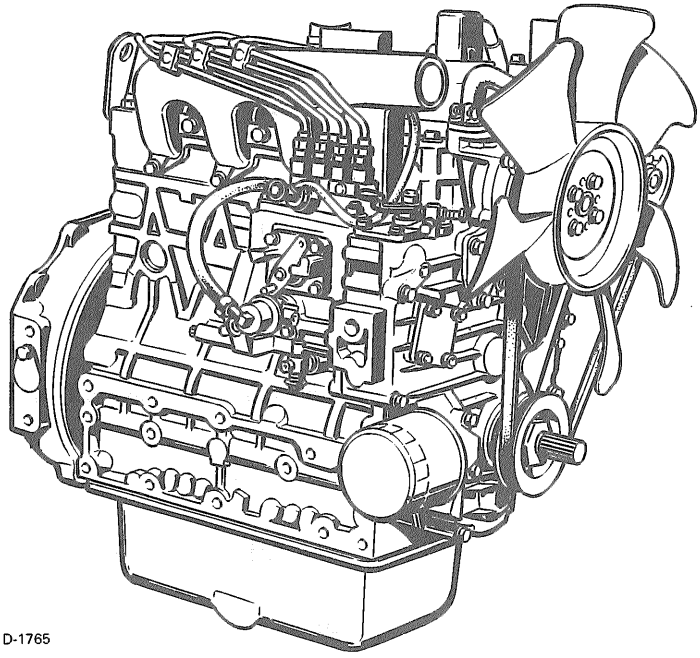
OPERATOR'S MANUAL

ENGLISH

KUBOTA
DIESEL ENGINE

MODELS D1403-E·V1903-E·V2203-DI-B
D1503-E·V2003-TE·F2503-T
D1703-E·V2203-E·F2803-E



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READ AND SAVE THIS BOOK

Kubota

ENGLISH

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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 The immediate use of new techniques in the manufacture of products may cause some small parts of this manual to be outdated.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

⚠ SAFE OPERATION

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

Be sure to observe the following for safe operation.

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 equipments 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 by yourself. UNAUTHORIZED MODIFICATIONS to the engine may impair the function and/or safety and affect engine life.

F-8822

WEAR SAFETY CLOTHING

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

B-1501 改

CHECK BEFORE OPERATION & STARTING THE ENGINE

- Be sure to check the engine before operation. If something is wrong with the engine, do not fail to repair it quickly.
- Keep all guards and shields in place before operating the engine. Replace any that are damaged or missing.
- Check to see if there is 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.

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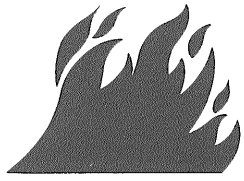
KEEP AROUND THE ENGINE CLEAN

- 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 away from sparks and fire.
- DO NOT stop the engine without idling; Temperatures around the engine rise suddenly. Keep the engine idling for over about 5 minutes before stopping.



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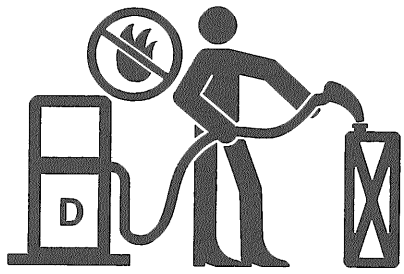
SAFE HANDLING OF FUEL AND LUBRICANTS
—KEEP OFF FIRE—

- Always stop the engine before refueling or/and lubricating.
- DO NOT smoke or allow flames or sparks in your working area. Fuel is extremely flammable and explosive under certain conditions.
- Refuel at a well ventilated and open place. When fuel and lubricants are spilled, refuel after letting engine cool off.
- DO NOT mix gasoline or alcohol with diesel fuel. The mixture can cause a fire.



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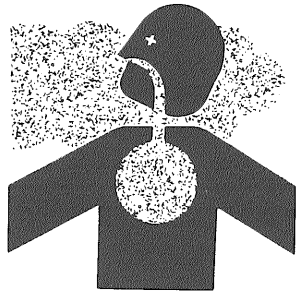
EXHAUST GASES & FIRE PREVENTION

- Engine exhaust fumes can be very harmful if allowed to accumulate. Be sure to run the engine in a well ventilated place 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 and any other combustible materials to exhaust gas. Also, keep the engine and muffler clean all the time.
- To avoid a fire, be alert for leaks of flammables from hoses and lines. Be sure to check for leaks from hoses or pipes, such as fuel and hydraulic 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 power connections clean. Bare wire or frayed insulation can cause a dangerous electrical shock and personal injury.



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ESCAPING FLUID

- Relieve all pressure in the air, the oil and the cooling systems before any lines, fittings or related items are removed or disconnected.
- Be alert for possible pressure when disconnecting any device from a system that utilizes pressure. DO NOT check for pressure leaks with your hand. High pressure oil or fuel can cause personal injury.
- Escaping hydraulic fluid under pressure has sufficient force to penetrate skin causing serious personal injury.
- Fluid escaping from pinholes may be invisible. Use a piece of cardbord 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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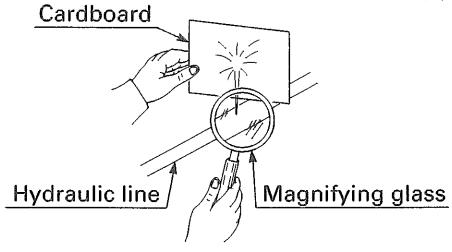

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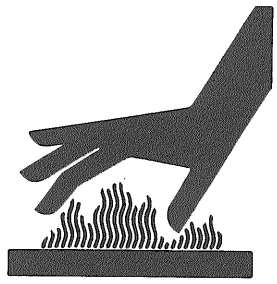
CAUTIONS AGAINST BURNS & BATTERY EXPLOSION

- To avoid burns, be alert for hot components, e.g. muffler, muffler cover, radiator, pipings, engine body, coolants, engine oil, etc. during operation and just 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 radiator. Wait for more than ten minutes to cool the radiator, before removing the cap.
- Make sure to shut the drain valve of coolant and oil to close pressure cap, to fasten pipe band before operating. If those parts are taken off, or loosen, it will result in serious personal injury.
- The battery presents an explosive hazard. When the battery is being activated, hydrogen and oxygen gases are extremely explosive.
- Do not use or charge the battery if its fluid level stands 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 levels.
- Keep sparks and open flames away from the battery, especially when charging the battery. DO NOT strike a match near the battery.
- DO NOT check battery charge by placing a metal object across the terminals. Use a voltmeter or hydrometer.
- DO NOT charge battery if frozen. It can be explosive. When frozen, warm the battery up more than 16°C (61°F).



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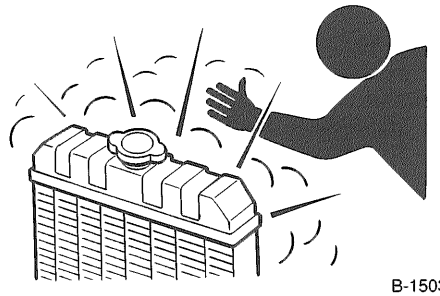

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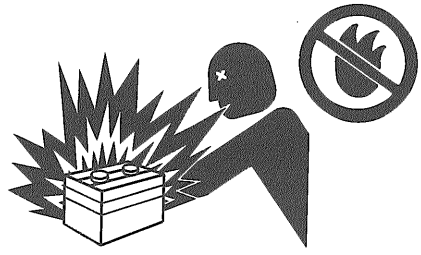

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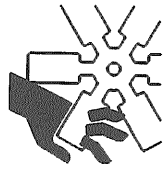
HANDS AND BODY AWAY FROM THE ROTATING PARTS

- Be sure to stop the engine before checking or adjusting belt tension and cooling fan.
- Keep your hands and body away from the rotating parts, such as cooling fan, V-belt, fan drive V-belt pulley or flywheel causing personal injury.
- DO NOT run the engine with installed safety guards detached. Install safety guards securely during operation.



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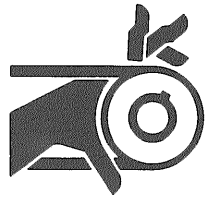

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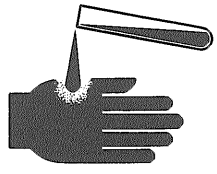
ANTI-FREEZE & DISPOSAL OF FLUIDS

- 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 chemical reaction causing harmful substances. Use approved or genuine KUBOTA Anti-freeze.
- Be mindful of the environment and the ecology. Before draining any fluids, find out the correct way of disposing 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 some container underneath the engine body.
- DO NOT pour waste onto the grounds, down a drain, or into any water source.



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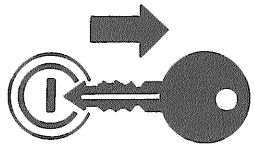
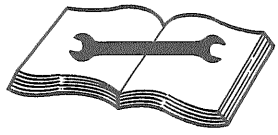
CONDUCTING SAFETY CHECKS & MAINTENANCE

- When checking engine or servicing, place the engine on a wide and level ground. DO NOT work on anything that is supported ONLY by lift jacks or a hoist. Always use blocks or correct stands to support the engine before servicing.
- Detach the battery from the engine before conducting service. Put a "DO NOT OPERATE!" tag in the key switch to avoid accidental starting.
- To avoid sparks from an accidental short circuit always disconnect the battery's ground cable ⊖ first and connect it last.
- Be sure to stop the engine and remove the key when conducting daily and periodic maintenance, servicing and cleaning.
- Check or conduct maintenance after the engine, coolant, muffler, or muffler cover have been cooled off completely.
- Always use the appropriate tools and jig-fixture in good condition when 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 practise can cause serious personal injury or premature machine damage to the cooling fan.
- 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 are aged gradually.
- When servicing is performed together by two or more persons, take care to perform all work safely.
- Keep first aid kit and fire extinguisher handy at all times.





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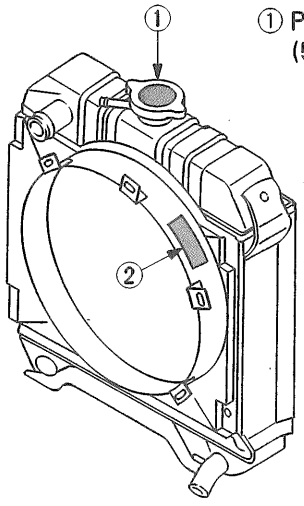
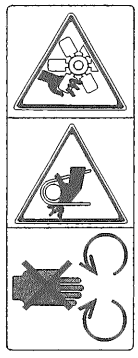
WARNING AND CAUTION LABELS



① Part No. 9077-8724-1 or 16667-8724-1
(55mm in diameter) (37mm in diameter)

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



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 new part, make sure new label(s) is (are) attached in the same location(s) as the replaced component.
(5) Mount new warning and caution labels by applying on a clean dry surface and pressing any bubbles to outside edge.

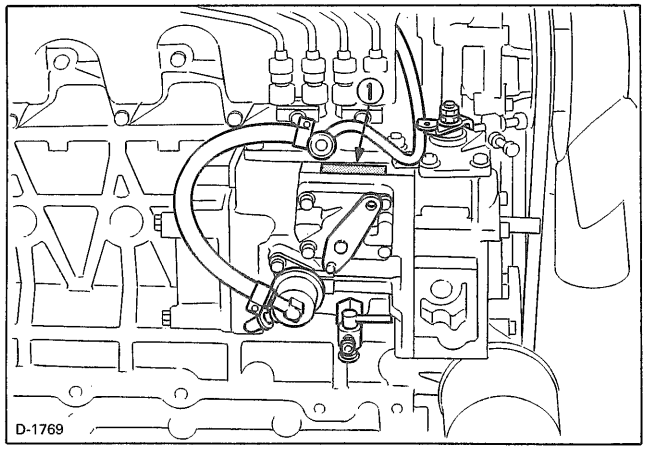
SERVICING OF THE ENGINE

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	_____	_____

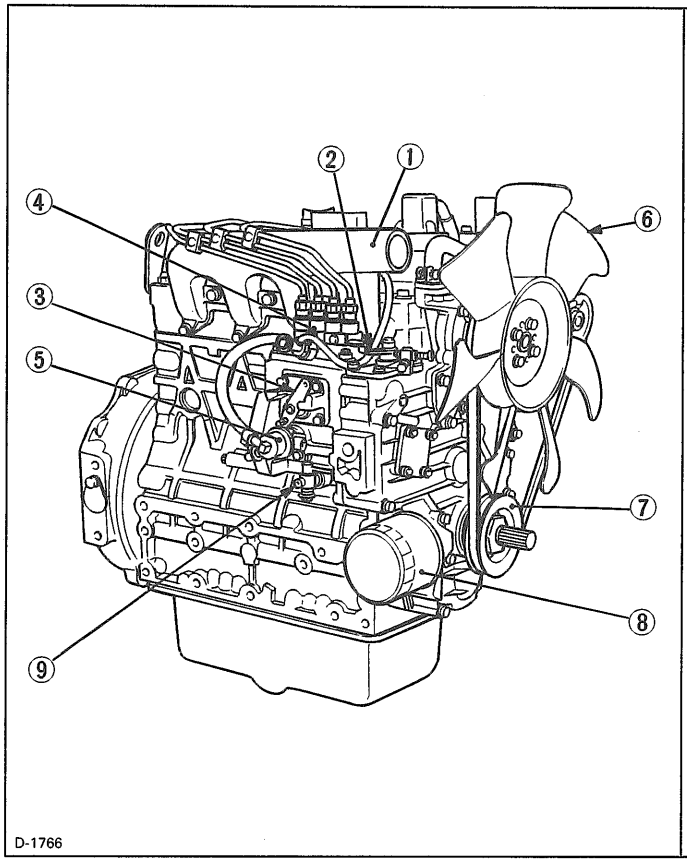
Date of Purchase _____

Name of Dealer _____
(To be filled in by purchaser)



(1) Engine serial number

NAMES OF PARTS



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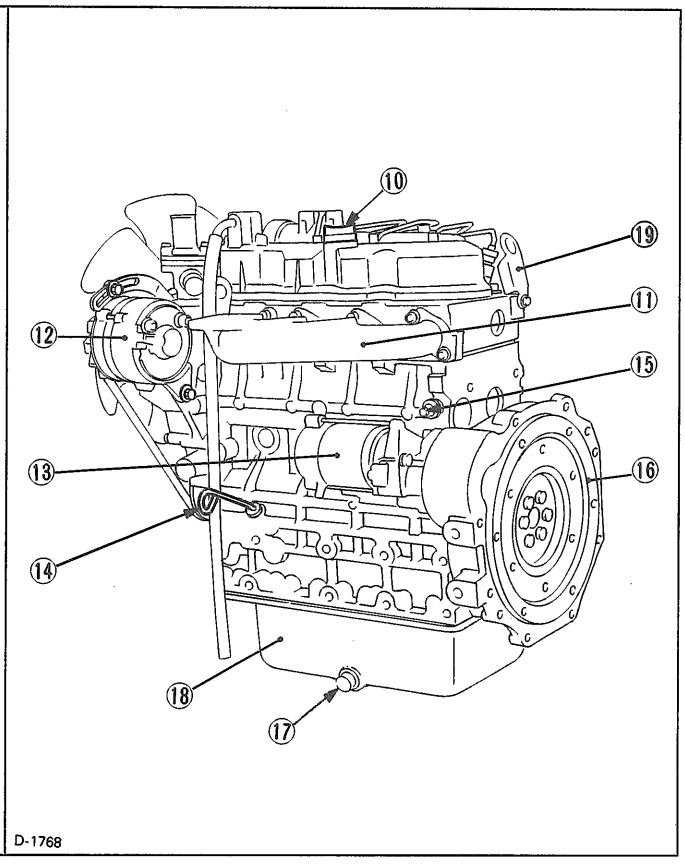

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(1) Intake manifold
(2) Speed control lever
(3) Engine stop lever
(4) Injection pump
(5) Fuel feed pump
(6) Cooling fan
(7) Fan drive pulley
(8) Oil filter cartridge
(9) Water drain cock
(10) Oil filler plug
(11) Exhaust manifold
(12) Alternator
(13) 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	13 to 18
	(2) Engine oil level and contamination	13, 14
	(3) Amount of fuel	10
	(4) Amount of coolant	15 to 18
	(5) Dust in air cleaner dust cup	19, 20
	(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

OPERATING THE ENGINE

STARTING THE ENGINE (NORMAL)

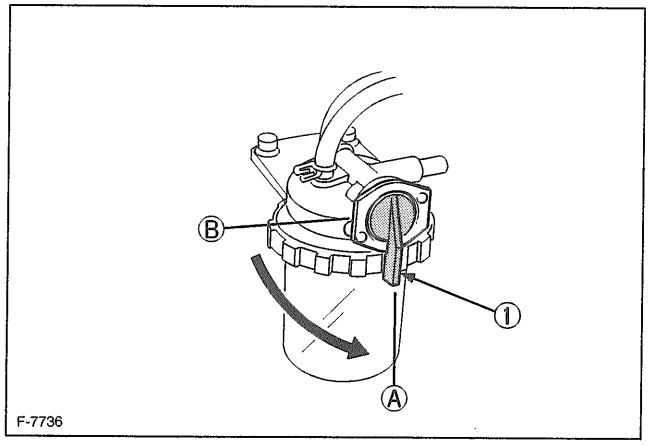
CAUTION
To avoid personal injury:

- **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.

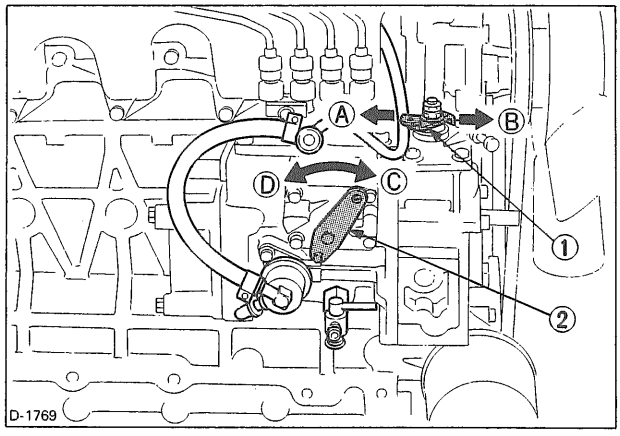
1. Set the fuel lever to the "ON" position.



(1) Fuel lever
(A) "ON"
(B) "OFF"

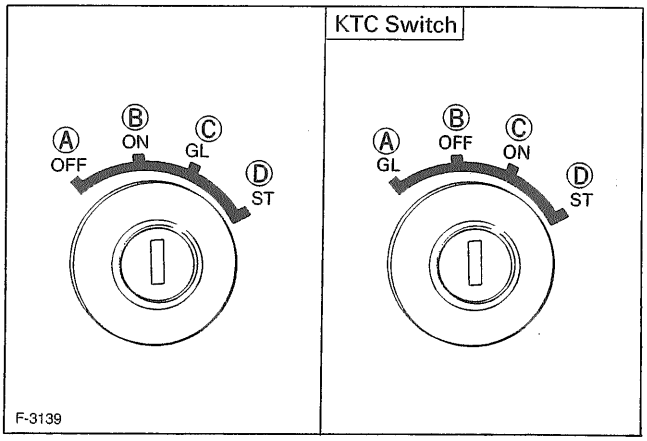
2. Place the engine stop lever to the "START" position.

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



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

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



(A) "SWITCHED OFF"
(B) "OPERATION"
(C) "PREHEATING"
(D) "START"

(A) "PREHEATING"
(B) "SWITCHED OFF"
(C) "OPERATION"
(D) "START"

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 "START" 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 "START" 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.

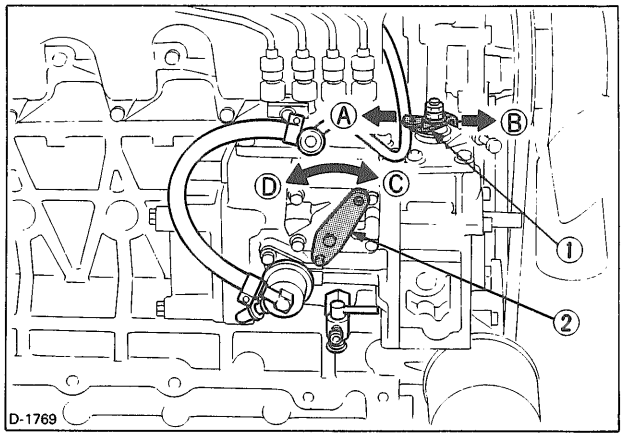
Ambient temperature	Preheating time	
	except V2203-DI-B	V2203-DI-B
Above 10°C (50°F)	NO NEED	NO NEED
10°C (50°F) to – 5°C(23°F)	Approx. 5 seconds	Approx. 10 seconds
*Below –5°C (23°F)	Approx. 10 seconds	Approx. 20 to 30 seconds
Limit of continuous use	20 seconds	40 seconds

6. Turn the key to the "START" 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) Speed control lever
(2) Engine stop lever
(A) "IDLING"
(B) "OPERATION"
(C) "START"
(D) "STOP"

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 cardbord 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.

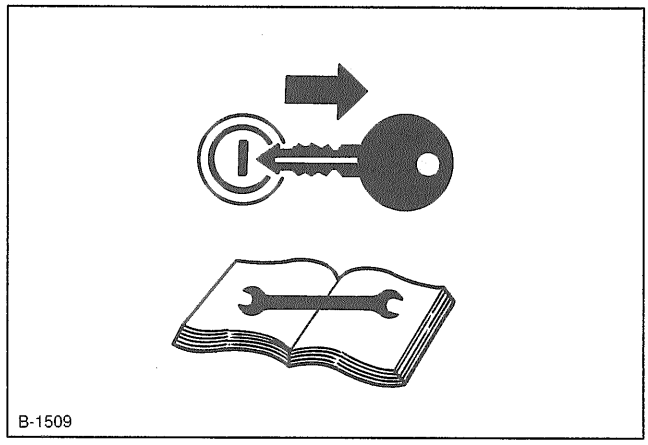
Remedies

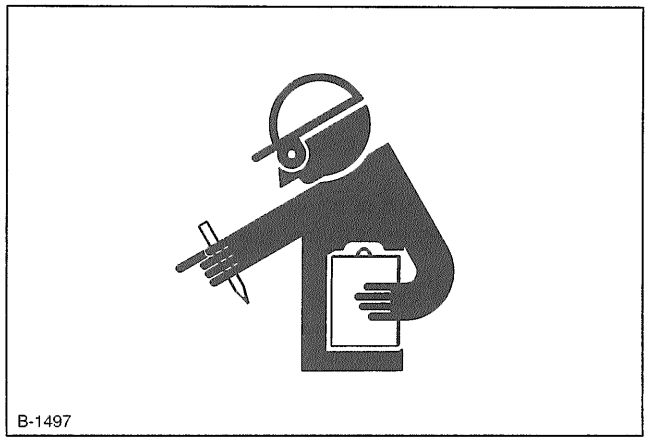
1. Immediately set the engine stop lever to the "STOP" position to stop the engine.
2. After stopping the engine, check the air cleaner, intake rubber tube and other parts and replace parts as needed.

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.**


B-1509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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	12		@
See NOTE:	Change of engine oil (depending on the oil pan)	13 to 15	◎	
Every 100 hours	Cleaning of air cleaner element	19, 20	*1	@
	Cleaning of fuel filter	12		
	Check of battery electrolyte level	20, 21		
	Check of fan belt tightness	22		
Every 200 hours	Check of radiator hoses and clamp bands	17		
	Replacement of oil filter cartridge (except V2203-DI-B), using standard oil pan	15	◎	
	Check of intake air line	–		@

Interval	Item	Ref. Page		
Every 400 hours	Replacement of oil filter cartridge (V2203-DI-B only), using standard oil pan	15	◎	
	Replacement of fuel filter cartridge	12		@
Every 500 hours	Removal of sediment in fuel tank	—		
	Cleaning of water jacket (radiator interior)	15 to 18		
	Replacement of fan belt	22		
Every one or two months	Recharging of battery	20, 21		
Every year	Replacement of air cleaner element	19, 20	*2	@
Every 800 hours	Check of valve clearance	24		
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		
	Replacement of battery	20, 21		
	Replacement of radiator hoses and clamp bands	17		
	Replacement of fuel pipes and clamp bands	12	*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.)
D1403-E D1503-E D1703-E V1903-E V2003-TE V2203-E F2503-T	200 Hrs	150 Hrs
F2803-E	200 Hrs	—
V2203-DI-B	400 Hrs	200 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 × : Not recommendable

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

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, °C (°F)	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, °C (°F) 90% Point		Viscosity Kinematic cSt or mm²/s at 40°C		Viscosity Saybolt, SUS at 100°F		Sulfur, weight %	Copper Strip Corrosion	Cetane Number
Min	Max	Min	Max	Min	Max	Max	Max	Min
282 (540)	338 (640)	1.9	4.1	32.6	40.1	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.

Air bleeding the fuel system

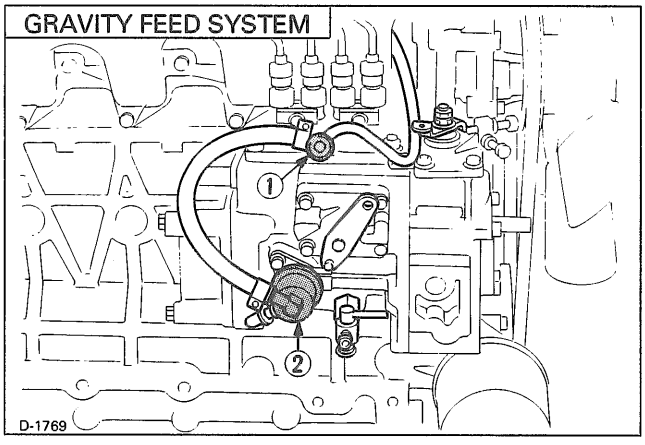
CAUTION
To avoid personal injury;
- **Do not bleed a hot engine as this could cause fuel to spill onto a hot exhaust manifold creating a danger of fire.**

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

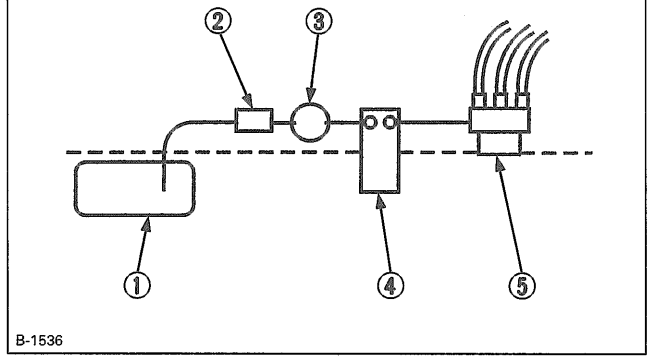


(1) Air vent cock
(2) Fuel feed pump

[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



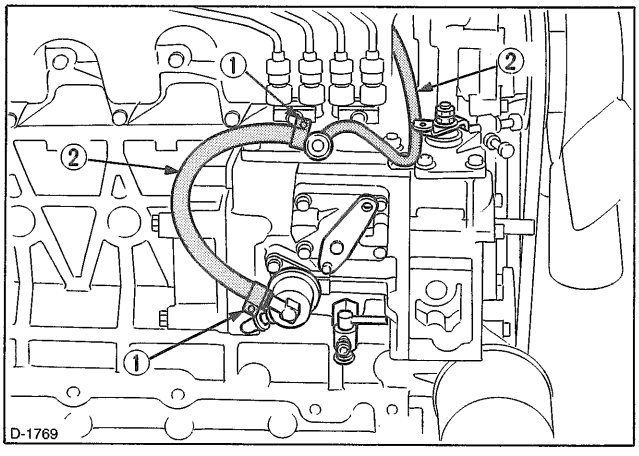
(1) Fuel tank below injection pump
(2) Pre-filter
(3) Electric or Mechanical pump
(4) Main Filter
(5) Injection pump

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, become worn out, replace them and the clamp bands every two years.
3. If the fuel pipes and clamp bands are found worn or damaged before two 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.

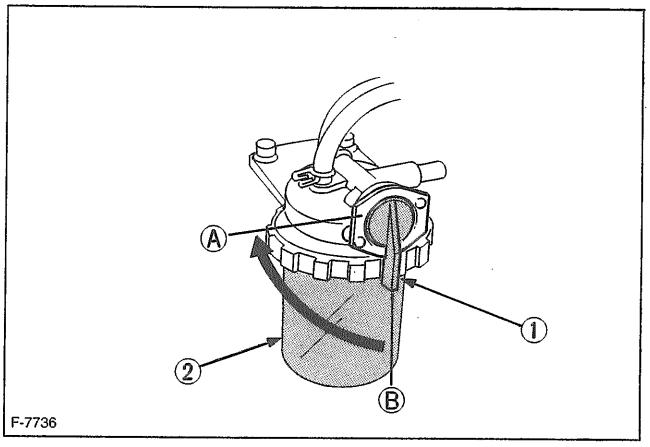


(1)Clamp band
(2)Fuel pipe

Cleaning the fuel filter pot

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

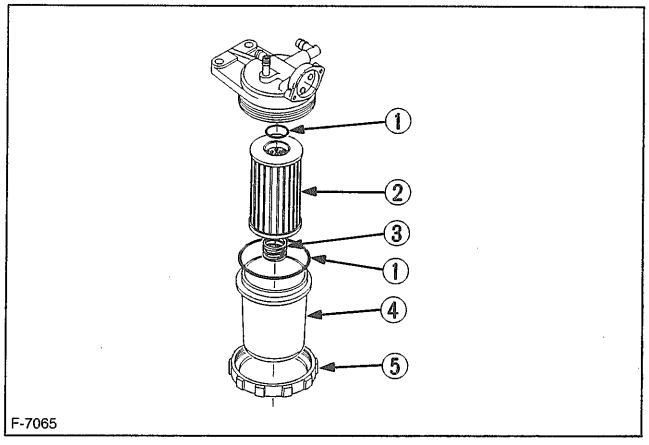
1. Close the fuel filter lever.



(1) Fuel filter lever *(A) "OFF"*
(2) Fuel filter pot *(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 mulfunction of the fuel injection pump and the injection nozzle. Wash the fuel filter cup periodically.



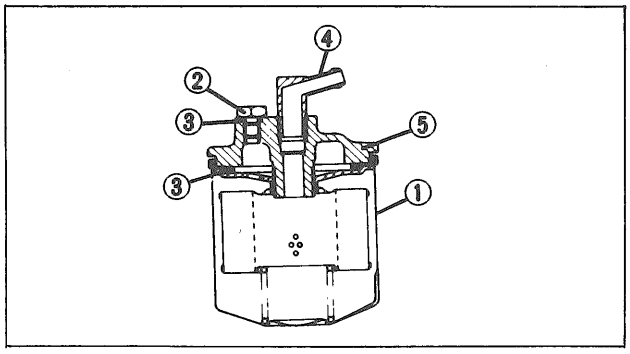
(1) O ring
(2) Filter element
(3) Spring
(4) Filter bowl
(5) Screw ring

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.



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

ENGINE OIL

CAUTION
To avoid personal injury:

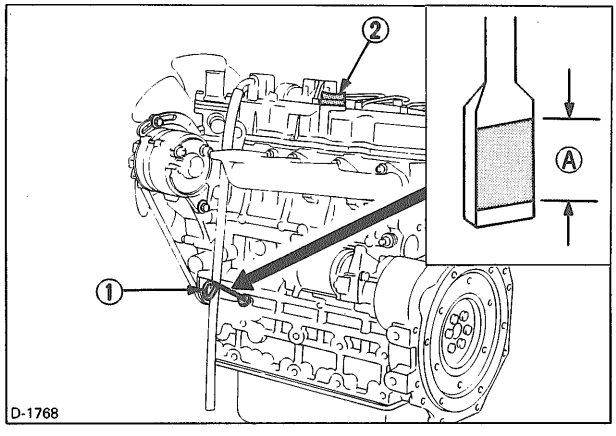
- **Be sure to stop the engine before checking and changing the engine oil and the oil filter cartidge.**
- **Do not touch muffler or exhaust pipes while they are hot; Severe burns could result. Always stop the engine and allow it to cool before conducting inspections, maintenance, or for a cleaning 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.



(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

Models	Oil pan depth	
	124 mm (4.88 in.)	※90 mm (3.54 in.)
D1403-E D1503-E D1703-E	7.0L (1.85 U.S. gals.)	5.6L (4.48 U.S. gals.)
V2003-TE	9.8L (2.59 U.S. gals.)	7.9L (2.09 U.S. gals.)
V1903-E V2203-E V2203-DI-B	9.5L (2.51 U.S. gals.)	7.6L (2.01 U.S. gals.)
F2503-T	12.3L (3.25 U.S. gals.)	—
F2803-E	12.0L (3.17 U.S. gals.)	—

※ 90 mm (3.54 in.) 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 to 25°C (32 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:

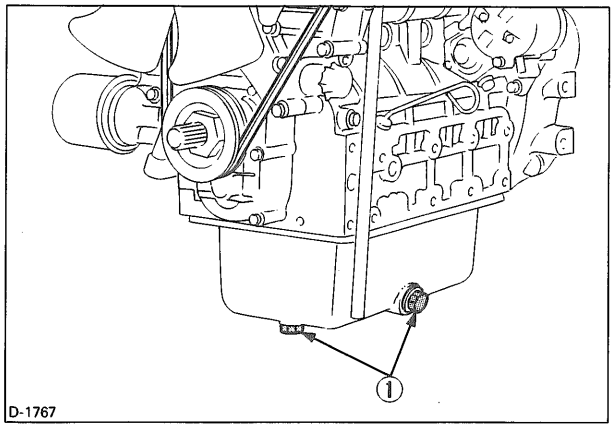
- Changing interval thereafter

Models	Oil pan depth	
	124 mm (4.88 in.)	※ 90 mm (3.54 in.)
D1403-E D1503-E D1703-E V1903-E V2003-TE V2203-E F2503-T	200 Hrs	150 Hrs
F2803-E	200 Hrs	—
V2203-DI-B	400 Hrs	200 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)

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

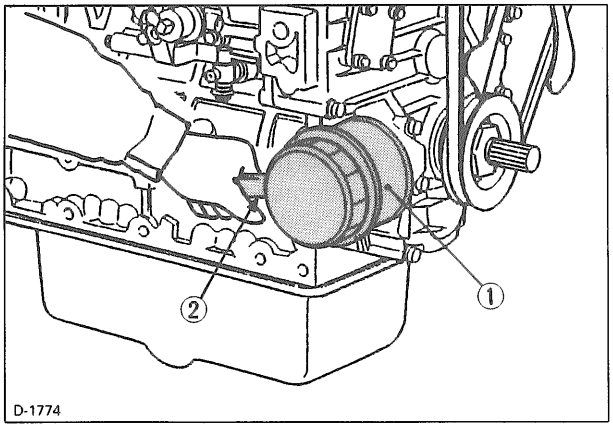
CAUTION
To avoid personal injury:
- **Be sure to stop the engine before changing the oil filter cartridge.**
- **Allow engine to cool down sufficiently, oil can be hot and cause burns.**

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

Models	Oil pan depth	
	124 mm (4.88 in.)	※ 90 mm (3.54 in.)
D1403-E D1503-E D1703-E V1903-E V2003-TE V2203-E F2503-T	200 Hrs	150 Hrs
F2803-E	200 Hrs	—
V2203-DI-B	400 Hrs	200 Hrs
Initial	50 Hrs	

※ 90 mm (3.54 in.) 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.



(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.

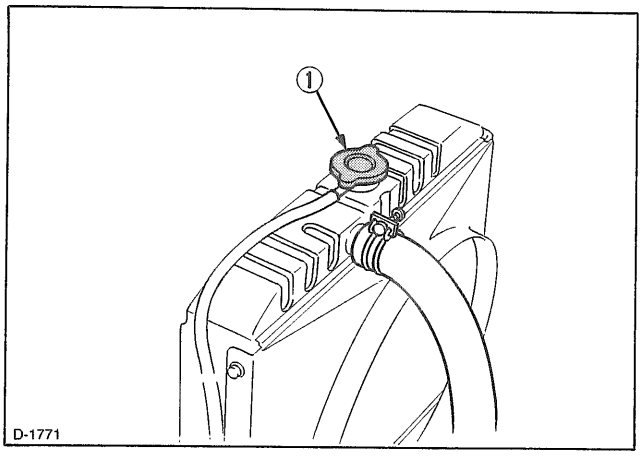
RADIATOR

Coolant will last for one day's work if filled all the way up before operation. 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.

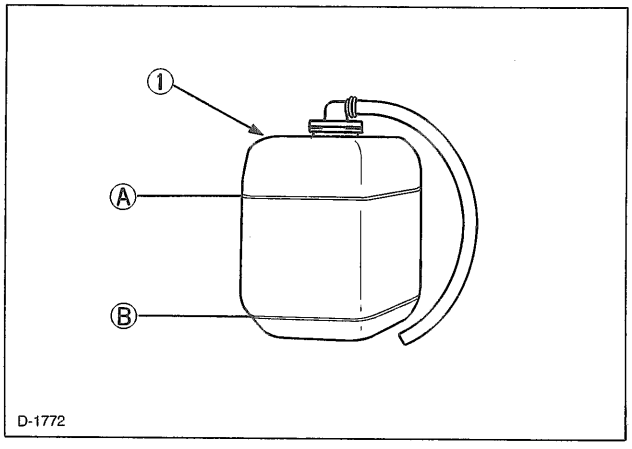
Checking coolant level, adding coolant

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



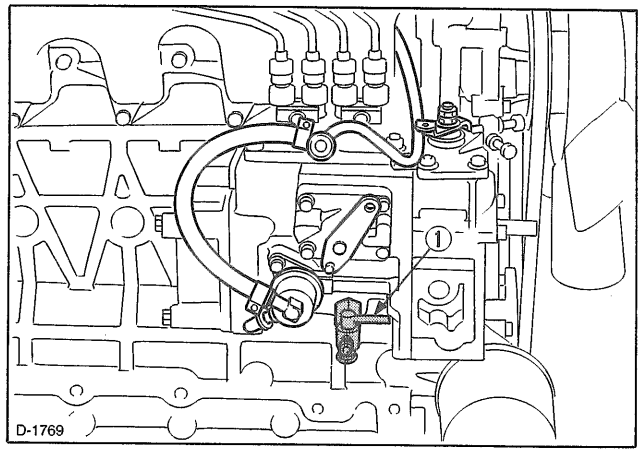
(1) Radiator pressure cap

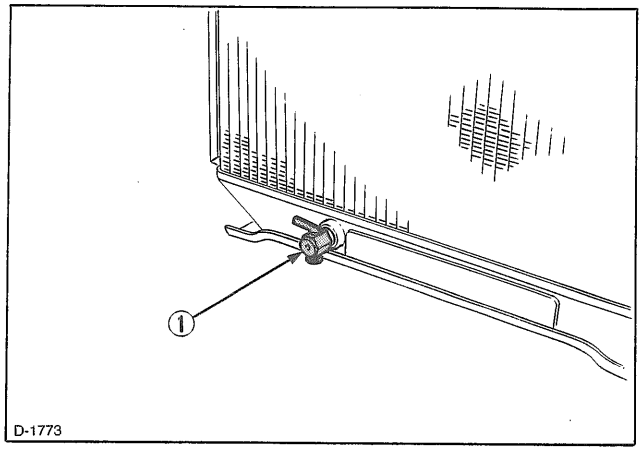
2. If the radiator is provided with a reserve tank, check the coolant level of the reserve tank. When it is between the "FULL" and "LOW" marks, the coolant will last for one day's work.



(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)

D1403-E	4.2 L (1.11 U.S. gals.)
D1503-E	4.5 L (1.19 U.S. gals.)
D1703-E	5.5 L (1.45 U.S. gals.)
V1903-E	6.4 L (1.69 U.S. gals.)
V2203-E, V2203-DI-B	8.1 L (2.14 U.S. gals.)
V2003-TE	8.2 L (2.17 U.S. gals.)
F2503-T	
F2803-E	

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 coolings performance.

Anti-freeze

CAUTION
To avoid personal injury:

- **When using anti-freeze, put on some protection such as rubber gloves.**
- **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.**
- **Keep fire and children away from anti-freeze.**
- **Be mindful of the environment and ecology. Before draining any fluids, find out the correct way of disposing by checking with local codes.**
- **Also, observe the relevant environmental protection regulations when disposing of oil, fuel, coolant, brake fluid, filters and batteries.**

If it freezes, coolant can damage the cylinders and radiator. It is necessary, if the ambient temperature falls below 0°C (32°F), to remove coolant after operating or to add anti-freeze to it.

1. There are two types of anti-freeze available; use the permanent type (PT) for this engine.
2. Before adding anti-freeze for the first time, clean the radiator and engine interior by pouring fresh water, and draining it a few times.
3. 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.
4. Mix the anti-freeze with water, and then fill into the radiator.

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 ※	
	°C	°F	°C	°F
40	−24	−12	106	222
50	−37	−34	108	226

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

NOTE:

- The above data represents 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.
- Anti-freeze absorbs moisture. Keep unused anti-freeze in a tightly sealed container.
- Do not use radiator cleaning agents when anti-freeze has been added to the coolant. (Anti-freeze contains an anti-corrosive agent, which will react with the radiator cleaning agent forming sludge which will affect the engine parts.)

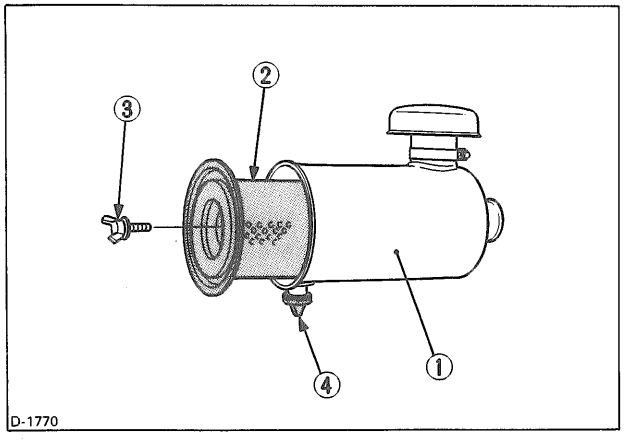
Radiator cement

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/cm², 30psi).
5. When carbon or oil adheres to the element, soak the element in detergent for 15 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.



(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.

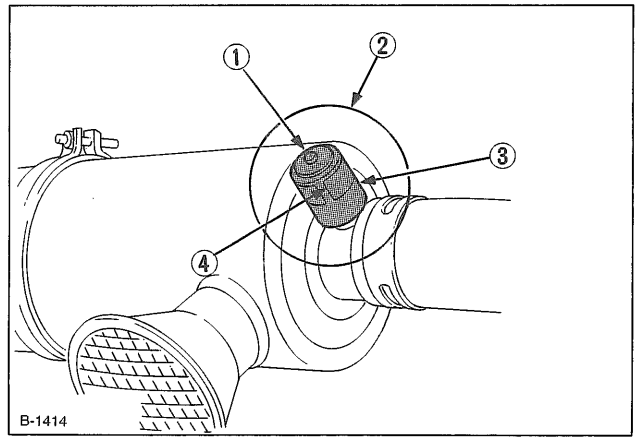
■ Evacuator valve

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.

■ 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.



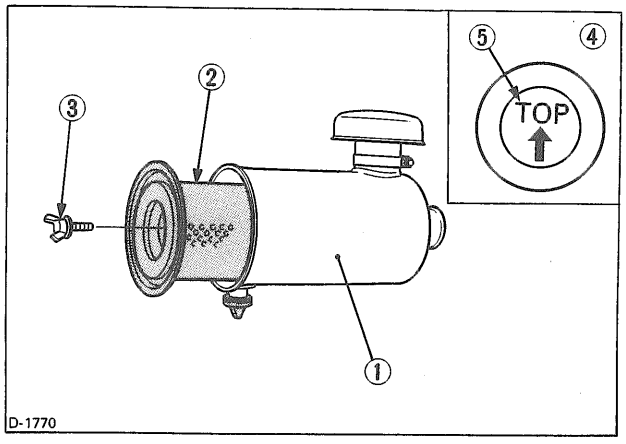
(1) "RESET" button
(2) Dust indicator
(3) Service level
(4) Signal

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 attachment 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

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

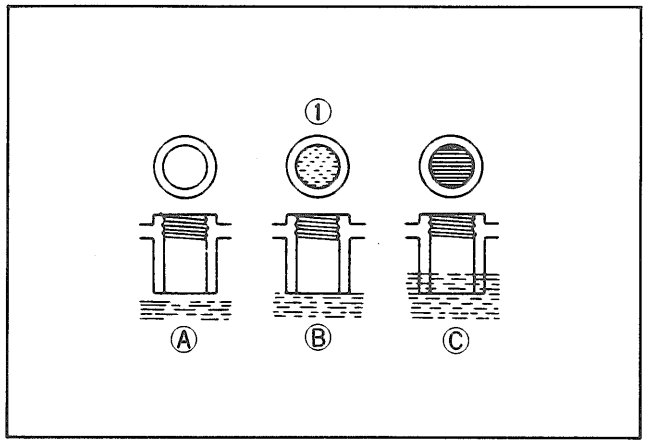
DANGER
The battery comes in two types: Refillable, Non-refillable.

- **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:

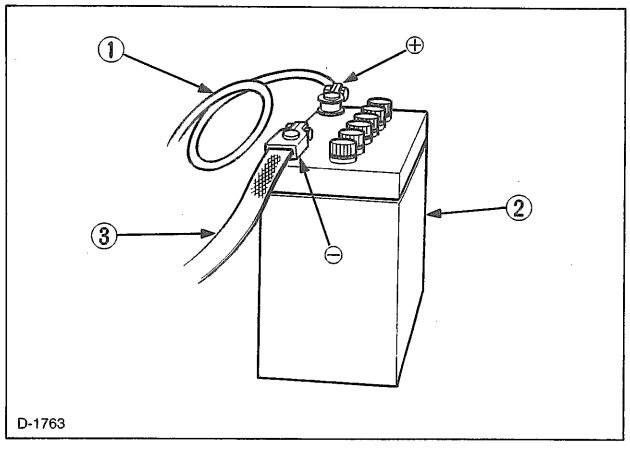
- **When the battery is being activated, hydrogen and oxygen gases in the battery are extremely explosive. Keep open sparks and flames away from the battery at all times, especially when charging the battery.**
- **When charging the battery, remove the battery vent plugs.**
- **When disconnecting the 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.

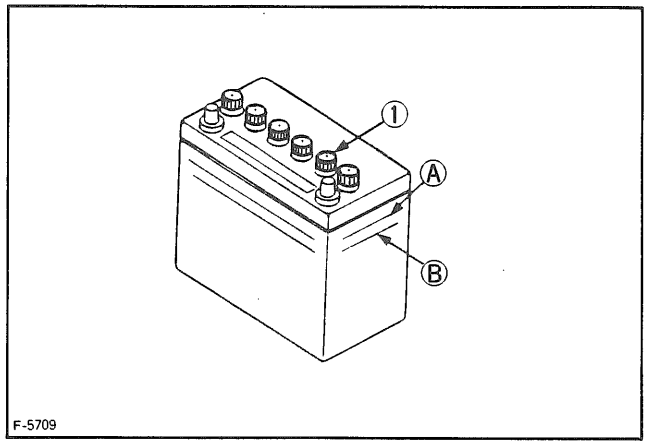


(1) Battery electrolyte level
(A) "TOO LOW"
(B) "PROPER"
(C) "TOO HIGH"

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 a battery of equal specifications shown in page 26, 27.



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



(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

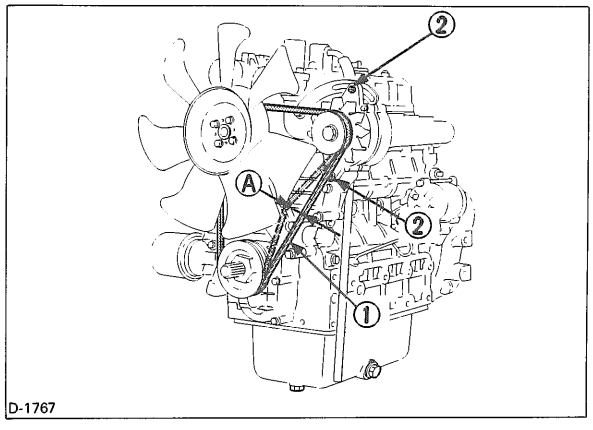
Adjusting Fan Belt Tension

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 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.



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

CARRAIGE 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 2-3 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 5-6 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 impurlities. * As all fuel will be filtered by the filter, if there shuld 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 fiter 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 atop 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 nozzole.
Valve clearance is wrong.	* Adjust valve clearance to 0.18 to 0.22 mm (0.007 to 0.0087 in.) when the engine is cold.
Leaking valves	* Grind valves.
Fuel injection timing is wrong.	* Adjust injection timing The injection timing 0.31 rad (18°) before top dead center
Engine oil becomes thick in cold weather and engine cranks slow.	* Charge grade of oil according to the weater (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 0.31rad(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. except V2203-DI-B (E-TVCS): 13.73 Mpa (140kgf/cm², 1991psi) V2203-DI-B: 22.75 Mpa (232kgf/cm², 3300 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 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 radiò.
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 part.
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	D1403-E	D1503-E	D1703-E	V1903-E
Type	Vertical, water-cooled, 4-cycle diesel			
Number of cylinders	3			4
Bore and stroke mm (in.)	80 × 92.4 (3.15 × 3.64)	83 × 92.4 (3.27 × 3.64)	87 × 92.4 (3.43 × 3.64)	80 × 92.4 (3.15 × 3.64)
Total displacement cm^3 (cu.in.)	1393 (85.01)	1499 (91.47)	1647 (100.51)	1857 (113.32)
Combustion chamber	Spherical Type (E-TVCS)			
SAE NET Intermittent H.P. (SAE J1349) kW / min^{-1}(rpm) (HP / min^{-1}(rpm))	21.6 / 2800 (29.0 / 2800)	23.5 / 2800 (31.5 / 2800)	25.7 / 2800 (34.5 / 2800)	29.1 / 2800 (39.0 / 2800)
SAE NET Continuous H.P. (SAE J1349) kW / min^{-1}(rpm) (HP / min^{-1}(rpm))	18.6 / 2800 (25.0 /2800)	20.1 / 2800 (27.0 / 2800)	22.4 / 2800 (30.0 / 2800)	25.4 / 2800 (34.0 / 2800)
Maximum bare speed min^{-1}(rpm)	3000			
Minimum bare idling speed min^{-1}(rpm)	700 to 750			
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 (140 kgf/cm^2,1991 psi)			
Injection timing (Before T.D.C.)	18°			
Compression ratio	23			
Fuel	Diesel fuel oil No.2-D			
Lubricant (API classification)	above CD grade			
Dimensions (length × width × height) mm (in.)	560.1 × 502.5 × 678.2 (22.05 × 19.78 × 26.70)			652.1×502.5×678.2 (25.67×19.782×26.70)
Dry weight kg (lbs.)	148 (326)			180 (397)
Starting system	Cell starter (with glow plug)			
Starting motor	12 V 1.2 kW			12V 1.4kW
Charging generator	12 V 360 W			
Recommended battery capacity	12 V, 70 to 80AH (400 CCA or higher) 0°F (–17.8°C) SAE rating			12V, 100 to 120AH

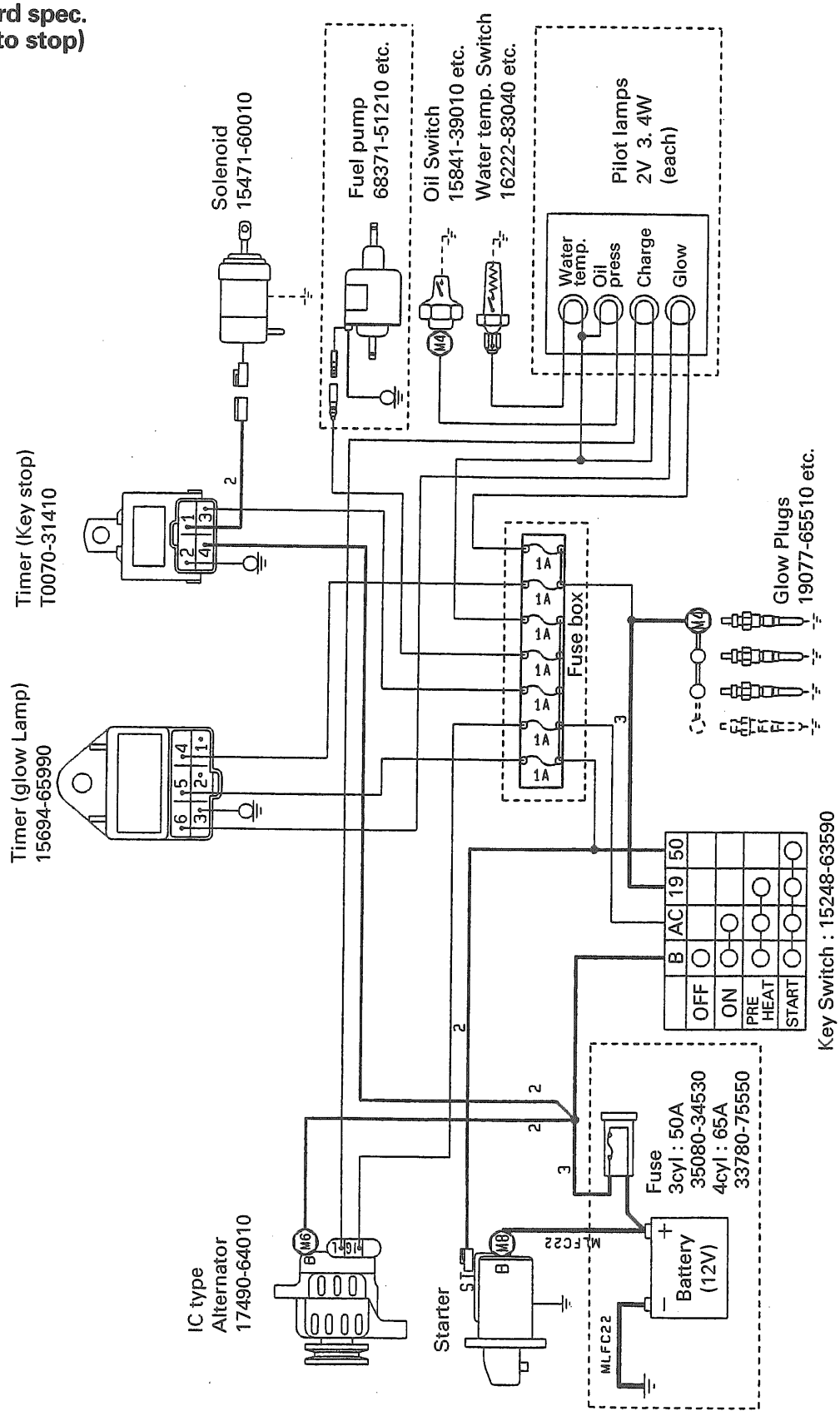
NOTE:

- Specifications are subject to change without notice.

V2003-TE	V2203-E	V2203-DI-B	F2503-T	F2803-E
Vertical, water-cooled, 4-cycle diesel				
4			5	
83 × 92.4 (3.27 × 3.64)	87 × 92.4 (3.43 × 3.64)		83 × 92.4 (3.27 × 3.64)	87 × 92.4 (3.43 × 3.64)
1999 (121.99)	2197 (134.07)		2499 (152.49)	2746 (167.57)
Spherical Type (E-TVCS)		Direct injection type	Spherical Type (E-TVCS)	
41.8 / 2800 (56.0 / 2800)	34.3 / 2800 (46.0 / 2800)		52.2 / 2800 (70.0 / 2800)	42.9 / 2800 (57.5 / 2800)
36.3 / 2800 (48.6 / 2800)	29.8 / 2800 (40.0 / 2800)		45.5 / 2800 (61.0 / 2800)	37.3 / 2800 (50.0 / 2800)
3000		3050	3000	
750 to 850	700 to 750	850 to 900	700 to 750	
1-3-4-2			1-3-5-4-2	
Counter-clockwise (viewed from flywheel side)				
Bosch type mini pump				
13.73 Mpa (140 kgf/cm^2, 1991 psi)		22.75 MPa (232 kgf/cm^2, 3300 psi)	13.73 MPa (140 kgf/cm^2, 1991 psi)	
18°				
22	23	19	23	
Diesel fuel oil No.2-D				
above CD grade				
667.1×520×678 (26.26×20.47×26.69)	652.1 × 502.5 × 678.2 (25.67 × 19.78 × 26.70)		779 × 520 × 739 (30.7 × 20.5 × 29.1)	779.2×502.5×739.2 (30.68×19.78×20.10)
186 (410.1)	180 (397)		227 (500.4)	223 (492)
Cell starter (with glow plug)				
12V 1.4 kW		12V 2.0 kW	12V 1.4 kW	
12V 480 W	12 V 420 W			
12V, 100 to 120AH				

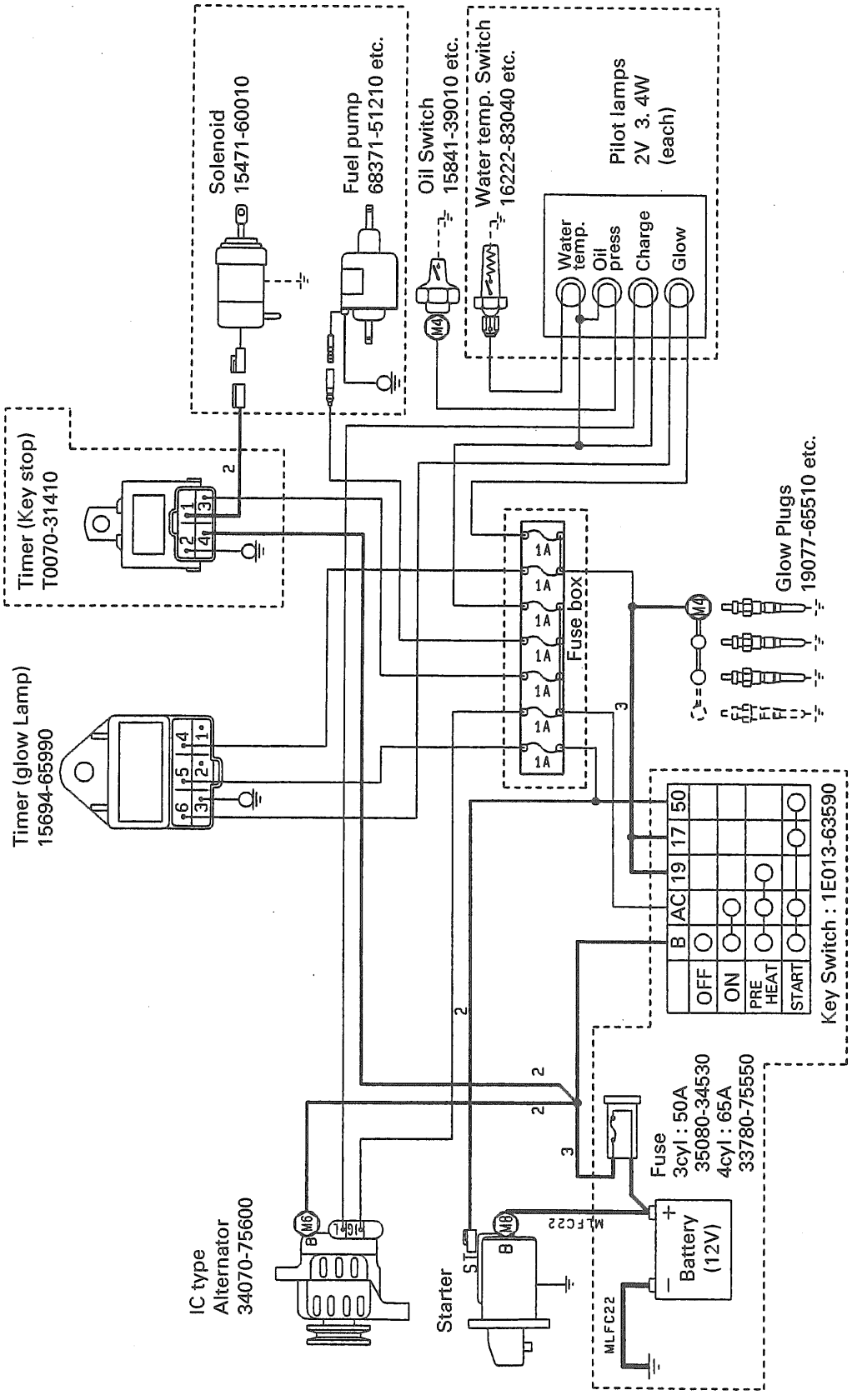
WIRING DIAGRAMS

EC standard spec.
(Energize to stop)



★ The parts boxed in [ ] are reference. NOT equipped for standard engine spec.
★ Non wire dia. is 0. 8~1. 25mm².

KTC/SAE standard spec.
(Energize to stop)



★ The parts boxed in [ ] are reference. NOT equipped for standard engine spec.
★ Non wire dia. is 0. 8~1. 25mm².

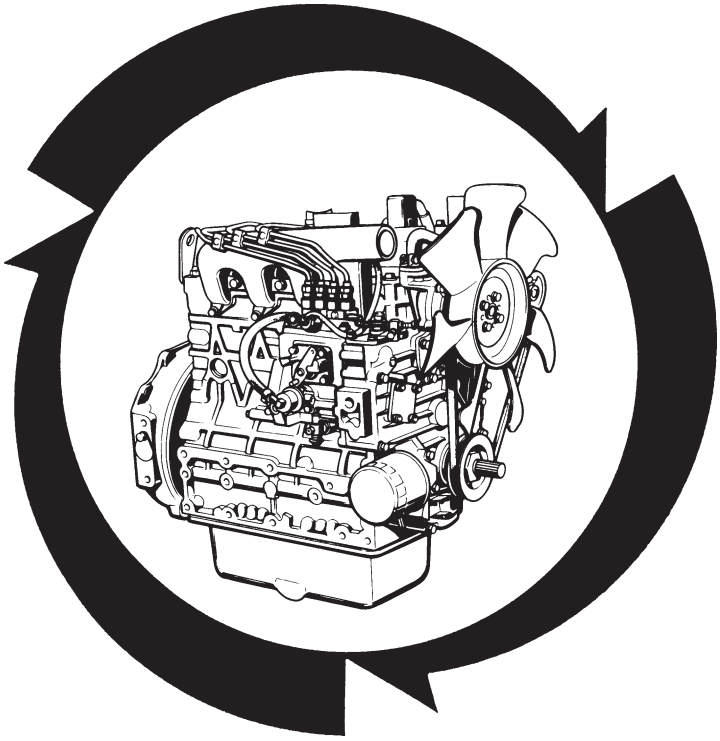
ILLUSTRATED PARTS LIST
LISTE DES PIECES
STÜCK LISTE

KUBOTA

MODEL
MODELE
MODELL

V2203-E2B-SBS.NZ-1

DIESEL ENGINE
MOTEUR DIESEL
DIESEL MOTOREN



Kubota

978P8-61521
OCT.
OCTOBRE 2004
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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.

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.

ACHTUNG

Die vorliegende Stückliste ist zur Verwendung der folgenden Fälle aufzubewahren:

1. Bei Bestellung der Teile anhand dieser Liste die Kennzahl und die Bezeichnung der Teile feststellen.
2. Bei Reparatur auf die Figur in der Stückliste Bezug nehmen.
3. Änderungen dieser Bestandteilliste vorbehalten.

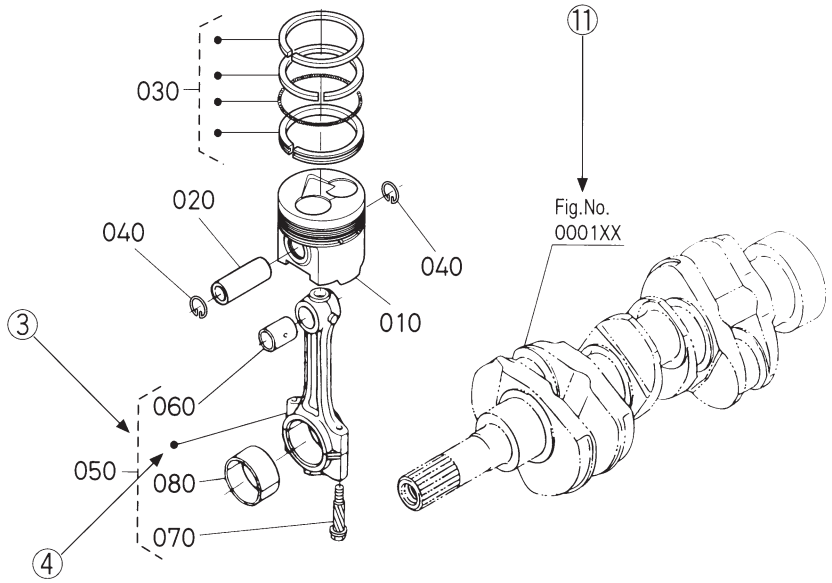
MODEL MODELE MODELL	CODE No. No. DE CODE CODE-Nr.
V2203-E2B-SBS.NZ-1	1G975-72000

INSTRUCTIONS
INSTRUCTION
ERKLÄRUNG

① → 0102 PISTON AND CRANKSHAFT
PISTON ET VILEBREQUIN
KOLBEN UND KURBELWELLE

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	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15800-0000-0	PISTON	PISTON	KOLBEN	1 <=15000	1 <=15000		〔Example—1〕
010	15800-0000-2	PISTON	PISTON	KOLBEN	1 >=15001	1 >=15001	←	〔Exemple—1〕
020	15800-1000-0	PIN,PISTON	AXE DE PISTON	KOLBENBOLZEN	1 <=15000	1 <=15000		〔Beispiel—1〕
020	15800-1000-2	PIN,PISTON	AXE DE PISTON	KOLBENBOLZEN	1 >=15001	1 >=15001	≠	〔Example—2〕
030	15800-2000-0	ASSY PISTON RING	ENS.JEU DE SEGMENTS	KOLBENRINGE	1 <=15000	1 <=15000		〔Exemple—2〕
030	15830-2000-0	ASSY PISTON RING	ENS.JEU DE SEGMENTS	KOLBENRINGE	1 >=15001	1 >=15001	↔	〔Beispiel—2〕
								〔Example—3〕
								〔Exemple—3〕
								〔Beispiel—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.

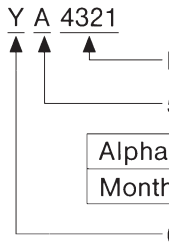
⑥ Model name ..... The name of the basic model is indicated in this column. Other applicable models are indicated on the "REMARKS" column ⑨.

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

Engine Serial No. .. Old Serial No.

654321 ... 6 digits all in numerals.

New Serial No.



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

Alphabetical letter or numerals	W	X	Y	1	2	3	4	5	6	7	8	9	A	B	C
Year	'98	'99	2000	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12

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. The following symbols and abbreviations are used throughout this book.
29＊12.00-15 ... Tire size sq.m .... m^2 sq.mm .... mm^2
cu.m .... m^3 cu.mm ... mm^3 D ... Diameter L .... Length

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.

⑪ Fig. No. ..... Indicates the numbers of figures for the parts that are shown in virtual images.
(virtual images) A figure number with XX means that there are two or more figures depending on the sister models.

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 ..... No. de série vieux

654321 ... Tous 6 chiffres en numerals.

No. de série nouveau

Y A 4321

4 chiffres inférieures en numerals.

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

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

6ème chiffre ... Lettre alphabétique ou numeral (Année de fabrication).

Lettre alphabétique ou numeral	W	X	Y	1	2	3	4	5	6	7	8	9	A	B	C
Année	'98	'99	2000	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12

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 piése et la vielle piéce 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.
Les symboles abréviations suivants sont utilisés dans l'ensemble de ce manuel.
29＊12.00-15 ... Dimension des pneus sq.m ... m^2 sq.mm ... mm^2
cu.m ... m^3 cu.mm .. mm^3 D ... Diamètre L ... Longueur

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 á 15000.
Pour certaines modèles, les expressions ci-dessus peuvent aussi être utilisées dans la rubrique des REMARQUES 1 ⑨.

⑪ No. de Fig. (images virtuelles) ..... Indique les numéros de figures pour les pièces qui sont illustrées dans les images virtuelles. Un numéro de figure avec XX signifie qu'il y a plus de deux figures selon les modèles soeurs.

① Abb. Nr. ..... Diese Nummer bezieht sich auf die jeweilige Gruppenbezeichnung.

② Spezifikationen .... (für Schwester-modelle) Die Typen und Bestimmungsorte der Schwestermodelle sind angegeben. Die Angaben beziehen sich auf die entsprechenden Seiten in diesen Handbuch.

③ Einzelteile ..... Die Einzelteile einer Baugruppe sind durch eine Klammer aus gestrichelten Linien gekennzeichnet.

④ Punkte ..... Punktierung zeigt an, daß das entsprechende Teil nicht einzeln erhältlich ist. Die gesammte Baugruppe, die dieses Teil beinhaltet muß bestellt werden. (BILD-Nr. 050).

⑤ BILD-Nr. ..... Die Teile in den Abbildungen sind mit Bezugsnummern versehen. Die Kennummer eines der abgebildeten Teile erhalten Sie, wenn Sie unter der Bezugsnummer in der Ersatzteilliste nachsehen.

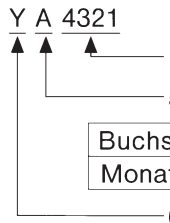
⑥ Typenbezeichnung ... In dieser Spalte wird die Bezeichnung des Grundtype aufgeführt. Weiter Modelle, die verwendet werden können werden unter "BEMERKUNGEN" in Spalte ⑨ angegeben.

⑦ S. Nr. ..... (Serien Nr.) Bezeichnet eine Gruppe Seriennummern, bei der Änderungen in der Ausführung vorgenommen wurden.

Motor-Serien-Nr. ... Alte Serien-Nr.

654321 ... Alle 6 Stellen mit Ziffern.

Neue Serien-Nr.



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

Buchstabe oder Ziffer	W	X	Y	1	2	3	4	5	6	7	8	9	A	B	C
Jahr	'98	'99	2000	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12

⑧ I. C. ..... (Austauschmöglichkeit) Bezeichnet die Austauschmöglichkeit der Teile untereinander bei einer Änderung in der Ausführung.

Beispiel- 1 ..... ← besagt, daß das alte Teil durch ein neues ersetzt werden kann, nicht jedoch umgekehrt. 15800-0000-0 bezieht sich auf die erste Serien Nr.bis S.Nr. 15000.
15800-0000-2 bezieht sich auf die erste Serien Nr.und darüber.

Beispiel- 2 ..... ≠ besagt, daß alte und neue Teile nicht austauschbar sind.
15800-1000-0 bezieht sich auf die erste Serien Nr.bis S.Nr. 15000.
15800-1000-2 bezieht sich auf S.Nr. 15001 und darüber.

Beispiel- 3 ..... ↔ besagt, daß alte und neue Teile austauschbar sind. Beiderseitig 15800-2000-0 und 15830-2000-0 bezieht sich auf die erste Serien Nr. und darüber.

⑨ BEMERKUNGEN 1 .. In dieser Spalte finden Sie weitere verwendbare Modellbezeichnungen, Abmessungen und andere besondere Angaben.
Die folgenden Symbole und Abkürzungen werden im Gesamettext des Buches benutzt : 29＊12.00-15 ..... Reifengrößen sq.m ..... m^2 sq.mm ..... mm^2
cu.m ..... m^3 cu.mm ..... mm^3 D ..... Durchmesser L ..... Länge

⑩ BEMERKUNGEN 2 .. Die folgenden Ausdrücke werden in "NOTE" für jede Gruppe verwendet.
Seriennummern von Maschinen werden wie folgt angezeigt :
〈=15000 ... Seriennummern unter 15000.
〉=15001 ..... Seriennummern über 15001.
14000 to 15000 ..... Seriennummern 14000 bis 15000.
Bei einigen Modellen können die oben genannten Ausdrücke auch in "ANMERKUNGEN 1 ⑨" verwendet werden.

⑪ Abb. Nr. ..... (virtuellen Bildern illustriert sind) Bezeichnet die Nummern der Abbildungen für die Teile, die in virtuellen Bildern illustriert sind. Ein Abbildungsnummer mit XX bedeutet, daß sich zwei oder mehre Abbildungen gemäß den Schwestermodellen befinden.

CONTENTS

[V2203-E2B-SBS.NZ-1]

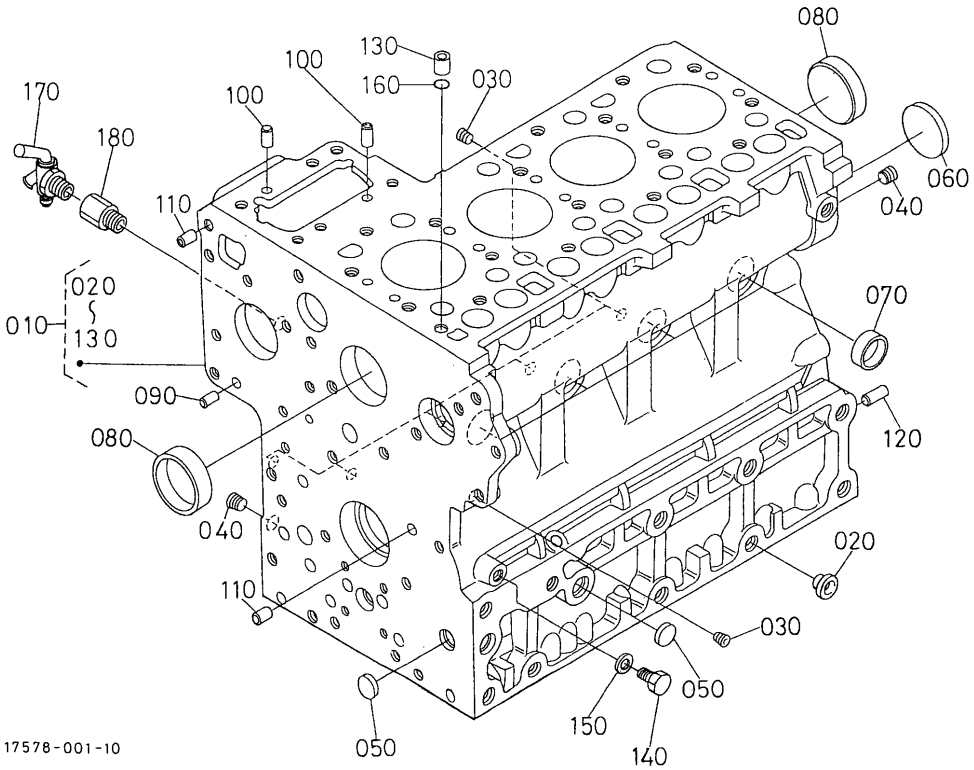
SOMMAIRE

[V2203-E2B-SBS.NZ-1]

INHALTSVERZEICHNIS

[V2203-E2B-SBS.NZ-1]

0001 CRANKCASE
BLOC MOTEUR
KURBELGEHAEUSE

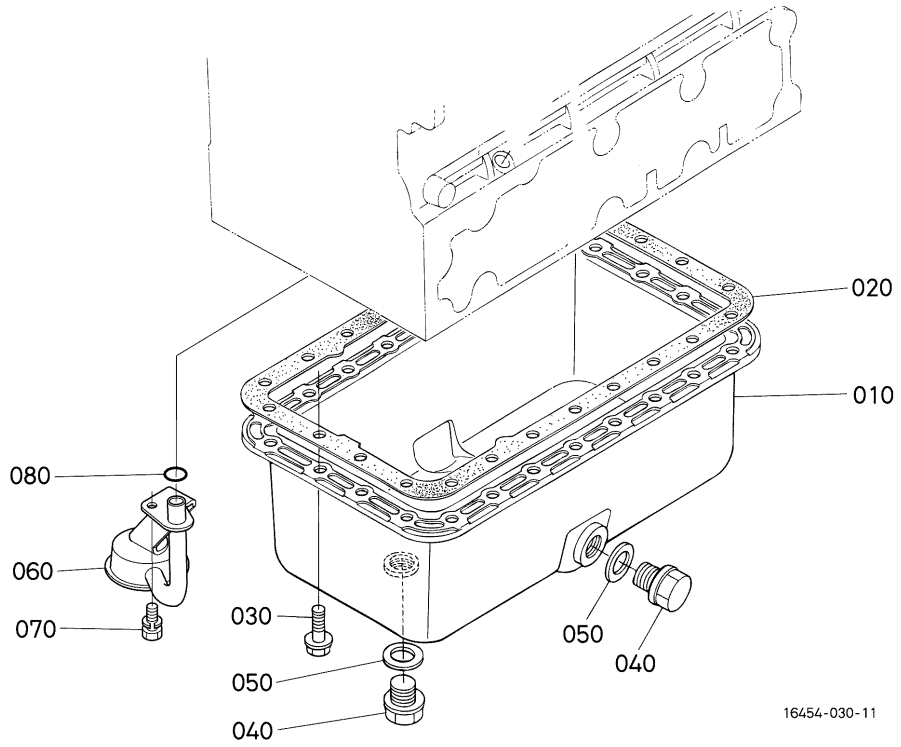


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16665-0101-4	COMP.CRANKCASE	BLOC MOTEUR COMPLET	KOMP.KURBELGEHAEUSE	1	-		
020	32210-2758-0	PLUG	BOUCHON	STOPFEN	2	-		
030	15521-9602-0	PLUG	BOUCHON	STOPFEN	6	-		
040	15521-9603-0	PLUG	BOUCHON	STOPFEN	2	-		
050	17391-9616-0	PLUG,EXPANSION	BOUCHON EXPANSIBLE	STOEPSEL,AUSDEHNUNG	3	-		
060	16271-9616-0	PLUG,EXPANSION	BOUCHON EXPANSIBLE	STOEPSEL,AUSDEHNUNG	1	-		
070	15221-0338-0	CAP,SEALING	PASTILLE	STEPSEL,ABDICHTU	6	-		
080	15221-0339-0	CAP,SEALING	PASTILLE	STEPSEL,ABDICHTU	2	-		
090	05012-00408	PIN,STRAIGHT	GOUPILLE CYLINDLIQUE	ZYLINDERSTIFT	2	-		
100	05012-00609	PIN,STRAIGHT	GOUPILLE CYLINDLIQUE	ZYLINDERSTIFT	2	-		
110	05012-00612	PIN,STRAIGHT	GOUPILLE CYLINDLIQUE	ZYLINDERSTIFT	2	-		
120	05012-01018	PIN,STRAIGHT	GOUPILLE CYLINDLIQUE	ZYLINDERSTIFT	1	-		
130	15221-3365-0	PIN,PIPE	GICLEUR	ROHRSTIFT	1	-		
140	15469-3361-0	PLUG	BOUCHON	STOPFEN	1	-		
150	15021-3366-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
160	15221-3370-0	O RING	JOINT TORIQUE	O RING	1	-		
170	15575-7310-0	COCK,DRAIN	ROBINET DE VIDANGE	ABLASSHAHN	1	-		
180	15291-7316-0	JOINT,DRAIN COCK	BOUCHON DE VIDANGE	ABLASSPROPFEN	1	-		

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

0002 OIL PAN
CARTER D'HUILE
OELWANNE

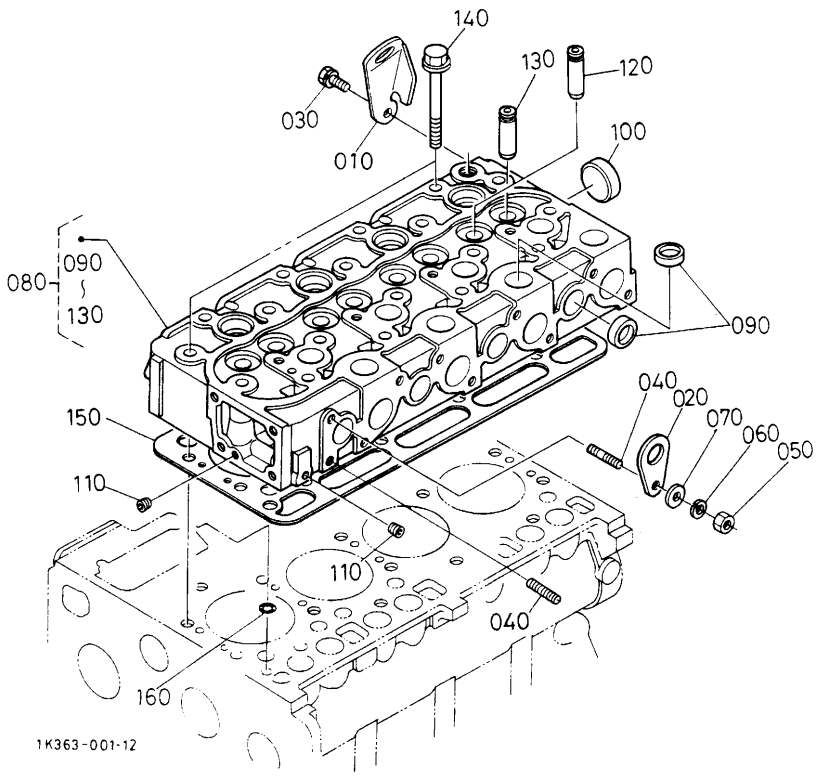


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	19077-0150-0	COMP.OIL PAN	CARTER D'HUILE COMP.	KOMP.OELWANNE	1	-		
020	1G780-0162-0	GASKET,OIL PAN	JOINT	DICHTUNG,OEL FAENGER	1	-		
030	17333-9101-3	BOLT,FLANGE	VIS DE BUTEE	FLANSCHEN-BOLZEN	24	-		
040	15707-3375-0	PLUG,DRAIN	BOUCHON DE VIDANGE	ENTLEERUNGSSTOPFEN	2	-		
050	15451-9667-0	GASKET	JOINT	DICHTUNGSPLATTE	2	-		
060	1G850-3211-0	FILTER,OIL	FILTRE D'HUILE	OELFILTER	1	-		
070	01123-60816	BOLT	VIS	BOLZEN	1	-		
080	04817-00160	O RING	JOINT TORIQUE	O RING	1	-		

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

0003 CYLINDER HEAD
CULASSE
ZYLINDERKOPF

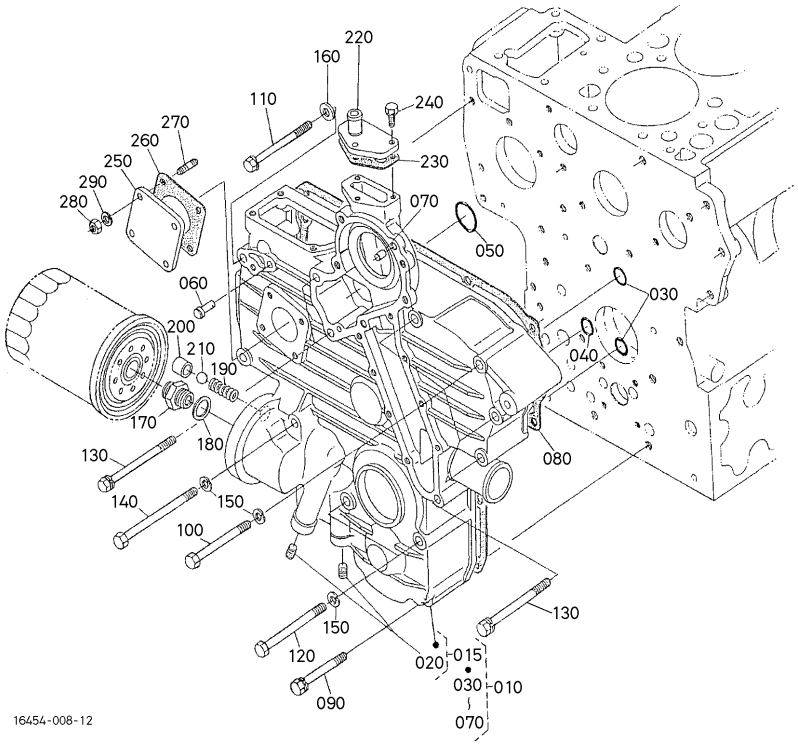


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16415-0175-2	HOOK,ENGINE	ANNEAU DE LEVAGE	MOTOR-ANKERHAKEN	1	-		
020	15221-0175-0	HOOK,ENGINE	ANNEAU DE LEVAGE	MOTOR-ANKERHAKEN	1	-		
030	01123-60816	BOLT	VIS	BOLZEN	1	-		
040	15221-9153-0	STUD	GOUJON	STEHBOLZEN	2	-		
050	02156-50080	NUT	ECROU	MUTTER	1	-		
060	04512-60080	WASHER,SPRING	RONDELLE GROWER	FEDERRING	1	-		
070	04012-50080	WASHER,PLAIN	RONDELLE FREIN	SCHEIBE	1	-		
080	1G780-0304-2	COMP.CYLINDER HEAD	CULASSE COMPLET	KOMP.ZYLINDERKOPF	1 <=4L1371	-		
080	1G780-0304-3	COMP.CYLINDER HEAD	CULASSE COMPLET	KOMP.ZYLINDERKOPF	1 >=4N0001	-	←	
090	15221-0337-0	CAP,SEALING	PASTILLE	STEPSEL,ABDICHTU	12	-		
100	15221-0349-0	CAP,SEALING	PASTILLE	STEPSEL,ABDICHTU	1	-		
110	15261-9601-0	PLUG	BOUCHON	STOPFEN	2	-		
120	17321-1358-0	GUIDE,INLET VALVE	GUIDE SOUP.D'ADMISS.	EINLASSVENTILFUHRUNG	4	-		
130	17321-1356-0	GUIDE,EXHAUST VALVE	GUIDE SOUP.D'ECHAP.	AUSLASSVENTILFUHRUNG	4	-		
140	19013-0345-0	BOLT,CYLINDER HEAD	VIS DE CYLINDRE	ZYLINDERKOPFSCHRAUBE	18	-		
150	19077-0331-0	GASKET,CYLINDER HEAD	JOINT DE CULASSE	DICHTUNG,ZYLINDERKOP	1	-		
160	15221-3370-0	O RING	JOINT TORIQUE	O RING	1	-		

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

0004 GEAR CASE
CARTER DE DISTRIBUTION
GETRIEBEGEHAEUSE

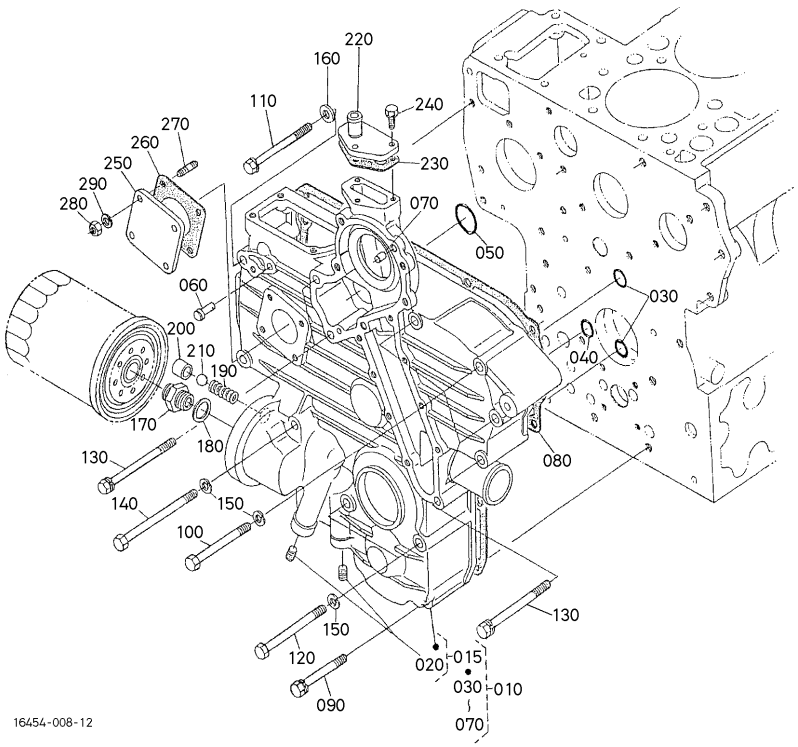


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	17112-0401-0	ASSY CASE,GEAR	ENS.CARTER DE DISTR.	GRP.GETRIEBEGEHAEUSE	1	-		
015	16343-0402-0	COMP.CASE,GEAR	CARTER DISTR.COMP.	KMP.GETRIEBEGEHAEUSE	1	-		
020	16851-9601-0	PLUG	BOUCHON	STOPFEN	2	-		
030	04817-00150	O RING	JOINT TORIQUE	O RING	2	-		
040	04817-00200	O RING	JOINT TORIQUE	O RING	1	-		
050	04817-00360	O RING	JOINT TORIQUE	O RING	1	-		
060	15221-5628-0	PIN,START SPRING	GOUPILLE DU RESSORT	STARTFEDERSTIFT	1	-		
070	05012-00612	PIN,STRAIGHT	GOUPILLE CYLINDLIQUE	ZYLINDERSTIFT	2	-		
080	15766-0413-2	GASKET,GEAR CASE	JOINT	DICHTUNGGETRIEBEGEH.	1	-		
090	01123-50860	BOLT	VIS	BOLZEN	2	-		
100	01153-50870	BOLT	VIS	BOLZEN	5	-		
110	17367-9101-0	BOLT	VIS	BOLZEN	1	-		
120	01153-50880	BOLT	VIS	BOLZEN	2	-		
130	17367-9102-0	BOLT	VIS	BOLZEN	3	-		
140	01153-50895	BOLT	VIS	BOLZEN	2	-		
150	04512-60080	WASHER,SPRING	RONDELLE GROWER	FEDERRING	9	-		
160	04012-50080	WASHER,PLAIN	RONDELLE FREIN	SCHEIBE	1	-		
170	1A021-3229-0	JOINT,PIPE	RACCORD DE TUYAU	VERBINDUNGSSTUECK	1 <=4N1473	-		
170	1A021-3229-0	JOINT,PIPE	RACCORD DE TUYAU	VERBINDUNGSSTUECK	1 >=400001	-	↔	
180	1G790-3230-2	COLLAR,VALVE SEAT	COLLIER	VENTILSITZRING	1	-		
190	15241-3695-0	SPRING	RESSORT	FEDER	1	-		
200	15521-3693-0	SEAT,VALVE	SIEGE DE SOUPAPE	SITZ,VENTIL	1	-		
210	07715-03213	BALL	BILLE	KUGEL	1	-		
220	15521-7332-0	FLANGE,WATER RETURN	BRIDE RETOUR D'EAU	FLANSCH	1	-		
230	1A021-7333-0	GASKET,RETURN FLANGE	JOINT	DICHTUNGSPLATTE	1	-		
240	01023-50620	BOLT	VIS	BOLZEN	3	-		
250	15223-8334-0	COVER	COUVERCLE	DECKEL	1	-		
260	1G751-8813-0	GASKET,HOUR METER	JOINT	DICHTUNG	1	-		
270	15221-8821-0	STUD	GOUJON	STEHBOLZEN	4	-		
280	02056-50060	NUT	ECROU	MUTTER	4	-		

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

0004 GEAR CASE
CARTER DE DISTRIBUTION
GETRIEBEGEHAEUSE

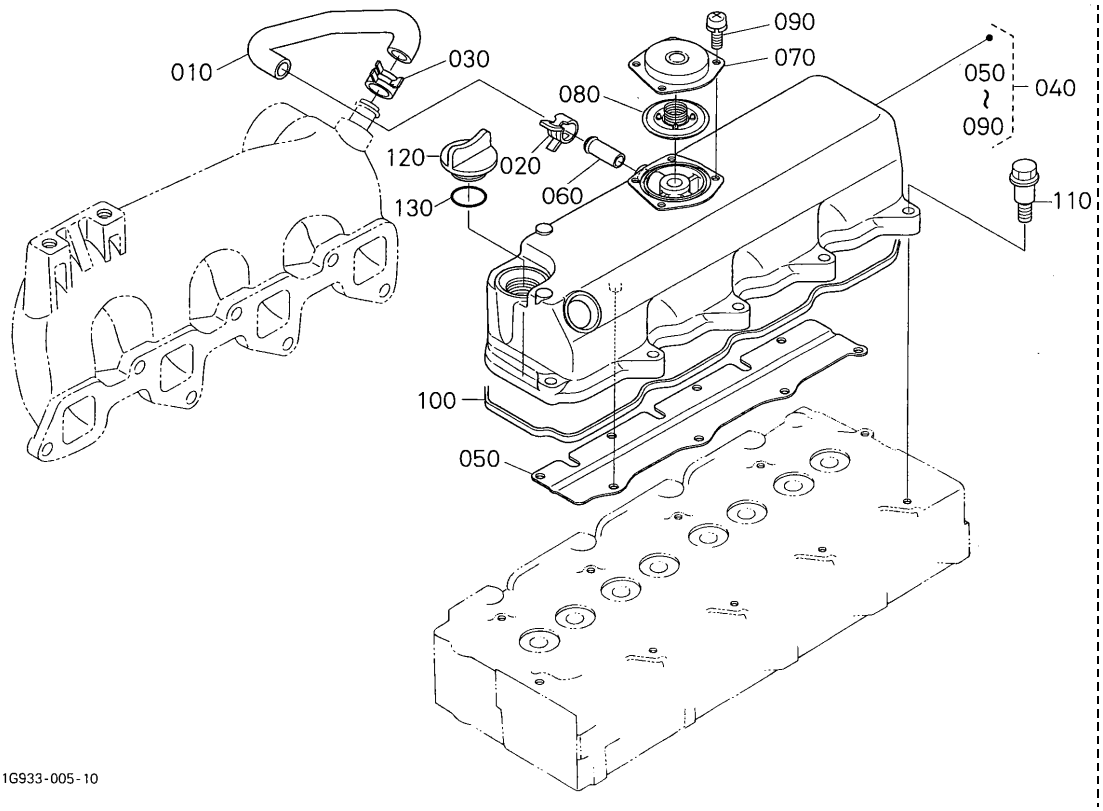


A:V2203-E2B-SBS.NZ-1

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
290	04512-60060	WASHER,SPRING	RONDELLE GROWER	FEDERRING	4	-		

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

0005 HEAD COVER
COUVRE-CULASSE
ZYLINDERKOPF-DECKEL

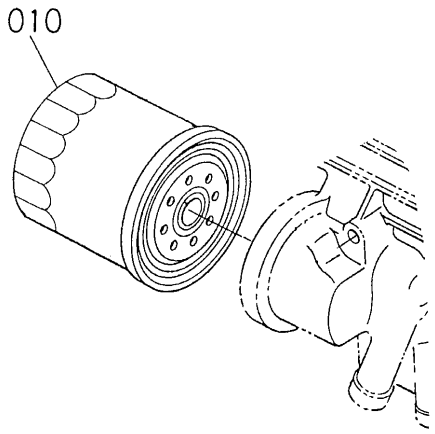


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	1G932-0551-0	TUBE,BREATHER	TUYAU DE REINFLARD	ENTLUFTUNGSROHR	1	-		
020	09318-88155	CLAMP,HOSE	COLLIER DE DURITE	SCHLAUCHBINDER	1	-		
030	09318-88200	CLAMP,HOSE	COLLIER DE DURITE	SCHLAUCHBINDER	1	-		
040	1G790-1450-3	ASSY COVER,CYL.HEAD	ENS.COUVERCLE	ZYLINDERKOPFHAUBE	1 <=4J1225	-		
040	1G790-1450-4	ASSY COVER,CYL.HEAD	ENS.COUVERCLE	ZYLINDERKOPFHAUBE	1 >=4L0001	-	←	
050	1G911-0537-0	SHIELD,BREATHER	BOUCLIER DE HUILE	OELSCHILD,ENTLUEFTER	1	-		
060	17331-7334-2	PIPE,WATER RETURN	TUYAU RETOUR D'EAU	WASSERROHR	1	-		
070	1G911-0512-0	COVER,BREATHER	COUVERCLE ASPIRATEUR	ENTLUEFTERDECKEL	1 <=4N1473	-		
070	1G801-0512-0	COVER,BREATHER	COUVERCLE ASPIRATEUR	ENTLUEFTERDECKEL	1 >=400001	-	↔	
080	1G911-0520-2	COMP.VALVE,BREATHER	ENS.ROBINET DE REIN.	GRP.HAHNENTLUFTUNGS	1	-		
090	03024-50510	SCREW,WITH WASHER	VIS	SCHRAUBE	4	-		
100	1G911-1452-0	GASKET,HEAD COVER	JOINT COUVRE-CULASSE	DICHTUNG,KOPFDECKEL	1	-		
110	1G911-9102-2	BOLT	VIS	BOLZEN	10	-		
120	15221-3314-0	PLUG,OIL FILLER	BOUCHON,REMPLIS.H/L	OELEINFUELLSSTOPFEN	1	-		
130	04817-50300	O RING	JOINT TORIQUE	O RING	1	-		

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

0006 OIL FILTER
FILTRE D'HUILE
OELFILTER



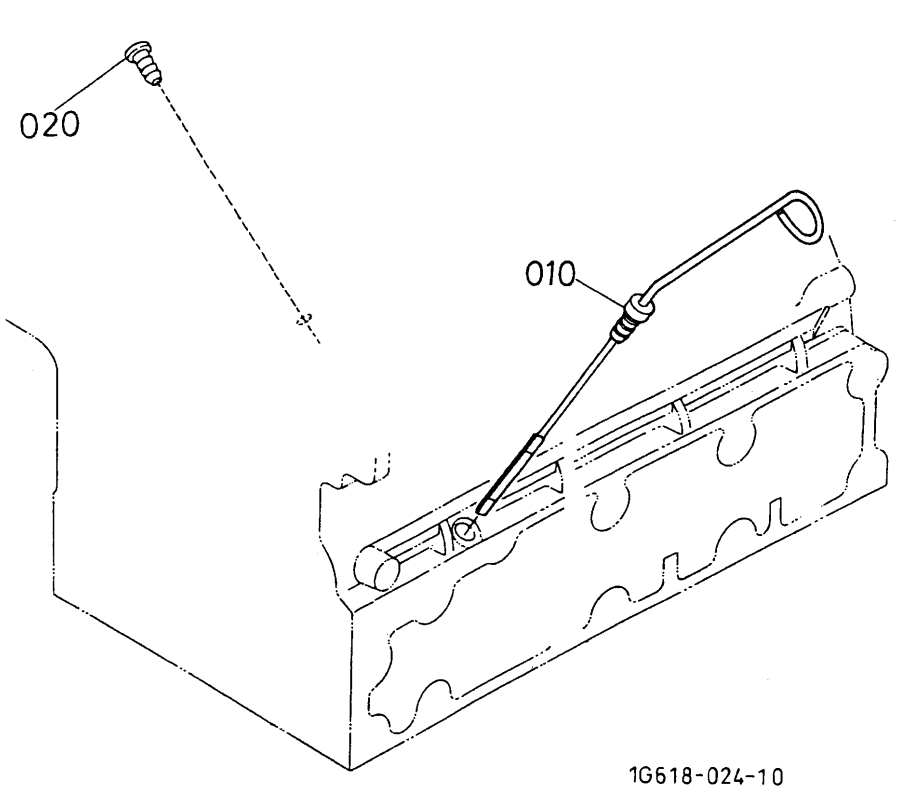
16641-004-10

A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16414-3243-0	CARTRIDGE,OIL FILTER	CARTOUCHE FILTRANTE	OELFILTERPATRONE	1	–		

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

0007 DIPSTICK
JAUGE D'HUILE
OELMESSSTAB

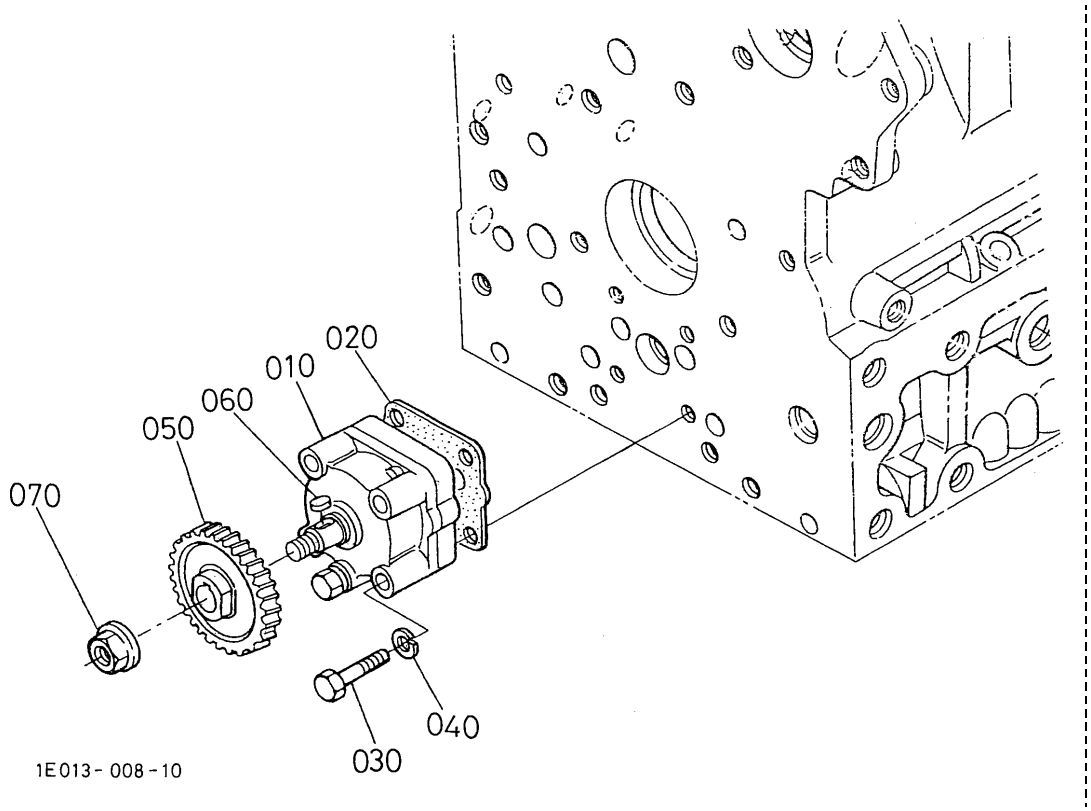


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	19077-3641-0	GAUGE,OIL	JAUGE D'HUILE	OELMESSSTAB	1	-		
020	16414-3364-0	PLUG,OIL GAUGE	BOUCHON DE JAUGE	STOPFENOELMESSSTAB	1	-		

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

0008 OIL PUMP
POMPE D'HUILE
OEL PUMPE

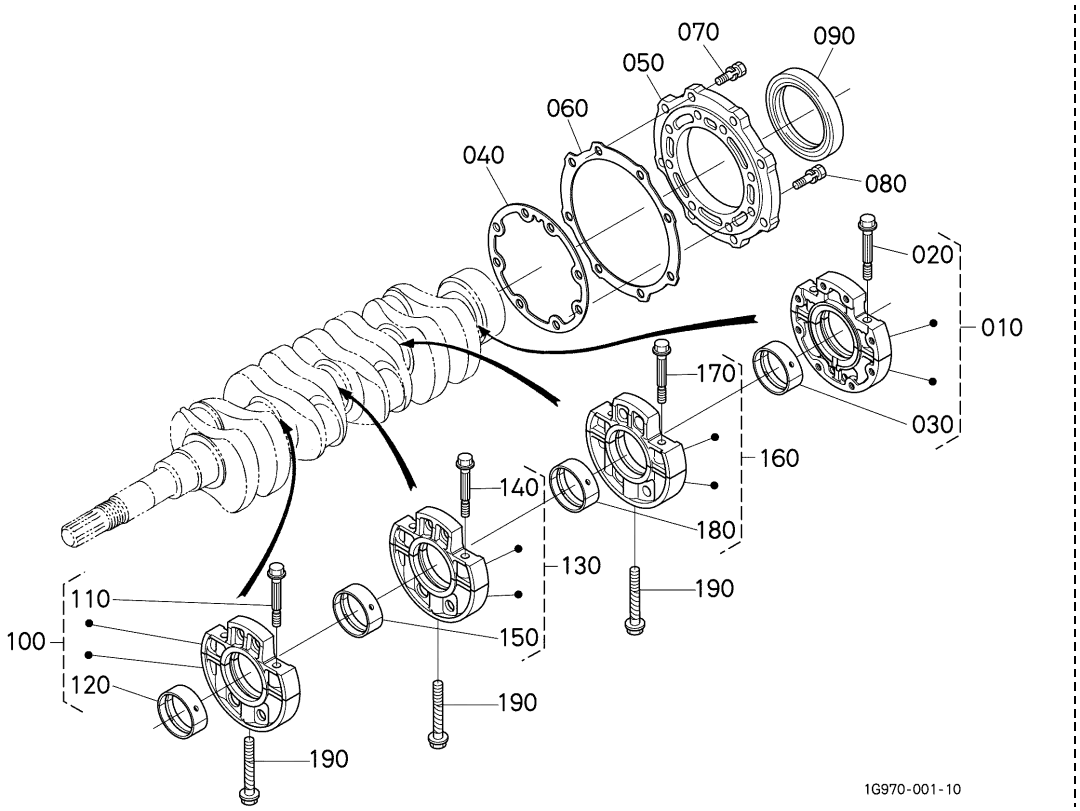


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15471-3501-3	ASSY PUMP,OIL	ENS.POMPE A HUILE	GRP.OELPUMPE	1	-		
020	1A021-3515-0	GASKET,OIL PUMP	JOINT	DICHTUNGSPLATTE	1	-		
030	01053-50650	BOLT	VIS	BOLZEN	4	-		
040	04512-60060	WASHER,SPRING	RONDELLE GROWER	FEDERRING	4	-		
050	19202-3566-0	GEAR,OIL PUMP DRIVE	PIGNON ENTRAIN.POMPE	GETRIEBE	1	-		
060	05712-00410	KEY,FEATHER	CLAVETTE	KEIL	1	-		
070	15221-3568-2	NUT,FLANGE	ECROU A EMBASE	FLANSCHEN-MUTTER	1	-		

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

0100 MAIN BEARING CASE
PALIERS DE VILEBREQUIN
HAUPTLAGERGEHAEUSE

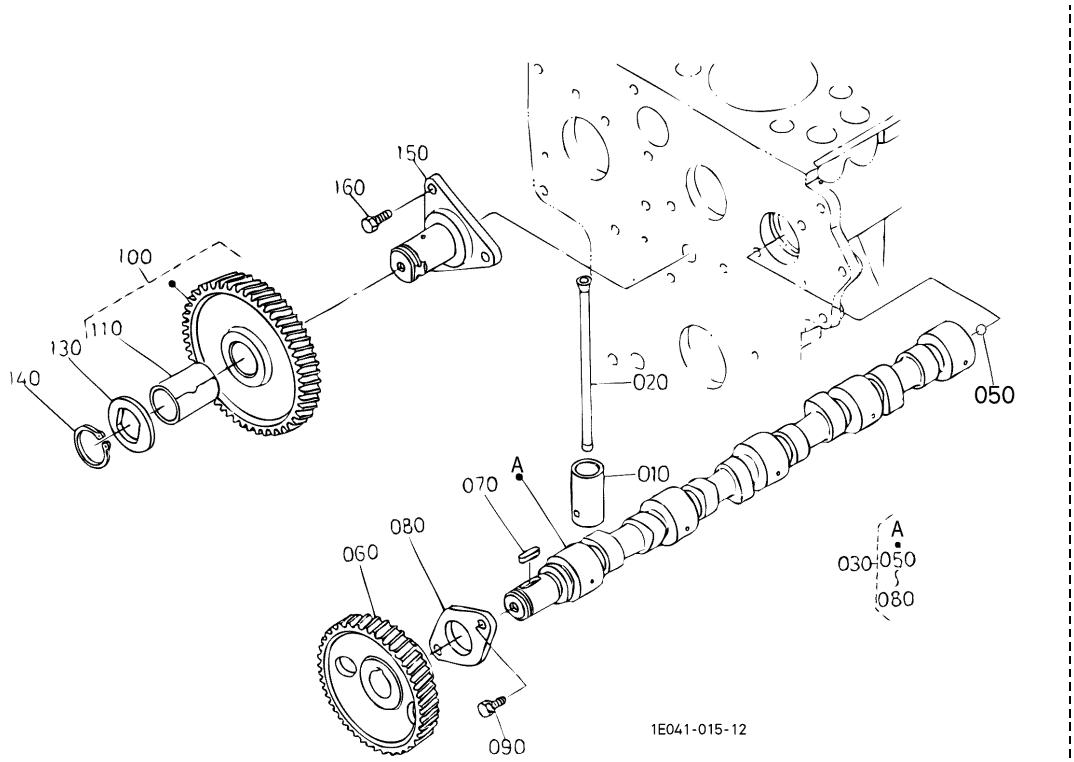


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	1A041-0709-3	ASSY BRG.CASE,WHEEL	ENS.PALIER VILEBREQ.	GRP.LAGERGEHAEUSE	1	-		
020	1A091-0454-0	BOLT,BEARING CASE	VIS	BOLZEN,LAGERKASTEN	2	-		
030	1A091-2348-0	METAL,CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		STD SET
030	1A091-2393-0	METAL,CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		-0.20mm SET
030	1A091-2394-0	METAL,CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		-0.40mm SET
040	1A091-0436-2	GASKET,BEARING CASE	JOINT CART.DE RLMT	DICHTUNG,LAGER	1	-		
050	1G851-0481-0	COVER,BEARING CASE	PORTE JOINT	DECKEL,LAGERKASTEN	1	-		
060	1A091-0482-0	GASKET,CASE COVER	JOINT DE CARTER FOU	DICHTUNG GEHAEUSEDEC	1	-		
070	01123-50825	BOLT	VIS	BOLZEN	8	-		
080	01123-50828	BOLT	VIS	BOLZEN	8	-		
090	1G911-0446-0	SEAL,OIL	BAGUE JOINT	DELDICHTUNGSRING	1	-		
100	1A091-0704-3	ASSY BRG.CASE,MAIN	ENS.PALIER VILEBREQ.	GRP.LAGERGEHAEUSE	1	-		
110	1A091-0454-0	BOLT,BEARING CASE	VIS	BOLZEN,LAGERKASTEN	2	-		
120	1A091-2348-0	METAL,CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		STD SET
120	1A091-2393-0	METAL,CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		-0.20mm SET
120	1A091-2394-0	METAL,CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		-0.40mm SET
130	1A091-0705-3	ASSY BRG.CASE,MAIN	ENS.PALIER VILEBREQ.	GRP.LAGERGEHAEUSE	1	-		
140	1A091-0454-0	BOLT,BEARING CASE	VIS	BOLZEN,LAGERKASTEN	2	-		
150	1A091-2348-0	METAL,CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		STD SET
150	1A091-2393-0	METAL,CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		-0.20mm SET
150	1A091-2394-0	METAL,CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		-0.40mm SET
160	1A091-0706-3	ASSY BRG.CASE,MAIN	ENS.PALIER VILEBREQ.	GRP.LAGERGEHAEUSE	1	-		
170	1A091-0454-0	BOLT,BEARING CASE	VIS	BOLZEN,LAGERKASTEN	2	-		
180	1A091-2348-0	METAL,CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		STD SET
180	1A091-2393-0	METAL,CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		-0.20mm SET
180	1A091-2394-0	METAL,CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		-0.40mm SET
190	15601-0456-0	BOLT,BEARING CASE	VIS DE VILEBREQUIN	BOLZEN, LAGERKASTEN	3	-		

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

0101 CAMSHAFT AND IDLE GEAR SHAFT
ARBRE A CAMES ET ARBRE DE PIGNON DE RALENTI
NOCKENWELLE UND FREILAUFGETRIEBEWELLE

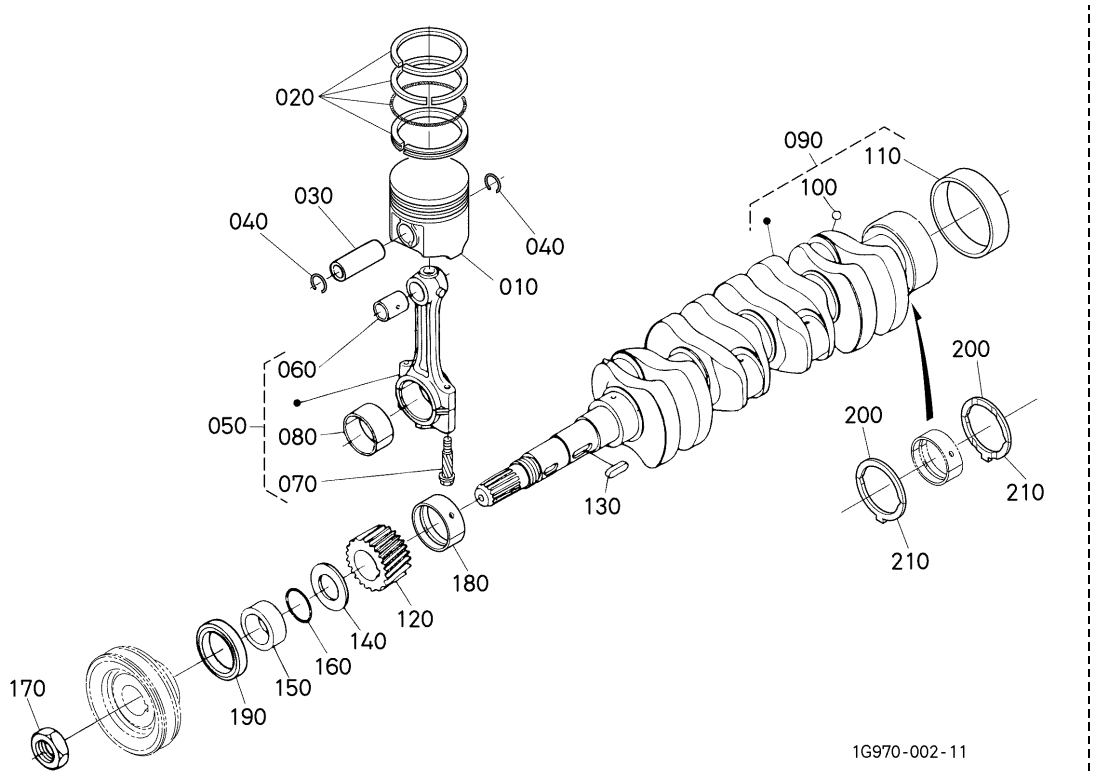


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15601-1555-0	TAPPET	POUSSOIR	STOSSEL	8	-		
020	19013-1511-0	PUSH ROD	TIGE DE POUSSOIR	STOSSELSTANGE	8	-		
030	17343-1601-0	ASSY CAMSHAFT	ENS.ARBRE A CAMES	GRP.NOCKENWELLE	1	-		
040	----	BLANK	BLANC	LEERE SPALTE	-	-		
050	07715-00401	BALL	BILLE	KUGEL	1	-		
060	15521-1651-5	GEAR,CAM	PIGNON	ZAHNRAD	1	-		
070	05712-00720	KEY,FEATHER	CLAVETTE	KEIL	1	-		
080	15221-1627-0	STOPPER,CAMSHAFT	BOUCHON ARBRE A CAME	NOCKENWELLESPERRPLA.	1	-		
090	01123-50818	BOLT	VIS	BOLZEN	2	-		
100	1G791-2401-0	COMP.GEAR,IDLE	PIGNON FOU COMP.	KOMP.LEERLAUFGETRIEB	1	-		
110	17331-2498-0	BUSH,IDLE GEAR	BAGUE DU PIGNON	BUCHSE,LEERLAUFGETR.	1	-		
120	----	BLANK	BLANC	LEERE SPALTE	-	-		
130	1A021-2437-0	COLLAR	COLLIER	HUELSE	1	-		
140	15451-9540-0	CIR CLIP,EXTERNAL	CIRCLIP	SPRENGRING,AUSSEN	1	-		
150	1A021-2425-0	SHAFT,IDLE GEAR	ARBRE DE PIGNON FOU	WELLE,FREILAUFGETR.	1	-		
160	01123-50818	BOLT	VIS	BOLZEN	3	-		

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

0102 PISTON AND CRANKSHAFT
PISTON ET VILEBREQUIN
KOLBEN UND KURBELWELLE

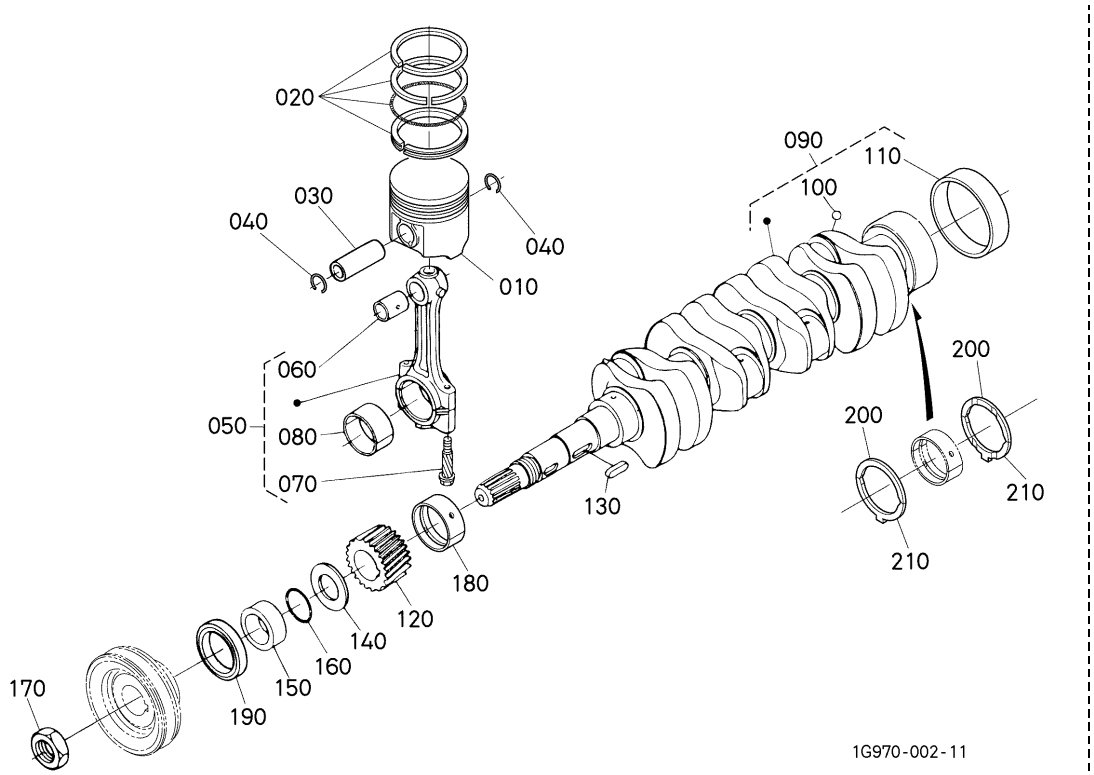


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16423-2111-0	PISTON	PISTON	KOLBEN	4 <=4N1473	-		STD
010	16423-2111-2	PISTON	PISTON	KOLBEN	4 >=4Q0001	-	≠	STD
010	16423-2191-0	PISTON	PISTON	KOLBEN	4 <=4N1473	-		+0.50mm
010	16423-2191-2	PISTON	PISTON	KOLBEN	4 >=4Q0001	-	≠	+0.50mm
020	17331-2105-0	ASSY PISTON RING	ENS.SEGMENT	GRP.KOLBENRING	4	-		STD
020	17331-2109-0	ASSY PISTON RING	ENS.SEGMENT	GRP.KOLBENRING	4	-		+0.50mm
030	14901-2131-0	PIN,PISTON	AXE DE PISTON	KOLBENBOLZEN	4	-		
040	14109-2133-0	CIR CLIP,INTERNAL	CIRCLIP	SPRENGRING	8 <=4N1473	-		
040	1G279-2133-0	CIR CLIP,INTERNAL	CIRCLIP	SPRENGRING	8 >=4Q0001	-	≠	
050	17311-2201-0	ASSY CONNECTING ROD	ENS. BIELLE	GRP.PLEUELSTANGE	4	-		
060	17331-2136-0	BUSH,PISTON PIN	BAGUE DE BIELLE	BUCHSE,KOLBENSTIFT	4	-		
070	15521-2214-2	BOLT,CONNECTING ROD	VIS DE BIELLE	BOLZEN	8	-		
080	17311-2231-0	METAL,CRANKPIN	COUSSINET DE BIELLE	METALLTEIL	4	-		STD SET
080	17331-2297-0	METAL,CRANKPIN	COUSSINET DE BIELLE	METALLTEIL	4	-		-0.20mm SET
080	17331-2298-0	METAL,CRANKPIN	COUSSINET DE BIELLE	METALLTEIL	4	-		-0.40mm SET
090	16641-2301-3	COMP.CRANKSHAFT	VILEBREQUIN COMPLET	KOMP.KURBELWELLE	1	-		
100	07715-00401	BALL	BILLE	KUGEL	4	-		
110	19202-2328-0	BUSH,CRANKSHAFT	BAGUE DE VILEBREQUIN	BUCHSE,KURBELWELLE	1	-		
120	15471-2411-0	GEAR,CRANK	PIGNON	ZAHNRAD	1	-		
130	05712-00720	KEY,FEATHER	CLAVETTE	KEIL	1	-		
140	15471-2331-2	SLINGER,OIL	DEFLECTEUR D'HUILE	OELFANGRING	1	-		
150	19202-2325-0	COLLAR,CRANKSHAFT	COLLIER VILEBREQUIN	HALSRING	1	-		
160	04811-10300	O RING	JOINT TORIQUE	O RING	1	-		
170	15221-2336-0	NUT,CRANKSHAFT	ECROU DE VILEB.	MUTTER,KURBELWELLE	1	-		
180	1A091-2347-0	METAL,CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		STD
180	1A091-2391-0	METAL,CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		-0.20mm
180	1A091-2392-0	METAL,CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		-0.40mm
190	19202-0414-0	SEAL,OIL	BAGUE JOINT	OELDICHTUNGSRING	1	-		
200	1A091-2353-0	METAL,SIDE	COUSSINET DE LATERAL	METALLSEITENRING	2	-		STD
200	1A091-2395-0	METAL,SIDE	COUSSINET DE LATERAL	METALLSEITENRING	2	-		+0.20mm

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

0102 PISTON AND CRANKSHAFT
PISTON ET VILEBREQUIN
KOLBEN UND KURBELWELLE

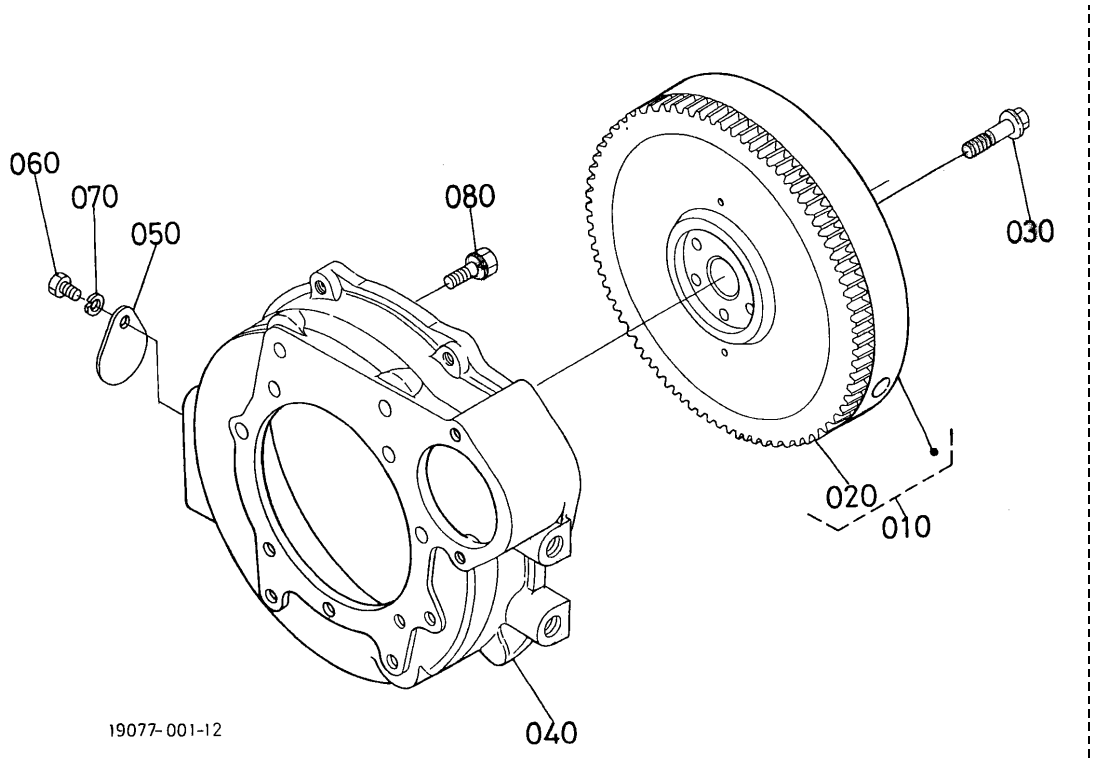


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
200	1A091-2396-0	METAL,SIDE	COUSSINET DE LATERAL	METALLSEITENRING	2	–		+0.40mm
210	1A091-2354-0	METAL,SIDE	COUSSINET DE LATERAL	METALLSEITENRING	2	–		STD
210	1A091-2397-0	METAL,SIDE	COUSSINET DE LATERAL	METALLSEITENRING	2	–		+0.20mm
210	1A091-2398-0	METAL,SIDE	COUSSINET DE LATERAL	METALLSEITENRING	2	–		+0.40mm

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

0103 FLYWHEEL
VOLANT MOTEUR
SCHWUNGRAD

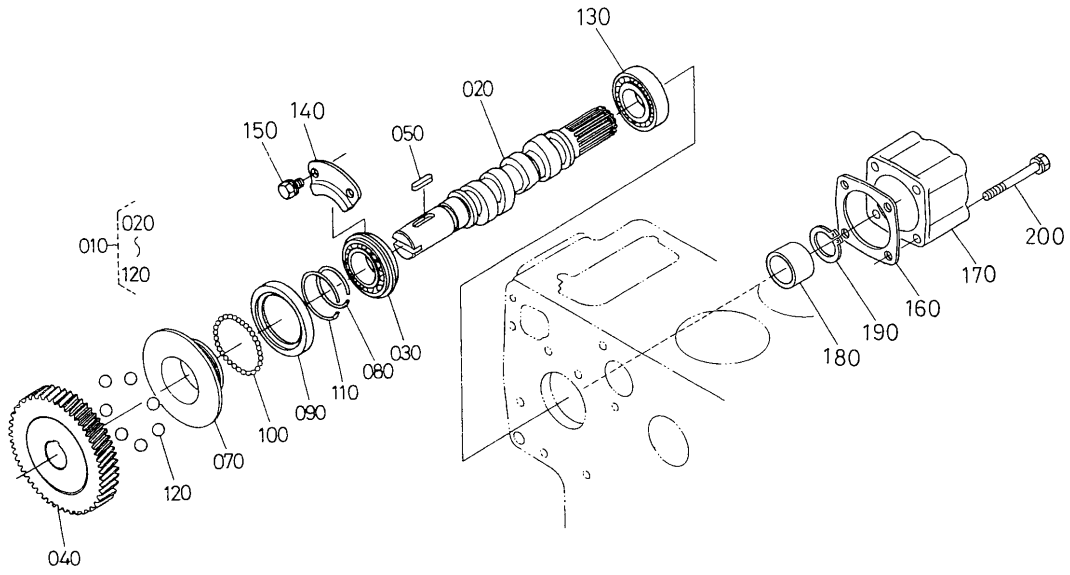


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16651-2501-0	COMP.FLYWHEEL	VOLANT MOTEUR COMP.	KOMP.SCHWUNGRAD	1	-		
020	15221-6382-0	GEAR,RING	COURONNE DE DEMARRE.	ZAHNKRANZ	1	-		
030	15321-2516-3	BOLT,FLYWHEEL	VIS DE VOLANT	BOLZEN,SCHWUNGRAD	6	-		
040	19004-0461-0	HOUSING,FLYWHEEL	CARTER VOLANT	GEHAEUSEEINHEIT	1	-		
050	31220-1417-0	COVER	COUVERCLE	DECKEL	1	-		
060	01153-50812	BOLT	VIS	BOLZEN	1	-		
070	04512-60080	WASHER,SPRING	RONDELLE GROWER	FEDERRING	1	-		
080	16427-9101-0	BOLT	VIS	BOLZEN	11	-		

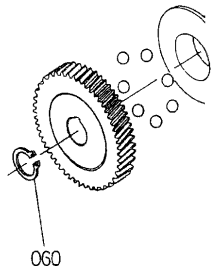
↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0105 FUEL CAMSHAFT AND GOVERNOR SHAFT
ARBRE A CAMES DE CARBURANT ET ARBRE REGULATEUR
KRAFTSTOFF-NOCKENWELLE UND ACHSE



1G610-006-12

OLD PART

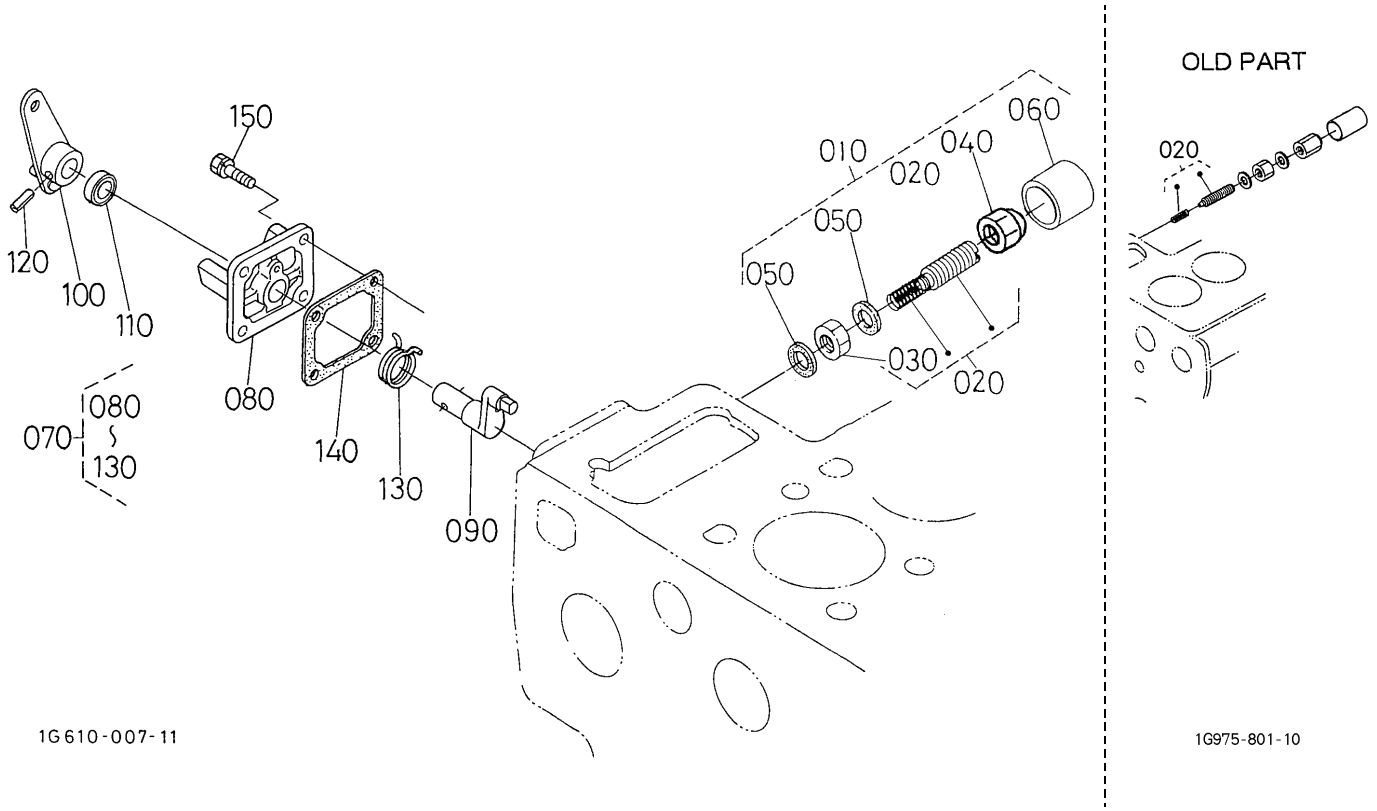


1G465-800-10

A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	19077-1602-0	ASSY CAMSHAFT,FUEL	ENS.ARBRE A CAMES	GRP.NOCKENWELLE	1	-		
020	19077-1617-0	CAMSHAFT,FUEL	ARBRE A CAMES	NOCKENWELLE	1	-		
030	08153-06205	BEARING,BALL	ROULEMENT A BILLES	KUGELLAGER	1	-		
040	16415-5115-0	GEAR,INJECTION PUMP	ENGRE.POMPE D'INJEC.	GETRIEBEZAHNRAD	1	-		
050	05712-00525	KEY,FEATHER	CLAVETTE	KEIL	1	-		
060	04612-00240	CIR CLIP,EXTERNAL	CIRCLIP	SPRENGRING,AUSSEN	1 <=4E6186	-		
070	15611-5545-0	SLEEVE,GOVERNOR	BAGUE DE REGULATEUR	REGLERMUFFE	1	-		
080	15221-5547-0	CIR-CLIP,GOV. SLEEVE	JONC D'ARRET	SPRENGRING	1	-		
090	15611-5569-0	CASE,GOVERNOR BALL	CUVETTE DE BILLES	REGLER-KUGELGEHAUSE	1	-		
100	07715-03205	BALL	BILLE	KUGEL	39	-		
110	15221-5574-0	CIR-CLIP	CIRCLIP	SPRENGRING	1	-		
120	07715-00403	BALL	BILLE	KUGEL	7	-		
130	19077-9730-0	BEARING,BALL	ROULEMENT A BILLES	KUGELLAGER	1	-		
140	15221-1632-0	STOPPER,FUEL C/SHAFT	BOUCHON ARBRE A CAM.	STOFFENNOCKENWELLE	1	-		
150	01123-60814	BOLT	VIS	BOLZEN	2	-		
160	1A051-1622-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
170	17183-1621-0	COVER,FUEL CAMSHAFT	COUV.ARBRE A CAMES	DECKEL	1	-		
180	19222-1619-0	COLLAR	COLLIER	HUELSE	1	-		
190	15471-9536-0	CIR CLIP,EXTERNAL	CIRCLIP	SPRENGRING,AUSSEN	1	-		
200	01123-50865	BOLT	VIS	BOLZEN	4	-		

0200 ENGINE STOP LEVER
LEVIER D'ARRET DU MOTEUR
MOTORABSTELLHEBEL

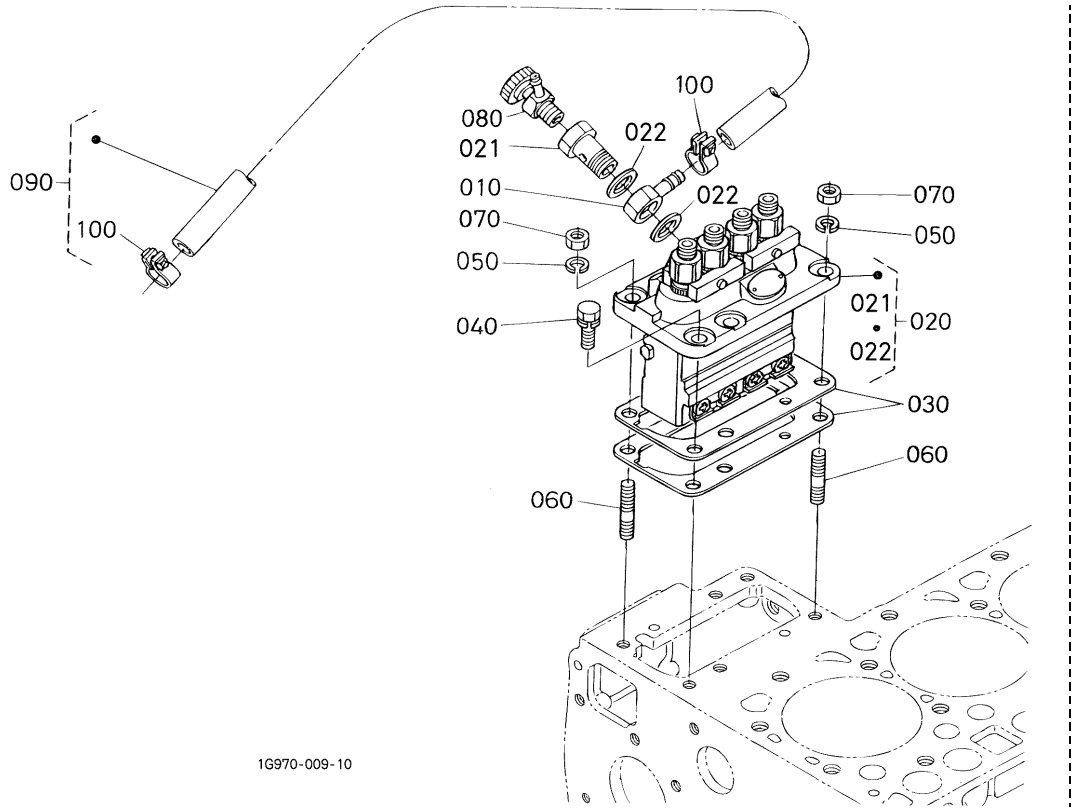


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15521-5409-0	APPARATUS, IDLING	DISPOSITIF DE RALENT	BAUTEIL, FREILAF-APPA	1	-		
020	15521-5410-0	ASSY BOLT, ADJUSTMENT	ENS. BOULON AU POINT	GRP. BOLZENFEINEINST.	1 <=4G1057	-		
020	15521-5410-3	ASSY BOLT, ADJUSTMENT	ENS. BOULON AU POINT	GRP. BOLZENFEINEINST.	1 >=4J0001	-	←	
030	15401-9201-0	NUT	ECROU	MUTTER	1	-		
040	15521-9233-0	NUT	ECROU	MUTTER	1	-		
050	15021-3366-0	GASKET	JOINT	DICHTUNGSPLATTE	2	-		
060	15521-5427-0	CAP	BOUCHON	KAPPE	1	-		
070	16604-5770-0	ASSY LEVER, ENG. STOP	LEVIER D'ARRET COMP.	MOTORABSTELLENHEBEL	1	-		
080	15471-5165-2	COVER, INJECTION PUMP	COUVERCLE	EINSPRITZPUMPEDECKEL	1	-		
090	19821-5774-0	SHAFT, LEVER	ARBRE D'ARRET MOTEUR	HEBELWELLE	1	-		
100	17331-5772-0	LEVER, ENGINE STOP	LEVIER D'ARRET	MOTOR-STOPHEBEL	1	-		
110	15471-5798-0	SEAL, OIL	BAGUE JOINT	OELDICHTUNGSRING	1	-		
120	05411-00420	PIN, SPRING	GOUPILLE-RESSORT	STIFT, FEDR	1	-		
130	15471-5792-0	SPRING, RETURN	RESSORT DE RAPPEL	RUECKZUGFEDER	1	-		
140	1A021-5166-0	GASKET, PUMP COVER	JOINT	DICHTUNGSPLATTE	1	-		
150	01023-50618	BOLT	VIS	BOLZEN	4	-		

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

0202 INJECTION PUMP
POMPE D'INJECTION
EINSPRITZENPUMPE

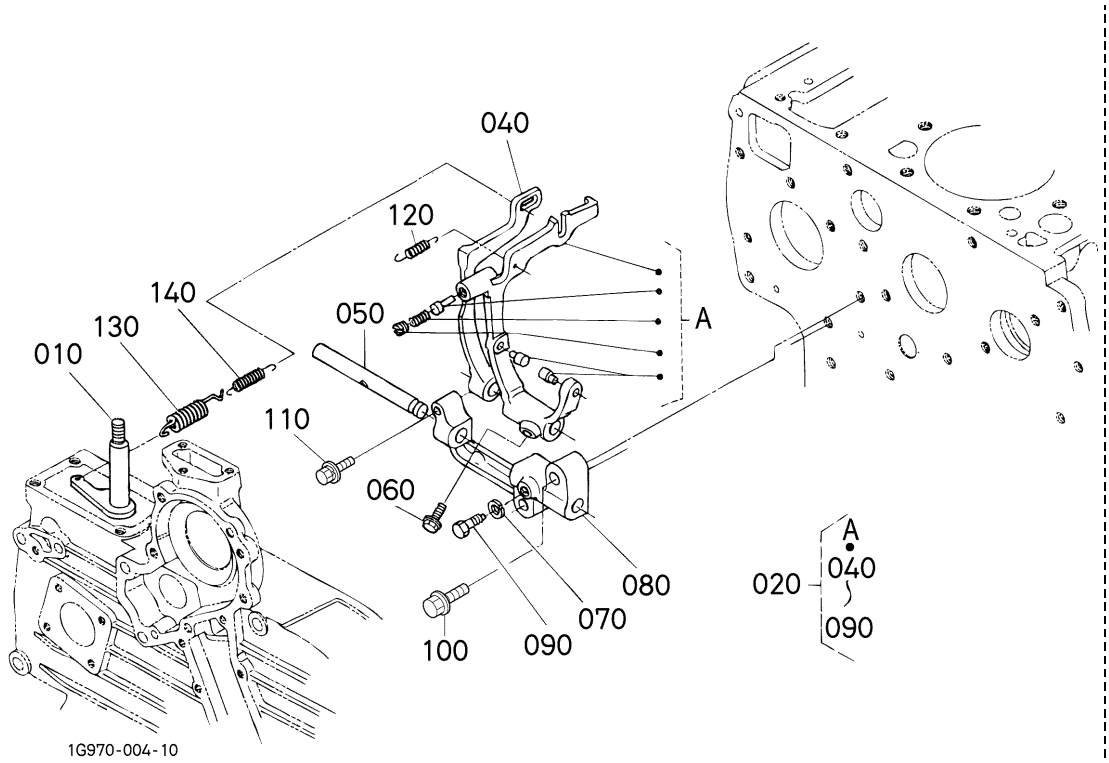


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15401-9569-0	JOINT,EYE	RACCORD	VERBINDUNGSSTUCK	1	-		
020	1G762-5101-0	ASSY PUMP,INJECTION	ENS.POMPE INJECTION	GRP.EINSPRITZPUMPE	1	-		
021	15471-5132-0	SCREW,HOLLOW	VIS	SCHRAUBE	1	-		
022	15401-9665-0	GASKET	JOINT	DICHTUNGSPLATTE	2	-		
030	19077-5209-2	SHIM,INJECTION PUMP	CALE,POMPE INJECTION	ABSTANDSSCHEIBE	1	-		0.20mm
030	19077-5211-3	SHIM,INJECTION PUMP	CALE,POMPE INJECTION	ABSTANDSSCHEIBE	1	-		0.25mm
030	19077-5212-3	SHIM,INJECTION PUMP	CALE,POMPE INJECTION	ABSTANDSSCHEIBE	1	-		0.30mm
040	01123-50822	BOLT	VIS	BOLZEN	4	-		
050	04512-60080	WASHER,SPRING	RONDELLE GROWER	FEDERRING	2	-		
060	15221-9153-0	STUD	GOUJON	STEHBOLZEN	2	-		
070	02156-50080	NUT	ECROU	MUTTER	2	-		
080	14311-6050-4	ASSY COCK,JET START	ROBINET DE PURGE	GRP.STARTDUESEHAHN	1	-		
090	14681-4201-0	ASSY PIPE,FUEL	ENS.TUYAU CARBURANT	GRP.KRAFTSTOFFROHR	1	-		
100	14301-4275-0	CLIP,PIPE	ATTACHE	ROHRKLEMME	2	-		

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

0204 GOVERNOR
REGULATEUR DE VITESSES
REGLER

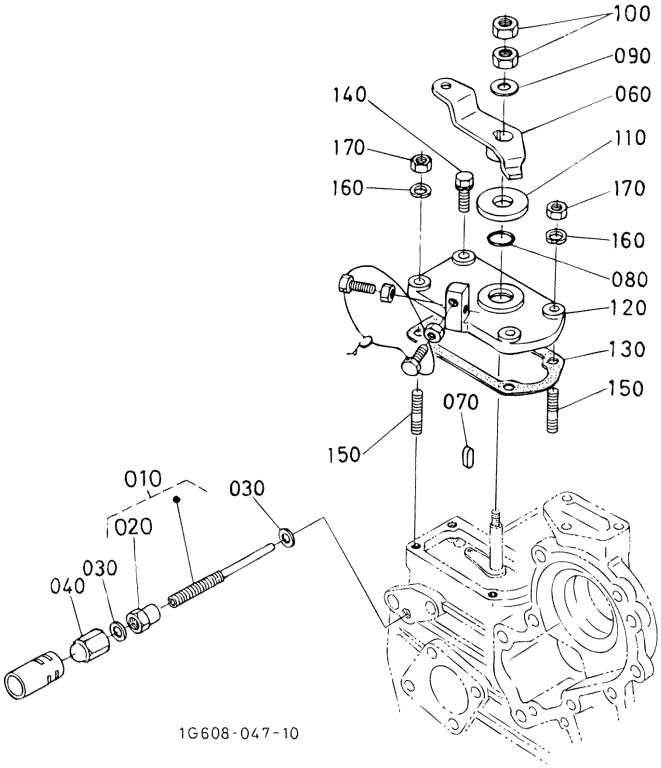


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15601-5602-0	COMP.LEVER,GOVERNOR	AXE D'ACCELERATEUR	KOMP.REGLERHEBEL	1	-		
020	19077-5605-0	ASSY LEVER,FORK	ENS.LEVIER A FOURCHE	GRP.GABELHEBEL	1	-		
030	----	BLANK	BLANC	LEERE SPALTE	-	-		
040	17331-5613-0	LEVER,FORK	LEVIER A FOURCHE	HEBEL,GABEL	1	-		
050	1G911-5615-0	SHAFT,FORK LEVER	ARBRE DE FOUR-LEVIER	GABELHEBELWELLE	1	-		
060	01754-50618	BOLT,FLANGE	VIS DE BUTEE	FLANSCHEN-BOLZEN	1	-		
070	04512-60060	WASHER,SPRING	RONDELLE GROWER	FEDERRING	1	-		
080	15221-5623-0	HOLDER,FORK LEVER	SUPP.FOUR-LEVIER	GABELHEBEL-HALTER	1	-		
090	15221-6641-0	BOLT	VIS	BOLZEN	1	-		
100	01754-50830	BOLT,FLANGE	VIS DE BUTEE	FLANSCHEN-BOLZEN	2	-		
110	01025-50630	BOLT	VIS	BOLZEN	1	-		
120	15611-5648-0	SPRING,START	RESSORT DE SURCHARGE	STARTERFEDER	1	-		
130	19077-5641-2	SPRING	RESSORT	FEDER	1	-		
140	16415-5642-0	SPRING,GOVERNOR	RESSORT DE REGULATEU	REGLERFEDER	1	-		

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

0205 SPEED CONTROL PLATE
PLAQUE DE VITESSE-CONTROLE
GESCHWINDIGKEITS-REGLERPLATTE

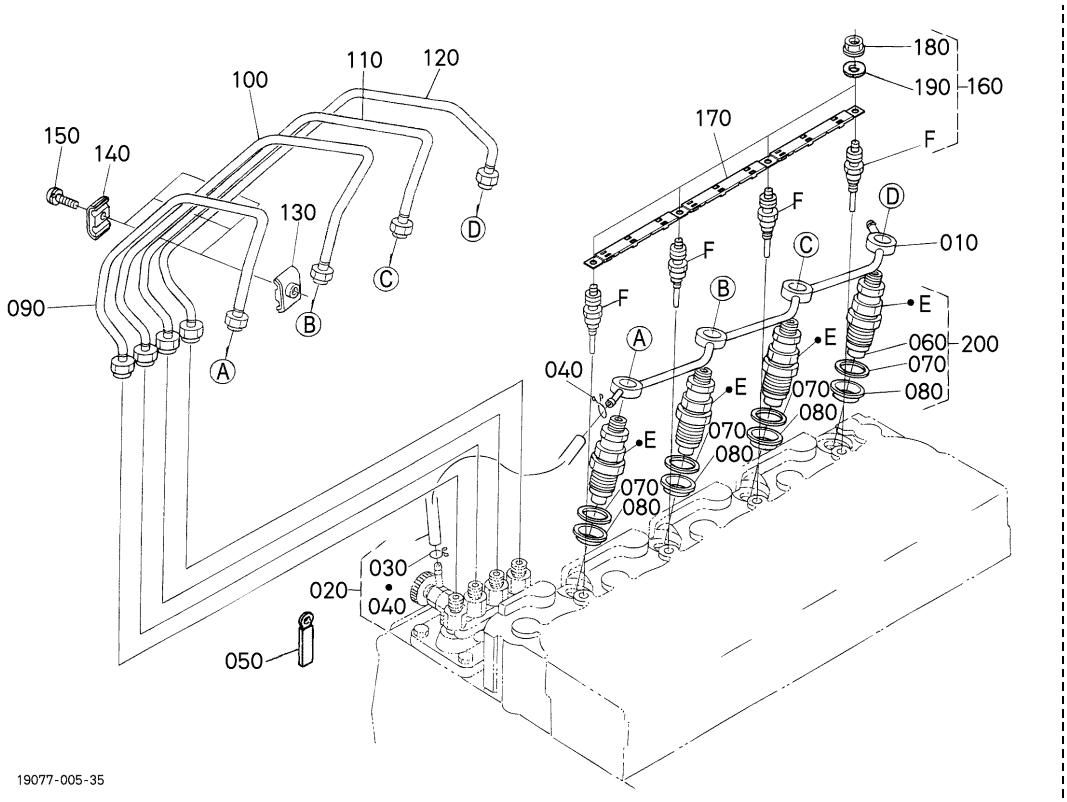


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	1A021-5435-0	ASSY BOLT,ADJUSTMENT	ENS.BOULON AU POINT	GRP.BOLZENFEINEINST.	1	-		
020	15601-9201-2	NUT	ECROU	MUTTER	1	-		
030	15601-9665-0	GASKET	JOINT	DICHTUNGSPLATTE	2	-		
040	15841-1462-0	NUT	ECROU	MUTTER	1	-		
050	----	BLANK	BLANC	LEERE SPALTE	-	-		
060	15471-5715-0	LEVER,SPEED CONTROL	LEVIER DE VIT-CONTRO	DREHZAHLVERSTELHEBEL	1	-		
070	05712-00408	KEY,FEATHER	CLAVETTE	KEIL	1	-		
080	04817-00120	O RING	JOINT TORIQUE	O RING	1	-		
090	04013-60080	WASHER,PLAIN	RONDELLE FREIN	SCHEIBE	1	-		
100	02112-50080	NUT	ECROU	MUTTER	2	-		
110	15521-5724-0	COLLAR	COLLIER	HUELSE	1	-		
120	15521-5711-5	PLATE,SPEED CONTROL	PLAQUE,VITE-CONTROLE	UMLAUFREGLERPLATTE	1	-		
130	15439-5721-0	GASKET	JOINT	DICHTUNG	1	-		
140	01023-50620	BOLT	VIS	BOLZEN	2	-		
150	15221-8821-0	STUD	GOUJON	STEHBOLZEN	2	-		
160	04512-60060	WASHER,SPRING	RONDELLE GROWER	FEDERRING	2	-		
170	02056-50060	NUT	ECROU	MUTTER	2	-		

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

0206 NOZZLE HOLDER AND GLOW PLUG
PORTE-INJECTEUR ET BOUGIE DE PRECHAUFFAGE
DUESENHALTER UND GLUEHKERZE

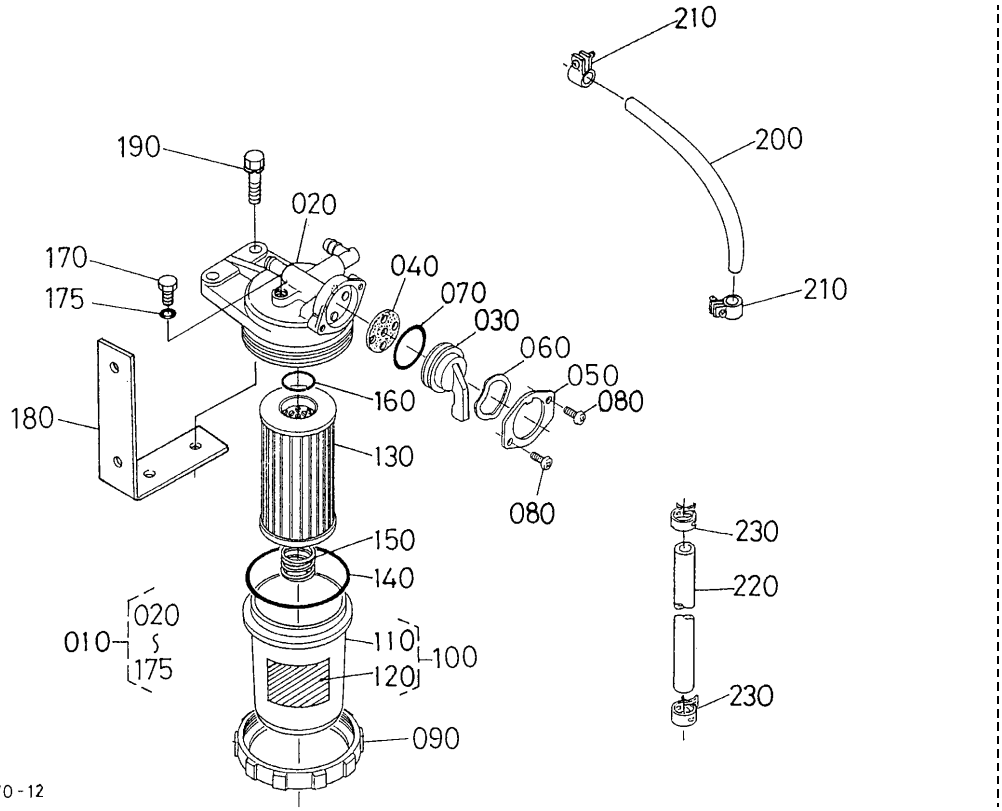


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16454-4250-2	ASSY PIPE,OVER FLOW	ENS.TUYAU TROP-PLEIN	GRP.UEBERLAUFROHR	1	-		
020	17331-4250-0	ASSY PIPE,OVER FLOW	ENS.TUYAU TROP-PLEIN	GRP.UEBERLAUFROHR	1	-		
030	14971-4275-0	CLIP,PIPE	ATTACHE	ROHRKLEMME	1	-		
040	10244-4232-0	CLIP,PIPE	ATTACHE	ROHRKLEMME	1	-		
050	15241-6758-0	CLAMP,CORD	ATTACHE-FILS	KABELKLEMME	1	-		
060	16454-5361-0	PIECE,NOZZLE	ELEMENT D'INJECTEUR	DUESENSTUECK	4	-		
070	15841-5362-2	GASKET	JOINT	DICHTUNGSPLATTE	4	-		
080	19077-5365-0	SEAL,HEAT	JOINT DE CHALEUR	DICHTUNG	4	-		
090	19077-5371-4	PIPE,INJECTION	TUYAU D'INJECTEUR	EINSPRITZROHR	1	-		
100	19077-5372-3	PIPE,INJECTION	TUYAU D'INJECTEUR	EINSPRITZROHR	1	-		
110	19077-5373-3	PIPE,INJECTION	TUYAU D'INJECTEUR	EINSPRITZROHR	1	-		
120	19077-5374-3	PIPE,INJECTION	TUYAU D'INJECTEUR	EINSPRITZROHR	1	-		
130	15841-5385-0	CLAMP,PIPE	COLLIER DE TUYAU	ROHRKLEMME	3	-		
140	15841-5386-0	CLAMP,PIPE	COLLIER DE TUYAU	ROHRKLEMME	3	-		
150	03024-50520	SCREW,WITH WASHER	VIS	SCHRAUBE	3	-		
160	19077-6551-0	GLOW PLUG	BOUGIE,PRE-CHAUFFAGE	GLUEHSTOEPSEL	4	-		
170	16475-6556-0	CORD,GLOW PLUG	FILDEBOUG.PRECHAUFF.	GLUEHKERZEKORD	1	-		
180	02761-50040	NUT,FLANGE	ECROU A EMBASE	FLANSCHEN-MUTTER	4	-		
190	04013-60040	WASHER,PLAIN	RONDELLE FREIN	SCHEIBE	4	-		
200	16454-5390-0	KIT HOLDER,NOZZLE	ENS.PORTE-INJECTEUR	GRP.DUESENHALTER	4	-		

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

0300 FUEL FILTER
FILTRE A CARBURANT
KRAFTSTOFFILTER

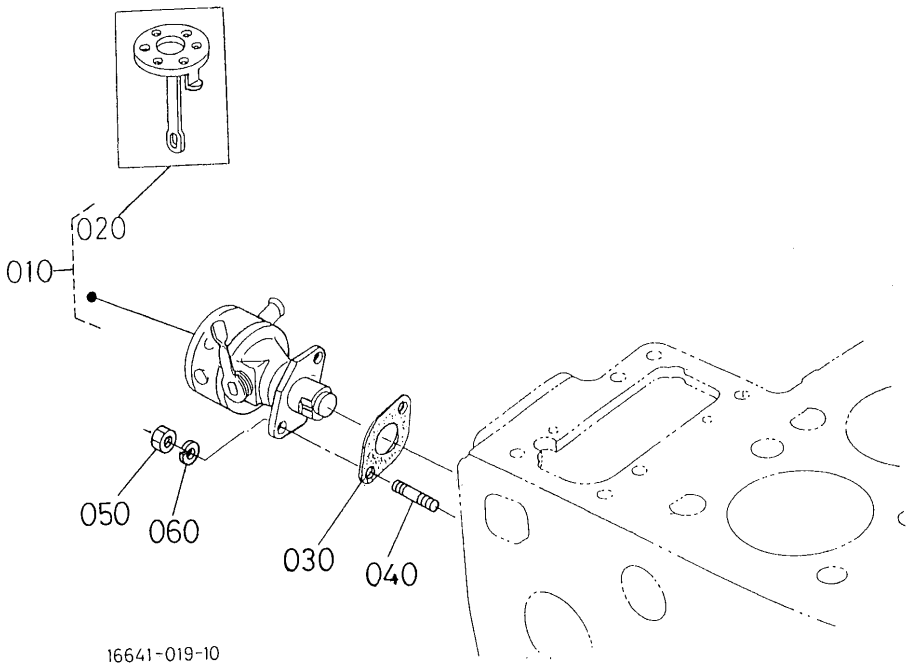


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16665-4301-3	ASSY FILTER,FUEL	ENS.FILTRE,COMBUST	GRP.KRAFTSTOFFILTER	1	-		
020	16665-4311-2	ASSY BODY	ENS.CARROSSERIE	GRP.KOERPER	1	-		
030	15521-4352-2	HANDLE,FILTER	MANCHE DE FILTRE	GRIFF,FILTER	1	-		
040	15521-4367-2	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
050	15521-4355-2	RETAINER,HANDLE	SUPPORT ROBINET	HALTER	1	-		
060	15521-4354-2	PLATE,THRUST	PLATEAU DU BUTEE	PLATTE	1	-		
070	04811-10290	O RING	JOINT TORIQUE	O RING	1	-		
080	03054-50308	SCREW,PAN-HEAD	VIS	SCHRAUBE	2	-		
090	15521-4315-0	RING,RETAINER	BAGUE DE RETENUE	RING	1	-		
100	15521-4310-0	ASSY CUP,FILTER	ENS.CHAPEAU DE FILTR	GRP.FILTERTOPF	1	-		
110	15521-4313-0	CUP,FILTER	CHAPEAU DE FILTRE	FILTERTOPF	1	-		
120	16873-8843-0	LABEL,FUEL	ETIQUETTE	AUFKLEBER, KRAFTSTF.	1	-		
130	16665-4316-0	ELEMENT,FILTER	ELEMENT DE FILTRE	FILTEREINSATZ	1	-		
140	04811-50650	O RING	JOINT TORIQUE	O RING	1	-		
150	15521-4393-0	SPRING	RESSORT	FEDER	1	-		
160	04816-00160	O RING	JOINT TORIQUE	O RING	1	-		
170	15231-4328-3	SCREW,AIR BREATHER	VIS	SCHRAUBE	1	-		
175	04817-00060	O RING	JOINT TORIQUE	O RING	1	-		
180	19228-4343-0	HOLDER,FUEL FILTER	SUPPORT DE FILTER	HALTERUNG	1	-		
190	01123-50825	BOLT	VIS	BOLZEN	2	-		
200	15905-4211-0	PIPE,FUEL	TUYAU DE COMBUSTIBLE	KRAFTSTOFFROHR	1	-		
210	14301-4275-0	CLIP,PIPE	ATTACHE	ROHRKLEMME	4	-		
220	19268-4252-0	PIPE,FUEL OVER FLOW	TUYAU DE TROP-PLEIN	KRAFSTOFFU-LAUFROHR	1	-		
230	10244-4232-0	CLIP,PIPE	ATTACHE	ROHRKLEMME	4	-		

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

0301 FUEL PUMP (MECHANICAL)
POMPE D'ALIMENTATION (MECHANIQUE)
KRAFTSTOFFPUMPE (MECHANISCH)

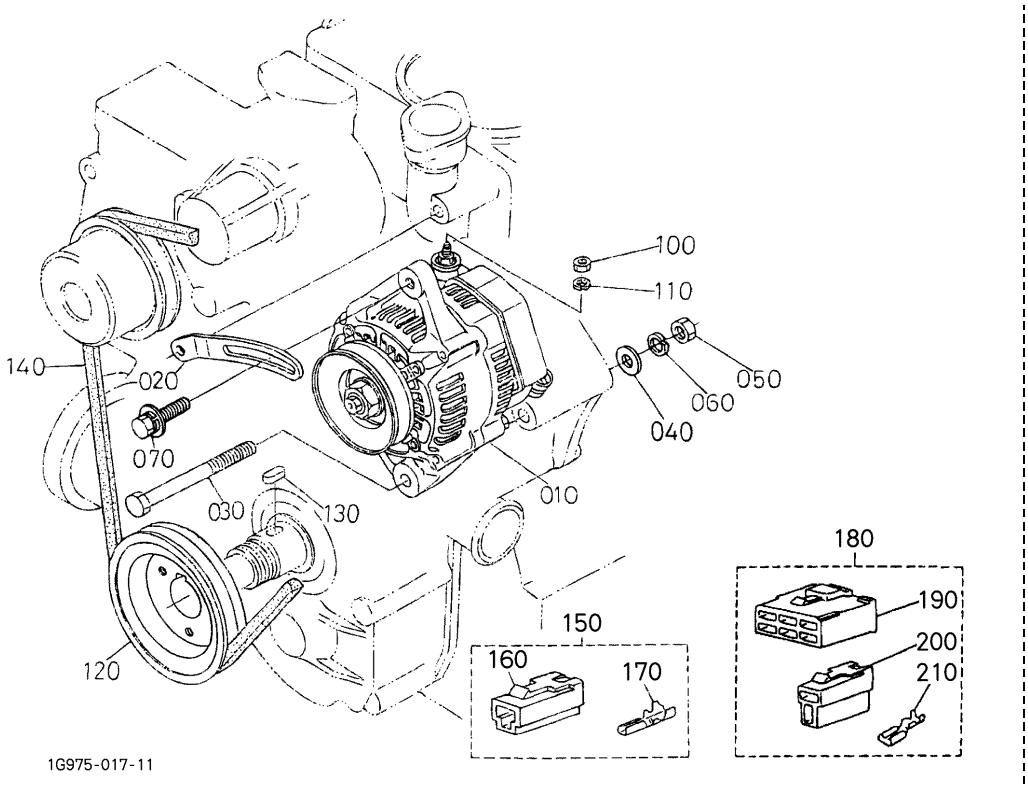


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16604-5203-2	ASSY PUMP,FUEL	ENS.POMPE D'ALIMEN.	GRP.KRAFTSTOFFPUMPE	1	–		
020	19844-5204-0	COMP DIAPHRAGM	DIAPHRAGME,ENS	DIAPHRAGM KOMPL.	1	–		
030	1G751-5214-0	GASKET,FUEL PUMP	JOINT	DICHTUNGSPLATTE	1	–		
040	01513-50616	STUD	GOUJON	STEHBOLZEN	2	–		
050	02056-50060	NUT	ECROU	MUTTER	2	–		
060	04512-60060	WASHER,SPRING	RONDELLE GROWER	FEDERRING	2	–		

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

0402 ALTERNATOR AND PULLEY
ALTERNATEUR
WECHSELSTROMMASCHINE

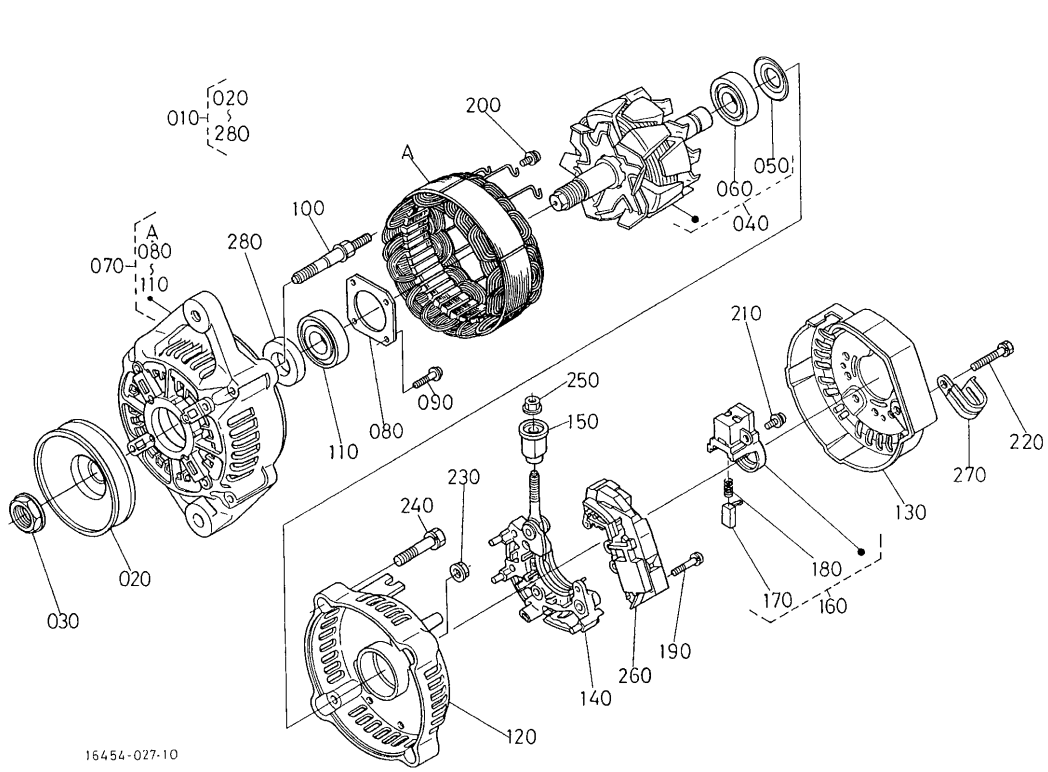


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	17356-6401-0	ASSY ALTERNATOR	ALTERNATEUR COMPLET	GRP.WECHSELSTROMDYN.	1	-		12V 45A
020	17077-6442-0	STAY,DYNAMO	TENDEUR	DYNAMOSTANGE	1	-		
030	01173-51000	BOLT	VIS	BOLZEN	1	-		
040	04011-50100	WASHER,PLAIN	RONDELLE FREIN	SCHEIBE	1	-		
050	02176-50100	NUT	ECROU	MUTTER	1	-		
060	04512-60100	WASHER,SPRING	RONDELLE GROWER	FEDERRING	1	-		
070	01127-50830	BOLT	VIS	BOLZEN	1	-		
080	----	BLANK	BLANC	LEERE SPALTE	-	-		
090	----	BLANK	BLANC	LEERE SPALTE	-	-		
100	02056-50060	NUT	ECROU	MUTTER	1	-		
110	04512-60060	WASHER,SPRING	RONDELLE GROWER	FEDERRING	1	-		
120	15424-7428-0	PULLEY,FAN DRIVE	POULIE ENTRAIN.VENT.	RIEMENSCHEIBE	1	-		
130	05712-00720	KEY,FEATHER	CLAVETTE	KEIL	1	-		
140	15196-9701-0	V BELT,A	COURROIE,V	RIEMEN,V	1	-		42in
150	19215-6375-0	TERMINAL	DEBORNE	ANSCHLUBKLEMME	1	-		
160	11521-6592-0	CONNECTOR	CONNECTEUR	ANSCHLUBE	1	-		
170	11521-6597-0	TERMINAL	DEBORNE	ANSCHLUBKLEMME	1	-		
180	19883-6583-0	ASSY COUPLER	ENS.COUPLEUR	GRP.KUPPLER	1	-		
190	19872-6584-0	CONNECTOR	CONNECTEUR	ANSCHLUBE	1	-		
200	19872-6588-0	CONNECTOR	CONNECTEUR	ANSCHLUBE	1	-		
210	19237-6591-0	TERMINAL	DEBORNE	ANSCHLUBKLEMME	7	-		

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

0403 ALTERNATOR (COMPONENT PARTS)
ALTERNATEUR (PARTIES COMPOSANTES)
WECHSELSTROMMASCHINE (EINZEL-TEIL)

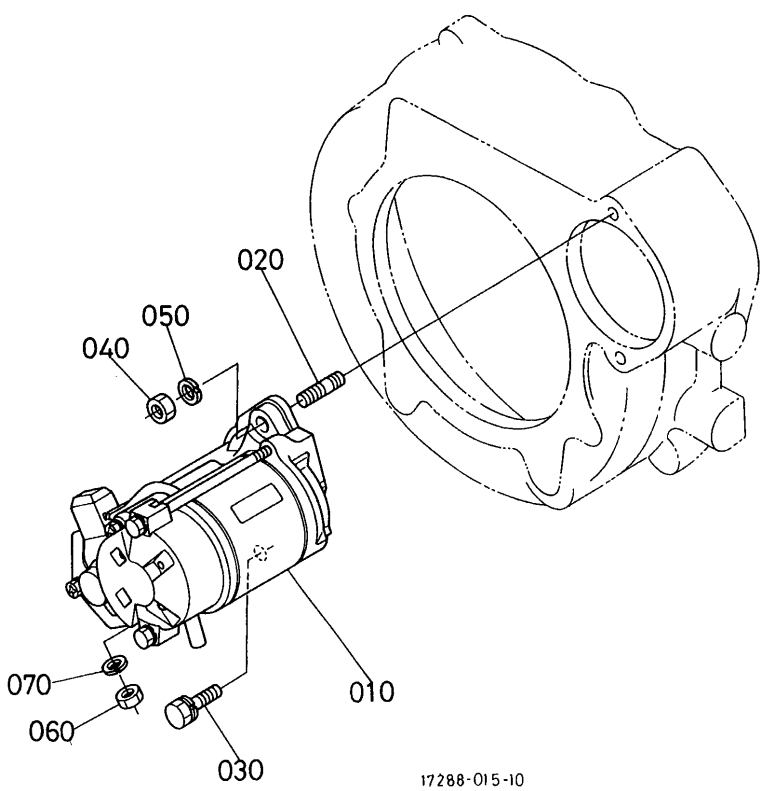


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	17356-6401-0	ASSY ALTERNATOR	ALTERNATEUR COMPLET	GRP.WECHSELSTROMDYN.	1	-		
020	16427-6411-0	PULLEY,ALTERNATOR	POULIE ALTERNATEUR	SCHEIBEWECHSELSTROM.	1	-		
030	15881-9201-0	NUT	ECROU	MUTTER	1	-		
040	17369-6404-0	ROTOR	ROTOR	ROTOR	1	-		
050	15881-6480-0	COVER,BEARING	COUVERCLE	DECKEL	1	-		
060	17369-6477-0	BEARING,BALL	ROULEMENT A BILLES	KUGELLAGER	1	-		
070	17369-6402-0	FRAME,DRIVE END	BATI	ANTRIEBSRAHMEN	1	-		
080	15881-6471-0	PLATE,RETAINER	PLAQUE RETENUE	HALTEPLATTE	1	-		
090	15881-9301-0	SCREW,ROUND HEAD	VIS A TETE RONDE	RUNDKOPFSCHRAUBE	4	-		
100	15881-6426-0	BOLT,THROUGH	VIS,PASSANT	DURCHGEHENDERBOLZEN	2	-		
110	15881-6478-0	BEARING,BALL	ROULEMENT A BILLES	KUGELLAGER	1	-		
120	17369-6406-0	FRAME,END	BATI	RAHMEN	1	-		
130	17369-6423-0	COVER,END	PALIER ARRIERE	DECKEL	1	-		
140	17369-6485-0	ASSY RECTIFIER	REDRESSEUR	MONT.GLEICHRICHTER	1	-		
150	15881-6490-0	BUSH,INSULATION	BAGUE ISOLANTE	BUCHSE	1	-		
160	15881-6431-0	HOLDER,BRUSH	PORTE-BALAI	BUERSTEN HALTER	1	-		
170	15881-6409-0	BRUSH	PATTE D'ATTACHE	BUERSTE	2	-		
180	15881-6433-0	SPRING,BRUSH	RESSORT DE BALAI	SCHLEIFBUERSTENFEDER	2	-		
190	15881-9302-0	SCREW,ROUND HEAD	VIS A TETE RONDE	RUNDKOPFSCHRAUBE	2	-		
200	15881-9303-0	SCREW,ROUND HEAD	VIS A TETE RONDE	RUNDKOPFSCHRAUBE	6	-		
210	15881-9304-0	SCREW,ROUND HEAD	VIS A TETE RONDE	RUNDKOPFSCHRAUBE	1	-		
220	15881-9104-0	BOLT	VIS	BOLZEN	3	-		
230	15881-9202-0	NUT	ECROU	MUTTER	2	-		
240	15881-9105-0	BOLT	VIS	BOLZEN	2	-		
250	14182-9203-0	NUT	ECROU	MUTTER	1	-		
260	1K531-6460-0	ASSY REGULATOR	REGULATEUR	REGULATOR	1	-		
270	17369-6757-0	CLAMP,CORD	ATTACHE-FILS	KABELKLEMME	1	-		
280	15881-6415-0	COLLAR	COLLIER	HUELSE	1	-		

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

0404 STARTER
DEMARREUR
ANLASSER

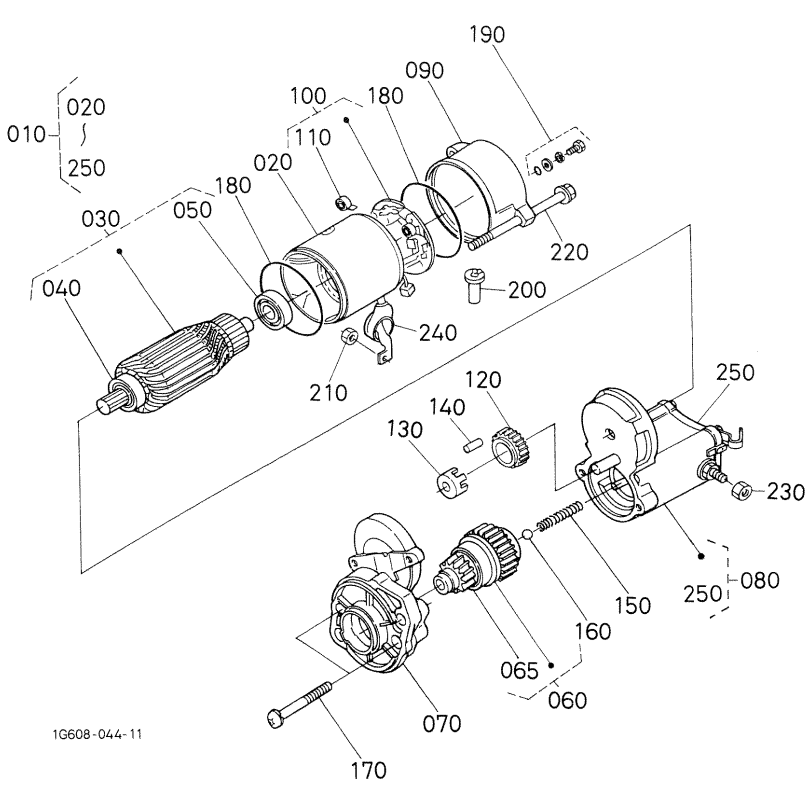


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15461-6301-0	ASSY STARTER	ENS.DEMARREUR	GRP.ANLASSER	1	–		12V 1.4kW
020	01517-51028	STUD	GOUJON	STEHBOLZEN	1	–		
030	01133-51030	BOLT	VIS	BOLZEN	1	–		
040	02176-50100	NUT	ECROU	MUTTER	1	–		
050	04512-60100	WASHER,SPRING	RONDELLE GROWER	FEDERRING	1	–		
060	02114-50080	NUT	ECROU	MUTTER	1	–		
070	04512-60080	WASHER,SPRING	RONDELLE GROWER	FEDERRING	1	–		

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

0405 STARTER (COMPONENT PARTS)
DEMARREUR (PARTIES COMPOSANTES)
ANLASSER (EINZEL-TEIL)

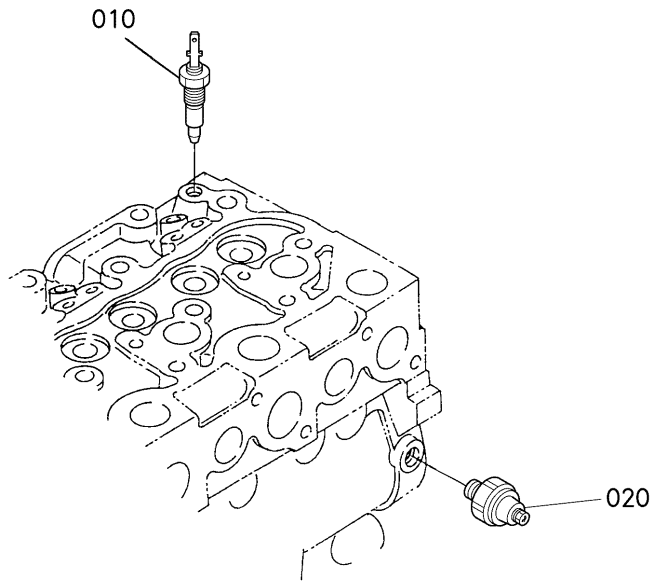


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15461-6301-0	ASSY STARTER	ENS.DEMARREUR	GRP.ANLASSER	1	-		
020	11197-6308-0	ASSY YOKE	ENS.CHAPE	GRP.GABELGELENK	1	-		
030	11197-6307-0	ASSY ARMATURE	ENS.ARMATURE	GRP.ARMATUR	1	-		
040	11460-6350-0	BEARING	ROULEMENT	LAGER	1	-		
050	11460-6353-0	BEARING	ROULEMENT	LAGER	1	-		
060	17341-6304-0	CLUTCH,OVER RUNNING	EMBRAYAGE A INERTIE	AUFLAUFKUPPLUNG	1	-		
065	17381-6328-0	PINION,BEVEL	PIGNON CONIQUE	ANTRIEBSKEGELRAD	1	-		
070	17341-6303-0	FRAME,DRIVE END	BATI	ANTRIEBSRAHMEN	1	-		
080	11173-6302-0	ASSY SWITCH,MAGNETIC	SOLENOIDE	GRP.MAGNETSCHALTER	1	-		
090	17341-6320-0	FRAME,END	BATI	RAHMEN	1	-		
100	11197-6338-0	ASSY HOLDER,BRUSH	ENS.SUPPORT	GRP.BUERSTENHALTER	1	-		
110	15401-6339-0	SPRING,BRUSH	RESSORT DE BALAI	SCHLEIFBUERSTENFEDER	4	-		
120	11460-6327-0	GEAR	ENGRENAGE	GETRIEBE	1	-		
130	11460-6311-0	RETAINER	SUPPORT	HALTESCHEIBE	1	-		
140	19212-6310-0	ROLLER	ROULEAU	ROLLE	5	-		
150	11460-6312-0	SPRING	RESSORT	FEDER	1	-		
160	19212-9713-0	BALL	BILLE	KUGEL	1	-		
170	11460-9331-0	BOLT	VIS	BOLZEN	2	-		
180	15511-9666-0	O RING	JOINT TORIQUE	O RING	2	-		
190	15511-6376-0	ASSY BOLT	ENS.VIS	GRP.BOLZEN	2	-		
200	16285-6357-0	PIPE,DRAIN	TUYAU DE DRAINAGE	DRANLEITUNG	1	-		
210	13963-9201-0	NUT,HEXAGON	ECROU HEXAGONAL	MUTTER	1	-		
220	11197-6332-0	BOLT	VIS	BOLZEN	2	-		
230	16285-9201-0	NUT,HEXAGON	ECROU HEXAGONAL	MUTTER	1	-		
240	11173-6313-0	COVER,TERMINAL	COUVERCLE	DECKEL	1	-		
250	16285-9805-0	ASSY COVER	ENS.COUVERCLE	GRP.DECKEL	1	-		

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

0406 OIL SWITCH AND THERMOMETER
CONTACT A HUILE ET THERMOMETRE
OELSCHALTER UND THERMOMETER



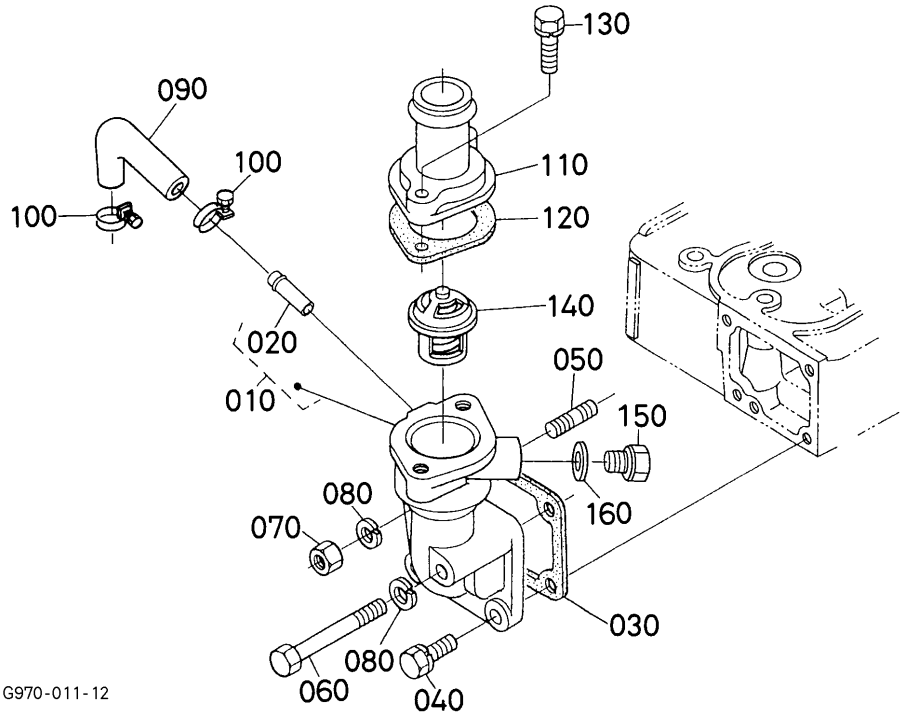
1G985-019-10

A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16222-8304-0	ASSY THERMOSWITCH	ENS.THERMOINTERRUPT.	GRP.THERMOZUENDSCHA.	1	-		
020	15841-3901-0	SWITCH,OIL	MANO-CONTACT D'HUILE	OELDRUCKSCHALTER	1	-		

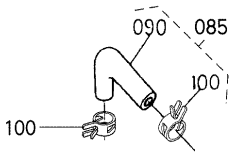
↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0500 WATER FLANGE AND THERMOSTAT
BRIDE A EAU ET THERMOSTAT
WASSERFLANSCH UND THERMOSTAT



1G970-011-12

OLD PART



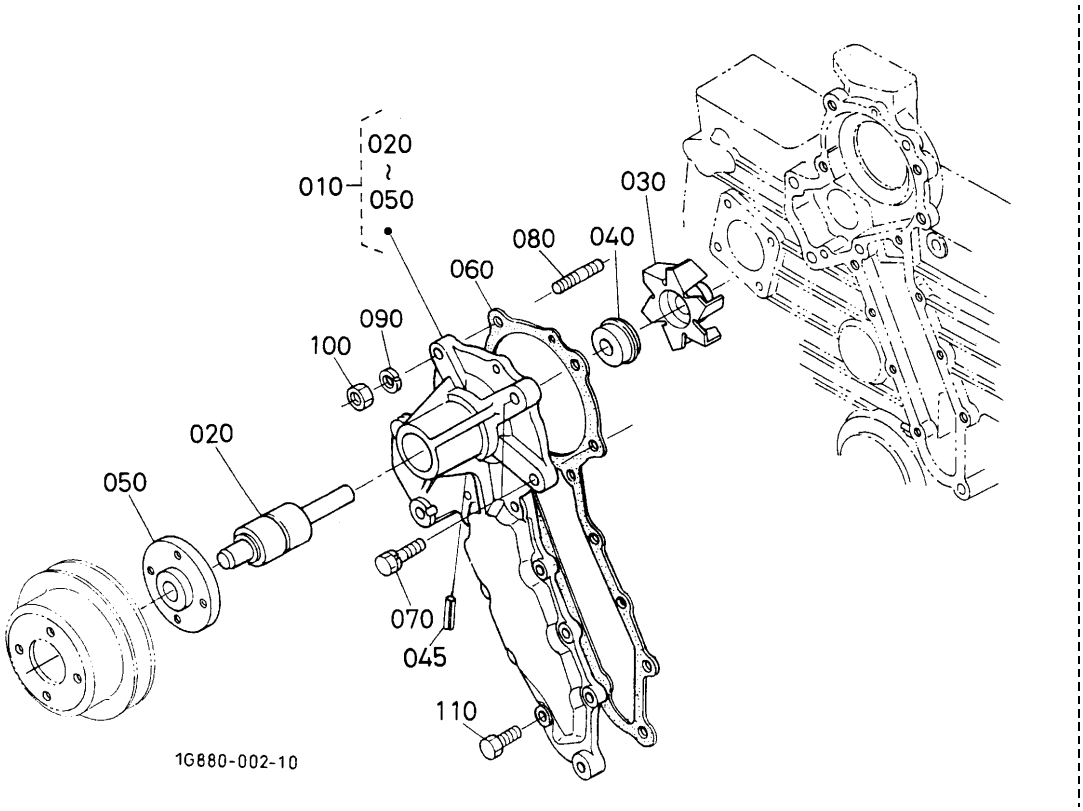
1G974-801-10

A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15512-7270-2	COMP.FLANGE,WATER	ENS.BRIDE A EAU	KOMP.FLANSCH	1	-		
020	17331-7334-2	PIPE,WATER RETURN	TUYAU RETOUR D'EAU	WASSERROHR	1	-		
030	1A021-7292-0	GASKET,WATER FLANGE	JOINT DE BRIDE A EAU	DICHTUNGWASSERFLANS.	1	-		
040	01123-50820	BOLT	VIS	BOLZEN	2	-		
050	15221-9153-0	STUD	GOUJON	STEHBOLZEN	1	-		
060	01153-50870	BOLT	VIS	BOLZEN	1	-		
070	02156-50080	NUT	ECROU	MUTTER	1	-		
080	04512-60080	WASHER,SPRING	RONDELLE GROWER	FEDERRING	2	-		
085	1G369-7330-0	ASSY PIPE	ENS.TUYAU A EAU	GRP.WASSERROHR	1 <=4A5345	-		
090	1G369-7334-0	PIPE,WATER RETURN	TUYAU RETOUR D'EAU	WASSERROHR	1	-		
100	09318-88180	CLAMP,HOSE	COLLIER DE DURITE	SCHLAUCHBINDER	2 <=4A5345	-		
100	15109-7336-0	BAND,PIPE	COLLIER DE TUYAU	ROHRBAND	2 >=4C0001	-	≠	
110	15321-7326-0	COVER,THERMOSTAT	COUV.DE THERMOSTAT	DECKEL,THERMOSTAT	1	-		
120	16221-7327-0	GASKET,THERMOSTAT	JOINT	DICHTUNG	1	-		
130	01123-50835	BOLT	VIS	BOLZEN	2	-		
140	19434-7301-4	ASSY THERMOSTAT	THERMOSTAT COMP.	GRP.THERMOSTAT	1	-		
150	15512-9601-0	PLUG	BOUCHON	STOPFEN	1	-		
160	04717-02150	WASHER,WITH RUBBER	JOINT EN CAOUTCHOUC	GUMMIUNTERLAGE	1	-		

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

0501 WATER PUMP
POMPE A EAU
WASSERPUMPE

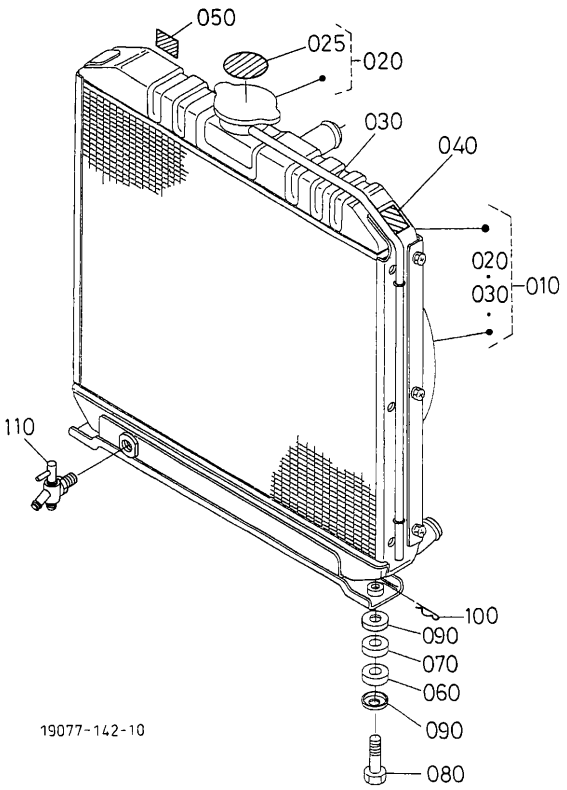


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15521-7303-5	ASSY PUMP,WATER	ENS.POMPE A EAU	GRUPPE WASSERPUMPE	1	-		
020	15521-7355-0	BEARING	ROULEMENT	LAGER	1	-		
030	1A021-7351-0	IMPELLER,WATER PUMP	TURBINE DE POMPE	FLUEGELRAD	1	-		
040	16661-7305-0	ASSY SEAL,MECHANICAL	ENS.JOINT MECANIQUE	GRP.MECH.DICHTUNG	1	-		
045	1E017-3365-0	PIN,SPRING	GOUPILLE-RESSORT	STIFT,FEDR	1	-		
050	1A021-7352-0	FLANGE,W/PUMP SHAFT	BRIDE	FLANSCH	1	-		
060	15766-7343-0	GASKET,WATER PUMP	JOINT DE POMPE A EAU	DICHTUNG,WASSERPUMPE	1	-		
070	01123-50828	BOLT	VIS	BOLZEN	2	-		
080	01518-50822	STUD	GOUJON	STEHBOLZEN	2	-		
090	04512-60080	WASHER,SPRING	RONDELLE GROWER	FEDERRING	2	-		
100	02156-50080	NUT	ECROU	MUTTER	2	-		
110	01023-50618	BOLT	VIS	BOLZEN	8	-		

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

0502 RADIATOR
RADIATEUR
KUEHLER

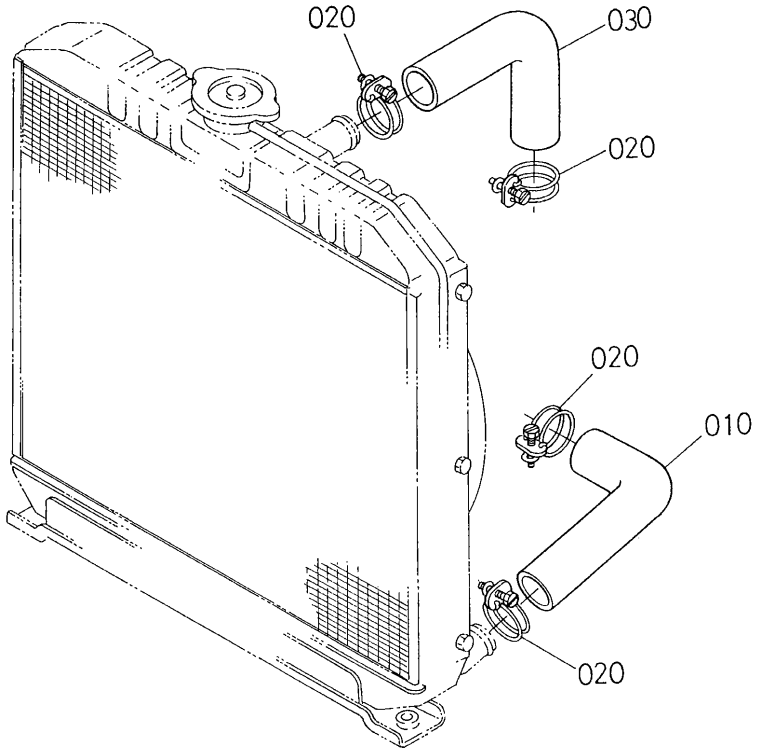


A:V2203-E2B-SBS.NZ-1

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	19077-7206-0	ASSY RADIATOR	ENS.RADIATEUR	GRP.KUEHLER	1	-		
020	15272-7202-0	ASSY CAP	BOUCHON	GRP.VERSCHLUSS	1	-		
025	19077-8724-0	LABEL,CAUTION	ETIQUETTE	AUFKLEBER,ACHTUNG	1	-		
030	15701-7271-0	PIPE,WATER OVER FLOW	ENS.TUYAU TROP-PLEIN	UEBERLAUFROHR	1	-		
040	16478-8823-0	LABEL,RADIATOR	ETIQUETTE	AUFKEBER	1	-		
050	19426-8788-0	LABEL,INSTRUCTION	ETIQUETTE	AUFKLEBER	1	-		
060	15111-7218-0	CUSHION	COUSSIN	KISSEN	2	-		
070	15111-7219-0	CUSHION	COUSSIN	KISSEN	2	-		
080	15108-7238-0	BOLT	VIS	BOLZEN	2	-		
090	15111-7220-0	WASHER	RONDELLE	SCHEIBE	4	-		
100	05515-61000	PIN,SNAP	GOUPILLE BETA	SICHERUNGSSTIFT	2	-		
110	15575-7310-0	COCK,DRAIN	ROBINET DE VIDANGE	ABLASSHAHN	1	-		

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

0503 WATER PIPE
TUYAU D'EAU
WASSERROHR



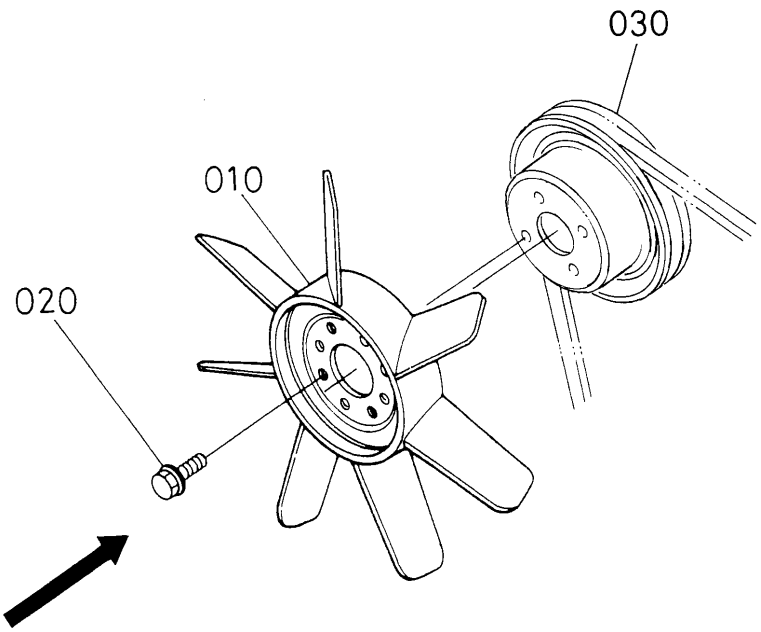
19077-074-10

A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15611-7285-0	PIPE,WATER	TUYAU D'EAU	WASSERROHR	1	–		
020	15108-7287-0	BAND	COLLIER	ROHRBAND	4	–		
030	15465-7294-0	PIPE,WATER UPPER	TUYAUD'EAU SUP.	WASSERROHR,OBEN	1	–		

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

0504 FAN
VENTILATEUR
VENTILATOR



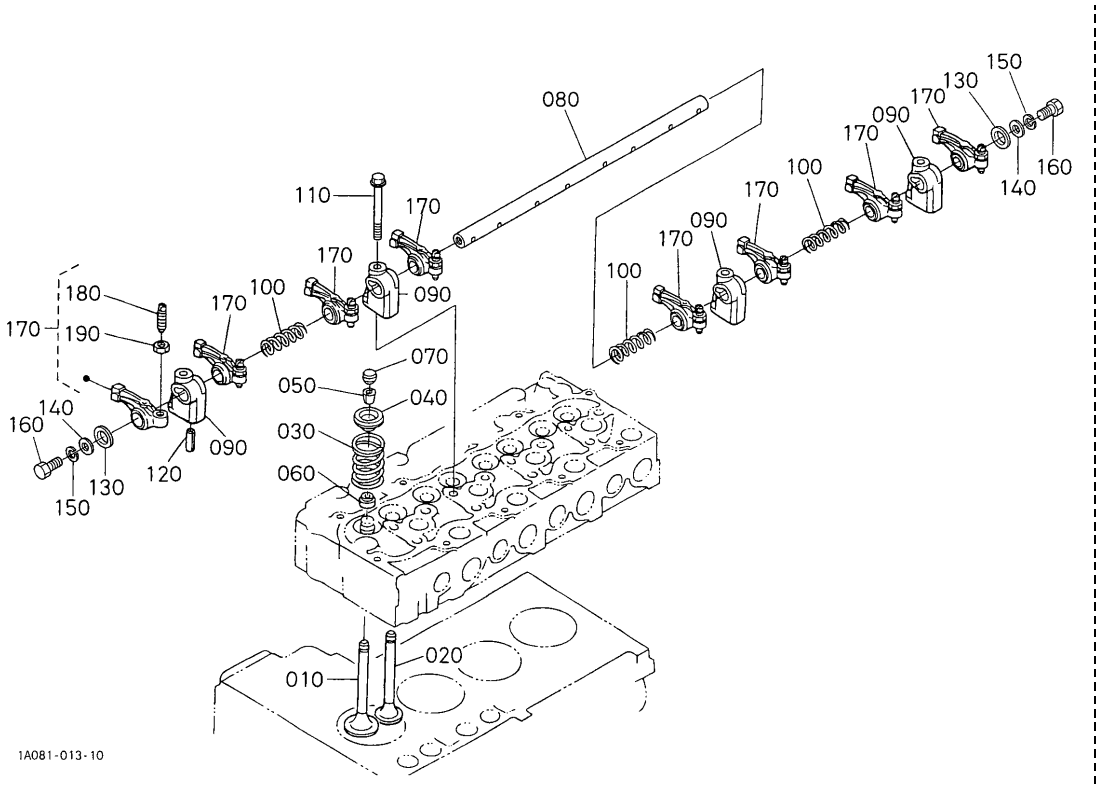
1G620-027-10

A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15476-7411-0	FAN	VENTILATEUR	VENTILATOR	1	-		
020	01754-50612	BOLT,FLANGE	VIS DE BUTEE	FLANSCHEN-BOLZEN	4	-		
030	17365-7425-2	PULLEY,FAN	POULIE VENTILATEUR	VENTILATORSCHEIBE	1	-		

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

0600 VALVE AND ROCKER ARM
SOUPAPES ET CULBUTEURS
VENTIL UND KIPPENARM

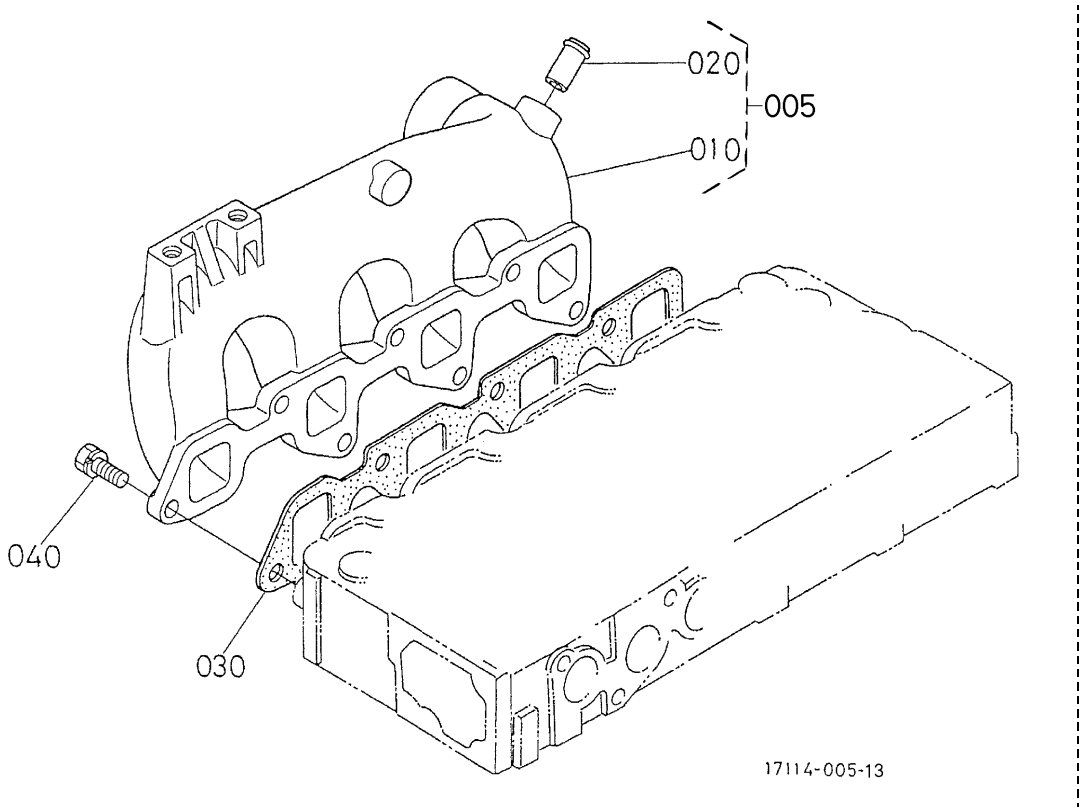


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16484-1311-0	VALVE, INLET	SOUPAPE D'ADMISSION	EINLASSVENTIL	4	-		
020	16484-1312-0	VALVE, EXHAUST	SOUPAPE D'ECHAPMENT	AUSLASSVENTIL	4	-		
030	15221-1324-0	SPRING, VALVE	RESSORT DE SOUPAPE	VENTIL-FEDER	8	-		
040	15221-1333-0	RETAINER, VALVE SP.	CUVETTE SUPERIEURE	ZURUECKHALTER	8	-		
050	15221-1398-0	COLLET, VALVE SPRING	DEMI CLAVETTE	KLEMMSCHEIBE	8	-		SET
060	15221-1315-3	SEAL, VALVE STEM	JOINT DE SOUPAPE	VENTILDICHTUNG	8	-		
070	15221-1328-0	CAP, VALVE	CHAPEAU DE SOUPAPE	VENTILKAPPE	8	-		
080	1A091-1426-0	SHAFT, ROCKER ARM	ARBRE DE CULBUTEUR	KIPPHEBELWELLE	1	-		
090	15221-1435-0	BRACKET, ROCKER ARM	SUPPORT DE CULBUTEUR	KIPPHEBELHALTER	4	-		
100	15221-1431-0	SPRING, ROCKER ARM	RESSORT DE CULBUTEUR	FEDER, KIPPHEBEL	3	-		
110	01754-50855	BOLT, FLANGE	VIS DE BUTEE	FLANSCHEN-BOLZEN	4	-		
120	05411-00528	PIN, SPRING	GOUPILLE-RESSORT	STIFT, FEDR	1	-		
130	15221-1443-0	WASHER, R-ARM. SHAFT	RONDELLE	SCHEIBE	2	-		
140	04013-60080	WASHER, PLAIN	RONDELLE FREIN	SCHEIBE	2	-		
150	04512-60080	WASHER, SPRING	RONDELLE GROWER	FEDERRING	2	-		
160	01153-50812	BOLT	VIS	BOLZEN	2	-		
170	15621-1403-0	ASSY ROCKER ARM	ENS. CULBUTEURS	GRP. KIPPHEBEL	8	-		
180	15521-1423-0	SCREW, ADJUSTING	VIS DE REGLAGE	STELLSCHRAUBE	8	-		
190	15021-1424-0	NUT	ECROU	MUTTER	8	-		

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

0601 INLET MANIFOLD
COLLECTEUR D'ADMISSION
ANSAUGENLEITUNG

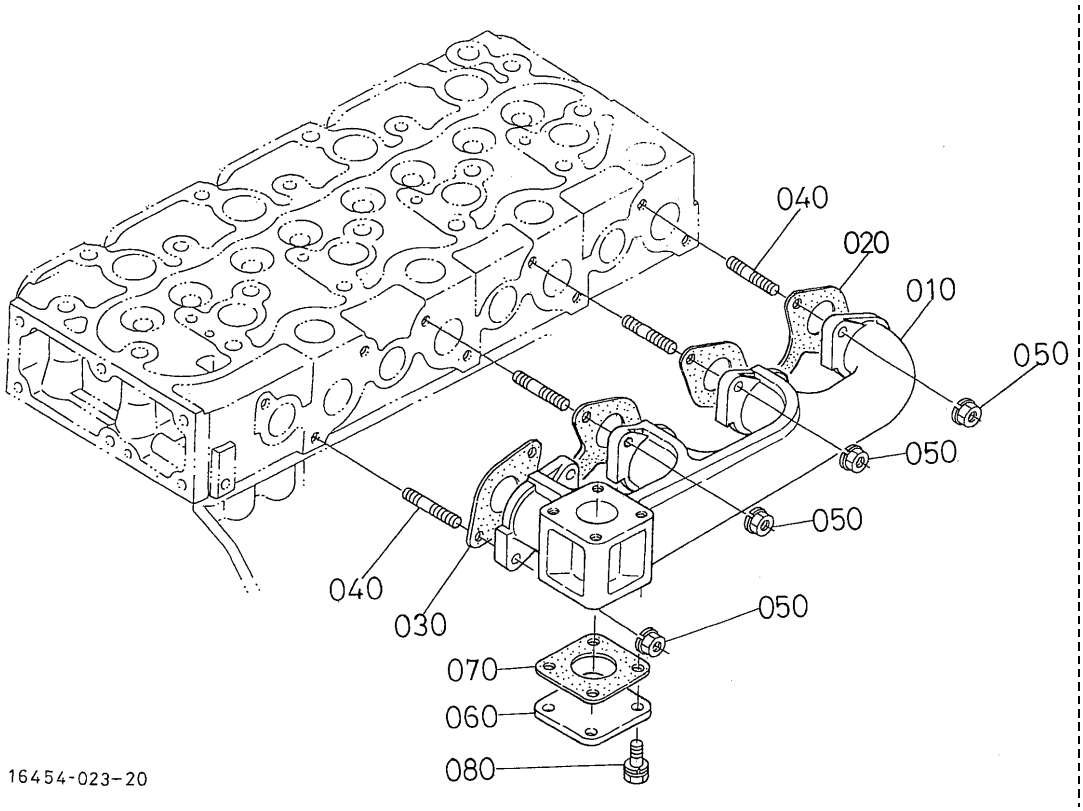


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
005	17114-1180-0	COMP MANIFOLD, INLET	ENS. COLLECTEUR D'AD.	KOMP. ANSAUG-ROHRKRU.	1	–		
010	17114-1176-0	MANIFOLD, INLET	COLLECTEUR D'ADMISS.	ANSAUG-ROHRKRUEMMER	1	–		
020	17182-0555-0	JOINT, BREATHER	RACCORD DE TUYAU	ANSCHLUSS	1	–		
030	1A091-1182-2	GASKET, IN-MANIFOLD	JOINT DE COLL. ADM.	DICHTUNG ANSAUGROHR	1	–		
040	01123-50822	BOLT	VIS	BOLZEN	7	–		

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

0602 EXHAUST MANIFOLD
COLLECTEUR D'ECHAPPEMENT
AUSPUFFRUEMMER

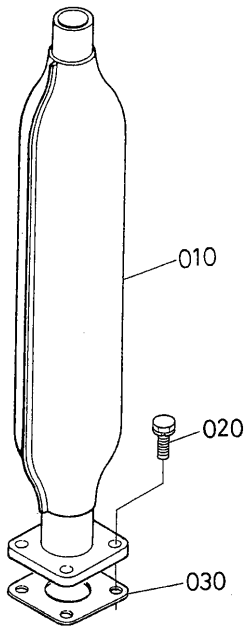


A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	17355-1231-2	MANIFOLD, EXHAUST	COLLECTEUR D'ECHAPP.	AUSPUFFROHR	1	–		
020	1A091-1236-0	GASKET, EX-MANIFOLD	JOINT DE COLL. ECHAP.	DICHTUNG, AUSPUFFPOHR	1	–		
030	1A091-1235-0	GASKET, EX-MANIFOLD	JOINT DE COLL. ECHAP.	DICHTUNG, AUSPUFFPOHR	1	–		
040	15221-9153-0	STUD	GOUJON	STEHBOLZEN	8	–		
050	16429-9201-0	NUT	ECROU	MUTTER	8	–		
060	17355-9285-2	COVER, MANIFOLD	OBTURATEUR	DECKEL, AUSPUFFOHR	1	–		
070	T0070-1642-0	GASKET, MUFFLER	JOINT DE SILENCIEUX	DICHTUNG, AUSPUFFTOPF	1	–		
080	01123-50822	BOLT	VIS	BOLZEN	4	–		

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

0605 MUFFLER
SILENCIEUX
AUSPUFFTOPF



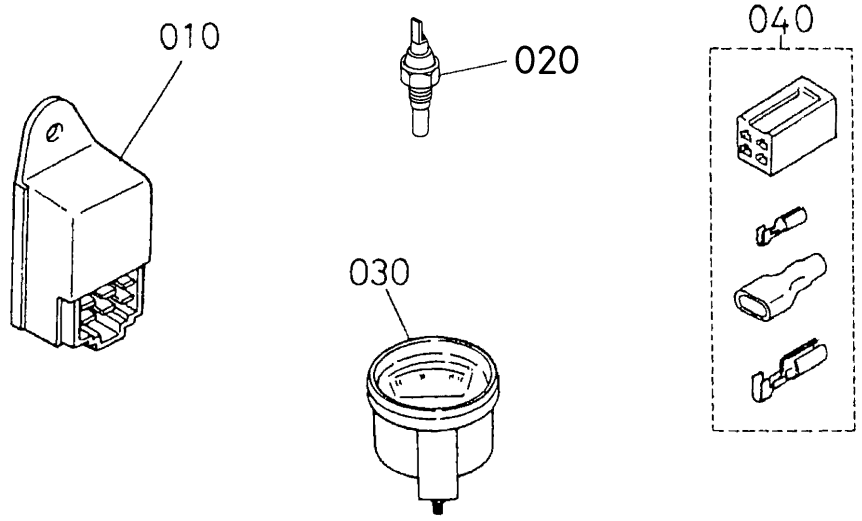
19077-078-11

A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	19077-1211-0	MUFFLER	SILENCIEUX	AUSPUFFTOPF	1	–		
020	01123-50825	BOLT	VIS	BOLZEN	4	–		
030	T0070-1642-0	GASKET,MUFFLER	JOINT DE SILENCIEUX	DICHTUNG,AUSPUFFTOPF	1	–		

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

0800 GLOW LAMP AND TIMER
INDICATEUR DE PRECHAUFFAGE ET TEMPORISATEUR
GLUEHLAMPE UND ZEITMESSER

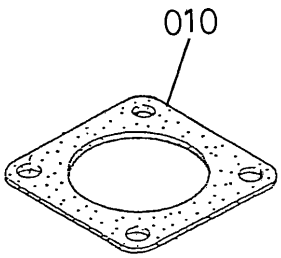


1G975-018-11

A:V2203-E2B-SBS.NZ-1

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	15694-6599-0	TIMER,GLOW LAMP	TEMPORISATEUR	LAMPETREMBLEUR	1	–		
020	31351-3283-0	SENSOR,THERMO	MANO CONTACT D'EAU	THERMOSTAT	1	–		
030	19488-8303-0	THERMOMETER	THERMOMETRE	WARMEMESSER	1	–		
040	19488-6583-0	ASSY COUPLER	ENS.COUPLEUR	GRP.KUPPLER	1	–		

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



1E013-033-10

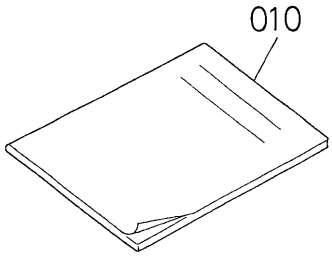
A:V2203-E2B-SBS.NZ-1

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	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	T0070-1642-0	GASKET,MUFFLER	JOINT DE SILENCIEUX	DICHTUNG,AUSPUFFTOPF	1	-		

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

0809 OPERATOR'S MANUAL
MANUEL DE L'UTILISATEUR
HANDHABUNG-GEBRAUCHSANWEISUNG

S.No.;A:<=4E6186



16201-028-10

A:V2203-E2B-SBS.NZ-1

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	16642-8916-6	OPERATOR'S MANUAL	MANUEL DE L'UTILISA.	DETDIENUNGSANLEITUNG	1	-		

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

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32210-2758-0	1	020									

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