F5AE5484A / F5AE9454A / F5AE9454D / F5AE9454J / F5AE9454L / F5AE9484A / F5AE9484B / F5AE9484G / F5AE9484K / F5CE5454B*A005 / F5CE5454B / F5CE5454C*A003 / F5CE5454G*A001 / F5CE9454C / F5CE9454E / F5CE9454G / F5CE9484C / F5CE9484E

Engine

SERVICE MANUAL

Part number 84465357
English
March 2011
Replaces part number 84283922

CASE CONSTRUCTION

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INTRODUCTION

Contents

INTRODUCTION

Foreword

This publication contains data, features instructions and methods for performing repair operations on the assembly and its components and is addressed to qualified, specialized personnel.
Check to make sure you have the right publication related to the component you are about to work on before you start. Make sure that you have all the necessary safety equipment: safety glasses, helmet, gloves, footwear, etc. Check that the working lifting and transport equipment is available and in working order. Make sure that vehicle is secured. Proceed by carefully observing the instructions contained in this publication and use the indicated specific tools to ensure correct repair procedures and safety of operators.

NOTE: *This manual applies to multiple applications, therefore images may not all be accurate.*

Safety rules

Standard safety precautions

Be informed and notify personnel of the laws in force regulating safety, and provide documentation available for consultation.

- Keep working areas as clean as possible.
- Ensure that working areas are provided with emergency boxes. They must be clearly visible and always contain adequate sanitary equipment.
- Fire extinguishers must be properly identified and always be clear of obstructions. Their efficiency must be checked on a regular basis and personnel must be trained on proper interventions and priorities.
- Keep all emergency exits free of obstructions and clearly marked.
- Smoking in working areas subject to fire danger must be strictly prohibited.

Prevention of injury

- Wear suitable work attire and safety glasses with no jewelry such as rings and chains when working close to engines and equipment in motion.
- Wear safety gloves and goggles when performing the following operations:
  - Topping off or changing lubrication oils.
  - Using compressed air or liquids at a pressure greater than **2 bar** (**29 psi**).
- Wear a safety helmet when working close to hanging loads or equipment working at head level.
- Always wear safety shoes and fitting clothes.
- Use protection cream for hands.
- Change wet clothes as soon as possible.
- In the presence of voltages exceeding **48 - 60 V**, verify the efficiency of the ground and mass electrical connections. Ensure that hands and feet are dry and use isolating foot boards. Workers should be properly trained to work with electricity.
- Do not smoke or start an open flame close to batteries and any fuel material.
- Place soiled rags with oil, diesel fuel or solvents in specially provided anti-fire containers.
- Do not use any tool or equipment for any use other than what it was originally intended for. Serious injury may occur.
- If running an engine indoors, make sure there is a sufficient exhaust fan in use to eliminate exhaust fumes.

During maintenance

- Never open the filler cap of the cooling system when the engine is hot. High temperature liquid at operating pressure could result in serious danger and risk of burn. Wait until the temperature decreases under **50 °C** (**122 °F**).
- Never add coolant to an overheated engine and use only appropriate liquids.
- Always work when the engine is turned off. Certain circumstances require maintenance on a running engine. Be aware of all the risks involved with such an operation.
- Always use adequate and safe containers for engine fluids and used oil.
- Keep engine clean of any spilled fluids such as oil, diesel fuel, and or chemical solvents.
- Use of solvents or detergents during maintenance may emit toxic vapors. Always keep working areas aerated. Wear a safety mask if necessary.
- Do not leave soiled rags that may contain any flammable substances close to the engine.
- Always use caution when starting an engine after any work has been performed. Be prepared to cut off intake air in case of engine runaway.
- Never disconnect the batteries while the engine is running.

- Disconnect the batteries prior to performing any work on the equipment.
- Disconnect the batteries to place a load on them with a load tester.
- After any work is performed, verify that the battery clamp polarity is correct and that the clamps are tight and safe from accidental short circuit and oxidation.
- Before disconnecting any pipelines (pneumatic, hydraulic, fuel pipes, etc.), verify that all pressure has been released. Take all necessary precautions bleeding and draining residual pressure. Always wear the proper safety equipment.
- Do not alter the lengths of any wires.
- Do not connect any electronic service tool to the engine electrical equipment unless specifically approved by Iveco.
- Do not modify the fuel system or hydraulic system unless approved by Iveco, Any unauthorized modification will compromise warranty assistance and may affect engine operation and life span.

For engine equipped with an electronic control unit

- Do not weld on any part of the equipment without removing the control unit.
- Remove the in case of work requiring heating over **80 °C** (**176 °F**).
- Do not paint the components and the electronic connections.
- Do not alter any data filed in the electronic control unit driving the engine. Any manipulation or alteration of electronic components will void engine warranty assistance and may affect the correct working order and life span of the engine.

Respect of the Environment

- Respect of the environment should be of primary importance. Take all necessary precautions to ensure personnel's safety and health.
- Inform the personnel of the laws regarding the dispensing of used engine fluids.
- Handle batteries with care, storing them in a well ventilated environment and within anti-acid container.

Torque

F5CE5454B, F5CE9454C, F5CE9454E, F5CE9454G, F5CE9484C, F5CE9484E, F5CE5454G*A001, F5CE5454B*A005, F5CE5454C*A003

DESCRIPTION	SIZE	TORQUE
Oil Pan		
Threaded cap with O-ring		**45 - 55 N·m** (**33 - 41 lb ft**)
Oil pan spacer	M8x1.25	**20 - 30 N·m** (**15 - 22 lb ft**)
Engine Block		
Crankshaft caps - Pre torque - Torque - Angle torque		 **45 - 55 N·m** (**33 - 41 lb ft**) **75 - 85 N·m** (**55 - 63 lb ft**) **85 - 95 °**
Piston cooling nozzle		**16 - 20 N·m** (**12 - 15 lb ft**)
Conical thread cap	3/8"	**35 - 45 N·m** (**26 - 33 lb ft**)
Conical thread cap	1/8"	**10 - 20 N·m** (**7 - 15 lb ft**)
Water drainage cap		**20 - 30 N·m** (**15 - 22 lb ft**)
Oil turbo supply pipe fitting		**35 - 45 N·m** (**26 - 33 lb ft**)
Timing gearcase		
Conical thread cap		**10 - 20 N·m** (**7 - 15 lb ft**)
Gear cooling nozzle		**10 - 20 N·m** (**7 - 15 lb ft**)
Cover	M8x1.25	**20 - 30 N·m** (**15 - 22 lb ft**)
Ignition pump screw stud		**3 - 5 N·m** (**27 - 44 lb in**)
Timing pin seat cap		**20 - 30 N·m** (**15 - 22 lb ft**)
Gearcase	M8x1.25	**20 - 30 N·m** (**15 - 22 lb ft**)
Inspection cover		**20 - 30 N·m** (**15 - 22 lb ft**)
Flywheel housing		
Housing	M8x1.25 M12x1.75	**30 - 40 N·m** (**22 - 30 lb ft**) **115 - 125 N·m** (**85 - 92 lb ft**)
Cylinder head		
Cylinder head - Stage 1 - Stage 2 - Stage 3	M15x1.5	 **120 - 140 N·m** (**89 - 103 lb ft**) **85 - 95 °** **85 - 95 °**
Cylinder head - Stage 1 - Stage 2 - Stage 3	M12x1.5	 **60 - 70 N·m** (**44 - 52 lb ft**) **85 - 95 °** **55 - 65 °**
Threaded cap		**35 - 45 N·m** (**26 - 33 lb ft**)
Overhead		
Rocker arm dowel		**20 - 30 N·m** (**15 - 22 lb ft**)
Overhead	M8x1.25	**20 - 30 N·m** (**15 - 22 lb ft**)
Valve adjusting nut		**15 - 25 N·m** (**11 - 18 lb ft**)
Intake Manifold		
Intake manifold	M8x1.25	**20 - 30 N·m** (**15 - 22 lb ft**)
Throw fastening to intake manifold		**20 - 30 N·m** (**15 - 22 lb ft**)
Exhaust Manifold		
Exhaust manifold		**10 - 20 N·m** (**7 - 15 lb ft**)

Turbocharger mounting stud		**10 - 20 N·m** (**7 - 15 lb ft**)
EGR Unit		
Heat exchanger fastening to valve unit		**20 - 30 N·m** (**15 - 22 lb ft**)
Heat exchanger fastening to throw		**20 - 30 N·m** (**15 - 22 lb ft**)
EGR fastening to intake manifold		**20 - 30 N·m** (**15 - 22 lb ft**)
Valve		**5 - 15 N·m** (**4 - 11 lb ft**)
Manifold fastening nuts		**20 - 30 N·m** (**15 - 22 lb ft**)
Manifold fastening rings		**5 - 15 N·m** (**4 - 11 lb ft**)
Pulley		
Engine crankshaft pulley		**335 - 365 N·m** (**247 - 269 lb ft**)
Connecting Rod		
Connecting rod cap - Pre-torque - Angle torque		 **45 - 55 N·m** (**33 - 41 lb ft**) **65 - 75 °**
Flywheel		
Flywheel - Pre-torque - Angle torque		 **25 - 35 N·m** (**18 - 26 lb ft**) **85 - 95 °**
Timing		
Phonic wheel		**12 - 18 N·m** (**9 - 13 lb ft**)
Thrust block		**20 - 30 N·m** (**15 - 22 lb ft**)
Gear		**31 - 41 N·m** (**23 - 30 lb ft**)
Injector		
Injector stud screw		**21 - 29 N·m** (**15 - 21 lb ft**)
Injector fastening nut - Pre-torque - Angle torque		 **10 - 20 N·m** (**7 - 15 lb ft**) **25 - 35 N·m** (**18 - 26 lb ft**)
LDA		
Manifold side		**15 - 25 N·m** (**11 - 18 lb ft**)
Pump side		**15 - 25 N·m** (**11 - 18 lb ft**)
Sensors		
Crankshaft speed sensor		**5 - 15 N·m** (**4 - 11 lb ft**)
Camshaft speed sesnor		**5 - 15 N·m** (**4 - 11 lb ft**)
Water temperature sensor		**31 - 41 N·m** (**23 - 30 lb ft**)
Oil temperature sensor		**20 - 30 N·m** (**15 - 22 lb ft**)
Air pressure sensor		**5 - 15 N·m** (**4 - 11 lb ft**)
Fuel filter		
Union fixing to support		**20 - 30 N·m** (**15 - 22 lb ft**)
Fuel filter		**20 - 30 N·m** (**15 - 22 lb ft**)
Supply Pump		
Supply pump		**20 - 30 N·m** (**15 - 22 lb ft**)
Inlet		**20 - 30 N·m** (**15 - 22 lb ft**)
Fast clutch		**20 - 30 N·m** (**15 - 22 lb ft**)
Turbocharger		

Collector fastening screw nuts		**20 - 30 N·m** (**15 - 22 lb ft**)
Oil delivery inlet		**20 - 30 N·m** (**15 - 22 lb ft**)
Delivery pipe fastening screw		**20 - 30 N·m** (**15 - 22 lb ft**)
Drain pipe to heat exchanger		**20 - 30 N·m** (**15 - 22 lb ft**)
Drain pipe to turbo		**10 - 20 N·m** (**7 - 15 lb ft**)
Cooling pipe		
Water pipe to heat exchanger		**20 - 30 N·m** (**15 - 22 lb ft**)
Water pipe to the support		**20 - 30 N·m** (**15 - 22 lb ft**)
Conical threaded cap	3/8"	**35 - 45 N·m** (**26 - 33 lb ft**)
Oil		
Oil pressure control valve		**40 - 50 N·m** (**30 - 37 lb ft**)
Oil dipstick		**20 - 30 N·m** (**15 - 22 lb ft**)
Oil inlet pipe		**10 - 20 N·m** (**7 - 15 lb ft**)
Pickup tube to block		**8 - 12 N·m** (**6 - 9 lb ft**)
Pickup tube support		**30 - 40 N·m** (**22 - 30 lb ft**)
Oil filter cartridge union		**40 - 50 N·m** (**30 - 37 lb ft**)
Oil filter		**20 - 30 N·m** (**15 - 22 lb ft**)
Oil filter cartridge		**16 - 20 N·m** (**12 - 15 lb ft**)
Oil pump - Stage 1 - Stage 2		 **10 - 20 N·m** (**7 - 15 lb ft**) **20 - 30 N·m** (**15 - 22 lb ft**)
Heat exchanger		
Threaded caps		**40 - 50 N·m** (**30 - 37 lb ft**)
Exchanger unit		**20 - 30 N·m** (**15 - 22 lb ft**)
Heat exchanger		**20 - 30 N·m** (**15 - 22 lb ft**)
Thermostat		
Thermostat unit		**20 - 30 N·m** (**15 - 22 lb ft**)
Bleed vent		**35 - 45 N·m** (**26 - 33 lb ft**)
Fan support		
Water pump		**20 - 30 N·m** (**15 - 22 lb ft**)
Bearing		**35 - 45 N·m** (**26 - 33 lb ft**)
Fan support		**20 - 30 N·m** (**15 - 22 lb ft**)
Pulley		**35 - 45 N·m** (**26 - 33 lb ft**)
Alternator		
Alternator support		**45 - 55 N·m** (**33 - 41 lb ft**)
Alternator		**45 - 55 N·m** (**33 - 41 lb ft**)
Lifting		
Front hook		**45 - 55 N·m** (**33 - 41 lb ft**)
Rear hook		**65 - 75 N·m** (**48 - 55 lb ft**)
Injection Pump		
Pump gear - Pre-torque - Torque		 **16 - 20 N·m** (**12 - 15 lb ft**) **85 - 95 N·m** (**63 - 70 lb ft**)

Torque

F5AE9454A, F5AE9454D, F5AE9484A, F5AE9484B, F5AE9484G, F5AE5484A, F5AE9454J, F5AE9454L, F5AE9484K

DESCRIPTION	SIZE	TORQUE
Oil Pan		
Side cap	M6	**35 - 45 N·m** (**26 - 33 lb ft**)
Side caps	M22	**45 - 55 N·m** (**33 - 41 lb ft**)
Front cap	M35	**35 - 45 N·m** (**26 - 33 lb ft**)
Fixing of sump		**65 - 75 N·m** (**48 - 55 lb ft**)
Engine Block		
Crankshaft caps - Pre torque - Torque - Angle torque		 **45 - 55 N·m** (**33 - 41 lb ft**) **75 - 85 N·m** (**55 - 63 lb ft**) **85 - 95 °**
Piston cooling nozzle		**16 - 20 N·m** (**12 - 15 lb ft**)
Conical thread cap	3/8"	**35 - 45 N·m** (**26 - 33 lb ft**)
Conical thread cap	1/8"	**10 - 20 N·m** (**7 - 15 lb ft**)
Water drainage cap		**20 - 30 N·m** (**15 - 22 lb ft**)
Oil turbo supply pipe fitting		**35 - 45 N·m** (**26 - 33 lb ft**)
Timing gearcase		
Conical thread cap		**10 - 20 N·m** (**7 - 15 lb ft**)
Gear cooling nozzle		**10 - 20 N·m** (**7 - 15 lb ft**)
Cover	M8x1.25	**20 - 30 N·m** (**15 - 22 lb ft**)
Ignition pump screw stud		**3 - 5 N·m** (**27 - 44 lb in**)
Timing pin seat cap		**20 - 30 N·m** (**15 - 22 lb ft**)
Gearcase	M8x1.25	**20 - 30 N·m** (**15 - 22 lb ft**)
Inspection cover		**20 - 30 N·m** (**15 - 22 lb ft**)
Flywheel housing		
Housing	M8x1.25 M12x1.75	**30 - 40 N·m** (**22 - 30 lb ft**) **115 - 125 N·m** (**85 - 92 lb ft**)
Cylinder head		
Cylinder head - Stage 1 - Stage 2 - Stage 3	M15x1.5	 **120 - 140 N·m** (**89 - 103 lb ft**) **85 - 95 °** **85 - 95 °**
Cylinder head - Stage 1 - Stage 2 - Stage 3	M12x1.5	 **60 - 70 N·m** (**44 - 52 lb ft**) **85 - 95 °** **55 - 65 °**
Threaded cap		**35 - 45 N·m** (**26 - 33 lb ft**)
Overhead		
Rocker arm dowel		**20 - 30 N·m** (**15 - 22 lb ft**)
Overhead	M8x1.25	**20 - 30 N·m** (**15 - 22 lb ft**)
Valve adjusting nut		**15 - 25 N·m** (**11 - 18 lb ft**)
Intake Manifold		
Intake manifold	M8x1.25	**20 - 30 N·m** (**15 - 22 lb ft**)
Throw fastening to intake manifold		**20 - 30 N·m** (**15 - 22 lb ft**)

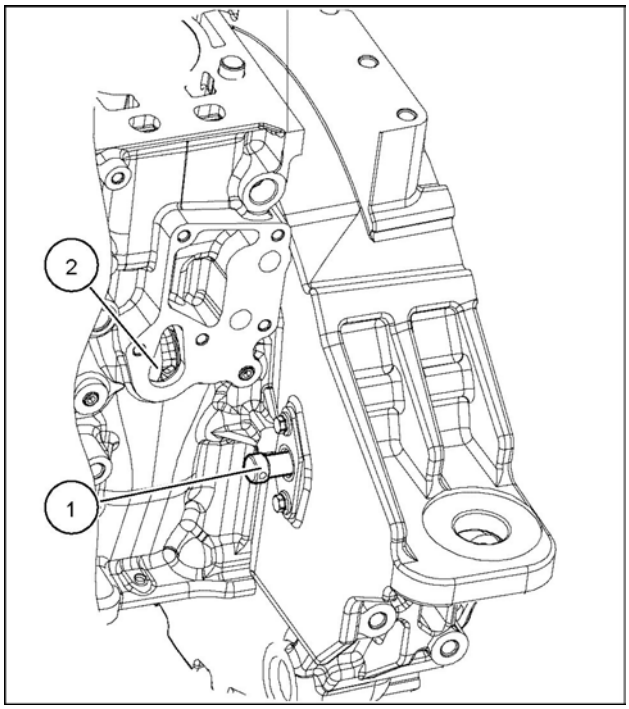
Exhaust Manifold		
Exhaust manifold		**30 - 40 N·m** (**22 - 30 lb ft**)
Turbocharger mounting stud		**10 - 20 N·m** (**7 - 15 lb ft**)
Pulley		
Engine crankshaft pulley		**335 - 365 N·m** (**247 - 269 lb ft**)
Connecting Rod		
Connecting rod cap - Pre-torque - Angle torque		 **45 - 55 N·m** (**33 - 41 lb ft**) **65 - 75 °**
Flywheel		
Flywheel - Pre-torque - Angle torque		 **25 - 35 N·m** (**18 - 26 lb ft**) **85 - 95 °**
Timing		
Phonic wheel		**12 - 18 N·m** (**9 - 13 lb ft**)
Thrust block		**20 - 30 N·m** (**15 - 22 lb ft**)
Gear		**31 - 41 N·m** (**23 - 30 lb ft**)
Injector		
Injector stud screw		**21 - 29 N·m** (**15 - 21 lb ft**)
Injector fastening nut - Pre-torque - Angle torque		 **10 - 20 N·m** (**7 - 15 lb ft**) **25 - 35 N·m** (**18 - 26 lb ft**)
LDA		
Manifold side		**15 - 25 N·m** (**11 - 18 lb ft**)
Pump side		**15 - 25 N·m** (**11 - 18 lb ft**)
Sensors		
Crankshaft speed sensor		**5 - 15 N·m** (**4 - 11 lb ft**)
Camshaft speed sesnor		**5 - 15 N·m** (**4 - 11 lb ft**)
Water temperature sensor		**31 - 41 N·m** (**23 - 30 lb ft**)
Oil temperature sensor		**20 - 30 N·m** (**15 - 22 lb ft**)
Air pressure sensor		**5 - 15 N·m** (**4 - 11 lb ft**)
Fuel filter		
Union fixing to support		**20 - 30 N·m** (**15 - 22 lb ft**)
Fuel filter		**20 - 30 N·m** (**15 - 22 lb ft**)
Supply Pump		
Supply pump		**20 - 30 N·m** (**15 - 22 lb ft**)
Inlet		**20 - 30 N·m** (**15 - 22 lb ft**)
Fast clutch		**20 - 30 N·m** (**15 - 22 lb ft**)
Turbocharger		
Collector fastening screw nuts		**20 - 30 N·m** (**15 - 22 lb ft**)
Oil delivery inlet		**20 - 30 N·m** (**15 - 22 lb ft**)
Delivery pipe fastening screw		**20 - 30 N·m** (**15 - 22 lb ft**)
Drain pipe to heat exchanger		**20 - 30 N·m** (**15 - 22 lb ft**)
Drain pipe to turbo		**10 - 20 N·m** (**7 - 15 lb ft**)

Cooling pipe		
Water pipe to heat exchanger		**20 - 30 N·m** (**15 - 22 lb ft**)
Water pipe to the support		**20 - 30 N·m** (**15 - 22 lb ft**)
Conical threaded cap	3/8"	**35 - 45 N·m** (**26 - 33 lb ft**)
Oil		
Oil pressure control valve		**40 - 50 N·m** (**30 - 37 lb ft**)
Oil dipstick		**20 - 30 N·m** (**15 - 22 lb ft**)
Oil inlet pipe		**10 - 20 N·m** (**7 - 15 lb ft**)
Pickup tube to block		**8 - 12 N·m** (**6 - 9 lb ft**)
Pickup tube support		**30 - 40 N·m** (**22 - 30 lb ft**)
Oil filter cartridge union		**40 - 50 N·m** (**30 - 37 lb ft**)
Oil filter		**20 - 30 N·m** (**15 - 22 lb ft**)
Oil filter cartridge		**16 - 20 N·m** (**12 - 15 lb ft**)
Oil pump - Stage 1 - Stage 2		 **10 - 20 N·m** (**7 - 15 lb ft**) **20 - 30 N·m** (**15 - 22 lb ft**)
Heat exchanger		
Threaded caps		**40 - 50 N·m** (**30 - 37 lb ft**)
Exchanger unit		**20 - 30 N·m** (**15 - 22 lb ft**)
Heat exchanger		**20 - 30 N·m** (**15 - 22 lb ft**)
Thermostat		
Thermostat unit		**20 - 30 N·m** (**15 - 22 lb ft**)
Bleed vent		**35 - 45 N·m** (**26 - 33 lb ft**)
Fan support		
Water pump		**20 - 30 N·m** (**15 - 22 lb ft**)
Bearing		**35 - 45 N·m** (**26 - 33 lb ft**)
Fan support		**20 - 30 N·m** (**15 - 22 lb ft**)
Pulley		**35 - 45 N·m** (**26 - 33 lb ft**)
Alternator		
Alternator support		**45 - 55 N·m** (**33 - 41 lb ft**)
Alternator		**45 - 55 N·m** (**33 - 41 lb ft**)
Lifting		
Front hook		**45 - 55 N·m** (**33 - 41 lb ft**)
Rear hook		**65 - 75 N·m** (**48 - 55 lb ft**)
Injection Pump		
Pump gear - Pre-torque - Torque		 **16 - 20 N·m** (**12 - 15 lb ft**) **85 - 95 N·m** (**63 - 70 lb ft**)

ENGINE - Service instruction - Finding Top Dead Center (TDC)

F5CE5454B, F5CE9454C, F5CE9454E, F5CE9454G, F5CE9484C, F5CE9484E, F5AE9454A, F5AE9454D, F5AE9484A, F5AE9484B, F5AE9484G, F5AE5484A, F5AE9454J, F5AE9454L, F5AE9484K

1. Fit the tool **380000150 (1)** through the case and into the port on the flywheel, as shown.
2. Using the tool **380000150 (1)** rotate the flywheel until the notch **(2)** is visible in the inspection hole and cylinder one is at T.D.C..

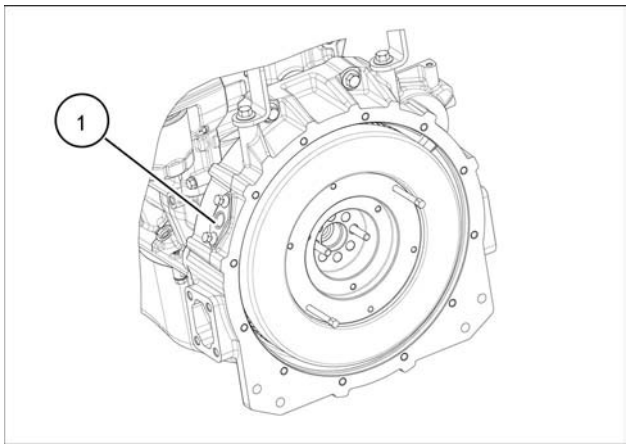


73092764 1

ENGINE - Service instruction - Finding Top Dead Center (TDC)

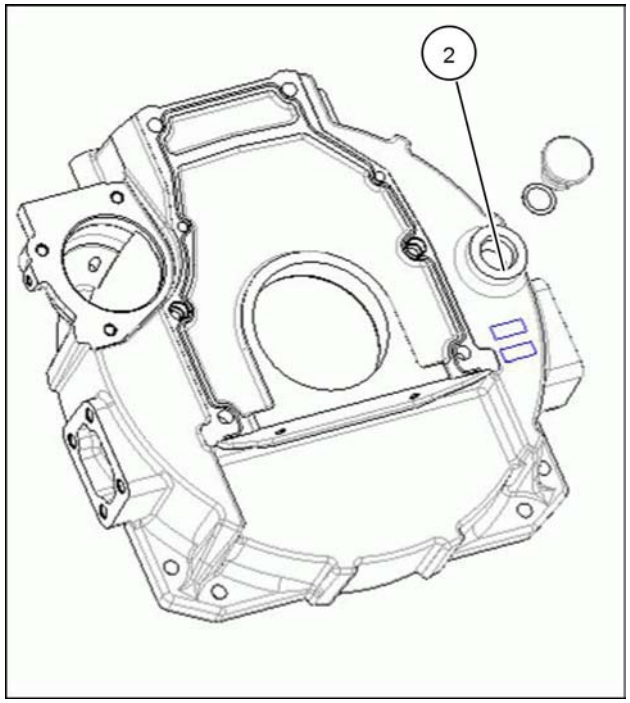
F5CE5454G*A001, F5CE5454B*A005, F5CE5454C*A003

1. Fit the tool **380000150** through the case and into the port **(1)** on the flywheel.



93111650 1

2. Using the tool **380000150** rotate the flywheel until the notch is visible in the inspection hole **(2)** and cylinder one is at T.D.C..

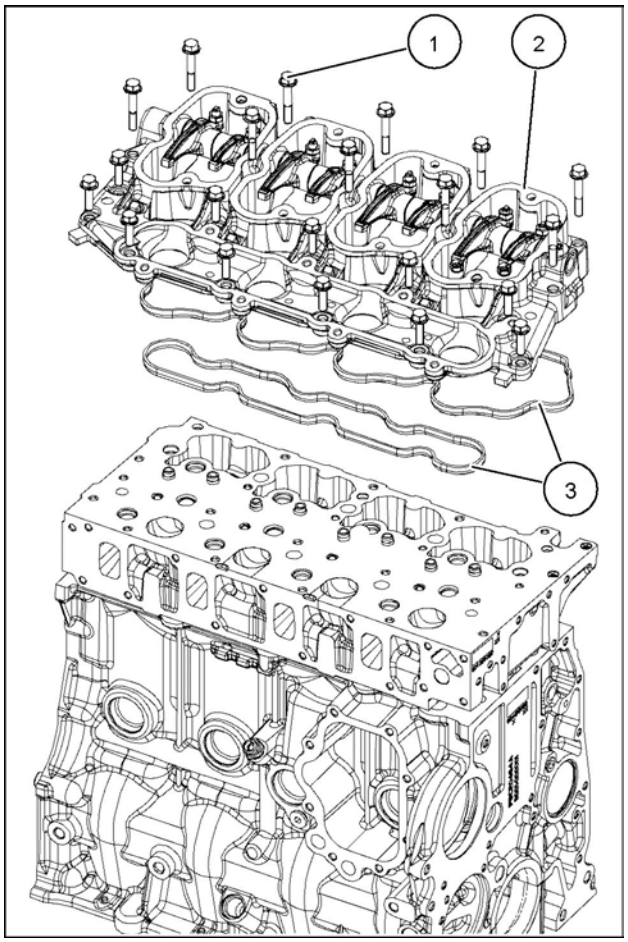


93111626 2

Rocker assembly Housing - Remove

Prior operation:
Valve cover - Remove (B.10.A)

1. Loosen the fastening screws **(1)**, remove the overhead holding the whole rocker arm unit **(2)** and recover the two gaskets **(3)**.



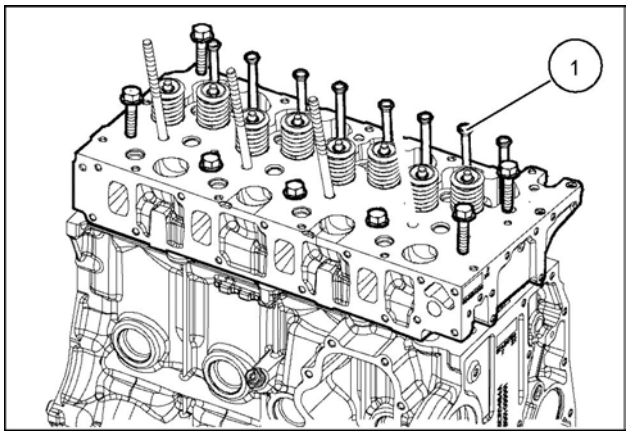
73092771 1

Next operation:
Rocker assembly Housing - Install (B.10.A)

Camshaft Push rod - Remove

Prior operation:
Rocker assembly Housing - Remove (B.10.A)

1. Remove the push rods **(1)**.



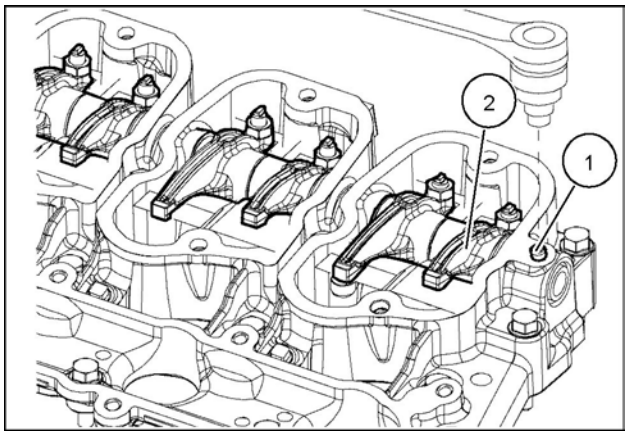
73092775 1

Next operation:
Camshaft Push rod - Inspect (B.10.A)

Rocker assembly Rocker arm - Remove

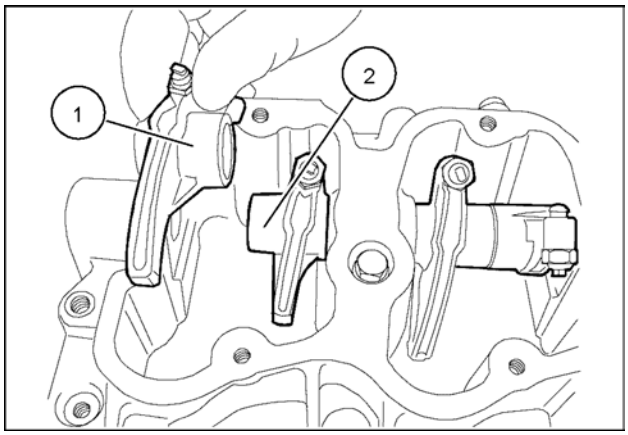
Prior operation:
Rocker assembly Housing - Remove (B.10.A)

1. Loosen the rocker arm fastening screw **(1)** from the disassembled rocker arm **(2)** holding unit and then remove the rocker arm.



73092779 1

2. Withdraw the rocker arm **(1)** from one side recovering the equalizers **(2)** from the other.



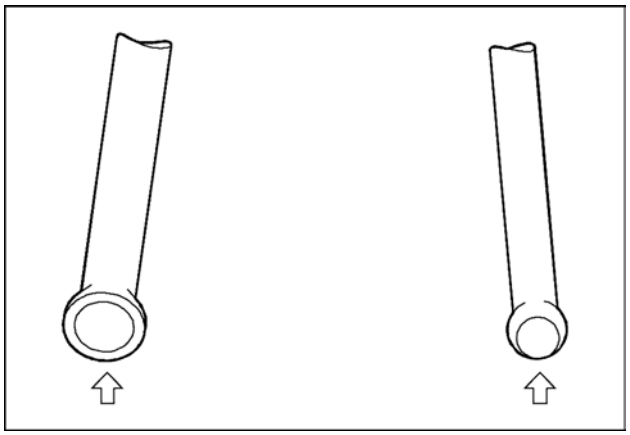
73092780 2

Next operation:
Rocker assembly Rocker arm - Install (B.10.A)

Camshaft Push rod - Inspect

Prior operation:
Camshaft Push rod - Remove (B.10.A)

1. Check that the rocker arm rods are not deformed; there must be no trace of wear or seizure on the spherical housings of the rocker arm adjusting screws as well as on the tappets (pointers); otherwise these parts must be replaced. The suction valve rods are identical and therefore interchangeable.



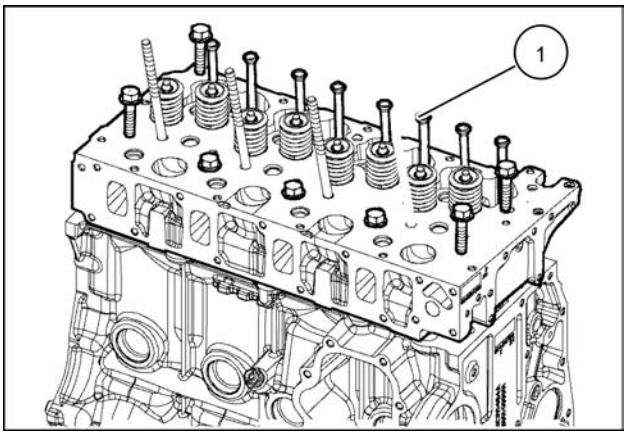
73092794 1

Next operation:
Camshaft Push rod - Install (B.10.A)

Camshaft Push rod - Install

Prior operation:
Camshaft Push rod - Inspect (B.10.A)

1. Fit the push rods **(1)** in their housing.



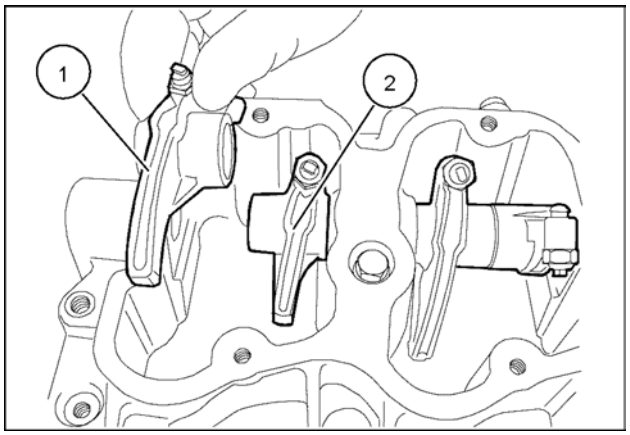
73092775 1

Next operation:
Rocker assembly Housing - Install (B.10.A)

Rocker assembly Rocker arm - Install

Prior operation:
Rocker assembly Rocker arm - Remove (B.10.A)

1. Fit the rocker arms onto the shaft.
2. The intake arms (short) **(2)** goes on first, and then the exhaust arms (long) **(1)**.



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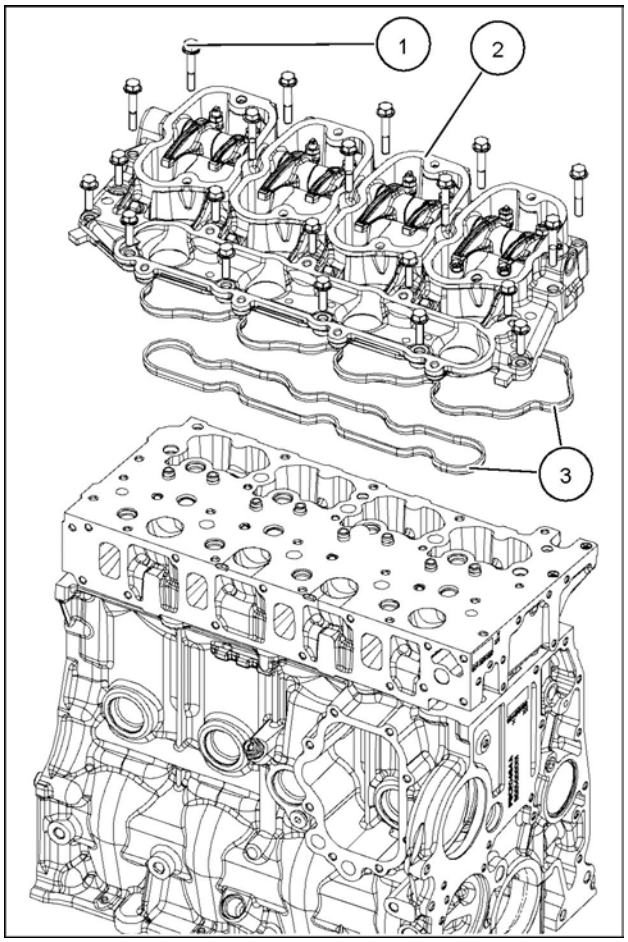
Next operation:
Rocker assembly Housing - Install (B.10.A)

Rocker assembly Housing - Install

Prior operation:
Rocker assembly Housing - Remove (B.10.A)

1. Replace the gaskets **(3)**, reassemble the rocker arm holding case **(2)** and tighten the fastening screws **(1)** to the prescribed torque setting.
2. After having completed the assembly, check that the rocker arms are correctly positioned on the valves and the tappet push rods.



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Next operation:
Valve cover - Install (B.10.A)

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