

**FARMALL 65A
FARMALL 75A
FARMALL 85A
FARMALL 95A
FARMALL 105A
FARMALL 115A**
Tractor

SERVICE MANUAL

Part number 47445484

English

August 2013

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SERVICE MANUAL

**FARMALL 105A , FARMALL 115A , FARMALL 65A , FARMALL 75A , FARMALL
85A , FARMALL 95A**

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INTRODUCTION

Safety rules

Pay attention to this symbol



This warning symbol points out important messages involving personal safety. Carefully read the safety rules contained herein and follow advised precautions to avoid potential hazards and safeguard your safety and personal integrity. In this manual you will find this symbol together with the following key-words:

WARNING – It gives warning about improper repair operations and deriving potential consequences affecting the service technician's personal safety.

DANGER – It gives specific warning about potential dangers for personal safety of the operator or other persons directly or indirectly involved.

To prevent accidents

Most accidents and personal injuries taking place in workshops are due from non-observance of some simple and essential prudential rule and safety precautions. For this reason, **IN MOST CASES THEY CAN BE AVOIDED**. It suffices to foresee possible causes and act consequently with necessary caution and care.

The possibility that an accident might occur with any type of machines should not be disregarded, no matter how well the machine in question was designed and built.

A wise and careful service technician is the best precautions against accidents.

Careful observance of this only basic precaution would be enough to avoid many severe accidents.

DANGER: Never carry out any cleaning, lubrication or maintenance operations when the engine is running.

Safety rules

Generalities

- Carefully follow specified repair and maintenance procedures.
- Do not wear rings, wristwatches, jewels, unbuttoned or flapping clothing such as ties, torn clothes, scarves, open jackets or shirts with open zips which could get hold into moving parts. We advise to use approved safety clothing such as anti-slipping footwear, gloves, safety goggles, helmets, etc.
- Never carry out any repair on the machine if someone is sitting on the operator's seat, except if they are certified operators to assist in the operation to be carried out.
- Never operate the machine or use attachments from a place other than sitting at the operator's seat.
- Never carry out any operation on the machine when the engine is running, except when specifically indicated.
- Stop the engine and ensure that all pressure is relieved from hydraulic circuits before removing caps, covers, valves, etc.
- All repair and maintenance operations should be carried out with the greatest care and attention.
- Service stairs and platforms used in a workshop or in the field should be built in compliance with the safety rules in force.
- Disconnect the batteries and label all controls to warn that the tractor is being serviced. Block the machine and all equipment which should be raised.
- Never check or fill fuel tanks and accumulator batteries, nor use starting liquid if you are smoking or near open flames as such fluids are flammable.
- Brakes are inoperative when they are manually released for maintenance purposes. In such cases, the machine should be kept constantly under control using blocks or similar devices.
- The fuel filling gun should remain always in contact with the filler neck. Maintain this contact until the fuel stops flowing into the tank to avoid possible sparks due to static electricity buildup.
- Use exclusively specified towing points for towing the tractor. Connect parts carefully. Ensure that foreseen pins and/or locks are steadily fixed before applying traction. Do not stop near towing bars, cables or chains working under load.

- To transfer a failed tractor, use a trailer or a low loading platform trolley if available.
- To load and unload the machine from the transportation mean, select a flat area providing a firm support to the trailer or truck wheels. Firmly tie the machine to the truck or trailer platform and block wheels as required by the forwarder.
- For electrical heaters, battery-chargers and similar equipment use exclusive auxiliary power supplies with a efficient ground to avoid electrical shock hazard.
- Always use lifting equipment and similar of appropriate capacity to lift or move heavy components.
- Pay special attention to bystanders.
- Never pour gasoline or diesel oil into open, wide and low containers.
- Never use gasoline, diesel oil or other flammable liquids as cleaning agents. Use nonflammable nontoxic proprietary solvents.
- Wear protection goggles with side guards when cleaning parts using compressed air.
- Do not exceed a pressure of **2.1 bar (30.45 psi)**, in accordance with local regulations.
- Do not run the engine in a closed building without proper ventilation.
- Do not smoke, use open flames, cause sparks in the nearby area when filling fuel or handling highly flammable liquids.
- Do not use flames as light sources when working on a machine or checking for leaks.
- Move with caution when working under a tractor, and also on or near a tractor. Wear proper safety accessories: helmets, goggles and special footwear.
- During checks which should be carried out with the engine running, ask an assistant to seat at the operator's seat and keep the service technician under visual control at any moment.
- In case of operations outside the workshop, drive the tractor to a flat area and block it. If working on an incline cannot be avoided, first block the tractor carefully. Move it to a flat area as soon as possible with a certain extent of safety.
- Ruined or plied cables and chains are unreliable. Do not use them for lifting or trailing. Always handle them wearing gloves of proper thickness.
- Chains should always be safely fastened. Ensure that fastening device is strong enough to hold the load foreseen. No persons should stop near the fastening point, trailing chains or cables.
- The working area should be always kept CLEAN and DRY. Immediately clean any spillage of water or oil.
- Do not pile up grease or oil soaked rags, as they constitute a great fire hazard. Always place them into a metal container. Before starting the tractor or its attachments, check, adjust and block the operator's seat. Also ensure that there are no persons within the tractor or attachment operating range.
- Do not keep into your pockets any object which might fall unobserved into the tractor's inner compartments.
- Whenever there is the possibility of being reached by ejected metal parts or similar, use protection eye mask or goggles with side guards, helmets, special footwear and heavy gloves.
- Wear suitable protection such as tinted eye protection, helmets, special clothing, gloves and footwear whenever it is necessary to carry out welding procedures. All persons standing in the vicinity of the welding process should wear tinted eye protection. NEVER LOOK AT THE WELDING ARC IF YOUR EYES ARE NOT SUITABLY PROTECTED.
- Metal cables with the use get frayed. Always wear adequate protections (heavy gloves, eye protection, etc.)
- Handle all parts with the greatest caution. Keep your hands and fingers far from gaps, moving gears and similar. Always use approved protective equipment, such as eye protection, heavy gloves and protective footwear.

Start up

- Never run the engine in confined spaces which are not equipped with adequate ventilation for exhaust gas extraction.
- Never bring your head, body, arms, legs, feet, hands, fingers near fans or rotating belts.

Engine

- Always loosen the radiator cap very slowly before removing it to allow pressure in the system to dissipate. Coolant should be topped up only when the engine is stopped or idle if hot.
- Do not fill up fuel tank when the engine is running, mainly if it is hot, to avoid ignition of fires in case of fuel spilling.
- Never check or adjust the fan belt tension when the engine is running. Never adjust the fuel injection pump when the tractor is moving.
- Never lubricate the tractor when the engine is running.

Electrical systems

- If it is necessary to use auxiliary batteries, cables must be connected at both sides as follows: (+) to (+) and (–) to (–). Avoid short circuiting the terminals. GAS RELEASED FROM BATTERIES IS HIGHLY FLAMMABLE. During charging, leave the battery compartment uncovered to improve ventilation. Avoid checking the battery charge by means of “jumpers” made by placing metallic objects across the terminals. Avoid sparks or flames near the battery area. Do not smoke to prevent explosion hazards.
- Prior to any service, check for fuel or current leaks. Remove these leaks before going on with the work.
- Do not charge batteries in confined spaces. Ensure that ventilation is appropriate to prevent accidental explosion hazard due to build up of gases released during charging.
- Always disconnect the batteries before performing any type of service on the electrical system.

Hydraulic systems

- Some fluid slowly coming out from a very small port can be almost invisible and be strong enough to penetrate the skin. For this reason, NEVER USE YOUR HANDS TO CHECK FOR LEAKS, but use a piece of cardboard or a piece of wood to this purpose. If any fluid is injected into the skin, seek medical aid immediately. Lack of immediate medical attention, serious infections or dermatosis may result.
- Always take system pressure readings using the appropriate gauges.

Wheels and tires

- Check that the tires are correctly inflated at the pressure specified by the manufacturer. Periodically check possible damages to the rims and tires.
- Keep off and stay at the tire side when correcting the inflation pressure.
- Check the pressure only when the tractor is unloaded and tires are cold to avoid wrong readings due to over-pressure. Do not reuse parts of recovered wheels as improper welding, brazing or heating may weaken the wheel and make it fail.
- Never cut, nor weld a rim with the inflated tire assembled.
- To remove the wheels, block both front and rear tractor wheels. Raise the tractor and install safe and stable supports under the tractor in accordance with regulations in force.
- Deflate the tire before removing any object caught into the tire tread.
- Never inflate tires using flammable gases as they may originate explosions and cause injuries to bystanders.

Removal and installation

- Lift and handle all heavy components using lifting equipment of adequate capacity. Ensure that parts are supported by appropriate slings and hooks. Use lifting eyes provided to this purpose. Take care of the persons near the loads to be lifted.
- Handle all parts with great care. Do not place your hands or fingers between two parts. Wear approved protective clothing such as safety goggles, gloves and footwear.
- Do not twine chains or metal cables. Always wear protection gloves to handle cables or chains.



SERVICE MANUAL

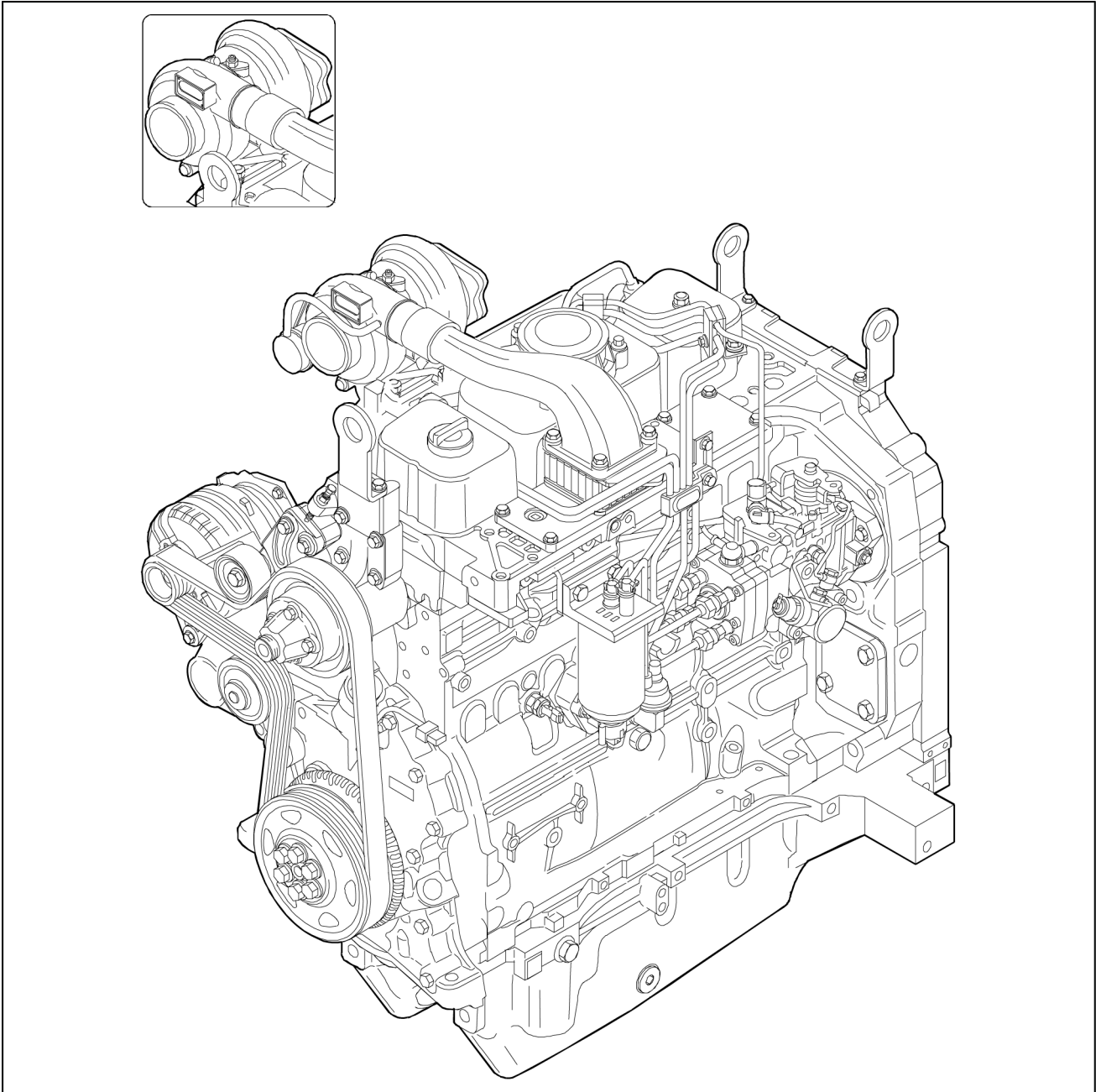
Engine

**FARMALL 105A , FARMALL 115A , FARMALL 65A , FARMALL 75A , FARMALL
85A , FARMALL 95A**

Engine - Overview

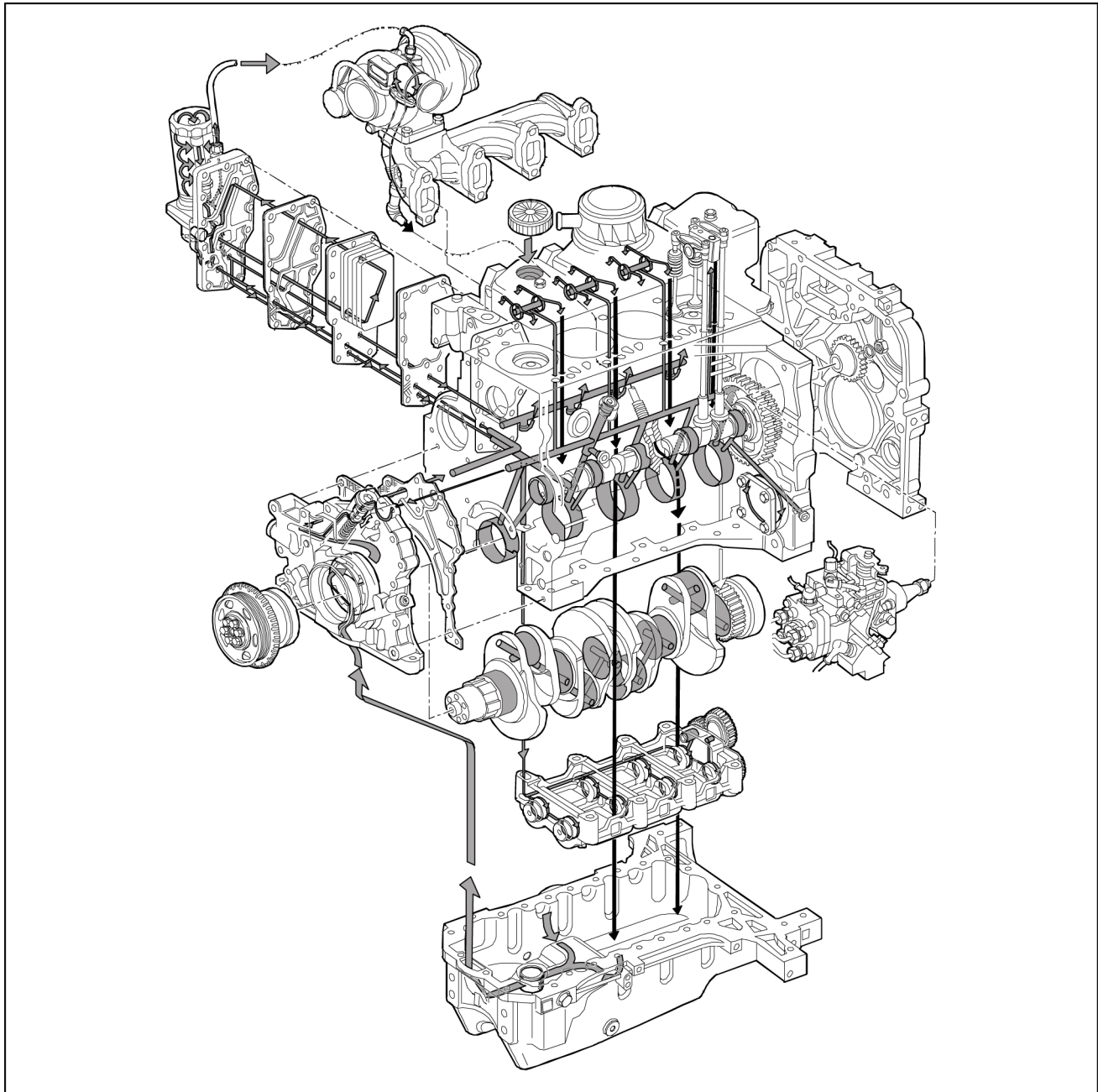
FARMALL 95A, FARMALL 105A, FARMALL 115A

View of FARMALL 95A tractor engines of 70 kW (95 Hp), FARMALL 105A of 78 kW (106 Hp) and FARMALL 115A tractor engines of 83 kW (113 Hp)



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Lubrication diagram for engines model. FARMALL 95A, FARMALL 105A and FARMALL 115A



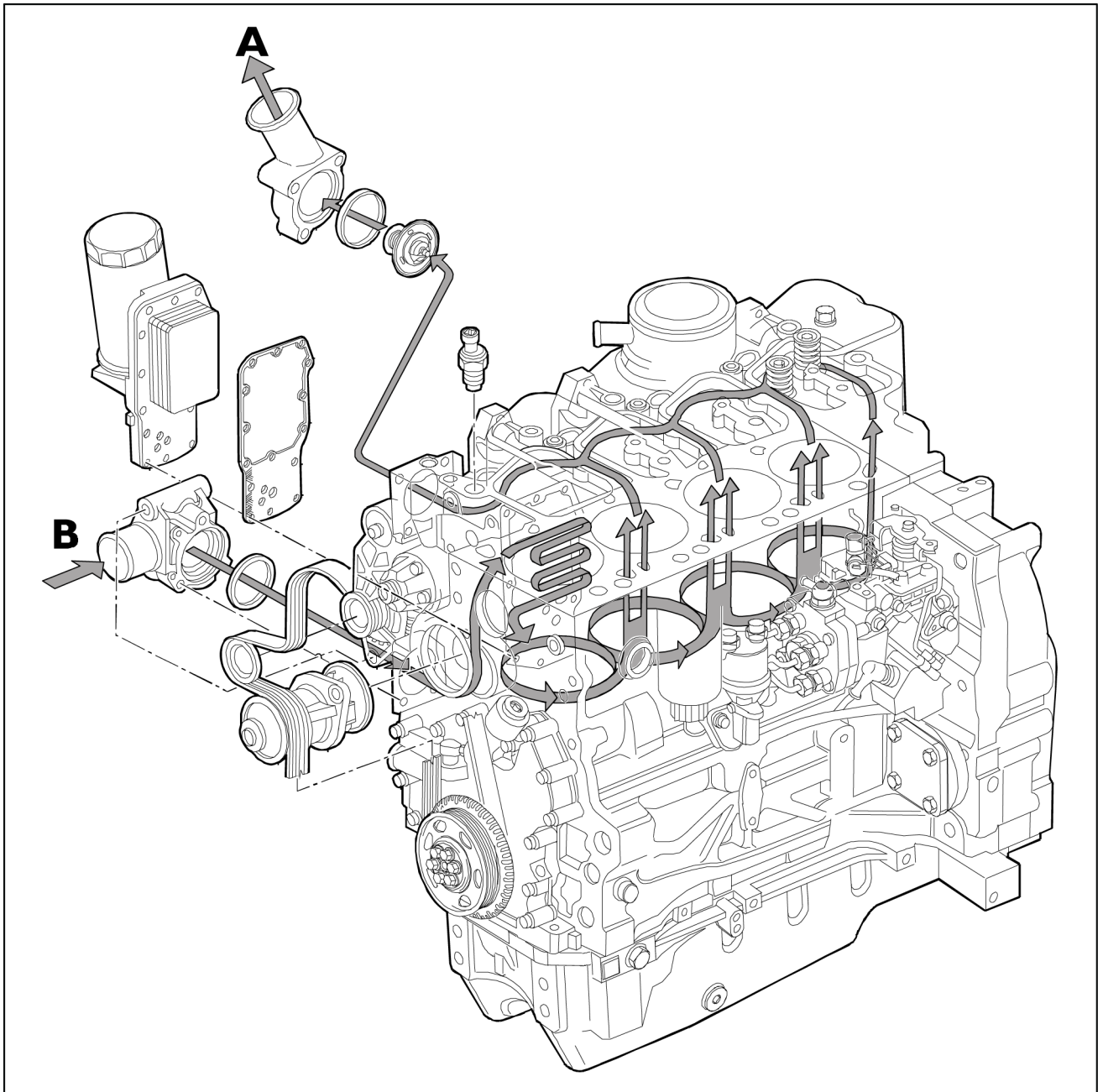
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-  Oil path under pressure
-  Oil return path under gravity

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

Cooling system diagram



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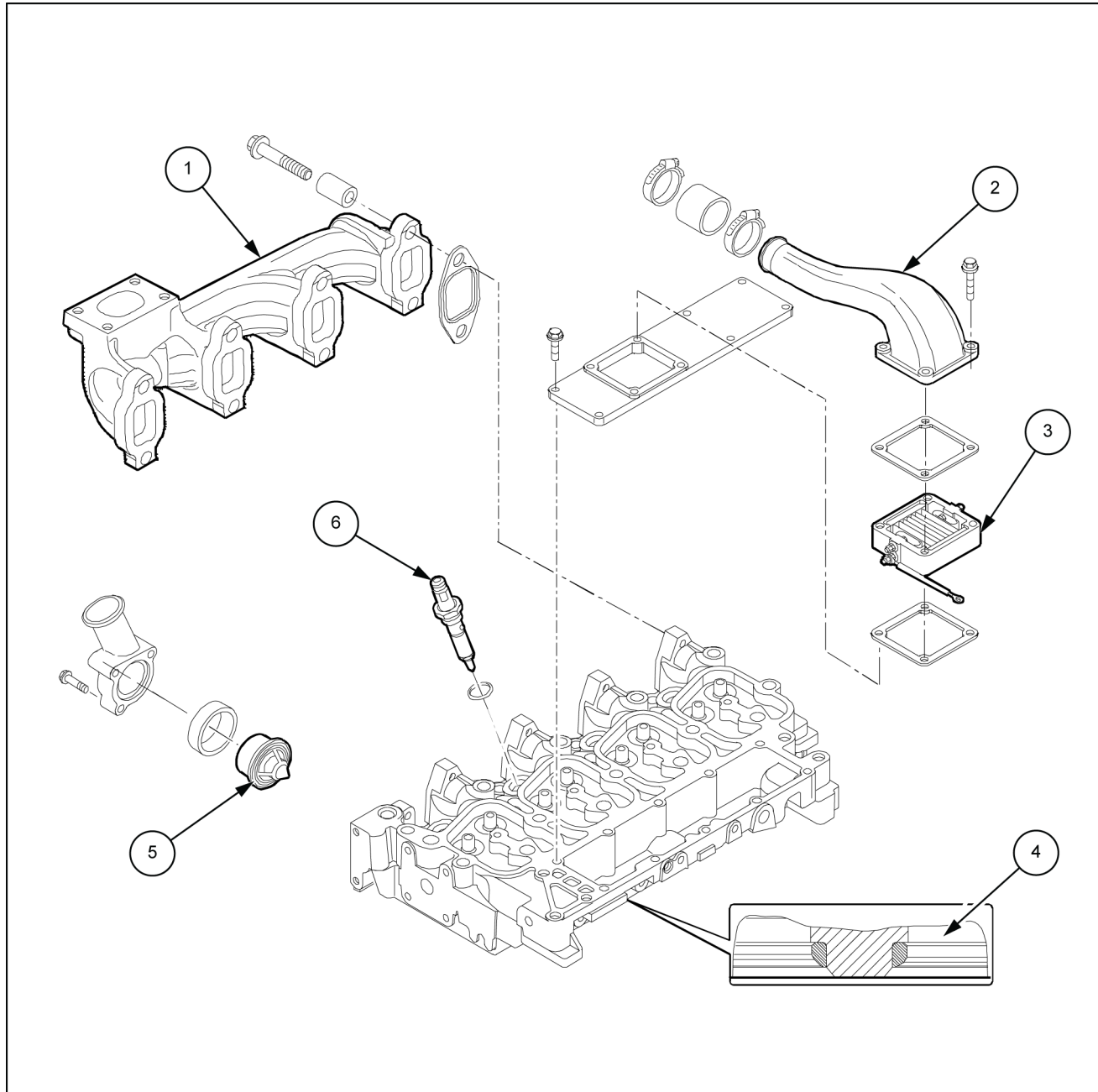
The forced circulation, closed-circuit engine cooling system is composed of the following components:

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

Engine - Exploded view

FARMALL 95A, FARMALL 105A, FARMALL 115A

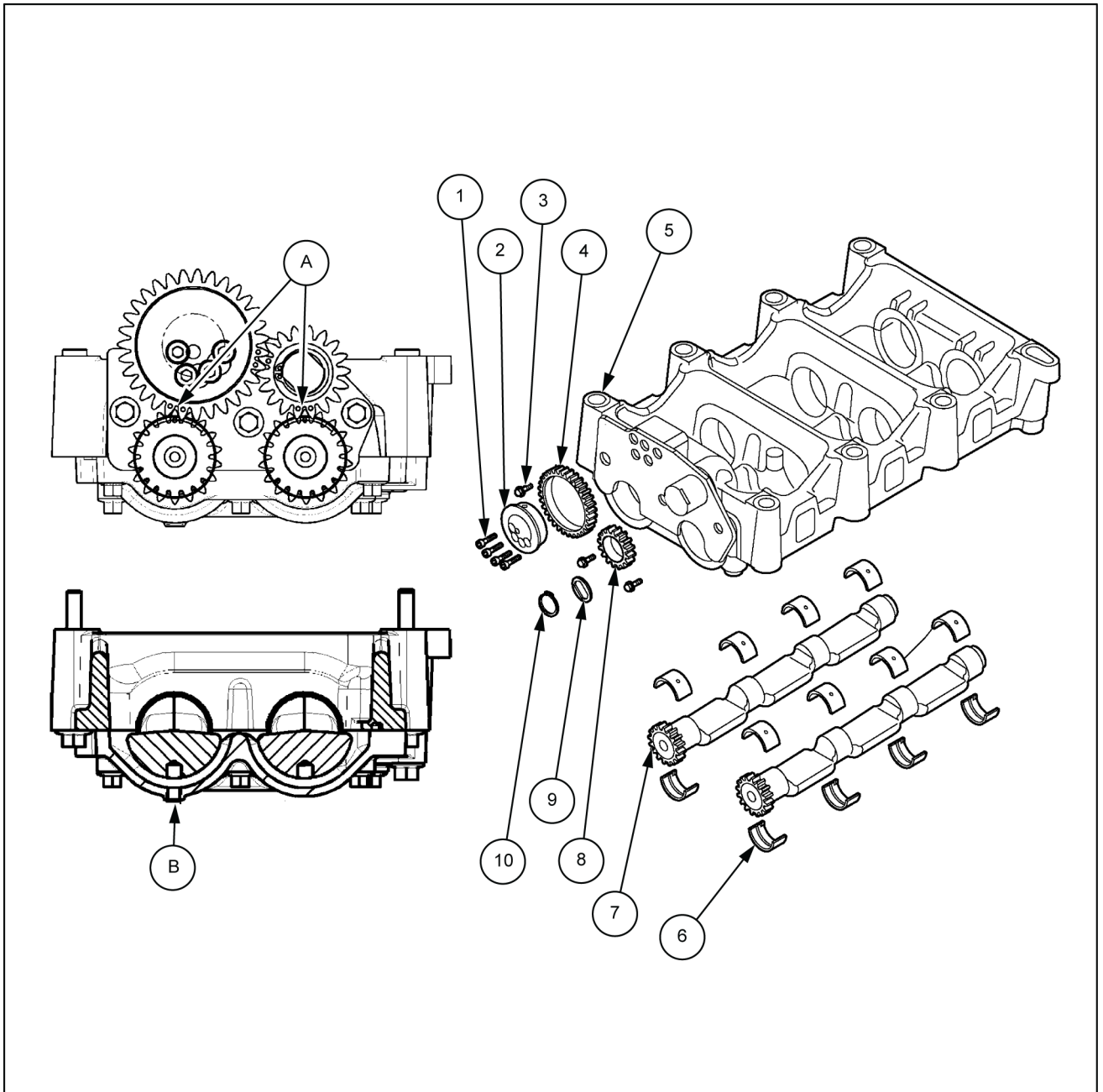
Details of cylinder head with valve seats fitted in engines model. FARMALL 95A, FARMALL 105A, FARMALL 115A



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- | | |
|---------------------|-----------------------|
| 1. Exhaust manifold | 4. Fitted valve seats |
| 2. Intake manifold | 5. Thermostat valve |
| 3. Air heater | 6. Injector |

Additional counterweights

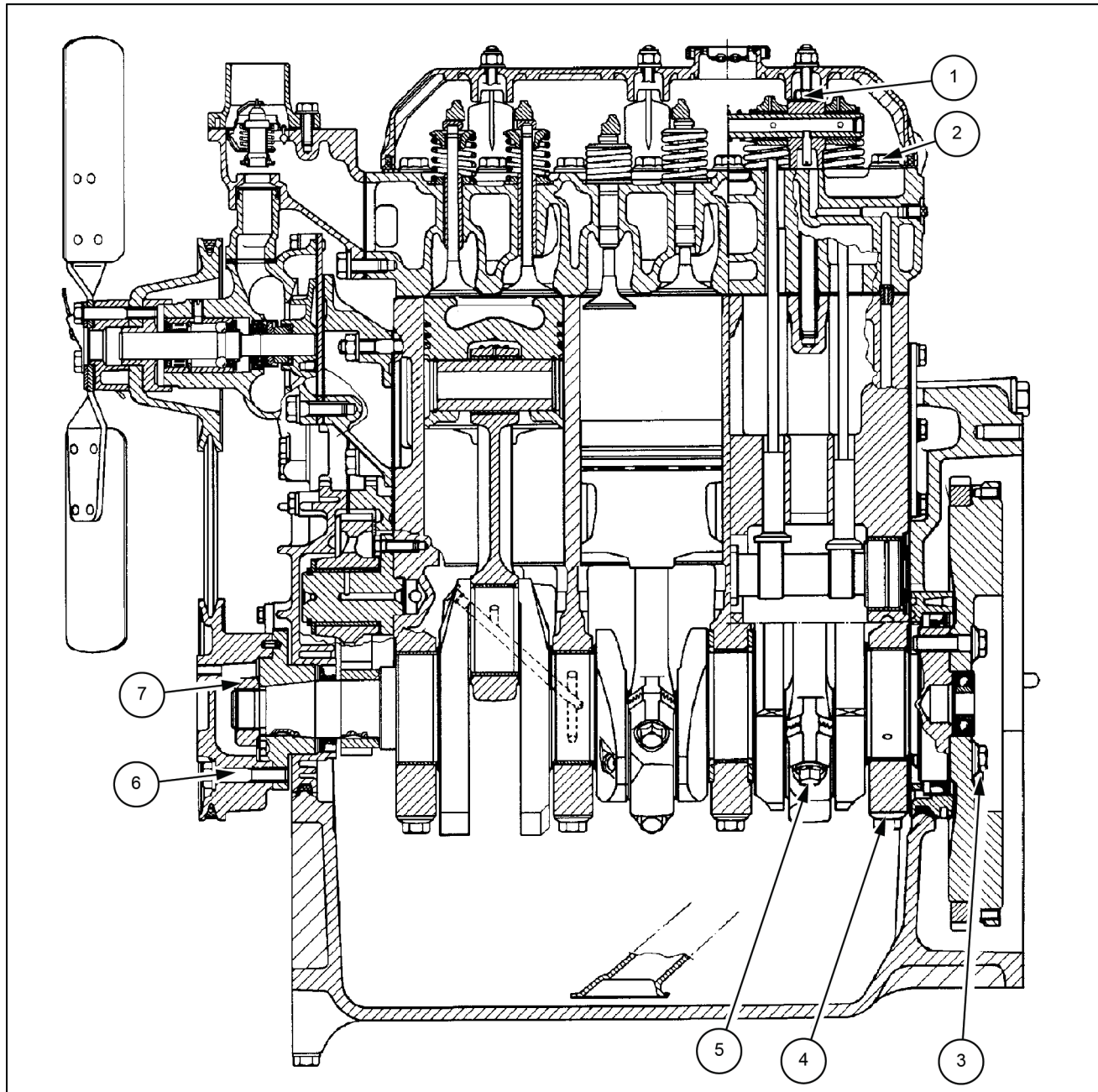


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- | | |
|---------------------|------------------|
| 1. Retaining bolts | 6. Half bearings |
| 2. Support | 7. Counter-shaft |
| 3. Retaining bolts | 8. Gear |
| 4. Gear | 9. Ring |
| 5. Balancing weight | 10. O-ring |

Engine - Overview (8000 Engine)

FARMALL 65A, FARMALL 75A



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Longitudinal section of 3-cylinder FARMALL 65A and FARMALL 75A Models

- | | |
|--------------------------------|------------------------------------|
| 1. Rocker shaft pedestal bolts | 5. Big-end cap bolts |
| 2. Cylinder head bolts | 6. Fan and alternator pulley bolts |
| 3. Flywheel bolts | 7. Crankshaft hub bolts |
| 4. Main bearing cap bolts | |

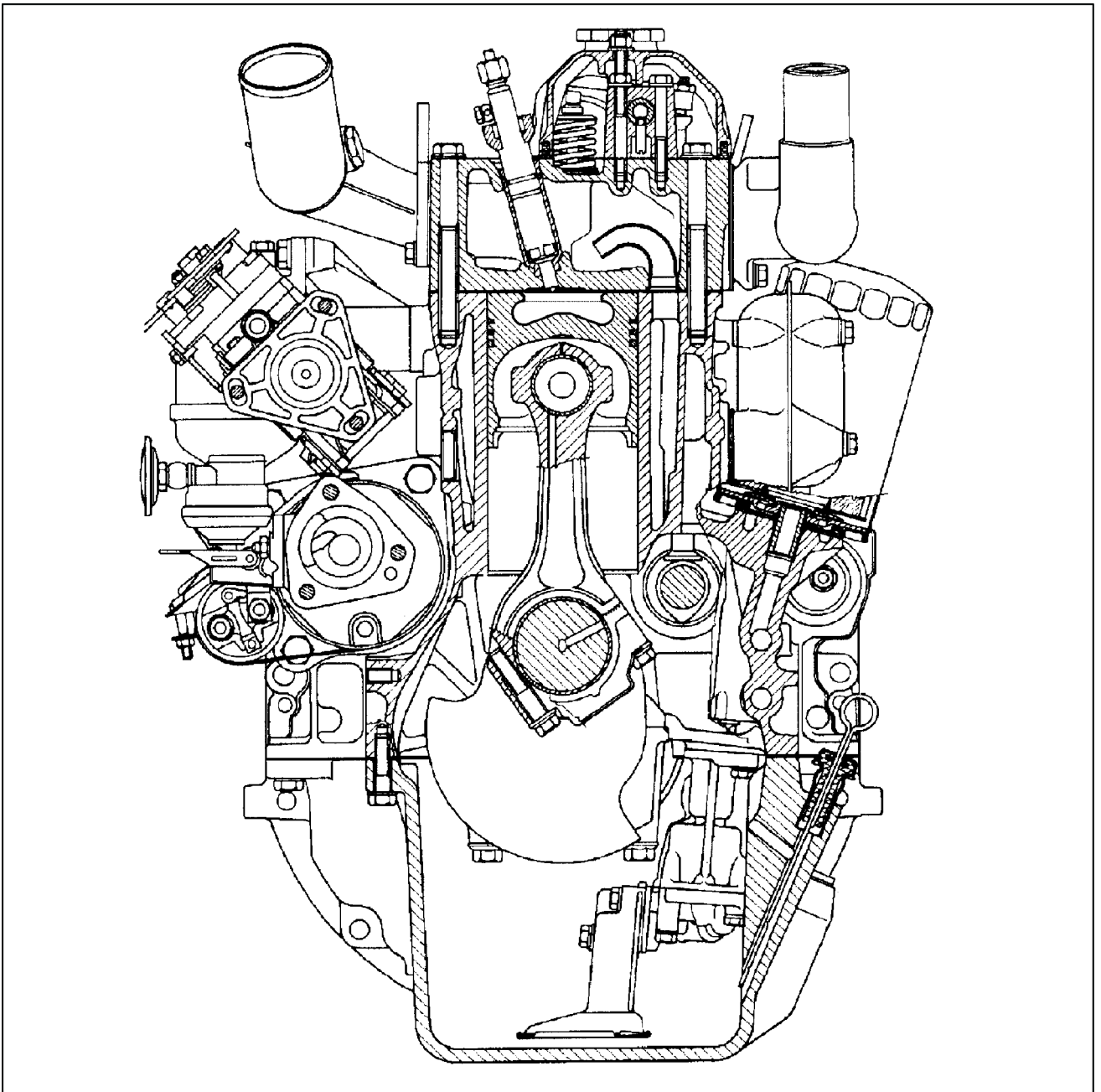


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Cross-section of 3-cylinder FARMALL 65A and FARMALL 75A Models

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