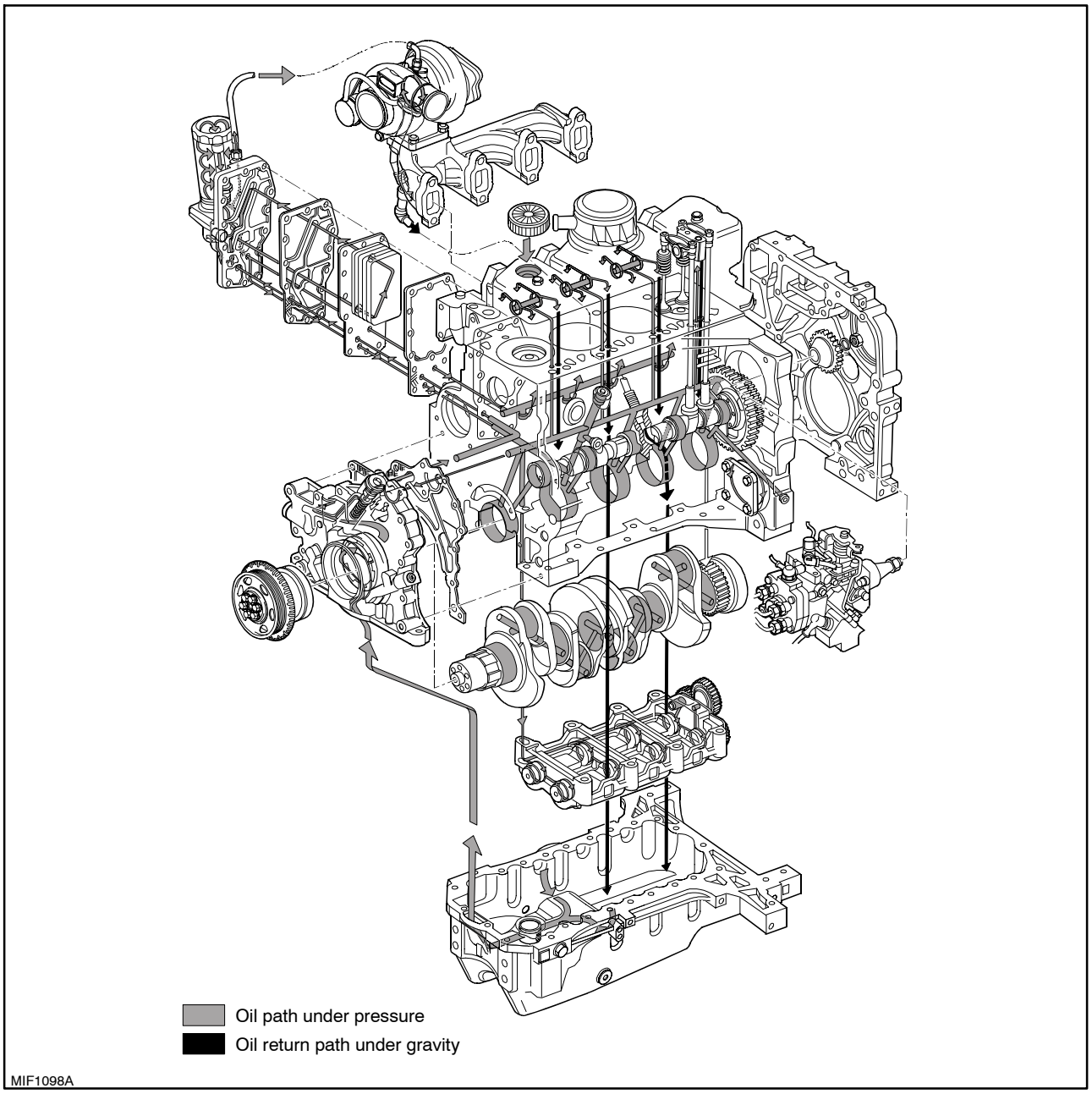
(continued)

SECTIONAL VIEWS



1

Engine view

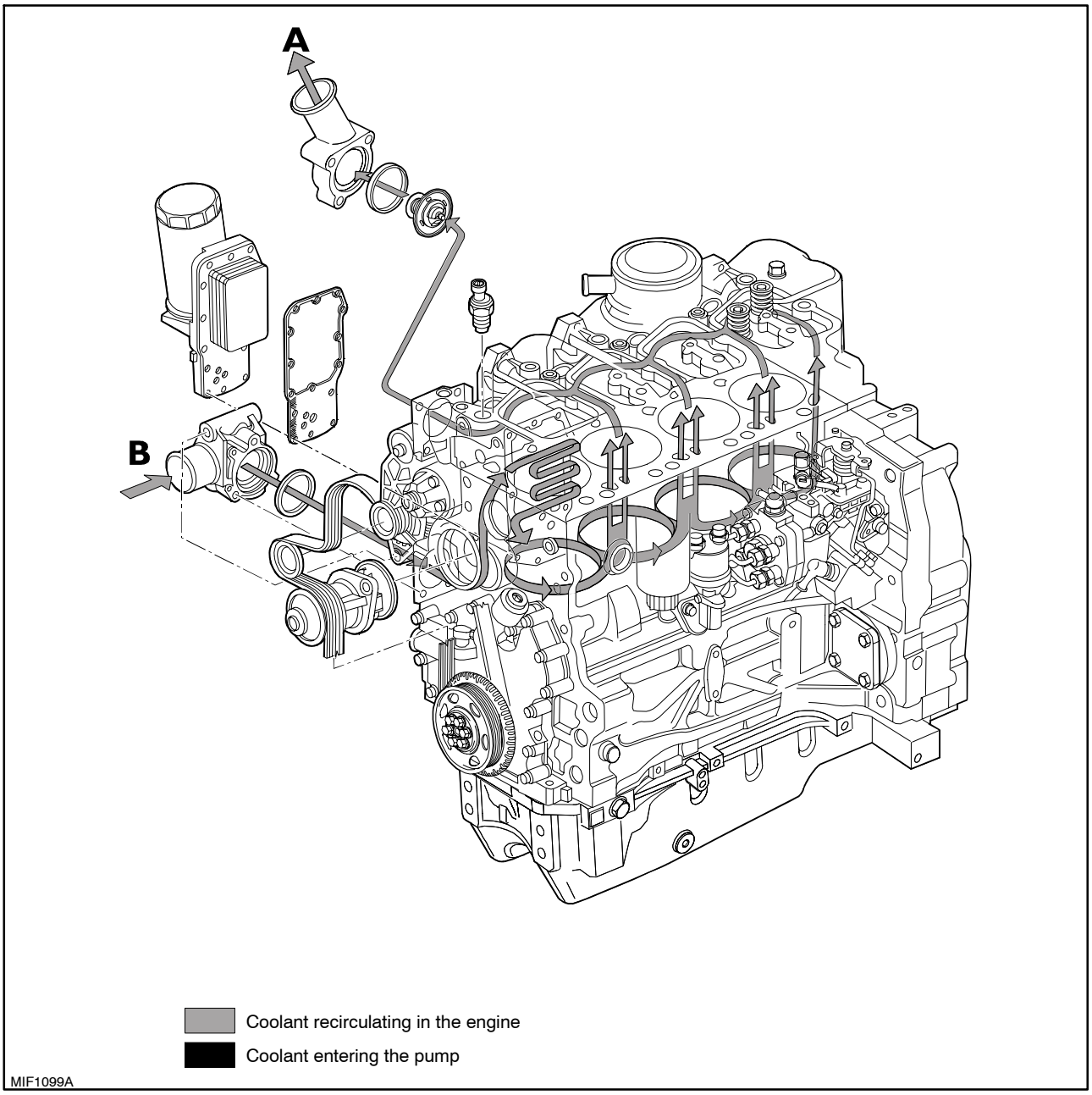


2

Engine lubrication diagram

Forced-circulation lubrication is accomplished by the following components:

- oil pump, housed at the front of the crankcase, driven by the grooved bushing keyed onto the shank of the crankshaft;
- water / oil cooler, housed in the crankcase;
- oil pressure control valve incorporated in the cooler assembly;
- by-pass valve to cut off clogged oil filter, incorporated in the cooler assembly;
- cartridge oil filter.

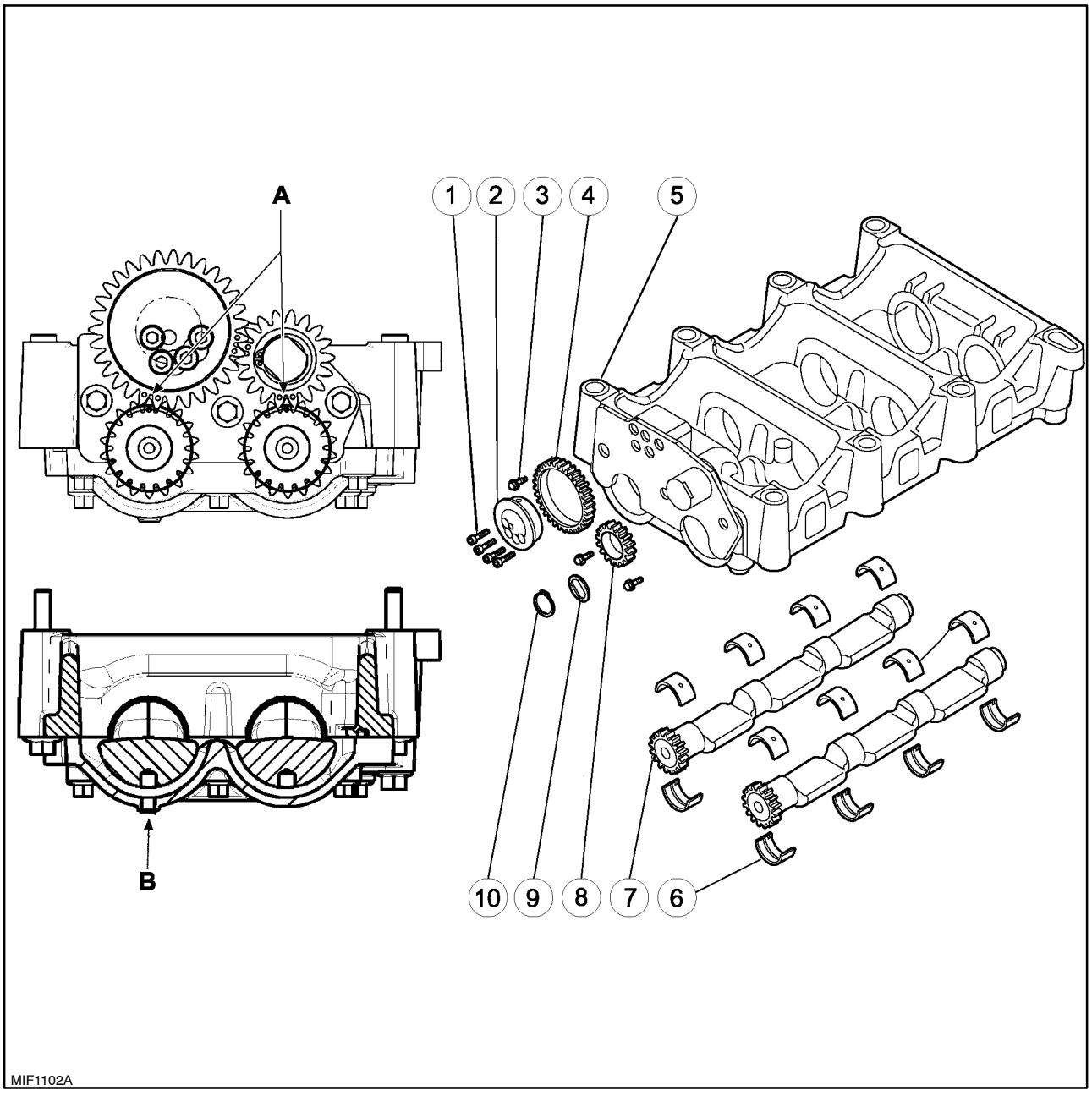


3

Cooling diagram

The forced circulation, closed-circuit engine cooling system is composed of the following components:

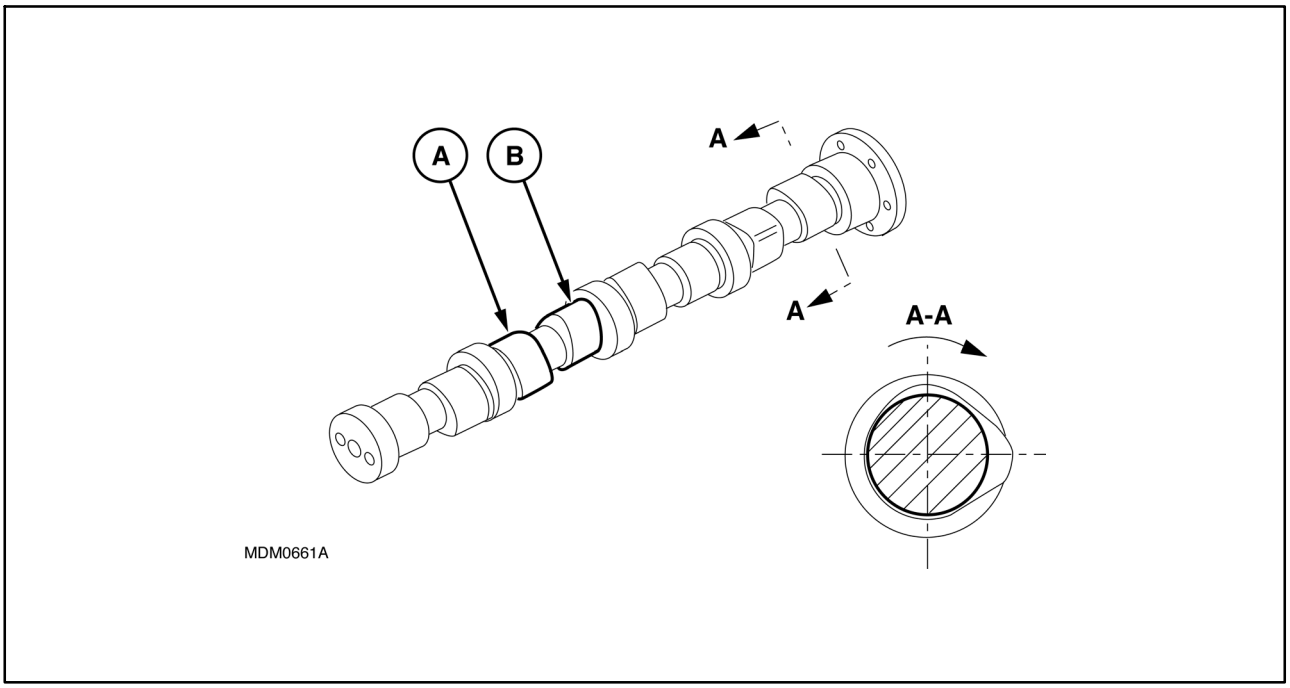
- a lubricating oil cooler;
- a centrifugal coolant pump housed at the front of the crankcase;
- a thermostat valve governing coolant circulation.



4

Additional counterweight diagram

1. Retaining bolts
2. Support
3. Retaining bolts
4. Gear
5. Balancing weight
6. Half bearings
7. Counter-shaft
8. Gear
9. Ring
10. O-rings



5

Camshaft view

A. Inlet valve cam.

B. Exhaust valve cam.

DESCRIPTION AND OPERATION

EXHAUST GAS RECIRCULATION SYSTEM (EGR)

On the TIER 3 version, the exhaust cam profile has been modified to permit partial opening of the related valve during the inlet phase (exhaust gas recirculation EGR) with the consequent re-introduction of some of the exhaust gases into the engine cylinders.

The exhaust gases can be partially redirected into the cylinders in order to reduce the maximum combustion temperature values which are responsible for the production of nitrogen oxide (NO_x).

The exhaust gas recirculation system (EGR), reducing the temperature of combustion by decreasing the concentration of oxygen in the combustion chamber, is therefore an effective system to control emissions of NO_x.

The internal EGR system is not provided with any electronically controlled elements: the system is always on.

Its configuration needs no additional elements such as control valves, pipes or heat exchangers.

The exhaust cam (B) in addition to the main lobe has another lobe (see sect. A-A, fig. 5) with respect to the configuration without EGR.

The additional lobe, during the inlet phase of the cylinder under examination, permits briefly opening the exhaust valve generating recirculation due to the exhaust gases returning caused by the lower pressure created in the inlet phase inside the cylinder.

OVERHAUL

Op. 10 001 10

ENGINE

Removal

DANGER

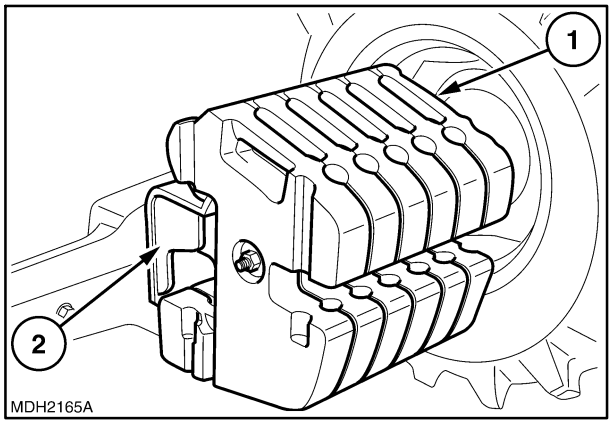
Lift and handle all heavy parts using suitable lifting equipment.
Make sure that assemblies or parts are supported by means of suitable slings and hooks. Ensure that no-one is in the vicinity of the load to be lifted.

WARNING

Use suitable tools to align the holes. NEVER USE FINGERS OR HANDS.

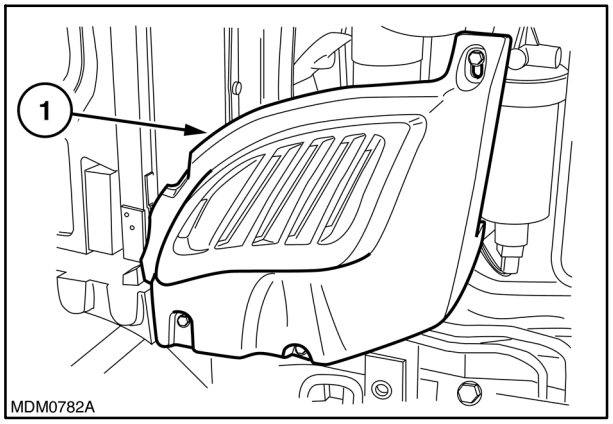
1. Remove the hood as described in operation **90 100 22**.

2. Extract the fixing pin and remove the ballast (1); unscrew the retaining screws and retrieve the ballast support (2).



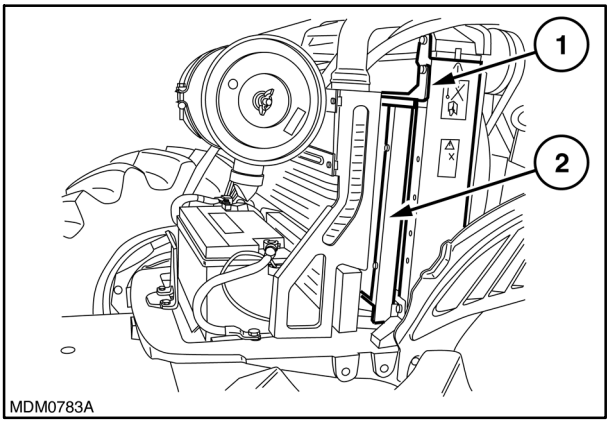
6

3. Unscrew the retaining bolts and remove the side grille (1).
   Perform this operation on the other side of the tractor too.



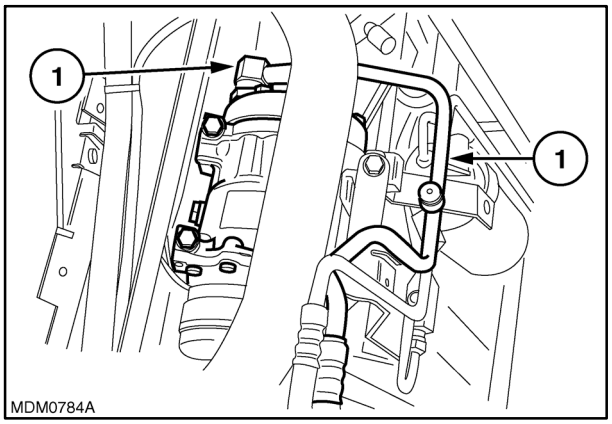
7

4. Unscrew the related retaining bolt and loosen the guide (1), unhook the catch and take out the condenser (2).



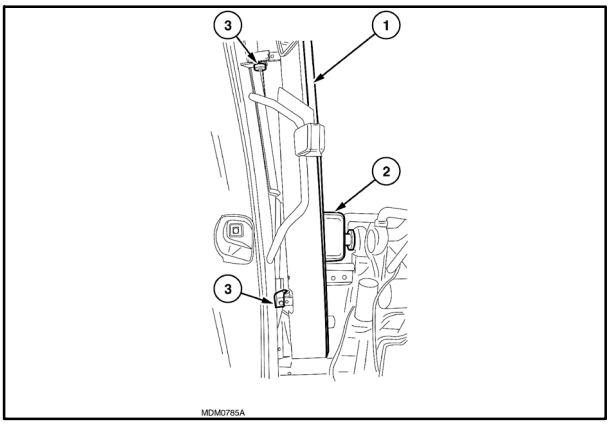
8

5. Disconnect the electrical connection from the compressor (1) and unscrew the related retaining bolts.
   Remove the brackets fixing the pipes of the air conditioning system and take the condenser, compressor and pipes under the transmission without disconnecting the pipes.



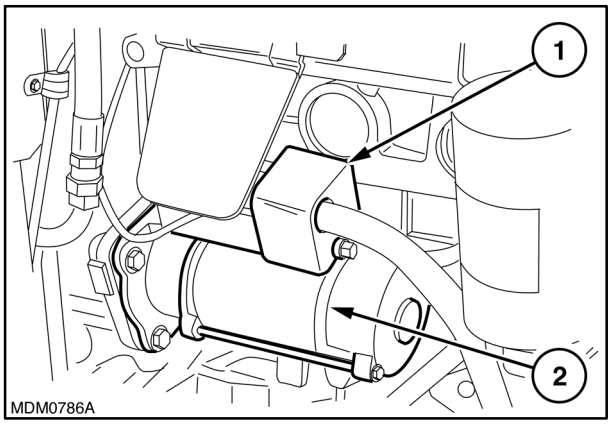
9

6. Unscrew the bolts (3) securing the exhaust pipe (1), unscrew the exhaust silencer retaining bolts (2) and remove the entire assembly.
   Unscrew the retaining bolts and remove the heat shield.



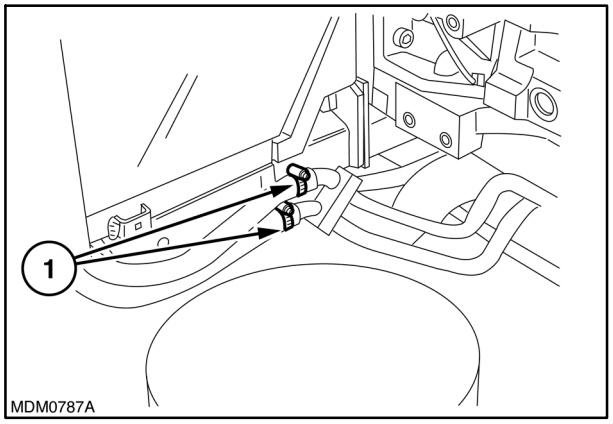
10

7. Remove the guard (1) and disconnect the cables from the starter motor (2).



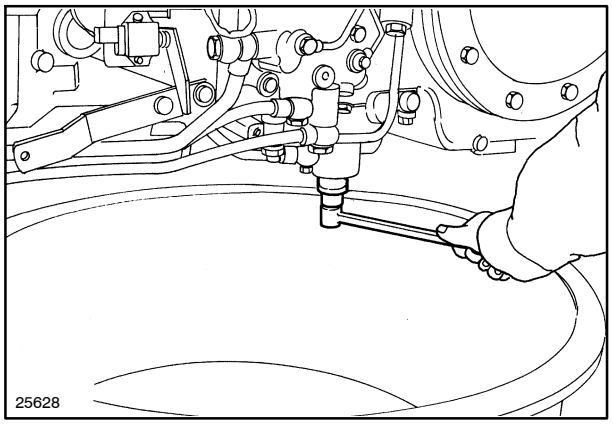
11

8. Disconnect the pipes (1) of the cab heating system and drain the engine cooling system.



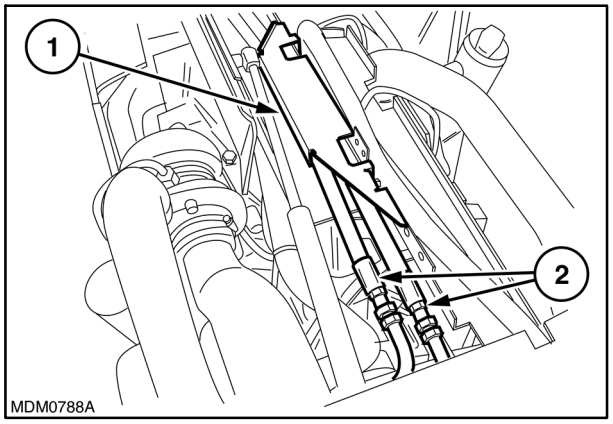
12

9. Unscrew the plug and drain the oil from the rear transmission casing (the prescribed quantity is 42 liters or 11 gallons).



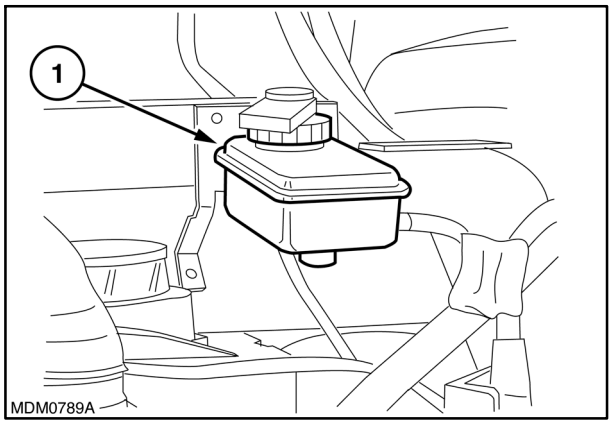
13

10. Disconnect the power steering pipes (2), unscrew the related retaining bolts and remove the bracket (1).



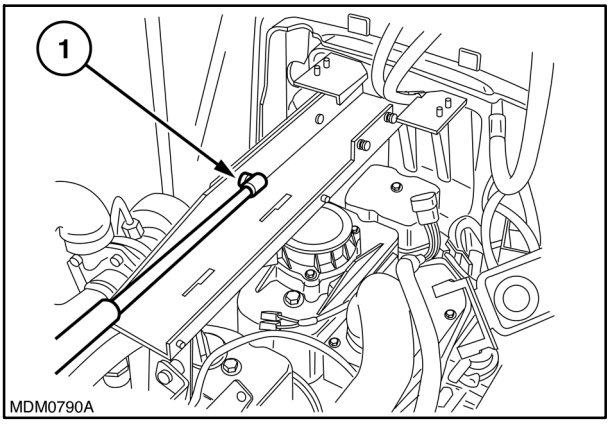
14

11. Disconnect the electrical connection from the brake fluid reservoir (1), unscrew the retaining bolts and remove the reservoir from the supporting bracket.



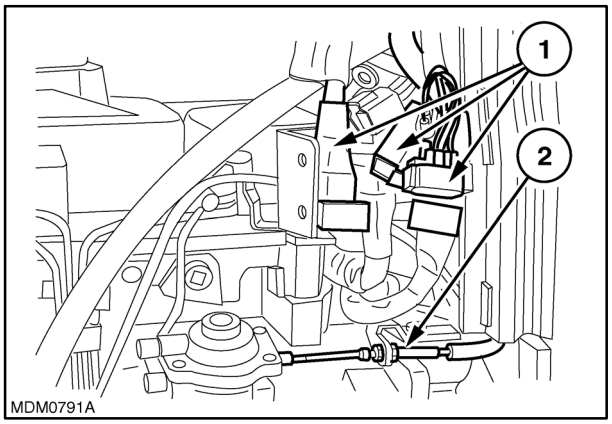
15

12. Unscrew the retaining bolts and remove the hood bracket (1).



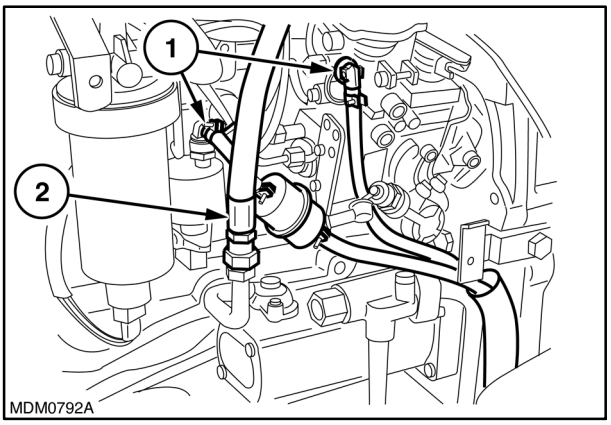
16

13. Disconnect: the main electrical connections (1), the connection of the steering sensor and the cab ground, disconnect the throttle cable (2) from the injection pump.



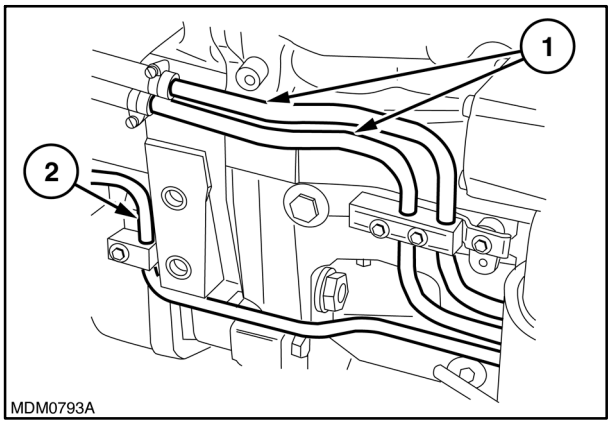
17

14. Disconnect the diesel pipes (1) from the injection pump.
Disconnect the pipe (2) from the pump.



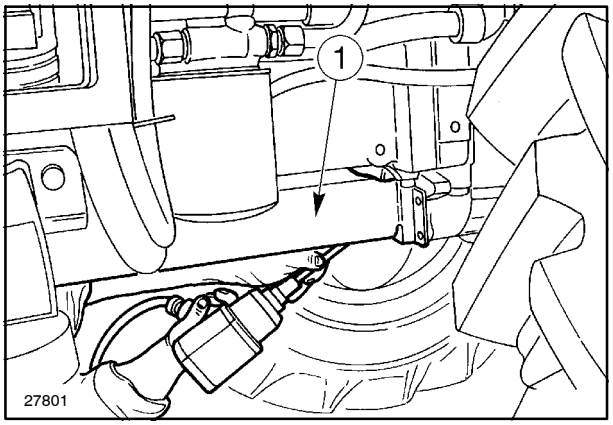
18

15. Disconnect: the transmission oil cooler pipes (1) and the front axle differential lock pipe (2).



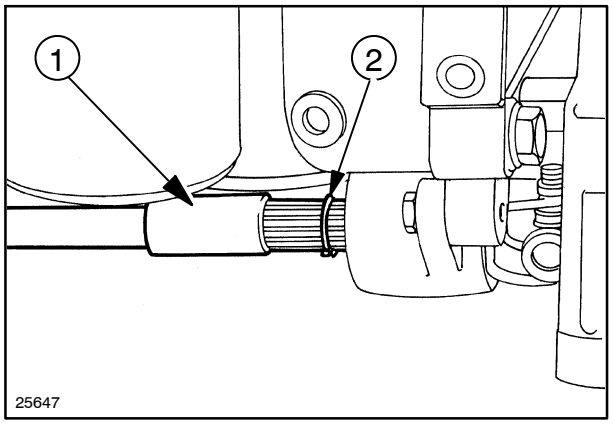
19

16. Unscrew the front, middle and rear retaining bolts and remove the propeller shaft guard (1).



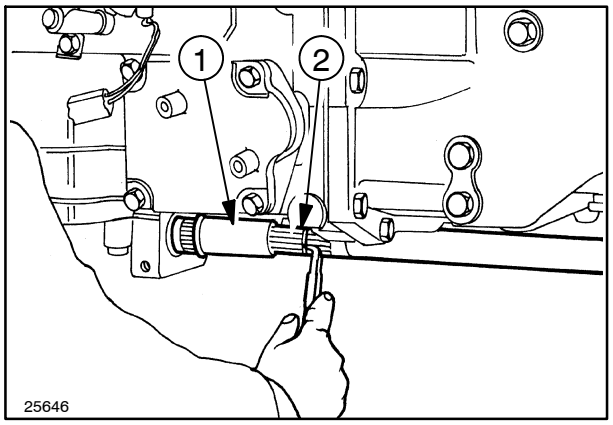
20

17. Remove the circlip (2) and move the front sleeve (1) backwards in order to free it from the groove on the front axle.



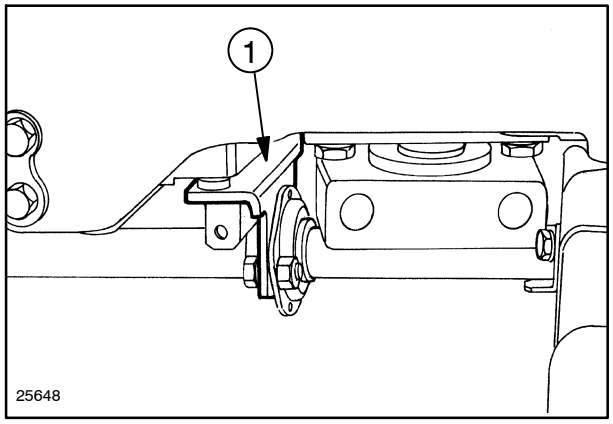
21

18. Remove the circlip (2) and move the rear sleeve (1) in order to release it from the groove on the drive.



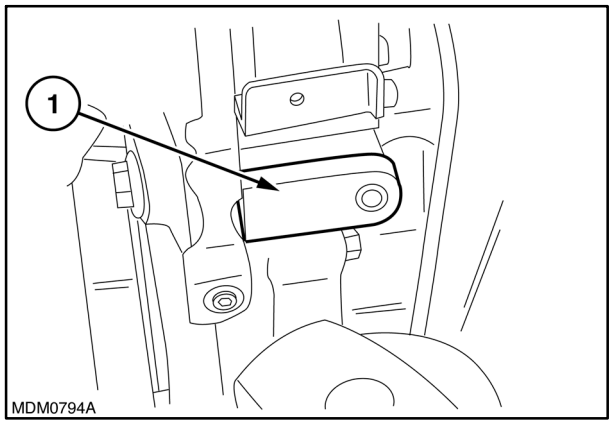
22

19. Remove the propeller shaft central support (1) retaining bolts and extract the shaft together with the support.



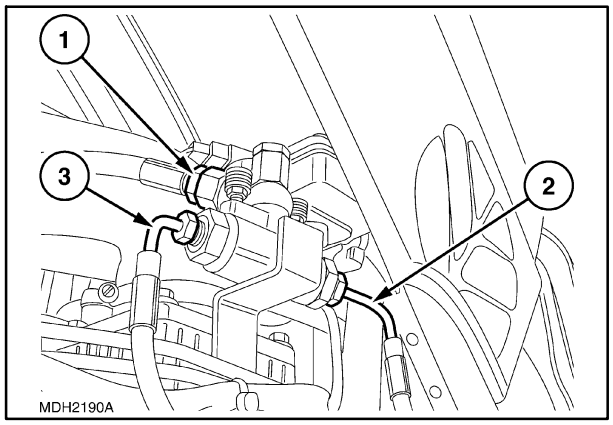
23

20. Loosen the retaining bolt and turn the bracket (1) through 90°.



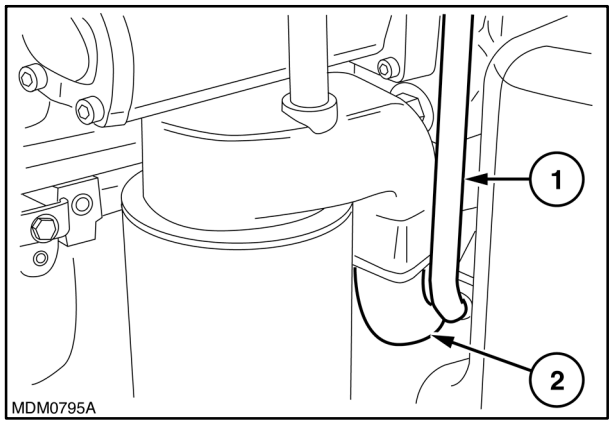
24

21. For models fitted with brakes on the front axle it is necessary to drain the brake fluid tank and disconnect the pipes (1, 2 and 3) from the block.



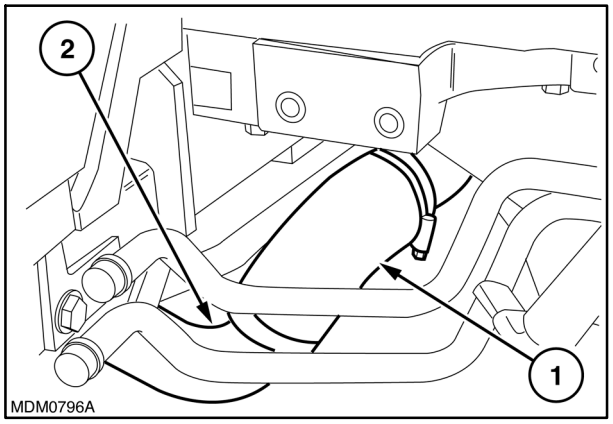
25

22. Unscrew: the retaining bolts of the pipe (1) delivering oil to the pump and the bolts retaining the pipe (2) to the filter support.



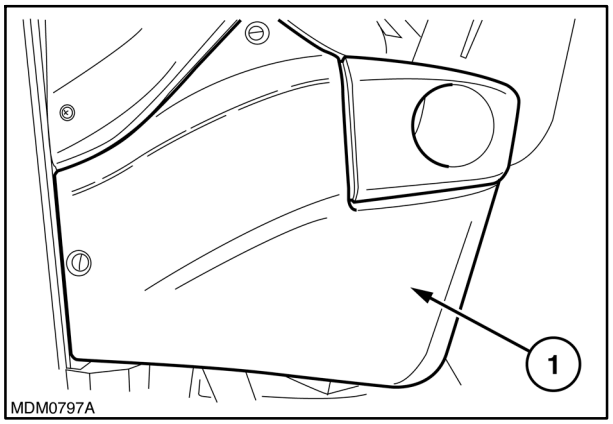
26

23. Loosen the related clamps and remove the sleeve (2) from the pipe (1) and remove the transmission oil inlet pipe together with the above-mentioned sleeve.



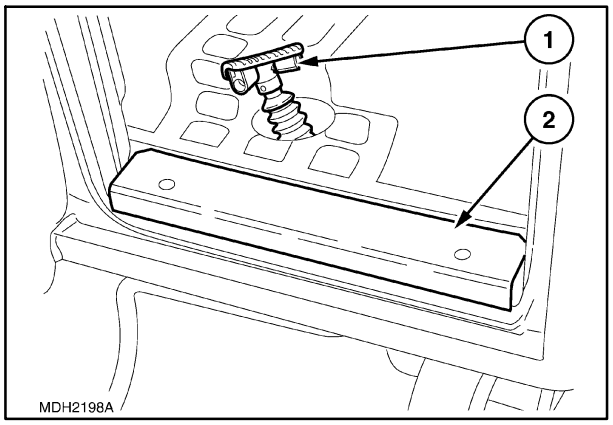
27

24. Unscrew the retaining bolts and remove the guard (1). Do this on both sides.



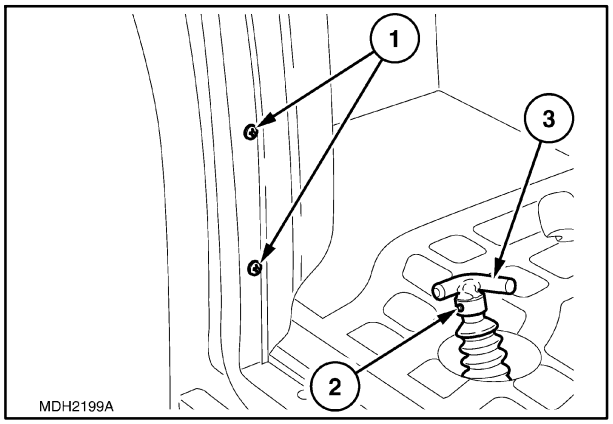
28

25. Unscrew the retaining bolts and remove the cab mat guard (2).
Remove the plastic pedal (1).



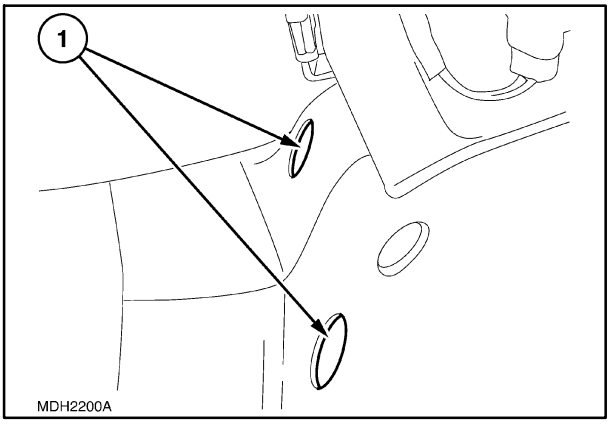
29

26. Unscrew the bolts (1) (on both sides), extract the spring pin (2) and remove the throttle pedal (3).



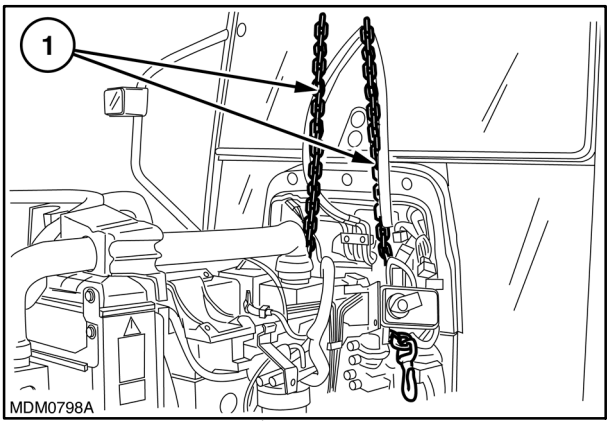
30

27. Raise the front part of the cab mat; remove the two plastic plugs and, through the hole (1), unscrew the four upper bolts securing the engine to the clutch casing.



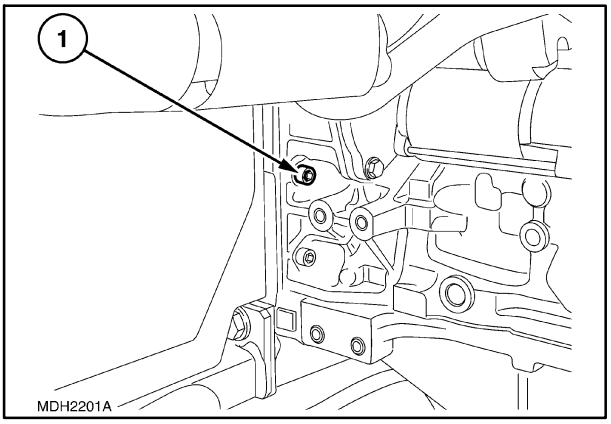
31

28. Place a stand under the clutch casing, attach the rear portion of the engine to a hoist, using chains (1).



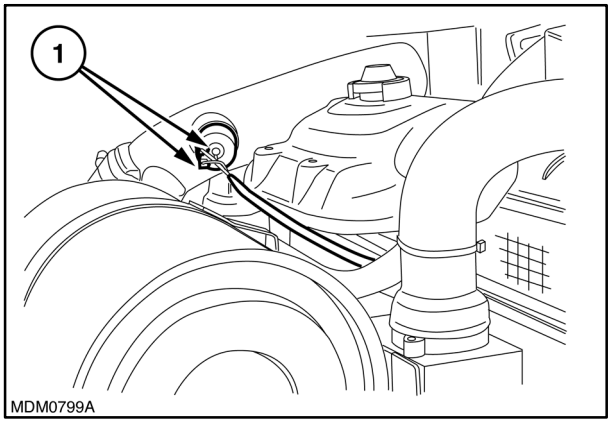
32

29. Unscrew the remaining bolts (1) securing the engine to the clutch casing and separate the engine with the front axle from the clutch casing.



33

30. Disconnect the connections (1) from the clogged air filter sensor.



34

Suggest:

If the above button click is invalid.

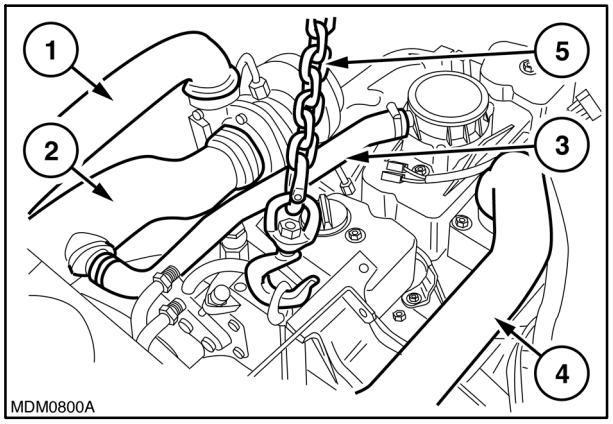
Please download this document

first, and then click the above link

to download the complete manual.

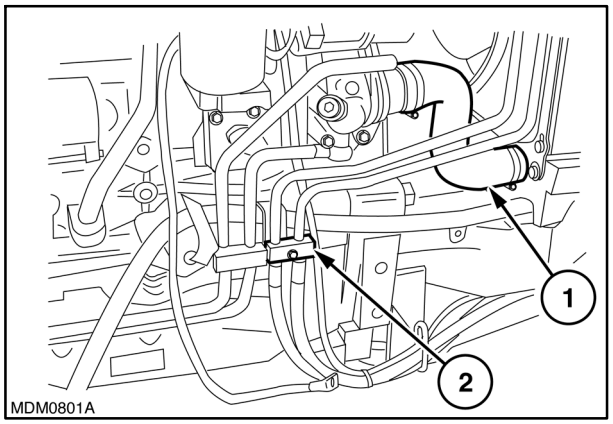
Thank you so much for reading

31. Set one fixed stand under the axle support at the rear and the other under the front side.
    Keeping the chains (1,fig. 32) connected, join one chain (5) to the front of the engine.
    Unscrew the clamps and remove: The engine oil vapor recirculation pipe (3), turbocharger intake pipe (2), and the intake air cooler pipes (1 and 4).



35

32. Disconnect the lower (1) and upper sleeves from the radiator, remove the bracket (2) fastening the power steering pipe.



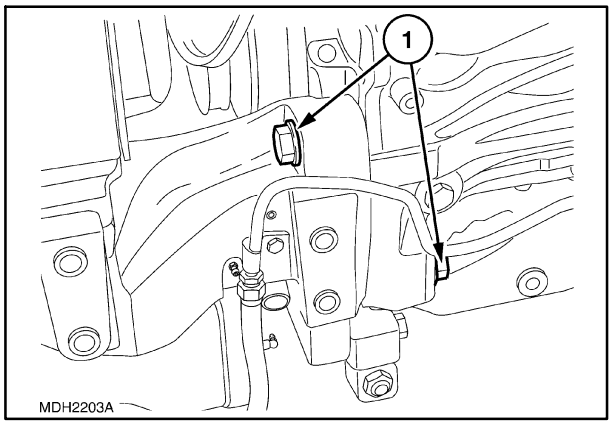
36

33. Insert a wooden wedge on each side between the axle support and the axle.
    For all models, unscrew the bolts (1) on both sides and separate the engine from the axle-support assembly with the radiator and battery.

34. Rest the engine on an adequate support.

WARNING

Use suitable tools to align the holes. NEVER USE FINGERS OR HANDS.



37

Installation

To re-fit the engine, proceed as follows.

1. Apply the torque settings listed in torque table.
2. Connect the engine, with chains, to the hoist.