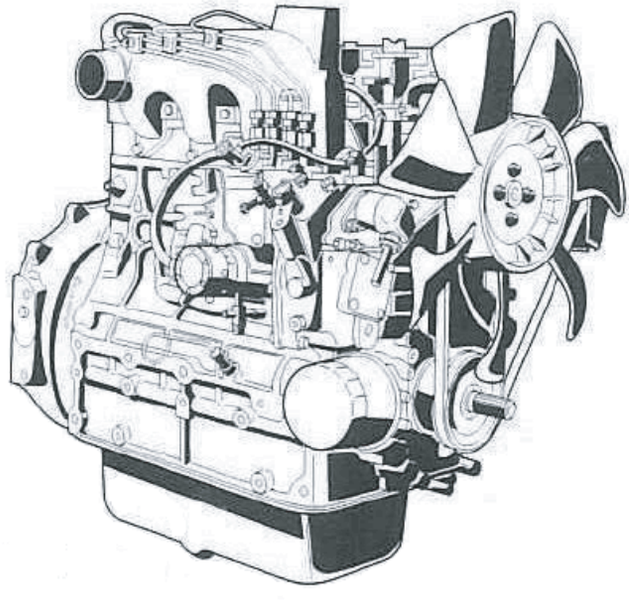
OPERATOR'S MANUAL

ENGLISH

KUBOTA
DIESEL ENGINE

MODELS V2403-M-E3B
V2203-M-E3B
V2003-M-E3B · V2003-T-E3B
D1503-M-E3B · D1703-M-E3B · D1803-M-E3B



READ AND SAVE THIS MANUAL

Kubota

FOREWORD

You are now the proud owner of a KUBOTA Engine. This engine is a product of KUBOTA quality engineering and manufacturing. It is made of fine materials and under a rigid quality control system. It will give you long, satisfactory service. To obtain the best use of your engine, please read this manual carefully. It will help you become familiar with the operation of the engine and contains many helpful hints about engine maintenance. It is KUBOTA's policy to utilize as quickly as possible every advance in our research. The immediate use of new techniques in the manufacture of products may cause some small parts of this manual to be outdated. KUBOTA distributors and dealers will have the most up-to-date information. Please do not hesitate to consult with them.

SAFETY FIRST

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully. It is essential that you read the instructions and safety regulations before you attempt to assemble or use this unit.

DANGER : Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING : Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.

CAUTION: Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.

IMPORTANT : Indicates that equipment or property damage could result if instructions are not followed.

NOTE : Gives helpful information.

ENGLISH

CONTENTS

SAFE OPERATION

Careful operation is your best assurance against an accident. Read and understand this section carefully before operating the engine. All operators, no matter how much experience they may have, should read this and other related manuals before operating the engine or any equipment attached to it. It is the owner's obligation to provide all operators with this information and instruct them on safe operation.

Be sure to observe the following for safe operation.

1. OBSERVE SAFETY INSTRUCTIONS

- Read and understand carefully this "OPERATOR'S MANUAL" and "LABELS ON THE ENGINE" before attempting to start and operate the engine.
- Learn how to operate and work safely. Know your equipment and its limitations. Always keep the engine in good condition.
- Before allowing other people to use your engine, explain how to operate and have them read this manual before operation.
- DO NOT modify the engine. UNAUTHORIZED MODIFICATIONS to the engine may impair the function and/or safety and affect engine life. If the engine does not perform properly, consult your local Kubota Engine Distributor first.

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2. WEAR SAFE CLOTHING AND PERSONAL PROTECTIVE EQUIPMENT (PPE)

- DO NOT wear loose, torn or bulky clothing around the machine that may catch on working controls and projections or into fans, pulleys and other moving parts causing personal injury.
- Use additional safety items-PPE, e.g. hard hat, safety protection, safety goggles, gloves, etc., as appropriate or required.
- DO NOT operate the machine or any equipment attached to it while under the influence of alcohol, medication, or other drugs, or while fatigued.
- DO NOT wear radio or music headphones while operating the engine.

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3. CHECK BEFORE STARTING & OPERATING THE ENGINE

- Be sure to inspect the engine before operation. Do not operate the engine if there is something wrong with it. Repair it immediately.
- Ensure all guards and shields are in place before operating the engine. Replace any that are damaged or missing.
- Check to see that you and others are a safe distance from the engine before starting.
- Always keep the engine at least 3 feet (1 meter) away from buildings and other facilities.
- DO NOT allow children or livestock to approach the machine while the engine is running.
- DO NOT start the engine by shorting across starter terminals. The machine may start in gear and move. Do not bypass or defeat any safety devices.

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4. KEEP THE ENGINE AND SURROUNDINGS CLEAN

- Be sure to stop the engine before cleaning.
- Keep the engine clean and free of accumulated dirt, grease and trash to avoid a fire. Store flammable fluids in proper containers and cabinets away from sparks and heat.
- Check for and repair leaks immediately.
- DO NOT stop the engine without idling; Allow the engine to cool down, first. Keep the engine idling for about 5 minutes before stopping unless there is a safety problem that requires immediate shut down.

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5. SAFE HANDLING OF FUEL AND LUBRICANTS -KEEP AWAY FROM FIRE

- Always stop the engine before refueling and/or lubricating.
- DO NOT smoke or allow flames or sparks in your work area. Fuel is extremely flammable and explosive under certain conditions.
- Refuel at a well ventilated and open place. When fuel and/or lubricants are spilled, refuel after letting the engine cool down.
- DO NOT mix gasoline or alcohol with diesel fuel. The mixture can cause a fire or severe engine damage.
- Do not use unapproved containers e.g. buckets, bottles, jars. Use approved fuel storage containers and dispensers.

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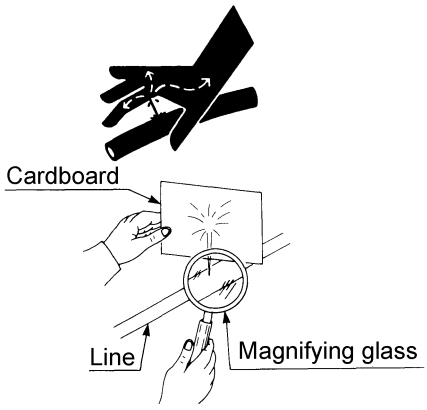
6. EXHAUST GASES & FIRE PREVENTION

- Engine exhaust fumes can be very harmful if allowed to accumulate. Be sure to run the engine in a well ventilated location and where there are no people or livestock near the engine.
- The exhaust gas from the muffler is very hot. To prevent a fire, do not expose dry grass, mowed grass, oil or any other combustible materials to exhaust gas. Keep the engine and muffler clean at all times.
- To avoid a fire, be alert for leaks of flammable substances from hoses and lines. Be sure to check for leaks from hoses or pipes, such as fuel and hydraulic fluid by following the maintenance check list.
- To avoid a fire, do not short across power cables and wires. Check to see that all power cables and wirings are in good condition. Keep all electrical connections clean. Bare wire or frayed insulation can cause a dangerous electrical shock and personal injury.

7. ESCAPING FLUID

- Relieve all pressure in the air, the oil and the cooling systems before disconnecting any lines, fittings or related items.
- Be cautious of possible pressure relief when disconnecting any device from a pressurized system that utilizes pressure. DO NOT check for pressure leaks with your hand. High pressure oil or fuel can cause personal injury.
- Escaping fluid under pressure has sufficient force to penetrate skin causing serious personal injury.
- Fluid escaping from pinholes may be invisible. Use a piece of cardboard or wood to search for suspected leaks: do not use hands and body. Use safety goggles or other eye protection when checking for leaks.
- If injured by escaping fluid, see a medical doctor immediately. This fluid can produce gangrene or severe allergic reaction.



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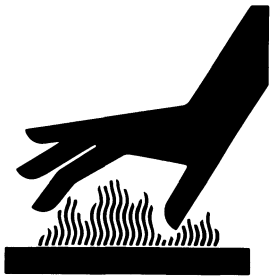
8. CAUTIONS AGAINST BURNS & BATTERY EXPLOSION

- To avoid burns, be cautious of hot components, e.g. muffler, muffler cover, radiator, hoses, engine body, coolants, engine oil, etc. during operation and after the engine has been shut off.
- DO NOT remove the radiator cap while the engine is running or immediately after stopping. Otherwise hot water will spout out from the radiator. Wait until the radiator is completely cool to the touch before removing the cap. Wear safety goggles.
- Be sure to close the coolant drain valve, secure the pressure cap, and fasten the pipe band before operating. If these parts are taken off, or loosened, it will result in serious personal injury.
- The battery presents an explosive hazard. When the battery is being charged, hydrogen and oxygen gases are extremely explosive.
- DO NOT use or charge the battery if its fluid level is below the LOWER mark.
  Otherwise, the component parts may deteriorate earlier than expected, which may shorten the service life or cause an explosion. Immediately, add distilled water until the fluid level is between the UPPER and LOWER marks.
- Keep sparks and open flames away from the battery, especially during charging. DO NOT strike a match near the battery.
- DO NOT check the battery charge by placing a metal object across the terminals. Use a voltmeter or hydrometer.
- DO NOT charge a frozen battery. There is a risk of explosion. When frozen, warm the battery up to at least 16°C (61°F).



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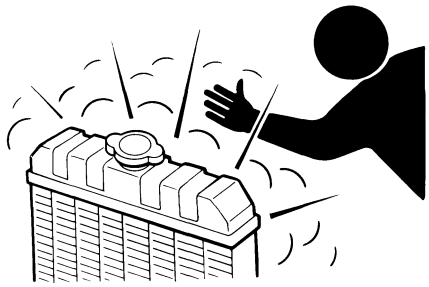

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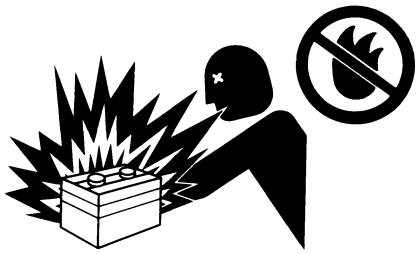

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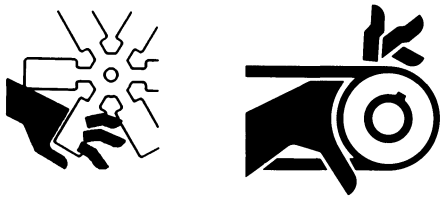
9. KEEP HANDS AND BODY AWAY FROM ROTATING PARTS

- Be sure to stop the engine before checking or adjusting the belt tension and cooling fan.
- Keep your hands and body away from rotating parts, such as the cooling fan, V-belt, fan drive V-belt, pulley or flywheel. Contact with rotating parts can cause severe personal injury.
- DO NOT run the engine without safety guards. Install safety guards securely before operation.



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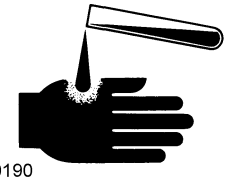
10. ANTI-FREEZE & DISPOSAL OF FLUIDS

- Anti-freeze contains poison. Wear rubber gloves to avoid personal injury. In case of contact with skin, wash it off immediately.
- DO NOT mix different types of Anti-freeze. The mixture can produce a chemical reaction causing harmful substances. Use approved or genuine KUBOTA Anti-freeze.
- Be mindful of the environment and the ecology. Before draining any fluids, determine the correct way to dispose of them. Observe the relevant environmental protection regulations when disposing of oil, fuel, coolant, brake fluid, filters and batteries.
- When draining fluids from the engine, place a suitable container underneath the engine body.
- DO NOT pour waste onto the ground, down a drain, or into any water source. Dispose of waste fluids according to environmental regulations.



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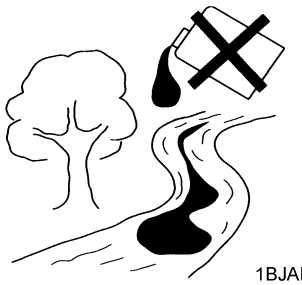

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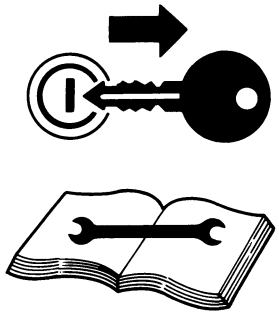
11. CONDUCTING SAFETY CHECKS & MAINTENANCE

- When inspecting the engine or servicing, place the engine on a large flat surface. DO NOT work on anything that is supported ONLY by lift jacks or a hoist. Always use blocks or the correct stands to support the engine before servicing.
- Disconnect the battery from the engine before conducting service. Put a "DO NOT OPERATE!" tag on the key switch to avoid accidental starting.
- To avoid sparks from an accidental short circuit always disconnect the battery's ground cable (-) first and reconnect it last.
- Be sure to stop the engine and remove the key when conducting daily and periodic maintenance, service and cleaning.
- Check or conduct maintenance after the engine, coolant, muffler, or muffler cover have cooled off completely.
- Always use the appropriate tools and fixtures. Verify that they are in good condition before performing any service work. Make sure you understand how to use them before service.
- Use ONLY correct engine barring techniques for manually rotating the engine. DO NOT attempt to rotate the engine by pulling or prying on the cooling fan and V-belt. This practice can cause serious personal injury or premature damage to the cooling fan and belt.
- Replace fuel pipes and lubricant pipes with their hose clamps every 2 years or earlier whether they are damaged or not. They are made of rubber and age gradually.
- When servicing is performed together by two or more persons, take care to perform all work safely.
- Keep a first aid kit and fire extinguisher handy at all times.



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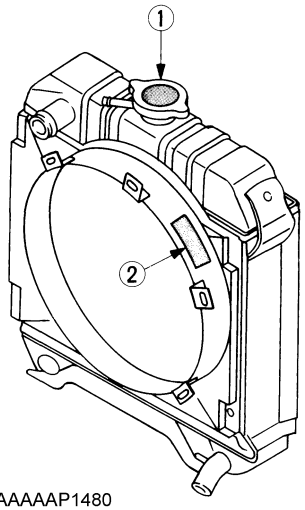
12. WARNING AND CAUTION LABELS



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① Part No.19077-8724-1 or 16667-8724-1
(55mm in diameter) (37mm in diameter)

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② Part No.TA040-4957-1
Stay clear of engine
fan and fan belt

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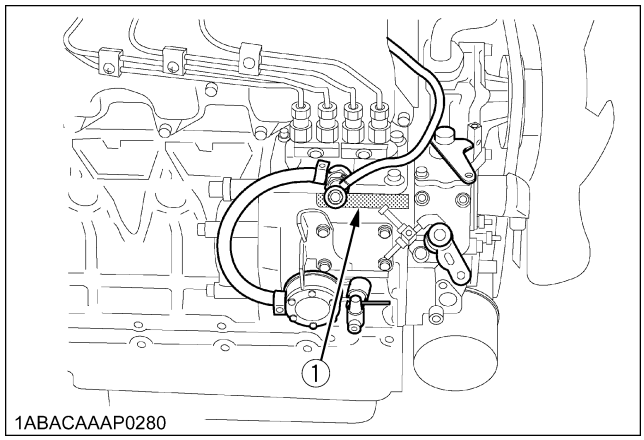
13. CARE OF WARNING AND CAUTION LABELS

1. Keep warning and caution labels clean and free from obstructing material.
2. Clean warning and caution labels with soap and water, dry with a soft cloth.
3. Replace damaged or missing warning and caution labels with new labels from your local KUBOTA dealer.
4. If a component with warning and caution label(s) affixed is replaced with a new part, make sure the new label(s) is (are) attached in the same location(s) as the replaced component.
5. Mount new warning and caution labels by applying to a clean dry surface and pressing any bubbles to the outside edge.

SERVICING OF THE ENGINE

Your dealer is interested in your new engine and has the desire to help you get the most value from it. After reading this manual thoroughly, you will find that you can do some of the regular maintenance yourself.
However, when in need of parts or major service, be sure to see your KUBOTA dealer.
For service, contact the KUBOTA Dealership from which you purchased your engine or your local KUBOTA dealer.
When in need of parts, be prepared to give your dealer the engine serial number.
Locate the serial number now and record them in the space provided.

	Type	Serial No.
Engine		
Date of Purchase		
Name of Dealer		
(To be filled in by purchaser)		



(1) Engine serial number

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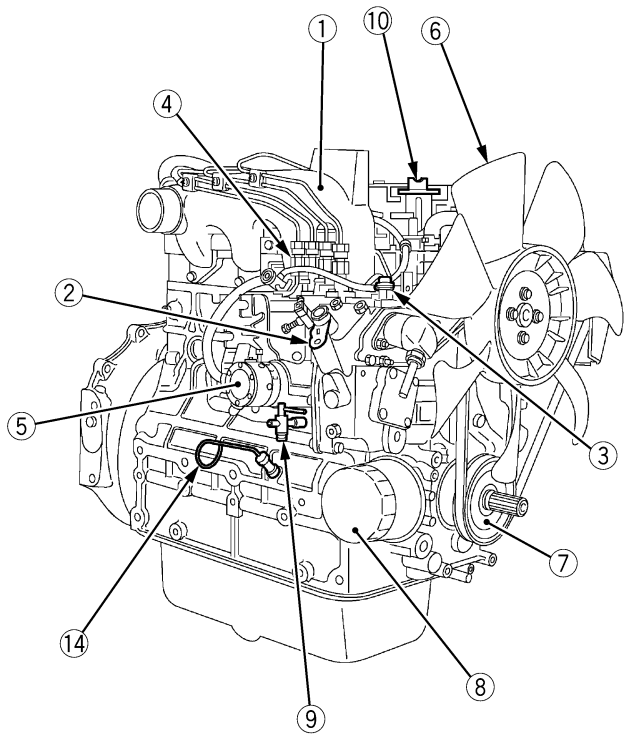
NAMES OF PARTS



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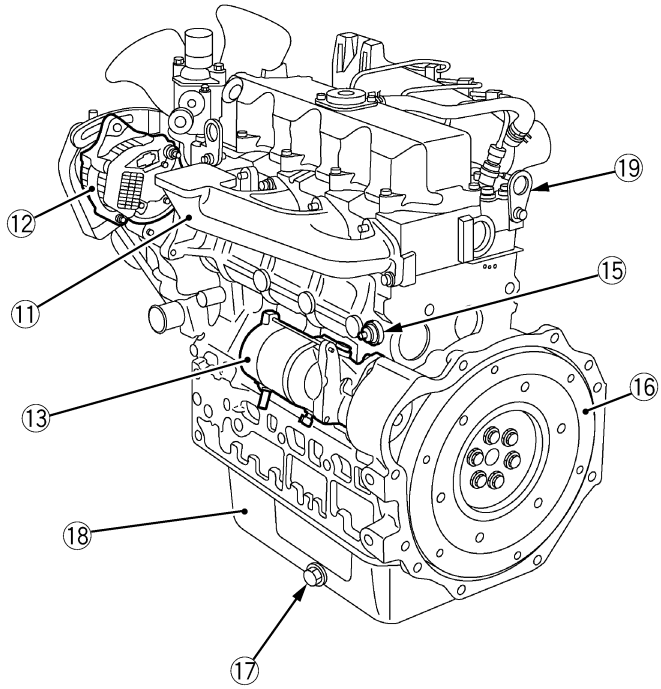

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(1) Intake manifold
(2) Speed control lever
(3) Engine stop lever
(4) Injection pump
(5) Fuel feed pump
(6) Cooling fan
(7) Fan drive pulley
(8) Oil filter cartridge
(9) Water drain cock
(10) Oil filler plug
(11) Exhaust manifold
(12) Alternator
(13) Starter
(14) Oil level gauge
(15) Oil pressure switch
(16) Flywheel
(17) Oil drain plug
(18) Oil pan
(19) Engine hook

PRE-OPERATION CHECK

BREAK-IN

During the engine break-in period, observe the following by all means:

1. Change engine oil and oil filter cartridge after the first 50 hours of operation (See "ENGINE OIL" in Periodic Service Section).
2. When ambient temperature is low, operate the machine after the engine has been completely warmed up.

DAILY CHECK

To prevent trouble from occurring, it is important to know the conditions of the engine well. Check it before starting.

CAUTION

To avoid personal injury:

- **Be sure to install shields and safeguards attached to the engine when operating.**
- **Stop the engine at a flat and wide space when checking.**
- **Keep dust or fuel away from the battery, wiring, muffler and engine to prevent a fire. Check and clear them before operating everyday. Pay attention to the heat of the exhaust pipe or exhaust gas so that it can not ignite trash.**

Item		Ref. page
1. Parts which had trouble in previous operation		-
2. By walking around the machine	(1) Oil or water leaks	14 to 20
	(2) Engine oil level and contamination	14,15
	(3) Amount of fuel	11
	(4) Amount of coolant	17 to 20
	(5) Dust in air cleaner dust cup	20,21
	(6) Damaged parts and loosened bolts and nuts	-
3. By inserting the key into the starter switch	(1) Proper functions of meters and pilot lamps; no stains on these parts	-
	(2) Proper function of glow lamp timer	-
4. By starting the engine	(1) Color of exhaust fumes	7
	(2) Unusual engine noise	7

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OPERATING THE ENGINE

STARTING THE ENGINE(NORMAL)

CAUTION

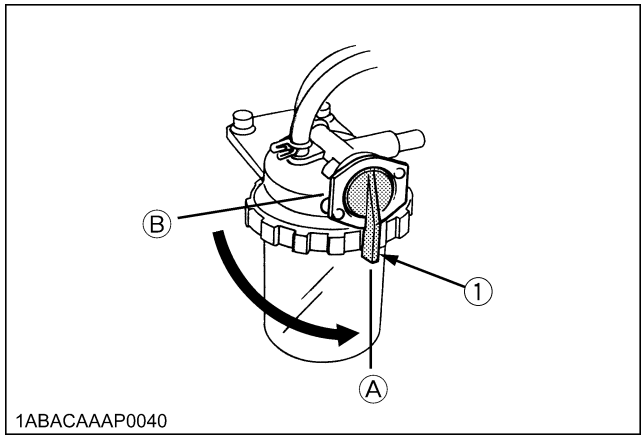
To avoid personal injury:

- **Do not allow children to approach the machine while the engine is running.**
- **Be sure to install the machine on which the engine is installed, on a flat place.**
- **Do not run the engine on gradients.**
- **Do not run the engine in an enclosed area. Exhaust gas can cause air pollution and exhaust gas poisoning.**
- **Keep your hands away from rotating parts (such as fan, pulley, belt, flywheel etc.) during operation.**
- **Do not operate the machine while under the influence of alcohol or drugs.**
- **Do not wear loose, torn or bulky clothing around the machine. It may catch on moving parts or controls, leading to the risk of accident. Use additional safety items, e.g. hard hat, safety boots or shoes, eye and hearing protection, gloves, etc., as appropriate or required.**
- **Do not wear radio or music headphones while operating engine.**
- **Check to see if it is safe around the engine before starting.**
- **Reinstall safeguards and shields securely and clear all maintenance tools when starting the engine after maintenance.**

IMPORTANT :

- Do not use ether or any starting fluid for starting the engine, or a severe damage will occur.
- When starting the engine after a long storage (of more than 3 months), first set the stop lever to the "STOP" position and then activate the starter for about 10 seconds to allow oil to reach every engine part.

1. Set the fuel lever to the "ON" position.

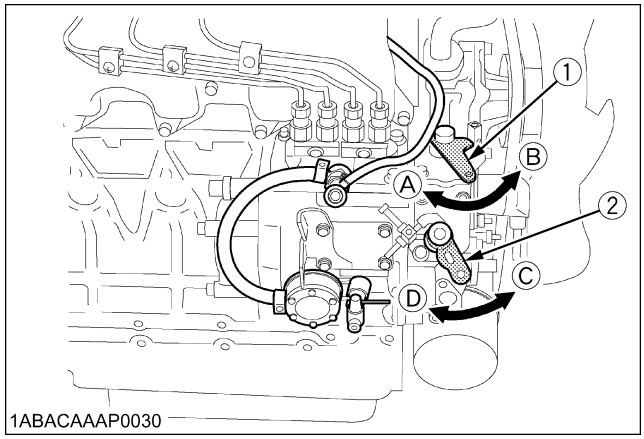


(1) Fuel lever

(A) "ON"
(B) "OFF"

2. Place the engine stop lever to the "START" position.

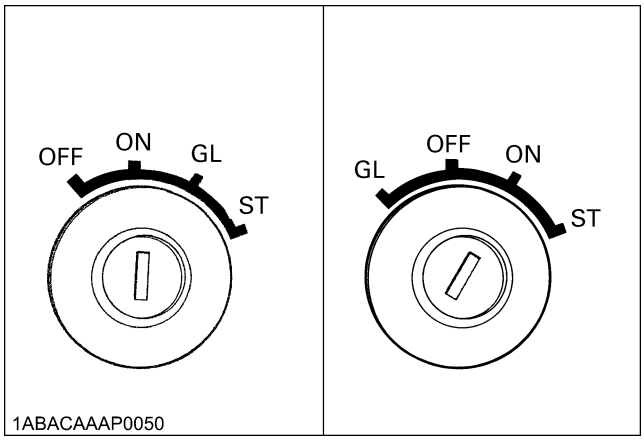
3. Place the speed control lever at more than half "OPERATION".



(1) Engine stop lever
(2) Speed Control lever

(A) "STOP"
(B) "START"
(C) "IDLING"
(D) "OPERATION"

4. Insert the key into the key switch and turn it to the "OPERATION" position.



(A) "OFF" SWITCHED OFF
(B) "ON" OPERATION
(C) "GL" PREHEATING
(D) "ST" STARTING

(A) "GL" PREHEATING
(B) "OFF" SWITCHED OFF
(C) "ON" OPERATION
(D) "ST" STARTING

5. Turn the starter switch to the "PREHEATING" position to allow the glow lamp to redden.

NOTE :
(with lamp timer in use)
- The glow lamp goes out in about 5 seconds when the lamp timer is up. Refer to this for pre-heating.
  Even with the glow lamp off, the glow plug can be pre-heated by turning the starter switch to the "PREHEATING" position.

6. Turn the key to the "STARTING" position and the engine should start. Release the key immediately when the engine starts.

7. Check to see that the oil pressure lamp and charge lamp are off. If the lamps are still on, immediately stop the engine, and determine the cause.
(See "CHECKS DURING OPERATION" in Operating the Engine Section)

NOTE :
- If the oil pressure lamp should be still on, immediately stop the engine and check;
  - if there is enough engine oil.
  - if the engine oil has dirt in it.
  - if the wiring is faulty.

8. Warm up the engine at medium speed without load.

IMPORTANT :
- If the glow lamp should redden too quickly or too slowly, immediately ask your KUBOTA dealer to check and repair it.
- If the engine does not catch or start at 10 seconds after the starter switch is set at "STARTING" position, wait for another 30 seconds and then begin the engine starting sequence again. Do not allow the starter motor to run continuously for more than 20 seconds.

COLD WEATHER STARTING

If the ambient temperature is below -5°C(23°F)* and the engine is very cold, start it in the following manner:
Take steps (1) through (4) above.

5. Turn the key to the "PREHEATING" position and keep it there for a certain period mentioned below.

IMPORTANT :
- Shown below are the standard preheating times for various temperatures. This operation, however, is not required, when the engine is warmed up.

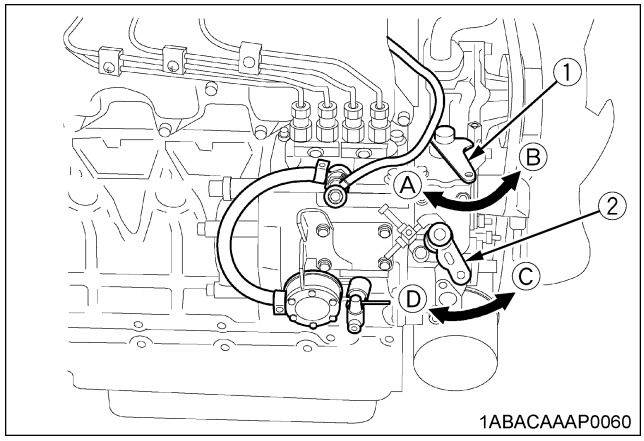
Ambient temperature	Preheating time
Above 10°C (50°F)	NO NEED
10°C (50°F) to -5°C (23°F)	Approx. 5 seconds
*Below -5°C (23°F)	Approx. 10 seconds
Limit of continuous use	20 seconds

6. Turn the key to the "STARTING" position and the engine should start.
(If the engine fails to start after 10 seconds, turn off the key for 5 to 30 seconds. Then repeat steps (5) and (6).)

IMPORTANT :
- Do not allow the starter motor to run continuously for more than 20 seconds.
- Be sure to warm up the engine, not only in winter, but also in warmer seasons. An insufficiently warmed-up engine can shorten its service life.
- When there is fear of temperature dropping below -15°C (5°F) detach the battery from the machine, and keep it indoors in a safe area, to be reinstalled just before the next operation.

STOPPING THE ENGINE

1. **Return the speed control lever to low idle, and run the engine under idling conditions.**
2. **Set the engine stop lever to the "STOP" position.**
3. **With the starter switch placed to the "SWITCHED OFF" position, remove the key. (Be sure to return the engine stop lever to the "START" position to be ready for the next start.)**



(1) Engine stop lever
(2) Speed control lever
(A) "STOP"
(B) "START"
(C) "IDLING"
(D) "OPERATION"

IMPORTANT :

- If equipped with a turbo-charger, allow the engine to idle for 5 minutes before shutting it off after a full load operation.
  Failure to do so may lead to turbo-charger trouble.

CHECKS DURING OPERATION

While running, make the following checks to see that all parts are working correctly.

■Radiator Cooling water(Coolant)

WARNING

To avoid personal injury:

- **Do not remove radiator cap until coolant temperature is well below its boiling point. Then loosen cap slightly to the stop position, to relieve any pressure, before removing cap completely.**

When the engine overheats and hot coolant overflows through the radiator and hoses, stop the engine immediately and make the following checks to determine the cause of trouble:

Check item

1. Check to see if there is any coolant leak;
2. Check to see if there is any obstacle around the cooling air inlet or outlet;
3. Check to see if there is any dirt or dust between radiator fins and tube;
4. Check to see if the fan belt is too loose;
5. Check to see if radiator water pipe is clogged; and
6. Check to see if anti-freeze is mixed to a 50/50% mix of water and anti-freeze.

■Oil pressure lamp

The lamp lights up to warn the operator that the engine oil pressure has dropped below the prescribed level. If this should happen during operation or should not go off even after the engine is accelerated more than 1000rpm, immediately stop the engine and check the following:

1. Engine oil level (See "ENGINE OIL" in Maintenance Section).
2. Lubricant system (See "ENGINE OIL" in Maintenance Section).

■Fuel

CAUTION

To avoid personal injury:

- **Fluid escaping from pinholes may be invisible. Do not use hands to search for suspected leaks; Use a piece of cardboard or wood, instead. If injured by escaping fluid, see a medical doctor at once. This fluid can produce gangrene or a severe allergic reaction.**
- **Check any leaks from fuel pipes or fuel injection pipes. Use eye protection when checking for leaks.**

Be careful not to empty the fuel tank. Otherwise air may enter the fuel system, requiring fuel system bleeding. (See "FUEL" in Maintenance Section).

■Color of exhaust

While the engine is run within the rated output range:

- The color of exhaust remains colorless.
- If the output slightly exceeds the rated level, exhaust may become a little colored with the output level kept constant.
- If the engine is run continuously with dark exhaust emission, it may lead to trouble with the engine.

■Immediately stop the engine if;

- The engine suddenly slow down or accelerates.
- Unusual noises suddenly appear.
- Exhaust fumes suddenly become very dark.
- The oil pressure lamp or the water temperature alarm lamp lights up.

REVERSED ENGINE REVOLUTION AND REMEDIES

CAUTION

To avoid personal injury:

- **Reversed engine operation can make the machine reverse and run it backwards. It may lead to serious trouble.**
- **Reversed engine operation may make exhaust gas gush out into the intake side and ignite the air cleaner; It could catch fire.**

Reversed engine revolution must be stopped immediately since engine oil circulation is cut quickly, leading to serious trouble.

■How to tell when the engine starts running backwards

1. Lubricating oil pressure drops sharply. Oil pressure warning light, if used, will light.
2. Since the intake and exhaust sides are reversed, the sound of the engine changes, and exhaust gas will come out of the air cleaner.
3. A louder knocking sound will be heard when the engine starts running backwards.

■Remedies

1. Immediately set the engine stop lever to the "STOP" position to stop the engine.
2. After stopping the engine, check the air cleaner, intake rubber tube and other parts and replace parts as needed.

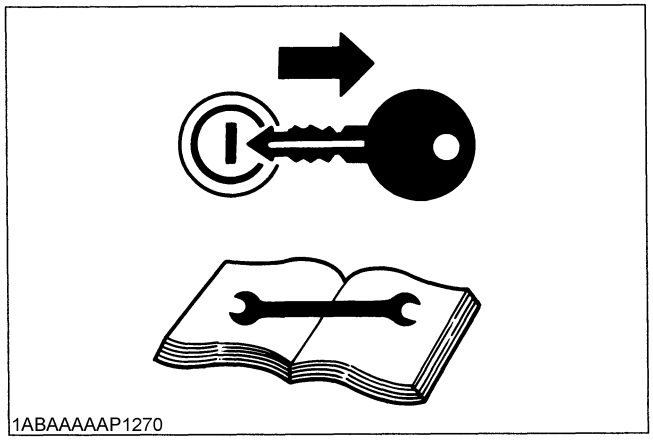
ENGLISH

MAINTENANCE

CAUTION

To avoid personal injury:

- **Be sure to conduct daily checks, periodic maintenance, refueling or cleaning on a level surface with the engine shut off and remove the key.**
- **Before allowing other people to use your engine, explain how to operate, and have them read this manual before operation.**
- **When cleaning any parts, do not use gasoline but use regular cleanser.**
- **Always use proper tools, that are in good condition. Make sure you understand how to use them, before performing any service work.**
- **When installing, be sure to tighten all bolts lest they should be loose. Tighten the bolts by the specified torque.**
- **Do not put any tools on the battery, or battery terminals may short out. Severe burns or fire could result. Detach the battery from the engine before maintenance.**
- **Do not touch muffler or exhaust pipes while they are hot; Severe burns could result.**



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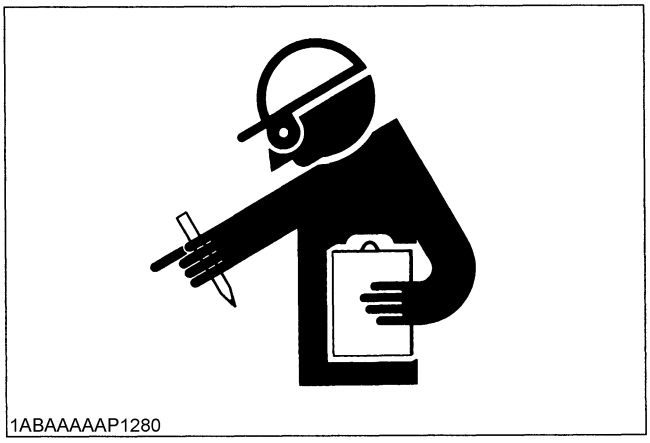

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SERVICE INTERVALS

Observe the following for service and maintenance.

The lubricating oil change intervals listed in the table below are for Classes CF, CE and CD lubricating oils of API classification with a low-sulfur fuel in use. If the CF-4 or CG-4 lubricating oil is used with a high-sulfur fuel, change the lubricating oil at shorter intervals than recommended in the table below depending on the operating condition.

Interval	Item	Ref.page		
Every 50 hours	Check of fuel pipes and clamp bands	13		@
See NOTE	Change of engine oil (depending on the oil pan)	14 to 16	◎	
Every 100 hours	Cleaning of air cleaner element	20,21	*1	@
	Cleaning of fuel filter	13		
	Check of battery electrolyte level	21,23		
	Check of fan belt tightness	23		
Every 200 hours	Check of radiator hoses and clamp bands	18		
	Replacement of oil filter cartridge, using standard oil pan	16	◎	
	Check of intake air line	-		@
Every 400 hours	Replacement of oil filter cartridge, using standard oil pan	16		
	Replacement of fuel filter cartridge	14		@
Every 500 hours	Removal of sediment in fuel tank	-		
	Cleaning of water jacket (radiator interior)	17 to 20		
	Replacement of fan belt	23		
Every one or two months	Recharging of battery	21,23		
Every year	Replacement of air cleaner element	20,21	*2	@
Every 800 hours	Check of valve clearance	25		
Every 1500 hours	Check of fuel injection nozzle injection pressure	-	*3	@
Every 3000 hours	Check of turbo charger	-	*3	@
	Check of injection pump	-	*3	@
Every two years	Change of radiator coolant (L.L.C.)	17 to 20		
	Replacement of battery	21,23		
	Replacement of radiator hoses and clamp bands	18		
	Replacement of fuel pipes and clamp bands	13	*3	@
	Replacement of intake air line	-	*4	@

IMPORTANT :

- The jobs indicated by ◎ must be done after the first 50 hours of operation.

*1 Air cleaner should be cleaned more often in dusty conditions than in normal conditions.

*2 After 6 times of cleaning.

*3 Consult your local KUBOTA Dealer for this service.

*4 Replace only if necessary.

- When the battery is used for less than 100 hours in a year, check its electrolyte yearly. (for refillable battery's only)
- The items listed above (@ marked) are registered as emission related critical parts by KUBOTA in the U.S. EPA nonroad emission regulation. As the engine owner, you are responsible for the performance of the required maintenance on the engine according to the above instruction.
  Please see the Warranty Statement in detail.

NOTE :

- **Changing interval of engine oil**

Models	*Oil pan depth	
	124 mm (4.88 in.)	*90 mm (3.54 in.)
D1503-M-E D1703-M-E D1803-M-E V2003-M-E V2203-M-E V2003-M-T-E V2403-M-E	200 Hrs	150 Hrs
Initial	50 Hrs	

* 90 mm (3.54 in.) oil pan depth is optional.

**Standard replacement interval

- API service classification: above CD grade
- Ambient temperature: below 35°C (95°F)

NOTE :

Lubricating oil

With the emission control now in effect, the CF-4 and CG-4 lubricating oils have been developed for use of a low-sulfur fuel on on-road vehicle engines. When an off-road vehicle engine runs on a high-sulfur fuel, it is advisable to employ the CF, CD or CE lubricating oil with a high total base number. If the CF-4 or CG-4 lubricating oil is used with a high-sulfur fuel, change the lubricating oil at shorter intervals.

- **Lubricating oil recommended when a low-sulfur or high-sulfur fuel is employed.**

○ : Recommendable X : Not recommendable

Lubricating oil class	Fuel		Remarks
	Low-sulfur	High-sulfur	
CF	○	○	TBN≧ 10
CF-4	○	X	
CG-4	○	X	

PERIODIC SERVICE

FUEL

Fuel is flammable and can be dangerous. You should handle fuel with care.

CAUTION

To avoid personal injury:

- **Do not mix gasoline or alcohol with diesel fuel. This mixture can cause an explosion.**
- **Be careful not to spill fuel during refueling. If fuel should spill, wipe it off at once, or it may cause a fire.**
- **Do not fail to stop the engine before refueling. Keep the engine away from the fire.**
- **Be sure to stop the engine while refueling or bleeding and when cleaning or changing fuel filter or fuel pipes. Do not smoke when working around the battery or when refueling.**
- **Check the above fuel systems at a well ventilated and wide place.**
- **When fuel and lubricant are spilled, refuel after letting the engine cool off.**
- **Always keep spilled fuel and lubricant away from engine.**

■Fuel level check and refueling

1. Check to see that the fuel level is above the lower limit of the fuel level gauge.
2. If the fuel is too low, add fuel to the upper limit. Do not overfill.

No.2-D is a distillate fuel oil of lower volatility for engines in industrial and heavy mobile service.
(SAE J313 JUN87)
Grade of Diesel Fuel Oil According to ASTM D975

Flash Point, ℃ (℉)	Water and Sediment, volume %	Carbon Residue on, 10 percent Residuum, %	Ash, weight %
Min	Max	Max	Max
52 (125)	0.05	0.35	0.01

Distillation Temperatures, ℃ (℉) 90% Point		Viscosity Kinematic cSt or mm^2/s at 40 ℃		Viscosity Saybolt, SUS at 37.8 ℃ (100 ℉)	
Min	Max	Min	Max	Min	Max
282 (540)	338 (640)	1.9	4.1	32.6	40.1

Sulfur, weight %	Copper Strip Corrosion	Cetane Number
Max	Max	Min
0.50	No. 3	40

The cetane number is required not to be less than 45.

IMPORTANT :

- Be sure to use a strainer when filling the fuel tank, or dirt or sand in the fuel may cause trouble in the fuel injection pump.
- For fuel, always use diesel fuel. You are required not to use alternative fuel, because its quality is unknown or it may be inferior in quality. Kerosene, which is very low in cetane rating, adversely affects the engine. Diesel fuel differs in grades depending on the temperature.
- Be careful not to let the fuel tank become empty, or air can enter the fuel system, necessitating bleeding before next engine start.

ENGLISH

■Air bleeding the fuel system

CAUTION

To avoid personal injury;

- **Do not bleed a hot engine as this could cause fuel to spill onto a hot exhaust manifold creating a danger of fire.**

Air bleeding of the fuel system is required if;

- after the fuel filter and pipes have been detached and refitted;
- after the fuel tank has become empty; or
- before the engine is to be used after a long storage.

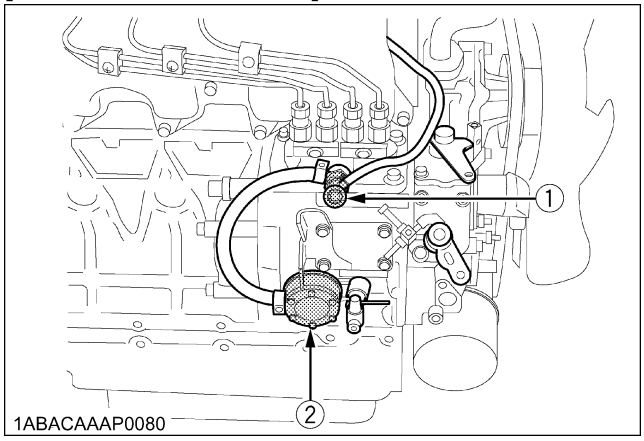
[PROCEDURE Ⓐ] (gravity feed fuel tanks only)

1. Fill the fuel tank to the fullest extent. Open the fuel filter lever.
2. Open the air vent cock on top of the fuel injection pump.
3. Turn the engine, continue it for about 10 seconds, then stop it, or move the fuel feed pump lever by hand (optional).
4. Close the air vent cock on top of the fuel injection pump.

IMPORTANT :

- Always keep the air vent cock on the fuel injection pump closed except when air is vented, or it may cause the engine to stop.

[GRAVITY FEED SYSTEM]



(1) Air vent cock
(2) Fuel feed pump

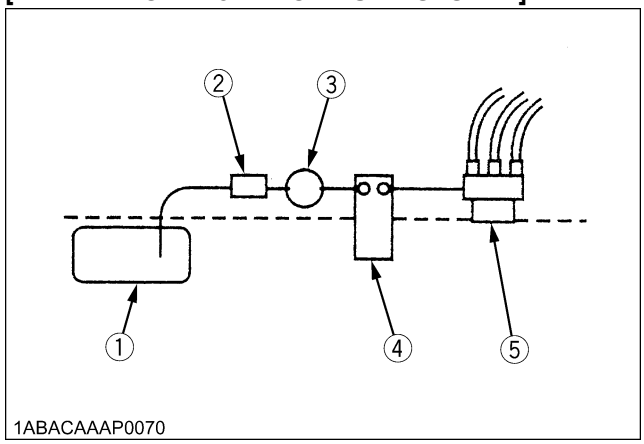
[PROCEDURE Ⓑ] (fuel tanks lower than injection pump)

1. For fuel tanks that are lower than the injection pump. The fuel system must be pressurized by the fuel system electric fuel pump.
2. If an electric fuel pump is not used, you must manually actuate the pump by lever to bleed.
3. The primary fuel filter must be on the pressure side of the pump if the fuel tank is lower than the injection pump.
4. To bleed, follow (2) through (4) above.

IMPORTANT :

- Tighten air vent plug of the fuel injection pump except when bleeding, or it may stop the engine suddenly.

[TANK BELOW INJECTION PUMP SYSTEM]



(1) Fuel tank below injection pump
(2) Pre-filter
(3) Electric or Mechanical pump
(4) Main Filter
(5) Injection pump

■Checking the fuel pipes

CAUTION

To avoid personal injury;

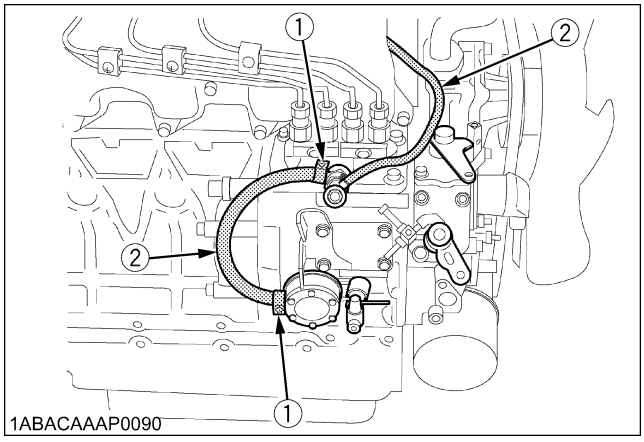
- **Check or replace the fuel pipes after stopping the engine. Broken fuel pipes can cause fires.**

Check the fuel pipes every 50 hours of operation. When if;

1. If the clamp band is loose, apply oil to the screw of the band, and tighten the band securely.
2. If the fuel pipes, made of rubber, became worn out, replace them and clamp bands every 2 years.
3. If the fuel pipes and clamp bands are found worn or damaged before 2 years' time, replace or repair them at once.
4. After replacement of the pipes and bands, air-bleed the fuel system.

IMPORTANT :

- When the fuel pipes are not installed, plug them at both ends with clean cloth or paper to prevent dirt from entering. Dirt in the pipes can cause fuel injection pump malfunction.



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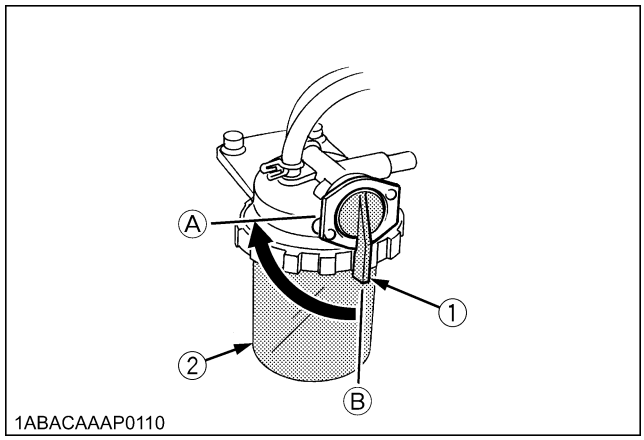
(1) Clamp band
(2) Fuel pipe

■Cleaning the fuel filter pot

Every 100 hours of operation, clean the fuel filter in a clean place to prevent dust intrusion.

1. Close the fuel filter lever.



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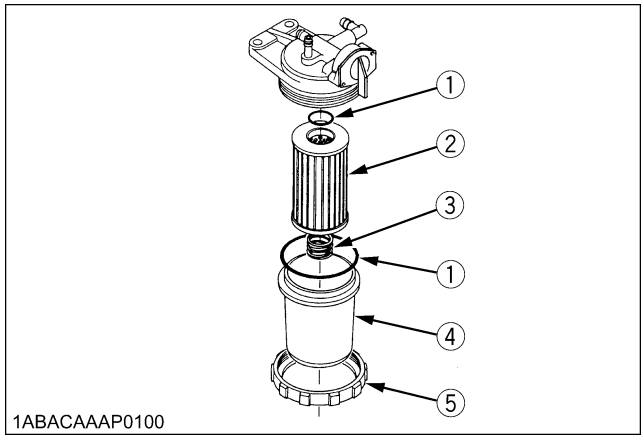
(1) Fuel filter lever
(2) Fuel filter pot
(A) "OFF"
(B) "ON"

2. Remove the top cap, and rinse the inside with diesel fuel.
3. Take out the element, and rinse it with diesel fuel.
4. After cleaning, reinstall the fuel filter, keeping out of dust and dirt.
5. Air-bleed the injection pump.

IMPORTANT :

- Entrance of dust and dirt can cause a malfunction of the fuel injection pump and the injection nozzle. Wash the fuel filter cup periodically.



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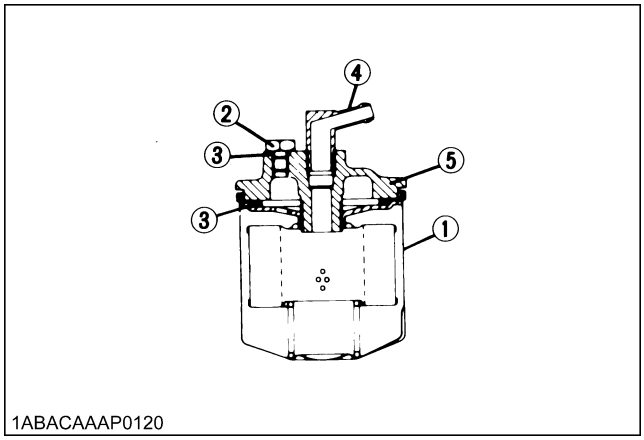
(1) O ring
(2) Filter element
(3) Spring
(4) Filter bowl
(5) Screw ring

■Fuel filter cartridge replacement

1. Replace the fuel filter cartridge with a new one every 400 operating hours.
2. Apply fuel oil thinly over the gasket and tighten the cartridge into position by hand-tightening only.
3. Finally, vent the air.

IMPORTANT :

- Replace the fuel filter cartridge periodically to prevent wear of the fuel injection pump plunger or the injection nozzle, due to dirt in the fuel.



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(1) Fuel filter cartridge
(2) Air vent plug
(3) O ring
(4) Pipe joint
(5) Cover

ENGINE OIL

⚠ CAUTION

To avoid personal injury:

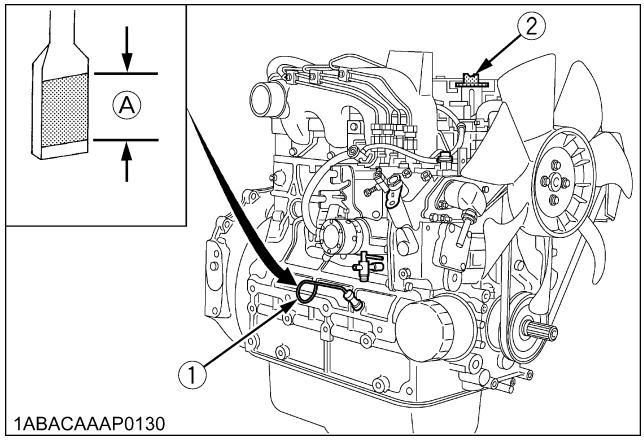
- **Be sure to stop the engine before checking and changing the engine oil and the oil filter cartridge.**
- **Do not touch muffler or exhaust pipes while they are hot; Severe burns could result. Always stop the engine and allow it to cool before conducting inspections, maintenance, or for a cleaning procedure.**
- **Contact with engine oil can damage your skin. Put on gloves when using engine oil. If you come in contact with engine oil, wash it off immediately.**

NOTE :

- Be sure to inspect the engine, locating it on a level place. If placed on gradients accurately, oil quantity may not be measured.

■Checking oil level and adding engine oil

1. Check the engine oil level before starting or more than 5 minutes after stopping the engine.
2. Remove the oil level gauge, wipe it clean and reinstall it.
3. Take the oil level gauge out again, and check the oil level.



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(1) Oil filler plug
(2) Oil level gauge
[Lower end of oil level gauge]
(A) Engine oil level within this range is proper.

4. If the oil level is too low, remove the oil filler plug, and add new oil to the prescribed level.
5. After adding oil, wait more than 5 minutes and check the oil level again. It takes some time for the oil to drain down to the oil pan.

Engine oil quantity

Model	Oil pan depth	
	124 mm (4.88 in.)	*90 mm (3.54 in.)
D1503-M-E D1703-M-E D1803-M-E	7.0 L (1.85 U.S.gals.)	5.6 L (1.48 U.S.gals.)
V2003-M-E V2203-M-E V2003-M-T-E V2403-M-E	9.5 L (2.51 U.S.gals.)	7.6 L (2.01 U.S.gals.)

* 90mm(3.54in.) oil pan depth is optional.
Oil quantities shown are for standard oil pans.

IMPORTANT :
- Engine oil should be MIL-L-2104C or have properties of API classification CD grades or higher.
  Change the type of engine oil according to the ambient temperature.

above 25°C(77°F)	SAE30 or SAE10W-30 SAE10W-40
0°C to 25°C(32°F to 77°F)	SAE20 or SAE10W-30 SAE10W-40
below 0°C(32°F)	SAE10W or SAE10W-30 SAE10W-40

- When using oil of different brands from the previous one, be sure to drain all the previous oil before adding the new engine oil.

■Changing engine oil

CAUTION

To avoid personal injury:
- **Be sure to stop the engine before draining engine oil.**
- **When draining engine oil, place some container underneath the engine and dispose it according to local regulations.**
- **Do not drain oil after running the engine. Allow engine to cool down sufficiently.**

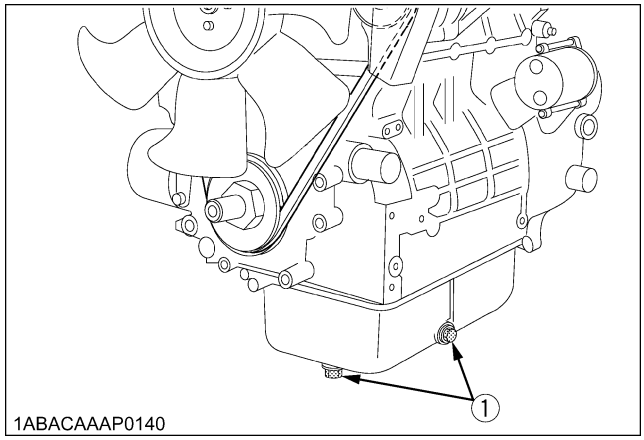
1. Change oil after the initial 50 hours of operation and every 200 hours thereafter. (See table below.)

NOTE :
- **Changing interval thereafter**

Models	Oil pan depth	
	124 mm (4.88in).	*90 mm (3.54in).
D1503-M-E D1703-M-E D1803-M-E V2003-M-E V2203-M-E V2003-M-T-E V2403-M-E	200 Hrs	150 Hrs
Initial	50 Hrs	

* 90mm(3.54 in) oil pan depth is optional.
**Standard replacement interval
- API service classification : above CD grade
- Ambient temperature : below 35°C (95°F)

2. Remove the drain plug at the bottom of the engine, and drain all the old oil. Drain oil will drain easier when the oil is warm.



(1) Oil drain plug

3. Add new engine oil up to the upper limit of the oil level gauge.

■Replacing the oil filter cartridge

CAUTION

To avoid personal injury:

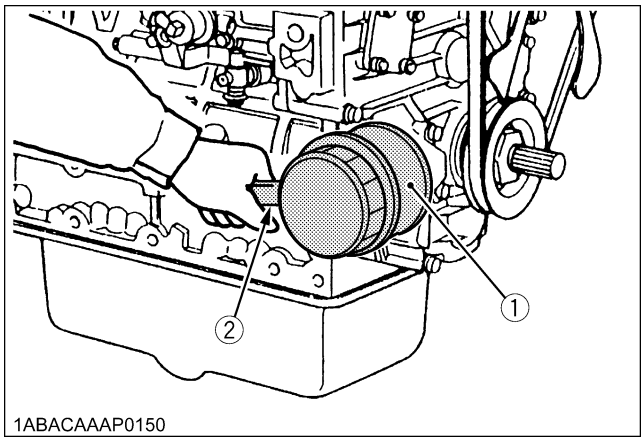
- **Be sure to stop the engine before changing the oil filter cartridge.**
- **Allow engine to cool down sufficiently, oil can be hot and cause burns.**

1. Replace the oil filter cartridge. Oil filter cartridge should be replaced, as following opreration hours.

Models	Oil pan depth	
	124 mm (4.88in.)	*90 mm (3.54in.)
D1503-M-E D1703-M-E D1803-M-E V2003-M-E V2203-M-E V2003-M-T-E V2403-M-E	200 Hrs	150 Hrs
Initial	50 Hrs	

* 90mm(3.54in.) oil pan depth is optional.

2. Remove the old oil filter cartridge with a filter wrench.
3. Apply a film of oil to the gasket for the new cartridge.
4. Screw in the cartridge by hand. When the gasket contacts the seal surface, tighten the cartridge enough by hand. Because, if you tighten the cartridge with a wrench, it will be tightened too much.



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(1) Oil filter cartridge
(2) Remove with a filter wrench
(Tighten with your hand)

5. After the new cartridge has been replaced, the engine oil level normally decreases a little. Thus, run the engine for a while and check for oil leaks through the seal before checking the engine oil level. Add oil if necessary.

NOTE :

- Wipe off any oil sticking to the machine completely.

RADIATOR

Coolant will last for one day's work if filled all the way up before operation start. Make it a rule to check the coolant level before every operation.

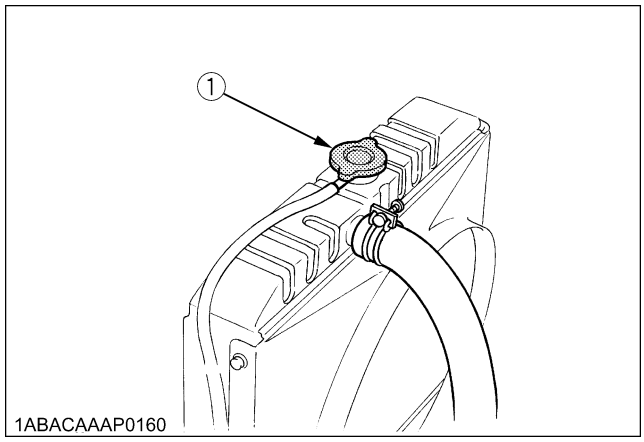
WARNING

To avoid personal injury:

- **Do not stop the engine suddenly, stop it after about 5 minutes of unloaded idling.**
- **Work only after letting the engine and radiator cool off completely (more than 30 minutes after it has been stopped).**
- **Do not remove the radiator cap while coolant is hot. When cool to the touch, rotate cap to the first stop to allow excess pressure to escape. Then remove cap completely.**
  If overheats should occur, steam may gush out from the radiator or reserve tank; Severe burns could result.

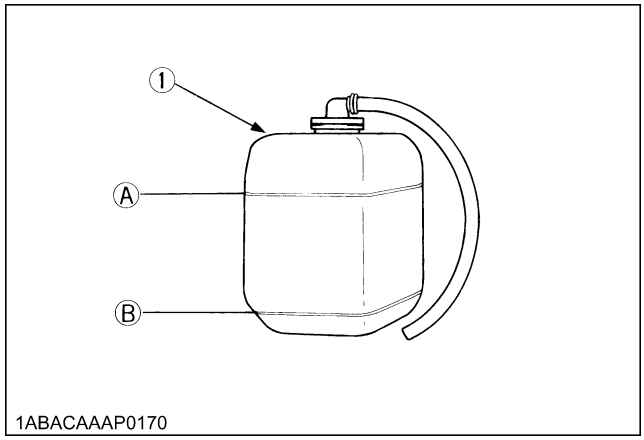
■Checking coolant level, adding coolant

1. Remove the radiator cap, after the engine has completely cooled, and check to see that coolant reaches the supply port.



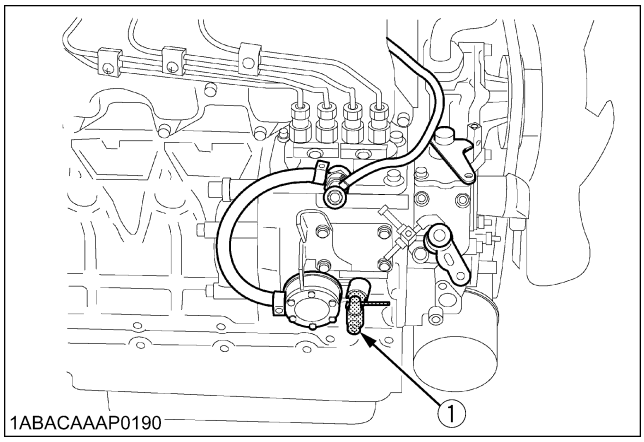
(1) Radiator pressure cap

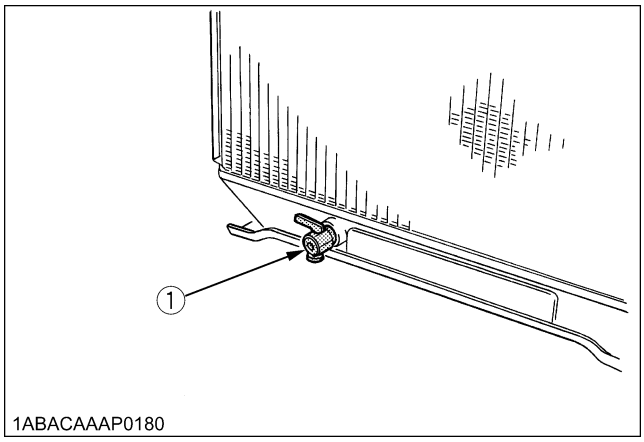
2. If the radiator is provided with a reserve tank, check the coolant level of the reserve tank. When it is between the "FULL" and "LOW" marks, the coolant will last for one day's work.



(1) Reserve tank
(A) "FULL"
(B) "LOW"

3. When the coolant level drops due to evaporation, add water only up to the full level.
4. Check to see that two drain cocks; one is at the crankcase side and the other is at the lower part of the radiator as figures below.





(1) Coolant drain cock

IMPORTANT :
- If the radiator cap has to be removed, follow the caution and securely retighten the cap.
- If coolant should be leak, consult your local KUBOTA dealer.
- Make sure that muddy or sea water does not enter the radiator.
- Use clean, fresh water and 50% anti-freeze to fill the recovery tank.
- Do not refill reserve tank with coolant over the "FULL" level mark.
- Be sure to close the radiator cap securely. If the cap is loose or improperly closed, coolant may leak out and decrease quickly.

■Changing coolant

1. To drain coolant, always open both drain cocks and simultaneously open the radiator cap as well. With the radiator cap kept closed, a complete drain of water is impossible.
2. Remove the overflow pipe of the radiator pressure cap to drain the reserve tank.
3. Prescribed coolant volume (U.S.gallons)

Models	Quantity
D1503-M-E,D1703-M-E	5.5 L (1.45 U.S.gals.)
D1803-M-E	5.8 L (1.53 U.S.gals.)
V2003-M-E,V2203-M-E	8.1 L (2.14 U.S.gals.)
V2003-M-T-E,V2403-M-E	8.4 L (2.22 U.S.gals.)

NOTE :
- Coolant quantities shown are for standard radiators.

4. An improperly tightened radiator cap or a gap between the cap and the seat quickens loss of coolant.
5. Coolant (Radiator cleaner and anti-freeze)

Season	Coolant
Summer	Pure water and radiator cleaner
Winter (when temperature drops below 0˚C (32˚F)) or all season	Pure water and anti-freeze (See "Anti-freeze" in RADIATOR Section)

■Remedies for quick decrease of coolant

1. Check any dust and dirt between the radiator fins and tube. If any, remove them from the fins and the tube.
2. Check the tightness of the fan belt. If loose, tighten it securely.
3. Check the internal blockage in the radiator hose. If scale forms in the hose, clean with the scale inhibitor or its equivalent.

■Checking radiator hoses and clamp

CAUTION

To avoid personal injury:
- **Be sure to check radiator hoses and hose clamps periodically. If radiator hose is damaged or coolant leaks, overheats or severe burns could occur.**

Check to see if radiator hoses are properly fixed every 200 hours of operation or 6 months, whichever comes first.

1. If hose clamps are loose or water leaks, tighten hose clamp securely.

2. Replace hoses and tighten hose clamps securely, if radiator hoses are swollen, hardened or cracked.

Replace hoses and hose clamps every 2 years or earlier, if checked and found that hoses are swollen, hardened or cracked.

■Precaution at overheating

Take the following actions in the event the coolant temperature is nearly or more than the boiling point, what is called "Overheating". Take these actions if the engine's alarm buzzer sounds or the alarm lamp lights up.

1. Stop the engine operation in a safe place and keep the engine unloaded idling.
2. Do not stop the engine suddenly. Stop it after about 5 minutes of unloaded idling.
3. If the engine stalls within about 5 minutes of running under no load, immediately leave and keep yourself away from the machine. Do not open the hood and any other part.
4. Keep yourself and others well away from the engine for further 10 minutes or while the steam blown out.
5. Checking that there gets no danger such as burn, get rid of the causes of overheating according to the manual, see "Troubleshooting" section. And then, start again the engine.

■Cleaning radiator core(outside)

If dust is between the fin and tube, wash it away with running water.

IMPORTANT :

- Do not clean radiator with firm tools such as spatulas or screwdrivers. They may damage specified fin or tube. It can cause coolant leaks or decrease cooling performance.

■Anti-freeze

CAUTION

To avoid personal injury:

- **When using anti-freeze, put on some protection such as rubber gloves (Anti-freeze contains poison.).**
- **If should drink anti-freeze, throw up at once and take medical attention.**
- **When anti-freeze comes in contact with the skin or clothing, wash it off immediately.**
- **Do not mix different types of anti-freeze. The mixture can produce chemical reaction causing harmful substances.**
- **Anti-freeze is extremely flammable and explosive under certain conditions. Keep fire and children away from anti-freeze.**
- **When draining fluids from the engine, place some container underneath the engine body.**
- **Do not pour waste onto the grounds, down a drain, or into any water source.**
- **Also, observe the relevant environmental protection regulations when disposing of anti-freeze.**

If it freezes, coolant can damage the cylinders and radiator. If the ambient temperature falls below 0°C (32°F) or before a long-term storage, let out cooling water completely, or mix fresh water with long-life coolant and fill the radiator and reserve tank with the mixture.

1. Long-life coolant (hereafter LLC) comes in several types. Use ethylene glycol (EG) type for this engine.
2. Before employing LLC-mixed cooling water, fill the radiator with fresh water and empty it again. Repeat this procedure 2 or 3 times to clean up the inside.
3. Mixing the LLC
   Put the LLC in cooling water in the percentage (%) for a target temperature. When mixing, stir it up well, and then fill into the radiator.
4. The procedure for the mixing of water and anti-freeze differs according to the make of the anti-freeze and the ambient temperature. Refer to SAE J1034 standard, more specifically also to SAE J814c.

IMPORTANT :

- When the anti-freeze is mixed with water, the anti-freeze mixing ratio must be less than 50%.

Vol % Anti-freeze	Freezing Point		Boiling Point *	
	℃	℉	℃	℉
40	-24	-12	106	222
50	-37	-34	108	226

*At 1.013 x 10^5 Pa (760 mmHg) pressure (atmospheric). A higher boiling point is obtained by using a radiator pressure cap which permits the development of pressure within the cooling system.

5. Adding the LLC
   (1) Add only water if the mixture reduces in amount by evaporation.
   (2) If there is a mixture leak, add the LLC of the same manufacturer and type in the same mixture percentage.

   *Never add any long-life coolant of different manufacturer. (Different brands may have different additive components, and the engine may fail to perform as specified.)
6. When the LLC is mixed, do not employ any radiator cleaning agent. The LLC contains anti-corrosive agent. If mixed with the cleaning agent, sludge may build up, adversely affecting the engine parts.
7. Kubota's genuine long-life coolant has a service life of 2 years. Be sure to change the coolant every 2 years.

NOTE :

- The above data represent industry standards that necessitate a minimum glycol content in the concentrated anti-freeze.
- When the coolant level drops due to evaporation, add water only to keep the anti-freeze mixing ratio less than 50%. In case of leakage, add anti-freeze and water in the specified mixing ratio before filling into the radiator.

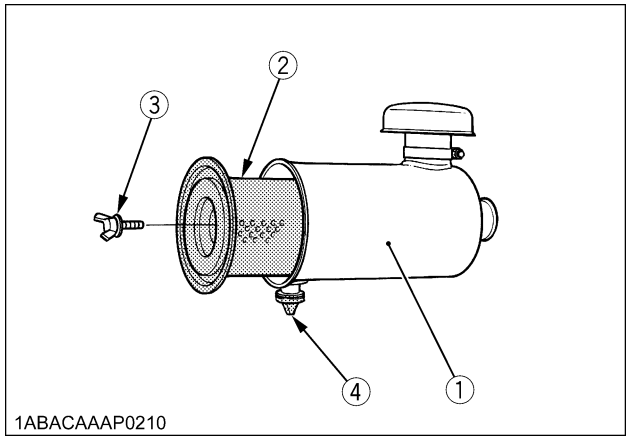
■Radiator cement

As the radiator is solidly constructed, there is little possibility of water leakage. Should this happen, however, radiator cement can easily fix it. If leakage is serious, contact your local KUBOTA dealer.

AIR CLEANER

Since the air cleaner employed on this engine is a dry type, never apply oil to it.

1. Open the evacuator valve once a week under ordinary conditions - or daily when used in a dusty place. This will get rid of large particles of dust and dirt.
2. Wipe the inside air cleaner clean with cloth if it is dirty or wet.
3. Avoid touching the element except when cleaning.
4. When dry dust adheres to the element, blow compressed air from the inside turning the element. Pressure of compressed air must be under 205kPa (2.1kgf/cm^2, 30psi).
5. When carbon or oil adheres to the element, soak the element in detergent for 30 minutes, then wash it several times in water, rinse with clean water and dry it naturally.
6. After the element is fully dried, inspect the inside of the element with a light, and check if it is damaged or not. (referring to the instructions on the label attached to the element.)
7. Replace the element every year or every 6 cleanings.



1ABACAAAP0210

(1) Air cleaner body
(2) Element
(3) Wing bolt
(4) Evacuator valve

IMPORTANT :

- Make sure the wing bolt for the element is tight enough. If it is loose, dust and dirt may be sucked in, wearing down the cylinder liner and piston ring earlier and thereby resulting in poor power output.
- Do not overservice the air cleaner element. Overservicing may cause dirt to enter the engine causing premature wear. Use the dust indicator as a guide on when to service.

■Evacuator valve

Open the evacuator valve once a week under ordinary conditions - or daily when used in a dusty place - to get rid of large particles of dust and dirt.

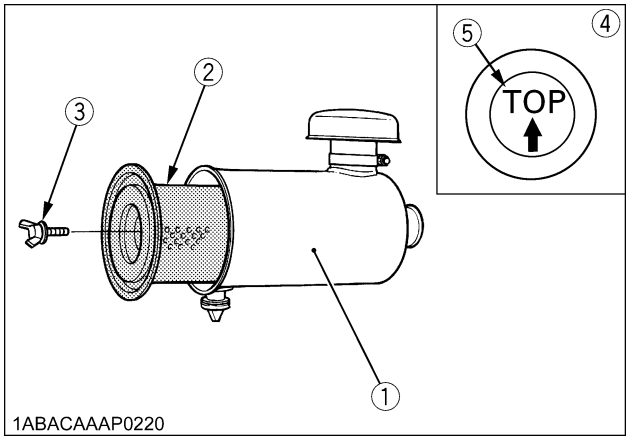
■For the air cleaner with a dust cup (optional)

Remove and clean out the dust cup before it becomes half full with dust; usually once a week, or even every day if the working surroundings are dusty.

Install the air cleaner dust cup with "TOP" indicated on the rear of the cup in the up position. (However, it may be installed in either direction when the cover is placed at the lower part.)

IMPORTANT :

- If the dust cup is mounted incorrectly, dust or dirt does not collect in the cup, and direct attachments of the dust to the element will cause its lifetime to shorten to a great extent.

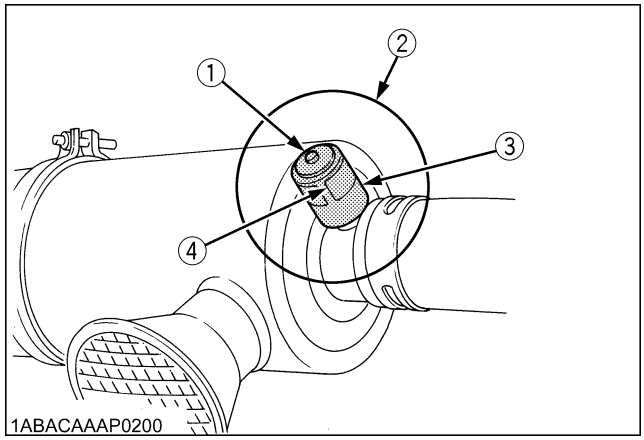


(1) Air cleaner body
(2) Element
(3) Wing bolt
(4) Dust cup
(5) "TOP" mark

■Dust indicator (optional)

If the red signal on the dust indicator attached to the air cleaner is visible, the air cleaner has reached the service level.

Clean the element immediately, and reset the signal with the "RESET" button.



(1) "RESET" button
(2) Dust indicator
(3) Service level
(4) Signal

BATTERY

CAUTION

To avoid personal injury:

- **Be careful not to let the battery electrolyte contact your body or clothing.**
- **Wear eye protection and rubber gloves, since the diluted sulfuric acid solution burns skin and eats holes in clothing. Should this occur, immediately wash it off with running water and get medical attention.**

Mishandling of the battery shortens the service life and adds to maintenance costs. Obtain the maximum performance and the longest life of the battery by handling properly and with care.

Engine starting will be more difficult, if the battery charge is low. Be careful to recharge it at an early occasion before it is too late.

■Battery charging

DANGER

The battery comes in two types: refillable and non-refillable.

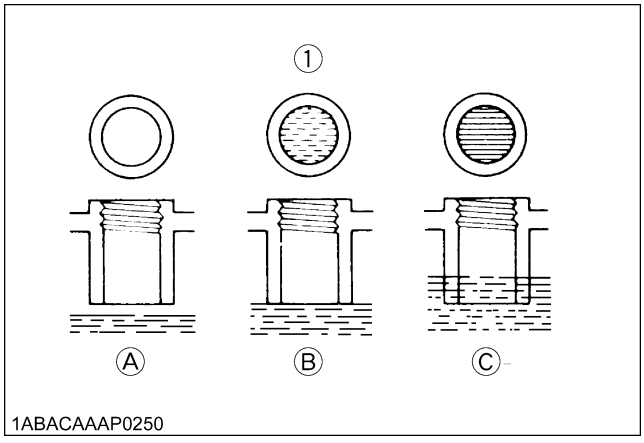
- **For using the refillable type battery, follow the instructions below.**
  Do not use or charge the battery if its fluid level stands below the LOWER (lower limit level) mark.
  Otherwise, the battery component parts may deteriorate earlier than expected, which may shorten the battery's service life or cause an explosion.
  Immediately, add distilled water until the battery's fluid level is between the UPPER and LOWER levels.

CAUTION

To avoid personal injury:

- **When the battery is being activated, hydrogen and oxygen gases in the battery are extremely explosive. Keep open sparks and flames away from the battery at all times, especially when charging the battery.**
- **When charging the battery, remove the battery vent plugs.**
- **When disconnecting the cable from the battery, start with the negative terminal, and when connecting them, start with the positive terminal first.**
- **DO NOT check the battery charge by placing a metal object across the terminals. Use a voltmeter or hydrometer.**

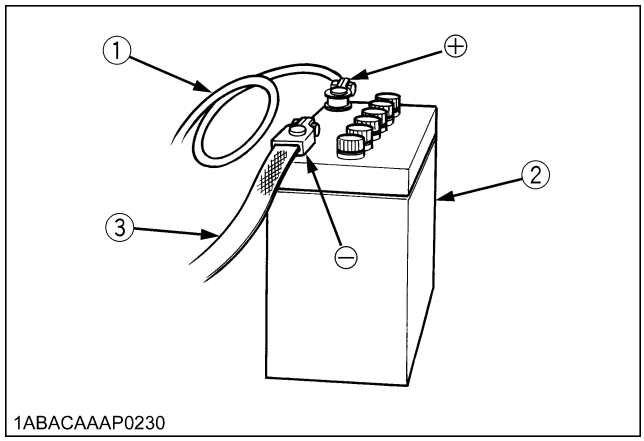
1. Make sure each electrolyte level is to the bottom of vent wells, if necessary, add only distilled water in a well-ventilated place.



1ABACAAAP0250

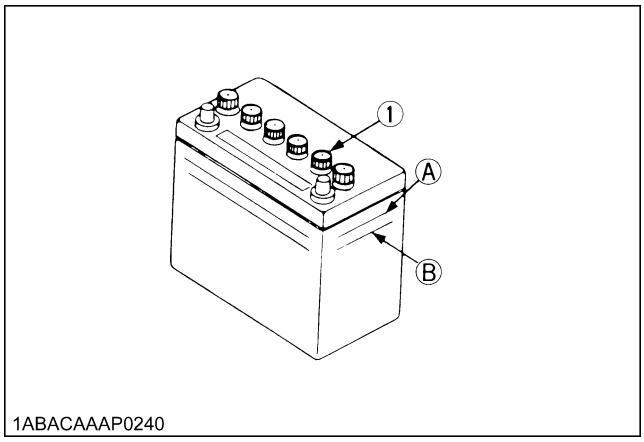
(1) Battery electrolyte level
(A) "TOO LOW"
(B) "PROPER"
(C) "TOO HIGH"

2. To slow charge the battery, connect the charger positive terminal to the battery positive terminal, and the negative to the negative, then recharge in the standard fashion.
3. Quick recharging charges the battery at a high rate in a short time. This is only for emergencies.
4. Recharge the battery as early as possible, or battery life will be extremely shortened.
5. When exchanging an old battery for a new one, use battery of equal specification shown in **Page 27** .



1ABACAAAP0230

(1) Thick cable red(+)
(2) Battery case
(3) Earth cable black(-)



1ABACAAAP0240

(1) Plug
(A) "HIGHEST LEVEL"
(B) "LOWEST LEVEL"

IMPORTANT :
- Connect the charger positive terminal to the battery positive terminal, and negative to the negative.
- When disconnecting the cable from the battery, start with the negative terminal first.
  When connecting the cable to the battery, start with the positive terminal first.
  If reversed, the contact of tools on the battery may cause a short.

■Direction for long term storage

1. When storing the engine for long periods of time, remove the battery, adjust the electrolyte to the proper level, and store in a dry and dark place.
2. The battery naturally discharges while it is stored. Recharge it once a month in summer, and every 2 months in winter.

ELECTRIC WIRING

CAUTION

To avoid personal injury:
- **◆ Shorting of electric cable or wiring may cause a fire.**
  - **Check to see if electric cables and wiring are swollen, hardened or cracked.**
  - **Keep dust and water away from all power connections.**
    Loose wiring terminal parts, make bad connections. Be sure to repair them before starting the engine.

Damaged wiring reduces the capacity of electrical parts. Change or repair damaged wiring immediately.

FAN BELT

■Adjusting Fan Belt Tension

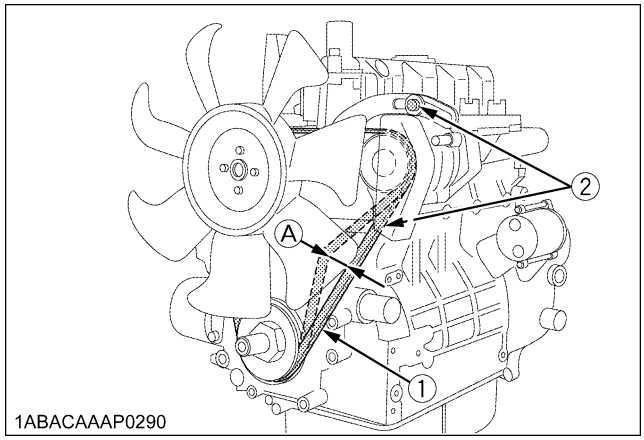
CAUTION

To avoid personal injury:
- **Be sure to stop the engine and remove the key before checking the belt tension.**
- **Be sure to reinstall the detached safety shield after maintenance or checking.**

Proper fan belt tension	A deflection of between 7 to 9 mm (0.28 to 0.35 in.) when the belt is pressed in the middle of the span.

1. Stop the engine and remove the key.
2. Apply moderate thumb pressure to belt between the pulleys.
3. If tension is incorrect, loosen the alternator mounting bolts and, using a lever placed between the alternator and the engine block, pull the alternator out until the deflection of the belt falls within acceptable limits.
4. Replace fan belt if it is damaged.

IMPORTANT :
- If belt is loosen or damaged and the fan is damaged, it could result in overheats or insufficient charging. Correct or replace belt.



1ABACAAAP0290

(1) Fan belt
(2) Bolt and nut
(A) 7 to 9 mm (0.28 to 0.35 in.) (under load of 10 kgf (22.1 lbs))

CARRIAGE AND STORAGE

CARRIAGE

CAUTION

To avoid personal injury:

- **Fix the engine securely not to fall during operation.**
- **Do not stand near or under the engine while carrying it.**
- **The engine is heavy. In handling it, be very alert not to get your hands and body caught in.**

1. Use carrier such as crane when carrying the engine, or hurt your waist and yourself. Support the engine securely with rope not to fall while carrying it.
2. When lifting the engine, put the hook securely to metal fittings attached to the engine. Use strong hook and fittings enough to hang the engine.

STORAGE

CAUTION

To avoid personal injury:

- **Do not clean the machine with engine running.**
- **To avoid the danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation.**
- **When storing the engine just after running, let the engine cool off.**

Before storing the engine for more than a few months, remove any dirt on the machine, and:

1. Drain the coolant in the radiator. Open the cock at the bottom of the radiator, and remove the pressure cap to drain water completely. Leave the cock open. Hang a note written "No water" on the pressure cap. Since water may freeze when the temperature drops below 0°C (32°F), it is very important that no water is left in the machine.
2. Remove dirty engine oil, fill with new oil and run the engine for about 5 minutes to let the oil penetrate to all the parts.
3. Check all the bolts and nuts, and tighten if necessary.
4. Remove the battery from the engine, adjust the electrolyte level, and recharge it. Store the battery in a dry and dark place.
5. When the engine is not used for a long period of time, run it for about 5 minutes under no load every 2 to 3 months to keep it free from rust. If the engine is stored without any running, moisture in the air may condense into dew over the sliding parts of the engine, resulting in rust there.
6. If you forget to run the engine for longer than 5 to 6 months, apply enough engine oil to the valve guide and valve stem seal and make sure the valve works smoothly before starting the engine.
7. Store the engine in a flat place and remove the key from engine.
8. Do not store the engine in a place where has flammable materials such as dry grass or straw.
9. When covering the engine for storage, let engine and muffler cool off completely.
10. Operate the engine after checking and repairing damaged wirings or pipes, and clearing flammable materials carried by mouse.

TROUBLESHOOTING

If the engine does not function properly, use the following chart to identify and correct the cause.

■ When it is difficult to start the engine

Cause	Countermeasures
Fuel is thick and doesn't flow.	*Check the fuel tank and fuel filter. *Remove water, dirt and other impurities. *As all fuel will be filtered by the filter, if there should be water or other foreign matters on the filter, clean the filter with kerosene.
Air or water mixed in fuel system	*If air is in the fuel filter or injection lines, the fuel pump will not work properly. To attain proper fuel injection pressure, check carefully for loosened fuel line coupling, loose cap nut, etc. *Loosen joint bolt stop fuel filter and air vent screws of fuel injection pump to eliminate all the air in the fuel system.
Thick carbon deposits on orifice of injection nozzle.	*This is caused when water or dirt is mixed in the fuel. Clean the nozzle injection piece, being careful not to damage the orifice. *Check to see if nozzle is working properly or not. If not, install a new nozzle.
Valve clearance is wrong.	*Adjust valve clearance to 0.18 to 0.22mm(0.007 to 0.0087 in.) when the engine is cold.
Leaking valves	*Grind valve.
Fuel injection timing is wrong.	*Adjust injection timing *The injection timing 0.314 rad(18°) before top dead center.
Engine oil becomes thick in cold weather and engine cranks slow.	*Change grade of oil according to the weather (temperature.)
Low compression	*Bad valve or excessive wear of rings, pistons and liners cause insufficient compression. Replace with new parts.
Battery is discharged and the engine will not crank.	*Charge battery. *In winter, always remove battery from machine, charge fully and keep indoors. Install in machine at time of use.

■ When output is insufficient

Cause	Countermeasures
Carbon stuck around orifice of nozzle piece	*Clean orifice and needle valve, being very careful not to damage the nozzle orifice. *Check nozzle to see if good. If not, replace with new parts.
Compression is insufficient. Leaking valves	*Bad valve and excessive wear of rings, pistons and liners cause insufficient compression. Replace with new parts. *Grind valves.
Fuel is insufficient.	*Check fuel system.
Overheating of moving parts	*Check lubricating oil system. *Check to see if lubricating oil filter is working properly. *Filter element deposited with impurities would cause poor lubrication. Change element. *Check the clearance of bearing are within factory specs. *Check injection timing. *Adjust timing 0.314 rad(18°) before top dead center.
Valve clearance is wrong.	*Adjust to proper valve clearance of 0.18 to 0.22 mm(0.007 to 0.0087 in.) with engine cold.
Air cleaner is dirty	*Clean the element every 100 hours of operation.
Fuel injection pressure is wrong.	*Adjust to proper pressure. 13.7Mpa (140 kgf/cm^2; 1991 psi)
Injection pump wear	*Do not use poor quality fuel as it will cause wear of the pump. Only use No. 2-D diesel fuel. *Check the fuel injection pump element and delivery valve assembly and replace as necessary.

NOTE :

- If the cause of trouble can not be found, contact your KUBOTA dealer.

■ When engine suddenly stops

Cause	Countermeasures
Lack of fuel	*Check the fuel tank and refill the fuel, if necessary. *Also check the fuel system for air or leaks.
Bad nozzle	*If necessary, replace with a new nozzle.
Moving parts are overheated due to shortage of lubrication oil or improper lubrication.	*Check amount of engine oil with oil level gauge. *Check lubricating oil system. *At every 2 times of oil change, oil filter cartridge should be replaced. *Check to see if the engine bearing clearances is within factory specs.

NOTE :

- When the engine has suddenly stopped, turn the engine lightly by pulling on the fan belt. If the engine turns easily without abnormalities, the cause of the trouble is usually lack of fuel or bad nozzle.

■ When color of exhaust is especially bad

Cause	Countermeasures
Fuel governing device bad	*Contact dealer for repairs.
Fuel is of extremely poor quality.	*Select good quality fuel. Use No. 2-D diesel fuel only.
Nozzle is bad.	*If necessary, replace with new nozzle.
Combustion is incomplete.	*Cause is poor atomization, improper injection timing, etc. Because of trouble in injection system or in poor valve adjustment, or compression leakage, poor compression, etc. Check for the cause.

■ When engine must be stopped immediately

Cause	Countermeasures
Engine revolution suddenly decreases or increases.	*Check the adjustments, injection timing and the fuel system.
Unusual sound is heard suddenly.	*Check all moving parts carefully.
Color of exhaust suddenly turns dark.	*Check the fuel injection system, especially the fuel injection nozzle.
Bearing parts are overheated.	*Check the lubricating system.
Oil lamp lights up during operation.	*Check the lubricating system. *Check, if the engine bearing clearances are within factory specs. *Check the function of the relieve valve in the lubricating system. *Check pressure switch. *Check filter base gasket.

■ When engine overheats

Cause	Countermeasures
Engine oil insufficient	*Check oil level. Replenish oil as required.
Fan belt broken or elongated	*Change belt or adjust belt tension.
Coolant insufficient	*Replenish coolant.
Excessive concentration of antifreeze	*Add water only or change to coolant with the specified mixing ratio.
Radiator net or radiator fin clogged with dust	*Clean net or fin carefully.
Inside of radiator or coolant flow route corroded	*Clean or replace radiator and parts.
Fan or radiator or radiator cap defective	*Replace defective parts.
Thermostat defective	*Check thermostat and replace if necessary.
Temperature gauge or sensor defective	*Check temperature with thermometer and replace if necessary.
Overload running	*Reduce load.
Head gasket defective or water leakage	*Replace parts.
Incorrect injection timing	*Adjust to proper timing.
Unsuitable fuel used	*Use the specified fuel.

SPECIFICATIONS

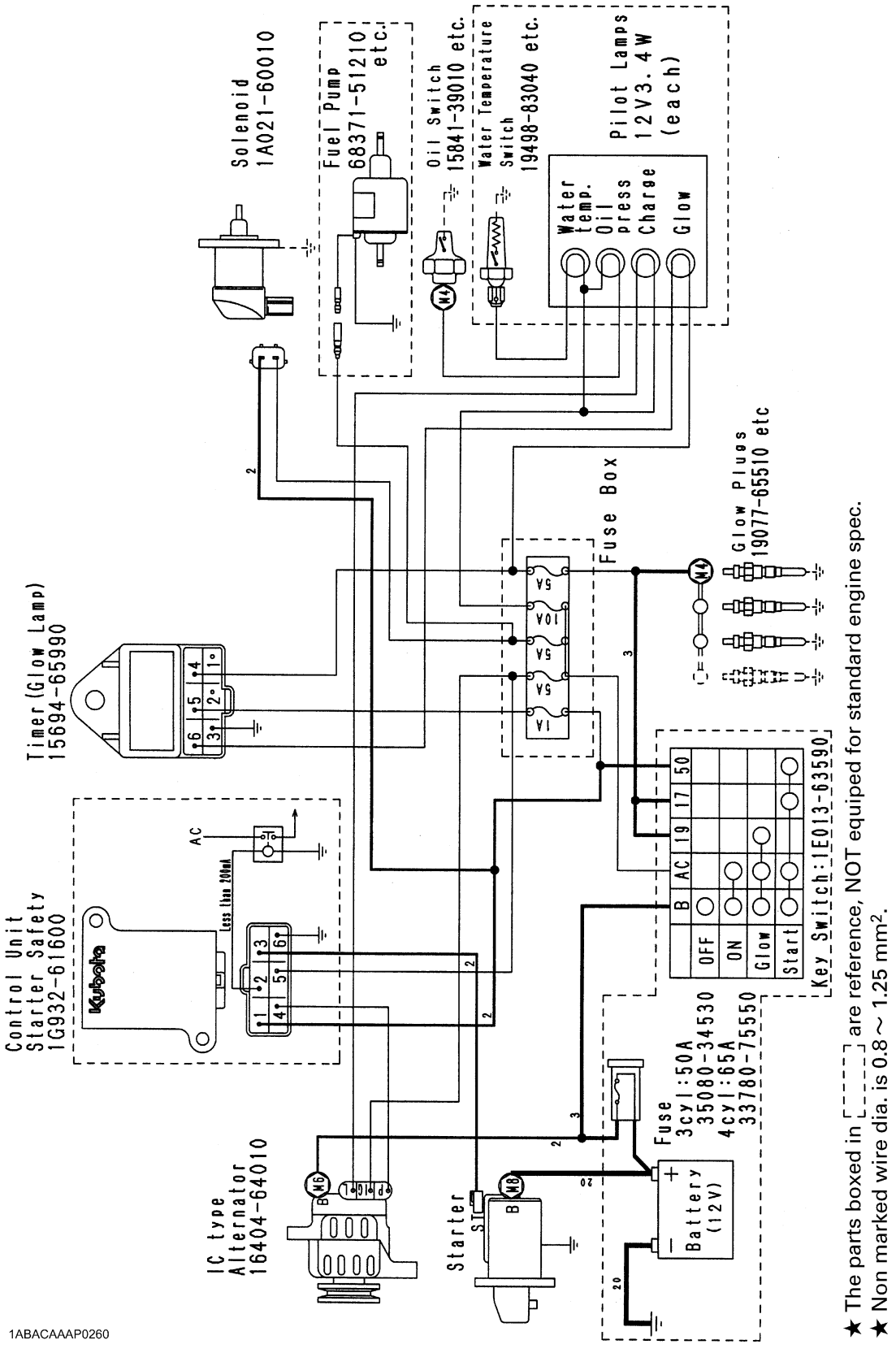
Model	D1503-M-E	D1703-M-E	D1803-M-E	V2003-M-E	V2203-M-E	V2003-M-T-E	V2403-M-E
Type	Vertical, water-cooled, 4-cycle diesel engine						
Number of cylinders	3			4			
Bore and stroke mm (in.)	83 x 92.4 (3.27 x 3.64)	87 x 92.4 (3.43 x 3.64)	87 x 102.4 (2.52 x 2.68)	83 x 92.4 (3.27 x 3.64)	87 x 92.4 (3.43 x 3.64)	83 x 92.4 (3.27 x 3.64)	87 x 102.4 (3.43 x 4.04)
Total displacement cm^3 (cu.in.)	1499 (91.44)	1647 (100.51)	1826 (111.43)	1999 (121.94)	2197 (134.07)	1999 (121.94)	2434 (148.53)
Combustion chamber	Spherical Type (E-TVCS)						
SAE NET Intermittent kW / rpm H.P. (SAEJ1349) (HP / rpm)	22.8 / 2800 (30.5 / 2800)	25.7 / 2800 (34.5 / 2800)	26.9 / 2600 (36.1 / 2600)	30.4 / 2800 (40.8 / 2800)	34.3 / 2800 (46.0 / 2800)	41.0 / 2800 (55.0 / 2800)	35.8 / 2600 (48.0 / 2600)
SAE NET Continuous kW / rpm H.P. (SAEJ1349) (HP / rpm)	19.8 / 2800 (26.5 / 2800)	22.4 / 2800 (30.0 / 2800)	23.3 / 2600 (31.2 / 2600)	26.4 / 2800 (35.4 / 2800)	29.8 / 2800 (40.0 / 2800)	35.5 / 2800 (47.6 / 2800)	31.1 / 2600 (41.6 / 2600)
Maximum bare speed rpm	3000		2800	3000			2800
Maximum bare idling speed rpm	750 to 850					850 to 950	750 to 850
Order of firing	1-2-3			1-3-4-2			
Direction of rotation	Counter-clockwise (viewed from flywheel side)						
Injection pump	Bosch Type mini pump						
Injection pressure	13.73 MPa, 1991 psi(140 kgf/cm^2)						
Injection timing (Before T.D.C.)	0.314rad(18°)						
Compression ratio	23.0	22.6	23.8	23.0	22.6	22.0	23.8
Fuel	Diesel Fuel No.2-D						
Lubricant (API classification)	above CD grade						
Dimension mm (in.) (length x width x height)	572.1 x 507.1 x 643.3 (22.5 x 20.0 x 25.3)		575.9 x 499.0 x 685.0 (22.7 x 19.8 x 27.0)	667.1 x 507.1 x 635.0 (26.3 x 20.0 x 25.0)		667.1 x 507.1 x 698.3 (26.3 x 20.0 x 27.5)	670.9 x 499.0 x 684.5 (26.4 x 19.7 x 26.9)
Dry weight (BB Spec.) kg (lbs.)	148 (326.4)		151 (33)	180 (397)		186 (410)	184 (406)
Starting system	Cell starter (with glow plut)						
Starting motor	12 V, 1.4 kW		12 V, 2.0 kW	12 V, 1.4 kW			12 V, 2.0 kW
Charging generator	12 V, 480 W						
Recommended battery capacity	12 V, 70 to 80 AH		12 V, 100 to 120 AH				

NOTE :

- Specifications are subject to change without notice.

ENGLISH

WIRING DIAGRAMS



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★ The parts boxed in [ ] are reference, NOT equiped for standard engine spec.
★ Non marked wire dia. is 0.8 ~ 1.25 mm².

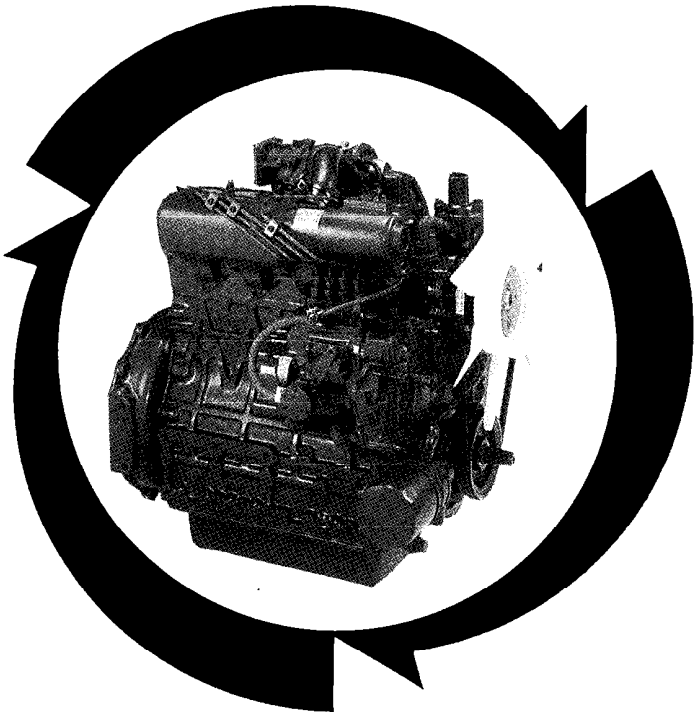
ILLUSTRATED PARTS LIST
LISTA DE PIEZAS
LISTE DES PIECES

KUBOTA

MODEL
MODELO
MODELE

V2403-M-T-E3B-KEA-2

DIESEL ENGINE
MOTOR DIESEL
MOTEUR DIESEL



Kubota

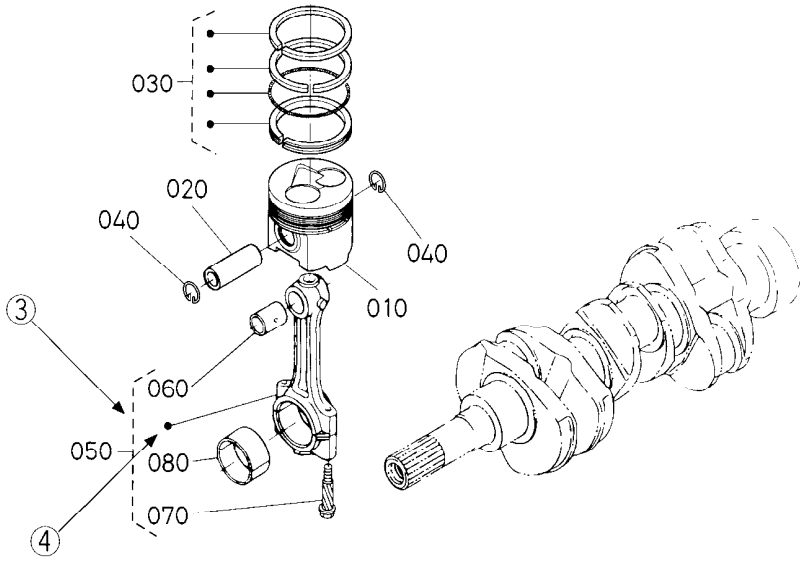
97898-73690
JAN.
ENERO 2008
JANVIER

INSTRUCTIONS
INSTRUCCIONES
INSTRUCTION

① → 0102 PISTON AND CRANKSHAFT / PISTON Y CIGUENAL / PISTON ET VILEBREQUIN

② → [B]

⑩ → S.No. ; A:<=15000, B:14000 to 15000



⑤ ⑥ ⑦ ⑧ ⑥ ⑨

A:××××, B:××××

REF No POS.No. BILD-Nr	PART No. REFERENCE BESTELL-Nr.	PART NAME	DESCRIPCION	DESIGNATION	⑥ QTY/S No. QTE/No S. STUECK/S Nr A	⑦ B	⑧ I.C.	⑨ REMARKS REMARQUES BEMERKUNGEN
010	15800-0000-0	PISTON	PISTON	PISTON	1 <=15000	1 <=15000		[Example—1]
010	15800-0000-2	PISTON	PISTON	PISTON	1 >=15001	1 >=15001	←	[Ejemplo—1] [Exemple—1]
020	15800-1000-0	PIN,PISTON	PASADOR, PISTON	AXE DE PISTON	1 <=15000	1 <=15000		
020	15800-1000-2	PIN,PISTON	PASADOR, PISTON	AXE DE PISTON	1 >=15001	1 >=15001	≠	[Example—2]
030	15800-2000-0	ASSY PISTON RING	CONJUNTO PISTON ARO	ENS.JEU OE SEGMENTS	1 <=15000	1 <=15000		[Ejemplo—2] [Exemple—2]
030	15830-2000-0	ASSY PISTON RING	CONJUNTO PISTON ARO	ENS.JEU DE SEGMENTS	1 >=15001	1 >=15001	↔	
								[Example—3] [Ejemplo—3] [Exemple—3]

① Fig. No. ..... Represents No. corresponding to each group name.

② Specifications ..... The types and destinations of sister models are indicated. These indications are (for sister models) given to tell their relevant pages in this book.

③ Components ..... The components of an assembly are identified by a bracket of dotted lines.

④ Point ..... Indicates that the parts is not sold independently.
The assembly (Ref.No.050) containing the part needs to be ordered.

⑤ REF. No. ..... Reference numbers are assigned to parts in the illustration.The code number of a part in the illustration can be identified by referring to the same reference number in the parts list.

⑥ Model name ..... The name of the basic model is indicated in this column. Other applicable models are indicated on the "REMARKS" column ⑨.

⑦ S. No. ..... Indicates a group of serial numbers to which a design change is applied.
(serial No.)

Engine Serial No.

7 J 0001
7 K A001

Lower 4 digits in Numerals or Alphabetical letter (A to Z) and Numerals (start 0001 to max Z999).
5th digit ····· Alphabetical letter (Month of manufacture).

Month	1	2	3	4	5	6	7	8	9	10	11	12
	A,B	C,D	E,F	G,H	J,K	L,M	N,P	Q,R	S,T	U,V	W,X	Y,Z

6th digit ····· Numerals or Alphabetical letter (Year of manufacture).

Year	1998	1999	2000	01	02	03	04	05	06	07	08	09	10	11
	W	X	Y	1	2	3	4	5	6	7	8	9	A	B

⑧ I. C. ..... Indicates the interchangeability of parts due to design change.
(interchangeability)

Example-1 ..... ← indicates that a new part can replace an old part, but not vice versa.
15800-0000-0 is applicable to the first serial number to S. No. 15000.
15800-0000-2 is applicable to the first serial number and above.

Example-2 ..... ≠ indicates that the new and old parts are not interchangeable.
15800-1000-0 is applicable to the first serial number to S. No. 15000.
15800-1000-2 is applicable to S. No. 15001 and above.

Example-3 ..... ↔ indicates that the new and old parts are interchangeable. Both 15800-2000-0 and 15830-2000-0 are applicable to the first serial number and above.

⑨ REMARKS 1 ..... In this column, enter other applicable model names, dimensions and other special items.

⑩ REMARKS 2 ..... The following expressions are used in NOTE for each group.
Machines' serial numbers are indicated as follows.
〈=15000 ..... Serial number below 15000.
〉=15001 ..... Serial number above 15001.
14000 to 15000 ..... Serial number 14000 to 15000.
For some models, the above expressions may also be used REMARKS 1 ⑨.

① Fig. No. ..... Representa el No. que corresponde al nombre de cada grupo.

② Especificaciones ... Se indican los tipos y destinos de los modelos del mismo tipo. Éstas se dan para indicar
(para los modelos gemelos) las páginas correspondientes a los modelos en este libro.

③ Componentes ..... Los componentes de un conjunto se identifican mediante un paréntesis o líneas de puntos.

④ Punto ..... Indica que las piezas no se venden por separado.
Es necesario solicitar el conjunto (No. DE REF. 050) que contiene la pieza.

⑤ No. DE REF. ..... En la ilustración se asignan números de referencia a las piezas. Puede identificar el número de código de una pieza de la ilustración consultando el número de referencia en la lista de piezas.

⑥ Nombre del modelo ... En esta columna se indica el nombre del modelo básico. Otros modelos se indican en la columna ⑨ "NOTA".

⑦ No. DE SERIE ..... Indica un grupo de números de serie al que se aplica un cambio de diseño.

No. DE SERIE del motor

7 J 0001
7 K A001

4 digitos menores de los números o de letra del alfabeto (A hasta Z) y los números (de 0001 hasta max. Z999).

Quinto digito ····· letra del alfabeto (mes de fabricación).

Mes	1	2	3	4	5	6	7	8	9	10	11	12
	A,B	C,D	E,F	G,H	J,K	L,M	N,P	Q,R	S,T	U,V	W,X	Y,Z

Sexto digito ····· Letra del alfabeto o número (año de fabricación).

Año	1998	1999	2000	01	02	03	04	05	06	07	08	09	10	11
	W	X	Y	1	2	3	4	5	6	7	8	9	A	B

⑧ I/C ..... Indica la intercambiabilidad de piezas debida a un cambio en el diseño.
(intercambiabilidad)

Ejemplo-1 ..... ← Indica que una pieza nueva puede sustituir a la anterior, pero no a la inversa.
15800-0000-0 es aplicable desde el primer número de serie hasta el No. S. 15000.
15800-0000-2 es aplicable al primer número de serie y a los siguientes.

Ejemplo-2 ..... ≠ indica que las piezas nuevas y viejas no son intercambiables.
15800-1000-0 es aplicable al primer número de serie hasta el No. S.15000.
15800-1000-2 es aplicable al número de serie 15001 y a los siguientes.

Ejemplo-3 ..... ↔ indica que las piezas nuevas y viejas son intercambiables. Tanto 15800-2000-0 y 15830-2000-0 son aplicables al primer número de serie y a los siguientes.

⑨ NOTA 1 ..... Escriba en esta columna otros nombres de modelos, dimensiones y otros elementos especiales pertinentes. En este libro se utilizan los siguientes símbolos y abreviaturas:
29*12.00-15 ... tamaño del neumático sq.m ... m^2 sq.mm ... mm^2
cu.m ... m^3 cu.mm ... mm^3 D ... diámetro L ... longitud

⑩ NOTA 2 ..... Las siguientes expresiones se utilizan en las Notas para cada grupo. Los números de serie de las máquinas se indican del siguiente modo:
<=15000 .... Números de serie inferiores a 15000.
>=15001 .... Números de serie superiores a 15001.
De 14000 a 15000 .... Número de serie entre 14000 y 15000.
En algunos modelos, las expresiones anteriores también pueden utilizarse NOTA 1⑨.

① No. de Fig. ..... Représente le No. de chaque nom de groupe.

② Spécifications (pour modèles soeurs) ..... Les types et les destinations des modèles soeurs sont indiqués. Ces indications sont données pour donner leurs pages relatives dans ce livre.

③ Composantes ..... Les composantes d'un ensemble sont identifiées par des parenthèses en pointillé.

④ Point ..... Indique que la pièce n'est pas à vendre toute seule.
Elle doit être commandée avec l'ensemble (POS.No. 050) qui la contient.

⑤ POS.No. ..... Des numéros de position sont donnés aux pièces représentées dans l'illustration.
Le référence d'une pièce de l'illustration peut être identifié en se reportant au même numéro de position indiqué dans la liste des pièces détachées.

⑥ Nom de type ..... Le nom du type de base est indiqué dans cette colonne. Les autres modèles sont indiqués dans la colonne des "REMARQUES" ⑨.

⑦ No. S. (No. de série) ..... Indique un groupe de numéros de série qui a subit des modifications de modèle.

No. de série de moteur

7 J 0001
7 K A001

4 chiffres inférieurs en lettres numérals ou alphabétiques (de A à Z) et numérals (de 0001 jusqu'à Z999 au maximum).

5ème chiffre ····· Lettre alphabétique (Mois de fabrication).

Mois	1	2	3	4	5	6	7	8	9	10	11	12
	A,B	C,D	E,F	G,H	J,K	L,M	N,P	Q,R	S,T	U,V	W,X	Y,Z

6ème chiffre ····· Numeral ou lettre alphabétique (Année de fabrication).

Année	1998	1999	2000	01	02	03	04	05	06	07	08	09	10	11
	W	X	Y	1	2	3	4	5	6	7	8	9	A	B

⑧ I. C. (permutabilité) ..... Indique la permutabilité des pièces due à un changement dans le modèle.

Exemple-1 ..... ← indique que la nouvelle pièce peut remplacer la vieille, mais pas vice versa.
Le 15800-0000-0 s'applique au premier numéro de série jusqu'au No.S. 15000.
Le 15800-0000-2 s'applique au premier numéro de série et à ceux ci-dessus.

Exemple-2 ..... ≠ indique que la nouvelle et vielle pièces sont permutables.
Le 15800-1000-0 s'applique au premier numéro de série jusqu'au No.S. 15000.
Le 15800-1000-2 s'applique au No.S. 15001 et à ceuxci-dessus.

Exemple-3 ..... ↔ indique que la nouvelle pièce et la vielle pièce sont interchangeable. Toules deux numéros 15800-2000-0 et 15830-2000-0 sont applicables a premier numéro de cette depuis.

⑨ REMARQUES 1 ... Cette colonne renferme d'autres noms de modèles applicables, les dimensions et autres éléments spéciaux.

⑩ REMARQUES 2 ... Les expressions suivantes sont utilisées dans la NOTE de chaque groupe.
Les numéros de série des machines sont indiqués de la manière suivante.
〈=15000 ..... Numéros de série au-dessous de 15000.
〉=15001 ..... Numéros de série au-dessus de 15001.
14000 to 15000 ..... Numéros de série 14000 à 15000.
Pour certaines modèles, les expressions ci-dessus peuvent aussi être utilisées dans la rubrique des REMARQUES 1 ⑨.

NOTICE

This Parts List is for the following purposes.

1. When ordering parts, check with this Parts List to confirm the part number and the name of parts.
2. When making repairs, refer to the illustrations in this Parts List.
3. This Parts List is subject to change without notice.

NOTA

Esta lista de piezas tiene el objetivo siguiente.

1. Cuando solicite piezas, consulte esta Lista de piezas para confirmar su número de referencia y nombre.
2. Al efectuar reparaciones, consulte las ilustraciones de esta Lista de piezas.
3. Esta lista de piezas está sujeta a cambios sin previo aviso.

NOTE

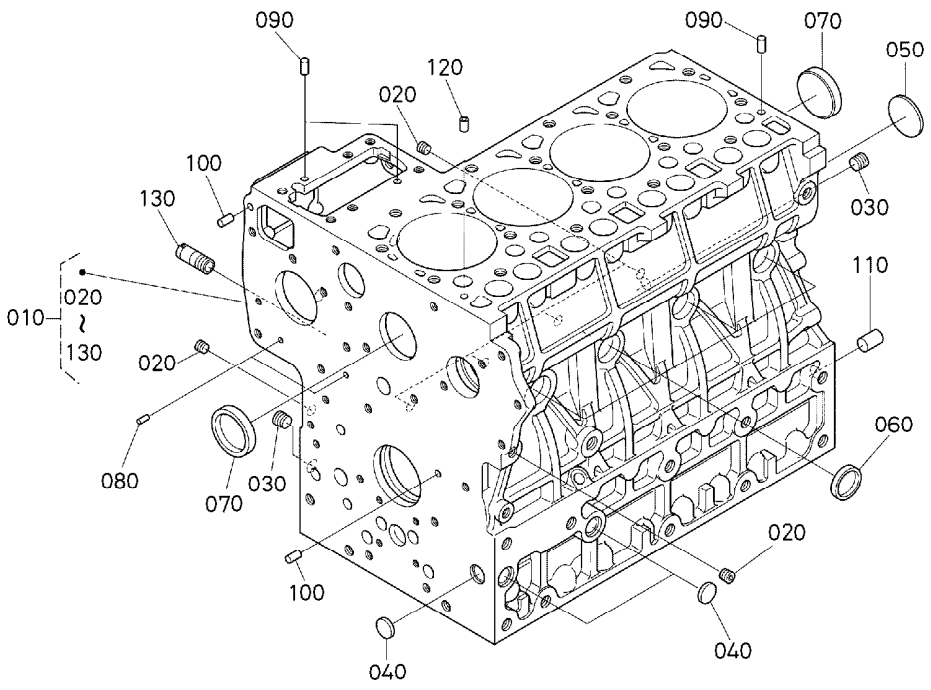
Utilisation de ce livre

1. A la commande d'une pièce, chercher la référence et le nom de la pièce.
2. Pour les rèparations, employez les illustrations.
3. La liste des pièces peut-être modifiè sans préavis.

MODEL MODELO MODELE	CODE No. No. DEL CODIGO No. DE CODE
V2403-M-T-E3B-KEA-2	1J403-00000

CONTENTS

0001 CRANKCASE
BLOQUE MOTOR
BLOC MOTEUR

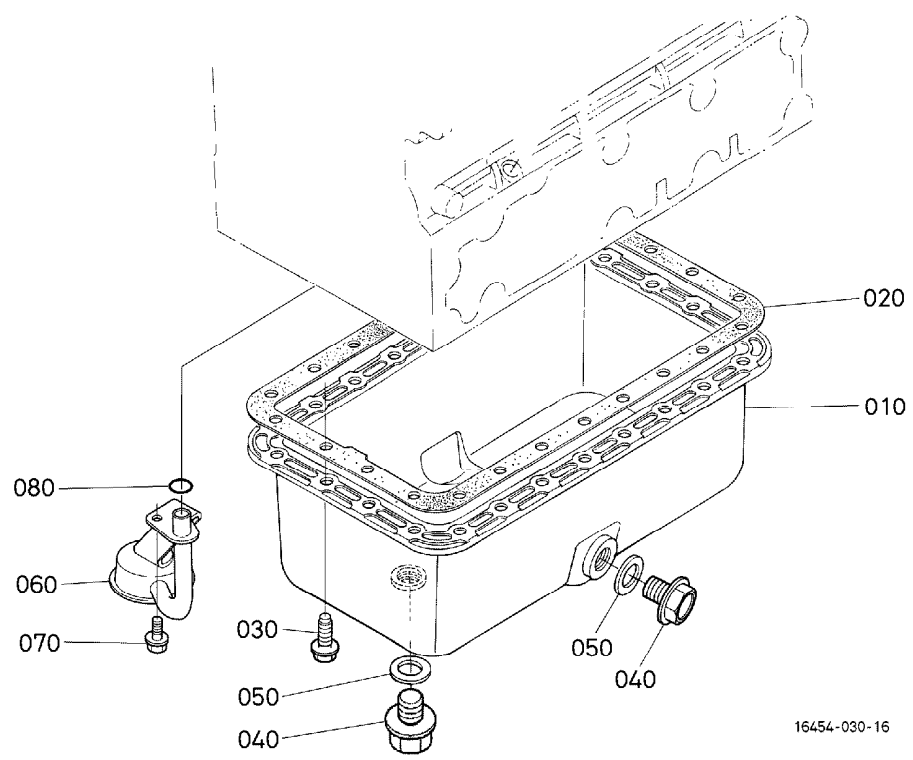


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	1G633-0101-0	COMP.CRANKCASE	COMP.BLOQUE MOTOR	BLOC MOTEUR COMPLET	1	-		
020	15521-9602-0	PLUG	TAPON	BOUCHON	6	-		
030	15521-9603-0	PLUG	TAPON	BOUCHON	2	-		
040	17391-9616-0	PLUG,EXPANSION	TAPON,EXPANSION	BOUCHON EXPANSIBLE	3	-		
050	16271-9616-0	PLUG,EXPANSION	TAPON,EXPANSION	BOUCHON EXPANSIBLE	1	-		
060	15221-0338-0	CAP,SEALING	TAPA,SELLADO	PASTILLE	6	-		
070	15221-0339-0	CAP,SEALING	TAPA,SELLADO	PASTILLE	2	-		
080	05012-00408	PIN,STRAIGHT	PASADOR,RECTO	GOUPILLE CYLINDLIQUE	2	-		
090	05012-00609	PIN,STRAIGHT	PASADOR,RECTO	GOUPILLE CYLINDLIQUE	3	-		
100	05012-00612	PIN.STRAIGHT	PASADOR.RECTO	GOUPILLE CYLINDLIQUE	2	-		
110	05012-01018	PIN,STRAIGHT	PASADOR,RECTO	GOUPILLE CYLINDLIQUE	1	-		
120	15221-3365-0	PIN,PIPE	PASADOR,TUBO	GICLEUR	1	-		
130	15321-7334-0	PIPE,WATER RETURN	TUBO,AGUA DEVOLVER	TUYAU RETOUR D'EAU	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0002 OIL PAN
ENGRASE LA CACEROLA
CARTER D'HUILE

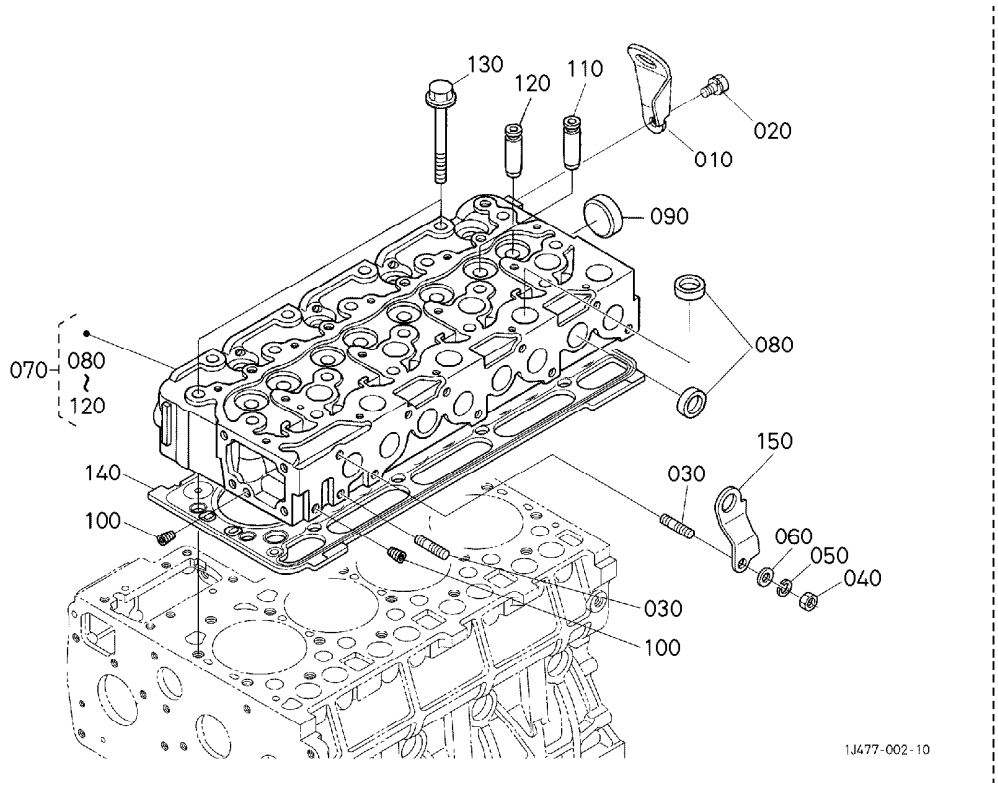


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	19077-0150-0	COMP.OIL PAN	COMP.ACEITE CCRL	CARTER D'HUILE COMP.	1	-		
020	1G780-0162-0	GASKET,OIL PAN	JUNTA,ACT CCRL	JOINT	1	-		
030	1G861-9101-0	BOLT,FLANGE	TORNILLO,BRIDA	VIS DE BUTEE	24	-		
040	15707-3375-0	PLUG,DRAIN	TAPON,VACIAR	BOUCHON DE VIDANGE	2	-		
050	15451-9667-0	GASKET	JUNTA	JOINT	2	-		
060	1G850-3211-0	FILTER,OIL	FILTRO,ACEITE	FILTRE D'HUILE	1	-		
070	01754-50812	BOLT,FLANGE	TORNILLO,BRIDA	VIS DE BUTEE	1	-		
080	04817-00160	O RING	O ARO	JOINT TORIQUE	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0003 CYLINDER HEAD
CILINDRO CULATA
CULASSE



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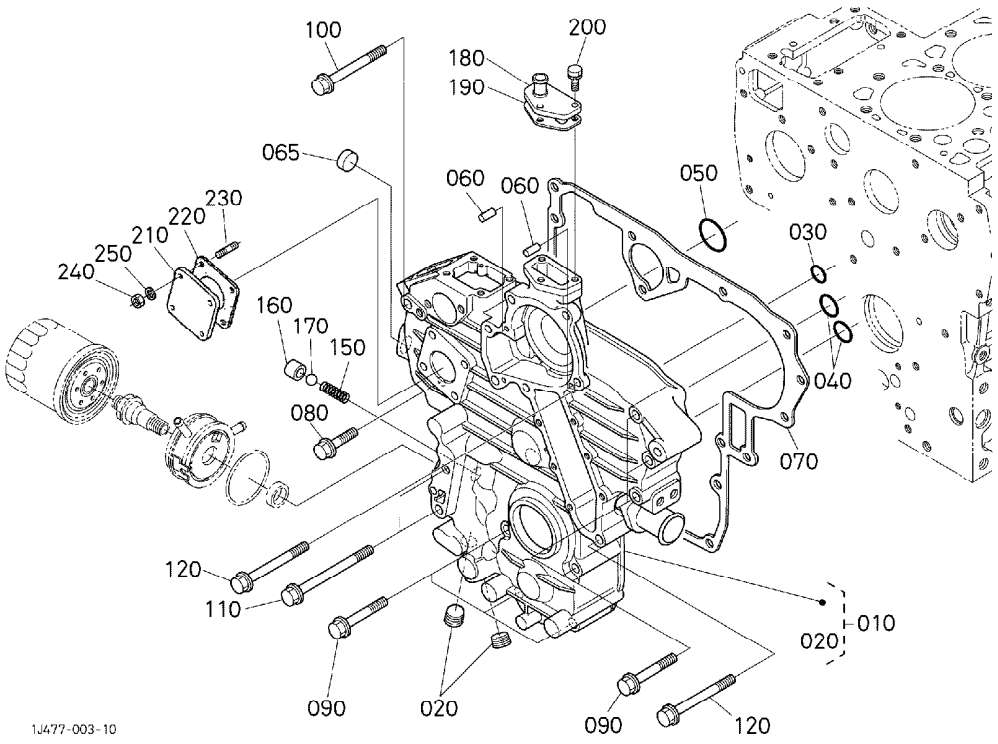
REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	16415-0175-2	HOOK, ENGINE	GANCHO, MOTOR	ANNEAU DE LEVAGE	1	-		
020	01123-60816	BOLT	TORNILLO	VIS	1	-		
030	15471-9153-0	STUD	ESPARRAGO	GOUJON	2	-		
040	02156-50080	NUT	TUERCA	ECROU	1	-		
050	04512-60080	WASHER, SPRING	ARANDELA DE MUELLE	RONDELLE GROWER	1	-		
060	04012-50080	WASHER, PLAIN	ARANDELA, SIMPLE	RONDELLE FREIN	1	-		
070	1J854-0304-0	COMP. CYLINDER HEAD	COMP. CILINDRO CLT	CULASSE COMPLET	1	-		
080	15221-0337-0	CAP, SEALING	TAPA, SELLADO	PASTILLE	12	-		
090	15221-0349-0	CAP, SEALING	TAPA, SELLADO	PASTILLE	1	-		
100	15261-9601-0	PLUG	TAPON	BOUCHON	2	-		
110	17321-1358-0	GUIDE, INLET VALVE	GUIA, ENTRADA VALVULA	GUIDE SOUP. D' ADMISS.	4	-		
120	1C010-1356-0	GUIDE, VALVE, EXHAUST	GUIA, VALVULA, ESCAPE	OEIL-GUIDE, ECHAPPEME	4	-		
130	19013-0345-0	BOLT, CYLINDER HEAD	TORNILLO, CLNDR CLT	VIS DE CYLINDRE	18	-		
140	1G790-0360-2	GASKET, CYLINDER HEAD	JUNTA, CLNDR CLT	JOINT	1	-		1.15mm
140	1G790-0331-2	GASKET, CYLINDER HEAD	JUNTA, CLNDR CLT	JOINT	1	-		1.20mm
140	1G790-0361-2	GASKET, CYLINDER HEAD	JUNTA, CLNDR CLT	JOINT	1	-		1.25mm
140	1G790-0362-2	GASKET, CYLINDER HEAD	JUNTA, CLNDR CLT	JOINT	1	-		1.30mm
140	1G790-0363-2	GASKET, CYLINDER HEAD	JUNTA, CLNDR CLT	JOINT	1	-		1.35mm
150	17331-0175-0	HOOK, ENGINE	GANCHO, MOTOR	ANNEAU DE LEVAGE	1	-		

0004 GEAR CASE
ENGRANAJE CAJA
CARTER DE DISTRIBUTION

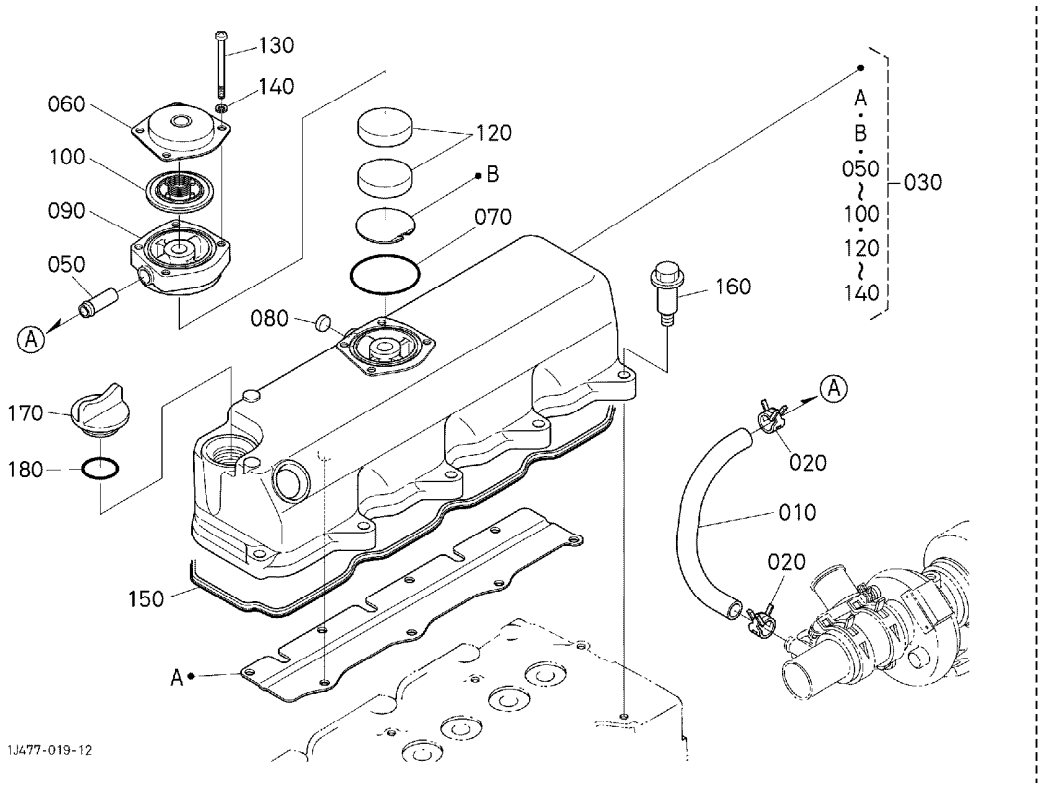


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	1G931-0402-3	COMP. CASE, GEAR	COMP. CAJA, ENGRNJ	CARTER DISTR. COMP.	1	-		
020	16241-9602-0	PLUG	TAPON	BOUCHON	2	-		
030	04817-00150	O RING	O ARO	JOINT TORIQUE	1	-		
040	04817-00220	O RING	O ARO	JOINT TORIQUE	2	-		
050	04817-00360	O RING	O ARO	JOINT TORIQUE	1	-		
060	05012-00612	PIN, STRAIGHT	PASADOR, RECTO	GOUPILLE CYLINDLIQUE	2	-		
065	06311-85018	CAP, SEALING	TAPA, SELLADO	PASTILLE	1	-		
070	1A021-0413-0	GASKET, GEAR CASE	JUNTA, ENGRANAJE CAJA	JOINT	1	-		
080	01754-50830	BOLT, FLANGE	TORNILLO, BRIDA	VIS DE BUTEE	1	-		
090	1A021-9103-0	BOLT. FLANGE	TORNILLO. BRIDA	VIS DE BUTEE	7	-		
100	01754-50875	BOLT, FLANGE	TORNILLO, BRIDA	VIS DE BUTEE	1	-		
110	1G841-9101-0	BOLT, FLANGE	TORNILLO, BRIDA	VIS DE BUTEE	2	-		
120	01754-50885	BOLT, FLANGE	TORNILLO, BRIDA	VIS DE BUTEE	4	-		
130	----	BLANK	POSTIZO	BLANC	-	-		
140	----	BLANK	POSTIZO	BLANC	-	-		
150	15241-3695-0	SPRING	RESORTE	RESSORT	1	-		
160	15521-3693-0	SEAT, VALVE	ASIENTO, VALVULA	SIEGE DE SOUPAPE	1	-		
170	07715-03213	BALL	BOLA	BILLE	1	-		
180	15521-7332-0	FLANGE, WATER RETURN	BRIDA, AGUA DEVOLVER	BRIDE RETOUR D'EAU	1	-		
190	1A021-7333-2	GASKET, RETURN FLANGE	JUNTA, DEVOLVER BRIDA	JOINT	1	-		
200	01023-50620	BOLT	TORNILLO	VIS	3	-		
210	15223-8334-0	COVER	CUBIERTA	COUVERCLE	1	-		
220	1G751-8813-0	GASKET, HOUR METER	JUNTA, HORA METRO	JOINT	1	-		
230	15221-8821-0	STUD	ESPARRAGO	GOUJON	4	-		
240	02056-50060	NUT	TUERCA	ECROU	4	-		
250	04512-60060	WASHER, SPRING	ARANDELA DE MUELLE	RONDELLE GROWER	4	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0005 HEAD COVER
CULATA CUBIERTA
COUVRE-CULASSE

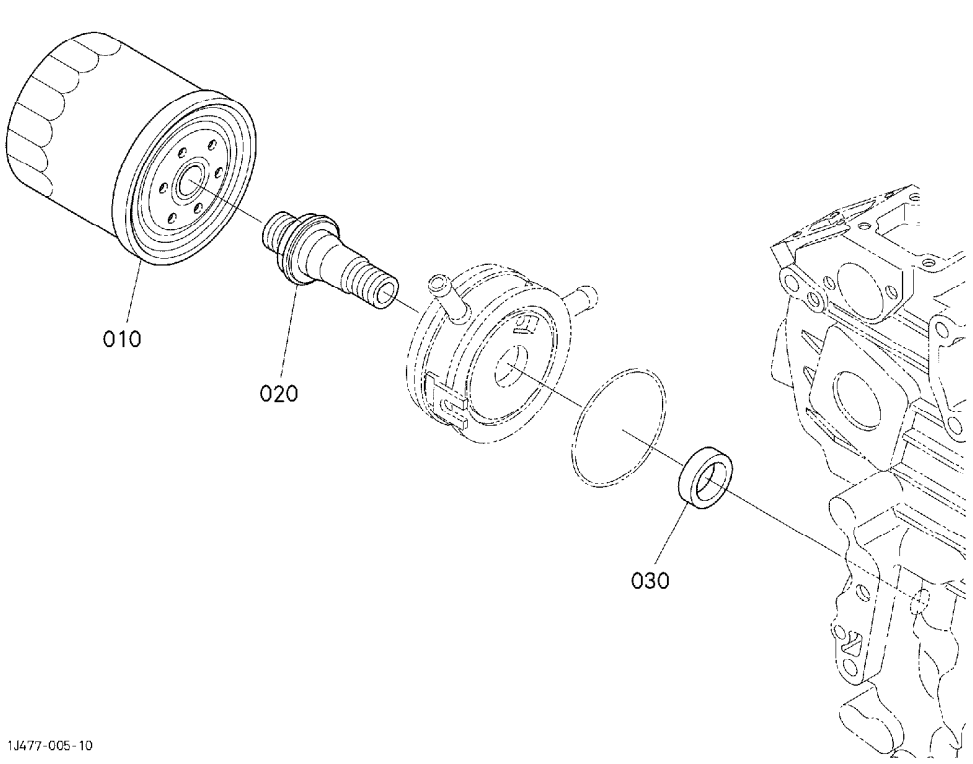


A:V2403-M-T-E3B-KEA-2

REF No. No. DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. A	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. B	I.C.	REMARKS NOTA REMARQUES
010	1G491-0551-0	TUBE, BREATHER TURBO	TUBO, RESPIRADERO	TUYAU DE RENLFLARD	1	-		
020	09318-88155	CLAMP, HOSE	ABRAZADERA, MANGUITO	COLLIER DE DURITE	2	-		
030	1J860-1450-0	ASSY COVER, CYL. HEAD	CUBIERTA PRINCIPAL	ENS. COUVERCLE	1	-		
040	----	BLANK	POSTIZO	BLANC	-	-		
050	17331-7334-2	PIPE, WATER RETURN	TUBO, AGUA DEVOLVER	TUYAU RETOUR D'EAU	1	-		
060	1G801-0512-0	COVER, BREATHER	CUBIERTA, RESPIRADERO	COUVERCLE ASPIRATEUR	1	-		
070	1G924-0543-0	O RING, BREATHER	O ARO, RESPIRADERO	JOINT TORIQUE	1	-		
080	15451-9630-0	CAP, SEALING	TAPA, SELLADO	PASTILLE	1	-		
090	1J860-1467-0	SPACER, BREATHER	SEPARADOR	ENTRETOISE	1	-		
100	1G911-0520-3	COMP. VALVE. BREATHER	COMP. VALVULA. RSPRDR	ENS. ROBINET DE REIN.	1	-		
110	----	BLANK	POSTIZO	BLANC	-	-		
120	16241-0567-0	ELEMENT, BREATHER	ELEMENTO, RESPIRADERO	TAMIS DU RENIFLARD	2	-		
130	03054-50545	SCREW, PAN-HEAD	TORNILLO, CCRL-CLT	VIS	4	-		
140	04512-60050	WASHER, SPRING	ARANDELA DE MUELLE	RONDELLE GROWER	4	-		
150	1G911-1452-3	GASKET, HEAD COVER	JUNTA, CLT CBRT	JOINT COUVRE-CULASSE	1	-		
160	1G911-9102-2	BOLT	TORNILLO	VIS	10	-		
170	15852-3314-0	PLUG, OIL FILLER	TAPON, ACT TPPRS	BOUCHON, REMPLIS. H/L	1	-		
180	04817-50300	O RING	O ARO	JOINT TORIQUE	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0006 OIL FILTER
ACEITE FILTRO
FILTRE D'HUILE

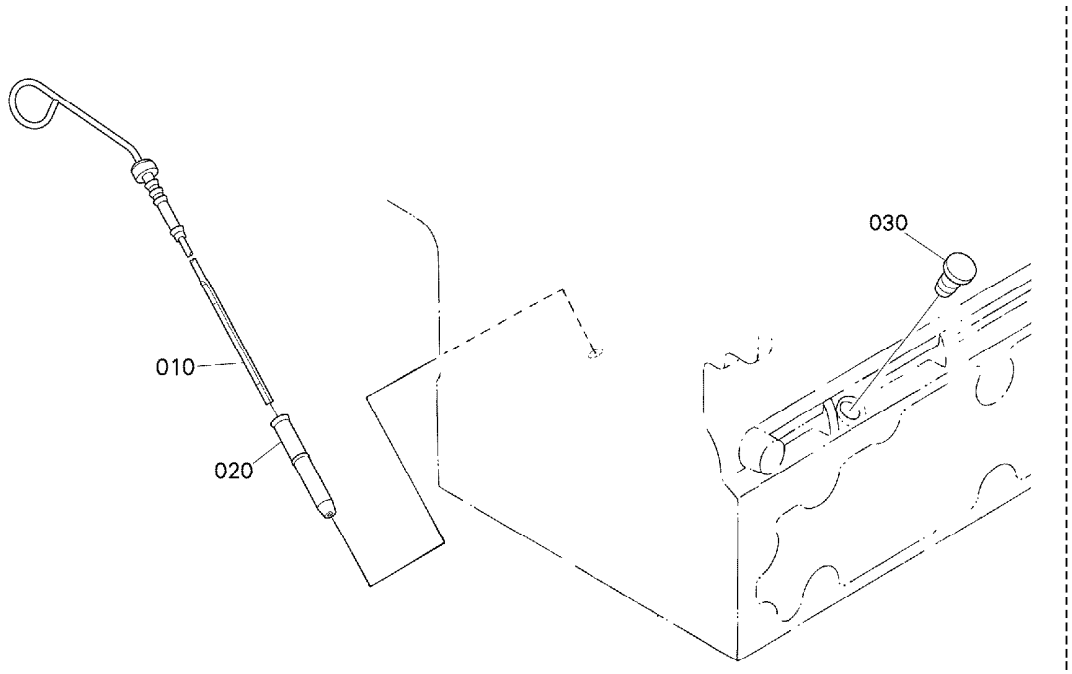


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S.		I.C.	REMARKS NOTA REMARQUES
					A	B		
010	HH164-3243-0	CARTRIDGE,OIL FILTER	CONJ.CARTUCHO,ACT	CARTOUCHE FILTRANTE	1	-		
020	1G849-3708-0	CONNECTOR	CONNETTORE	CONNECTEUR	1	-		
030	1G730-3709-0	COLLAR	COLLAR	COLLIER	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0007 DIPSTICK AND GUIDE
VARILLA DE NIVBL Y GUIA
JAUGE D'HUILE ET GUIDE



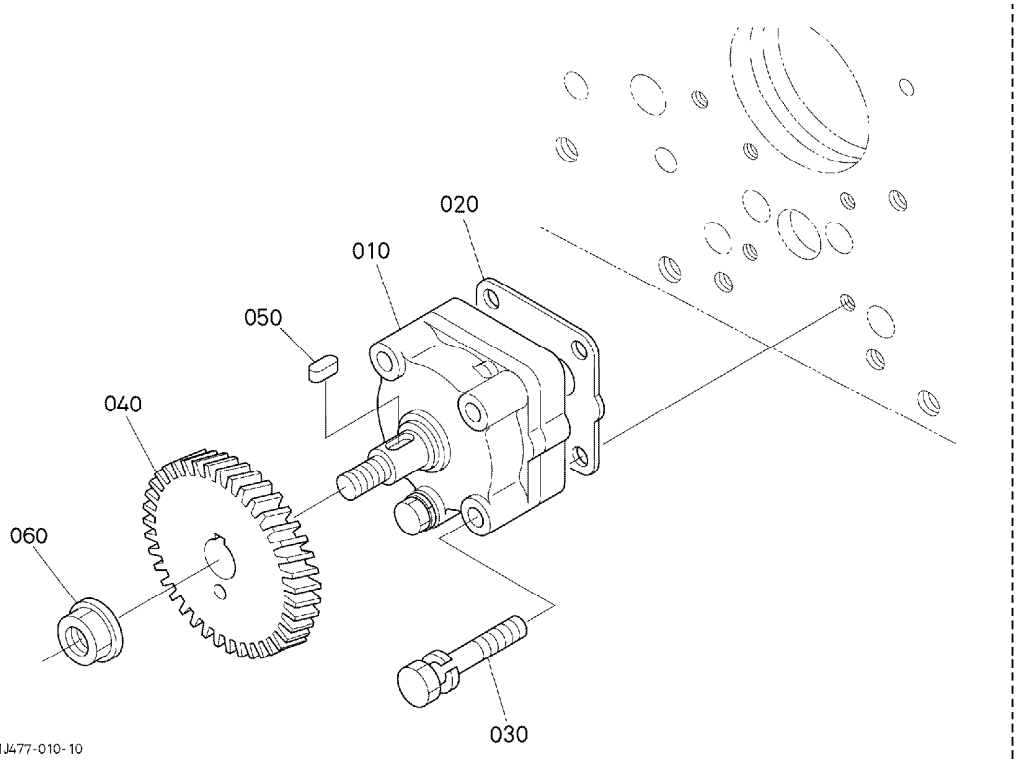
1G933-007-11

A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	1G790-3641-3	GAUGE,OIL	MEDIDOR,ACEITE	JAUGE D'HUILE	1	-		
020	17456-3642-0	GUIDE,OIL GAUGE	GUIA,ACEITE MEDIDOR	GUIDE	1	-		
030	1G513-3655-0	PLUG,OIL GAUGE	TAPON,ACEITE MEDIDOR	BOUCHON DE JAUGE	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0008 OIL PUMP
ACEITE BOMBA
POMPE D'HUILE

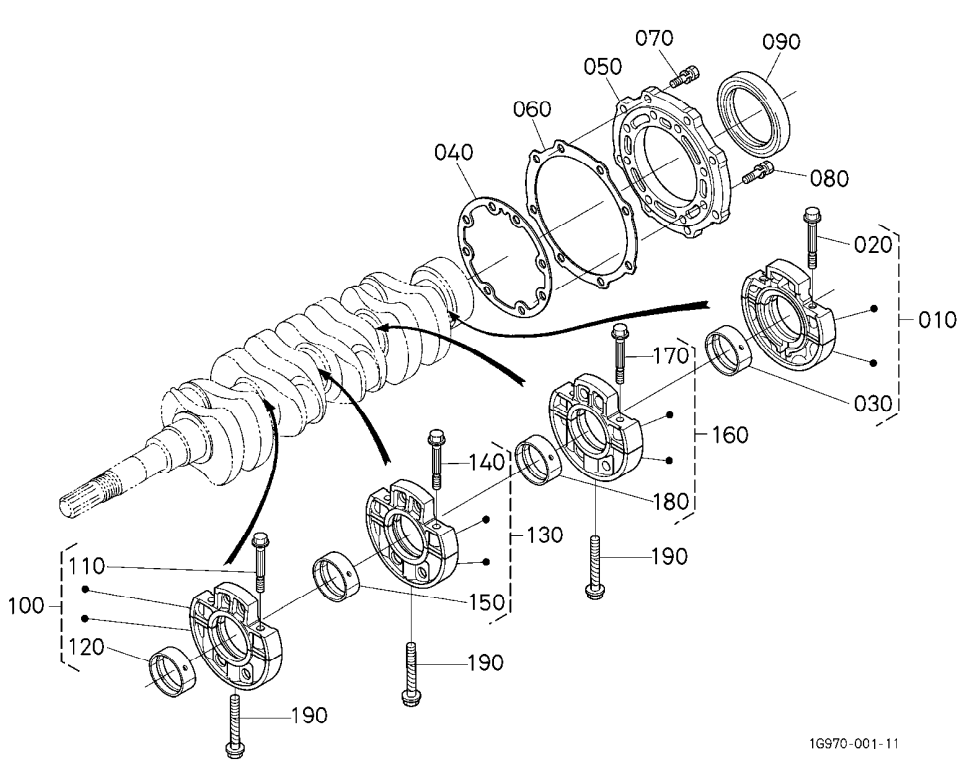


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	15471-3501-3	ASSY PUMP, OIL	CONJ. BOMBA, ACT	ENS. POMPE A HUILE	1	-		
020	1A021-3515-0	GASKET, OIL PUMP	JUNTA, ACEITE BOMBA	JOINT	1	-		
030	01023-60650	BOLT	TORNILLO	VIS	4	-		
040	17301-3566-0	GEAR, OIL PUMP DRIVE	ENGRANAJE, ACT	PIGNON ENTRAIN. POMPE	1	-		
050	05712-00410	KEY, FEATHER	LLAVE, PLUMA	CLAVETTE	1	-		
060	15221-3568-2	NUT, FLANGE	TUERCA, BRIDA	ECROU A EMBASE	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0100 MAIN BEARING CASE
PRINCIPAL RODAMIENTO CAJA
PALIERS DE VILEBREQUIN

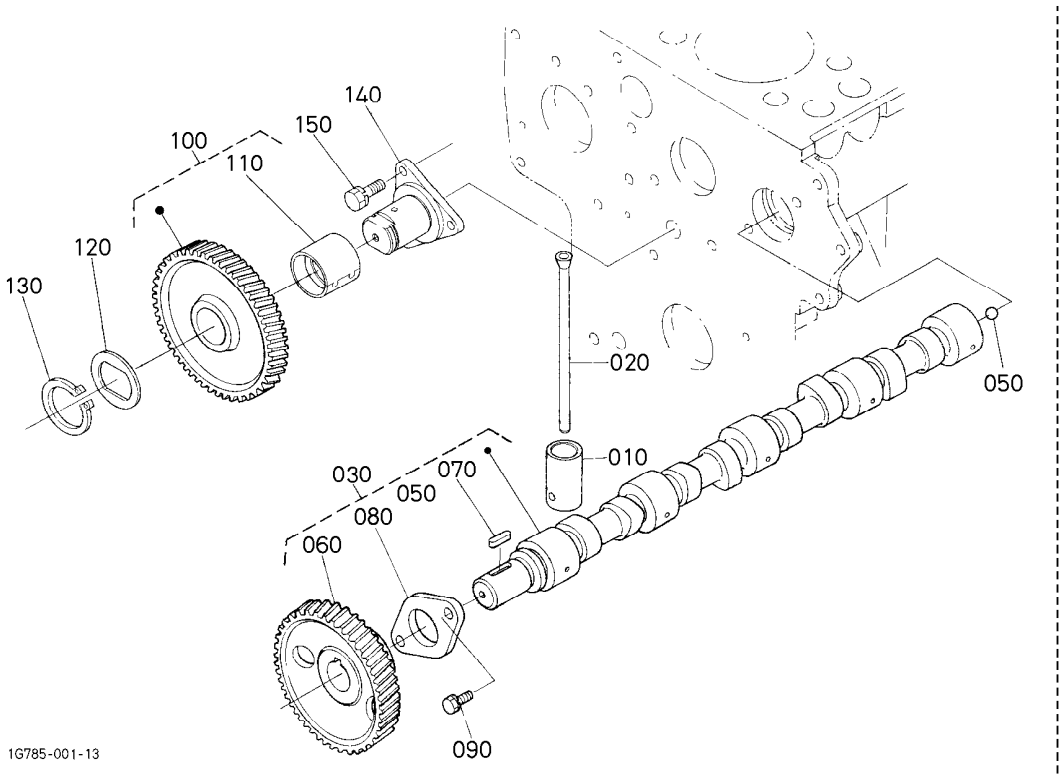


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	B	I.C.	REMARKS NOTA REMARQUES
010	1G928-0709-0	ASSY BRG.CASE,WHEEL	CONJ.PUENTE CJ,RD	ENS.PALIER VILEBREQ.	1	-		
020	1A091-0454-0	BOLT,BEARING CASE	TORNILLO,RDMNT CJ	VIS	2	-		
030	1A091-2348-0	METAL,CRANKSHAFT	METAL,CIGUENAL	COUSSINET DE VILEBR.	1	-		STD SET
030	1A091-2393-0	METAL,CRANKSHAFT	METAL,CIGUENAL	COUSSINET DE VILEBR.	1	-		-0.20mm SET
030	1A091-2394-0	METAL,CRANKSHAFT	METAL,CIGUENAL	COUSSINET DE VILEBR.	1	-		-0.40mm SET
040	1A091-0436-2	GASKET,BEARING CASE	JUNTA,RDMNT CJ	JOINT CART.DE RLMT	1	-		
050	1G851-0481-3	COVER,BEARING CASE	CUBIERTA,RDMNT CJ	PORTE JOINT	1	-		
060	1A091-0482-0	GASKET,CASE COVER	JUNTA,CAJA CUBIERTA	JOINT DE CARTER FOU	1	-		
070	01123-50825	BOLT	TORNILLO	VIS	8	-		
080	01123-50828	BOLT	TORNILLO	VIS	8	-		
090	1G911-0446-0	SEAL,OIL	RETEN DE ACEITE	BAGUE JOINT	1	-		
100	1G928-0704-0	ASSY BRG.CASE,MAIN	CONJ.PUENTE	ENS.PALIER VILEBREQ.	1	-		
110	1A091-0454-0	BOLT,BEARING CASE	TORNILLO,RDMNT CJ	VIS	2	-		
120	1A091-2348-0	METAL,CRANKSHAFT	METAL,CIGUENAL	COUSSINET DE VILEBR.	1	-		STD SET
120	1A091-2393-0	METAL,CRANKSHAFT	METAL,CIGUENAL	COUSSINET DE VILEBR.	1	-		-0.20mm SET
120	1A091-2394-0	METAL,CRANKSHAFT	METAL,CIGUENAL	COUSSINET DE VILEBR.	1	-		-0.40mm SET
130	1G928-0705-0	ASSY BRG.CASE,MAIN	CONJ.PUENTE	ENS.PALIER VILEBREQ.	1	-		
140	1A091-0454-0	BOLT,BEARING CASE	TORNILLO,RDMNT CJ	VIS	2	-		
150	1A091-2348-0	METAL,CRANKSHAFT	METAL,CIGUENAL	COUSSINET DE VILEBR.	1	-		STD SET
150	1A091-2393-0	METAL,CRANKSHAFT	METAL,CIGUENAL	COUSSINET DE VILEBR.	1	-		-0.20mm SET
150	1A091-2394-0	METAL,CRANKSHAFT	METAL,CIGUENAL	COUSSINET DE VILEBR.	1	-		-0.40mm SET
160	1G928-0706-0	ASSY BRG.CASE,MAIN	CONJ.PUENTE	ENS.PALIER VILEBREQ.	1	-		
170	1A091-0454-0	BOLT,BEARING CASE	TORNILLO,RDMNT CJ	VIS	2	-		
180	1A091-2348-0	METAL,CRANKSHAFT	METAL,CIGUENAL	COUSSINET DE VILEBR.	1	-		STD SET
180	1A091-2393-0	METAL,CRANKSHAFT	METAL,CIGUENAL	COUSSINET DE VILEBR.	1	-		-0.20mm SET
180	1A091-2394-0	METAL,CRANKSHAFT	METAL,CIGUENAL	COUSSINET DE VILEBR.	1	-		-0.40mm SET
190	15601-0456-0	BOLT,BEARING CASE	TORNILLO,RDMNT CJ	VIS DE VILEBREQUIN	3	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0101 CAMSHAFT AND IDLE GEAR SHAFT
ARBOL DE LEVAS Y PUNTO MUERTO ENGRANAJE EJE
ARBRE A CAMES ET ARBRE DE PIGNON DE RALENTI

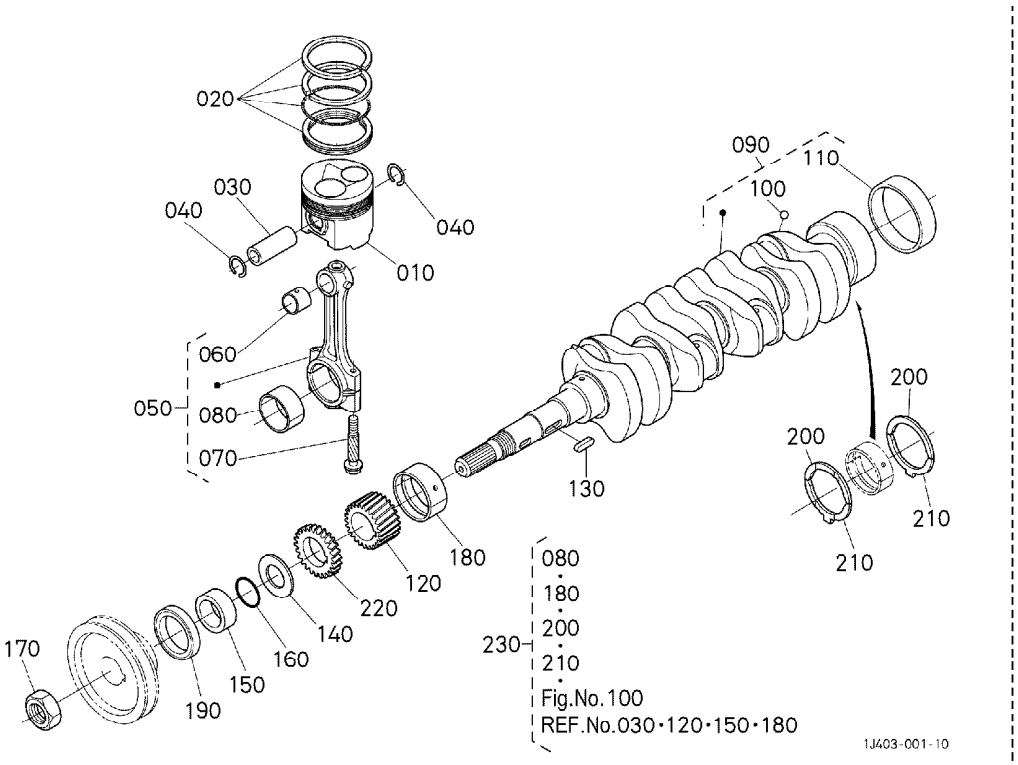


A:V2403-M-T-E3B-KEA-2

REF No. No. DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. A	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. B	I.C.	REMARKS NOTA REMARQUES
010	15601-1555-0	TAPPET	EMPUJADOR	POUSSOIR	8	-		
020	1A091-1511-0	PUSH ROD	EMPUJAR VARILLA	TIGE DE POUSSOIR	8	-		
030	1J403-1601-0	ASSY CAMSHAFT	CONJ. ARBOL DE LEVAS	ENS. ARBRE A CAMES	1	-		
040	----	BLANK	POSTIZO	BLANC	-	-		
050	07715-00401	BALL	BOLA	BILLE	1	-		
060	1J403-1651-0	GEAR, CAM	ENGRANAJE, LEVA	PIGNON	1	-		
070	05712-00720	KEY, FEATHER	LLAVE, PLUMA	CLAVETTE	1	-		
080	15221-1627-0	STOPPER, CAMSHAFT	TAPON, ARBOL DE LEVAS	BOUCHON ARBRE A CAME	1	-		
090	01123-50818	BOLT	TORNILLO	VIS	2	-		
100	1G791-2401-0	COMP. GEAR. IDLE	COMP. ENGRANAJE	PIGNON FOU COMP.	1	-		
110	1A021-2498-0	BUSH, IDLE GEAR	CASQUILLO, PNT	BAGUE DU PIGNON	1	-		
120	1A021-2437-0	COLLAR	COLLAR	COLLIER	1	-		
130	15451-9540-0	CIR CLIP, EXTERNAL	ANILLO, EXTERNO	CIRCLIP	1	-		
140	1A021-2425-2	SHAFT, IDLE GEAR	EJE, PNT MRT ENGRNJ	ARBRE DE PIGNON FOU	1	-		
150	01123-50818	BOLT	TORNILLO	VIS	3	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0102 PISTON AND CRANKSHAFT
PISTON Y CIGUENAL
PISTON ET VILEBREQUIN

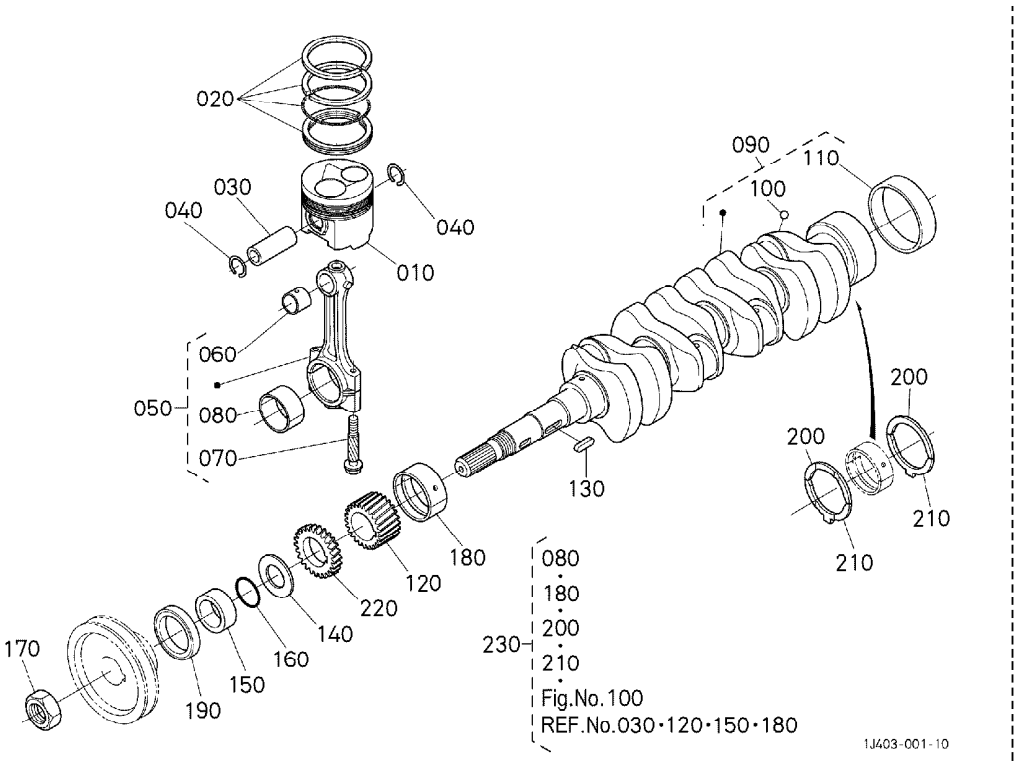


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	B	I.C.	REMARKS NOTA REMARQUES
010	1J403-2111-0	PISTON	PISTON	PISTON	4	-		STD
010	1J403-2190-0	PISTON	PISTON	PISTON	4	-		+0.25mm
020	1G924-2105-2	ASSY PISTON RING	CONJUNTO PISTON ARO	ENS.SEGMENT	4	-		STD
020	1G924-2109-0	ASSY PISTON RING	CONJUNTO PISTON ARO	ENS.SEGMENT	4	-		+0.25mm
030	1A021-2131-0	PIN,PISTON	PASADOR,PISTON	AXE DE PISTON	4	-		
040	1G279-2133-0	CIR CLIP,INTERNAL	ANILLO,INTERNO	CIRCLIP	8	-		
050	1G924-2201-0	ASSY ROD,CONNECTING	CONJ.VARILLA,CNCTND	ENS.BIELLE	4	-		
060	1G924-2198-0	BUSH,PISTON PIN	CASQUILLO,PSTN PSDR	BAGUE DE BIELLE	4	-		
070	15521-2214-2	BOLT,CONNECTING ROD	TORNILLO,CNCTND VRLL	VIS DE BIELLE	8	-		
080	17311-2231-0	METAL.CRANKPIN	METAL.MUNEQUILLA	COUSSINET DE BIELLE	4	-		STD SET
080	17311-2297-0	METAL,CRANKPIN	METAL,MUNEQUILLA	COUSSINET DE BIELLE	4	-		-0.20mm SET
080	17311-2298-0	METAL,CRANKPIN	METAL,MUNEQUILLA	COUSSINET DE BIELLE	4	-		-0.40mm SET
090	1G851-2301-3	COMP.CRANKSHAFT	COMPLETO CIGUENAL	VILEBREQUIN COMPLET	1	-		
100	07715-00401	BALL	BOLA	BILLE	4	-		
110	19202-2328-0	BUSH,CRANKSHAFT	CASQUILLO,CIGUENAL	BAGUE DE VILEBREQUIN	1	-		
120	15401-2411-0	GEAR,CRANK	ENGRANAJE,GIRAR	PIGNON	1	-		
130	05712-00730	KEY,FEATHER	LLAVE,PLUMA	CLAVETTE	1	-		
140	15471-2331-2	SLINGER,OIL	DEFLECTOR,ACEITE	DEFLECTEUR D'HUILE	1	-		
150	19202-2325-0	COLLAR,CRANKSHAFT	COLLARIN,CIGUENAL	COLLIER VILEBREQUIN	1	-		
160	04811-10300	O RING	O ARO	JOINT TORIQUE	1	-		
170	15221-2336-0	NUT,CRANKSHAFT	TUERCA,CIGUENAL	ECROU DE VILEB.	1	-		
180	1A091-2347-0	METAL,CRANKSHAFT	METAL,CIGUENAL	COUSSINET DE VILEBR.	1	-		STD
180	1A091-2391-0	METAL,CRANKSHAFT	METAL,CIGUENAL	COUSSINET DE VILEBR.	1	-		-0.20mm
180	1A091-2392-0	METAL,CRANKSHAFT	METAL,CIGUENAL	COUSSINET DE VILEBR.	1	-		-0.40mm
190	19202-0414-0	SEAL,OIL	RETEN DE ACEITE	BAGUE JOINT	1	-		
200	1A091-2353-0	METAL,SIDE	METAL,LADO	COUSSINET DE LATERAL	2	-		STD
200	1A091-2395-0	METAL,SIDE	METAL,LADO	COUSSINET DE LATERAL	2	-		+0.20mm
200	1A091-2396-0	METAL,SIDE	METAL,LADO	COUSSINET DE LATERAL	2	-		+0.40mm
210	1A091-2354-0	METAL,SIDE	METAL,LADO	COUSSINET DE LATERAL	2	-		STD
210	1A091-2397-0	METAL,SIDE	METAL,LADO	COUSSINET DE LATERAL	2	-		+0.20mm

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0102 PISTON AND CRANKSHAFT
PISTON Y CIGUENAL
PISTON ET VILEBREQUIN

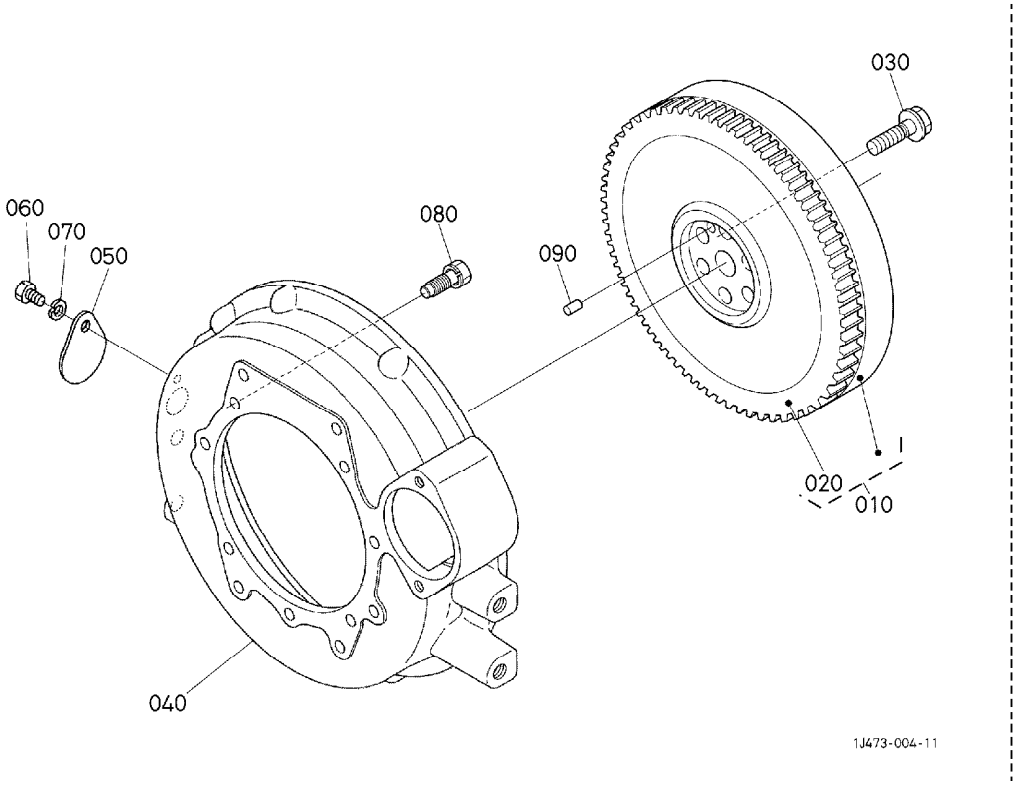


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
210	1A091-2398-0	METAL, SIDE	METAL, LADO	COUSSINET DE LATERAL	2	-		+0.40mm
220	15401-3563-0	GEAR, OIL PUMP DRIVE	ENGRANAJE, ACT	PIGNON ENTRAIN. POMPE	1	-		
230	1G856-2375-0	KIT METAL, ENGINE	KIT METAL, MOTOR	JEU DE COUSSINET	1	-		STD
230	1G856-2376-0	KIT METAL, ENGINE	KIT METAL, MOTOR	JEU DE COUSSINET	1	-		-0.20mm/+0.20mm
230	1G856-2377-0	KIT METAL, ENGINE	KIT METAL, MOTOR	JEU DE COUSSINET	1	-		-0.40mm/+0.40mm

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0103 FLYWHEEL
VOLANTE
VOLANT MOTEUR

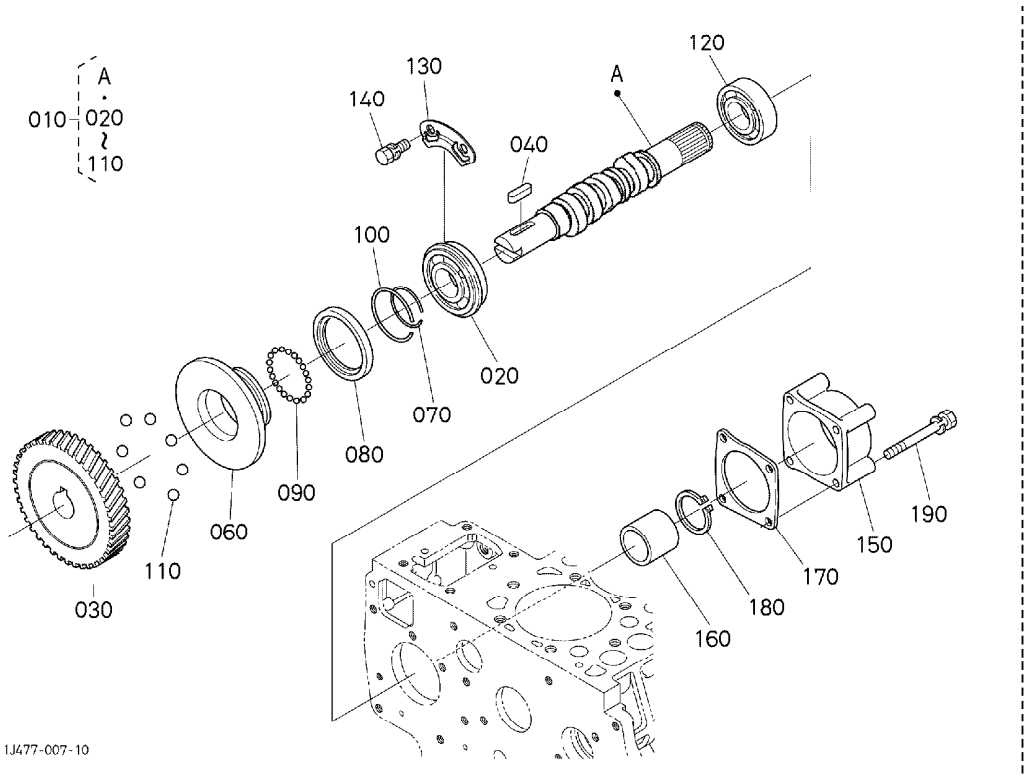


A:V2403-M-T-E3B-KEA-2

REF No. No. DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. A	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. B	I.C.	REMARKS NOTA REMARQUES
010	1G850-2501-5	COMP. FLYWHEEL	COMPLETO VOLANTE	VOLANT MOTEUR COMP.	1	-		
020	1A021-6382-0	GEAR, RING	ENGRANAJE, ARO	COURONNE DE DEMARRE.	1	-		
030	15321-2516-3	BOLT, FLYWHEEL	TORNILLO, VOLANTE	VIS DE VOLANT	6	-		
040	1G850-0461-3	HOUSING, FLYWHEEL	CARCASA, VOLANTE	CARTER VOLANT	1	-		
050	31220-1417-0	COVER	CUBIERTA	COUVERCLE	1	-		
060	01153-50812	BOLT	TORNILLO	VIS	1	-		
070	04512-60080	WASHER, SPRING	ARANDELA DE MUELLE	RONDELLE GROWER	1	-		
080	16427-9101-0	BOLT	TORNILLO	VIS	11	-		
090	1A021-2319-0	PIN, STRAIGHT	PASADOR, RECTO	GOUPILLE CYLINDLIQUE	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0105 FUEL CAMSHAFT AND GOVERNOR SHAFT
COMBUSTIBLE ARBOL DE LEVAS Y REGULADOR EJE
ARBRE A CAMES DE CARBURANT ET ARBRE REGULATEUR

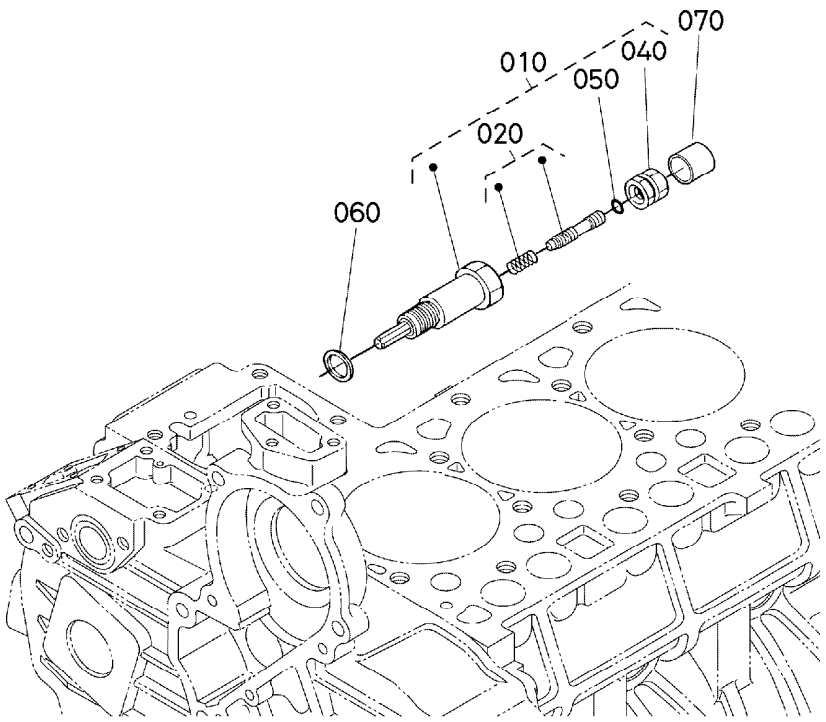


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	1A091-1602-5	ASSY CAMSHAFT,FUEL	CONJ.ARBOL	ENS.ARBRE A CAMES	1	-		
020	1G924-5175-0	BEARING,BALL	RODAMIENTO	ROULEMENT A BILLES	1	-		
030	16415-5115-0	GEAR,INJECTION PUMP	ENGRANAJE,INYCCN BMB	ENGRE.POMPE D'INJEC.	1	-		
040	05712-00525	KEY,FEATHER	LLAVE,PLUMA	CLAVETTE	1	-		
050	----	BLANK	POSTIZO	BLANC	-	-		
060	15611-5545-0	SLEEVE,GOVERNOR	CASQUILLO,REGULADOR	BAGUE DE REGULATEUR	1	-		
070	15221-5547-0	CIR-CLIP,GOV. SLEEVE	ANILLO	JONC D'ARRET	1	-		
080	15611-5569-0	CASE,GOVERNOR BALL	CAJA,REGULADOR BOLA	CUVETTE DE BILLES	1	-		
090	07715-03205	BALL	BOLA	BILLE	39	-		
100	15221-5574-0	CIR-CLIP	ANILLO	CIRCLIP	1	-		
110	07715-00403	BALL	BOLA	BILLE	7	-		
120	1G861-9730-0	BEARING,BALL	RODAMIENTO	ROULEMENT A BILLES	1	-		
130	1A091-1632-0	STOPPER,FUEL C/SHAFT	TAPON,CMBSTBL LV/EJ	BOUCHON ARBRE A CAM.	1	-		
140	01123-60814	BOLT	TORNILLO	VIS	2	-		
150	15225-1621-4	COVER,FUEL CAMSHAFT	CUBIERTA,CMBSTBL	COUV.ARBRE A CAMES	1	-		
160	1G861-1619-0	COLLAR	COLLAR	COLLIER	1	-		
170	1G492-1622-0	GASKET	JUNTA	JOINT	1	-		
180	15471-9536-0	CIR CLIP,EXTERNAL	ANILLO,EXTERNO	CIRCLIP	1	-		
190	01123-50865	BOLT	TORNILLO	VIS	4	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0180 IDLE APPARATUS
PUNTO MUERTO APARATO
DISPOSITIF DE RALENTISSEUR



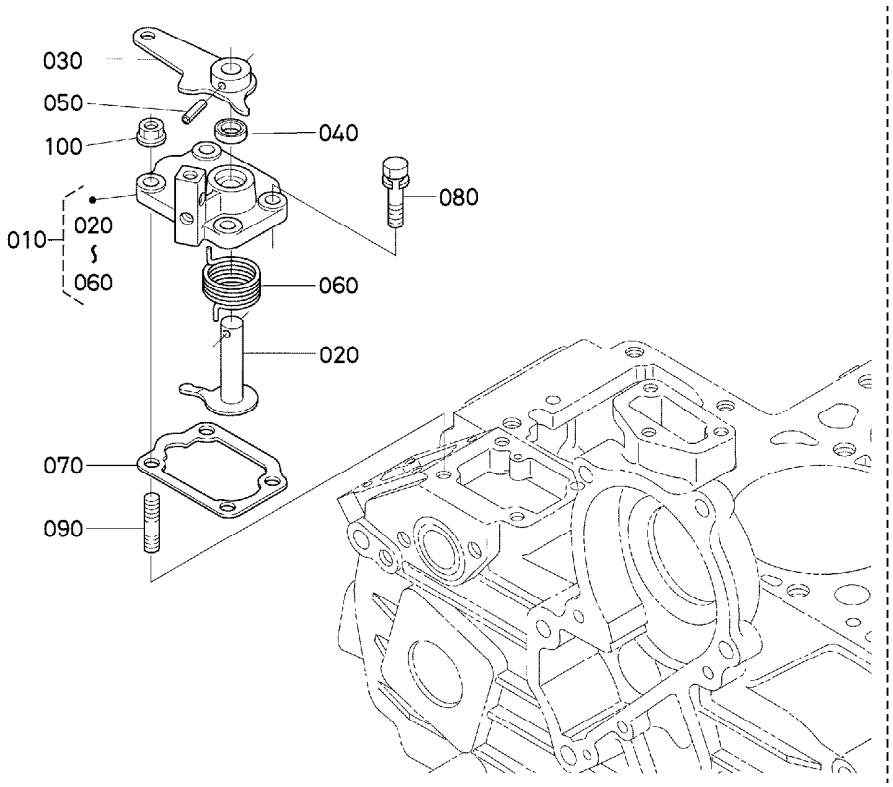
1G176-005-11

A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	1A021-5416-0	APPARATUS, IDLING	APARATO, AL RALENTI	DISPOSITIF DE RALENT	1	-		
020	1G911-5410-0	ASSY BOLT, ADJUSTMENT	CONJ. TORNILLO, AJST	ENS. BOULON AU POINT	1	-		
030	----	BLANK	POSTIZO	BLANC	-	-		
040	1G911-9201-0	NUT, SPRING	TUERCA, RESORTE	ECROU PRISONNIER	1	-		
050	04814-00060	O RING	O ARO	JOINT TORIQUE	1	-		
060	04724-00140	GASKET	JUNTA	JOINT	1	-		
070	1G911-5427-0	CAP	TAPA	BOUCHON	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0200 ENGINE STOP LEVER
MOTOR PARAR PALANCA
LEVIER D'ARRET DU MOTEUR

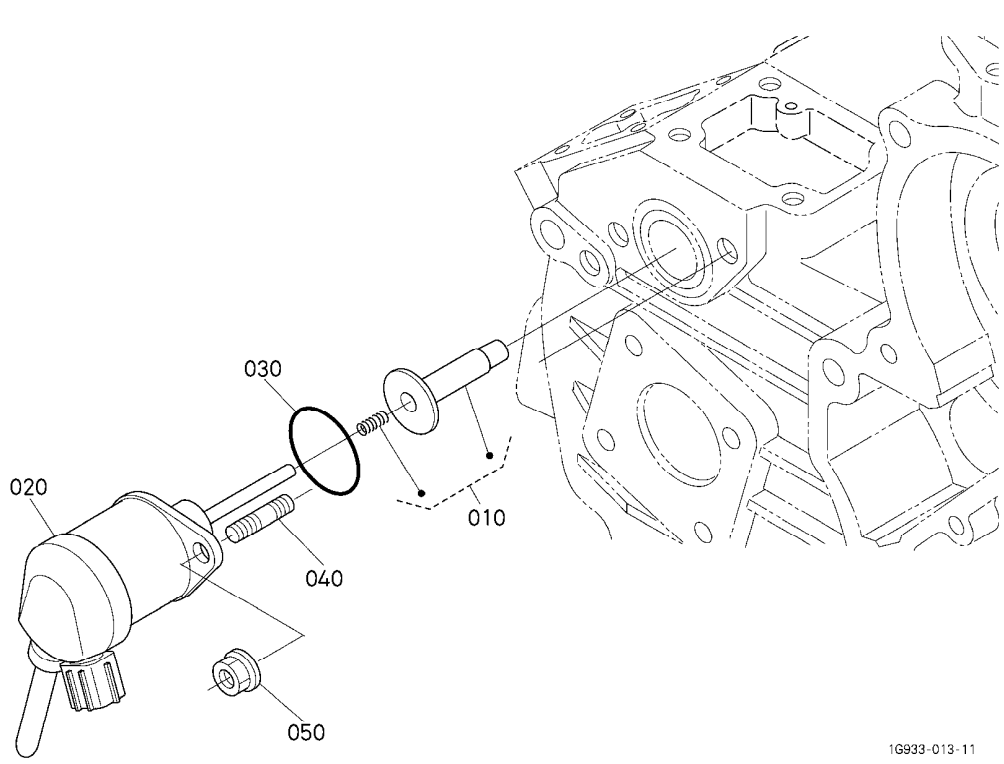


A:V2403-M-T-E3B-KEA-2

REF No. No. DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. A	B	I. C.	REMARKS NOTA REMARQUES
010	1A021-5770-3	ASSY LEVER, ENG. STOP	CONJ. PALANCA, MTR PRR	LEVIER D'ARRET COMP.	1	-		
020	1A021-5771-0	COMP. LEVER, STOP	COMP. PALANCA, PRR	LEVIER D'ARRET COMP.	1	-		
030	1A021-5772-0	LEVER, ENGINE STOP	PALANCA	LEVIER D'ARRET	1	-		
040	16691-5798-0	SEAL, OIL	RETEN DE ACEITE	BAGUE JOINT	1	-		
050	05411-00420	PIN, SPRING	PASADOR, RESORTE	GOUPILLE-RESSORT	1	-		
060	1A021-5792-0	SPRING, RETURN	RESORTE, DEVOLVER	RESSORT DE RAPPEL	1	-		
070	1A021-5721-2	GASKET, PLATE	JUNTA, PLACA	JOINT	1	-		
080	01023-50620	BOLT	TORNILLO	VIS	2	-		
090	15221-8821-0	STUD	ESPARRAGO	GOUJON	2	-		
100	02751-50060	NUT. FLANGE	TUERCA. BRIDA	ECROU A EMBASE	2	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0201 STOP SOLENOID
PARAR SOLENOIDE
SOLENOIDE D'ARRET

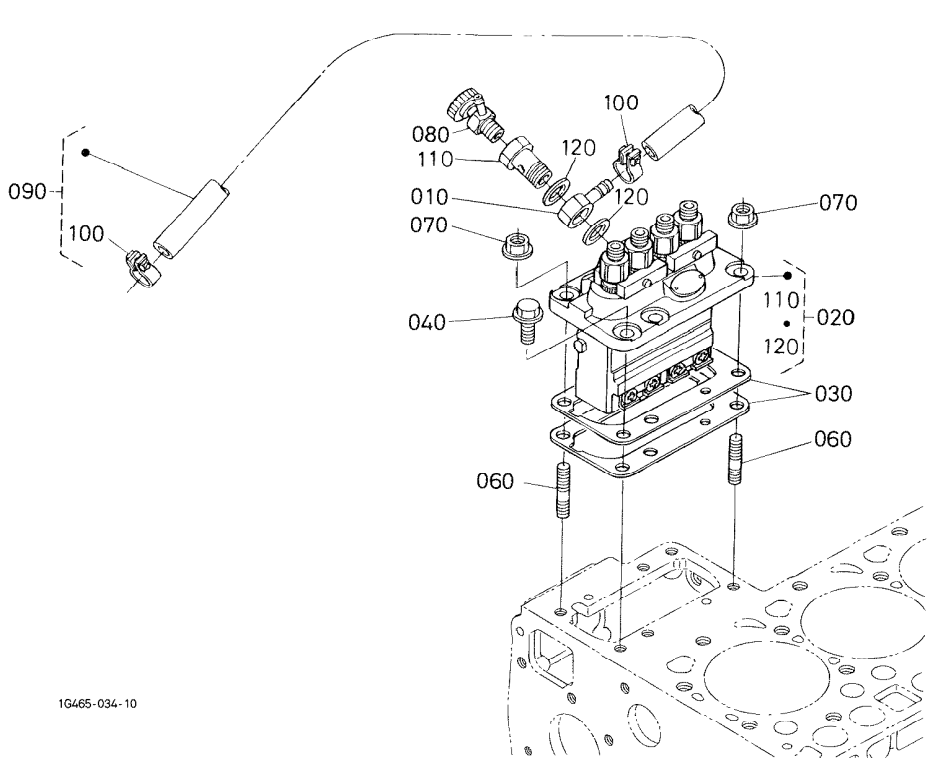


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	1A021-5660-2	COMP. GUIDE, SOLENOID	COMP. GUIA, SLND	ENSEMBLE GUIDE	1	-		
020	1A021-6001-5	ASSY SOLENOID	SOLENOIDE, ASAMBLEA	ENS. SOLENOID	1	-		
030	04814-06310	O RING	O ARO	JOINT TORIQUE	1	-		
040	15221-8821-0	STUD	ESPARRAGO	GOUJON	2	-		
050	02751-50060	NUT, FLANGE	TUERCA, BRIDA	ECROU A EMBASE	2	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0202 INJECTION PUMP
INYECCION BOMBA
POMPE D'INJECTION

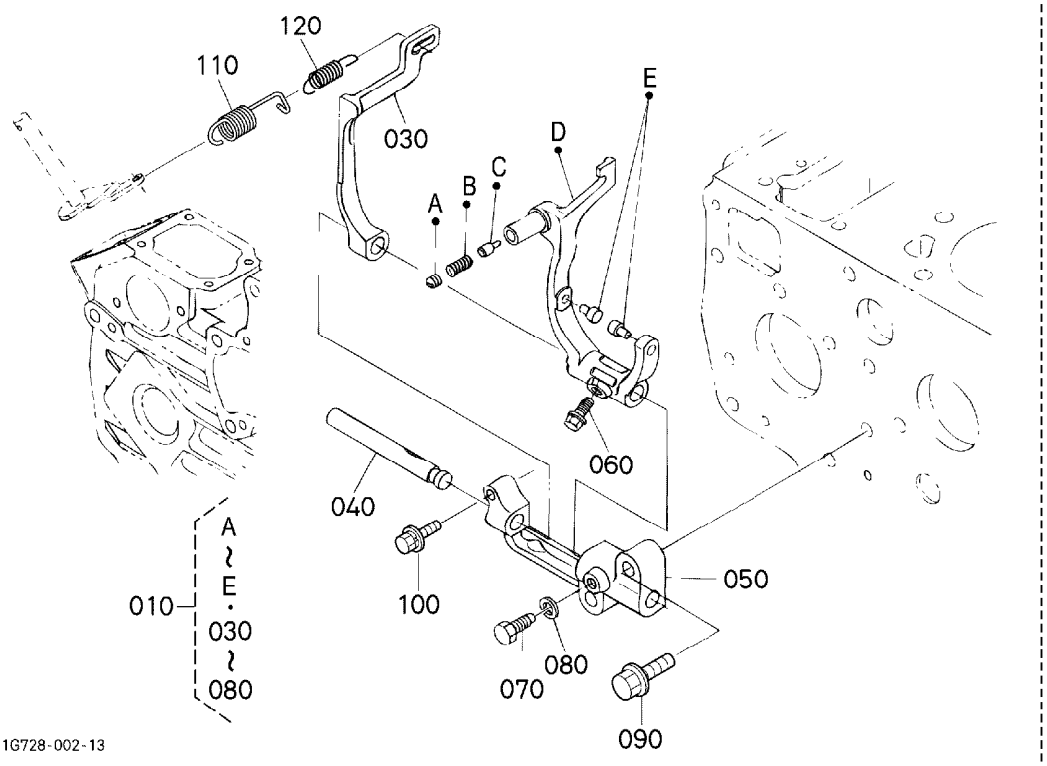


A:V2403-M-T-E3B-KEA-2

REF No. No. DE REF POS No.	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. A	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. B	I.C.	REMARKS NOTA REMARQUES
010	15401-9569-0	JOINT, EYE	JUNTA, OJO	RACCORD	1	-		
020	1J860-5101-0	ASSY PUMP, INJECTION	CONJ. BOMBA, INYCCN	ENS. POMPE INJECTION	1	-		
030	1G896-5220-0	SHIM, INJECTION PUMP	SUPLEMENTO, INYCCN	CALE, POMPE INJECTION	1	-		0.175mm
030	19077-5209-2	SHIM, INJECTION PUMP	SUPLEMENTO, INYCCN	CALE, POMPE INJECTION	1	-		0.200mm
030	19077-5211-3	SHIM, INJECTION PUMP	SUPLEMENTO, INYCCN	CALE, POMPE INJECTION	1	-		0.250mm
030	19077-5212-3	SHIM, INJECTION PUMP	SUPLEMENTO, INYCCN	CALE, POMPE INJECTION	1	-		0.300mm
040	01754-50820	BOLT, FLANGE	TORNILLO, BRIDA	VIS DE BUTEE	4	-		
050	----	BLANK	POSTIZO	BLANC	-	-		
060	15221-9153-0	STUD	ESPARRAGO	GOUJON	2	-		
070	02751-50080	NUT. FLANGE	TUERCA. BRIDA	ECROU A EMBASE	2	-		
080	14311-6050-4	ASSY COCK, JET START	CONJ. GRIFO	ROBINET DE PURGE	1	-		
090	14681-4201-0	ASSY PIPE, FUEL	CONJ. TUBO, CMBSTBL	ENS. TUYAU CARBURANT	1	-		
100	14301-4275-0	CLIP, PIPE	PRESILLA, TUBO	ATTACHE	2	-		
110	15471-5132-0	SCREW, HOLLOW	TORNILLO, HUECO	VIS	1	-		
120	15401-9665-0	GASKET	JUNTA	JOINT	2	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0204 GOVERNOR
REGULADOR
REGULATEUR DE VITESSES

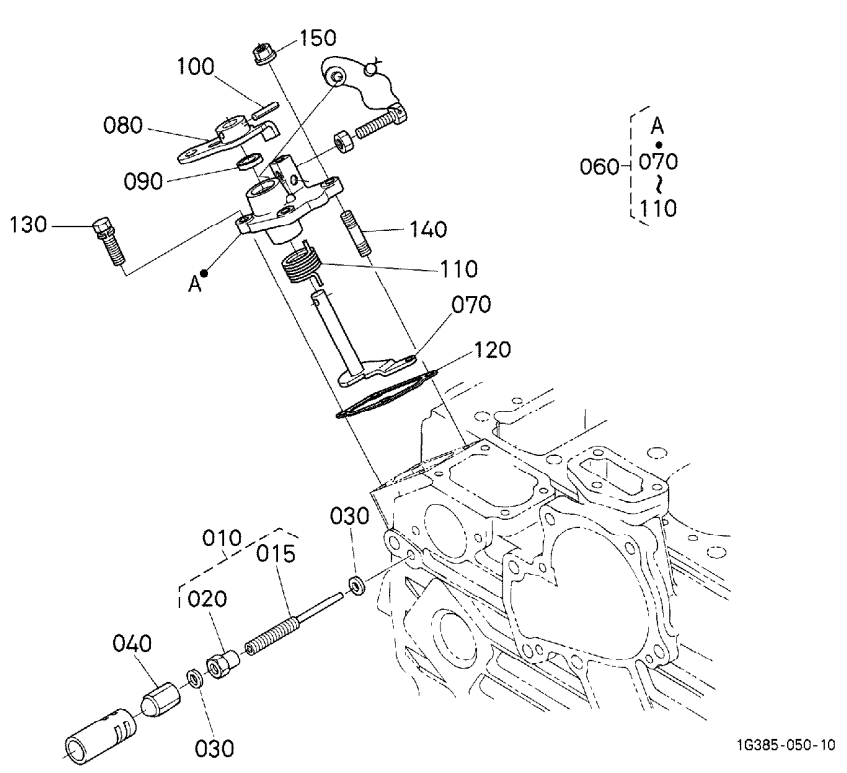


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	1J403-5605-0	ASSY LEVER, FORK	CONJ. PALANCA, BFRCCN	ENS. LEVIER A FOURCHE	1	-		
020	----	BLANK	POSTIZO	BLANC	-	-		
030	1A021-5613-3	LEVER, FORK	PALANCA, BIFURCACION	LEVIER A FOURCHE	1	-		
040	1G911-5615-0	SHAFT, FORK LEVER	EJE, BFRCCN PLNC	ARBRE DE FOUR-LEVIER	1	-		
050	15221-5623-0	HOLDER, FORK LEVER	SOPORTE, BFRCCN PLNC	SUPP. FOUR-LEVIER	1	-		
060	01754-50618	BOLT, FLANGE	TORNILLO, BRIDA	VIS DE BUTEE	1	-		
070	15221-6641-0	BOLT	TORNILLO	VIS	1	-		
080	04512-60060	WASHER, SPRING	ARANDELA DE MUELLE	RONDELLE GROWER	1	-		
090	01754-50830	BOLT, FLANGE	TORNILLO, BRIDA	VIS DE BUTEE	2	-		
100	01025-50630	BOLT	TORNILLO	VIS	1	-		
110	1A023-5641-5	SPRING, GOVERNOR	RESORTE, REGULADOR	RESSORT DE REGULATEU	1	-		
120	1A021-5642-2	SPRING, GOVERNOR	RESORTE, REGULADOR	RESSORT DE REGULATEU	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0205 SPEED CONTROL PLATE
VELOCIDAD CONTROL PLACA
PLAQUE DE VITESSE-CONTROLE

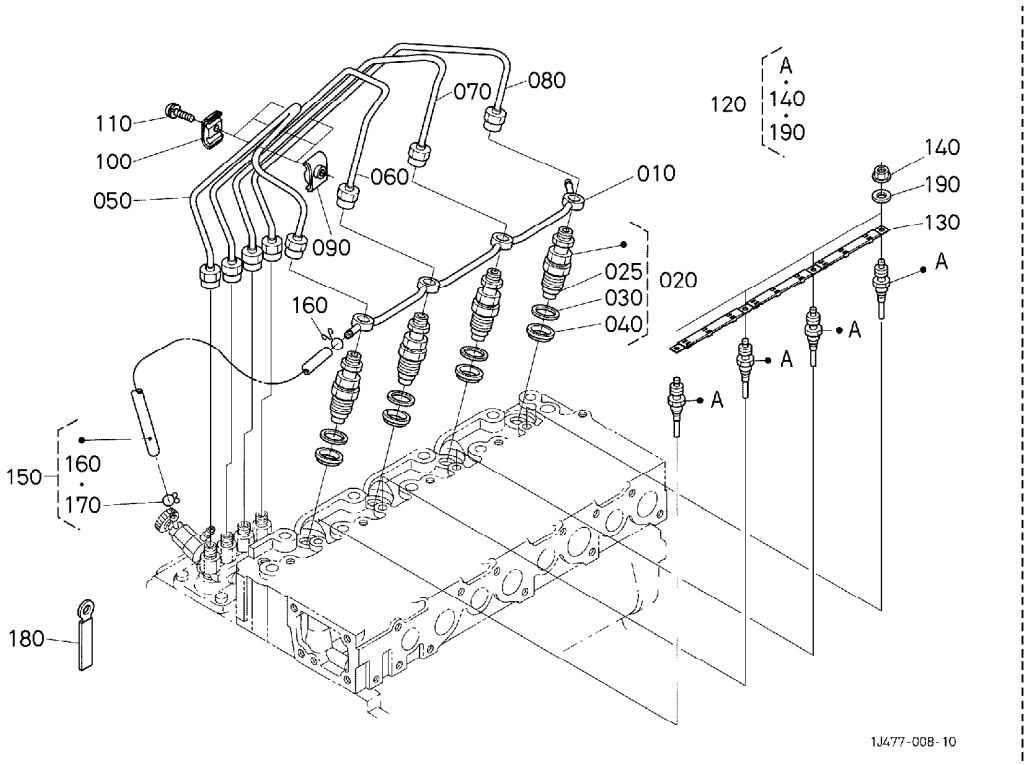


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	B	I.C.	REMARKS NOTA REMARQUES
010	1A021-5435-0	ASSY BOLT, ADJUSTMENT	CONJ. TORNILLO, AJST	ENS. BOULON AU POINT	1	-		
015	1A021-5412-0	BOLT, ADJUSTING	TORNILLO, AJUSTE	VIS REGLAGE	1	-		
020	15601-9201-2	NUT	TUERCA	ECROU	1	-		
030	15601-9665-0	GASKET	JUNTA	JOINT	2	-		
040	15841-1462-0	NUT	TUERCA	ECROU	1	-		
050	----	BLANK	POSTIZO	BLANC	-	-		
060	1G790-5700-4	ASSY PLATE, CONTROL	CONJ. PLACA, CNTRL	PLATEAU DE COMMANDE	1	-		
070	1A021-5602-0	COMP. LEVER, GOVERNOR	COMP. PALANCA, RGLDR	AXE D'ACCELERATEUR	1	-		
080	1G790-5715-0	LEVER, SPEED CONTROL	PALANCA, VLCDD CNTRL	LEVIER DE VIT-CONTR.	1	-		
090	16691-5798-0	SEAL. OIL	RETEN DE ACEITE	BAGUE JOINT	1	-		
100	05411-00420	PIN, SPRING	PASADOR, RESORTE	GOUPILLE-RESSORT	1	-		
110	1A021-5792-0	SPRING, RETURN	RESORTE, DEVOLVER	RESSORT DE RAPPEL	1	-		
120	1A021-5721-2	GASKET, PLATE	JUNTA, PLACA	JOINT	1	-		
130	01023-50620	BOLT	TORNILLO	VIS	2	-		
140	15221-8821-0	STUD	ESPARRAGO	GOUJON	2	-		
150	02751-50060	NUT, FLANGE	TUERCA, BRIDA	ECROU A EMBASE	2	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0206 NOZZLE HOLDER AND GLOW PLUG
TOBERA SOPORTE Y BUJIA DE CALENTAMIENTO TAPON
PORTE-INJECTEUR ET BOUGIE DE PRECHAUFFAGE

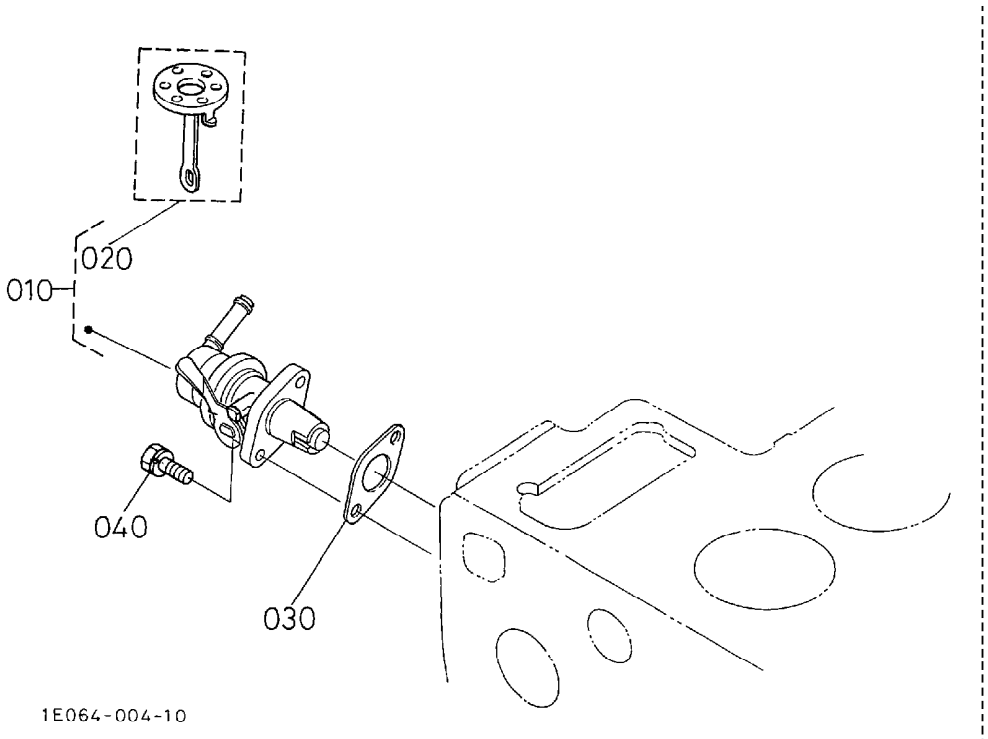


A:V2403-M-T-E3B-KEA-2

REF No. No. DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. A	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. B	I. C.	REMARKS NOTA REMARQUES
010	16454-4250-2	ASSY PIPE, OVER FLOW	CONJ. TUBO, ENCM CDL	ENS. TUYAU TROP-PLEIN	1	-		
020	16419-5390-0	KIT HOLDER, NOZZLE	KIT SOPORTE, TOBERA	ENS. PORTE-INJECTEUR	4	-		
025	16082-5361-0	PIECE, NOZZLE	PIEZA, TOBERA	ELEMENT D' INJECTEUR	4	-		
030	15841-5362-2	GASKET	JUNTA	JOINT	4	-		
040	19077-5365-0	SEAL, HEAT	RETEN, CALOR	JOINT DE CHALEUR	4	-		
050	1E013-5371-0	PIPE, INJECTION	INYECTOR DE LA PIPA	TUYAU D' INJECTEUR	1	-		
060	1E013-5372-0	PIPE, INJECTION	INYECTOR DE LA PIPA	TUYAU D' INJECTEUR	1	-		
070	1E013-5373-0	PIPE, INJECTION	INYECTOR DE LA PIPA	TUYAU D' INJECTEUR	1	-		
080	1E013-5374-0	PIPE, INJECTION	INYECTOR DE LA PIPA	TUYAU D' INJECTEUR	1	-		
090	15841-5385-0	CLAMP. PIPE	ABRAZADERA	COLLIER DE TUYAU	3	-		
100	15841-5386-0	CLAMP, PIPE	ABRAZADERA	COLLIER DE TUYAU	3	-		
110	03024-50520	SCREW, WITH WASHER	TORNILLO, CN ARNDL	VIS	3	-		
120	19077-6551-2	GLOW PLUG	BUJIA CALENTAMIENTO	BOUGIE, PRE-CHAUFFAGE	4	-		
130	1G778-6556-0	CORD, GLOW PLUG	CABLE, BJ CLNTMNT TPN	FILDEBOUG. PRECHAUFF.	1	-		
140	02761-50040	NUT, FLANGE	TUERCA, BRIDA	ECROU A EMBASE	4	-		
150	17331-4250-0	ASSY PIPE, OVER FLOW	CONJ. TUBO, ENCM CDL	ENS. TUYAU TROP-PLEIN	1	-		
160	14971-4275-0	CLIP, PIPE	PRESILLA, TUBO	ATTACHE	1	-		
170	15271-4271-0	CLIP, PIPE	PRESILLA, TUBO	ATTACHE	1	-		
180	15241-6758-0	CLAMP, CORD	ABRAZADERA, CABLE	ATTACHE-FILS	1	-		
190	04013-60040	WASHER, PLAIN	ARANDELA, SIMPLE	RONDELLE FREIN	4	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0301 FUEL PUMP (MECHANICAL)
COMBUSTIBLE BOMBA(MECANICO)
POMPE D'ALIMENTATION (MECHANIQUE)



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010	17539-5203-0	ASSY PUMP,FUEL	CONJ.BOMBA,CMBSTBL	ENS.POMPE D'ALIMEN.	1	-		
020	19844-5204-0	COMP DIAPHRAGM	COMPLETO DIAFRAGMA	DIAPHRAGME,ENS	1	-		
030	1G751-5214-0	GASKET,FUEL PUMP	JUNTA,CMBSTBL BMB	JOINT	1	-		
040	01023-50616	BOLT	TORNILLO	VIS	2	-		

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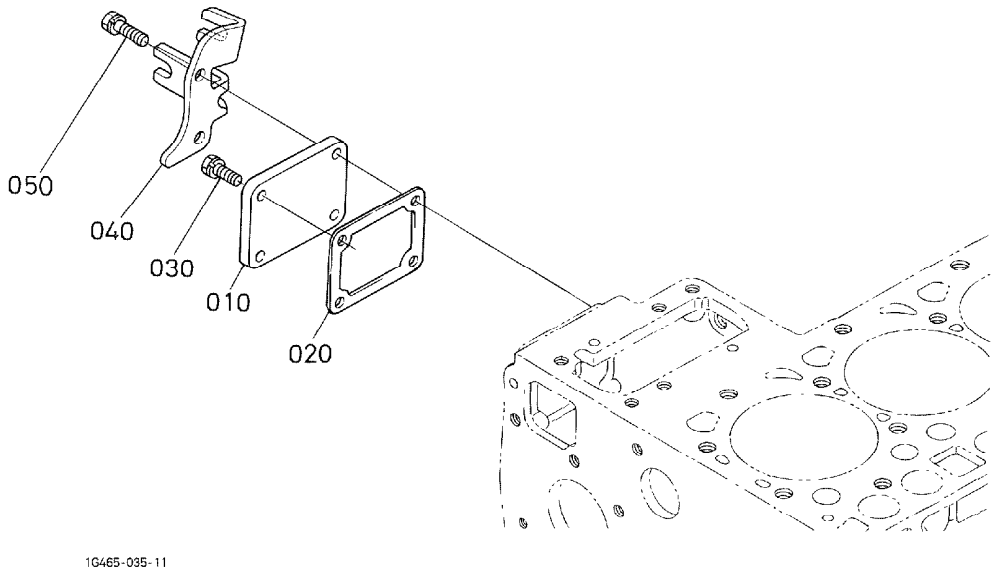
0305 COVER
CUBIERTA
COUVERCLE



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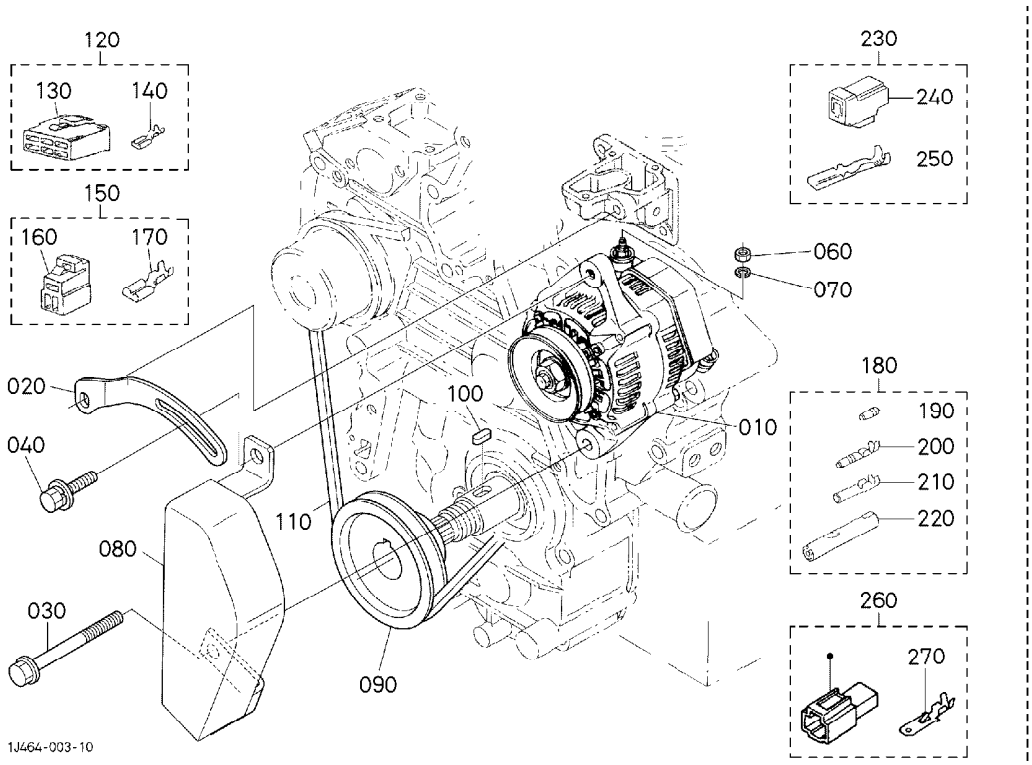
010	1A053-5165-0	COVER, INJ. PUMP	CUBIERTA, INYCCN BMB	COUVERCLE FILTRE D'.	1	-		
020	1A021-5166-0	GASKET, PUMP COVER	JUNTA, BOMBA CUBIERTA	JOINT	1	-		
030	01023-50616	BOLT	TORNILLO	VIS	2	-		
040	1A053-5748-2	BRACKET, ACCEL. CABLE	SOPORTE, ACLRDR CBL	SUPPORT DE FER	1	-		
050	01023-50620	BOLT	TORNILLO	VIS	2	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0402 ALTERNATOR AND PULLEY
ALTERNADOR Y POLEA
ALTERNATEUR



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010	16404-6401-2	ASSY ALTERNATOR	CONJUNTO ALTERNADOR	ALTERNATEUR COMPLET	1	-		12V 40A
020	1A033-6442-0	STAY, DYNAMO	SOPORTE, DINAMO	TENDEUR	1	-		
030	01754-51075	BOLT, FLANGE	TORNILLO, BRIDA	VIS DE BUTEE	1	-		
040	01127-50830	BOLT	TORNILLO	VIS	1	-		
050	----	BLANK	POSTIZO	BLANC	-	-		
060	02056-50060	NUT	TUERCA	ECROU	1	-		
070	04512-60060	WASHER, SPRING	ARANDELA DE MUELLE	RONDELLE GROWER	1	-		
080	1G465-1386-0	COVER, ALTERNATOR	CUBIERTA, ALTERNADOR	COUVERCLE	1	-		
090	1A085-7428-0	PULLEY, FAN DRIVE	POLEA, VNTLDR ACCNR	POULIE ENTRAIN. VENT.	1	-		
100	05712-00720	KEY, FEATHER	LLAVE, PLUMA	CLAVETTE	1	-		
110	1G953-9701-0	BELT, COG	CORREA, DIENTE	COURROIE	1	-		39.5in
120	16662-6583-0	ASSY COUPLER, CONNEC.	CONJ. ACOPLADOR	ENS. COUPLEUR CONNEC.	1	-		
130	19872-6584-0	CONNECTOR	CONNETTORE	CONNECTEUR	1	-		
140	19237-6591-0	TERMINAL	TERMINAL	DEBORNE	5	-		
150	16678-6583-0	ASSY CONNECTOR	CONJUNTO CONECTOR	ENS. CONNECTEUR	1	-		
160	16631-6584-0	CONNECTOR	CONNETTORE	CONNECTEUR	1	-		
170	19237-6591-0	TERMINAL	TERMINAL	DEBORNE	3	-		
180	19268-6578-0	ASSY TERMINAL	CONJUNTO TERMINAL	ENS. TERMINAL	1	-		
190	68271-6592-0	SLEEVE	CASQUILLO	MANCHON	1	-		
200	68271-6591-0	TERMINAL	TERMINAL	DEBORNE	1	-		
210	19268-6593-0	TERMINAL	TERMINAL	DEBORNE	1	-		
220	19268-6587-0	SLEEVE	CASQUILLO	MANCHON	1	-		
230	1C010-6583-0	ASSY COUPLER	CONJUNTO ACOPLADOR	ENS. COUPLEUR	1	-		
240	1C010-6588-0	CONNECTOR	CONNETTORE	CONNECTEUR	1	-		
250	1C010-6591-0	TERMINAL	TERMINAL	DEBORNE	2	-		
260	16611-6583-0	ASSY COUPLER	CONJUNTO ACOPLADOR	ENS. COUPLEUR	1	-		
270	19844-6577-0	TERMINAL	TERMINAL	DEBORNE	1	-		

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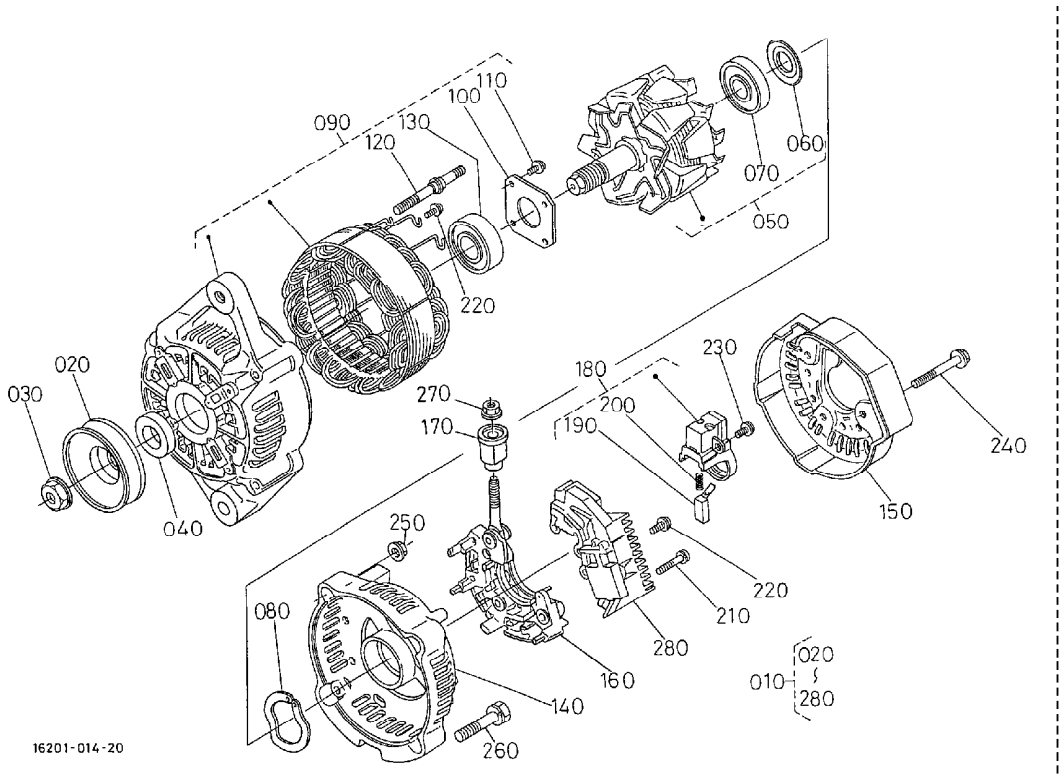
0403 ALTERNATOR (COMPONENT PARTS)
ALTERNADOR(COMPONENTE PIEZAS)
ALTERNATEUR (PARTIES COMPOSANTES)



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010	16404-6401-2	ASSY ALTERNATOR	CONJUNTO ALTERNADOR	ALTERNATEUR COMPLET	1	-		
020	16427-6411-0	PULLEY, ALTERNATOR	POLEA, ALTERNADOR	POULIE ALTERNATEUR	1	-		
030	15881-9201-0	NUT	TUERCA	ECROU	1	-		
040	15881-6415-0	COLLAR	COLLAR	COLLIER	1	-		
050	66436-6404-0	ROTOR	ROTOR	ROTOR	1	-		
060	15881-6480-0	COVER, BEARING	CUBIERTA, RODAMIENTO	COUVERCLE	1	-		
070	16652-6477-0	BEARING, BALL	RODAMIENTO	ROULEMENT A BILLES	1	-		
080	15881-6481-0	WASHER, THRUST	ARANDELA, EMPUJE	RONDELLE DE BUTEE	1	-		
090	66436-6402-0	ASSY FRAME, DRIVE END	CONJ. BASTIDOR	ENS. BATI ARRIERE	1	-		
100	15881-6471-0	PLATE, RETAINER	PLACA. RETENEDOR	PLAQUE RETENUE	1	-		
110	15881-9301-0	SCREW, ROUND HEAD	TORNILLO, RDND CLT	VIS A TETE RONDE	4	-		
120	15881-6426-0	BOLT, THROUGH	TORNILLO, A TRAVES	VIS, PASSANT	2	-		
130	16652-6478-0	BEARING, BALL	RODAMIENTO	ROULEMENT A BILLES	1	-		
140	15881-6406-0	FRAME, END	BASTIDOR, FIN	BATI	1	-		
150	16678-6423-0	COVER, END	CUBIERTA, FIN	PALIER ARRIERE	1	-		
160	15881-6485-0	ASSY RECTIFIER	CONJ. RECTIFICADOR	REDRESSEUR	1	-		
170	15881-6490-0	BUSH, INSULATION	CASQUILLO, ASLMNT	BAGUE ISOLANTE	1	-		
180	16652-6431-0	HOLDER, BRUSH	SOPORTE, ESCOBILLA	PORTE-BALAI	1	-		
190	15881-6409-0	BRUSH	ESCOBILLA	PATTE D'ATTACHE	2	-		
200	15881-6433-0	SPRING, BRUSH	RESORTE, ESCOBILLA	RESSORT DE BALAI	2	-		
210	15881-9302-0	SCREW, ROUND HEAD	TORNILLO, RDND CLT	VIS A TETE RONDE	2	-		
220	15881-9303-0	SCREW, ROUND HEAD	TORNILLO, RDND CLT	VIS A TETE RONDE	6	-		
230	15881-9304-0	SCREW, ROUND HEAD	TORNILLO, RDND CLT	VIS A TETE RONDE	1	-		
240	15881-9104-0	BOLT	TORNILLO	VIS	3	-		
250	15881-9202-0	NUT	TUERCA	ECROU	2	-		
260	15881-9105-0	BOLT	TORNILLO	VIS	2	-		
270	14182-9203-0	NUT	TUERCA	ECROU	1	-		
280	16652-6460-0	ASSY REGULATOR	CONJUNTO REGULADOR	REGULATEUR	1	-		

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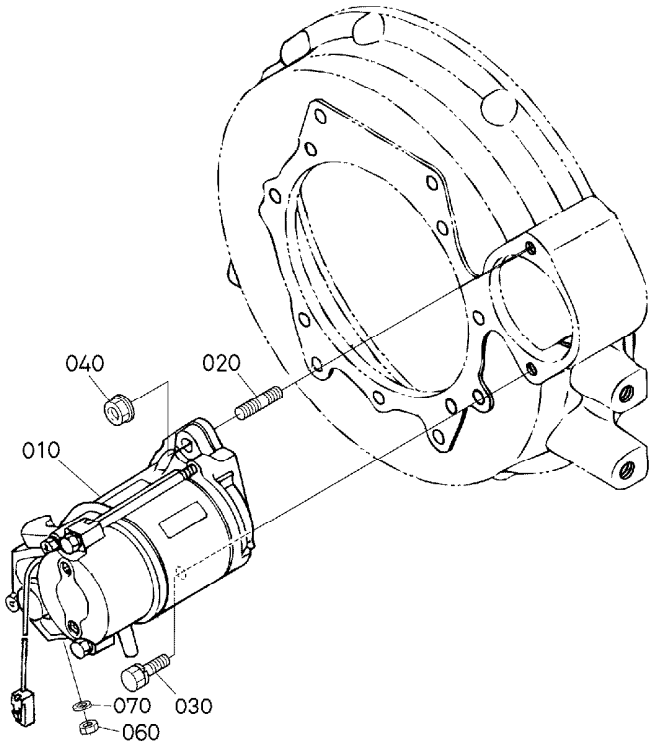
0404 STARTER
MOTOR DE ARRANQUE
DEMARREUR



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					A	B		
010	17490-6301-4	ASSY STARTER	CONJ.MOTOR ARRANQUE	ENS.DEMARREUR	1	-		12V 2.0kW
020	01517-51028	STUD	ESPARRAGO	GOUJON	1	-		
030	01133-51030	BOLT	TORNILLO	VIS	1	-		
040	02771-60100	NUT,FLANGE	TUERCA,BRIDA	ECROU A EMBASE	1	-		
050	----	BLANK	POSTIZO	BLANC	-	-		
060	02114-50080	NUT	TUERCA	ECROU	1	-		
070	04512-60080	WASHER,SPRING	ARANDELA DE MUELLE	RONDELLE GROWER	1	-		

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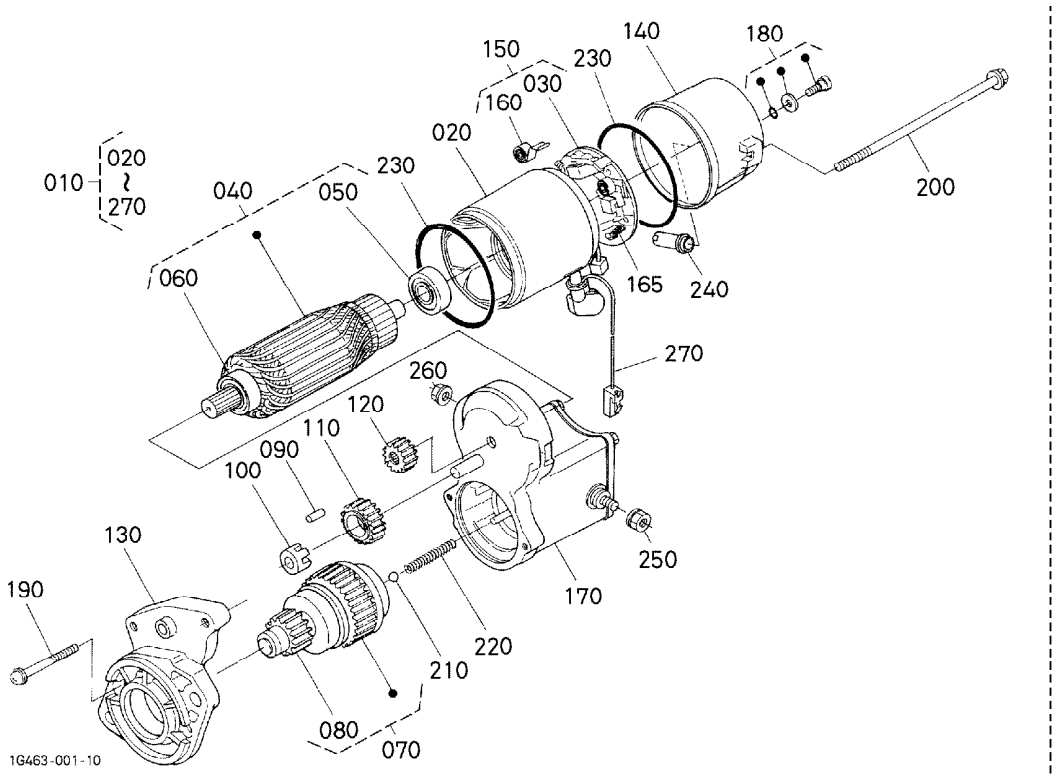
0405 STARTER (COMPONENT PARTS)
MOTOR DE ARRANQUE(COMPONENTE PIEZAS)
DEMARREUR (PARTIES COMPOSANTES)



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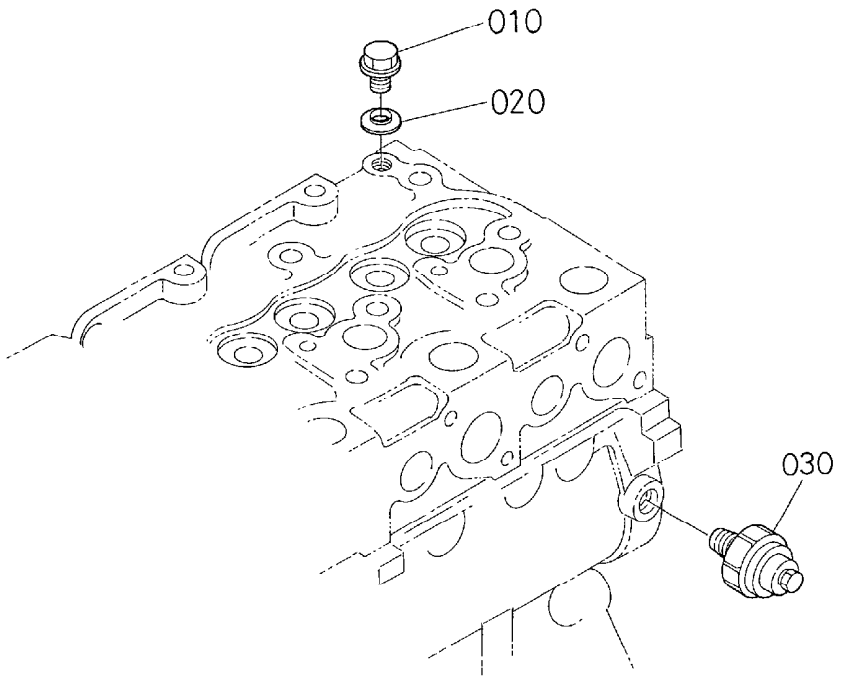
010	17490-6301-4	ASSY STARTER	CONJ.MOTOR ARRANQUE	ENS.DEMARREUR	1	-		
020	17123-6308-0	YOKE	YUGO	FOURCHE	1	-		
030	15425-6340-0	KIT BRUSH	KIT ESCOBILLA	BALAI	2	-		
040	17123-6307-0	ARMATURE	INDUCIDO	ARMATURE	1	-		
050	17123-6350-0	BEARING	RODAMIENTO	ROULEMENT	1	-		
060	11460-6350-0	BEARING	RODAMIENTO	ROULEMENT	1	-		
070	17123-6304-0	CLUTCH,OVER RUNNING	EMBRAGUE,ENCM RCRRND	EMBRAYAGE A INERTIE	1	-		
080	17311-6328-0	GEAR,PINION	ENGRANAJE,PINON	PIGNON	1	-		
090	19212-6310-0	ROLLER	RODILLO	ROULEAU	5	-		
100	11460-6311-0	RETAINER	DETENEDOR	SUPPORT	1	-		
110	11460-6327-0	GEAR	ENGRANAJE	ENGRENAGE	1	-		
120	17123-6326-0	GEAR	ENGRANAJE	ENGRENAGE	1	-		
130	17123-6303-0	FRAME,DRIVE END	BASTIDOR,ACCNR FN	BATI	1	-		
140	17123-6320-0	FRAME,END	BASTIDOR,FIN	BATI	1	-		
150	17123-6338-0	HOLDER,BRUSH	SOPORTE,ESCOBILLA	PORTE-BALAI	1	-		
160	17123-6314-0	SPRING	RESORTE	RESSORT	4	-		
165	15425-6339-0	SPRING,BRUSH	RESORTE,ESCOBILLA	RESSORT DE BALAI	4	-		
170	17490-6302-3	ASSY SWITCH,MAGNETIC	CONJ.CONMUTADOR	ENS.INTERRUPTEUR	1	-		
180	17123-9331-0	SCREW	TORNILLO	VIS	2	-		
190	17123-9332-0	SCREW	TORNILLO	VIS	2	-		
200	17123-6332-0	BOLT,THROUGH	TORNILLO,A TRAVES	VIS,PASSANT	2	-		
210	19212-9713-0	BALL	BOLA	BILLE	1	-		
220	11460-6312-0	SPRING	RESORTE	RESSORT	1	-		
230	15511-9666-0	O RING	O ARO	JOINT TORIQUE	2	-		
240	15833-6357-0	PIPE,DRAIN	TUBO,VACIAR	TUYAU DE DRAINAGE	1	-		
250	13963-9201-0	NUT,HEXAGON	TUERCA,HEXAGONO	ECROU HEXAGONAL	1	-		
260	16285-9201-0	NUT,HEXAGON	TUERCA,HEXAGONO	ECROU HEXAGONAL	1	-		
270	16611-6366-0	CORD,STOP SOLENOID	CABLE,PRR SLND	PRISE DE SOLENOIDE	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0406 OIL SWITCH AND PLUG
MANOCONTACTO DE ACEITE Y TAPON
CONTACT A HUILE ET OBTURATEUR



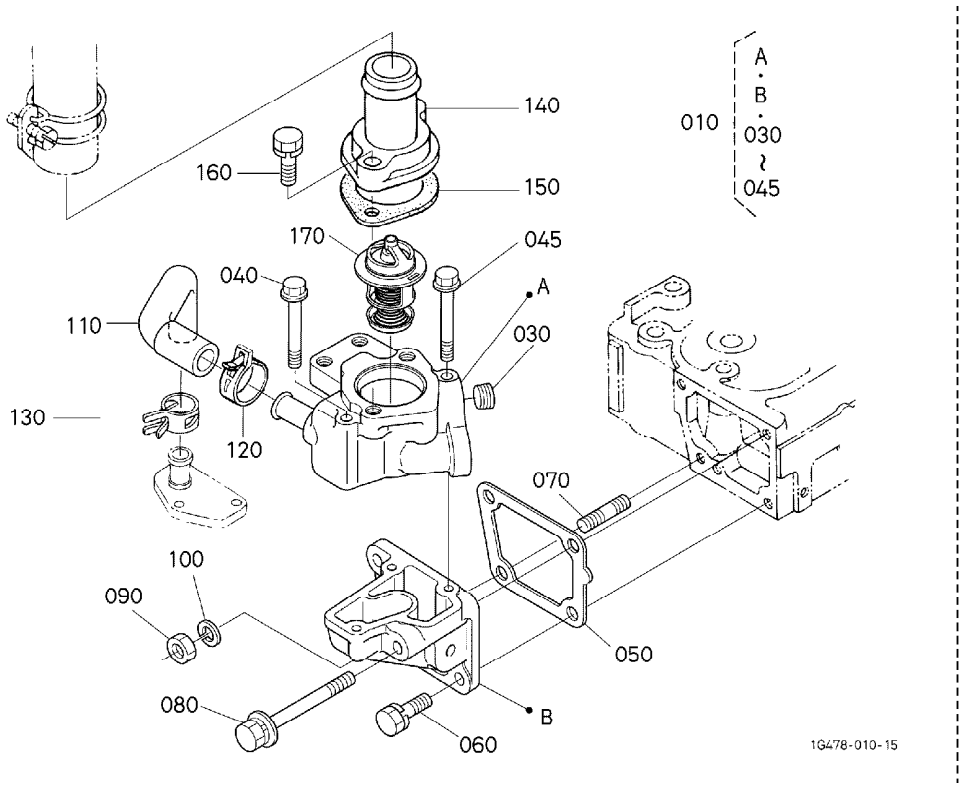
17290-018-10

A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	06311-55010	PLUG	TAPON	BOUCHON	1	-		
020	04717-01000	WASHER,WITH RUBBER	ARANDELA,CON CAUCHO	JOINT EN CAOUTCHOUC	1	-		
030	15841-3901-0	SWITCH,OIL	CONMUTADOR,ACEITE	MANO-CONTACT D'HUILE	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0500 WATER FLANGE AND THERMOSTAT
AGUA BRIDA Y TERMOSTATO
BRIDE A EAU ET THERMOSTAT

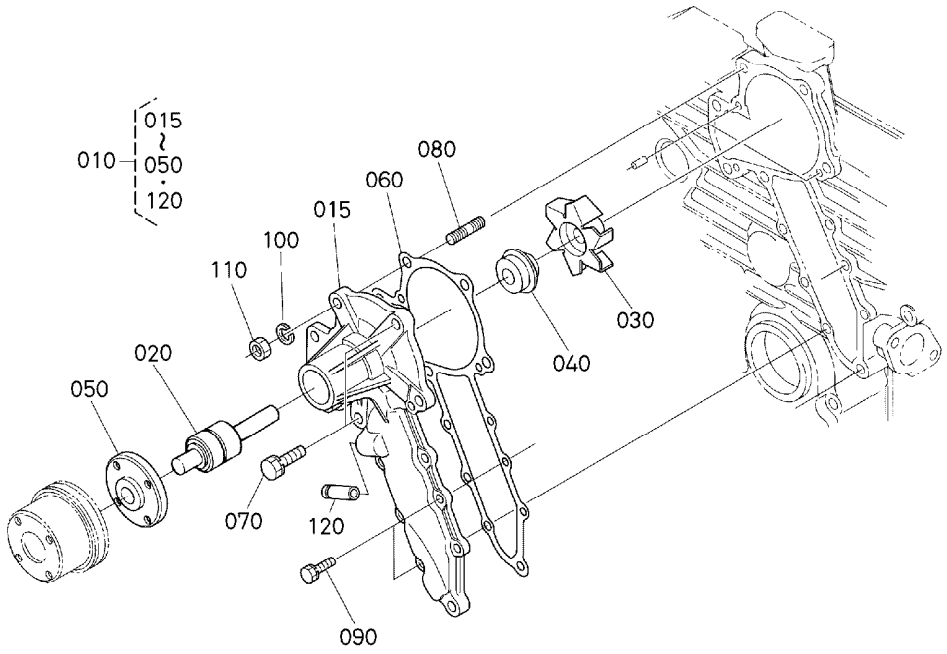


A:V2403-M-T-E3B-KEA-2

REF No. No. DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. A	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. B	I.C.	REMARKS NOTA REMARQUES
010	1G790-7270-3	COMP. FLANGE, WATER	COMPLETO BRIDA, AGUA	BRIDE A EAU COMP.	1	-		
020	----	BLANK	POSTIZO	BLANC	-	-		
030	1A021-9602-0	PLUG	TAPON	BOUCHON	1	-		
040	01754-50660	BOLT, FLANGE	TORNILLO, BRIDA	VIS DE BUTEE	2	-		
045	01754-50665	BOLT, FLANGE	TORNILLO, BRIDA	VIS DE BUTEE	1	-		
050	1A021-7292-0	GASKET, WATER FLANGE	JUNTA, AGUA BRIDA	JOINT DE BRIDE A EAU	1	-		
060	01123-50820	BOLT	TORNILLO	VIS	2	-		
070	15221-9153-0	STUD	ESPARRAGO	GOUJON	1	-		
080	1A021-9102-0	BOLT	TORNILLO	VIS	1	-		
090	02156-50080	NUT	TUERCA	ECROU	1	-		
100	04512-60080	WASHER, SPRING	ARANDELA DE MUELLE	RONDELLE GROWER	1	-		
110	1A021-7334-0	PIPE, WATER RETURN	TUBO, AGUA DEVOLVER	TUYAU RETOUR D'EAU	1	-		
120	1A021-1172-0	CLAMP, HOSE	ABRAZADERA, MANGUITO	COLLIER DE DURITE	1	-		
130	09318-88180	CLAMP, HOSE	ABRAZADERA, MANGUITO	COLLIER DE DURITE	1	-		
140	15321-7326-0	COVER, THERMOSTAT	CUBIERTA	COUV. DE THERMOSTAT	1	-		
150	16221-7327-0	GASKET, THERMOSTAT	JUNTA, TERMOSTATO	JOINT	1	-		
160	01123-50835	BOLT	TORNILLO	VIS	2	-		
170	1A021-7301-2	ASSY THERMOSTAT	CONJUNTO TERMOSTATO	THERMOSTAT COMP.	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0501 WATER PUMP
AGUA BOMBA
POMPE A EAU



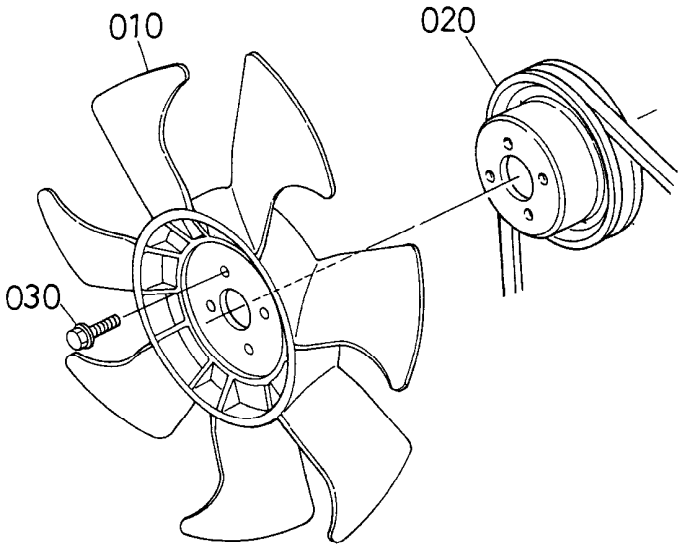
1J477-015-10

A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	1G489-7303-0	ASSY PUMP,WATER	CONJUNTO BOMBA,AGUA	ENS.POMPE A EAU	1	-		
015	1G730-7341-0	BODY,WATER PUMP	CARROCERIA,AG BMB	CORPS DE POMPE A.EAU	1	-		
020	16661-7355-0	BEARING	RODAMIENTO	ROULEMENT	1	-		
030	1A021-7351-0	IMPELLER,WATER PUMP	RODETE,AGUA BOMBA	TURBINE DE POMPE	1	-		
040	1G610-7305-0	ASSY SEAL,MECHANICAL	CONJ.RETEN,MCNC	ENS.JOINT MECANIQUE	1	-		
050	1A021-7352-0	FLANGE,W/PUMP SHAFT	BRIDA,AGUA/BOMBA EJE	BRIDE	1	-		
060	1A051-7343-0	GASKET,WATER PUMP	JUNTA,AGUA BOMBA	JOINT DE POMPE A EAU	1	-		
070	01123-50828	BOLT	TORNILLO	VIS	2	-		
080	01518-50822	STUD	ESPARRAGO	GOUJON	1	-		
090	01023-50618	BOLT	TORNILLO	VIS	6	-		
100	04512-60080	WASHER,SPRING	ARANDELA DE MUELLE	RONDELLE GROWER	1	-		
110	02156-50080	NUT	TUERCA	ECROU	1	-		
120	16241-7337-0	PIPE,WATER RETURN	TUBO,AGUA DEVOLVER	TUYAU RETOUR D'EAU	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0504 FAN
VENTILADOR
VENTILATEUR



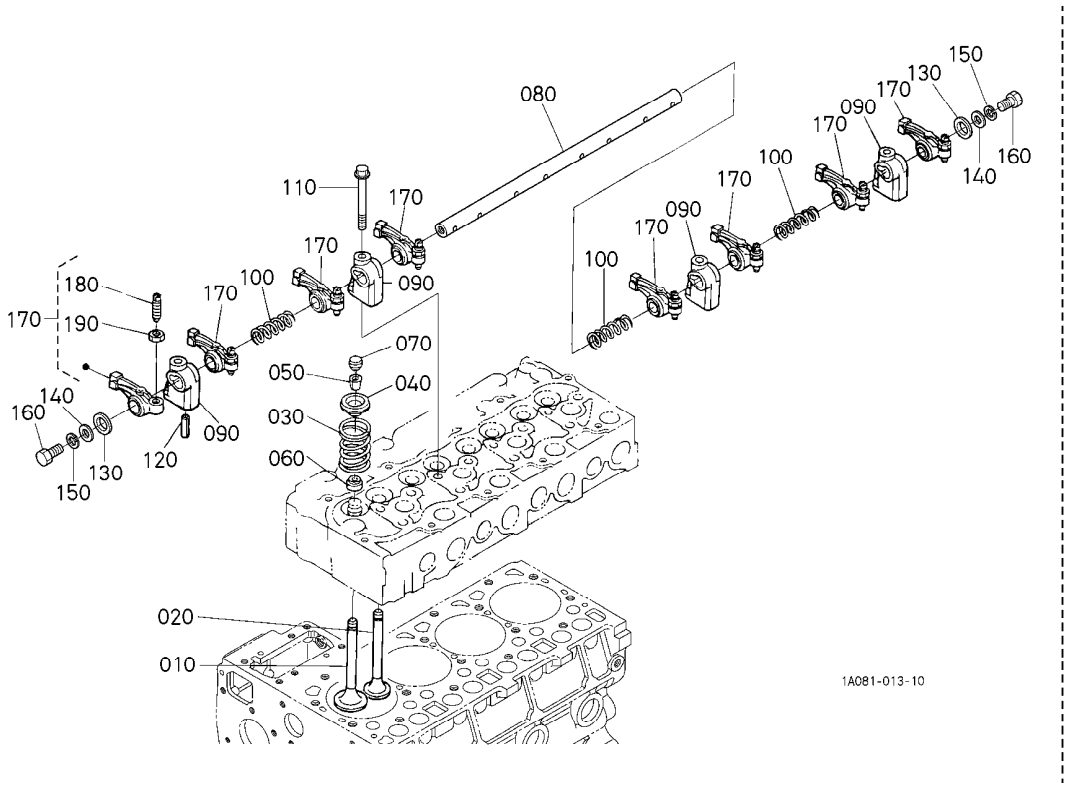
1G299-158-10

A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	16661-7411-0	FAN	VENTILADOR	VENTILATEUR	1	-		
020	17351-7425-0	PULLEY,FAN	POLEA,VENTILADOR	POULIE VENTILATEUR	1	-		
030	01754-50612	BOLT,FLANGE	TORNILLO,BRIDA	VIS DE BUTEE	4	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0600 VALVE AND ROCKER ARM
VALVULA Y BALANCIN BRAZO
SOUPAPES ET CULBUTEURS

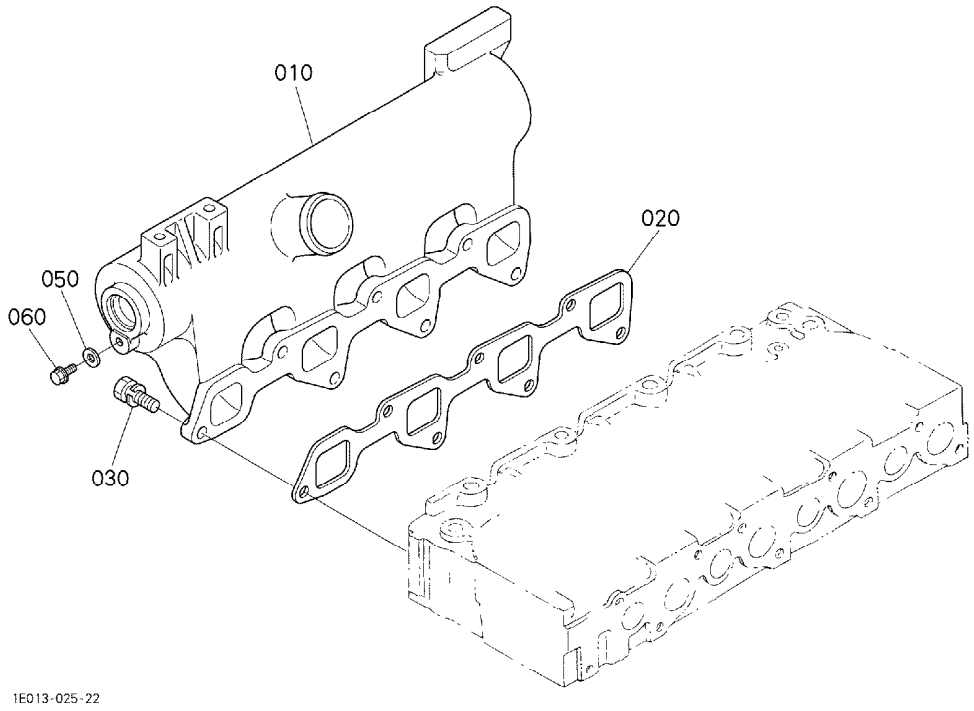


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	B	I.C.	REMARKS NOTA REMARQUES
010	1G896-1311-0	VALVE, INLET	VALVULA, ENTRADA	SOUPAPE D'ADMISSION	4	-		
020	16419-1312-5	VALVE, EXHAUST	VALVULA, ESCAPE	SOUPAPE D'ECHAPMENT	4	-		
030	15221-1324-0	SPRING, VALVE	RESORTE, VALVULA	RESSORT DE SOUPAPE	8	-		
040	15221-1333-0	RETAINER, VALVE SP.	RETENEDOR, VLVL VLCDD	CUVETTE SUPERIEURE	8	-		
050	15221-1398-0	COLLET, VALVE SPRING	ENGASTE, VLVL RSRT	DEMI CLAVETTE	8	-		SET
060	15221-1315-3	SEAL, VALVE STEM	RETEN, VLVL VSTG	JOINT DE SOUPAPE	8	-		
070	15221-1328-0	CAP, VALVE	TAPA, VALVULA	CHAPEAU DE SOUPAPE	8	-		
080	1A091-1426-0	SHAFT, ROCKER ARM	EJE, BALANCIN BRAZO	ARBRE DE CULBUTEUR	1	-		
090	15221-1435-3	BRACKET, ROCKER ARM	SOPORTE, BLNCN BRZ	SUPPORT DE CULBUTEUR	4	-		
100	15221-1431-0	SPRING. ROCKER ARM	RESORTE	RESSORT DE CULBUTEUR	3	-		
110	01754-50855	BOLT, FLANGE	TORNILLO, BRIDA	VIS DE BUTEE	4	-		
120	05411-00528	PIN, SPRING	PASADOR, RESORTE	GOUPILLE-RESSORT	1	-		
130	15221-1443-0	WASHER, R-ARM. SHAFT	ARANDELA, BLNCN-BRZ	RONDELLE	2	-		
140	04013-60080	WASHER, PLAIN	ARANDELA, SIMPLE	RONDELLE FREIN	2	-		
150	04512-60080	WASHER, SPRING	ARANDELA DE MUELLE	RONDELLE GROWER	2	-		
160	01153-50812	BOLT	TORNILLO	VIS	2	-		
170	15621-1403-0	ASSY ROCKER ARM	CONJ. BALANCIN BRZ	ENS. CULBUTEURS	8	-		
180	15521-1423-0	SCREW, ADJUSTING	TORNILLO, AJUSTE	VIS DE REGLAGE	8	-		
190	15021-1424-0	NUT	TUERCA	ECROU	8	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0601 INLET MANIFOLD
ENTRADA COLECTOR
COLLECTEUR D'ADMISSION

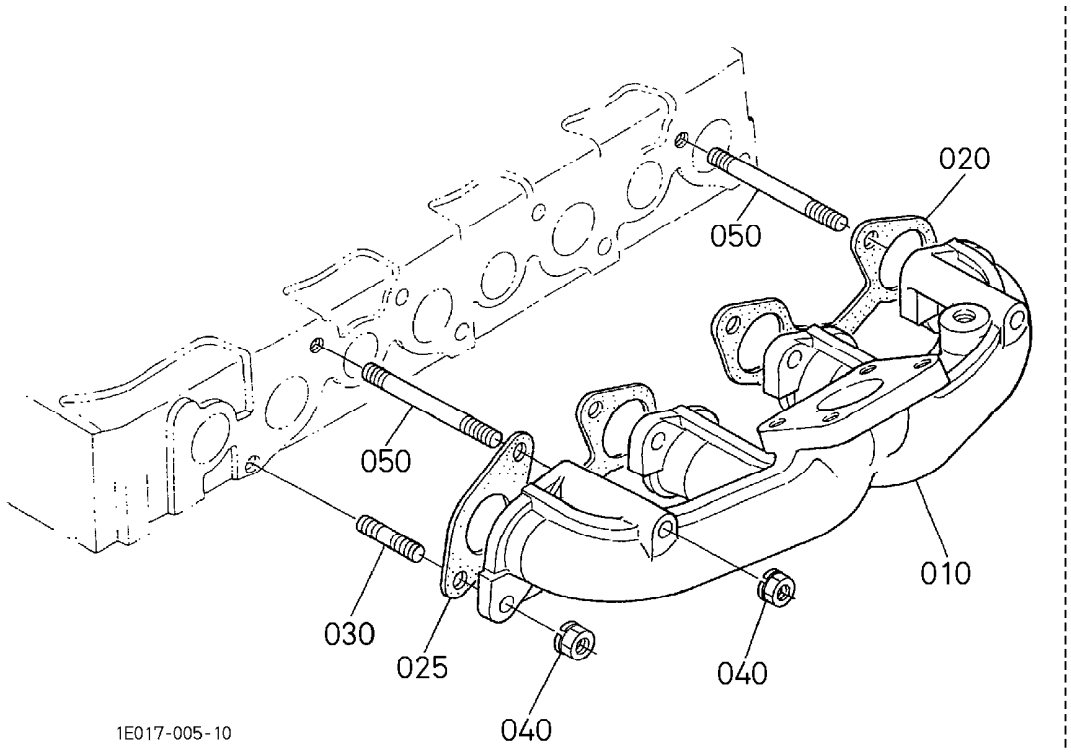


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	1G624-1176-2	MANIFOLD, INLET	COLECTOR, ENTRADA	COLLECTEUR D'ADMISS.	1	-		
020	1A091-1182-2	GASKET, IN-MANIFOLD	JUNTA, ENTRD-CLCTR	JOINT DE COLL. ADM.	1	-		
030	01123-50822	BOLT	TORNILLO	VIS	7	-		
040	----	BLANK	POSTIZO	BLANC	-	-		
050	15601-9665-0	GASKET	JUNTA	JOINT	1	-		
060	01754-50612	BOLT, FLANGE	TORNILLO, BRIDA	VIS DE BUTEE	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0602 EXHAUST MANIFOLD
ESCAPE COLECTOR
COLLECTEUR D'ECHAPPEMENT

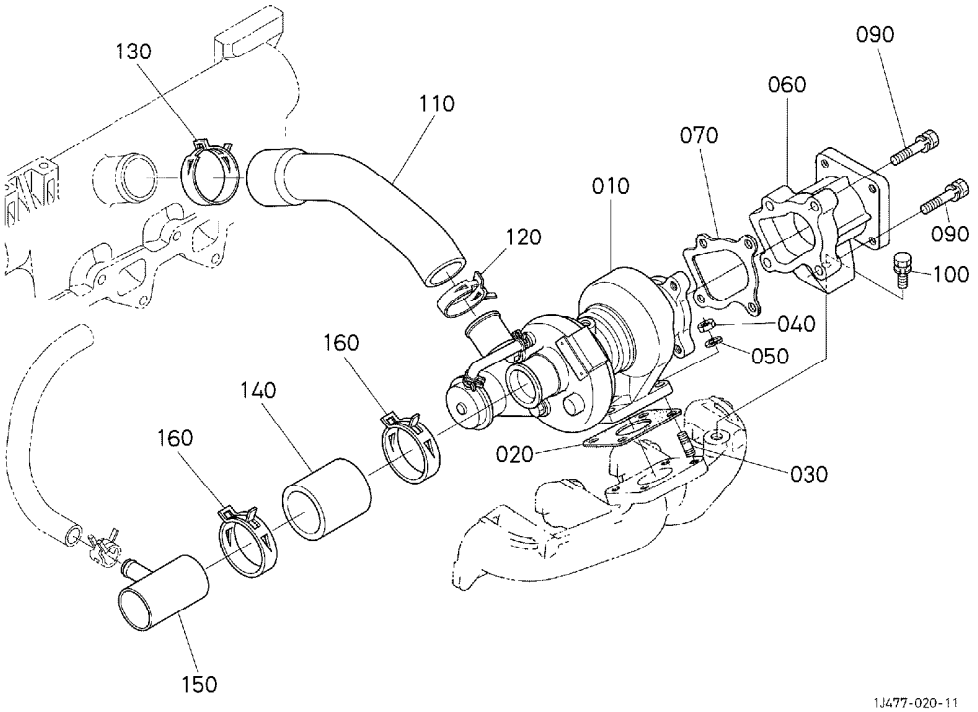


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	1E013-1231-0	MANIFOLD, EXHAUST	COLECTOR, ESCAPE	COLLECTEUR D'ECHAPP.	1	-		
020	1A091-1236-0	GASKET, EX-MANIFOLD	JUNTA, ESCP-CLCTR	JOINT DE COLL. ECHAP.	1	-		
025	1A091-1235-0	GASKET, EX-MANIFOLD	JUNTA, ESCP-CLCTR	JOINT DE COLL. ECHAP.	1	-		
030	15221-9153-0	STUD	ESPARRAGO	GOUJON	6	-		
040	16429-9201-0	NUT	TUERCA	ECROU	8	-		
050	1E013-9149-2	STUD	ESPARRAGO	GOUJON	2	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0606 TURBO CHARGER
TURBO CARGADOR
TURBO-CHARGEUR

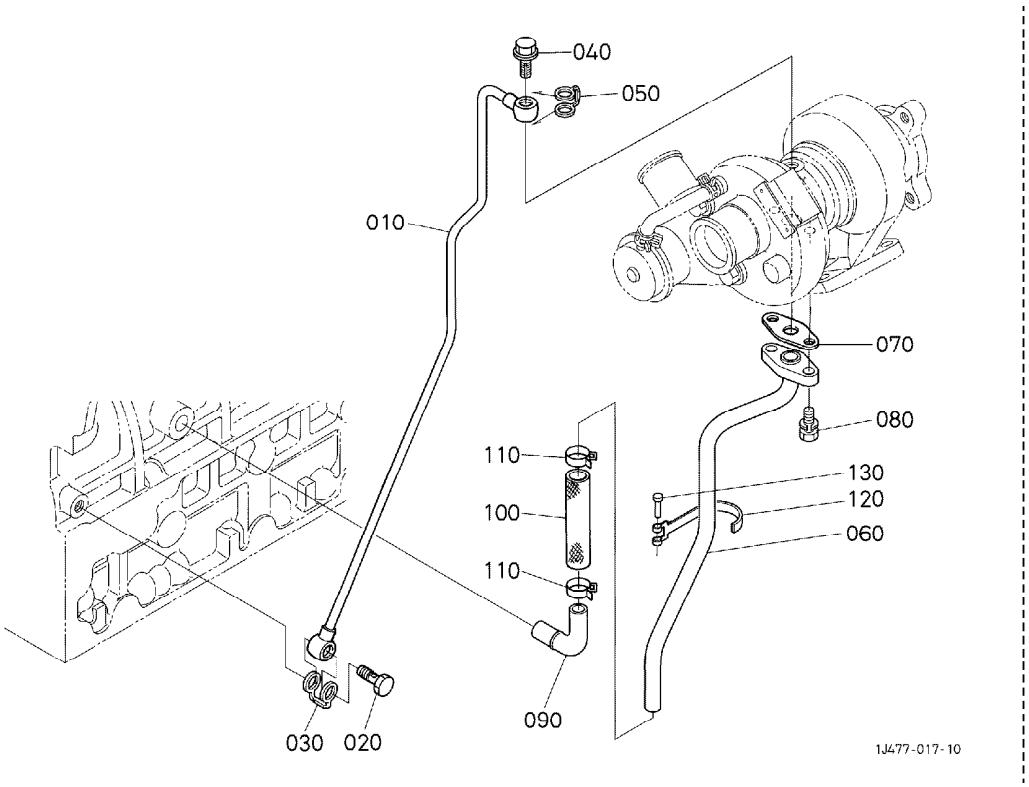


A:V2403-M-T-E3B-KEA-2

REF No. No. DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. A	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. B	I.C.	REMARKS NOTA REMARQUES
010	1J403-1701-0	ASSY TURBO CHARGER	CONJ. TURBO CRGDR	TURBO COMPRESSEUR	1	-		
020	16483-1710-0	GASKET	JUNTA	JOINT	1	-		
030	01513-60820	STUD	ESPARRAGO	GOUJON	4	-		
040	02156-50080	NUT	TUERCA	ECROU	4	-		
050	04512-60080	WASHER, SPRING	ARANDELA DE MUELLE	RONDELLE GROWER	4	-		
060	19830-1232-0	FLANGE, MUFFLER	BRIDA, SILENCIADOR	BRIDE DE SILENCIEUX	1	-		
070	16483-1711-0	GASKET	JUNTA	JOINT	1	-		
080	----	BLANK	POSTIZO	BLANC	-	-		
090	01123-50830	BOLT	TORNILLO	VIS	4	-		
100	1G923-9101-0	BOLT	TORNILLO	VIS	1	-		
110	1J403-1164-0	HOSE, INLET	MANGUITO, ENTRADA	TUYAU D'ADMISSION	1	-		
120	16483-1172-0	BAND, PIPE	BANDA, TUBO	COLLIER DE TUYAU	1	-		
130	16241-1172-0	BAND, PIPE	BANDA, TUBO	COLLIER DE TUYAU	1	-		
140	1J403-1162-0	TUBE, INLET TURBO	TUBO, ENTRADA	TUYAU D'ADMISSION	1	-		
150	1J403-1163-0	PIPE, INLET BREATHER	TUBO, RESPIRADERO	TUYAU D'ADMISSION	1	-		
160	16241-1172-0	BAND, PIPE	BANDA, TUBO	COLLIER DE TUYAU	2	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0610 OIL PIPE (TURBO CHARGER)
ACEITE TUBO(TURBO CARGADOR)
TUYAU D'HUILE (TURBO-CHARGEUR)

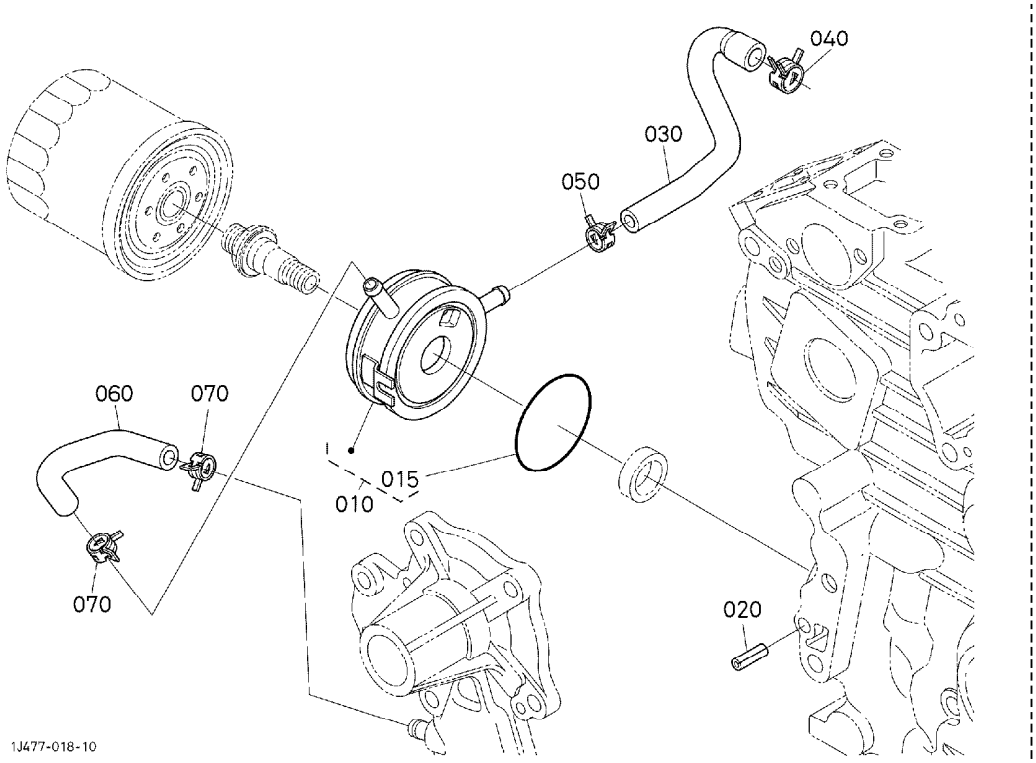


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	1J403-3304-0	COMP.PIPE,OIL	COMPLETO TUBO,ACEITE	TUYAU D'HUILE	1	-		
020	15471-9579-0	BOLT,EYE JOINT	TORNILLO,OJO JUNTA	VIS	1	-		
030	1G557-9665-0	GASKET	JUNTA	JOINT	1	-		
040	16241-9580-3	BOLT,EYE JOINT	TORNILLO,OJO JUNTA	VIS	1	-		
050	1C020-9665-0	GASKET	JUNTA	JOINT	1	-		
060	1G934-3305-0	COMP.PIPE,OIL	COMPLETO TUBO,ACEITE	TUYAU D'HUILE	1	-		
070	1C040-3367-0	GASKET	JUNTA	JOINT	1	-		
080	01023-50618	BOLT	TORNILLO	VIS	2	-		
090	1A024-3323-0	PIPE,OIL	TUBO,ACEITE	TUYAU D'HUILE	1	-		
100	1G924-3324-0	TUBE.OIL	TUBO.ACEITE	TUYAU D'HUILE	1	-		
110	09318-88200	CLAMP,HOSE	ABRAZADERA,MANGUITO	COLLIER DE DURITE	2	-		
120	1A024-3352-0	CLAMP,PIPE	ABRAZADERA	ATTACHE DE TUYAU	1	-		
130	33430-8276-0	PIN,BAND	PASADOR,BANDA	GOUPILLE COLLIER	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0702 OIL COOLER
ACEITE REFRIGERADOR
REFROIDISSEMENT



A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S.		I.C.	REMARKS NOTA REMARQUES
					A	B		
010	1G849-3701-0	ASSY COOLER,OIL	CONJ.REFRIGERADOR	ENS.REFROIDISSEUR	1	-		
015	K7561-3312-0	O RING	O ARO	JOINT TORIQUE	1	-		
020	05411-00618	PIN,SPRING	PASADOR,RESORTE	GOUPILLE-RESSORT	1	-		
030	1A024-3715-2	HOSE,OIL COOLER	MANGUITO,ACT RFRGRDR	TUYAU	1	-		
040	09318-88180	CLAMP,HOSE	ABRAZADERA,MANGUITO	COLLIER DE DURITE	1	-		
050	16241-7336-0	BAND,PIPE	BANDA,TUBO	COLLIER DE TUYAU	1	-		
060	1G730-3716-0	HOSE,OIL COOLER	MANGUITO,ACT RFRGRDR	TUYAU	1	-		
070	16241-7336-0	BAND,PIPE	BANDA,TUBO	COLLIER DE TUYAU	2	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

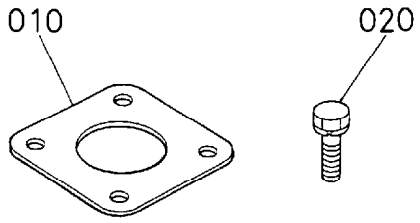
0800 GLOW LAMP AND TIMER
BUJIA DE CALENTAMIENTO LAMPARA Y TEMPORIZADOR
INDICATEUR DE PRECHAUFFAGE ET TEMPORISATEUR

16614-037-13

A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	15694-6599-0	TIMER, GLOW LAMP	TEMPORIZADOR, BJ	TEMPORISATEUR	1	-		
020	15403-6449-0	LAMP, INDICATOR	LAMPARA, INDICADOR	AMPOULE DE INDICATE.	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new



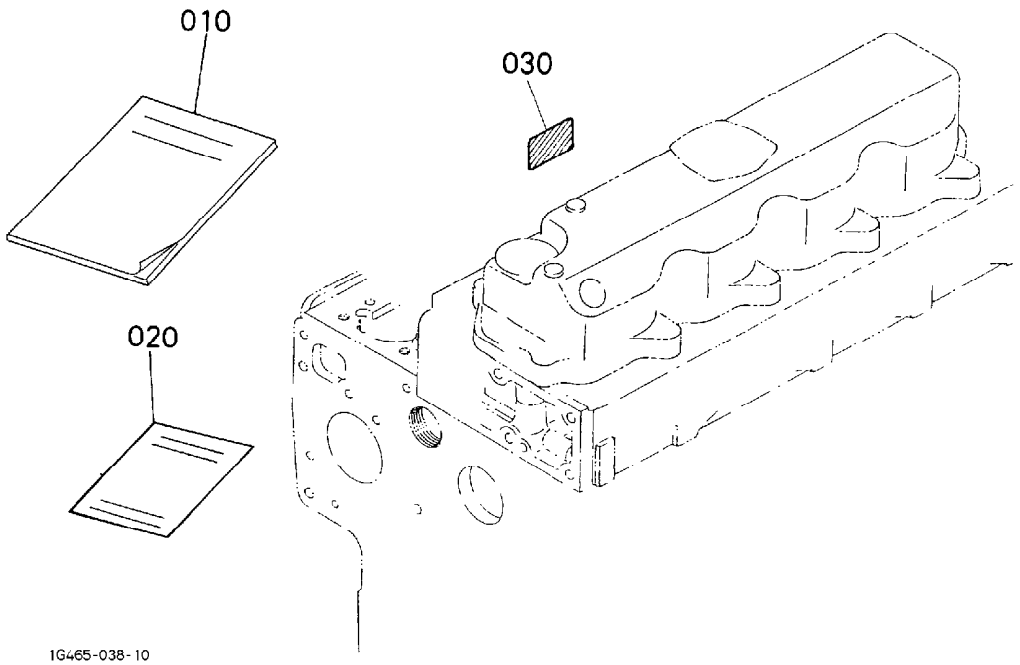
1G662-022-10

A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S.		I.C.	REMARKS NOTA REMARQUES
					A	B		
010	T0070-1642-0	GASKET,MUFFLER	JUNTA,SILENCIADOR	JOINT DE SILENCIEUX	1	-		
020	01123-50825	BOLT	TORNILLO	VIS	4	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0809 LABEL AND OPERATOR'S MANUAL
ETIQUETA Y DEL OPERADOR MANUAL
ETIQUETTE ET MANUEL DE L'UTILISATEUR

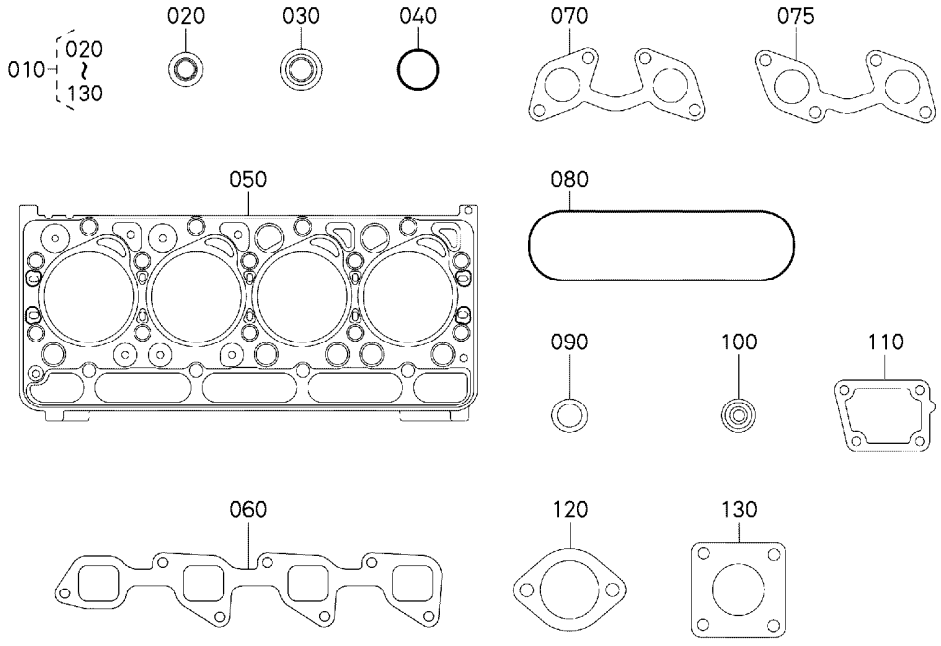


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	1J464-8916-0	OPERATOR'S MANUAL	MANUAL DEL OPERADOR	MANUEL DE L'UTILISA.	1	-		
020	1G511-8981-5	STATEMENT, WARRANTY	DECLARACION, GARANTIA	DECLARATION, GARANTIE	1	-		
030	1G790-8721-0	LABEL, PUMP	ETIQ, BOMBA	ETIQUETTE	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

090001 GASKET KIT [OPTION]
EQUIPO DE LA EMPAQUETADURA [OPCION]
JEU DE JOINTS [OPTION]

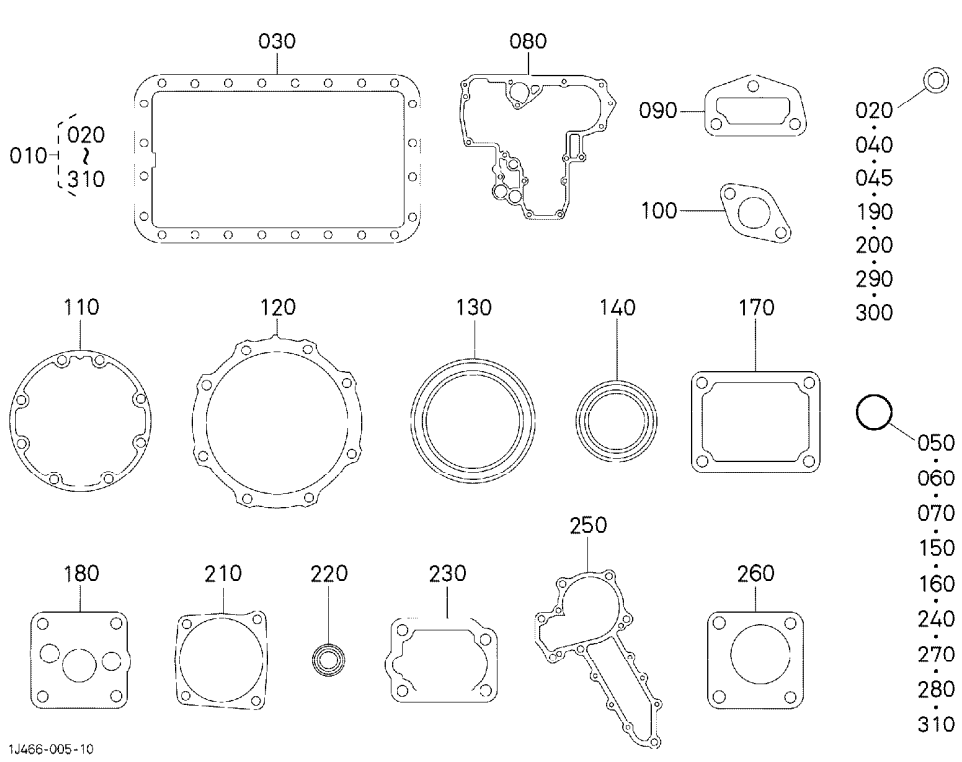


A:V2403-M-T-E3B-KEA-2

REF No. No.DE REF POS No	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. A	Q'TY/S.No. CANTIDAD/No.DE SERIE Q'TE/No.S. B	I.C.	REMARKS NOTA REMARQUES
010	1G465-9935-0	KIT GASKET,UPPER	KIT JUNTA,SUPERIOR	JEU DE JOINTS SUPER.	1	-		
020	04717-01000	WASHER,WITH RUBBER	ARANDELA,CON CAUCHO	JOINT EN CAOUTCHOUC	1	-		
030	15221-1315-3	SEAL,VALVE STEM	RETEN,VLVL VSTG	JOINT DE SOUPAPE	8	-		
040	04817-50300	O RING	O ARO	JOINT TORIQUE	1	-		
050	1G790-0331-2	GASKET,CYLINDER HEAD	JUNTA,CLNDR CLT	JOINT	1	-		
060	1A091-1182-2	GASKET,IN-MANIFOLD	JUNTA,ENTRD-CLCTR	JOINT DE COLL.ADM.	1	-		
070	1A091-1235-0	GASKET,EX-MANIFOLD	JUNTA,ESCP-CLCTR	JOINT DE COLL.ECHAP.	1	-		
075	1A091-1236-0	GASKET,EX-MANIFOLD	JUNTA,ESCP-CLCTR	JOINT DE COLL.ECHAP.	1	-		
080	1G911-1452-3	GASKET,HEAD COVER	JUNTA,CLT CBRT	JOINT COUVRE-CULASSE	1	-		
090	15841-5362-2	GASKET	JUNTA	JOINT	4	-		
100	19077-5365-0	SEAL,HEAT	RETEN,CALOR	JOINT DE CHALEUR	4	-		
110	1A021-7292-0	GASKET,WATER FLANGE	JUNTA,AGUA BRIDA	JOINT DE BRIDE A EAU	1	-		
120	16221-7327-0	GASKET,THERMOSTAT	JUNTA,TERMOSTATO	JOINT	1	-		
130	T0070-1642-0	GASKET,MUFFLER	JUNTA,SILENCIADOR	JOINT DE SILENCIEUX	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

090002 GASKET KIT [OPTION]
JEU DE JOINTS [OPTION]
DICHTUNG-GERAET [OPTION]

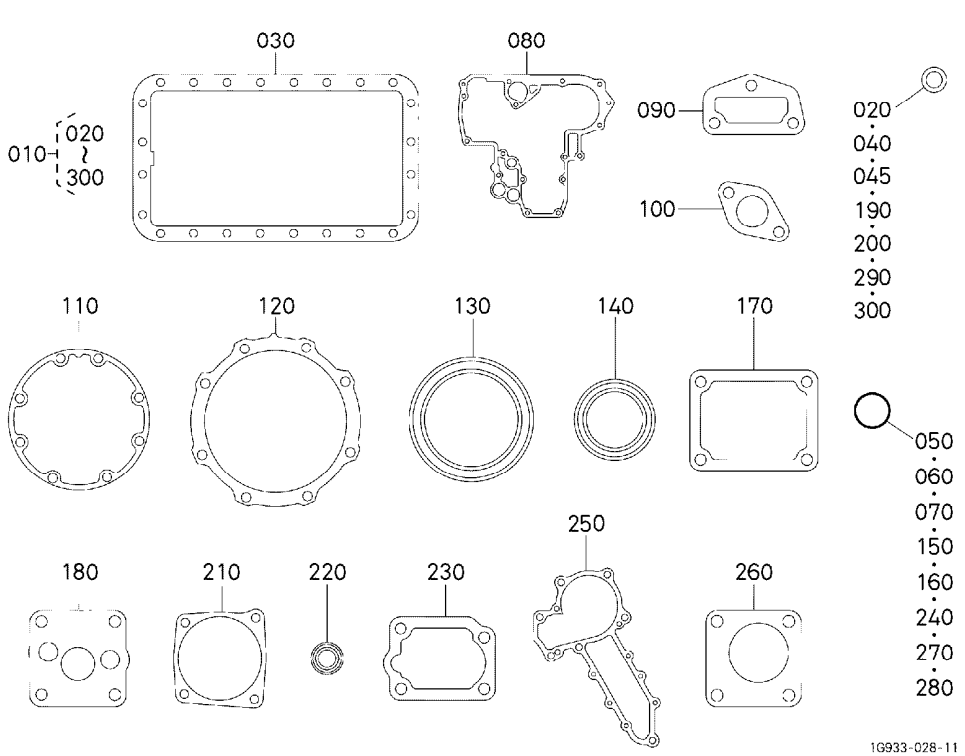


A:V2403-M-T-E3B-KEA-2

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S. Nr. A	B	I. C.	REMARKS REMARQUES BEMERKUNGEN
010	1G464-9936-4	KIT GASKET, LOWER	JEU DE JOINTS INFER.	UNTERDICHTUNGENTASC.	1 <=8DZ999	-		#
010	1G466-9936-0	KIT GASKET, LOWER	JEU DE JOINTS INFER.	UNTERDICHTUNGENTASC.	1 >=8E0001	-	←	#
020	6C090-5896-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
030	1G780-0162-0	GASKET, OIL PAN	JOINT	DICHTUNG, OEL FAENGER	1	-		
040	04724-00160	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
045	15451-9667-0	GASKET	JOINT	DICHTUNGSPLATTE	2	-		
050	04817-00150	O RING	JOINT TORIQUE	O RING	1	-		
060	04817-00220	O RING	JOINT TORIQUE	O RING	2	-		
070	04817-00360	O RING	JOINT TORIQUE	O RING	1	-		
080	1A021-0413-0	GASKET, GEAR CASE	JOINT	DICHTUNGGETRIEBEGEH.	1	-		
090	1A021-7333-2	GASKET, RETURN FLANGE	JOINT	DICHTUNGSPLATTE	1	-		
100	1G751-5214-0	GASKET, FUEL PUMP	JOINT	DICHTUNGSPLATTE	1	-		
110	1A091-0436-2	GASKET, BEARING CASE	JOINT CART. DE RLMT	DICHTUNG, LAGER	1	-		
120	1A091-0482-0	GASKET, CASE COVER	JOINT DE CARTER FOU	DICHTUNG GEHAEUSEDEC	1	-		
130	1G911-0446-0	SEAL, OIL	BAGUE JOINT	DELDICHTUNGSRING	1	-		
140	19202-0414-0	SEAL, OIL	BAGUE JOINT	OELDICHTUNGSRING	1	-		
150	04811-10300	O RING	JOINT TORIQUE	O RING	1	-		
160	04817-00160	O RING	JOINT TORIQUE	O RING	1	-		
170	1A021-5166-0	GASKET, PUMP COVER	JOINT	DICHTUNGSPLATTE	1	-		
180	1A021-3515-0	GASKET, OIL PUMP	JOINT	DICHTUNGSPLATTE	1	-		
190	15601-9665-0	GASKET	JOINT	DICHTUNGSPLATTE	2	-		
200	15401-9665-0	GASKET	JOINT	DICHTUNGSPLATTE	2	-		
210	1G492-1622-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
220	16691-5798-0	SEAL, OIL	BAGUE JOINT	OELDICHTUNGSRING	2	-		
230	1A021-5721-2	GASKET, PLATE	JOINT	DICHTUNGSPLATTE	2	-		
240	04814-06310	O RING	JOINT TORIQUE	O RING	1	-		
250	1A051-7343-0	GASKET, WATER PUMP	JOINT DE POMPE A EAU	DICHTUNG, WASSERPUMPE	1	-		
260	1G751-8813-0	GASKET, HOUR METER	JOINT	DICHTUNG	1	-		
270	14311-9675-0	RING	BAGUE	RING	1	-		
280	04814-00060	O RING	JOINT TORIQUE	O RING	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

090002 GASKET KIT [OPTION]
EQUIPO DE LA EMPAQUETADURA [OPCION]
JEU DE JOINTS [OPTION]



A:V2403-M-T-E3B-KEA-2

REF No. No. DE REF. POS No.	PART No. No. REF. REFERENCE	PART NAME	DESCRIPCION	DESIGNATION	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. A	Q'TY/S.No. CANTIDAD/No. DE SERIE Q'TE/No. S. B	I. C.	REMARKS NOTA REMARQUES
300	15021-3366-0	GASKET	JUNTA	JOINT	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

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