

ENGINE HAND BOOK PARTS CATALOG

ENGINE P11C HAND BOOK PARTS CATALOG

ENGINE HAND BOOK

FOREWORD

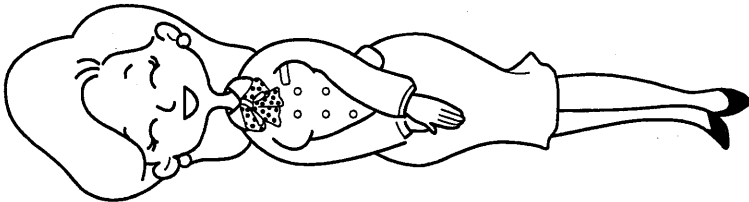
We thank you very much for having purchased a HINO engine this time.

This handbook has been prepared to give you a thorough understanding of the operation of the HINO engine together with guidance on a simple and periodic inspection and maintenance. Please make sure to read this handbook carefully before you start your engine so that you can operate it safely, comfortably and friendly to social environment.

- Read very carefully those sections which have signs "Important fundamentals you must know", "DANGER", "WARNING", "CAUTION", "ADVICE" and "✱". They are particularly important.

 DANGER	Items that will result in death or severe personal injury if handled improperly.
 WARNING	Items that can result in death or severe personal injury if handled improperly.
 CAUTION	Items that can result in personal injury and/or property damage, such as engine damage, if handled improperly.
 ADVICE	Items that should be followed to ensure proper engine performance and to prevent engine from trouble and damage.
✱	Items that are referring to the engine handling, operating, inspection and maintenance.

- ■, ▶, ● represents, from the left to the right, order of importance.
- The contents of this handbook are based on the standard specifications of HINO industrial engines. Depending upon the machines, standard specifications may be different for your engine. Please refer to the "Operation Manual" of your machine.
- For information on the handling of equipment other than HINO engine, please refer to the "Operation Manual" supplied by your machine manufacturer.
- Engine models covered by this handbook: J05E, J08E, P11C



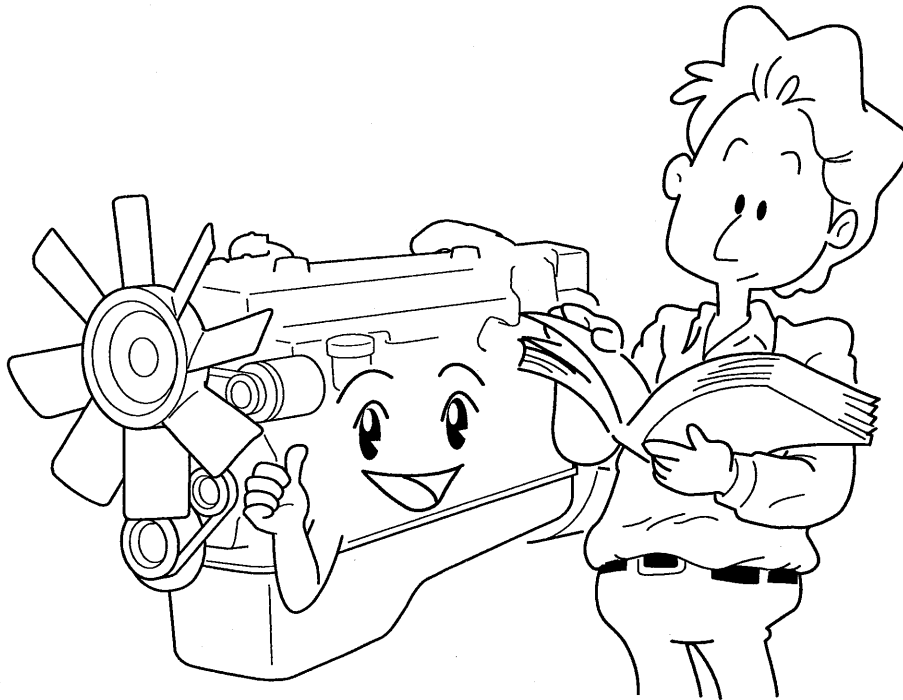
HinoMotors,Ltd.

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1. IMPORTANT FUNDAMENTALS YOU MUST KNOW

1-1



● PRECAUTIONS DURING OPERATION	P1- 2
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IMPORTANT FUNDAMENTALS YOU MUST KNOW

PRECAUTIONS DURING OPERATION

■ USE THE SPECIFIED FUEL

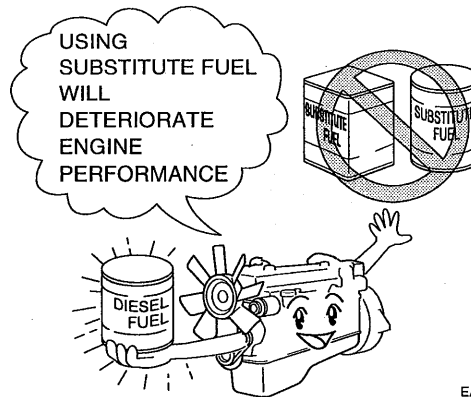
⚠ WARNING

Never fill the tank with gasoline. If you pour the gasoline into the tank by mistake, extract the gasoline completely before starting the engine. Starting the engine with gasoline in the tank is dangerous as it can result in a fire or engine damage.

- * For fuel, use diesel fuel (ASTM 2-D).
- Use Winter 2-D when the outside temperature is lower than 0°C {32°F}.
- Do not use fuel of bad quality or substitute fuel. It may deteriorate engine performance and may cause troubles which will not be covered by warranty.
- When filling fuel, make sure that no dust or water gets into the tank.
- Make sure to fasten the fuel tank cap securely. Remove the drain plug below the tank occasionally and drain sediment and water content at the bottom of the tank together with the fuel.

GRADE	FINAL BOILING POINT (MAX.)	CETANE NUMBER (MIN.)	SULFUR (MAX.)
Winter 2-D	357°C {675°F}	45	0.50%
Summer 2-D	357°C {675°F}	40	0.50%

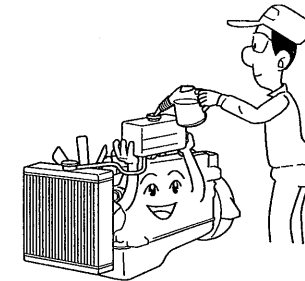
NOTE: Fuel additives should not be used.



EA01 - 001A

■ FOR COOLANT USE LONG LIFE COOLANT (LLC) MIXED WITH WATER

..... Page 4-14



HA01 - 010A

■ BE CAREFUL WITH THE RADIATOR CAP

⚠ WARNING

Never remove the radiator cap while it is hot. Opening the cap carelessly can lead burn injury due to spurting out of hot coolant and steam. Make sure to fasten the radiator cap securely.



TA07 - 002A

IMPORTANT FUNDAMENTALS YOU MUST KNOW

1-3

■ USE THE PROPER ENGINE OIL

The engine oil must be able to withstand heat and oxidation. It must be stable in viscosity in spite of temperature change.

Hino genuine engine oil has been made in order to satisfy such performance and you are kindly asked to use proper oil depending upon the using condition of your engine.

It is necessary to use oil of different viscosities in accordance with the outside temperature. Be sure to select the proper oil.

● ENGINE OIL SELECTION

• Oil quality

JASO	DH-1,DH-2
API	CD,CE,CF,CF-4,CH-4,CI-4
ACEA	E-3,E-4,E-5

• Viscosity recommendations (SAE)

-40	-22	-4	14	32	50	66	88	104 °F
-40	-30	-20	-10	0	10	20	30	40 °C
SAE 20W-50 *								
SAE 15W-40, SAE 10W-30								
SAE 30								
SAE 40								

* Only Hino Genuine Oils

■ PAY ATTENTION TO THE METERS, GAUGES AND LAMPS WHILE RUNNING THE ENGINE

⚠ CAUTION

When the warning lamps light up or the instruments indicate any abnormality, be sure to idle the engine immediately and carry out inspections and repairs in accordance with this handbook. If you continue to operate ignoring the warnings of the warning lamps or the instruments, it might result in an unexpected accident. When you cannot find the cause or you cannot service it by yourself, have the engine inspected and repaired at the nearest your dealer.

● If you continue to operate neglecting or ignoring the warnings of the instruments as follows:

Have your engine inspected in accordance with this handbook.

- When the needle of the coolant temperature gauge indicates the dangerous temperature zone.



EA01 - 003A

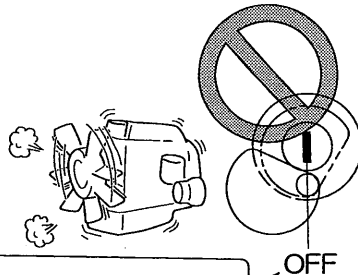
- Turning off the engine immediately may result in seizure of the engine. Before turning off the engine, be sure to idle the engine and wait until the needle return to the normal operating temperature zone.

IMPORTANT FUNDAMENTALS YOU MUST KNOW

- NEVER TURN OFF THE STARTER SWITCH OR THE BATTERY SWITCH WHILE OPERATING THE ENGINE Page 3-2

CAUTION

Never turn off the starter switch or the battery switch while operating the engine. If you turn these switches off, warning lamps and instruments which are necessary for operation will not work and therefore it is extremely dangerous. It may also lead to the generation of high voltages in the electrical circuits, causing damages to the diodes.



INSTRUMENTS WILL NOT OPERATE, IF THE SWITCH IS KEPT "OFF" DURING OPERATION.

EA01 - 005A

- INSPECTION AND MAINTENANCE

CAUTION

- If you touch or get close turning parts such as the belt and the fan while the engine is running, your hands or clothes can get caught and you might cause an unexpected injury.
- After finishing the work, be careful not to leave any rag, paper and tool in the engine compartment. Pay special attention to any flammable materials since they can cause fire.

- BE SURE TO PERFORM INSPECTION AND MAINTENANCE OF ENGINES EQUIPPED WITH TURBOCHARGER FIRMLY AND WITHOUT FAIL

CAUTION

- When the engine is operated at high load and high speed, continue warming up until the coolant temperature gauge starts moving.
- When the engine has been operated at high load and high speed, keep the engine idling until the turbocharger has cooled down, before stopping the engine.
- In order to keep the function of the turbocharger properly, it is necessary to practice the periodical replacement of the engine oil of good quality and of the oil filter, as well as cleaning the air cleaner periodically.

IMPORTANT FUNDAMENTALS YOU MUST KNOW

1-5



- Be sure to warm up the engine before operating it, and perform idling before stopping the engine.

■ BE CAREFUL WITH EXHAUST GAS

WARNING

- Exhaust gas contains carbon monoxide (CO) which is colorless and odorless but harmful. Inhaling exhaust gas is dangerous as it can result in carbon monoxide poisoning.
- Do not keep the engine running in a poorly ventilated area. Surrounded areas such as indoor areas are especially dangerous because such areas can be filled with exhaust gas, which can result in carbon monoxide poisoning.
- Check your exhaust pipe occasionally. If you find a hole or crack, coupler damage, or anything unusual with the exhaust pipe, have the engine inspected and repaired at the nearest your dealer. Keep using the engine under such conditions can cause the exhaust gas to enter the indoor areas and result in carbon monoxide poisoning.

MEMO

2. BASIC ENGINE CARE

2-1



- WARRANTY P2- 2
- ENGINE INSPECTION P2- 3
- BREAKING-IN THE
NEW ENGINE P2- 4

BASIC ENGINE CARE

WARRANTY

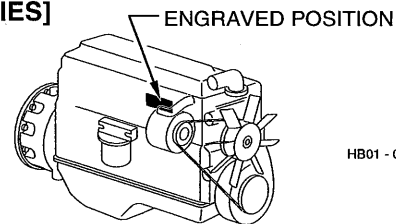
HINO engines are produced using the latest production technologies and under through quality control. We are sure that you will be satisfied with your engine performance and functions. However, if there should be a manufacturing related problem, we will repair it without charge as long as it is covered by the conditions described in the warranty card. Please refer to the warranty card for details.

■ ENGINE MODEL AND NUMBER

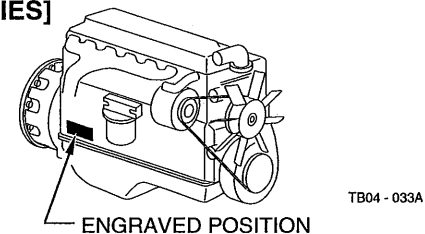
- The engine model and serial numbers are engraved on the crank case on the side of the engine.

EXAMPLE: P11C TA10001

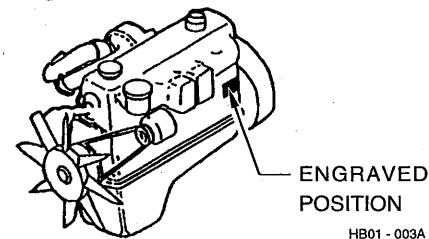
[J05 SERIES]



[J08 SERIES]



[P11 SERIES]



■ GENUINE PARTS

- When purchasing parts, always specify “**HINO genuine parts**”. Since we guarantee the quality of “**HINO genuine parts**”, you can depend upon their reliability. “**HINO genuine parts**” carry the label  or *Hino* as shown below on the products themselves or are packed in the box or wrapping paper with the same labels.



EB01 - 001A

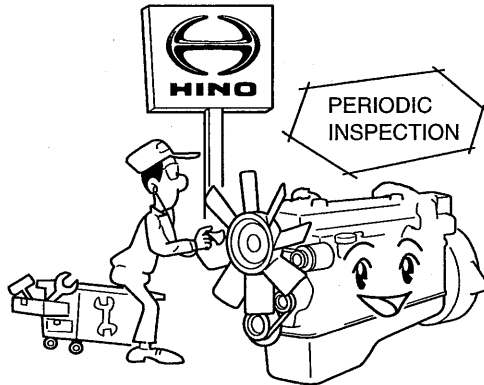


EB01 - 002A

BASIC ENGINE CARE

2-3

ENGINE INSPECTION



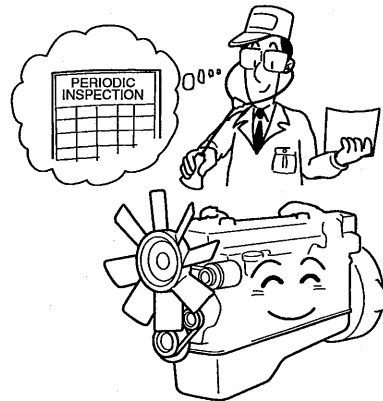
EB01 - 003A

■ PERIODIC INSPECTION

Periodic inspection and maintenance is absolutely necessary in order to ensure maximum engine performance and long service life. Conduct periodic inspection and maintenance and oil and/or grease replacement according to the methods described in the periodic inspection and maintenance chart and the lubricants table contained in this handbook. Please bear in mind that problems caused by neglecting inspection or oil and/or grease replacement shall not be covered by the warranty.

👉 ADVICE

The degradation of the engine progresses and the performance of the component parts and of its equipment reduces depending upon the length of operation period as well as the quality of care. Please make sure to perform regular inspections and maintenance, in order to avoid damage and to reduce exhaust gas and noises which adversely affect the social environment.



EB01 - 004A

■ PERIODIC REPLACEMENT PARTS

With the passage of time, there will be a deterioration in quality of material of rubber parts of the engine, which are important from the safety point of view. It is difficult to determine how much longer these parts can be used safely during periodic inspection.

Since such parts play an important role in ensuring their performance, function and safety, make sure to replace these parts periodically according to the schedule specified by HINO.

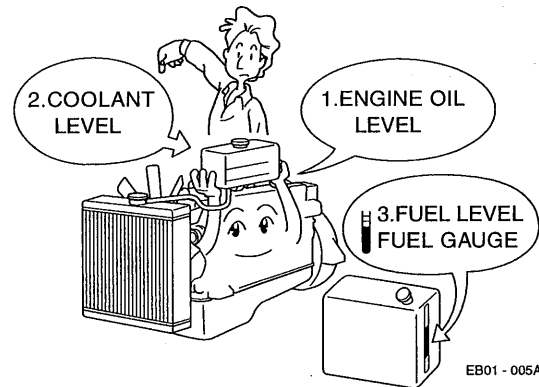
👉 ADVICE

Please note that the periodic replacement of parts is to be carried out on your own responsibility and paid for by yourself. It is different from repair work covered by the warranty.

Depending upon operation conditions and other circumstances it may be necessary to replace such parts earlier than the specified schedule. At such time please consult your dealer.

BASIC ENGINE CARE

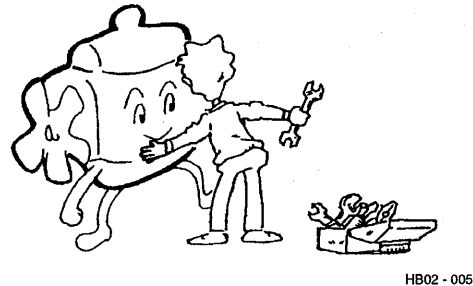
■ DAILY(BEFORE STARTING THE ENGINE) INSPECTION



- To ensure always safe and trouble-free use of the engine, inspect the following items before starting the engine.
 1. Engine oil level
 2. Coolant level
 3. Fuel level

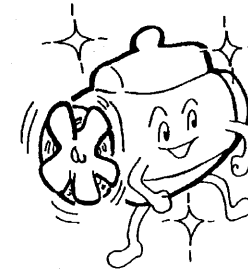
■ INSPECTION AND MAINTENANCE

- To ensure optimum engine performance, check the following inspection items which are included in the periodic inspection and maintenance chart and conduct inspection and maintenance regularly. These items and procedures can be performed by a person with basic knowledge of engine structure and components.



- To ensure safety, follow the instruction contained in "PRECAUTIONS OF SAFETY" on page 4-2.

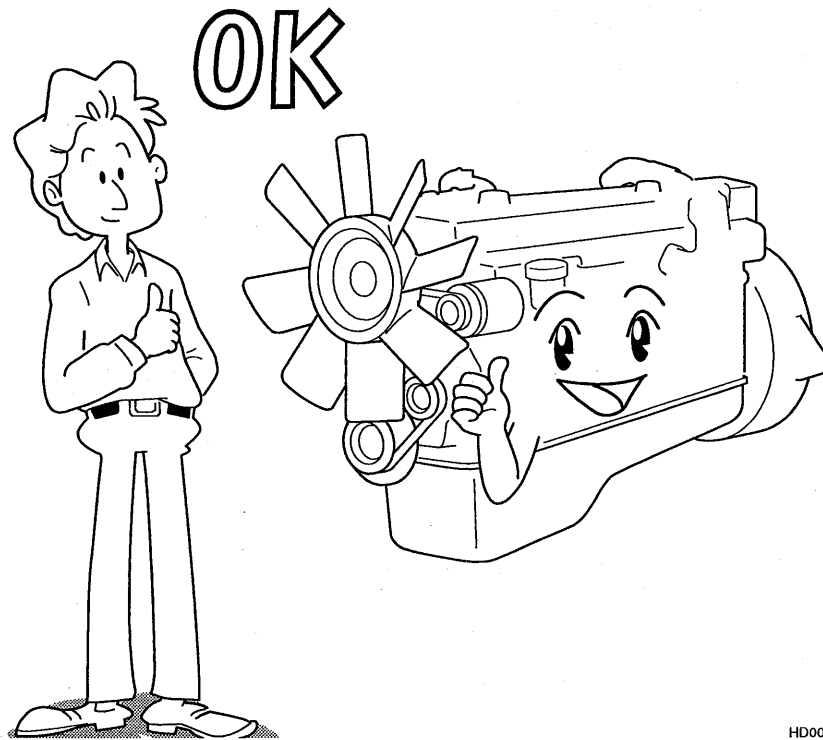
BREAKING-IN THE NEW ENGINE



- The first 30 hours is the breaking-in period. Pay attention to the following points when breaking-in the engine.
 - Be sure to warm up sufficiently.
 - Avoid racing the engine. It is not only puts a strain on the engine, but also wastes fuel.
 - Make every effort not to operate the engine in overload.
 - After the 30 hours of breaking-in period, change the engine oil.

3. PROPER OPERATION

3-1



HD00 - 003A

ADVICE

Items contained in this section are based on the standard specifications of HINO industrial engines. Depending upon the machine model, they may not be the same as your engine. Please refer to the "OPERATION MANUAL" of your machine.

- STARTER SWITCH P3- 2
- STARTING THE ENGINE P3- 3
- ENGINE WARM-UP P3- 4
- PRECAUTIONS TO TAKE WHEN
OPERATING THE ENGINE P3- 5
- STOPPING THE ENGINE P3- 5
- HANDLING IN COLD WEATHER P3- 6
- HANDLING IN HOT WEATHER P3- 7
- LONG-TERM STORAGE
OF THE ENGINE P3- 8

PROPER OPERATION

STARTER SWITCH

■ KEY POSITIONS

► “OFF” position

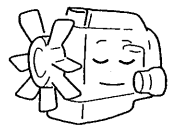
- In this position, the key can be inserted or removed.

- * Be sure to set the switch to this position after the engine is stopped.

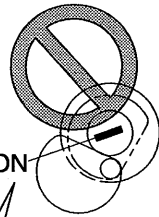
👉 **ADVICE**

Be sure to always set the switch to the “OFF” position when the engine is not running. Leaving the switch in the “ON” position for a long period of time when the engine is not running may result in loss of battery power and cause the engine not to start.

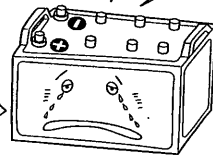
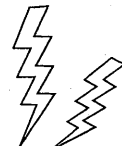
WHILE THE ENGINE IS NOT RUNNING



IF THE SWITCH IS LEFT IN THE “ON” POSITION FOR A LONG PERIOD OF TIME WHEN THE ENGINE IS NOT RUNNING



DISCHARGE



EC01 - 001A

► “ON” position

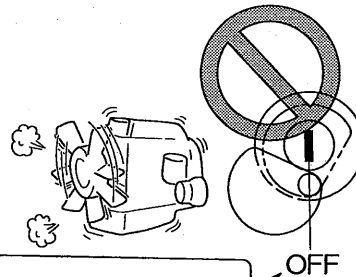
- This is the position in which the engine is running.

► “START” position

- This is the position to start the engine.

⚠ CAUTION

Always keep the key in the “ON” position while running. When it is in the “OFF” position, the warning lamps and instruments necessary for operation will not operate and it is very dangerous. It also damages the electric circuit.



INSTRUMENTS WILL NOT OPERATE, IF THE SWITCH IS KEPT “OFF” DURING OPERATION.

EA01 - 005A

PROPER OPERATION

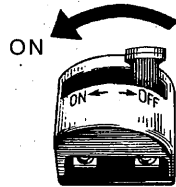
3-3

STARTING THE ENGINE

Depending on the machine, they may be different in the way the engine is started and stopped. Please refer to the "OPERATION MANUAL" of your machine.

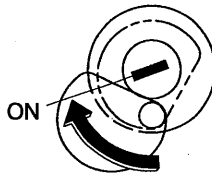
■ NORMAL STARTING AND WHEN THE ENGINE IS WARMED UP

1. Turn the battery switch to the "ON" position.



HD02 - 001A

2. Insert the starter key and turn it to the "ON" position. Check that all instruments are operating properly.



HD02 - 006A

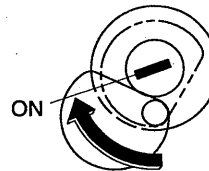
3. Turn the starter key to the "START" position and start the engine.

👉 ADVICE

If there is anything abnormal with the operation or the lighting up of any of the instruments or warning lamps, turn off the starter switch and battery switch, and inspect the abnormal area.

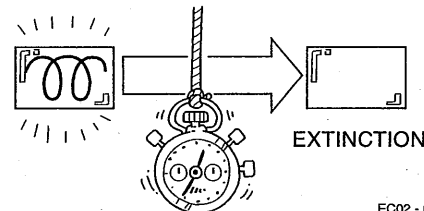
■ WHEN YOU FIND IT DIFFICULT TO START THE ENGINE IN COLD WEATHER

1. Turn the starter key to the "ON" position.



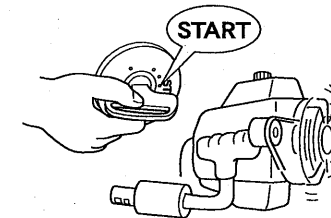
HD02 - 006A

2. If the coolant temperature is below 0°C {32°F} (J series engine) and -15°C {5°F} (P series engine), the preheat indicator lamp lights up and it turns off when preheating is completed.



EC02 - 002A

3. Simultaneously with the extinction (approx. five seconds) of the preheat indicator lamp, turn the starter key to the "START" position and start the engine.



TE002 - 024A

- Starting the engine within 3.5 seconds after extinction of the preheat indicator lamp will facilitate raising engine revolution.

👉 ADVICE

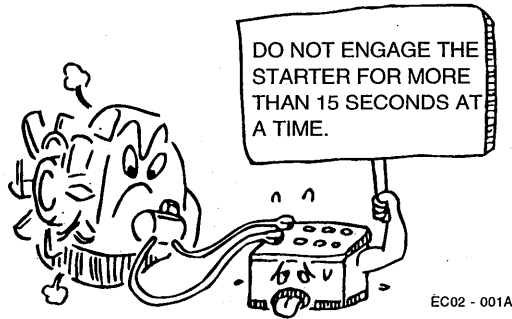
- Heater plug (J series engine) and intake air heater (P series engine) use a lot of electricity. Please avoid repeated operation of them, since it gives excessive strain to batteries.
- If the engine does not start on the first attempt, wait approximately 30 seconds for the batteries to recover before trying again.

PROPER OPERATION

ENGINE WARM-UP

ADVICE

Do not engage the starter for more than 15 seconds at a time.



1. When the engine starts, use the accelerator lever to run the engine at a little higher than the normal idling speed.
 - Warm-up for approximately five minutes.

2. Continue warm-up the engine until the needle of the coolant temperature gauge starts moving.

3. When the needle has started moving, return the engine to the normal idling speed. The normal idling speed rate is different depending on the machines. Please refer to the "OPERATION MANUAL" of your machine.

- While warming up of the engine, observe the engine condition and inspect all sections of the engine to ensure proper operation.

1. Pay attention to the engine noise and check the color of the exhaust gas. If you notice any abnormality of the engine noise, stop the engine immediately and perform inspection and repairs. Also, monitor the color of the exhaust gas to identify combustion condition.

How to distinguish the exhaust gas color (when the engine is warm)

Colorless..... Complete combustion

Black..... Incomplete combustion

White..... Oil combustion due to oil loss via piston rings or valve guides

CAUTION

When operating the engine, make sure that there are no combustible materials near the exhaust pipe. The heat from the exhaust can cause a fire.

PROPER OPERATION

3-5

PRECAUTIONS TO TAKE WHEN OPERATING THE ENGINE

2. Check that the coolant temperature is normal. Through the action of the thermostat, the temperature of the coolant is kept within the normal operating temperature zone. The engine is started, and then the needle of the coolant temperature gauge starts moving to the right and enters the normal operating temperature zone.

If in cold weather the needle does not enter the normal operating temperature zone even after an extended period of time, use a radiator curtain or such to reduce the radiator core area and over-cooling.

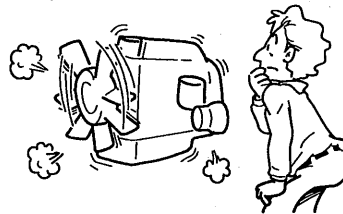
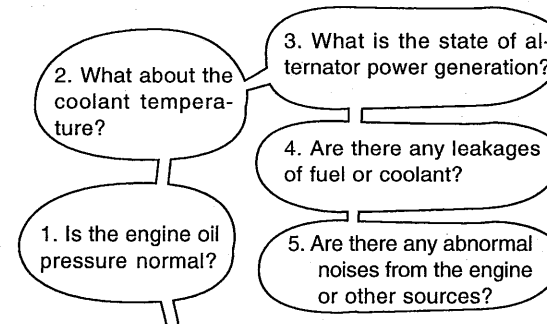
When the coolant temperature is abnormally low, it results in a higher fuel consumption and a premature wear of engine parts.

WARNING

Do not warm up the engine in a poorly ventilated area. It is dangerous because the exhaust gas can cause carbon monoxide poisoning.

Pay attention to the following while operating.

- (1) The oil pressure is normal.
- (2) The coolant temperature is normal. (Generally below 95°C {203°F} at the maximum ambient temperature.)
- (3) The batteries are properly charged.
- (4) There are no leakages of fuel, coolant, oil, or gas.
- (5) There are no abnormal noises from the engine or other sources.



EC04 - 001A

STOPPING THE ENGINE

■ IDLING BEFORE STOPPING THE ENGINE

- Before stopping the engine, idle the engine for five minutes to cool down.
- To stop the engine, return the starter key to the "OFF" position and then the battery switch to the "OFF" position without fail.

ADVICE

Stopping the engine immediately after operation without cooling down by idling is not good for the engine. Particularly in the case of engines equipped with turbochargers or an engine that has been operated under great load, the various parts of the engine are in overheated condition. Therefore, be sure to cool down the engine sufficiently by idling before stopping it.

PROPER OPERATION

HANDLING IN COLD WEATHER

■ INSPECTION OF ENGINE AFTER OPERATION

In addition to cleaning the engine after operation, perform the following.

- Inspect and repair areas which had appeared faulty during operation.
- Check to see whether there are any loose or damaged parts and any leakage of oil or coolant.
- If you do not use an antifreeze or long life coolant (LLC) during the winter season, drain all the coolant from the engine. If the coolant is not drained, it can freeze and crack the crankcase or the coolant system or cause other damage.

The engine needs special care in areas where there is a lot of snow, mountainous regions or extremely cold regions.

■ PRECAUTIONS TO TAKE WHEN STARTING THE ENGINE

- Preheat the engine before starting it.
- After starting the engine, warm up the engine by idling at a little higher speed than normal idling.

ADVICE

When the engine is cold, do not race the engine or suddenly impose load to it or rotate it at high speed, because if these are done, they can cause not only engine trouble but also waste of fuel.

■ PRECAUTIONS TO TAKE DURING FUEL REPLENISHMENT

- Be sure to fill up the fuel tank after the operation.
In cold weather, if the fuel level is low and there is an increase of the amount of air inside the fuel tank, the vapor contained in the air can turn into drops of water, which may freeze or cause rust in the fuel system, resulting in engine trouble or breakdowns.
- Be sure to tighten the fuel tank cap firmly to prevent rain or snow from getting into the tank.

- Occasionally remove the drain plug of the fuel tank to drain the water content from inside the tank.

ADVICE

Summer 2-D diesel fuel may freeze when the outside temperature drops below -10°C $\{14^{\circ}\text{F}\}$. When the fuel freezes, the engine cannot start. In cold areas, use Winter 2-D diesel fuel. For details of the fuel, please refer to a table in "PRECAUTIONS DURING OPERATION" on page 1-2.

■ PRECAUTIONS REGARDING THE ENGINE OIL

- When operating the engine in cold areas, be sure to use the type of oil with the appropriate viscosity because engine oil viscosity increases as outside temperature falls.

■ PRECAUTIONS REGARDING THE COOLING SYSTEM

- Always mix long life coolant (LLC) with the coolant to prevent it from freezing and damaging the engine and radiator.

ADVICE

If you do not use the long life coolant (LLC), always be sure to remove all the drain cocks from the crankcase and the radiator and drain all the coolant after finishing operation.

PROPER OPERATION

3-7

HANDLING IN HOT WEATHER

■ PRECAUTIONS REGARDING THE BATTERY

Battery power declines in cold weather and the battery freezes more easily. Therefore, try to keep the batteries fully charged at all times.

- Always charge the batteries by running the engine after replenishing electrolyte, to prevent the batteries from freezing.



ADVICE

When it is extremely cold, remove the battery and store it indoors if it is not being used for an extended period of time.

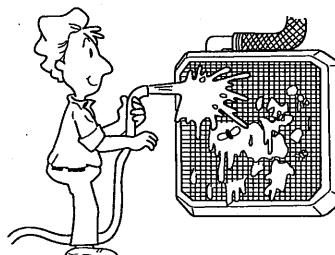
The engine can overheat more easily in hot weather. Therefore, the handling of the cooling system needs special attention.

■ PRECAUTIONS REGARDING THE ENGINE OIL

- Since the engine oil viscosity decreases as outside temperature rises, always use oil with the appropriate viscosity when operating the engine in hot weather.

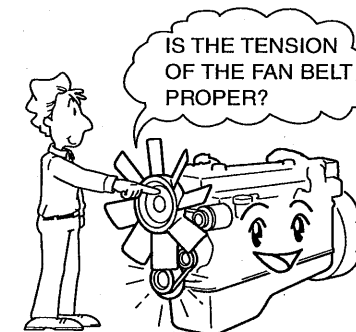
■ PRECAUTIONS REGARDING THE COOLANT SYSTEM

- When the weather is hot, scale and rust will build up more easily in the cooling system, particularly inside the radiator. Therefore, replace the coolant occasionally and ensure that the coolant circulating inside the cooling system is always clean.
- The front of radiator or intercooler may get clogged with mud and dust, resulting in decreased cooling efficiency. Therefore, regularly wash off the front of them with water.



TM11 - 003A

- Always check the fan belt for proper tension and make sure to adjust the tension so that it conforms to the standard value.



EC07 - 001A



WARNING

Never remove the radiator cap until the coolant temperature is below the normal temperature range. Opening the radiator cap carelessly can lead to burn and other injuries due to spurting out of hot coolant and steam.

■ PRECAUTIONS REGARDING THE BATTERY

- Battery electrolyte consumption is higher in hot weather, therefore, check the electrolyte level more frequently and make sure the battery is always filled up with replenisher or distilled water up to the "UPPER" level.

PROPER OPERATION

LONG-TERM STORAGE OF THE ENGINE

DANGER

Since the batteries produce flammable hydrogen gas, keep electric sparks and burning cigarette end away from the batteries. It is very dangerous and could cause hydrogen gas catch fire and cause the batteries to explode.

WARNING

Battery electrolyte is dilute sulfuric acid and can burn your skin and clothing. If battery electrolyte should contact your clothing, wash the area thoroughly with soap and water. If it should contact your skin or eyes, immediately flush your skin or eyes thoroughly with water and get prompt medical treatment.

ADVICE

- When replenishing the battery, be sure not to fill above the "UPPER" level. Filling above the "UPPER" level may result in the overflow of the replenisher causing the corrosion of terminals, etc.
- Always charge the battery by running the engine after adding replenisher. Especially in cold weather, the battery may freeze and be damaged if it is not charged after replenishment.

When the engine is going to be idle for a period of time, it should be stored in a dry warehouse according to the procedures described below.

■ WHEN THE ENGINE CAN BE OPERATED WHILE IN STORAGE

- Be sure to run the engine at least once a week, and let the oil and grease reach every part of the engine. Before operating the engine, be sure to idle the engine via starter switch, and to check that the oil pressure sufficiently goes up by the oil pressure gauge.

■ WHEN THE ENGINE IS NOT OPERATED FOR A LONG TIME

- ▶ When the engine is idle for a comparatively shorter period (approximately within one month)
 - Securely cover all fuel, oil, grease, air and coolant related openings, and take care to prevent moisture.

ENGINE CAN HAVE A
NICE REST BY ESTAB-
LISHING NECESSARY
MEASURE FOR IMMO-
BILIZATION



EC08-001A

▶ When the engine is idle for a long time (ap- proximately for more than three months)

- Be sure to store the engine according to the following procedures.
1. Rust prevention measures for engine itself
 - a. After removing the oil from the oil pan, replace it with **Antirust Oil 2** described on page 3-10, filling in the oil in the same way that engine oil is supplied.
 - b. By using the normal fuel, run the engine at a constant speed for about 15 minutes, then stop it.
 - c. Drain all the fuel from inside the tank, replace it with **Antirust Oil 1** and run the engine at idling speed until the antirust oil has spread throughout the fuel system.
 - d. A few seconds before you stop idling the engine, spray **Antirust Oil 2** through the intake manifold, at the same time you set the accelerator lever or stop button to the "STOP" position. In such a case, there is a danger of the engine speed rising suddenly, therefore, spray the oil in smaller quantity, then carefully increase the frequency gradually.

PROPER OPERATION

3-9

- e. When the engine has cooled down **enough to be able to touch**, remove the nozzle. After making sure that the upper part of each piston is at the center of the cylinder liner, spray **Antirust Oil 2** into the interior of the cylinder liner (until the oil accumulates up to the point above the pistons) and then mount the nozzle.
 - f. Remove the cylinder head cover, and spray **Antirust Oil 2** on the rocker arms and other moving parts. After loosening the adjusting screw, install the head cover.
 - g. Drain the coolant completely, and then close all the drain cocks.
 - h. When the rust prevention measures are all completed, be sure to seal all fuel, oil, grease, air and coolant related openings with waterproof tape.
 - i. Apply paint as needed to mend damaged paint parts. Lightly apply **Antirust Oil 2** to metal parts that do not need to be painted.
2. Rust prevention measures for accessories
- a. After cleaning the air cleaner, seal it with waterproof tape.
 - b. Clean the insides of the alternator, the starter and the relays with dry compressed air and cover them with dustproof, waterproof covers.
 - c. Loosen the tension of the V-belt.
 - d. Charge the battery fully after filling up with replenisher or distilled water, and disconnect all its cables. **Be sure to recharge the battery about once a month.**

ADVICE

If the engine is kept idle for more than a year, perform the above procedures repeatedly.

■ **PRECAUTIONS FOR REUSING AN ENGINE THAT HAS BEEN IDLE FOR A LONG TIME**

There should be no problems using an engine that has been idle for a long time, if it has been started and warmed up about once a week during the period it has been idle. However, when reusing an engine that has been idle for some time and has not been warmed up periodically, be sure to perform the following inspection and maintenance before using the engine.

- (1) Check and adjust the valve clearance.
- (2) If you have used Antirust Oil 1 and 2, replace the oil filters and fuel filters.
- (3) Remove the cylinder head and check the inside of the cylinder liner to make sure it has not rusted. (Corrective measures will be needed, if there is too much rust.) Pour the engine oil on the cylinder liner walls and the top of the piston, and then let the engine rotate a couple of times by hand.
- (4) Replace the antirust oil inside the oil pan with the engine oil and check that there is a specified amount of the engine oil.

- (5) Before the test run of the engine, idle the engine with the starter for about 10 seconds to make sure all of the parts are lubricated. Also open the cylinder head cover and make sure the rocker arm bearing and the push rod are sufficiently lubricated.
- (6) During the test run, check that there are not any leakage of fuel, coolant and gas.

PROPER OPERATION

■ RECOMMENDED ANTIRUST OILS

Maker	Antirust Oil 1 (for fuel)	Antirust Oil 2 (for lubrication)
CALTEX	564 Rust Proof Oil	Preservative 30
ESSO	Rust-Ban 337	P1010 Antirust P1020 P1030
MOBIL	Mobil Kote 501	Mobil Kote 503
SHELL	-	Shell Ensis Engine Oil 30

4. INSPECTION AND MAINTENANCE

4-1

This section contains a description of simple maintenance procedures that can be performed by you. For information on detailed inspection, replacement of parts and adjustments that you cannot perform yourself, please contact the nearest your dealer.

⚠ CAUTION

- Failing to perform regular maintenance can result in serious accidents, or engine trouble. In addition, damages resulting from the lack of maintenance may not be covered by warranty.
- Be sure to perform regular inspections even when the engine is not being used for an extended period of time.

👉 ADVICE

- In the event that both operation hours and length of service time are mentioned for the intervals of inspection and maintenance, follow whichever comes first.
- Items in this section are based on the standard specifications of HINO industrial engines. Depending on the machine model, they may be different for your engine. Please refer to the "OPERATION MANUAL" of your machine.

PRECAUTIONS OF SAFETY P4- 2

DAILY (BEFORE STARTING THE ENGINE) INSPECTION P4- 3

- ENGINE OIL LEVEL P4- 3
- COOLANT LEVEL AND LEAKAGE FROM THE COOLANT SYSTEM P4- 3
- TENSION AND DAMAGE OF THE V-BELTS P4- 4
- FUEL LEVEL P4- 5
- THE COLOR OF THE EXHAUST GAS P4- 5
- IRREGULARITIES FOUND DURING PREVIOUS OPERATION P4- 5

INSPECTION OF EACH PARTS P4- 6

- ENGINE OIL FILTER P4- 6
- FUEL FILTER P4- 8

- AIR BLEEDING OF THE FUEL SYSTEM P4-11

- ADJUSTMENT OF THE V-BELT TENSION P4-12

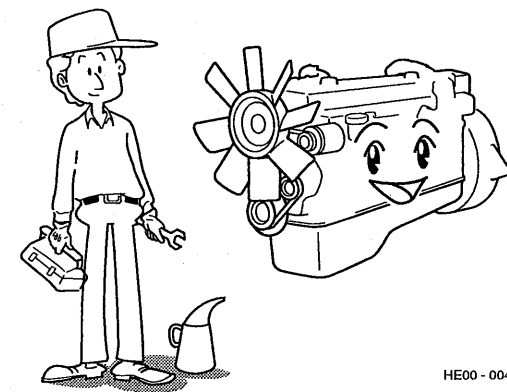
- INSPECTION OF THE COOLING SYSTEM P4-14

- ALTERNATOR P4-17

- STARTER P4-18

PERIODIC INSPECTION AND MAINTENANCE P4-19

- PERIODIC INSPECTION P4-19



HE00 - 004A

INSPECTION AND MAINTENANCE

PRECAUTIONS OF SAFETY

1. Perform the inspection and the maintenance work in a safe place.
2. Be sure to stop the engine and remove the starter key.
3. Use appropriate tools, machines and measuring devices for the inspection and maintenance work.
4. Wear appropriate clothing during the inspection and the maintenance work.

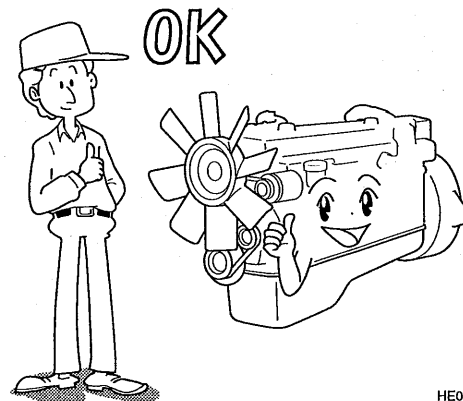
CAUTION

- Engine parts such as the radiator and exhaust system are very hot just after the engine has been stopped. Be sure to let the engine cool down before you start to work, you may suffer burns yourself.
- When replacing the various types of oil, oil filters and coolant, be sure to wait until they have cooled down sufficiently. They are very hot just after the engine has stopped and you may suffer burns yourself.
- When disposing the oil, coolant and parts that have been replaced, be sure to do so in an environmentally safe manner.
- Be sure not to have contact with the revolving parts of the engine while it is running. Your hand and foot or clothing may get caught, resulting in unexpected injury or accidents.

ADVICE

Do not step on pipes and accessories. Doing so may cause damage and failures.

5. After the inspection and the maintenance, perform a test run of the engine to make sure that all parts are functioning properly.



HE00 - 005A

CAUTION

After finishing the work, be careful not to leave rag, paper and any tool in the engine compartment. Especially, flammable materials can cause fire.



ED01 - 001A

INSPECTION AND MAINTENANCE

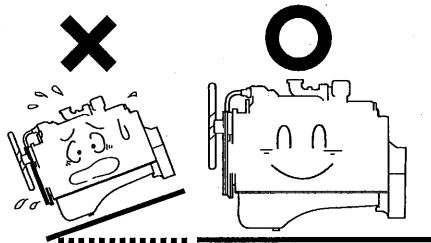
4-3

DAILY (BEFORE STARTING THE ENGINE) INSPECTION

Daily inspection (before starting the engine) is the inspection performed by the operator once a day before the engine is started.

ENGINE OIL LEVEL

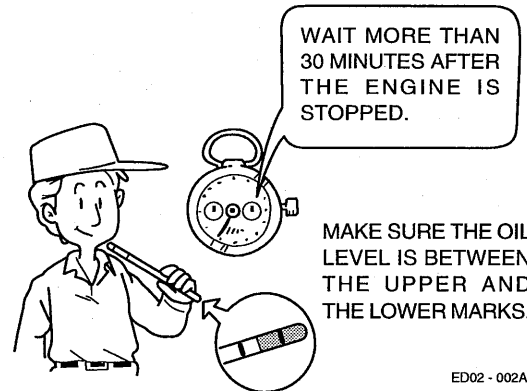
* When checking the oil level or replenishing the oil, make sure the engine is on the level ground.



MAKE SURE THE ENGINE IS ON THE LEVEL GROUND.

ED02 - 001A

1. Pull out the oil level gauge and wipe off the oil sticking to the gauge by using a rag.
2. Reinsert the gauge fully and pull it out again.



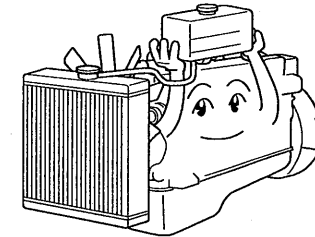
ED02 - 002A

- If the oil sticks to the range between the notches, it is normal. If the oil is insufficient, replenish the oil through the oil filler.
- * For details of replenishment of the oil, please refer to "ENGINE OIL" on page 5-2.

ADVICE

- Always check the oil level before starting the engine. Make sure that the engine is on level ground. You cannot check the exact oil level, with the engine running or inclined.
- If the engine has been running, stop the engine and wait at least 30 minutes before checking the oil level.

COOLANT LEVEL AND LEAKAGE FROM THE COOLING SYSTEM



HE02 - 003A

- Check to see that the levels of coolant in the radiator and the reserve tank are sufficient.
- Check whether there is any leakage of coolant from radiator or its hoses. Also, check to see if there is any trace of coolant leakage under the engine.
- * If the coolant level is excessively low, there is a danger of coolant leakage from the cooling system. Contact the nearest your dealer.
- * For details of replenishment of the coolant, please refer to "INSPECTION OF THE COOLING SYSTEM" on page 4-14.

ADVICE

Check the coolant level and add the coolant while the engine is cold.

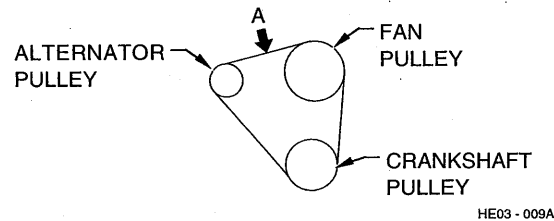
INSPECTION AND MAINTENANCE

TENSION AND DAMAGE OF THE V-BELTS

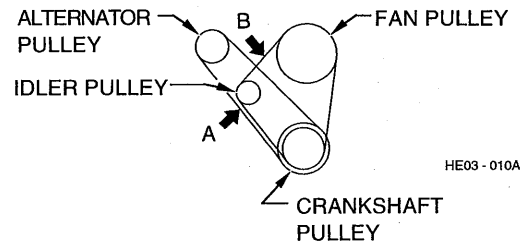
MEASURING POSITION OF THE ALTERNATOR BELT AND THE FAN BELT

- Measure belt tension at point A and B.

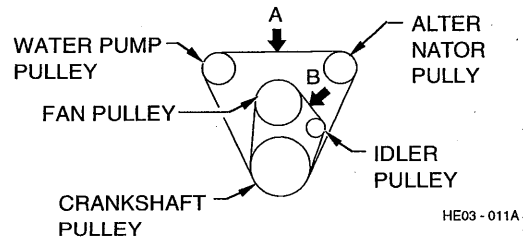
[J05 SERIES]



[J08 SERIES]

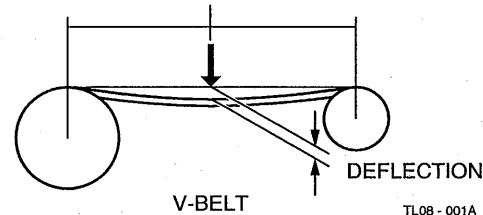


[P11 SERIES]



How to measure the deflection

MEASURING POSITION
(MIDWAY BETWEEN THE TWO PULLEYS)



- Check the V-belts for proper tension by applying a pressure to the center of the belt with your finger and if the amount of deflection is within the standard value.
- Measure the belt deflection by applying a pressure of approximately 98 N {10 kgf, 22 lbf} with your finger or a belt tension gauge, a special tool (Part number: 09444-1210) to the midway between the two pulleys.
- If the tension is out of the standard value, make a necessary adjustment of the tension.
- * For details on the adjustment of the V-belt, please refer to "ADJUSTMENT OF THE V-BELT TENSION" on page 4-12.

STANDARD DEFLECTION OF THE V-BELT

Engine model	Standard Value	
	Measuring Position (A)	
	When new belt replaced	When inspected
J05E	8 - 10 mm {0.31 - 0.39 in}	10 - 12 mm {0.39 - 0.47 in}
J08E excavator	22 - 23 mm {0.87 - 0.91 in}	24 - 25 mm {0.94 - 0.98 in}
J08E crane	22 - 23 mm {0.87 - 0.91 in}	24 - 25 mm {0.94 - 0.98 in}
P11C crane	13 - 15 mm {0.51 - 0.59 in}	17 - 19 mm {0.67 - 0.75 in}

Engine model	Standard Value	
	Measuring Position (B)	
	When new belt replaced	When inspected
J05E	-	-
J08E excavator	13 - 14 mm {0.51 - 0.55 in}	15 - 17 mm {0.59 - 0.67 in}
J08E crane	9 - 10 mm {0.35 - 0.39 in}	10 - 11 mm {0.39 - 0.43 in}
P11C crane	6 - 8 mm {0.24 - 0.31 in}	7.5 - 9.5 mm {0.30 - 0.37 in}

- Also check the V-belts for damage. Replace them with the new belts if damaged.

ADVICE

The items mentioned here are based on the standard specifications of HINO industrial engines. Depending on the machine model, they may not be the same for your engine. Please refer to the "OPERATION MANUAL" of your engine.

INSPECTION AND MAINTENANCE

4-5

FUEL LEVEL

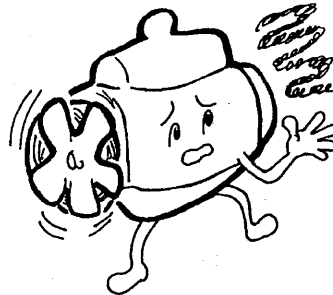
Check to see if there is sufficient fuel in the tank.
Also, make sure that there is no leakage of fuel.

WARNING

Leakage of fuel is dangerous (including at the pipe and hose connections) and can cause a fire. If fuel is leaking, replace the gaskets at each connection or retighten them.

THE COLOR OF THE EXHAUST GAS

After warming up the engine sufficiently, check the color of the exhaust gas.



HE05 - 001A

Colorless Complete combustion
Black..... Incomplete combustion
White..... Oil combustion due to oil loss by way of piston ring or valve guides

* Due to cold weather in winter the smoke may appear white. Be careful not to get confused.

WARNING

Do not operate the engine in a poorly ventilated area. It is dangerous because the exhaust gas can cause carbon monoxide poisoning.

IRREGULARITIES FOUND DURING PREVIOUS OPERATION

Check to see if irregularities found the previous day or the last time the engine was operated do not affect operation and nor pose a hazard. If you find anything abnormal that you cannot repair yourself, contact the nearest your dealer for inspection and repairs.

INSPECTION AND MAINTENANCE

INSPECTION OF EACH PARTS

ENGINE OIL FILTER

Different types of oil filters (full-flow by-pass center bolt type, full-flow by-pass spin-on type) are used for the various types of machine, depending on what the engine is used for. This section describes the typical oil filters used for HINO industrial engines.

■ OIL FILTER ELEMENT REPLACEMENT INTERVALS

Replacement intervals

Every 500 hours of operation

👉 ADVICE

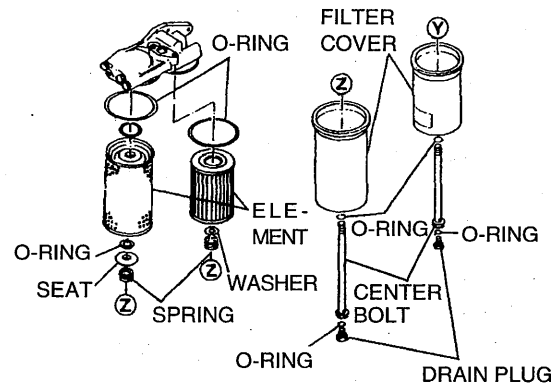
Replacement intervals for the element are different depending on the type of machine. Please refer to the "OPERATION MANUAL" of your machine.

- Replace the oil filter element simultaneously with the engine oil change. If the oil filter warning lamp lights up, replace the oil filter element regardless of hours of operation.
- * In case of engines equipped with turbochargers, be sure to use high quality engine oil to ensure the performance of turbocharger.

■ REPLACEMENT PROCEDURE

[P series engine]

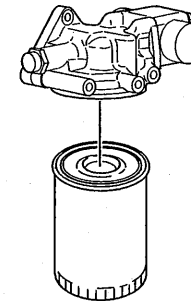
▶ Center bolt type (full-flow by-pass type)



ED03 - 001A

[J series engine]

▶ Spin-on type (full-flow by-pass type)



HE07 - 004A

INSPECTION AND MAINTENANCE

4-7

► Center bolt type (P series engine)

- * As dirt may get into the oil filter, be sure to remove all dirt and dust from around the filter before starting to work.

CAUTION

Just after running, the engine oil is still hot and can burn you. Wait a few minutes to let the oil cool down before changing or checking it.

1. Place a container for the oil to be drained under the oil filter and then drain the oil by loosening the drain plug at the lower part of the oil filter.
 2. Loosen the center bolt by approximately one turn to facilitate the draining of the oil.
- * To ensure safety and to prevent the ground from getting dirty, make sure all of the drained oil is drained into a container.
3. After draining, tighten the drain plug securely.
 4. After removing the center bolt, remove the element together with the filter cover.
- * Be careful not to lose the spring and the washer.
5. Wash all parts, except the element and the O-rings, in detergent oil.
 6. Install new element in the filter cover, in reverse order of disassembling.
- * Element cannot be washed and reused.
 - * Install new O-rings included in the element kit.
 - * When installing, make sure not to damage the O-rings by twisting. Also, pay attention not to install the element in reverse direction.

7. After replacing the element, run the engine and let the element be fully soaked with oil, then check the engine oil level.

CAUTION

After replacement of the oil filter, operate the engine for trial to check again to see if there is any oil leakage around the oil filter. Oil leakage can cause a fire.

► Spin-on type (J series engine)

- * As dirt may get into the oil filter, be sure to remove all dirt and dust from around the filter before starting to work.

CAUTION

Just after running, the engine oil is still hot and can burn you. Wait a few minutes to let the oil cool down before changing or checking it.

1. Remove the element by turning it to the left using an oil filter wrench, a special tool.
- * To ensure safety and to prevent the ground from getting dirty, make sure all of the drained oil is drained into a container.
2. Remove all dirt and mud that may be sticking on the sealing face (contact face of the element gasket) of the filter main body.

3. Apply oil to the gaskets of the new oil filter element and install it by turning it lightly by hand to the right until it comes in contact with the sealing face of the main body.

- * Be sure to use the new gasket contained in the element kit.
 - * When installing, make sure not to damage the gasket by twisting.
 - * Do not reuse the old element.
4. From this state, tighten the filter element by approximately 3/4 to 1 turn using an oil filter wrench, a special tool.
 5. After replacing the element, run the engine and let the element be fully soaked with oil, then check the engine oil level.

CAUTION

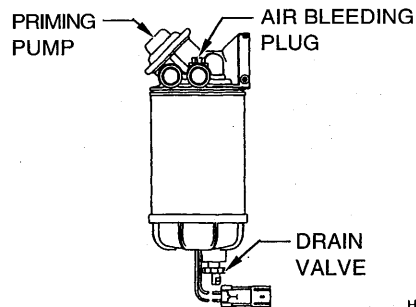
After replacement of the oil filter, operate the engine for trial to check again to see if there is any oil leakage around the oil filter. Oil leakage can cause a fire.

INSPECTION AND MAINTENANCE

FUEL FILTER

■ DRAINING WATER FROM FUEL FILTER

► J series engine



1. Place a container to receive the drained water under the drain valve.
2. Loosen drain valve and air bleeding plug to drain water gathered in the fuel filter.

⚠ CAUTION

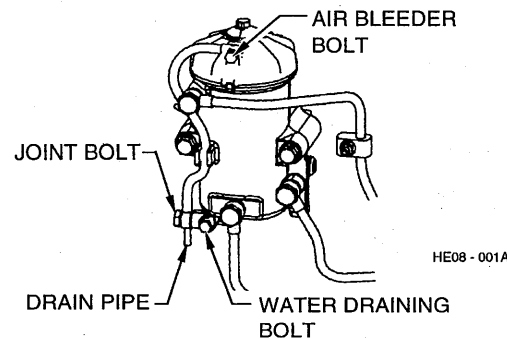
Drained water contains fuel, therefore, follow the processing regulation specified in each region, when disposing of it.

3. Make sure to tighten drain valve and air bleeding plug without fail.

⚠ CAUTION

After draining water, wipe out all the spilled water and fuel and check again if there is any leakage of fuel after running the engine.

► P series engine



1. Place a container to receive the drained water under the drain pipe.
2. Loosen the air bleeder bolt and the water draining bolt of the fuel filter to drain water gathered at the bottom of the fuel filter case.

⚠ CAUTION

Drained water contains fuel, therefore, follow the processing regulation specified in each region, when disposing of it.

3. Tighten the water draining bolt.

4. Actuate the priming pump and bleed air from the fuel system.

⚠ CAUTION

Check to see the air bleeder bolt is loosened.

5. Tighten the air bleeder bolt.

Tightning Torque

$6.9 \pm 2 \text{ N} \cdot \text{m}$ { $70 \pm 20 \text{ kgf} \cdot \text{cm}$ }

⚠ CAUTION

After draining water, wipe out all the spilled water and fuel and check again if there is any leakage of fuel after running the engine.

INSPECTION AND MAINTENANCE

4-9

REPLACEMENT OF FUEL FILTER ELEMENT

Replacement Intervals
Every 500 hours of operation

ADVICE

Replacement intervals for the element are different depending on the type of machine. Please refer to the "OPERATION MANUAL" of your machine.

J series engine

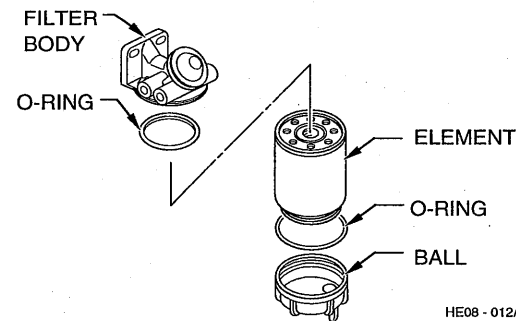
Draining of fuel

1. Place a container to receive the drained fuel under the drain valve.
 2. Loosen the air bleeder plug and drain valve to drain the fuel inside the fuel filter.
- * If water is also gathered, refer to "DRAINING WATER FROM FUEL FILTER (J series engine)" on page 4-8 to drain water.

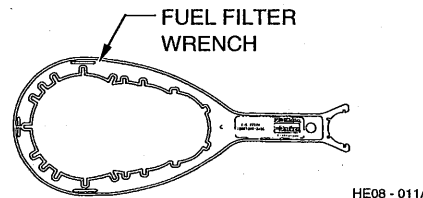
CAUTION

Follow the processing regulation specified in each region, when disposing of drained water and fuel.

Removing the fuel filter element



1. Hold the fuel filter element so as not to turn, and then remove the ball from it using a fuel filter wrench (Part number: 09553-1050A), a specified special tool.



2. Remove the element from the filter body.
Clean the groove of the ball and the O-ring.
- * Do not damage or throw out the ball, because it is used again.

Installing the fuel filter element

1. Remove any dirt or foreign materials on the fitting surface of the fuel filter element.
2. Apply diesel oil thinly to a new O-ring and set it to the sealing surface of the ball.
3. Install the ball to the new element firmly by hand.
4. Apply diesel fuel thinly to a new O-ring and set it to the sealing surface of the upper surface of the element.
5. Install the assembled element and the ball firmly to the filter body by hand.

CAUTION

- Do not reuse the element. Replace old O-rings with new O-rings contained in the element kit.
- Be careful not to damage the O-rings by twisting.
- Check to see if the O-rings firmly contact to the sealing surface.

6. Tighten the drain valve.
7. Actuate the priming pump to bleed air from the fuel system.

CAUTION

Check to see the air bleeder plug is loosened.

INSPECTION AND MAINTENANCE

8. Tighten the air bleeder plug.

⚠ CAUTION

After installing the fuel element, make sure to wipe out the spilled oil and check to see if there is any leakage of fuel, after running the engine.

► P series engine

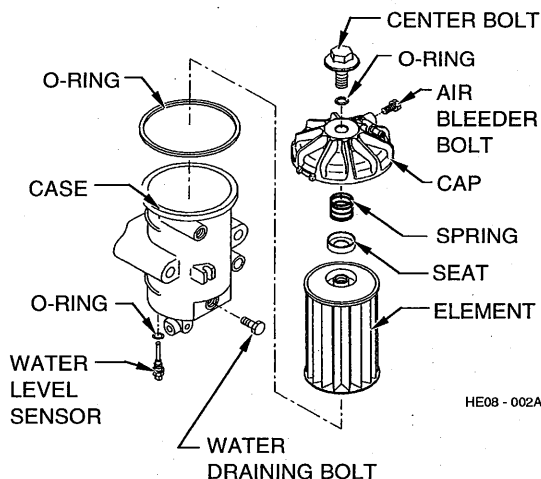
● Draining of fuel

1. Place a container to receive drained fuel under the drain pipe.
2. Loosen the air bleeder bolt, water draining bolt and joint bolt to drain the fuel from the fuel filter case.

⚠ CAUTION

Follow the processing regulation specified in each region, when disposing of drained fuel.

● Removing the fuel filter element



HE08 - 002A

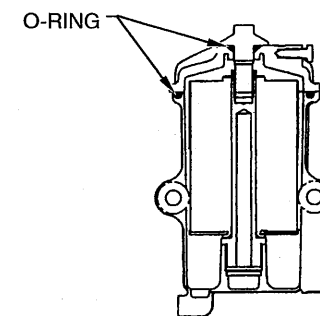
1. Loosen the center bolt and remove the cap.
2. Remove the element.

⚠ CAUTION

Prepare a container because the filter contains diesel fuel.

● Installing the fuel filter element

1. Remove any dirt or foreign material on the fitting surface.
2. Accommodate the element in the case.
3. Apply diesel fuel thinly to a new O-ring.
4. Install the O-ring and the cap and tighten the center bolt.



HE08 - 004A

Tightning Torque

$29.4 \pm 4.9 \text{ N}\cdot\text{m}$ { $300 \pm 50 \text{ kgf}\cdot\text{cm}$ }

⚠ CAUTION

- Do not reuse the element. Replace old O-rings with new O-rings contained in the element kit.
- Be careful not to damage the O-rings by twisting.
- Check to see if the O-rings firmly contact to the sealing surface.
- Let the matching mark of cap and case align.

INSPECTION AND MAINTENANCE

4-11

5. Tighten the water draining bolt and the joint bolt.
6. Actuate the priming pump to bleed the air from the fuel system.

⚠ CAUTION

Check to see that the air bleeder bolt is loosened.

7. Tighten the air bleeder bolt.

Tightning Torque

$6.9 \pm 2 \text{ N}\cdot\text{m}$ { $70 \pm 20 \text{ kgf}\cdot\text{cm}$ }

⚠ CAUTION

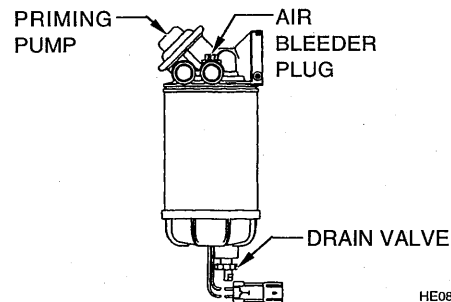
After installing the fuel element, make sure to wipe out the spilled oil and check to see again if there is any leakage of fuel, after running the engine.

AIR BLEEDING OF THE FUEL SYSTEM

After replacing the fuel filter or if you have run out of fuel, air might have entered the fuel system and a simple supply of fuel cannot start the engine. Bleed the air according to the following procedure:

■ AIR BLEEDING PROCEDURE

► J series engine



1. Place a container to receive drained fuel under the drain valve.
2. Loosen the air bleeder plug and send fuel pumping the priming pump.
Put the rag to the air bleeder plug to absorb drained fuel.
3. Pump the priming pump until the fuel without bubbles comes out from the air bleeder plug.

4. Tighten the air bleeder plug if the fuel without bubbles comes out from the air bleeder plug.
5. Pump the priming pump again more than 20 times.
6. After air bleeding is completed, wipe off any leaked fuel. Run the engine and check for fuel leakage.

⚠ WARNING

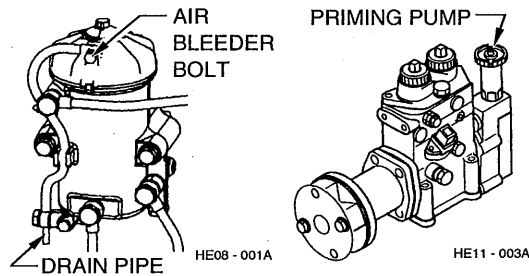
- Be sure to drain the fuel into a container to ensure safety and keep the ground clean.
- If fuel is spilled on engine parts, wipe it off entirely. It is dangerous since it can cause a fire.

⚠ CAUTION

- If you cannot start the engine at your first attempt, wait for recovery of battery function approximately 30 seconds before attempting your second trial.
- Do not turn the starter key for more than 15 seconds consecutively at a time.

INSPECTION AND MAINTENANCE

► P series engine



1. Place a container to receive drained fuel under the drain pipe.
2. Loosen the air bleeder bolt.
3. Turn the priming pump to the left and move it up and down with floating it.
4. Pump the priming pump until the fuel without bubbles comes out from the drain pipe.
5. Tighten the air bleeder bolt.

Tightning Torque
6.9±2 N•m {70±20 kgf•cm}

6. Pump the priming pump again more than 20 times.
7. Tighten the priming pump to the right fully with pressing it down.
8. Make sure there is not any fuel leakage.

⚠ WARNING

- Be sure to drain the fuel into a container to ensure safety and keep the ground clean.
- If fuel is spilled on engine parts, wipe it off entirely. It is dangerous since it can cause a fire.

⚠ CAUTION

- If you cannot start the engine at your first attempt, wait for recovery of battery function approximately 30 seconds before attempting your second trial.
- Do not turn the starter key for more than 15 seconds consecutively at a time.

👉 ADVICE

Do not entwine the priming pump piston forcibly when housing it, since it may be jammed and damaged.

■ INSPECTION OF FUEL PIPE AND HOSE

Fuel pipes and hoses are important for safety. Inspect them as follows:

- Check connections and clips for looseness and tighten firmly if loosened.
- Check for scratches, rust, wear and hose deterioration. Replace if necessary.

⚠ WARNING

It is dangerous since fuel leakage (including connections of each pipe and hose) can cause a fire. If fuel is leaking, replace the gaskets at each connection or retighten them.

ADJUSTMENT OF THE V-BELT TENSION

There are different types of V-belts used for the machine, depending on what the engine is used for. Typical V-belts are described here.

- Looseness or excessive tension of the V-belts can cause an improper charging or failure of the alternator or water pump. Always adjust the tension of the V-belts to ensure correct tension.

■ V-BELT TENSION ADJUSTMENT INTERVALS

Tension adjustment intervals

Every 120 hours of operation

👉 ADVICE

- When replaced with a new belt, there is a lack of initial adaptability of the belt. Run the engine at idling speed for about three to five minutes. After that, adjust the belt tension again.
- New belts get complete initial elongation after being run about two hours.
- When you replace V-belts which are two in one set, make sure to replace both of them.

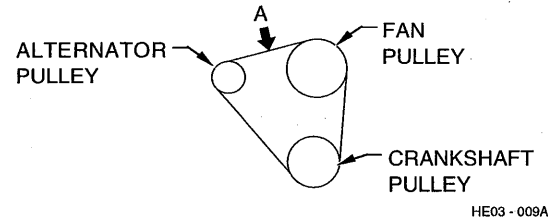
INSPECTION AND MAINTENANCE

4-13

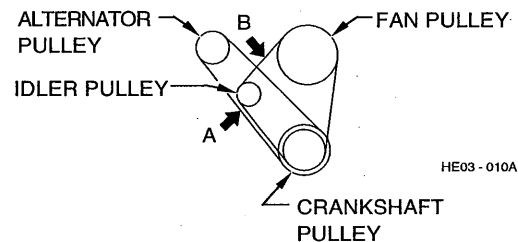
MEASURING POSITIONS OF THE ALTERNATOR BELT AND THE FAN BELT

- Measure belt tension at point A or B.

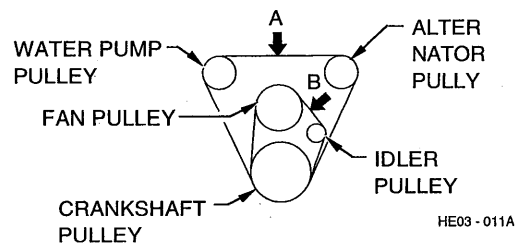
[J05E]



[J08E]



[P11C]



STANDARD TENSION OF THE V-BELT

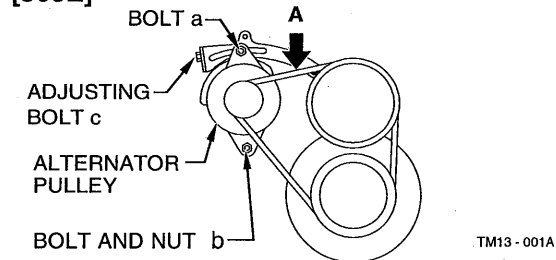
Engine model	Standard Value	
	Measuring Position (A)	
	When new belt replaced	When inspected
J05E	8 - 10 mm {0.31 - 0.39 in}	10 - 12 mm {0.39 - 0.47 in}
J08E excavator	22 - 23 mm {0.87 - 0.91 in}	24 - 25 mm {0.94 - 0.98 in}
J08E crane	22 - 23 mm {0.87 - 0.91 in}	24 - 25 mm {0.94 - 0.98 in}
P11C crane	13 - 15 mm {0.51 - 0.59 in}	17 - 19 mm {0.67 - 0.75 in}

Engine model	Standard Value	
	Measuring Position (B)	
	When new belt replaced	When inspected
J05E	-	-
J08E excavator	13 - 14 mm {0.51 - 0.55 in}	15 - 17 mm {0.59 - 0.67 in}
J08E crane	9 - 10 mm {0.35 - 0.39 in}	10 - 11 mm {0.39 - 0.43 in}
P11C crane	6 - 8 mm {0.24 - 0.31 in}	7.5 - 9.5 mm {0.30 - 0.37 in}

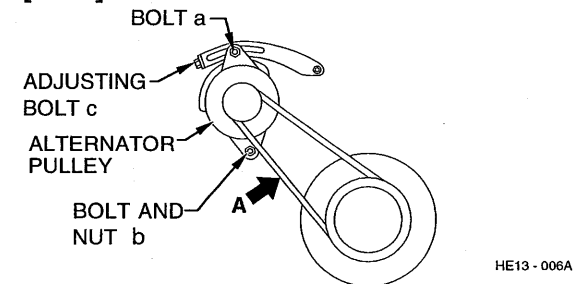
ALTERNATOR BELT ADJUSTMENT PROCEDURE

- Measure the belt deflection at point A.

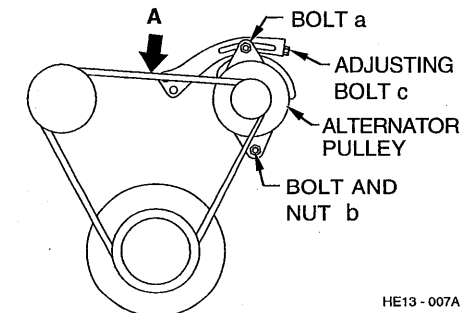
[J05E]



[J08E]



[P11C]



INSPECTION AND MAINTENANCE

1. Loosen the bolt a and the bolt and nut b.
2. Measure the belt deflection of the point A (mid-way between the pulleys) by applying and holding a pressure of about 98 N {10kgf, 22 lbf} to the point A with your finger, or by using a belt tension gauge (part number: 09444-1210) of a special tool. If the deflection is out of standard, adjust it by turning the adjusting bolt c so that the deflection comes to within the standard.
- The tension of the belt can be increased by turning the adjusting bolt c to clockwise.



ADVICE

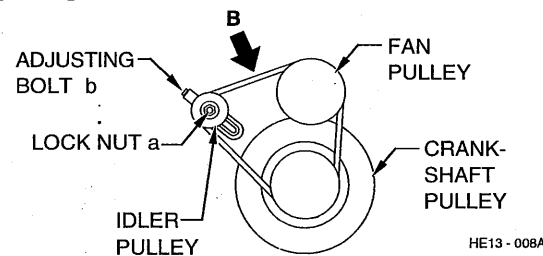
When moving the alternator pulley, be careful not to damage the stator coil located between the front and rear parts and the through bolt.

3. After adjusting the tension, tighten the bolt a and then tighten the bolt and nut b securely.
4. Retighten the adjusting bolt c.

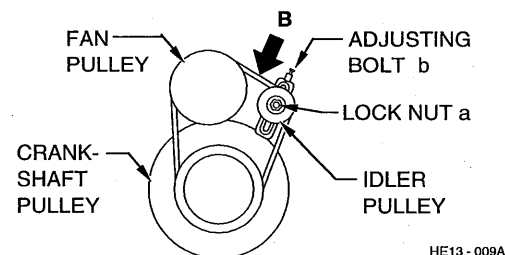
FAN BELT ADJUSTMENT PROCEDURE

- Measure the belt deflection at point B.

[J08E]



[P11C]



1. Loosen the lock nut a.
2. Turn the adjusting bolt b and adjust the deflection of the belt so that it comes to within the standard.
3. After the adjustment, securely tighten the lock nut a.

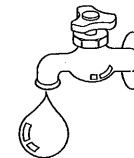
INSPECTION OF THE COOLING SYSTEM

THE COOLANT TO BE USED



ED14-001A

HINO DIESEL
LLC-EX
SUPER



TJ01-001A

- Use a mixture of long life coolant (LLC) and water.



ADVICE

Use tap water (soft water) to mix with long life coolant (LLC). Hard water from rivers or from the well will cause the formation of water stain and rust.

- * Usage of LLC other than HINO's recommendation will cause damage of cooling system by rust. Pay attention to select the right one.
- * For a list of recommended brands, please refer to "RECOMMENDED LUBRICANT LIST" on page 5-7.

INSPECTION AND MAINTENANCE

4-15

■ PREPARATION OF COOLANT

LLC-WATER MIXING TABLE

Outside temperature °C {°F}	LLC %
-12 {10.4}	30
-15 {5}	35
-20 {-4}	40
-25 {-13}	45
-30 {-22}	50
-35 {-31}	55
-40 {-40}	60

- In cold weather, when the outside temperature is below 0°C {32°F} or in cold area, the coolant may freeze and cause to damage the engine, radiator, or the other parts. Therefore, be sure to use a proper percentage of LLC in the coolant based on the table above.

👉 ADVICE

- Do not use together with Anti-freeze, Antirust and LLC over the counter.
- Use within 30 % to 60 % of LLC-WATER mixture. If the mixture percentage is below 30 %, anti-rust and anti-freeze efficiency will decrease. If it goes more than 60 %, anti-freeze effect will decrease.
- When you replenish LLC, use the same brand and same density of LLC.
- If you replenish water only, density of LLC becomes low and efficiency of anti-rust and anti-freeze will be decreased.

■ HANDLING OF LLC

⚠ WARNING

- LLC is poisonous. Never drink it. If you drink it by mistake, immediately vomit it and get a medical treatment.
- If the LLC enters your eyes, immediately wash your eyes with clean water and get medical treatment.

⚠ CAUTION

- LLC is flammable. Keep the LLC away from fire.
- If the LLC gets on your skin or clothes, immediately rinse with water and then wash with soap and water.
- When storing the LLC, make sure to cover it and store it out of reach of the children.

👉 ADVICE

If the LLC gets on a painted surface, immediately rinse it with water.

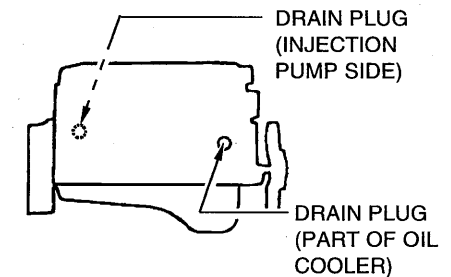
■ REPLACEMENT OF THE COOLANT INSIDE THE ENGINE

► Replacement interval

Replacement interval
Every 6 months (if you use water and antifreeze)
Every 2 years (if you use LLC)

- * Replace the coolant when it is sufficiently cool.
1. Open each drain plug of the engine and drain the coolant.

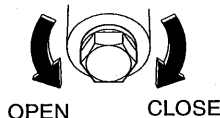
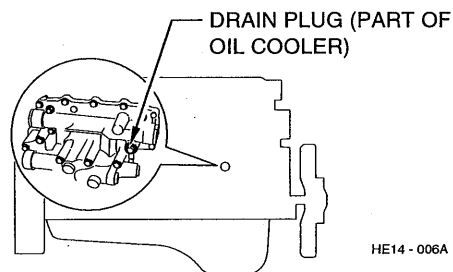
[P series engine]



HE15 - 010A

INSPECTION AND MAINTENANCE

[J series engine]



2. After completing draining, close each drain plug.

CAUTION

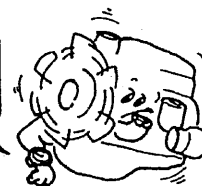
Dispose of LLC and antifreeze with a method that is environmentally sound. Failing to comply with may be a violation of the law.

ADVICE

Never operate the engine without refilling the coolant after draining. This will cause a failure of the water pump and an engine seizure.

3. In order to properly bleed air from the system, run the engine at a little higher than normal idling speed. Bring the temperature to the normal temperature range and idle the engine for about 10 minutes.

BLEED AIR AFTER IDLING ABOUT 10 MINUTES



ADVICE

Interfusion of air into the coolant can cause overheating and coolant leakage from the water pump.

4. Stop the engine and after the engine has cooled down, remove the radiator cap again and check if the coolant is filled up to the cap opening level and close the radiator cap securely. Then check the amount of coolant in the reserve tank and refill it to bring the coolant to the proper level (refill proportionally to the decreased quantity by air bleeding).
5. After refilling, close the reserve tank cap securely.

WARNING

Never touch the radiator cap until the coolant temperature goes below the normal temperature range. Opening the radiator cap carelessly can lead to scalding and other injuries due to spurting out of hot coolant and steam.

INSPECTION AND MAINTENANCE

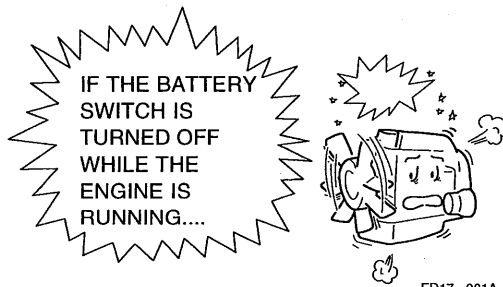
4-17

ALTERNATOR

The alternator can be damaged by high temperature, excess voltage and over current. Observe the following precautions to prevent damage to the alternator.

CAUTION

- Never turn off the battery switch and the starter switch while the engine is running. Turning these switches off while the engine is running will generate high voltage and can damage the diode.

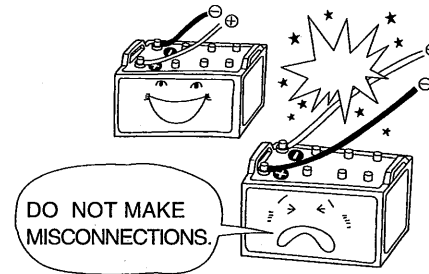


ED17 - 001A

- Always turn the starter and battery switches off when the engine has been stopped.

CAUTION

- Pay special attention not to make **misconnection of the alternator, the relay and the battery. Especially, if battery terminals are misconnected and polarity is reversed, the diodes will short the circuit and allow a large current to flow through and damage the diodes and burning the wiring harness.**



ED17 - 002A

- Be sure to disconnect the battery cables when using a fast charger. Otherwise the diode may be damaged.
- When cleaning (including high-pressure washing), do not pour water on the alternator. Do not aim steam directly to the alternator when using steam cleaner.
- Always use the specified type of fuse and make sure it is installed securely.

INSPECTION INTERVALS

- In case of alternators equipped with brushes
- Inspect and clean the brushes and the slip rings.
- Measure the brush length and replace it with a new one, if necessary.

Inspection interval

Every 1,000 hours of operation

INSPECTION AND MAINTENANCE

STARTER

1. Each of the terminal is marked with an inscription. Be sure not to make any error of connecting mark and connect the terminal correctly.
2. Inspect and clean the commutator and the brush. If the commutator surface deteriorates or gets burned, it will result in bigger sparks. Polish the surface with a No. 400 sandpaper and wipe clean with a dry cloth.
If a brush is worn by more than 2/3, replace it with a new one.

■ INSPECTION INTERVAL

Inspection interval
Every 1,000 hours of operation

CAUTION

- Be sure to use fuses of specified amperage.
Never substitute a copper or other kind of wire for a fuse. Using a fuse that is not of specified amperage can result in the overheating of the wire harness and cause a fire.
- Do not use high-pressure washing machine when cleaning on the outside of engine.
Although connectors around the engine are waterproofed, high-pressure washing may deform the water-resistant rubbers and cause water to enter inside the connectors. The interior waterproof structure will prevent the water from coming out once it enters. This will lead to rust and corrosion resulting in broken wires and other damages.

INSPECTION AND MAINTENANCE

4-19

PERIODIC INSPECTION AND MAINTENANCE

PERIODIC INSPECTION

The table lists items requiring daily and periodic inspection.

To get maximum performance from the engine and extend its service life, be sure to carry out inspection and maintenance in accordance with the periodic inspection and maintenance tables.

Note:

- (1) Inspection intervals are based on the standard specifications of HINO industrial engines. Depending on the machines, they may be different from your engine. Please refer to the "OPERATION MANUAL" of your machine.
- (2) More frequent inspections may be required, depending on the conditions under which the engine is used.
- (3) For the lubrication related intervals, refer to "LUBRICANTS TABLE" on page 5-6.

PERIODIC INSPECTION

(○: Check, ⊙: Replace)

ITEM	OPERATION HOURS	INSPECTION INTERVALS (OPERATION HOURS)					NOTES
		New engine with 30 hours of operation	120	250	500	1000	
MAIN BODY							
1. Checking of valve clearance		○			○		
2. Checking of compression						○	
3. Checking tightening condition of cylinder head		○				○	
4. Retightening of engine hood						○	
AIR INTAKE AND EXHAUST SYSTEM							
1. Checking tightening condition of intake and exhaust manifolds		○				○	
2. Checking tightening condition of oil pan and related accessorie mounting area		○				○	
3. Checking and cleaning of air cleaner and replacement of element				○		◎	

(Continued)

INSPECTION AND MAINTENANCE

(○: Check, ⊗: Replace)

ITEM	OPERATION HOURS	INSPECTION INTERVALS (OPERATION HOURS)					NOTES
		New engine with 30 hours of operation	120	250	500	1000	
TURBOCHARGER							
1. Checking tightening condition of each parts of turbocharger		○	○				
2. Checking rotating condition of rotor and impeller				○			
3. Checking play of rotor					○		
LUBRICATION SYSTEM							
1. Checking whether water and diesel fuel get mixed in the oil pan interior			○				
2. Replacement of oil filter element				⊙*	⊙		Refer to "OPERATION MANUAL" of your machine. *: In case of using oil other than HINO's genuine oil.
3. Replacement of by-pass oil filter and oil filter element				⊙*	⊙		
4. Checking of leakage of lubricant system of turbocharger						○	
FUEL SYSTEM							
1. Replacement of fuel filter element			○		⊙		Refer to "OPERATION MANUAL" of your machine
2. Draining of water from fuel filter							Daily inspection
3. Checking of fuel tank strainer					○		
4. Replacement of fuel hose							Every 2 years
5. Draining of sediments and water from fuel tank interior					○		

(Continued)

INSPECTION AND MAINTENANCE

4-21

(○: Check, ⊗: Replace)

ITEM	OPERATION HOURS	INSPECTION INTERVALS (OPERATION HOURS)					NOTES
		New engine with 30 hours of operation	120	250	500	1000	
COOLING SYSTEM							
1. Checking of V-belt tension and damage		○	○				Daily inspection
2. Checking tightening condition of fan mounting bolt		○					
3. Replacement of coolant					○		Every 6 months (if you use water and antifreeze) Every 2 years (if you use LLC)
4. Cleaning cooling system							
5. Checking performance of thermostat						○	
6. Replacement of rubber hose of coolant pump							Every 2 years
7. Cleaning radiator and inter-cooler fins					○		
ELECTRICAL EQUIPMENT							
1. Checking battery electrolyte level							Daily inspection
2. Checking battery electrolyte specific gravity and voltage							Once a year
3. Checking electric wiring		○			○		
4. Checking performance of heater plug and intake air heater (start assistance device)					○		Check performance before the start of winter. (Check for broken wires, etc.)

(Continued)

INSPECTION AND MAINTENANCE

4-23

POINTS OF LUBRICATION AND LUBRICATION INTERVALS

- Inspection, refilling and replacement intervals shown here are recommended for HINO industrial engines with the standard specifications.
- Depending on the machines, the requirements for your engine may be different. Please refer to the "OPERATION MANUAL" of your machine.
- For a list of recommended brands, please refer to "RECOMMENDED LUBRICANT LIST" on page 5-7.

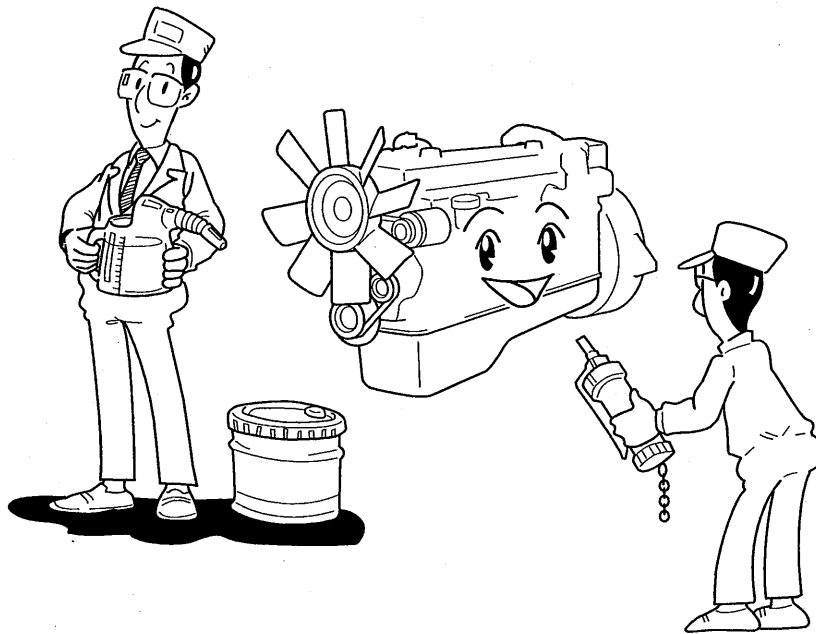
(○: Check, ⊙: Replace)

ITEM	INTERVALS, ETC.	INSPECTION INTERVALS (OPERATION HOURS)						USING OIL & GREASE	REMARKS
		New engine with 30 hours of operation	30	120	250	500	1000		
1. Engine	⊙				○*	⊙		—	Before starting the engine *: In case of using oil other than HINO's genuine oil.
2. Starter								Refer to the "RECOMMENDED LUBRICANT LIST" on page 5-7	When disassemble it
3. Alternator									When disassemble it

MEMO

5. LUBRICATION

5-1



ADVICE

Items contained in this section are based on the standard specifications of HINO industrial engines. Depending on the machine model, they may not be the same as your engine. Please refer to the "OPERATION MANUAL" of your machine.

- RECOMMENDED LUBRICANTS P5- 2
- ENGINE OIL P5- 2
- GREASING P5- 5
- LUBRICANTS TABLE P5- 6
- RECOMMENDED LUBRICANT LIST P5- 7

LUBRICATION

RECOMMENDED LUBRICANTS

Periodical replenishment and replacement of oil and grease play an important role in the maintenance of performance quality, prolongation of service life and prevention of accidents. Be sure to follow the recommendations.

Hino genuine lubricants have been made to satisfy such engine performance and you are highly recommended to use Hino genuine lubricants when you replenish or replace lubricants periodically.

CAUTION

Handle the disposal of drained oil and grease with a method that is environmentally sound.

ADVICE

When inspection and replacement intervals are indicated in both hours of operation and length of time, perform inspection and replenishment according to whichever comes first.

■ PRECAUTIONS DURING OIL REPLENISHMENT AND REPLACEMENT

- * After replenishment or replacement of oil, wipe off the oil deposited around the oil filter cap or filler plug and drain plug and be sure to check to see if there is any oil leakage.
- * When changing the oil, be sure to use a container for the drained oil.
- * Never throw out any waste oil in an open space or in a ditch.

CAUTION

Be sure to wipe off the oil scattered around. Leaving it may result in catching fire, which is very dangerous.

■ PRECAUTIONS DURING GREASING

- * Shortage of grease may result in an excessive play, abnormal noises and seizure due to premature wear of different parts. Always maintain correct greasing to prevent it.
- * Remove mud or dirt from grease nipples, bleeders and places to be greased before you start greasing.
- * After greasing, be sure to wipe off the excessive grease.

ENGINE OIL

Engine oil must offer stable performance in high temperature and resist oxidation. The oil viscosity must remain consistent in a wide range of temperature. Hino genuine engine oils have been made to satisfy such performance and you are recommended to use proper oil according to your condition of usage.

It is necessary to use engine oils of different viscosity values in summer and winter. Select an appropriate oil type in accordance with your engine operating condition.

■ REPLENISHMENT

1. If the oil level is insufficient, replenish engine oil through the oil filler.

CAUTION

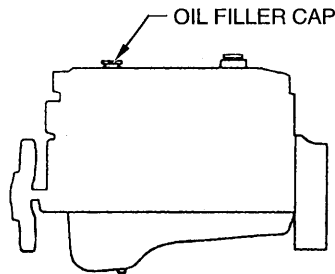
When replenishing the oil, be sure not to spill any oil. If the oil sticks to the exhaust pipe, it may catch fire due to its high temperature. Be careful when replenishing.

LUBRICATION

5-3

2. Check the oil level 10 minutes after replenishing.

* For details of checking the oil level, please refer to the "ENGINE OIL LEVEL" on page 4-3. The position of the oil filler cap may be different depending on the machine. Please refer to the "OPERATION MANUAL" of your machine.



HF02 - 004A

REPLACING OF ENGINE OIL

Replacement intervals

Every 500 hours of operation

ADVICE

- Depending on the machine model, oil replacement intervals may be different from your engine. Please refer to the "OPERATION MANUAL" of your machine.
- If the engine is used frequently at high revolutions and under high loads, oil deteriorates quickly. Change the engine oil early regardless of the specified intervals. Also change the engine oil early if it is found dirty when checking the oil level, regardless of the specified intervals.
- Simultaneously with oil replacement, make sure to replace the oil filter element.

1. Remove the oil filler cap and drain plug of the oil pan to drain oil. Also drain oil from the oil filter.
- The oil can be drained more easily if the engine is warm.

CAUTION

Just after driving, the engine oil is still hot and can burn you. Wait a few minutes to let the oil cool down before changing or checking it.

2. After the oil is completely drained, tighten the drain plug securely.
3. Fill the oil through the oil filler. (For the specified oil level for each engine model, refer to "ENGINE OIL LEVEL TABLE".)
4. About 10 minutes after filling the oil, check the oil level with the oil level gauge.
5. Start the engine and run it in idling.
6. Stop the engine. Wait more than 30 minutes and after that, check the oil level with the oil level gauge. If the oil level is low, replenish the oil. Also check the drain plugs for leakage.

■ ENGINE OIL LEVEL TABLE

**ADVICE**

Items contained here are based on the standard specifications of HINO industrial engines. Depending on the machine model, they may not be the same as your engine. Please refer to the "OPERATION MANUAL" of your machine.

Engine model	Oil pan shape	Oil level (L)		
		Max.	Min.	Total oil capacity
J05E	 Deep-set	19	15	21.5
J08E	 Deep-set	26	20	28.5
P11C	 Deep-set	35	27	42.0
	 Bathtub type	23	17	30.0

LUBRICATION

5-5

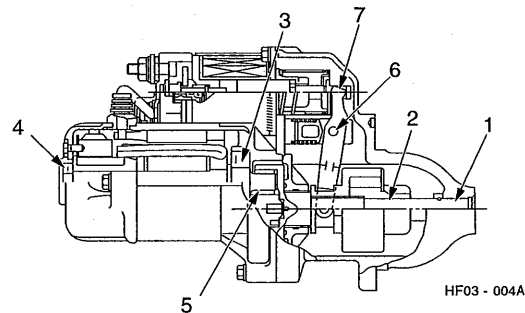
GREASING

To ensure long service life of engine, you must perform the required lubrications according to the specified schedule. Points to be lubricated may be different depending on the machines. Please refer to the "OPERATION MANUAL" of your machine. Items shown here are based on the standard specifications of HINO industrial engines.

■ STARTER

- For a list of recommended brands, please refer to "RECOMMENDED LUBRICANT LIST" on page 5-7.
- Whenever disassembled, lubricate the seven locations shown in the illustration.
 1. Metal A (front)
 2. Metal B (pinion)
 3. Bearing A (center)
 4. Bearing B (rear)
 5. Reduction gear
 6. Shift lever
 7. Engage switch tip

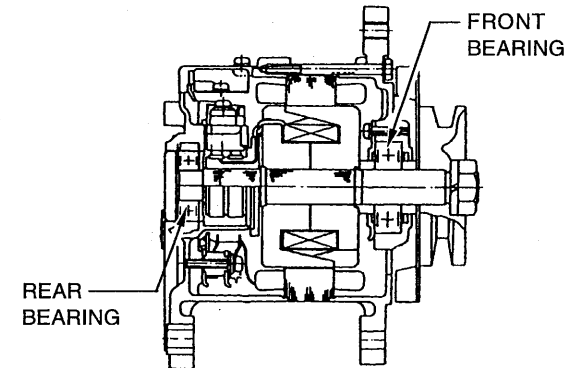
[POINTS TO BE LUBRICATED ON THE STARTER]



■ ALTERNATOR

- For a list of recommended brands, please refer to "RECOMMENDED LUBRICANT LIST" on page 5-7.
- Lubricate the front and the rear bearings whenever the alternator is disassembled. At such time, replace any bearings that do not rotate smoothly. Also replace damaged oil seals with new ones.

[POINTS TO LUBRICATED ON THE ALTERNATOR]



HF03 - 006A

LUBRICATION

LUBRICANTS TABLE

ADVICE

Items contained here are based on the standard specifications of HINO industrial engines. Depending on the machine model, they may not be the same as your engine. Please refer to the "OPERATION MANUAL" of your machine.

(◎: Replace)

INTERVALS, ETC. LUBRICATING POINTS	LUBRICATION INTERVALS (OPERATION HOURS)					SPECIFIED LUBRICANT	QUANTITY	PAGE TO REFER
	New engine with 30 hours of operation	120	250	500	1,000			
1.Engine	◎		◎*	◎		Refer to the "ENGINE OIL SELECTION" on page 1-3.	Refer to the "ENGINE OIL LEVEL TABLE" on page 5-4.	5-2
2.Starter (Whenever disassembled)						Refer to the "RECOMMENDED LUBRICANT LIST" on page 5-7.	As required	5-5
3.Alternator (Whenever disassembled)							As required	5-5

* : In case of using oil other than HINO's genuine oil.

LUBRICATION

5-7

RECOMMENDED LUBRICANT LIST**NOTE:** Lubricants were amended according to new classification by A.P.I. (American Petroleum Institute).

No.	LUBRICANTS	POSITIONS	BP	CALTEX	CASTROL	ESSO	GULF	MOBIL	SHELL	TOTAL
1	STARTER GREASE	Bushing, Clutch, Drive Shaft, Pinion Shift Lever & Reduction Gear	—	Molytex Grease EP2	—	—	—	Mobilgrease 29	Aero Shell Grease 17	—
2	ALTERNATOR & STARTER BEARING GREASE	Alternator Bearing Starter Bearing	Energrease LT2	RPM Grease SRI 2	—	—	—	Mobilgrease 28	Aero Shell Grease 7	—
3	ANTIFREEZE (MIL-A-53009)	Engine, Radiator	Anti Frost	AF Engine Coolant	Castrol Anti Freeze Castrol Long Life Coolant	Esso Anti Freeze Coolant	Cruise Master Antifreeze and Summer Coolant	Mobil Permazone	Shellzona (U.S.A.) Glycoshell Plus (European Countries) Shellsafe Anti-Freeze P281 Coolguard	TOTAL ANTIGEL

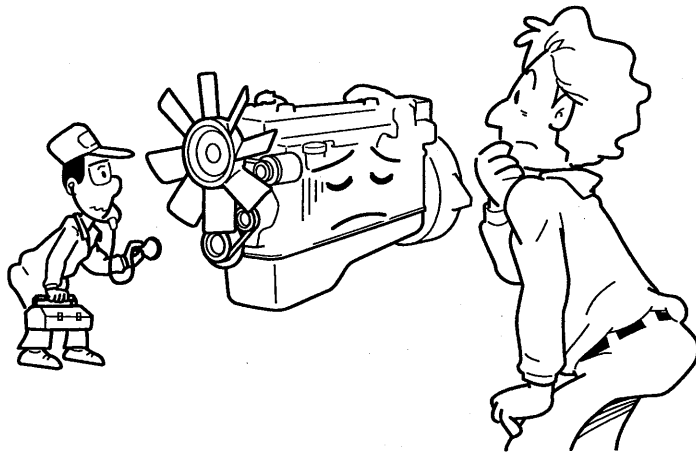
MEMO

6. TROUBLESHOOTING

6-1

Correct operating and assured observance of daily inspection and maintenance procedures together with periodic inspection and maintenance virtually eliminates troubles. Close attention should be paid to any minor troubles, since prompt action keeps minor troubles from becoming major troubles.

When any of the following problems appear, check and repair according to the following tables. If a problem is unclear or if repair is not possible, have the nearest your dealer check and repair the engine.



HF00 - 004A

- ENGINE DOES NOT START P 6- 2
- ENGINE DOES NOT STOP P 6- 2
- ENGINE STALLS AT LOW
SPEED P 6- 2
- ENGINE LACKS IN POWER P 6- 3
- ENGINE OVERHEATS P 6- 3
- EXHAUST GAS IS BLACK P 6- 3
- FUEL CONSUMPTION IS
EXCESSIVE P 6- 3
- ENGINE OIL CONSUMPTION IS
EXCESSIVE P 6- 3

TROUBLESHOOTING

Problem		Possible cause	Remedies	Page to refer
Engine does not start	Starter does not operate or operate slowly	Discharged battery	Charge or replace the battery.	—
		The battery terminal is off, loosened, or corroded	Tighten securely after cleaning corroded parts.	—
		Disconnected ground wire	Connect the ground wire properly.	—
		Malfunction of the starter and the electric system	Contact the nearest your dealer.	—
		Engine oil viscosity is too high	Replace with proper oil.	5-2
	Starter operates normally	Improper operation of the preheat	Follow the proper preheat procedure.	—
		Malfunction of preheating device	Contact the nearest your dealer.	—
		Lack of fuel in the tank	Fill fuel in the tank.	1-2
		Dirty fuel filter	Replace the element.	4-8
		Accumulation of air in the fuel system	Bleed air.	4-11
		Frozen fuel line	Warm up the fuel line with hot water (below 60° C {140° F}).	—
		Water in the fuel tank	Drain water.	—
		Air cleaner air inlet is stopped up by sheet, etc	Remove the sheet, etc.	—
		Clogged air cleaner element (Dust indicator shows red signal.)	Clean or replace the element.	—
		Crushed intake air hose	Replace the hose.	—
Engine does not stop		Engine stop lever is engaged	Contact the nearest your dealer.	—
Engine stalls at low speed	Idling speed is too low	Contact the nearest your dealer.	—	
	Lack of the fuel in the tank	Fill fuel in the tank.	1-2	
	Dirty fuel filter	Replace the element.	4-8	
	Accumulation of air in the fuel system	Bleed air.	4-11	
	Air cleaner air inlet is stopped up by sheet, etc	Remove the sheet, etc.	—	
	Clogged air cleaner element (Dust indicator shows red signal.)	Clean or replace the element.	—	
	Crushed intake air hose	Replace the hose.	—	
	Possible switches related trouble	Contact the nearest your dealer.	—	

- Figures in “Page to refer” correspond to the page of the title for which the remedies are mentioned.

TROUBLESHOOTING

6-3

Problem	Possible cause	Remedies	Page to refer
Engine lacks in power	Dirty fuel filter	Replace the element.	4-8
	Accumulation of air in the fuel system	Bleed air.	4-11
	Fuel is not diesel fuel	Drain fuel from the tank and refill with diesel fuel.	—
	Air cleaner air inlet is stopped up by sheet, etc.	Remove the sheet, etc.	—
	Clogged air cleaner element (Dust indicator shows red signal.)	Clean or replace the element.	—
	Crushed intake air hose	Replace the hose.	—
Engine overheats	Insufficient coolant	Check leakage of coolant and add coolant. Bleed air sufficiently.	4-14
	Clogged front of the radiator	Clean the front of the radiator.	—
	Radiator is clogged with scale	Clean the radiator with detergent.	—
	Thermostat faulty (Closed)	Check the actuation of the thermostat.	—
Exhaust gas is black	Air cleaner air inlet is stopped up by sheet, etc	Remove the sheet, etc.	—
	Clogged air cleaner element (Dust indicator shows red signal.)	Clean or replace the element.	—
	Crushed intake air hose	Replace the hose.	—
Fuel consumption is excessive	Fuel leakage	Check the fuel system and retighten if loose.	4-12
	Air cleaner air inlet is stopped up by sheet, etc	Remove the sheet, etc.	—
	Clogged air cleaner element (Dust indicator shows red signal.)	Clean or replace the element.	—
	Crushed intake air hose	Replace the hose.	—
Engine oil consumption is excessive	Use of unsuitable oil	Replace with proper oil.	5-2
	Oil level is too high	Drain excessive oil and make it proper level.	5-4
	Oil leakage	In case of looseness of bolts and nuts, retighten them.	—
	Replacement interval is too long	Replace at proper intervals.	5-3
	Clogged oil filter	Replace the filter element.	4-6
	Omission of engine warm-up	Warm-up the engine properly.	3-4

- Figures in “Page to refer” correspond to the page of the title for which the remedies are mentioned.

MEMO

7. TABLE OF DIAGNOSIS CODE FOR TROUBLES

7-1

- TABLE OF DIAGNOSIS CODE FOR
TROUBLES P7-2



TABLE OF DIAGNOSIS CODE FOR TROUBLES

SAE CODE	SYSTEM	TCCS	TROUBLE
		2-DIGIT CODE	
P0217	Various kinds of sensors & their related dialogue	6	Overheating
P0228		15	Malfunction of atmospheric pressure sensor circuit (Low input)
P0229		15	Malfunction of atmospheric pressure sensor circuit (High input)
P0192		67	Malfunction of common rail pressure sensor circuit (Low input)
P0193		67	Malfunction of common rail pressure sensor circuit (High input)
P0191		67	Malfunction of common rail pressure sensor
P0237		37	Malfunction of boost sensor circuit (Low input)
P0108		37	Malfunction of boost sensor circuit (High input)
P0117		11	Malfunction of coolant temperature sensor circuit (Low input)
P0118		11	Malfunction of coolant temperature sensor circuit (High input)
P0182		14	Malfunction of fuel temperature sensor circuit (Low input)
P0183		14	Malfunction of fuel temperature sensor circuit (High input)
P2120	Accelerator sensor	22	Malfunction of accelerator sensors 1 & 2
P2122		22	Malfunction of accelerator sensor 1 (Low input)

SAE CODE	SYSTEM	TCCS	TROUBLE
		2-DIGIT CODE	
P2123	Accelerator sensor	22	Malfunction of accelerator sensor 1 (High input)
P2127		22	Malfunction of accelerator sensor 2 (Low input)
P2128		22	Malfunction of accelerator sensor 2 (High input)
P0335	Engine speed sensor system	13	Malfunction of engine speed main circuit, Malfunction of engine speed main & sub sensor circuits
P0340		12	Malfunction of engine speed sub sensor circuit
P0629	Supply pump system	74	Short circuit of SCV (+) VB
P0628		75	Malfunction of SCV and others
P0088		68	Excessive common rail pressure (1st stage)
P0088		69	Excessive common rail pressure (2nd stage)
P2635		75	Seizure of solenoid valve of supply pump
P2635		77	Malfunction of supply pump
P2635		79	Record of excessive pressure of supply pump
P1211	Injector system	57	Malfunction of injector common 1 (Short circuit to GND)
P1214		58	Malfunction of injector common 2 (Short circuit to GND)

TABLE OF DIAGNOSIS CODE FOR TROUBLES

7-3

SAE CODE	SYSTEM	TCCS	TROUBLE
		2-DIGIT CODE	
P1212	Injector system	57	Malfunction of injector common 1 (Short circuit to VB)
P1215		58	Malfunction of injector common 2 (Short circuit to VB)
P1212		57	Malfunction of injector common 1 (Open)
P1215		58	Malfunction of injector common 2 (Open)
P0201		51	Disconnection of injector circuit-cylinder 1
P0202		52	Disconnection of injector circuit-cylinder 2
P0203		53	Disconnection of injector circuit-cylinder 3
P0204		54	Disconnection of injector circuit-cylinder 4
P0205		55	Disconnection of injector circuit-cylinder 5
P0206		56	Disconnection of injector circuit-cylinder 6
P0263		61	Cylinder 1 contribution/balance fault
P0266		62	Cylinder 2 contribution/balance fault
P0269		63	Cylinder 3 contribution/balance fault
P0272		64	Cylinder 4 contribution/balance fault

SAE CODE	SYSTEM	TCCS	TROUBLE
		2-DIGIT CODE	
P0275	Injector system	65	Cylinder 5 contribution/balance fault
P0278		66	Cylinder 6 contribution/balance fault
P0489	EGR system	81	Malfunction of EGR linear solenoid 1 (Disconnection and/or short circuit to GND)
P0490		81	Malfunction of EGR linear solenoid 1 (Short circuit to VB)
P1402		82	Malfunction of EGR linear solenoid 2 (Disconnection and/or short circuit to GND)
P1403		82	Malfunction of EGR linear solenoid 2 (Short circuit to VB)
P0404		88	Sticking of EGR valve 1
P1401		89	Sticking of EGR valve 2
P0405		86	Malfunction of EGR lift sensor 1 circuit (Low input)
P0406		86	Malfunction of EGR lift sensor 1 circuit (High input)
P0407		87	Malfunction of EGR lift sensor 2 circuit (Low input)
P0408		87	Malfunction of EGR lift sensor 2 circuit (High input)
P0234	Turbocharger	39	Turbocharger over boost
P0611	ECU main system	59	Malfunction of ECU charge circuit (Low input)
P0200		59	Malfunction of ECU charge circuit (High input)

TABLE OF DIAGNOSIS CODE FOR TROUBLES

SAE CODE	SYSTEM	TCCS	TROUBLE
		2-DIGIT CODE	
P0605	ECU main system	3	Flash ROM error
P0606		3	Malfunction of CPU (Hardware detection)
P0607		3	Malfunction of IC for monitoring CPU
P1601		2	Malfunction of QR code
P0540	Vehicle system	25	Malfunction of preheating device
P0686		5	Malfunction of main relay
P0219		7	Engine overrun
P0617		45	Malfunction of starter switch
U1001		9	Malfunction of CAN communication (Vehicle)

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ENGINE PARTS CATALOG

Please read carefully!

1. This parts catalog covers service parts installed that are specific only to the listed vehicle. (See the next page)
2. Please provide us with the following when placing your spare parts orders:
 - (1) chassis no.
it is engraved in Hino's ID plate in the driver's door sill.
 - (2) part no.
 - (3) required quantity
3. The illustrations shown on this parts catalog is mainly to illustrate the basic design of each part. Since dimensions, direction of parts installation, and assembly order are not exactly mentioned, this catalog should not be used for the purpose of maintenance.
4. For repair and maintenance of Hino vehicles, usage of quality-assured Hino Genuine Parts is highly recommended.

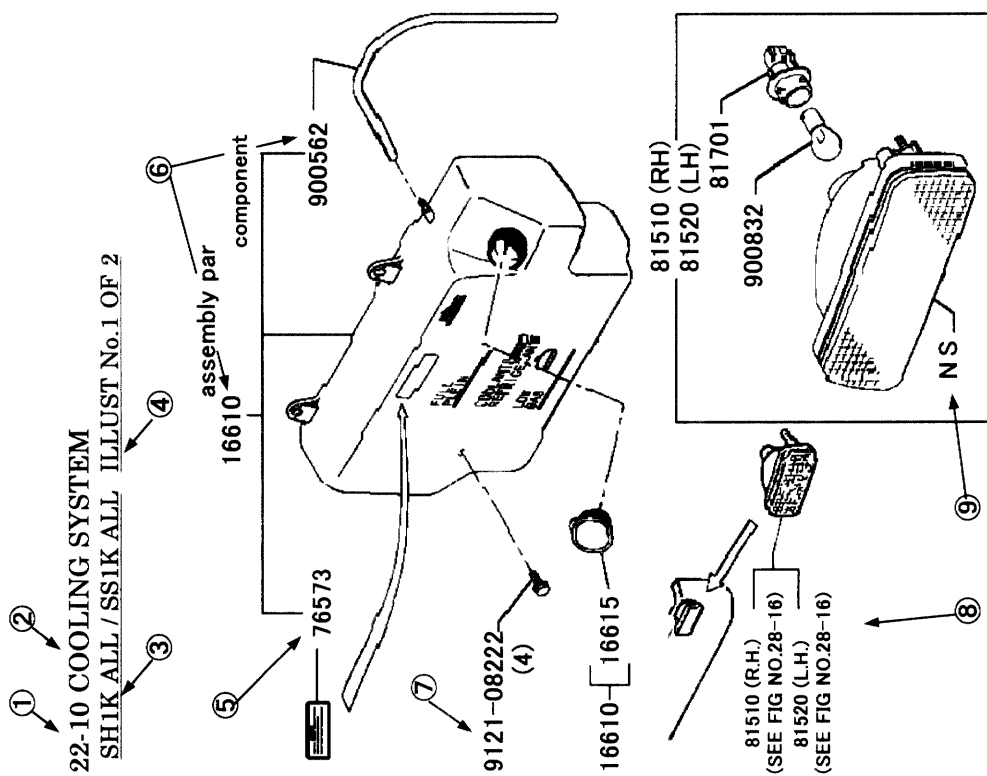
Contents

- I . Specifications of the listed vehicle
 - ① Applicable models and chassis serial numbers
 - ② Chassis production date / production number cross-reference
 - ③ Application table
- II . How to look up the parts catalog
- III . Abbreviation List
- IV . FIG No. Index
- V . Illustration Index

II. How to look up the parts catalog

(1) Illustrations

Illustrations are described as follows.



- ① **FIG No.** 4-digit number to classify each component
- ② **Title**
- ③ **Specific Application** Applicable vehicle model, engine model, option number, assembly part number,
- ④ **Illustration No.** It is displayed when the illustrations are plural in the identical FIG No. and
Example: first page ILLUSTR No.1 OF 2
second page ILLUSTR No.2 OF 2
- ⑤ **Key Number** Key number specifies the parts on the illustrations.
- ⑥ **Component Parts** Relationship between an assembly part and its component parts is shown.
- ⑦ **Standard Parts** In the case of standard parts such as bolts, nuts, washers etc., the part number and the required quantity (number in the parenthesis) are indicated on the illustration only. These are not shown on the part number list.
- ⑧ **Complete Parts** Description code for complete parts and FIG No. are shown. Component parts for electrical parts, bulbs, and cylinders are indicated on
- ⑨ **Non Supplying** NS, standing for "Non-supplying", denotes that the item cannot be supplied as a loose item for a technical or manufacturing reason.

(2) Part number list

Part number list is shown in the following manner:

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
④ 10-00	① CYLINDER HEAD	②				
9911- 9911- 9911- 9912- 9912- 9912-	* 76589A PLATE,CAUTION ENG K. SHIKFMA-TNL K. SHIKFMA-TNL K. SHIKFMA-TNL K. SSIKKMA-UGL K. SSIKKMA-UGL K. SSIKKMA-UGL	CHN ESP ARB FRA CHN ENG CHN ESP ARB FRA CHN ENG	R R R R R R	76589-6050 76589-6060 76589-6180 76589-6050 76589-6060 76589-6180	01 01 01 01 01 01	- - - - - -
⑪-1	* 79904* CLIP SUB ASSY	⑪-2				
9911- 9911- 9911- 9912-	K. SHIKFMA-TNL S. SHIKFMA-TNL(L/ EXH.B) A. SHIKFMA-TNL (W/ EXH.B) K. SSIKKMA-UGL			79904-2370 79904-2370 79904-2370 79904-2370	01 01 02 02	- - - -
9911- 9912-	* 900115A GASKET K. SHIKFMA-TNL K. SS1K#..(UGL,TNL)	⑧ ⑨ ⑩	# M # M	9001-15133 (9001-15221) 9001-15133 (9001-15221)	01 01	- -
9911- 9912-	* 900116 SPACER K. SHIKFMA-TNL K. SSIKKMA-UGL	T=52.0 T=52.0		9001-16131 9001-16131	01 01	- -

① FIG No. 4-digit number to classify each component

② Title

③ Production Period The period when the vehicle production started and finished.

④ Key Number Key number specifies the parts on the illustrations.

⑤ Part Number

⑥ Substitutions

M : substitute part

S : additional item for the substitute part

R : selective part

: This mark stands for substitutional part

⑦ Quantity

Quantity of parts per unit is shown. When quantity required varies case by case, it is shown as 'X'.

In the case of component parts of a complete part, the quantity of each part is shown.

⑧ Parts Description

⑨ Applicable model Applicable model of the part (model, specifications, engine model, body type, etc.) The following marks are used for the sake of simplicity:

#: stands for 'series'. e.g. SS1K# means 'SS1K series'.
..(two consecutive dots): stands for 'limited to' or 'but only for'. e.g. SS1K#..(UGL,TNL) means 'SS1K series but limited to or only for SS1K series with Production Series Codes UGL or TNL.'

⑩ Remarks The following part's specifications are indicated, which can be helpful in identifying and / or selecting the part number.

a) T=2.00	thickness of shim
b) TETH=137	number of gear teeth
c) * C	loose items for cab assembly for service use
d) * D	loose items for door assembly for service use
e) ZEXEL 134064-2720	maker's name and part number

⑪-1 Stands for "selective specifications"

K. = basic specification
S. = selective specification(standard)
A. } selective specification
B. } (optional parts installed factory or dealer)
P. }

⑪-2 The applicable vehicle models, engine models and option numbers for the item are

⑪-3 How to specify the parts number

Example 1:
Model : SH 1 KFMA-TNL
specification: W/ EXH.B
"K and A" are corresponding items
79904-2370 3 pieces

Example 2:
Model : SH 1 KFMA-TNL
specification: L/ EXH.B
"K and S" are corresponding items
79904-2370 2 pieces

(3) Other Remarks

① Indication of "front/rear", "left/right", "upper/lower" of chassis or cab are defined by viewing the vehicle from the rear.

For engine, we define "back" as in where the flywheel is located.

"Left /right" is described by viewing it from the engine.

Consequently, in the case of rear engine bus, "front/rear" or "left/right" of the engine is the opposite from that of a front engine vehicle.

② Numerical Index

Numerical index is given at the end of the catalog. Please look it up when looking for an item by part number or description code (except for part numbers issued by outside manufacturers).

③ Dimensions

All parts are manufactured in metric measure.

④ Abbreviation List

Meaning of abbreviations used on the catalog is shown on the abbreviation list.

⑤ Parts Change

Part numbers, the quantity of each part required, and the shape of each part are subject to change without notice.

APPLICABLE MODELS AND CHASSIS SERIAL NUMBERS

475110

PRODUCTION PERIOD	MODEL	CHASSIS NOS.	PRODUCTION PERIOD	MODEL	CHASSIS NOS.
10/05 -	P11CUN	FROM P11CUN-10101			

APPLICATION TABLE

475110

[illegible]

(60/60)

2-I

CAT NO. 4751-0-1

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
#	CODE	138T	3400CC DIESEL TURBO
&	AND	13E	1.3E TYPE
0-0PX0-0	OUTSIDE DIAMETER-PITCH X BOLT LENGTH-THR	13S	13-SEATER
0/S	OVERSIZE	13STD	1.3STD TYPE
00V-00V	BATTERY VOLTAGE-GLOW PLUG RATED VOLTAGE	13TH	THIRTEENTH
02S	2-SEATER	13TJ	1800CC
03S	3-SEATER	13TU	1800CC
04S	4-SEATER	14B	3700CC DIESEL
05S	5-SEATER	14BT	3700CC DIESEL TURBO
06S	6-SEATER	14S	14-SEATER
07S	7-SEATER	14TH	FOURTEENTH
08S	8-SEATER	150R	150R TYPE
09S	9-SEATER	15B0NG	4100CC CNG
00=	OUTSIDE DIAMETER (MM)	15BF	4100CC DIESEL
00AC	OVERHEAD DUAL AIR CONDITIONER	15BFP	4100CC LPG
0F	OVER FENDER	15BFT	4100CC DIESEL TURBO
01L PRESSURE S/W	OIL PRESSURE SWITCH	15BFTE	4100CC DIESEL TURBO EFI
0M	OK MONITOR	15BLPG	4100CC LPG
0M0R0N	TATEISHI ELECTRIC CORPORATION	15GLI	6L-I TYPE
0S	0MAN SPECIFICATION	15S	15-SEATER
0TM	OUTSIDE REAR VIEW MIRROR	15T	1.5TONS
0TS	ONE-TOUCH 2-4 SELECTOR	15TH	FIFTEENTH
0UT	OUTER	16R	1800CC
0VE	OVERDRIVE	16S	FOR 16 PASSENGERS
1	PLANT NO. M21	16TH	SIXTEENTH
1000K	1000 KILOGRAMS	175T	1.75TONS
10S	10-SEATER	17S	17-SEATER
10T	1.0TONS	18R	2000CC
10TH	TENTH	18RC	2000CC
11TH	ELEVENTH	18RG	2000CC DOHC
125T	1.25TONS	18GEU	2000CC DOHC EFI
12HT	4000CC DIESEL TURBO	18RJ	2000CC
12R	1600CC	19S	19-SEATER
12RJ	1600CC	1AC	1500CC
12RM	1600CC	1ADFTV	2000CC DIESEL TURBO
12S	12-SEATER	1AZFE	2000CC 16-VALVE DOHC EFI
12T	1600CC	1AZFSE	2000CC 16-VALVE DOHC EFI
12TH	TWELFTH	1BZFNE	4100CC CNG
12TJ	1600CC	1BZFPE	4100CC LPG
13B	3400CC DIESEL	1C	1800CC DIESEL

ABBREVIATION LIST

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
1CDFTV	2000CC DIESEL TURBO	1N0	ORDINARY TRUCK
1CL	1800CC DIESEL	1NT	1500CC DIESEL TURBO
1CLC	1800CC DIESEL	1NZFE	1500CC 16VALVE DOHC EFI
1CTL	1800CC DIESEL TURBO	1NZFNE	1500CC 16VALVE DOHC EFI
1CTLG	1800CC DIESEL TURBO	1NZFXE	1500CC 16VALVE DOHC EFI
1E	1000CC	1PZ	3500CC DIESEL
1EL	1000CC	1RZ	2000CC
1FZF	4500CC	1RZE	2000CC EFI
1FZFE	4500CC	1S	1800CC
1GE	2000CC EFI	1S0	ONE SIDE OPEN
1GEJ	2000CC EFI	1SEL	1800CC EFI
1GEU	2000CC EFI	1SELU	1800CC EFI
1GFE	2000CC 24-VALVE DOHC EFI	1SI	1800CC CI
1GGE	2000CC 24-VALVE DOHC EFI	1SILU	1800CC CI
1GGEU	2000CC 24-VALVE DOHC EFI	1SL	1800CC
1G6P	2000CC 24-VALVE DOHC LPG	1SLU	1800CC
1G6PE	2000CC 24-VALVE DOHC LPG EFI	1S0	ONE SIDE OPEN
1G6TE	2000CC 24-VALVE DOHC EFI TWIN TURBO	1SR	SINGLE SPEED REAR AXLE
1G6TEU	2000CC 24-VALVE DOHC EFI TWIN TURBO	1ST	FIRST
1G6ZE	2000CC 24-VALVE DOHC EFI SUPER CHAGER	1SU	1800CC
1G6ZEU	2000CC 24-VALVE DOHC EFI SUPER CHAGER	1SZFE	1000CC 16VALVE DOHC EFI
1GR	40000CC 24-VALVE DOHC EFI	1T	1.0 TON
1GRFE	4000CC 24-VALVE DOHC EFI	1TRFE	2000CC 16-VALVE DOHC EFI
1GZFE	5000CC 48-VALVE DOHC EFI	1URFE	4600CC 32-VALVE DOHC EFI
1HDFT	4200CC DIESEL TURBO	1URFSE	4600CC 32-VALVE DOHC EFI
1HDFTE	4200CC DIESEL TURBO	1UZFE	4000CC 32-VALVE DOHC EFI
1HDT	4200CC DIESEL TURBO	1VZFE	2000CC 24-VALVE DOHC EFI
1HZ	4200CC DIESEL	1W	4000CC DIESEL
1HZT	4200CC DIESEL	1WZ	1800CC DIESEL
1JZFSE	4200CC DIESEL	1X	1900CC
1JZGE	2500CC 24-VALVE DOHC EFI	1Y	1600CC
1JZGTE	2500CC 24-VALVE DOHC EFI TWIN TURBO	1YC	1600CC
1KDFTV	3000CC DIESEL TURBO	1YJ	1600CC
1KRFE	1000CC 12-VALVE DOHC EFI	1ZRFE	1600CC 16-VALVE DOHC EFI
1KZT	3000CC DIESEL	1ZZFE	1800CC 16-VALVE DOHC EFI
1KZTE	3000CC DIESEL TURBO	20DSA	2.0D SALOON TYPE
1MZFE	3000CC 24-VALVE DOHC EFI	20R	2200CC
1N	1500CC DIESEL	20S	20-SEATER
1N0	ORDINARY TRUCK	20T	2 TONS
1NDTV	1400CC DIESEL TURBO	21R	2000CC

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
21RC	2000CC	2CTLC	2000CC DIESEL TURBO
21RU	2000CC	2D	2 -DOOR
21S	FOR 21 PASSENGERS	2DH	2-DOOR HARD TOP
22R	2400CC	2DS	2-DOOR SEDAN
22RE	2400CC EFI	2DV	2-DOOR VAN
22REC	2400CC EFI	2DW	2-DOOR STATION WAGON
22RTEC	2400CC	2E	1300CC 12-VALVE
22S	22-SEATER	2EE	1300CC 12-VALVE EFI
23S	FOR 23 PASSENGERS	2EELU	1300CC 12-VALVE EFI
240G	240G OR 240V TYPE	2EL	1300CC
24S	24-SEATER	2ELC	1300CC
24T	2.4 TOURING TYPE	2ELJ	1300CC 12-VALVE
25G	2.5G TYPE	2ELU	1300CC 12-VALVE
25K	25-KG LOADING CAPACITY	2ETELU	1300CC 12-VALVE EFI TURBO
25R0Y	2.5 ROYAL TYPE	2F	4200CC
25R0Y	2.5 ROYAL TYPE	2FC	ATM, 2-SPEED FLOOR SHIFT
25S	2.5 ROYAL TYPE	2GRFE	3500CC 24-VALVE DOHC EFI
25T	2.5-TON LOADING CAPACITY	2GRFSE	3500CC 24-VALVE DOHC EFI
26S	26-SEATER	2H	4000CC DIESEL
275T	2.75 TONS	2HC	2-SPEED AUTOMATIC TRANSMISSION, COLUMN S
27LPG	2700CC LPG	2J	2500CC DIESEL
295T	2.95 TONS	2JZFSE	3000CC 24-VALVE DOHC EFI
29S	29-SEATER	2JZGE	3000CC 24-VALVE DOHC EFI
2A	1300CC	2JZGTE	3000CC 24-VALVE DOHC EFI TURBO
2ADHV	2200CC DIESEL TURBO	2K	1000CC
2ADFTV	2200CC DIESEL TURBO	2KDFTV	2500CC DIESEL TURBO
2AL	1300CC	2L	2400CC DIESEL
2ALC	1300CC	2LT	2400CC DIESEL TURBO
2ALU	1300CC	2LTE	2400CC DIESEL TURBO
2AU	1300CC	2LTHE	2400CC DIESEL TURBO
2AZFE	2400CC 16VALVE DOHC EFI	2M	2200CC
2AZFSE	2400CC 16-VALVE DOHC EFI	2MZFE	2500CC 24-VALVE DOHC EFI
2AZFXE	2400CC 16-VALVE DOHC EFI	2ND	SECOND
2B	3200CC DIESEL	2NZFE	1300CC 16VALVE DOHC EFI
2C	2000CC DIESEL	2RZ	2400CC
2CE	2000CC DIESEL EFI	2RZE	2400CC EFI
2CL	2000CC DIESEL	2RZFE	2400CC EFI
2CT	2000CC DIESEL TURBO	2S	2000CC
2CTE	2000CC DIESEL EFI TURBO	2SBD	2 STEP BACK DOOR DAMPER
2CTL	2000CC DIESEL TURBO	2SC	2000CC

ABBREVIATION LIST

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
2SEL	2000CC EFI	3B	3400CC DIESEL
2SELC	2000CC EFI	3CE	2200CC DIESEL EFI
2SELU	2000CC EFI	3CT	2200CC DIESEL TURBO
2SR	TWO SPEED REAR AXLE	3CTE	2200CC DIESEL EFI TURBO
2SZFE	1300CC 16VALVE DOHC EFI	3D	3-D00R
2T	1600CC	3DS	3 D00R
2TB	1600CC	3E	1500CC 12-VALVE
2TC	1600CC	3EE	1500CC 12-VALVE EFI
2TG	1600CC DOHC	3ETE	1500CC 12-VALVE EFI TURBO
2TGEU	1600CC DOHC EFI	3F	3-SPEED MANUAL TRANSMISSION, FLOOR SHIFT
2TJ	1600CCC	3FC	ATM, 3-SPEED FLOOR SHIFT
2TR	2700CC 16-VALVE DOHC EFI	3FE	4000CC
2TRFE	2700CC 16-VALVE DOHC EFI	3GRFE	3000CC 24-VALVE DOHC EFI
2TZFE	2400CC 16-VALVE DOHC EFI	3GRFSE	3000CC 24-VALVE DOHC EFI
2TZFZE	2400CC 16-VALVE DOHC EFI	3H	MTM, 3-SPEED COLUMN SHIFT
2UC	1800CC	3HC	ATM, 3-SPEED COLUMN SHIFT
2UZFE	4700CC 32-VALVE DOHC EFI	3K	1200CC
2VZFE	2500CC DOHC EFI	3KB	1200CC TWIN CARBURETOR(HIGH OCTANE GASOL
2WD	2-WHEEL DRIVE	3KBR	1500CC TWIN CARBURATOR (REGULAR GASOLINE
2WZTV	1400CC DIESEL TURBO	3KC	1200CC
2Y	1800CC	3KH	1200CC
2YC	1800CC	3KHJ	1200CC
2YJ	1800CC	3KJ	1200CC
2YPU	1800CC LPG	3KU	1200CC
2YU	1800CC	3L	2800CC DIESEL
2ZRFE	1800CC 16-VALVE DOHC EFI	3MZFE	3300CC 24-VALVE DOHC EFI
2ZZGE	1800CC 16-VALVE DOHC EFI	3N0	ORDINARY PASSENGER VEHICLE
300GP	300G PREMIUM TYPE	3N0	ORDINARY PASSENGER VEHICLE
30S	FOR 30 PASSENGERS EFI	3PCS	EXPANDER TYPE
30T	3 TONS	3QT	0.75TONS
35K	350-KG LOADING CAPACITY	3RD	THIRD
35T	3.5 TONS	3RZF	2700CC CBR DOHC
39C	39-SEATER	3RZFE	2700CC EFI
39S	39-SEATER FOR INFANT	3RZFP	2700CC LPG
3A	1500CC	3RZFPE	2700CC 16VALVE DOHC LPG EFI
3AC	1500CC	3S0	THREE SIDE 0PEN
3AHU	1500CC	3SF	2000CC
3ALU	1500CC	3SFE	2000CC 16-VALVE DOHC EFI
3ASU	1500CC	3SFSE	2000CC 16-VALVE DOHC EFI
3AU	1500CC	3SGE	2000CC 16-VALVE DOHC EFI

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
3SGEL	2000CC 16-VALVE DOHC EFI	4AFHE	1600CC 16-TURBO DOHC EFI
3SGELC	2000CC 16-VALVE DOHC EFI	4AGE	1600CC 16-VALVE DOHC EFI
3SGELU	2000CC 16-VALVE DOHC EFI	4AGEC	1600CC DOHC EFI
3SGTE	2000CC 16-VALVE DOHC EFI TURBO	4AGEL	1600CC DOHC EFI
3S0	THREE SIDE OPEN	4AGELC	1600CC DOHC EFI
3SZFE	1500CC 16VALVE DOHC EFI	4AGELU	1600CC 16-TURBO DOHC EFI
3SZVE	1500CC 16-VALVE DOHC EFI	4AGEU	1600CC 16-TURBO DOHC EFI
3T	1800CC	4AGZE	1600CC DOHC EFI SUPER CHARGER
3TC	1800CC	4AL	1600CC
3TEU	1800CC EFI	4ALC	1600CC
3TGTEU	1800CC DOHC EFI TURBO	4AT	ATM, 4-SPEED
3URFE	5700CC 32-VALVE DOHC EFI	4ATS	ATM, 4-SPEED (STEERSHIFTMATIC)
3UZFE	4300CC 32-VALVE DOHC EFI	4B	3700CC DIESEL
3V	3000CC	4D	4-DOOR
3VZE	3000CC EFI	4DH	4-DOOR HARDTOP
3VZFE	3000CC 24-VALVE DOHC EFI	4DS	4 DOOR
3Y	2000CC	4DV	4-DOOR VAN
3YC	2000CC	4DW	4-DOOR STATION WAGON
3YE	2000CC EFI	4EF	1300CC 16-TURBO DOHC
3YEC	2000CC EFI	4EFE	1300CC 16-VALVE DOHC EFI
3YEU	2000CC EFI	4EFTE	1300CC 16-TURBO DOHC EFI TURBO
3YJ	2000CC	4F	MTM, 4-SPEED FLOOR SHIFT
3YP	2000CC LPG	4FC	ATM, 4-SPEED FLOOR SHIFT
3YPE	2000CC LPG	4GRFSE	2500CC 24-VALVE DOHC EFI
3YPU	2000CC LPG	4H	MTM, 4-SPEED COLUMN SHIFT
3YU	2000CC	4HC	ATM, 4-SPEED COLUMN SHIFT
3ZZFE	1600CC 16-VALVE DOHC EFI	4K	1300CC
40K	400-KG LOADING CAPACITY	4KC	1300CC
40T	4-TON LOADING CAPACITY	4KE	1300CC EFI
40T0V	4 T0NS 0VER	4KEU	1300CC EFI
40T0V	4 TONS 0VER	4KJ	1300CC
41LPG	4100CC LPG	4KU	1300CC
44C	44-SEATER (SCHOOL BUS)	4M	2600CC
48T	4.8 TONS	4ME	2600CC EFI
49S	49-SEATER FOR INFANT	4N0	LIGHT TRUCK
4A	1600CC	4N0	LIGHT TRUCK
4AC	1600CC	4SFE	1800CC 16-VALVE DOHC EFI
4AELU	1600CC EFI	4SFI	1800CC 16-VALVE DOHC CI
4AF	1600CC 16-VALVE DOHC	4TGTEU	1800CC DOHC EFI TURBO
4AFE	1600CC 16-VALVE DOHC EFI	4TH	FOURTH

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
4V	3400CC	5MGE	2800CC DOHC EFI
4VEU	3400CC	5MGEU	2800CC DOHC EFI
4VU	3400CC	5MT	MTM, 5-SPEED
4VZFE	2500CC 24-VALVE DOHC EFI	5N0	SMALL VEHICLE
4WD	4-WHEEL DRIVE	5N0	SMALL VEHICLE
4Y	2200CC	5R	2000CC
4YC	2200CC	5RU	2000CC
4YE	2200CC EFI	5S	5-SEATER
4YEC	2200CC EFI	5SFE	2200CC 16-VALVE DOHC EFI
4ZZFE	1400CC 16-VALVE DOHC EFI	5SFNE	2200CC 16-VALVE DOHC CNG EFI
50K	500-KG LOADING CAPACITY	5TH	FIFTH
55T	5.5 TONS	5VEU	4000CC EFI
5AF	1500CC 16-VALVE DOHC	5VZFE	3400CC EFI
5AFE	1500CC 16-VALVE DOHC EFI	65T	6.5 TONS
5AFHE	1500CC 16-VALVE DOHC EFI	6F	MTM, 6-SPEED FLOOR SHIFT
5D	5-DOOR	6FC	ATM, 6-SPEED FLOOR SHIFT
5D2	5-DOOR (2-BOX)	6FS	MTM, 6-SPEED FLOOR SHIFT (SEQUENTIAL)
5D3	5-DOOR (3-BOX)	6HC	ATM, 6-SPEED COLUMN SHIFT
5DS	5-DOOR SEDAN	6MGE	3000CC DOHC EFI
5DV	5 DOOR VAN	6MGEU	3000CC DOHC EFI
5EFE	1500CC 16-VALVE DOHC EFI	6TH	SIXTH
5EFHE	1500CC 16-VALVE DOHC EFI	75T	7.5 TONS
5F	MTM, 5-SPEED FLOOR SHIFT	7AFE	1800CC 16-VALVE DOHC EFI
5F0	5-SPEED TRANSMISSION, OVER DRIVE (OVER T0	7K	1800CC
5FC	ATM, 5-SPEED FLOOR SHIFT	7KE	1800CC
5FD	5-SPEED TRANSMISSION, DIRECT DRIVE	7MGE	3000CC 24-VALVE DOHC EFI
5F0	5-SPEED TRANSMISSION, OVER DRIVE (OVER T0	7MGTE	3000CC 24-VALVE DOHC EFI TURBO
5FS	MTM, 5-SPEED FLOOR SHIFT(SEQUENTIAL)	7MGTEU	3000CC 24-VALVE DOHC EFI TURBO
5GRFE	2500CC 24-VALVE DOHC EFI	7S	7-SEATER
5H	MTM, 5-SPEED COLUMN SHIFT	7TH	SEVENTH
5HC	ATM, 5-SPEED COLUMN SHIFT	80T	8.0 TONS
5K	1500CC	850K	850 KILOGRAMS
5KC	1500CC	85T	8.5 TONS
5KJ	1500CC	8AFE	1300CC 16-VALVE DOHC EFI
5KU	1500CC	8R	1900CC
5L	3000CC DIESEL	8RC	1900CC
5LE	3000CC DIESEL	8S	8-SEATERS
5M	2800CC	8TH	EIGHTH
5ME	2800CC EFI	9S	9-SEATER
5MEU	2800CC EFI	9TH	NINTH

ABBREVIATION LIST

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	AMPERE	AERO	AERO SPORTS TYPE
A-SIDE	ASSISTANT SIDE	AET	LIFTBACK (AERO TOP)
A/C	AIR CLEANER	AF	ACOUSTIC FLAVOR
A/O	AIR OVER HYDRAULIC	AFB	AM/AM MPX 6-PB/CASSETTE
A/P	AIR PUMP	AFC	AM/FM RADIO & CLOCK
A/R	AS REQUIRED	AFCC	AM/FM RADIO & CLOCK & CASSETTE
A/T	AUTOMATIC TRANSMISSION	AFE	AM/FM MPX ETR
A180	ARDEO 180 TYPE	AFM	AM/FM MPX ETR/CASSETTE
A180E	ARDEO 180 E TYPE	AFS	AM/FM/SW MPX ETR
A180S	ARDEO 180 S TYPE	AFT	AUXILIARY FUEL TANK (BACK DOOR TYPE)
A20	A20 TYPE TRANSMISSION (AUTOMATIC)	AH	AMPERE HOUR
A200	ARDEO 200 TYPE	AI	AIR INJECTION
A200E	ARDEO 200 E TYPE	AIC	AIR CONDITIONER
A200G	ARDEO 200 G TYPE	AIR CON	AIR CONDITIONER
A200S	ARDEO 200 S TYPE	AIR-CON =AIC	AIR CONDITIONER
A30	A30 TYPE TRANSMISSION (AUTOMATIC)	AIR-CON	AIR CONDITIONER
A32	A32 TYPE TRANSMISSION (AUTOMATIC)	AIR-CON=AIC	AIR CONDITIONER
A40	A40 TYPE TRANSMISSION (AUTOMATIC)	AL (300series)	AUTOMATIC LEVELER
AAC	AUTOMATIC AIR CONDITIONER	AL (500,700series)	ALUMINUM
AAP	AUXILIARY ACCELERATION PUMP	ALC	AUTOMATIC LIGHT CONTROL
ABS	ANTILOCK BRAKING SYSTEM	ALM	ALUMINUM WHEEL
ABV	AIR BYPASS VALVE	ALN	ALLION
AC	ALTERNATING CURRENT	ALPX	ALPHA X TYPE(S PACKAGE TYPE)
ACB	ACCESS CAB	ALT	ALTISE TYPE
ACCEL	ACCELERATOR	ALTS	ALTISE SPORT TYPE
ACIS	AIR CLEANER INLET SHUTTER	ALU	FOR ALUMINUM WHEEL
ACM	ANNUAL CONQUEST MODEL	ALUMI	ALUMINUM
ACS	ACOUSTIC FLAVOR	ALUMI WHEEL	ALUMINUM WHEEL
ACSRY	ACCESSORY	ALV	ALUMI VAN
ACT	AIR CONTROL VALVE	AM	AMPLITUDE MODULATION
ACV	AIR CONTROL VALVE	AM/FM	AM/FM
ACW	AIR CLEANER WARNING	AM/SW	AM/SW
AD	AUTO DRIVE	AMC	AM MPX/FM MPX ETR/CASSETTE
ADD	AUTOMATIC DISCONNECTING DIFFERENTIAL	AMF	AM MPX/FM MPX ETR
ADJ	ADJUSTER/ADJUSTING	AMP	AMPERE
AEOF	AUTOMATIC ENGINE OIL FEEDER	ANCOM	ECUADOR, COLOMBIA
AEC	AERO CABIN	ANCOM	ECUADOR, COLOMBIA
AEOF	AUTOMATIC ENGINE OIL FEEDER	ANGLE	ANGLE
AER	AERO TOURER TYPE	AP	AIR PUMP
AERO	AERO SPORTS TYPE	APX	GT APEX TYPE

ABBREVIATION LIST

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
AR	AS REQUIRED	BASE	BASE TYPE
ARB	ARABIC	BB	BRAKE BOOSTER
ARCH	ARCH	BC(300series)	WITH BATH COOLER
ARCTIC	COLD WEATHER SPECIFICATIONS	BC(500,700series)	BOTTLE COOLER
AREM	AUTOMATIC RETRACTABLE ELECTRIC REMOTE CO	BDD	BACK DOOR DAMPER
ARI	DRIVER INFORMATION BY RADIO	BDEL	BACK DOOR ELECTROMAGNETIC LOCK
ARL	AUSTRALIA SPECIFICATION	BHD	BULKHEAD
AS	ANALOG SPEEDOMETER	BKT	BRACKET
ASSY	ASSEMBLY	BLUE M.	BLUE METALLIC
ASV	AIR SWITCHING VALVE	BN	BENCH SEAT
ATCH	ATTACHING	BOC SH A.S.	BOC SH AUTMOTIVE SYSTEM CORPORATION
ATG	AERO TOURING TYPE	BOC SH B.S.	BOC SH BRAKE SYSTEM CORPORATION
ATH	ATHLETE,ATHLETE FOUR TYPE	BOS	BODY SONIC
ATHE	ATHLETE E TYPE	BRG	BEARING
ATHG	ATHLETE G TYPE	BRK	BRAKE
ATHV	ATHLETE V TYPE	BRU	BRUNEI
ATM	AUTOMATIC TRANSMISSION	BS	BACK SONAR
ATP	A TYPE	BSTR	BOOSTER
ATX	AT-X TYPE	BTP	B TYPE(STANDARD TYPE)
AUC	AUTO COMPASS	BTR	CAB-BEHIND-ENGINE TRUCK (EXCLUDING DUMP
AUD	AUTO DOOR	BTRY	BATTERY
AUTO.	AUTOMATIC	BUS	MINIBUS (COMMUTER)
AUX	AUXILIARY	BUSH	BUSHING
AV1	AV-1 TYPE	BV	BOOST VENTILATOR
AV2	AV-2 TYPE	BVSV	BIMETAL VACUUM SWITCHING VALVE
AVE	AVENUE TYPE	BZ	BRAZIL
AVT	AVANT TYPE	BZG	BZ-G TYPE
AVTG	AVANT-G TYPE	BZR	BZ-R TYPE
AX	AX TYPE	BZT	BZ-TOURING TYPE
AXC	AXLE CODE (STATED IN TRANS/AXLE COLUMN 0	BZV	BZ-V TYPE
AXL	AXLE	C	EUROPE (W/CATALYZER)
AXX	AX-X TYPE	C/L	CLUTCH
B	3000CC DIESEL	C/MBR	CROSS MEMBER
B-	BROWNISH	C/R	COMMON-RAIL
B-IN	BUILT-IN COOLER	CØ	CØLØMBIA
B.GRAY	BROWNISH GRAY	CØH	CØAT HØØK
B/C	BRAKE CHAMBER	CØM	CØMMUTER
B/D	BODY	CØN	CØNDUCTIVE TYPE
B/R	BAGGAGE ROOM	CØNQ	CØNQUEST TYPE
BOS	BODY SONIC	CØS	CØLD SPECIFICATION

ABBREVIATION LIST

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
CAC	CYCLONE AIR CLEANER	CO	COLOMBIA
CAN	CANVAS TOP	COH	COAT HOOK
CANSI	CANVAS TOP SI TYPE	COM	COMMUTER
CAPA	CAPACITY	COMB	COMBINATION
CARAT	CARAT TYPE	COMPR	COMPRESSOR
CB	CONSOLE BOX	CON	CONDUCTIVE TYPE
CBR	STANDARD CARBURETOR SPECIFICATION	CON ROD	CONNECTING ROD
CBU	COMPLETED VEHICLE	CONQ	CONQUEST TYPE
CC	CRUISE COMPUTER	CONROD	CONNECTING ROD
CD	CD SPECIFICATION	CONST	CONSTRUCTION
CDL	CENTER DIFFERENTIAL LOCK	COS	COLD SPECIFICATION
CE	CE TYPE	CP(300series)	COUPE
CE1	CE TYPE(- 0005)	CP(500,700series)	CAR-POT
CE2	CE TYPE(0005-)	CR	CHROME PLATED
CEW	CENTRALIZATION WARNING	CR- PLATED	CHROME PLATED
CEX	CUSTOM EXTRA SPECIFICATION	CR-PLTD	CHROME PLATED
CH	COMBUSTION HEATER	CRC	CRUISE CONTROL
CH0	CHOKE OPENER	CRS	CLEARANCE SONER
CHASSIS#	CHASSIS SERIAL NUMBER	CS	COMBINATION SEAT
CHB	CHOKE BREAKER	CS7	CASUAL SEVEN TYPE
CHI	CHINA	CSA	CENTRAL & SOUTH AMERICA SPECIFICATION
CHN	CHINESE	CSII	CS-1 TYPE
CH0	CHOKE OPENER	CSX	CSX TYPE
CHR	FOR CHROME PLATED WHEEL	CT	CANVAS TOP
CI	ELECTRIC FUEL INJECTION SYSTEM	CTD	CUSTOM DX SPECIFICATION
CIS	COMMONWEALTH OF INDEPENDENT STATES	CTE	CUSTOM EDITION SPECIFICATION
CTU	COOLER IDLE UP	CTM	CUSTOM SPECIFICATION
CKD	COMPLETE KNOCK DOWN	CTP	C TYPE
CL(300series)	N TYPE (CL)	CTR	CENTER
CL(500,700series)	CLUTCH	CTX	CUSTOM EXTRA SPECIFICATION
CLA	CLAVIA TYPE	CU-W	COPPER-TUNGSTEN
CLB	CLUTCH BOOSTER	CUH	CUP HOLDER
CLM	CLINOMETER	CUT	CUTEY TYPE
CM	CENTIMETERS	CV	CONVERTIBLE TYPE
CM2	CENTIMETERS SQUARE	CVFC	ATM STEPLESS FLOOR SHIFT
CMPR	COMPRESSOR	CVHC	ATM, CONTINUOUSLY VARIABLE COLUMN SHIFT
CND	CANADA	CVJ	CONSTANT VELOCITY JOINT
CNG	CNG TYPE	CVT	CONVERTIBLE
CNP	CANION PACKAGE SPECIFICATION	CW	COIL WINDING
CNT	CONTROL	CX	CX SPECIFICATION

ABBREVIATION LIST

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
CXI	CS-X1 TYPE	DF	DRIVER'S SEAT FOOTREST
CXS	CX SALOON SPECIFICATION	DF.	DEGREES FAHRENHEIT
CYG	CYGNUS TYPE	DIA	DIAMETER
CYL	CYLINDER	DIAPH	DIAPHRAGM
CYN	CYNTHIA TYPE	DIFF	DIFFERENTIAL
CZ	CZ TYPE	DIH	DOUBLE INSIDE HANDLE
D	D TYPE (BASE)	DIN	GERMAN INSTITUTE FOR STANDARDIZATION
D GRAY	DARK GRAY	DIP	DISTANCE PLATE
D, L	CUT DAM TO LENGTH AS SPECIFIED IN REMARK	DIS	FRONT DISC BRAKE
D-	DARK	DISTR	DISTRIBUTING/DISTRIBUTION
D-S/ABS	DOUBLE ACTING SHOCKABSORBER	DL	DIFFERENTIAL LOCK
D-SIDE	DRIVER SIDE	DLP	DLX PACKAGE
D.	DEGREES (C.)	DLX	DELUX SPECIFICATION
D. BLUE	DARK BLUE	DLXA	DELUXE A TYPE
D. BROWN	DARK BROWN	DLXI	DLX-I TYPE
D. BROWN	DARK BROWN	DM	DOOR MIRROR
D. GRAY	DARK GRAY	DM0	DRIVER MONITOR
D. GREEN	DARK GREEN	DM1	DUMP TRUCK (STANDARD)
D/E	DOOR ENGINE	DM2	DUMP TRUCK (JUST LOW)
D=	DIAMETER (MM)	DM3	DUMP TRUCK (3-WAY DUMP TRUCK)
DOOR MIR.	DOOR MIRROR	DM4	DUMP TRUCK (QUARRYING)
DOP	DEALER OPTION	DM5	FULL JUST LOW DUMP TRUCK
D4	DIRECT-INJECTION GASOLINE ENGINE	DM6	DUMP (ALGERIA)
DABD	DASHBOARD	DM7	DUMP, REINFORCED TYPE(3.1M)
DC(300series)	DIGITAL CLOCK	DM8	DUMP, REINFORCED TYPE(2.85M)
DC(500,700series)	DIRECT CURRENT	DMALH	DUAL MODE AUTOMATIC LOCKING HUB
DC.	DEGREE CENTIGRADE	DMO	DRIVER MONITOR
DCB	DOUBLE CAB	DMP	DUMP TRUCK
DCR	DIESEL COMMON RAIL INJECTION SYSTEM	DOOR MIR.	DOOR MIRROR
DCRL	DIESEL COMMON RAIL INJECTION SYSTEM(LOW-	DOP	DEALER OPTION
DCRTH	DIESEL COMMON RAIL INJECTION SYSTEM(LOW	DP	DECELERATION CONTROL SYSTEM
DCRTJ	DIESEL COMMON RAIL INJECTION SYSTEM(MIDD	DPMS	DRIVING POSITION MEMORY SYSTEM
DCRTK	DIESEL COMMON RAIL INJECTION SYSTEM(HIGH	DR	DRIVER
DCRTL	DIESEL COMMON RAIL INJECTION SYSTEM(HIGH	DR LAMP	DRIVER LAMP
DCS	DOOR CONTROL SWITCH	DRC	DOOR REMOTE CONTROL MIRROR
DEC	DECOMPRESSION	DRL	DAYTIME RUNNING LIGHT SYSTEM
DECOMP	DECOMPRESSION	DRM	FRONT DRUM BRAKE
DEF(300series)	DEF0GGER	DS	DIGITAL SPEEDOMETER
DEF(500,700series)	DEFROSTER	DSBD	DOUBLE SWING BACK DOOR
DEFI	DIESEL EFI	DSC	DESCRIPTION

ABBREVIATION LIST

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
DSL	DIESEL	EIS	ENGINE IMMOBILIZER SYSTEM
DSL2	DIESEL 2 VALVE	EJ	1000CC
DSL4	DIESEL 4 VALVE	EJDE	1000CC TWIN CAM 12-VALVE EFI
DSLl	DIESEL (LOW-POLLUTION ENGINE)	EJVE	1000CC
DSLt	DIESEL	EL	ELECTROMAGNETIC LOCK
DSP	DIGITAL SIGNAL PROCESSER	ELC	ELECTRIC CONTROL TRANSFER
DSPV	DECELERATION SENSING PROPORTIONING VALVE	ELCD	EVAPORATIVE EMISSION CONTROL SYSTEM
DTP	D TYPE	ELEC	ELECTRIC
DTY	DETACHABLE TYPE	ELEGT	ELEGANT TYPE
DV	DELIVERY VAN	ELR	EMERGENCY LOCKING RETRACTOR SEAT BELT
DW	DETACHABLE TYPE WINDOW	ELT	ELECTRONIC TUNER
DX	DELUX SPECIFICATION	ELU	ELUCED TYPE
DXA	DX-A SPECIFICATION	EM	ELECTRIC MOTOR
DXJ	DX-J TYPE	EMERG	EMERGENCY
DYN	DYNA	EMV	ELECTRO MULTI VISION
Dx.	DRIVER SEAT	ENCL	ENCLOSURE
E-GOV	ELECTRIC GOVERNOR	ENG	ENGINE
E.T.C.	ETCETERA	ENG#	ENGINE SERIAL NUMBER
E/G	ENGINE	ENGINE	3000CC 24-VALVE DOHC EFI
E/LOCK	ELECTRIC LOCK	ENT	ENTRANCE
E4AT	ELECTRONIC CONTROL 4SPEED AUTOMATIC TRAN	EP	ELECTRIC PNEUMATIC
EAT	ELECTRONIC AUTOMATIC TRANSMISSION CONTRO	EQUIP	EQUIPMENT
EB	EXHAUST BRAKE	ESC	ELECTRONIC SKID CONTROL
ECB	ENLARGE CAB	ESP	ELECTRIC SERVO PACKAGE
ECD	ELECTRONIC CONTROL DIESEL	ET	ET SPECIFICATION
ECE	ECONOMIC COMMISSION FOR EUROPE	ET0 TYPE	ET0 TYPE
ECS	EASY CLOSER SYSTEM	ETC SYSTEM	ETC SYSTEM
ECT	ELECTRONIC CONTROL TRANSMISSION	ET0 TYPE	ET0 TYPE
EDIC	ELECTRONIC DIESEL INJECTION CONTROL	E TYPE	E TYPE
EECC	FOR EXHAUST EMISSION CONTROLLED COUNTRY	ETR	ELECTRONIC TUNING RADIO
EFI	ELECTRONIC FUEL INJECTION SYSTEM	EUG	EUROPE GENERAL
EFIS	ELECTRIC FUEL INJECTION SYSTEM	EUR	EUROPE
EGR	EXHAUST GAS RECIRCURATION SYSTEM	EW	ELECTRIC WINCH
EGR-VM	EGR VACUUM MODULATOR	EX	EX SPECIFICATION
EHL	ELECTRICAL HEATED LAMINATED GLASS	EX-USSR	EX-UNION OF SOVIET SOCIALIST REPUBLICS S
ENSERL	ELECTRICAL HEATED SOLER-ENERGE REFLECTIN	EX.	EXHAUST
ENSERT	ELECTORICAL HEATED SOLAR-ENERGE REFLECTI	EX.EMISSION CONTROL	EXAUST EMISSION CONTROL
EHT	ELECTRICAL HEATED TEMPERED GLASS	EX.EMISSION CONTROL	EXAUST EMISSION CONTROL
EHTL	ELECTRICAL HEATED TINTED LAMINATED GLASS	EX/	EXCLUDING
EHTT	ELECTRICAL HEATED TINTED TEMPERED GLASS	EX5	EX5 TYPE

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
EXA	EXA TYPE	FL	FLUORESCENT LAMP
EXC	EXCEED TYPE	FL0	FUEL LID OPENER
EXCG	EXCEED G TYPE	FLEX	FLEXIBLE
EXCL/	EXCLUDE	FLL	FULL FLOATING REAR ACCELERATOR
EXEC	EXHAUST EMISSION CONTROL	FLO	FUEL LID OPENER
EXG	EX-G TYPE	FLU.LAMP	FLUORESCENT LAMP
EXH	EXHAUST	FM	FENDER MIRROR
EXH.B	EXHAUST BRAKE	FR	FRONT
EXP	EXPORT	FRC	FENDER REMOTE CONTROL MIRROR
EXPORT	EXPORT ONLY	FRG	THE FEDERAL REPUBLIC GERMANY SPECIFICATI
EXPORT	EXPORT ONLY	FRP	PRODUCED AT TMF
EXS	EX SALOON SPECIFICATION	FRS	FOLDING REAR SEAT
EXT	EXTRA INTERIOR	FS	FINLAND SPECIFICATION
EZ	TERCEL EZ	FSD	FRONT SLIDE DOOR
F	3900CC:F TYPE	FSRS	FOLD-DOWN SPLIT REAR SEAT BACKS
F-VL	FOAMED VINYL CHLORIDE LEATHER	FST	FUEL SUB TANK
F/A	FRONT AXLE	FSW	FUEL SEDIMENTER WARNING
F/AXLE	FRONT AXLE	FT	FULL TRIM
F/H	FLYWHEEL HOUSING	FTC	FUEL TANK CAPACITY
F/W	FLYWEIGHT	FTP	F TYPE
FB	FABRIC	FTY	FIXED TYPE
FB-A	FABRIC-A PATTERN	FUEL-T	FUEL TANK
FB-B	FABRIC-B PATTERN	FV	FOAMED VINYL
FB-C	FABRIC-C PATTERN	FW	FIXED TYPE WINDOW
FB-D	FABRIC-D PATTERN	FWD	FRONT WINDOW DEFOGGER
FCRS	FIXED CUSHION REAR SEAT	FWH	FREE WHEEL HUB
FD	FOLDING DOOR	FXD	FX-D TYPE
FDB	FRONT DISC BRAKE	FXG	FX-G TYPE
FDL	FRONT DIFFERENTIAL LOCK	FXGT	FX-GT SPECIFICATIONS
FDRS	FOUR DIVISION REAR SEAT	FXGTV	FX-GTV TYPE
FE	FE TYPE	FXL	FX-L TYPE
FFA	FULL-FLOATING AXLE	FXR	FX-R TYPE
FFCL	FULL FLAT CONTROL LEVER	FXT	FX-T TYPE
FFCS	FULL FLAT CONTROL SWITCH	FXV	FXV SPECIFICATIONS
FFRS	FORWARD FACING REAR SEAT	FXVS	FX-VS TYPE
FFS	FULL FLAT SEAT	FXZI	FX-ZI SPECIFICATIONS
FG	FG TYPE	FXZS	FX-ZS TYPE
FGR	FINAL GEAR RATIO	FZ	FZ TYPE
FH	FUEL HEATER	G	GRAMS
FIG	FIGURE	G, L	CUT GASKET TO LENGTH AS SPECIFIED IN REM

ABBREVIATION LIST

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
G-	GREENISH	GLZV	GLANZA V TYPE
G-0LIVE	GRAYISH 0LIVE	GOV	GOVERNOR
G-GRAY	GREENISH GRAY	GP	GP TURBO TYPE
G-OLIVE	GRAYISH OLIVE	GR	GR TYPE
G/K	GOLD KING	GR0	GR0IRE TYPE
G/R	GEAR RATIO	GRAY M.	GRAY METALLIC
G07S	WAGON 7-SEATERS	GREI	GRAY
G08S	WAGON 8-SEATERS	GRGT	GRANDE G-TB TYPE
G6	G6 TYPE	GR0	GR0IRE TYPE
G8S	GLASS BREAKAGE SENSOR	GRZS	GLANZA S TYPE
GC	GRAND CABIN	GRZV	GLANZA V TYPE
GCB	GAUGE CONSOLE BOX	GS	MANUFACTURER
GCC	GULF CORPORATION COUNCIL	GSL	GSL SPECIFICATION
GCGE	GRAND CABIN G-P TYPE	GSS	GSS SPECIFICATION
GCGN	GRAND CABIN G-E TYPE	GT2	GT2 SPECIFICATION
GD	GRANDE TYPE, RANDE FOUR TYPE	GT4	GT-FOUR TYPE
GDG	GRANDE G TYPE, GRANDE G FOUR TYPE	GT4A	GT-FOUR A TYPE
GDGT	GRANDE G-TB TYPE	GT4RC	GT-FOUR RC TYPE
GDS	GRANDE IR-S TYPE	GT4WD	GT-4WD TYPE
GDV	GRANDE IR-V TYPE	GTAPX	GT APPEX SPECIFICATION
GE	GRAPHIC EQUALIZER AMPLIFIER	GTL	GT LIMITED TYPE
GEN (300series)	GENERAL COUNTRIES	GTP	G TYPE
GEN (500, 700series)	GENERATOR	GTR	GT-R TYPE
GENKD	FOR GENERAL COUNTRIES (CKD)	GTS	GTS TYPE
GEX	GRAND EXTRA SPECIFICATION	GTT	GT TURBO TYPE
GHD	GENERAL COUNTRIES, HEAVY-DUTY	GTTL	GT TURBO A TYPE
GHI	GENERAL COUNTRIES, HEAVY I BEAM	GTRR	GT TURBO R TYPE
GI	GRANDAIR INTERIOR	GTV	GTV TYPE
GIS	GALVANIZED IRON SHEET	GTX	GTX TYPE
GL	GL SPECIFICATION	GTZ	GTZ SPECIFICATION
GLD	GLIDE DOOR	GUS	GULF SPECIFICATION (BAHRAINISLAND, IRAQ, Q
GLE	GLE TYPE	GUT	GULL TOP
GLI	GLI TYPE	GX	GX SPECIFICATION
GLIM	G-LIMITED TYPE	GXA	GX-A TYPE
GLS	GLS TYPE	GXI	GXI TYPE
GLUX	G LUXURY TYPE	GXL	GXL SPECIFICATION
GLX	GLX TYPE	GZ	GZ TYPE
GLXI	GLX-I TYPE	H	3600CC DIESEL
GLXS	GLX-S TYPE	H, L	CUT HOSE TO LENGTH AS SPECIFIED IN REMAR
GLZS	GLANZA S TYPE	H. L.	CUT HOSE TO LENGTH AS SPECIFIED IN REMAR

ABBREVIATION LIST

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
H/C	HEAD LAMP CLEANER	I	I TYPE
H=	HEIGHT	IC.	INTERIOR COLOR
H50	H50 TYPE TRANSMISSION	ID	INNER DIAMETER
H51	H51 TYPE TRANSMISSION	ID=	INSIDE DIAMETER (MM)
HA	HIGH ALTITUDE SPECIFICATION	IDN	INDONESIA
HAC	HIGH ALTITUDE COMPENSATOR	IDSUV	INDONESIA PRODUCED SUV WAGON
HAL	HALOGEN	IIA	INTEGRATED IGNITION ASSEMBLY
HAP	HANDICAP PERSON SPECIFICATION	IKI	MANUFACTURER
HB	HATCHBACK	ILL	ILL TYPE
HBS	HIGH BACK SEAT	IM-FB	IMITATION FABRIC
HC	HEADLAMP CLEANER	IM-FB.	IMITATION FABRIC
HCEJ	1300CC GASOLINE ENGINE	IN	INCHES
HD	HEAVY DEFOGGER	IN.	INCH
HDCR	HIGH POWER DIESEL COMMON RAIL INJECTION	INCL	INCLUDE
HDX	HIGH DELUX SPECIFICATION	INCR	INCREASE
HEA	HEATER	IND	INDIA
HEX	HEXAGON	INJ	INJECTION
HGP	HIGH GRADE PACKAGE	INN	INNER
HIC	HOT IDLE COMPENSATOR	INSL	INSULATOR
HIR	HIGH ROOF	INSP	INSPECTION
HIS	HIGH SIDE PICKUP	INST	INSTRUMENT
HIU	HEATER IDLE UP	INSTR	INSTRUMENT
HLF	0.5TONS	INT	INTERNAL
HP	HEATER PUMP	IP	INSTRUMENT PANEL
HR	HEADREST	IPA	INTELLIGENT PARKING ASSIST
HRF	HIGH ROOF	IPM	INTERNAL PROJECTION MEASURES
HRP	HARSH ROAD PACKAGE	IR	IR TYPE,IR FOUR TYPE
HS	HAWAII SPECIFICATION	IRCL	INFRARED CUT LAMINATED GLASS
HSEA	HIGH SOLAR ENERGY ABSORPTION GLASS	IRQ	IRAQ
HSEAL	HIGH SOLAR ENERGY ABSORPTION LAMINATED G	IRS	INDEPENDENT REAR SUSPENSION
HSL	HIGH MOUNTED STOP LAMP	IRV	IR-V TYPE
HSL1	HIGH MOUNTED STOP LAMP(1 BULB TYPE)	IRW	INTERMITTENT REAR WIPER
HSV	HOT START VALVE	ISO	INTERNATIONAL ORGANIZATION FOR STANDARDI
HT	HARD TOP SERIES	ISO	INTERNATIONAL ORGANIZATION FOR STANDARDI
HTWC	HIGH EFFICIENCY TWIN CAM	IT	INTEGRAL TYPE (SPECIAL HEATER)
HVY	HEAVY	IV	INCOMPLETE VEHICLES (CHASSIS & CAB)
HW	HINGED WINDSHIELD	IV1	CHASSIS WITH WIND SHIELD
HWS	HALOGEN WHITE SEMI-SEALED BEAM	IV2	BARE CHASSIS
HYD	HYDRAULIC	IV3	CHASSIS WITH CAB
HY'S	HALOGEN YELLOW SEMI-SEALED BEAM	IV4	CHASSIS FOR FIRE-FIGHTING VEHICLE

ABBREVIATION LIST

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
IV5	CHASSIS WITH FLAT FACE	L.GRAY	LIGHT GRAY
IV6	INCOMPLETE VEHICLES (CAB & CHASSIS)	L.GREEN	LIGHT GREEN
IV7	INCOMPLETE VEHICLE(CAB,CHASSIS & REAR FL	L.GREEN M	LIGHT GREEN METALLIC
IV	INTERMITTENT WIPER	L.GREEN M.	LIGHT GREEN METALLIC
J	J SPECIFICATION	L.S.V.	LOAD SENSING VALVE
J05C	5300CC DIESEL	L.Y.GRAY	LIGHT YELLOWISH GRAY
J0I	JOINAS TYPE	L/	LESS/WITHOUT
JL	SINGLE JUST LOW	L=	LENGTH(MM)
JLC	SINGLE JUST LOW (WITH CRANE)	LØR	LØW RØØF
J05C	5300CC DIESEL	LØS	LØW SIDE PICKUP
J0I	JOINAS TYPE	L1	LENGTH OF LOADING SPACE = 2.85M
JPN	JAPANESE	L2	LENGTH OF LOADING SPACE = 3M OR 3.1M
K	NUMBER OF COIL TURNS:SPRING CONSTANT	LA	LATIN AMERICA(EXCEPT ECUADOR, COLOMBIA)
K-FB	KNIT FABRIC	LAM	LAMINATED GLASS
K-TY	KNIT TAPE YARN	LB	POUNDS
K3	1300CC	LBS	LOW BACK SEAT
K3DE	1300CC 16-VALVE EFI	LCB	LARGE CAB
K3VE	1300CC 16-VALVE DOHC EFI	LD	LH DRIVE SPECIFICATION
K3VT	1300CC 16-VALVE DOHC EFI TURBO	LE	LE TYPE
K4Ø	K40 TYPE TRANSMISSION	LE1	LE TYPE(- 0005)
K5Ø	K50 TYPE TRANSMISSION	LE2	LE TYPE(0005-)
KB	1100CC TWIN CABURETOR	LED	LESS DOOR
KC	1100CC	LEDIN	LEAD-IN TYPE
KCAL	KILO CALORIE	LEF	LEAF TYPE REAR SUSPENSION
KG	KILOGRAMS	LEL	LE LIMITED TYPE
KG/CM2	KILOGRAMS PER CENTIMETER SQUARE	LES	LEATHER SEAT
KM	KILOMETER	LG	LG TYPE
KM/H	KILOMETER HOUR	LGT	LG TOURING SPECIFICATION
KW	KILOWATTS	LH	LEFT-HAND
KYØ	DRIVERS SCHOOL VEHICLE	LHC	LEVER TYPE HEATER CONTROL
KYØ	DRIVERS SCHOOL VEHICLE	LHD	LEFT-HAND DRIVE
L	LITER/LONG	LI	LI TYPE
L GRAY	LIGHT GRAY	LIM	LIME TYPE
L-	LIGHT	LIM4	LIMITED 4 TYPE
L.BLUE	LIGHT BLUE	LIMD	LIMITED TYPE
L.BLUE M.	LIGHT BLUE METALLIC	LITENS	LITENS AUTOMOTIVE PARTNERSHIP
L.BROWN	LIGHT BROWN	LLP	LARGE LICENSE PLATE
L.BROWN .	LIGHT BROWN	LMA	LW/MM/UKW MPX ETR/ARI
L.CREAM M.	LIGHT CREAM METALLIC	LWU	LW/MM/UKW MPX ETR/ARI/CASSETTE
L.DRAY	LIGHT GRAY	LNK	4-LINK TYPE REAR SUSPENSION

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
LOC	LOCATION	M50	M50 TYPE TRANSMISSION
LOR	LOW ROOF	M51	M51 TYPE TRANSMISSION
LOS	LOW SIDE PICKUP	MA	FOR MALAYSIA
LPB	LESS PASSIVE BELT	MAC	FOR MACHINED FINISH WHEEL
LPEFI	ELECTRONIC FUEL INJECTION SYSTEM (USE LP	MAD	MECHANICAL AUTO DOOR
LPG	LPG FUELED VEHICLE	MAGN	MAGNETIC
LP6B	LP6 TYPE(B TYPE ENGINE)	MAX	MAXIMUM
LP6TE	LP6 TWIN CAM EFI	MCT	MECHANICAL CONTROL TRANSFER
LPL	LICENSE PLATE LAMP	MCV	AIR-FUEL RATION CONTROL VALVE
LRDT	LARGE REAR DECK TRIM	MDA	MOTOR DRIVE ANTENNA
LS	LIVING SALOON	ME	MIDDLE EAST COUNTRIES SPECIFICATION
LSD	LIMITED SLIP DIFFERENTIAL	MECH	MECHANICAL
LSPV	LOAD SENSING PROPORTIONING VALVE	MECHA	MECHANICAL
LSV	LOAD SENSING VALVE	MED	MEDIUM
LTC	LESS TTC	MEU	2000CC EFI
LUB(300series)	LIFT UP BACK DOOR	MFLD	MANIFOLD
LUB(500,700series)	LUBRICATION/LUBRICAT	MG	MUDGUARD
LULI	LUXURY TYPE(-0008), LIMITED TYPE(0008-)	MH	MOULDED HEADLINING
LUS	LUMBER SUPPORT	MTH	MIRROR HEATER
LUX	LUXURY TYPE	MM	MILLIMETER
LV1	LEVEL 1 TYPE	MIN	MINIMUM
LVN	LEVIN MODEL	MJ(300series)	2000CC
LVR	REVIN SPECIFICATION	MJ(500,700series)	MICROPHONE JACK
LVS	LEVIN S TYPE	ML	MAGNETIC LOCK
LVVT	LESS VVT	MM	MILLIMETERS
LW	LIGHTING WARNING	MMT	MULTI-MODE MANUAL TRANSMISSION
LWR	LOWER	MOG	(WITHOUT GRADE)GRADE EXPRESSION BY PACKA
LX	LX SPECIFICATION	MOS	MORE SPECIAL
LX5	LX-5 SPECIFICATION	MP	2000CC LPG
LXL	LUXEL TYPE	MPAAC	MICRO PROCESSED AUTOMATIC AIR CONDITIOINE
M(500,700series)	CASE	MPS	MICRO COMPUTER POWER SEAT
M.	METALLIC	MPU	2000CC LPG
M.(300series)	METALLIC	MPX	MULTIPLX
M/C	MASTER CYLINDER	MR	MOON ROOF
M/LOCK	MANUAL LOCK	MRA	MANUAL RECLINING ADJUSTER
M/T	MANUAL TRANSMISSION	MRF	MIDDLE ROOF
M/W	MANUAL WINDOW	MRN	MARINO MODEL
MOS	MORE SPECIAL	MS	MICRO COMPUTER PRESET STEERING
M1	M1 CATEGORY	MSF	MM/SW/FM MPX ETR
M4AT	MANUAL CONTROL 4SPEED AUTOMATIC TRANNSHI	MT	MOULDED TYPE

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
MTEU	2000CC EFI TURBO	NSW	NEW SOUTH WALES SPECIFICATION
MTG	MOUNTING	NTA	NATIONAL TYPE APPROVAL NUMBER
MTM	MANUAL TRANSMISSION	NZ	NEW ZEALAND SPECIFICATION
MTP	MONTANA PACKAGE SPECIFICATION	O.D	OVERDRIVE
MU	2000CC	O.P.T.	OPTION
MUFF	MUFFLER	O.S	OVERSIZE
MW	MECHANICAL WINCH	O/D	OVERDRIVE
MX	MX SPECIFICATION	O/PUMP	OIL PUMP
MXC	MEXICO	O/R	OVER RIDER
N	N TYPE:GL TYPE:DELIVERY TYPE	O/S	OVERSIZE
N=	NUMBER OF TEETH	OD	OUTER DIAMETER
N0.	NUMBER	OD=	OUTSIDE DIAMETER (MM)
N04C	4000CC DIESEL	ODAC	OVERHEAD DUAL AIR CONDITIONER
N04CTB	4000CC	OF	OVER FENDER
N04CTC	4000CC COMMON RAIL TURBO DIESEL	OHC	OVERHEAD CONSOLE
N04CTF	4000CC COMMON RAIL TURBO DIESEL	OIL PRESSURE SWITCH	OIL PRESSURE SWITCH
N04CTG	4000CC COMMON RAIL TURBO DIESEL	OM	OK MONITOR
N04CTH	4000CC COMMON RAIL TURBO DIESEL	OMRON	TATEISHI ELECTRIC CORPORATION
N04CTJ	4000CC COMMON RAIL TURBO DIESEL	OPT	OPTION
N04CTK	4000CC COMMON RAIL TURBO DIESEL	OS	OMAN SPECIFICATION
N04CTL	4000CC COMMON RAIL TURBO DIESEL	OTM	OUTSIDE REAR VIEW MIRROR
N04CTN	4000CC DIESEL	OTS	ONE-TOUCH 2-4 SELECTOR
N04CTQ	4000CC DIESEL	OUT	OUTER
N04CTT	4000CC COMMON RAIL TURBO DIESEL	OVE	OVERDRIVE
N04CTV	4000CC COMMON RAIL TURBO DIESEL	P	P TYPE
N0B	NORMAL BODY	P & B	PROPORTIONING & BY-PASS VALVE
N0G	GRADE EXPRESSION BY PACKAGE 0PT UNTIL AP	P&B	PROPORTIONING & BY-PASS VALVE
N1	N1 CATEGORY	P.L	CUT PART TO LENGTH AS SPECIFIED IN REMAR
N30	N30 TYPE TRANSMISSION	P-	PURPLISH
N31	N31 TYPE TRANSMISSION	P.BLUE	PURPLISH BLUE
NK	NUMBER OF TEETH	P.S.	PRODUCTION SERIES
NLR	NON-LOCKING RETRACTOR SEAT BELT	P.S.#	PRODUCTION SERIES CODE
N0.	NUMBER	P.S.CODE	PRODUCTION SERIES CODE
N04C	4000CC DIESEL	P.T.O.	POWER TAKE-OFF
N04CTB	4000CC	P.VALVE	PURPLISH BLUE
N04CTC	4000CC COMMON RAIL TURBO DIESEL	P/B	PARKING BRAKE
N04CTF	4000CC COMMON RAIL TURBO DIESEL	P/LOCK	POWER LOCK
N0B	NORMAL BODY	P/N	PARTS NUMBER
NS	NON-SUPPLYING	P/S	POWER STEERING
NSK	MANUFACTURER	P=	PITCH

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
POS	PORTUGAL SPECIFICATION	PROP	PROPELLER
POWER STRG.	POWER STEERING VEHICLE	PROTR	PROTECTOR
PS0	P50 TYPE TRANSMISSION	PRT	PORTUGAL
PS1	P51 TYPE TRANSMISSION	PRV	PRINT VINYL
PAF	ASSISTANT DRIVER'S SEAT FOOTREST	PS	POWER STEERING
PAG	PREMIUM ACTIVE GRADE	PSB	PRE-CRASH SEAT BELT
PB	PRE-CRASH BRAKE	PSC	PAINTED IN THE STYLE OF CHROME
PC	POWER CURTAIN	PSD	ASSISTANT DRIVER'S SEAT SIDE DOOR
PCL	POWER CLUTCH	PSE	POWER SEAT
PCN	PROJECTION COUNTERMEASURE	PSR	POWER SUNROOF
PCV	POSITIVE CRANKCASE VENTILATION SYSTEM	PST	POWER STEERING VEHICLE
PF	PERTORATED FOAM COATED VINYL LEATHERETTE	PT	PACKAGE TRAY
PH	PHILIPPINE	PT0	POWER TAKE-OFF
PHC	PUSH TYPE HEATER CONTROL	PTO	POWER TAKE-OFF
PHL	PHILIPPINE	PV	PROPORTIONING VALVE
PHS	PHILIPPINE SPECIFICATION	PW	POWER WINDOW
PTC	PICKUP	PWR	POWER
PKN	PAKISTAN	Q, T, Y,	QUANTITY
PL	PILOT LAMP	QLTD	GRANVIA=Q TYPE, GRAND WAGON=LIMITED TYPE
PLR	PILLER	QTY	QUANTITY
PNC	PART NAME CODE	R	RATIO
PNG	PAPUA NEW GUINEA SPECIFICATION	R-FUN	ROOF FUN
PNR	PANEL	R/A	REAR AXLE
POS	PORTUGAL SPECIFICATION	R/AXLE	REAR AXLE
POWER STRG.	POWER STEERING VEHICLE	R/C	RELEASE CYLINDER
PP	PERFORMANCE PACKAGE	R/M	REPAIR MANUAL
PR0B	PR0B0X	R/P	REPLACEMENT PART
PR0D. DATE	PRODUCTION DATE	R0C	ROYAL CABIN
PRA	POWER RECLINING ADJUSTER	R0U	ROUND TYPE
PRD	PRODIGY TYPE	R0UG	ROULANT G TYPE
PRE	PRESARA TYPE	R0US	ROULANT S TYPE
PRESS	PRESSURE	R0Y	ROYAL SALOON TYPE
PRLS	PARALLEL SEAT	R0YEX	ROYAL EXTRA, ROYAL EXTRA FOUR
PRM	PREMIO TYPE	R0YG	ROYAL SALOON G TYPE
PRME	PREMIO E TYPE	R0YT	ROYAL TOURING TYPE
PRNG	PREMIO G TYPE	RACY	RACY TYPE
PR0(300series)	PROMINENT TYPE	RAD	RADIATOR
PR0(500,700series)	PROPELLER	RAF	RAFFINE TYPE
PR0B	PR0B0X	RB	ROLL BAR
PR0D.DATE	PRODUCTION DATE	RC	REMOTE CONTROL TYPE

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
RC1	RENTAL CAR SPECIFICATION PACKAGE 1	ROY	ROYAL SALOON TYPE
RC2	RENTAL CAR SPECIFICATION PACKAGE 2	ROYEX	ROYAL EXTRA,ROYAL EXTRA FOUR
RC3	RENTAL CAR SPECIFICATION PACKAGE 3	ROYG	ROYAL SALOON G TYPE
RCA	RENT-A-CAR SPECIFICATION PACKAGE A	ROYT	ROYAL TOURING TYPE
RCB	RENT-A-CAR SPECIFICATION PACKAGE B	RPCS	ROYAL TOURING TYPE
RCC	RENT-A-CAR SPECIFICATION PACKAGE C	RR	REAR
RCD	RENT-A-CAR SPECIFICATION PACKAGE D	RRL	REAR ROOM LAMP
RCE	RENT-A-CAR SPECIFICATION PACKAGE E	RRM	REFER TO REPAIR MANUAL
RCL	REAR COMBINATION LAMP	RRS	RECLINING REAR SEAT
RCM	REMOTE CONTROL MIRROR	RS	REAR SPOILER
RD	RH DRIVE SPECIFICATION	RSA	RECLINING SEAT ADJUSTER
RDL	REAR DIFFERENTIAL LOCK	RT	RH TRAFFIC SPECIFICATION
REAR WINDOW	REAR WINDOW	RUM	REAR UNDER MIRROR
REAR WINDOW	REAR WINDOW	RV	ROOF VENTILATOR
REC	RECTANGULAR TYPE	RVS	RV SPETIAL TYPE
RED	REDUCTION	RW	REAR WIPER
REF.	REFERENCE	RWD	REAR WINDOW DEFOGGER
REG	REGULATOR	RWPB	REAR WHEEL PARKING BRAKE
REH	REAR HEATER	RZS	RZ-S TYPE
REMX	REMX TYPE	S KANREI	STRONG COLD PROOF KIT
REP(300series)	REPAIR	S-	SADDLE
REP(500,700series)	REVOLUTION PRE-MINUTE	S-ASSY	SUBASSEMBLY
RESVR	RESERVOIR	S.T.D.	STANDARD
REV	REVERSE	S/ABS	SHOCKABSORBER
REV.	REVERSE	S/B	SERVICE BRAKE
REV.REF.CODE	REVISION REFERENCE CODE	S/MBR	SIDEMEMBER
REV.REF.CODE	REVISION REFERENCE CODE	S/P	SPOOL
RF-C	REAR FLOOR CARPET	S/S	SEMI-SIZE
RFL	REAR FOG LAMP	S/T	SPARE TIRE
RFLF	REFLET F TYPE	S/U-MIR	SIDE UNDER MIRROR
RFLX	REFLET X TYPE	S/W	SWITCH
RFM	REAR FLOOR MAT	S=	SCREW LENGTH (MM)
RH(300series)	ROPE H00K:RIGHT-HAND	S00S	SULTANATE 0F 0MAN SPECIFICATION
RH(500,700series)	RIGHT-HAND	S05C	4600CC DIESEL
RHD	RIGHT-HAND DRIVE	S05CB	4600CC DIESEL
RHW	RED HAZARD WARNING	S05CTA	4600CC DIESEL TURBO
ROC	ROYAL CABIN	S05CTB	4600CC DIESEL TURBO
ROU	ROUND TYPE	S05D	4900CC DIESEL
ROUG	ROULANT G TYPE	S0B	SWING 0UT BACK D00R
ROUS	ROULANT S TYPE	S0BD	SWING 0UT BACK D00R

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
S0L	S0LEIL TYPE	SEL	SECURITY LOCK
S0LL	S0LEIL-L TYPE	SELS	SELECT SALLON TYPE
S0M	S0PHIA MEMORIAL	SEP	SEPARATE TYPE (STANDARD HEATER)
S0P	S0PHIA SPECIFICATION	SEPA	SEPARATE SEAT TYPE
S0S	S0PHIA MEMORIAL	SERL	SOLAR-ENERGY REFLECTING LAMINATED GLASS
S0T	S0FT T0P SERIES (AWNING TYPE)	SERT	SOLAR-ENERGY REFLECTING TEMPERED GLASS
SA	SOUTH AFRICA SPECIFICATION	SESAL	SE-SALOON TYPE
SAA	SAUDI ARABIA SPECIFICATION	SEVIN	SE-VINTAGE TYPE
SAB	SHOCK ABSORBING BUMPER	SF0	SINGLE FILE ONLY
SADCB	SOUTH AFRICA PRODUCED DOUBLE CAB	SFA	SEMI-FLOATING AXLE
SAER	S AERO TOURER	SF0	SINGLE FILE ONLY
SAGINAW	DELPHI SAGINAW STEERING SYSTEMS	SG	SIDE GLASS
SAL	SUPER SALOON TYPE	S6EXT	S6 EXTRA TYPE
SALEX	SUPER SALOON EXTRA TYPE	S6I	S6-I TYPE
SAS	SAUDI ARABIA SPECIFICATION	S6L	SUPER 6L SPECIFICATION
SB	STEP BUMPER	S6LE	SUPER 6L-E TYPE
SBE	SEAT BELT	S6S	SEG SPECIFICATIONS
SBS	SUB SEAT	S6T	S6 TOORING SPECIFICATION
SC	SEPARATOR CURTAIN	SH	SEAT HEATER
SC0	F0R SOME COUNTRY ONLY (H0NG K0NG,SINGAP0	SHD	SUN SHADE
SCA	SPACE CASUAL SPECIFICATION	SHRV	SEMI HIGH ROOF VAN
SCB	SINGLE CARBURETOR;SINGLE CAB	SHRW	SEMI HIGH ROOF WAGON
SCHR	FOR SUPER CHROME METALLIC WHEEL	SIR	SINGLE RASCHEL
SCL	SUPER CUSTOM LIMITED SPECIFICATION	SIS	SOUND IN SOUND
SCM	SUPER CUSTOM SPECIFICATION	SIWS	SIDE WINDOW SWING-OUT TYPE
SCMM	SUPER CUSTOM MOON ROOF TYPE	SJL	SUPER SINGLE JUST LOW
SC0	FOR SOME COUNTRY ONLY (HONG KONG,SINGAPO	SJLC	SUPER SINGLE JUST LOW (WITH CRANE)
SCRU	S-CRUISE TYPE	SKR	SKYLITE ROOF
SCt	SOLAR CUT,TEMPERED GLASS	SLE	SL-EFT SPECIFICATION
SCV	SPARK CONTROL VALVE	SLI	SLI TYPE
SD	SLIDE DOOR	SLIM	S-LIMITED TYPE
SDN	SWEDEN	SLT	SL TOURING SPECIFICATION
S0T	STANDARD-TURBO	SLTG	SLTG TYPE
SDX	SUPER DELUXE	SLU	SLU TYPE
SDZ	SWEDEN OR SWITZERLAND	SM	SPEAK MONITOR
SE	SE TYPE	SM-SP	SEMI SEPARATE SEAT
SED	SEDAN	SMD	SUPER MONITORING DISPLAY
SEEXT	SE EXTRA TYPE	SMG	SPEEDOMETER GEAR
SEG	SE-G TYPE	SMRF	SEMI MIDDLE ROOF
SEI	SEI TYPE	SMU	SIDE MUDGUARD

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ABBREVIATION LIST

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
SNR	SUN ROOF	SRDT	SMALL REAR DECK TRIM
SOB	SWING OUT BACK DOOR	SRF	STANDARD ROOF
SOBD	SWING OUT BACK DOOR	SRI	SR-I TYPE
SOL	SOLEIL TYPE	SRP	SR PACKAGE
SOLL	SOLEIL-L TYPE	SRT	SR-5 TYPE (WITH TURBO)
SOM	SOPHIA MEMORIAL	SRV	SR-V TYPE
SOOS	SULTANATE OF OMAN SPECIFICATION	SRWGN	STANDARD ROOF WAGON
SOP	SOPHIA SPECIFICATION	SS	SWING SEAT
SOS	SOPHIA MEMORIAL	SS1	SS-1 TYPE
SOT	SOFT TOP SERIES (AWNING TYPE)	SS2	SS-2 TYPE
SP	SEPARATE SEAT	SS3	SS-3 TYPE
SP-BN	SPLIT BENCH SEAT	SSB	SEMI-SEALED BEAM UNIT
SPØ	SEAT POCKET	SSBD	SINGLE SWING BACK DOOR
SPC	SUPER CHARGER .	SSD	STEP SIDE DECK
SPD	SPECIAL DELUX TYPE	SSL	SUPER SELECT TYPE
SPDLX	SUPER DELUXE	SSR	SSR SPECIFICATION
SPE	SPECIAL EDITION TYPE	SSRG	SSR-G TYPE
SPEC	SPECIFICATION	SSRP	SSR PACKAGE
SPEC.	SPECIFICATION	SSRV	SSR-V TYPE
SPEEDO	SPEEDOMETER	SSRX	SSR-X TYPE
SPG	SPEAKER GRILLE	SSS	SUPER STRUT SUSPENSION
SPH	SPLASH	SSSB	SLIDE STILLBAR SEAT BELT
SPHBD	SPLASHBOARD	SSV	HIGH QUALITY VINYL LEATHER
SPK	SPEAKER	SSW	SUPER SW TYPE
SPL	SPECIAL TYPE	ST	SINGAPORE TAXI
SPM	SIDE PROTECTION MOULDING	STØUR	S-TOURING TYPE
SPØ	SEAT POCKET	STAC	SCHNOKEL TYPE AIR CLEANER
SPP	SPECIAL PACKAGE	START	STARTER
SPR	SPORT ROOF	STC	STEREO CAMERA
SPS	SPORTS SEAT	STD	STANDARD TYPE
SPSAL	SUPER SALOON TYPE	STDH	STANDARD TYPE (HIGHLAND)
SPV	SPORTIVO TYPE	STE	FOR STEEL WHEEL
SPVS	SPORTIVO SX6 TYPE	STL	STEERING LOCK
SPVZ	SPORTIVO ZR6 TYPE	STNR	STRAINER
SPX	SUPER X TYPE	STOUR	S-TOURING TYPE
SR	SR SPECIFICATION	STR	SUPER TOURING
SR5	SR-5 TYPE, GLX TYPE	STRG	STEERING
SR5B	SR5 TYPE (-0008), BASE TYPE (0008 -)	STY	SLIDING TYPE
SR5V	SR5-V6 TYPE (-0008), SR5 TYPE (0008 -)	SU	TYPE SU
SRD	SEPARATION DOOR	SUC	SUPER CUSTOM SPECIFICATION: SUPER CASUAL

ABBREVIATION LIST

475110

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
SUCD	SUCCEED	T4	(FULL JUST LOW)
SUCT	SUCTION	T40	T40 TYPE TRANSMISSION (4 SPEED)
SUE	SUPER EXTRA SPECIFICATION	T5	HIGH PLATFORM, WOODEN(NARROW WIDTH)
SUF	SUF TYPE	T50	T50 TYPE TRANSMISSION (5 SPEED)
SUH	SUSPENDED HEADLINING	TAC	TACHOMETER
SULG	SUPER LOUNGE TYPE	TACH	TACHOMETER
SULUG	SUPER LOUNGE TYPE	TACHO	TACHOMETER
SUP	SUPER SPECIFICATION	TAIL & STOP	TAIL & STOP (LAMP)
SUPT	SUSPENSION	TAIL&STOP	TAIL & STOP (LAMP)
SUS	SUSPENSION SEAT	TAIW	FOR TAIWAN
SUSP	SUSPENSION	TAX	TAXI
SUVW	SUV WAGON	TB	BOARDING DECK
SV	SV SPECIFICATION	TB0	WITH TURB0 (HARGER)
SW	SWITCH:SIDE WIPER	TB04W	TURB0 4MD TYPE
SWI	SUPER WINDY	TB0AT	TURB0 ALL-TRAC TYPE
SHS	SIDE WINDOW SLIDE TYPE	TB4WA	TURB0 4MD A TYPE
SNZ	SWITZERLAND SPECIFICATION	TB0	WITH TURB0 (HARGER)
SK1	SK-1 TYPE	TB04W	TURB0 4MD TYPE
SK5	SK-5 SPECIFICATION	TB0AT	TURB0 ALL-TRAC TYPE
SYM	SYMBOL	TBR	T-BAR ROOF
SYNCHRO	SYNCHRONIZING/SYNCHRONIZER	TBS	TURB0 SPECIFICATIONS
SYS	SYSTEM	TC	GUARD FRAME DECK
SZR	SZ-R TYPE	TCA	TANK CAPACITY
T	1400CC	TCB	TWIN CARBURETOR
T/C	TORQUE CONVERTOR	TCD	CANVAS DOOR TYPE
T/F	TRANSFER	TCS	IGNITION TIMING CONTROL SYSTEM
T/G	TIMING GEAR	TD	TURB0 DIESEL
T/GATE	TAILGATE	TD2	TURB0 DIESEL 2 VALVE
T/L	TUBELESS	TD4	TURB0 DIESEL 4 VALVE
T/M	TRANSMISSION	TD5	TURB0 DIESEL
T/P	TYPE	TDE	TURB0 DIESEL WITH ECD
T=	THICKNESS(MM)	TDEC	TURB0 DIESEL WITH ECD
T0C	T0NNEAU COVER	TDEFI	TURB0 DIESEL EFI
T0R	TURB0 R TYPE	TDI	TURB0 CHARGED EFI DIESEL ENGINE WITH INT
T0U	T0URING TYPE	TDS	THEFT DETERRENT SYSTEM
T0US	T0URER S TYPE	TE	TRUCK WITH AMNING
T0UV	T0URER V TYPE	TEC	TECHNICAL TYPE
T1	LOW DECK (STANDARD DECK)	TEM	TEMPERED GLASS
T2	LOW FLAT DECK OPENING ON THREE SIDES (JU	TEMP	TEMPERATURE
T3	HIGH FLAT DECK OPENING ON THREE SIDES	TEW	TELLTALE WARNING

ABBREVIATION LIST

475110

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
TH	FOR THAILAND	TRX	TR-X TYPE
TH0	THROTTLE OPENER	TS	STEEL-MADE DECK
THAI	THAILAND	TSD	STEEL DOOR TYPE
THB	THROTTLE BUTTON	TS6S	TOYOTA STOP&GO SYSTEM
THDCB	THAILAND PRODUCED DOUBLE CAB	TSP	TWEETER SPEAKER
THRMO	THERMOSTAT	TST	TOP SHADE TYPE
TH0	THROTTLE OPENER	TT	TINTED TEMPERED GLASS
THR0TTLE	THROTTLE	TTS	TILT AND TELESCOPIC STEERING: TOYOTA TOT
THR0TTLE	THROTTLE	TUR	FOR TURKEY
THS	THAILAND SPECIFICATION	TURBO	TURBOCHARGER
THSCB	THAILAND PRODUCED SINGLE CAB	TV	TELEVISION & VIDEO
THXTR	THAILAND PRODUCED EXTRA CAB	TVSV	TEMPERATURE SENSING TYPE VACUUM SWITCHIN
THXTRA	THAILAND PRODUCED EXTRA CAB	TVTV	TEMPERATURE SENSING TYPE VACUUM DELAY VA
TIA	TIARA TYPE	TW	DOUBLE CAB TRUCK
TIS	TILT STEERING	TW1	DOUBLE CAB TRUCK (STANDARD)
TJ	FRP DECK	TW2	DOUBLE CAB TRUCK (JUST LOW)
TL	TINTED LAMINATED GLASS	TW3	DOUBLE CAB(HIGH STEEL PLATFORM)
TL4	LOW CAB	TW4	DOUBLE CAB TRUCK (FULL JUST LOW)
TLE	TOUGHENED LEATHER	TWC	TWIN CAM
TOC	TONNEAU COVER	TWIN	TWIN
TOR	TURBO R TYPE	TWLP6	TWIN CAM (USE LPG)
TOU	TOURING TYPE	TWN	L-TWIN (MARK II L-TWIN CARBURETER VEHICL
TOUS	TOURER S TYPE	TWT	TWIN CAM, TURBO
TOUV	TOURER V TYPE	TZT	TINTED ZONE TEMPERED GLASS
TP	DECELERATION CONTROL SYSTEM	U	EMISSION REGULATION
TPB	TARPAULIN CANVAS TOP SPECIFICATION B	U-JOINT	UNIVERSAL JOINT
TPB4W	SOFTTOP(TARPAULIN CANVASTOP OR VINYLTOP)	U-S	UNDERSIZE
TPC	TARPAULIN CANVAS TOP SPECIFICATION C	U/JNT	UNIVERSAL JOINT
TPL	TOUGHENED PRINT LEATHER	U/S	UNDERSIZE
TPS	TARPAULIN CANVAS TOP STANDARD SPECIFICAT	UB	URETHANE BUMPER
TR	TRUCK (EXCLUDING DUMP TRUCK)	UKP	PRODUCED AT THUK
TRASX	TRANS-X TYPE	UL	UL TYPE
TRC	TRACTION CONTROL	ULT	ULTRA
TRG	TR-6 TYPE	UNIV	UNIVERSAL
TRG4	TR-64 TYPE	UP T0	UP T0
TRIM	TRIM	UP TO	UP TO
TRN	SPRINTER TRENO	UPP.	UPPER
TRR	TRENO SPECIFICATION	UPR	UPPER
TRS	TRANSVERSE SEAT	UPR.	UPPER
TRSTD	TERRA TYPE(- 0212), STANDARD TYPE(0212-)	USA	UNITED STATES OF AMERICA

(09/09)

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ABBREVIATION LIST

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
USSR	UNION OF SOVIET SOCIALIST REPUBLICS	VPT	RESIN TOP TYPE
USW	URETHANE STEERING WHEEL	VR	VR TYPE
UVCEHL	UV(ULTRAVIOLET) CUT, ELECTRICAL HEATED LAM	VR2A	CLASS 2A(BENDING REINFORCED TYPE)
UVCEHST	UV(ULTRAVIOLET) CUT, ELECTRICAL HEATED SOL	VR2B	CLASS 2B(LONG LIFE TYPE)
UVCENT	UV(ULTRAVIOLET) CUT, ELECTRICAL HEATED TEM	VR2B'	CLASS 2B' OR 2C(ANTI NOISE TYPE)
UVCEHTT	UV(ULTRAVIOLET) CUT, ELECTRICAL HEATED TI	VSC	VEHICLE STABILITY CONTROL
UVCL	UV(ULTRAVIOLET) CUT, LAMINATED GLASS	VSD	SLIDE DOOR VAN
UVCSERT	UV(ULTRAVIOLET) CUT, SOLAR ENERGY REFLECTI	VSG	SIDE GLASS VAN
UVCT	UV(ULTRAVIOLET) CUT, TEMPERED GLASS	VSI	VS-I TYPE
UVCTL	UV(ULTRAVIOLET) CUT, TINTED LAMINATED GLA	VSP	ROUTE VAN (SIDE PANEL VAN)
UVCTT	UV(ULTRAVIOLET) CUT, TINTED, TEMPERED GLAS	VST	STEEL PLATE TOP TYPE
V(300series)	VAN	VSV	VACUUM SWITCHING VALVE
V(500, 700series)	VOLTAGE	VT	CANVAS TOP VAN
V/S	VACUUM SERVO HYDRAULIC	VT0UR	V-TOURING TYPE
V=	VOLTS	VTG	VAN (STATION WAGON), WITH TAIL GATE BACK
V0D	OPEN DOOR VAN	VTOUR	V-TOURING TYPE
V1	V1 SPECIFICATION: VAN (STANDARD)	VTV	VACUUM TRANSMITTING VALVE
V2	V2 SPECIFICATION: VAN (SUPER-, SINGLE-,	W	VENTILATOR WINDOW
V30	V30 TYPE TRANSMISSION	WIP	PRODUCED AT VW
V40	V40 TYPE TRANSMISSION	VZ	VZ SPECIFICATION
V4D	4-DOOR VAN	W(	WITH
V5D	5-DOOR VAN	W(300series)	WATTS
VA	VERTICAL ADJUSTER	W(500, 700series)	WIDE/WIDTH
VB1	CLASS 1(STANDARD TYPE)	W/	WITH
VB2	CLASS 2(IMPROVED TENSION MAINTENANCE TYP	W/...	WITH
VCD	VISCOUS CENTER DIFFERENTIAL	W/0	WITHOUT
VCV	VACUUM CONTROL VALVE	W/0(	WITHOUT ...
VEN	VENEZUELA	W/A, B & C	VEHICLES WITH A, B AND C
VENT	VENTILATOR	W/A, B OR C	VEHICLES WITH EITHER ONE OF
VZW	VARIABLE INTERMITTENT WIPER	W/A, B OR C	VEHICLES WITH EITHER ONE OF
VKC	VAN WITH DOUBLE-LEAFED HINGED DOOR	W/C	WHEELCYLINDER
VL	VINYL LEATHERETTE	W/O	WITHOUT
VLC	VAN (HARD TOP), WITH LIFT UP AND SWING OU	W/O(	WITHOUT ...
VLS	VAN (HARDTOP), WITH LIFT UP BACK DOOR AND	W/PUMP	WATER PUMP
VM	EQUIPPED WITH VM ENGINE	W/S	WINDSHIELD
VN	VIET NAM	W/T	WITH TUBE
V0D	OPEN DOOR VAN	W=	WATTS
VP	PANEL VAN	W0DGRAIN	W0DGRAIN
VPA	PANEL VAN (ALUMINUM MADE)	W040	W40 TYPE TRANSMISSION
VPS	PANEL VAN (WITH SLIDE DOOR)	W04D	4000CC DIESEL

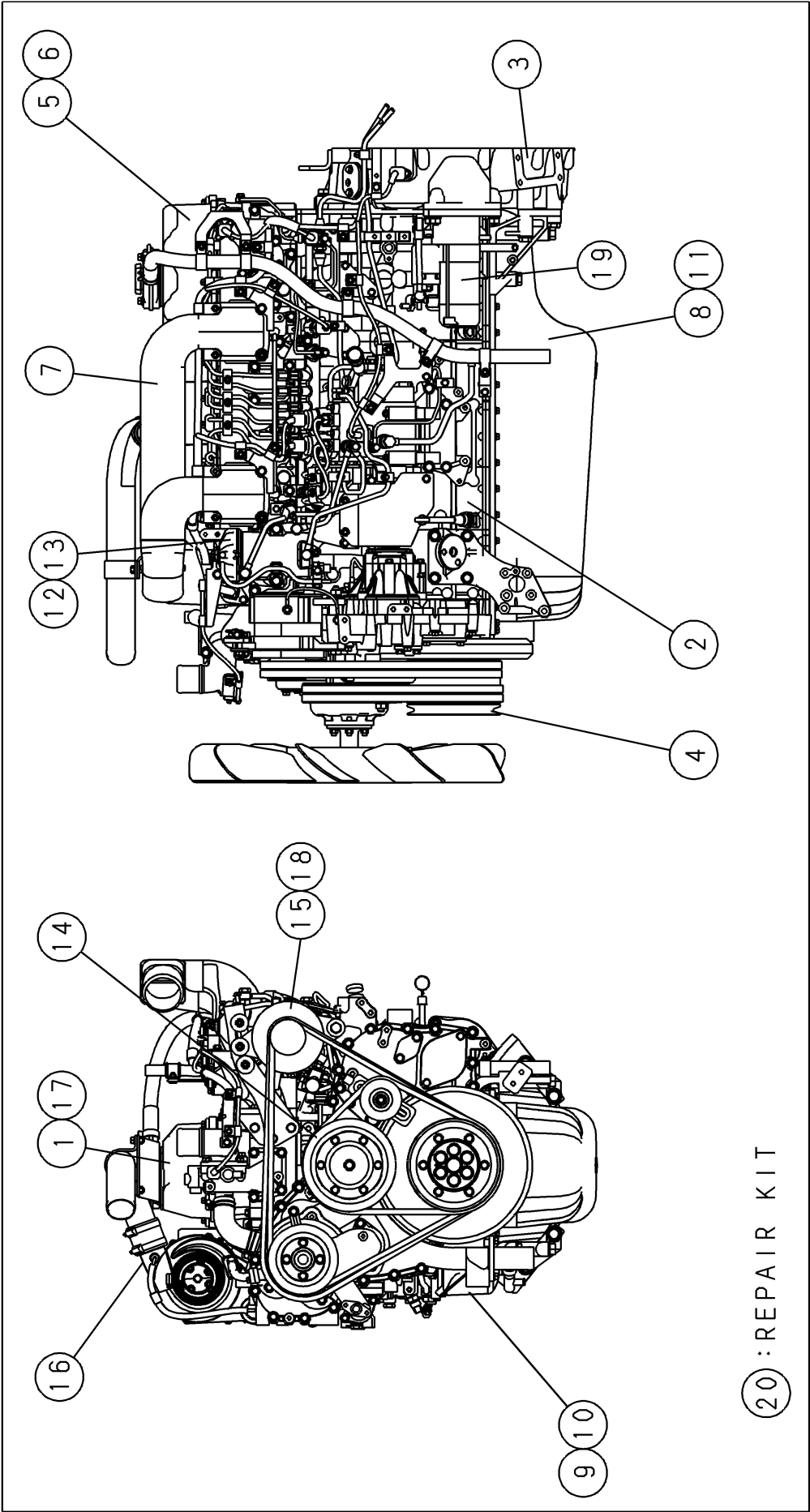
ABBREVIATION LIST 475110

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
W04DTM	4000CC COMMON RAIL TURBO DIESEL	WSB	WHITE SEMI-SEALED BEAM
W04DTN	4000CC COMMON RAIL TURBO DIESEL	WSW	WHITE SIDE WALL TIRE
W07S	WAGON 7-SEATERS	WT	DOUBLE TIRE
W08S	WAGON 8-SEATERS	WT1	DOUBLE TIRE
W0C	WITHOUT COOLER	WT2	DOUBLE TIRE (BIG TIRE)
W0RB	WITHOUT ROLL BAR	WVTA	WHOLE VEHICLE TYPE APPROVAL NUMBER
W40	W40 TYPE TRANSMISSION	WVVT	WITH VVT
W4D	4-DOOR WAGON	X	BY
W50	W50 TYPE TRANSMISSION	XE	XE SPECIFICATION
W5D	5-DOOR WAGON	XESAL	XE-SALOON TYPE
WALK-IN	WALK-IN	XEVIN	XE-VINTAGE TYPE
WAM	WHEEL ARCH MOULDING	XI	XI SPECIFICATION
WAW	WIDE ANGLE WATER TEMPERATURE GAGE	XL	XL SPECIFICATION
WAX	WAX TYPE (OPENING TEMPERATURE- FULLY OP	XL-L	A, B OR C XL-LYSER SPECIFICATION
WAX 0-0	WAX TYPE (OPENING TEMPERATURE-FULLY OPEN	XL7	XL-SEVEN SPECIFICATION
WB(300series)	WHITE SEALED BEAM	XLTD	X LIMITED TYPE
WB(500,700series)	WHEELBASE	XLUX	X LUXURY TYPE
WC	WITH COOLER	XTR	EXTRA CAB
WD	WIRE DIAMETER	Y	SATISFACTION OF 1993 EXHAUST EMISSION CO
WDL	WIRELESS DOOR LOCK	YB	YELLOW SEALED BEAM
WEG	WEST GERMANY SPECIFICATION	YE	YELLOW
WG	WAGON	YSB	YELLOW SEMI-SEALED BEAM
WGG	STATION WAGON G TYPE	ZAER	Z AERO TOURER TYPE
WGN	STATION WAGON	ZE	ZE SPECIFICATION
WGV	LAND CRUISER VAN	ZI	ZI SPECIFICATION
WH	WHITE	ZT	ZONE TEMPERED GLASS
WI	WALK-IN	ZT0UR	Z-TOURING TYPE
WIB	WIDE BODY	ZT0UR	Z-TOURING TYPE
WID	WITH DOOR		
WIDE	WIDE SPORTS TYPE		
WIN	WINDY TYPE		
WINT	WIND TOURER		
WISTD	REGIUS=WIND TOURER, SPORTS WAGON=STANDARD		
WOC	WITHOUT COOLER		
WOO	WOODGRAIN		
WORB	WITHOUT ROLL BAR		
WP	DOUBLE PICK-UP		
WPB	WITH PASSIVE BELT		
WPM	WIDE PROTECTIVE MOULDING		
WS	WOOFER SPEAKER		

FIG NUMBER INDEX

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FIG NO	FIG TITLE	PAGE	FIG NO	FIG TITLE	PAGE
	** ENGINE GROUP **				
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11-10	TIMING GEAR COVER AND FLYWHEEL HOUSING	11			
12-00	MAIN MOVING PARTS	14			
13-00	CAMSHAFT AND IDLE GEAR	17			
13-10	VALVE SYSTEM	20			
13-20	AIR INTAKE AND EXHAUST SYSTEM	23			
14-00	LUBRICATION	28			
14-51	OIL FILTER	30			
14-52	OIL COOLER	34			
14-53	OIL PUMP	38			
15-00	FUEL SYSTEM	40			
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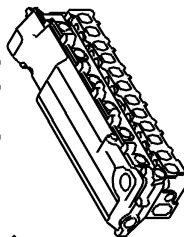
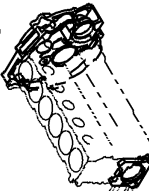
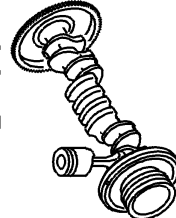
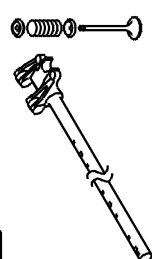
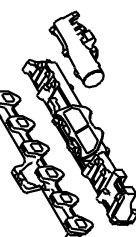
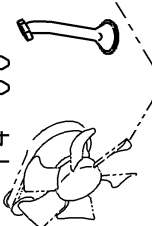
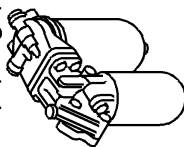
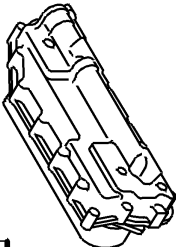
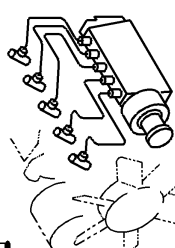
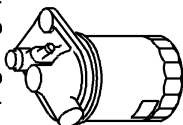
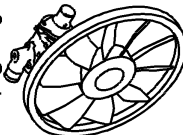
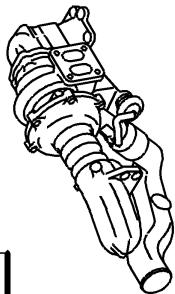
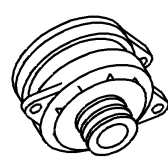
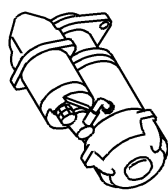
(H)

記載メーカー型式・日野エンジン型式内容
(Manufacturer's Model and Hino Engine Model to be mounted on respectively)

種 類 (MACHINE)	メーカー型式 (MFR'S MODEL)	日野エンジン型式 (HINO ENGINE MODEL)	メーカー名 (MANUFACTURER)
クローラ・クレーン (CRAWLER CRANE)	BM700HD-2 BM800HD-2 BM900HD-2 7090 7120 7200-2	P11CUN-KSFA	コベルコ クレーン株式会社 (KOBELCO CRANES CO., LTD.)
	CKE900 CKE1100 CKE1350 CKE1800 CKE2500-II CK1000-II CK1200 CK1600 CK2000 CK2500-II		

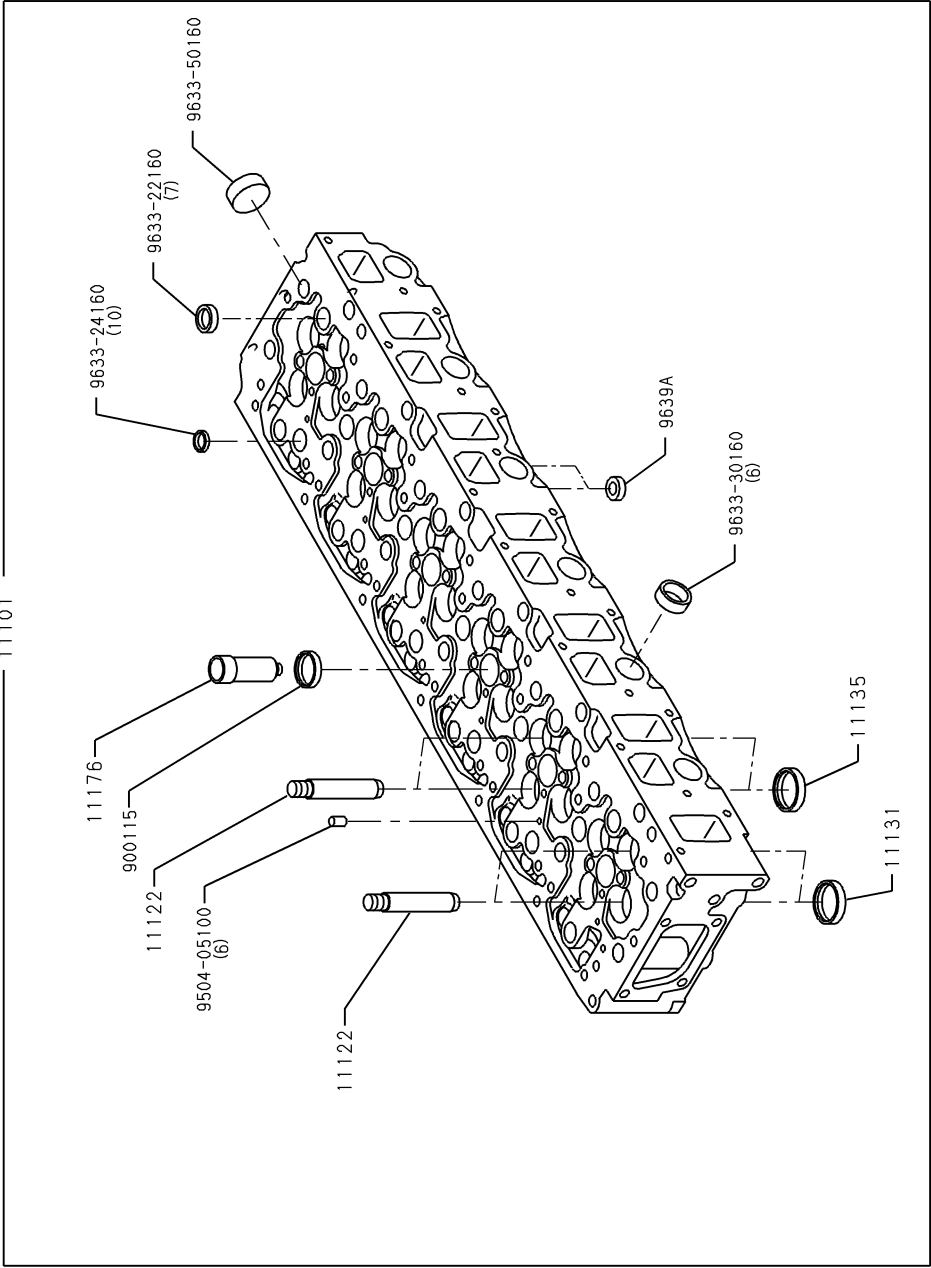
00B-331A
(0010)
K284, 475110



ENGINE (1/1) 00B-331B	1	10-00		2	11-00		3	11-10		4	12-00		5	13-00						
	CYLINDER HEAD			CYLINDER BLOCK AND FLYWHEEL HOUSING			TIMING GEAR COVER AND FLYWHEEL HOUSING			MAIN MOVING PARTS			CAMSHAFT AND IDLE GEAR							
6	13-10		7	13-20		8	14-00		9	14-51		10	14-52		11	14-53				OIL PUMP
12	15-00		13	15-54		14	16-00		15	18-10		16	18-30		17	18-40				ENGINE ACCESSORY PARTS
18	19-04		19	19-05		20	19-91	KIT												
								GASKET KIT (ENGINE OVERHAUL)												

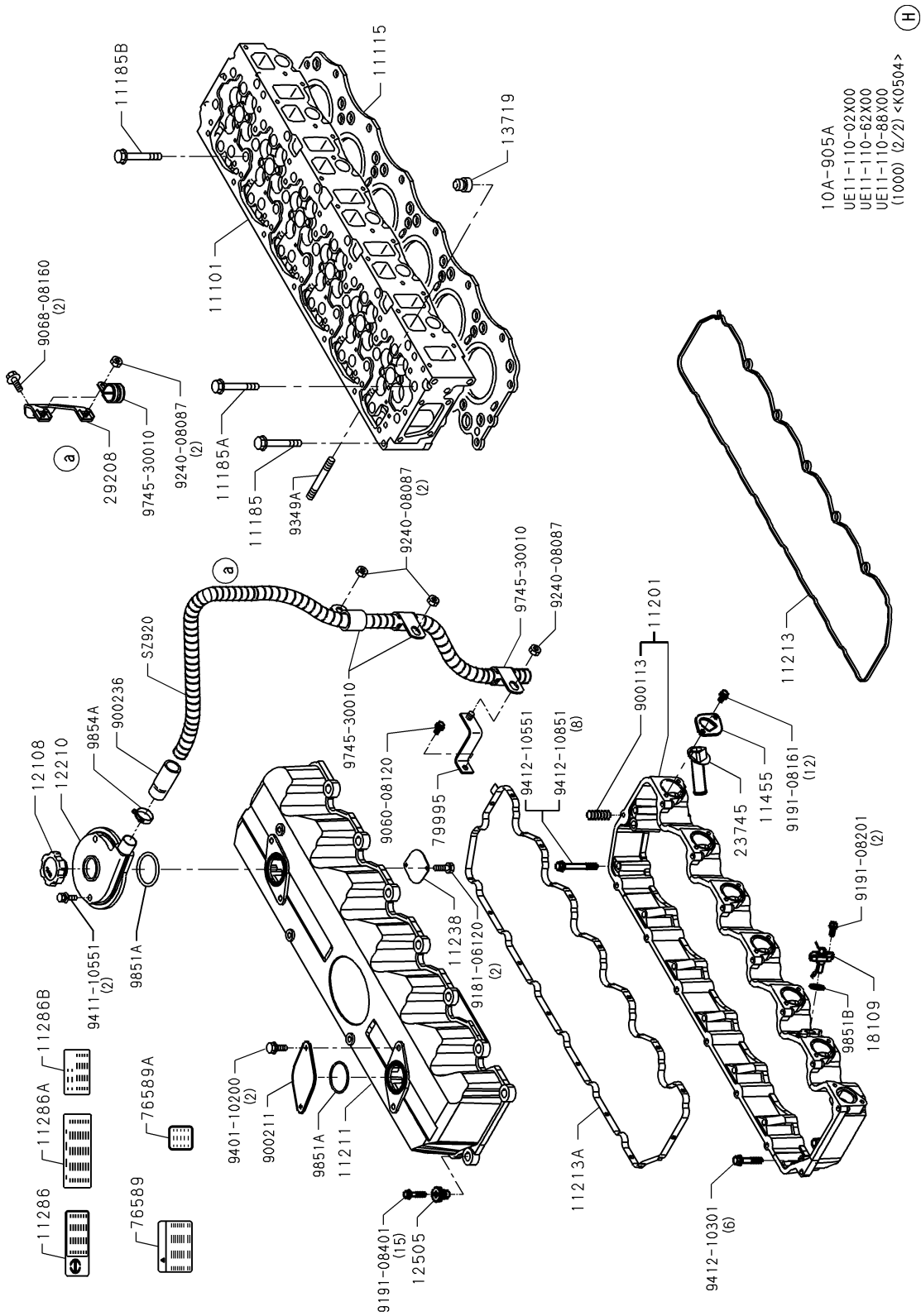
475110

10-00 CYLINDER HEAD
P11CUN-KSFA ILLUSTRATION NO.1 OF 2



10A-904A
UE11-110-02X00.01
(1000) (1/2) <K0501>

(H)



475110

10-00 CYLINDER HEAD

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T
0511-	* 11101 * HEAD SUB ASSY, CYL * 11101 * HEAD SUB ASSY, CYL K. P11CUN-KSFA	# 11101-4640 M (S1110-14640)			01	-	0511-	* 11185B * BOLT, CYL HEAD * 11185B * BOLT, CYL HEAD K. P11CUN-KSFA	# 11185-2552 M (S1118-52552)			07	-
0511-	* 11115 * GASKET, CYL HEAD * 11115 * GASKET, CYL HEAD K. P11CUN-KSFA	# 11115-2810 M (S1111-52810)			01	-	0511-	* 11201 * COVER SUB ASSY, CYL HEAD * 11201 * COVER SUB ASSY, CYL HEAD K. P11CUN-KSFA	# 11201-1941 M (S1120-11941)			01	-
0511-	* 11122 * BUSHING, VALVE GUIDE * 11122 * BUSHING, VALVE GUIDE K. P11CUN-KSFA	INTAKE, REPAIR STD # 11122-1190 M (S1112-21190)			24	-	0511-	* 11211 * COVER, CYL HEAD * 11211 * COVER, CYL HEAD K. P11CUN-KSFA	# 11211-3280 M (S1121-13280)			01	-
0511-	* 11131 * SEAT, VALVE INTAKE * 11131 * SEAT, VALVE INTAKE K. P11CUN-KSFA	# 11131-1520 M (S1113-11520)			12	-	0511-	* 11213 * GASKET, CYL HEAD COVER * 11213 * GASKET, CYL HEAD COVER K. P11CUN-KSFA	# 11213-2040 M (S1121-32040)			01	-
0511-	* 11135 * SEAT, VALVE EXH * 11135 * SEAT, VALVE EXH K. P11CUN-KSFA	# 11135-1760 M (S1113-51760)			12	-	0511-	* 11238 * COVER, CYL HEAD DUST * 11238 * COVER, CYL HEAD DUST K. P11CUN-KSFA	# 11238-1020 M (S1123-81020)			01	-
0511-	* 11176 * SEAT, INJ NOZZLE * 11176 * SEAT, INJ NOZZLE K. P11CUN-KSFA	# 11176-1170 M (S1117-61170)			06	-	0512-	* 11286 * PLATE, ENGINE SPECIFICATION * 11286 * PLATE, ENGINE SPECIFICATION K. P11CUN-KSFA	11286-E0210			01	-
0511-	* 11185A * BOLT, CYL HEAD * 11185A * BOLT, CYL HEAD K. P11CUN-KSFA	# 11185-2542 M (S1118-52542)			19	-	0512-	* 11286 * PLATE, ENGINE SPECIFICATION * 11286 * PLATE, ENGINE SPECIFICATION K. P11CUN-KSFA	11286-E0220 11286-E0480 11286-E0A10			01 01 01	- - -

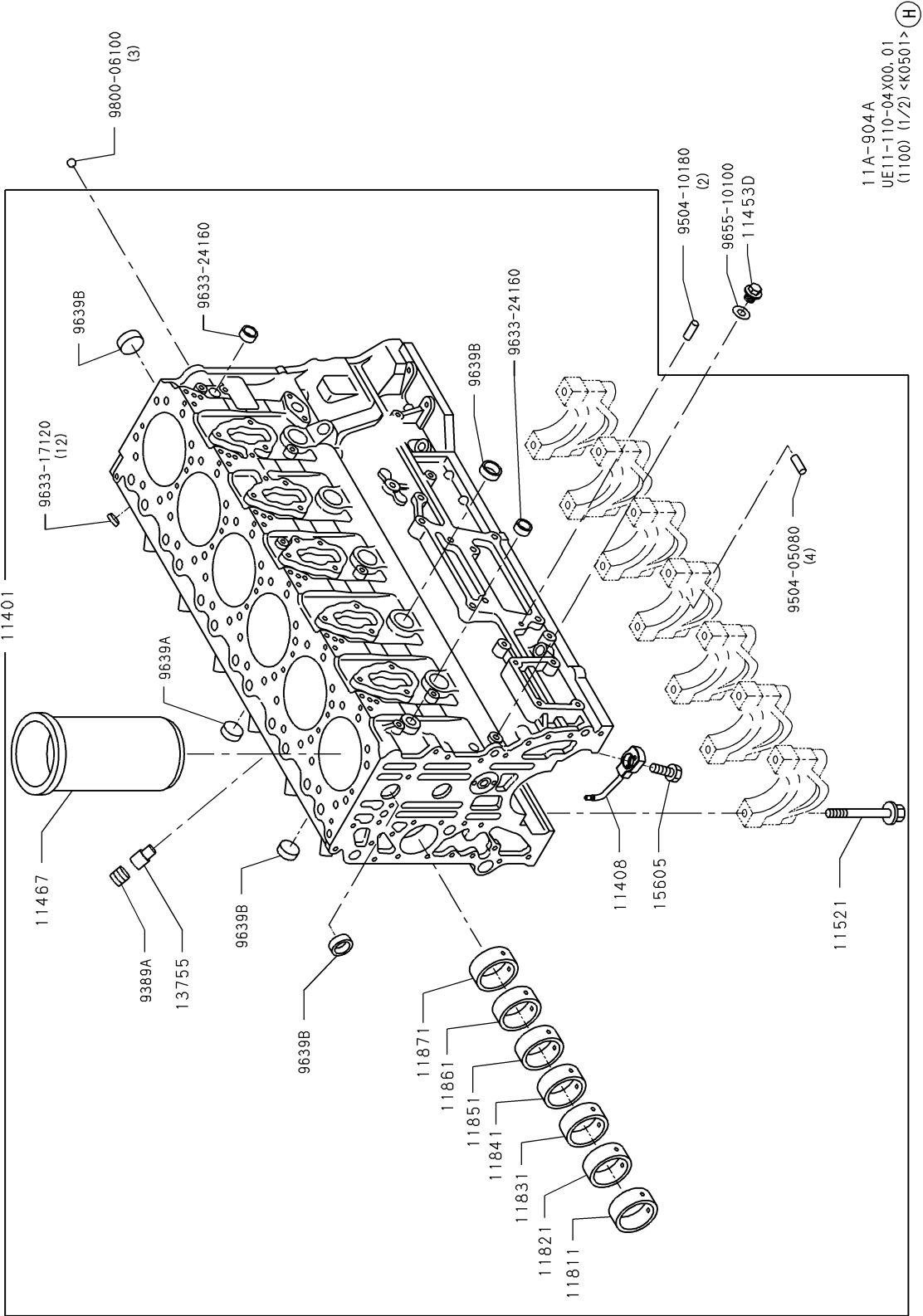
10-00 CYLINDER HEAD

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	P	PART NO.	Q T Y	REV. REF F-T
0512-	* 11286B * PLATE, ENGINE SPECIFICATION * ----- * K. P11CUN-KSFA			11286-E0230	01	-	0511-	* ----- * * 29208 * BRACKET SUB ASSY * ----- * K. P11CUN-KSFA				# 29208-3330 M (S2920-83330)	01	-
0511-	* 11455 * PLATE * ----- * K. P11CUN-KSFA			# 11455-1160 M (S1145-51160)	06	-	0511-	* ----- * * 76589 * PLATE, CAUTION ENG * ----- * K. P11CUN-KSFA	JAPANESE			# 76589-4090 M (S7658-94090)	01	-
0511-	* 12108 * CAP SUB ASSY, OIL FILLER * ----- * K. P11CUN-KSFA			# 12108-1100 M (S1210-81100)	01	-	0511-	* ----- * * 76589A * PLATE, CAUTION ENG * ----- * K. P11CUN-KSFA	JAPANESE			# 76589-6350 M (S7658-96350)	01	-
0511-	* 12210 * VENTILATOR ASSY * ----- * K. P11CUN-KSFA			# 12210-1600 M (S1221-01600)	01	-	0511-	* ----- * * 79995 * HOLDER, CLIP * ----- * K. P11CUN-KSFA				# 79995-2100 M (S7999-52100)	01	-
0511-	* 12505 * SILENT BLOCK SUB ASSY * ----- * K. P11CUN-KSFA			# 12505-1050 M (S1250-51050)	15	-	0511-	* ----- * * 900113 * HELISERT * ----- * K. P11CUN-KSFA				# 9001-13120 M (S2910-13008)	15	-
0511-	* 13719 * SEAL, VALVE STEM OIL * ----- * K. P11CUN-KSFA			# 13719-1540 M (S1371-91540)	24	-	0511-	* ----- * * 900115 * GASKET * ----- * K. P11CUN-KSFA				# 9001-15183 M (S2910-15037)	06	-
0511-	* 18109 * TERMINAL SUB ASSY * ----- * K. P11CUN-KSFA			# 18109-1070 M (S1810-91070)	01	-	0511-	* ----- * * 900211 * FLANGE * ----- * K. P11CUN-KSFA				# 9002-11163 M (S2920-11029)	01	-
0511-	* 23745 * SEAL, INJ PIPE OIL * ----- * K. P11CUN-KSFA			# 23745-1060 M (S2374-51060)	06	-	0511-	* ----- * * 900236 * HOSE, VENT * ----- * K. P11CUN-KSFA				# 9002-36248 M (S2920-36078)	01	-

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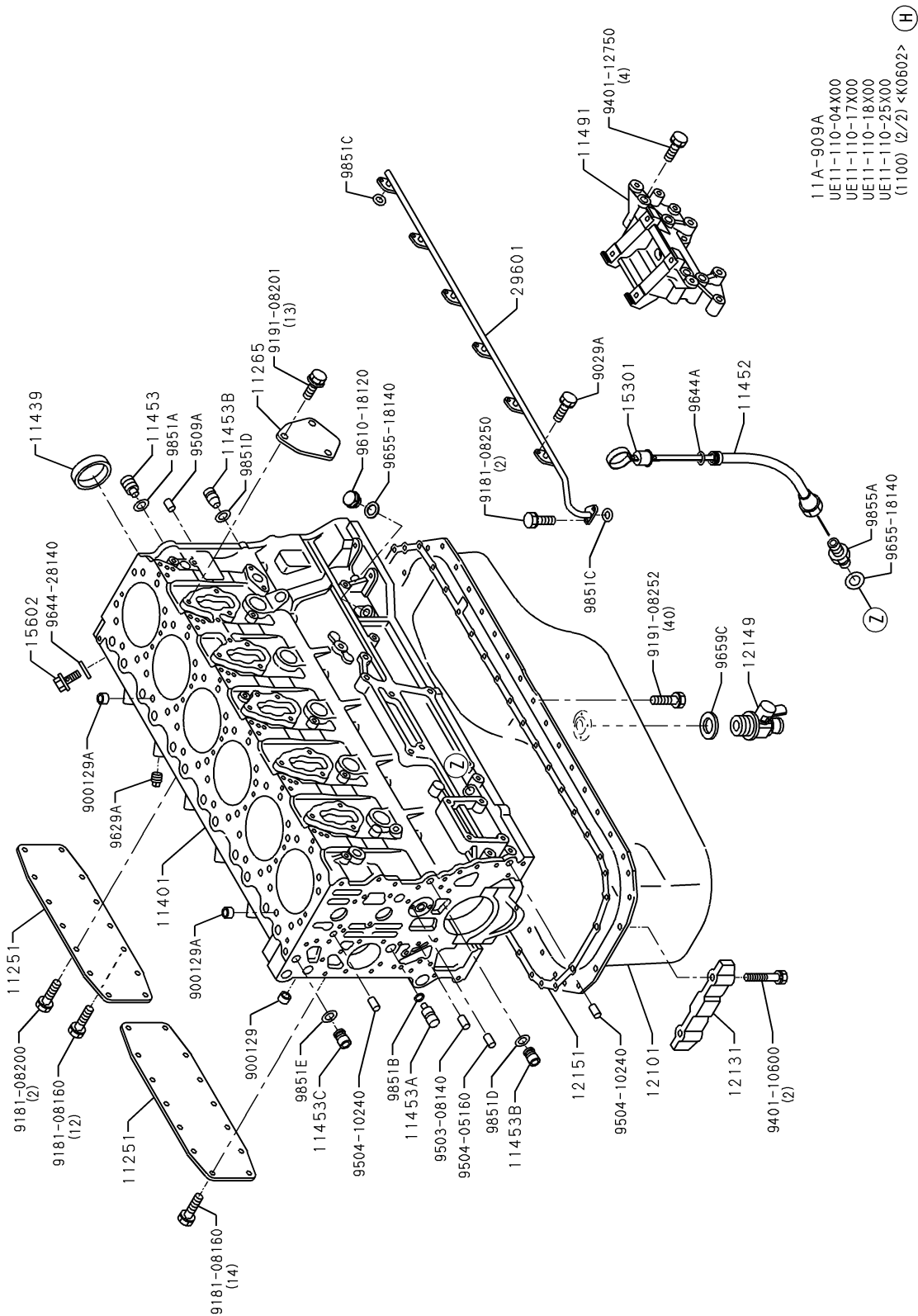
10-00 CYLINDER HEAD

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	P	PART NO.	Q T Y	REV. REF F-T
0511-	* 9349A * STUD *-----* K. P11CUN-KSFA		#	9349-10137 M (SZ126-10003)	20	-								
0511-	* 9639A * PLUG, EXPANSION *-----* K. P11CUN-KSFA		#	9639-22109 M (SZ331-22006)	06	-								
0511-	* 9851A * O-RING *-----* K. P11CUN-KSFA		#	9851-54102 M (SZ301-54002)	02	-								
0511-	* 9851B * O-RING *-----* K. P11CUN-KSFA		#	9851-25103 M (SZ301-25002)	01	-								
0511-	* 9854A * CLIP *-----* K. P11CUN-KSFA		#	9854-31102 M (SZ466-31001)	01	-								
0511-	* SZ920 * HOSE, VENT *-----* K. P11CUN-KSFA			SZ920-36255	01	-								



11-00 CYLINDER BLOCK
P11CUN-KSFA ILLUSTR. NO.2 OF 2

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11-00 CYLINDER BLOCK

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T
0511-	* 11251 * COVER, VALVE PUSH ROD * 11251 * COVER, VALVE PUSH ROD K. P11CUN-KSFA		#	11251-1210 M (S1125-11210)	02	-	0511-	* 11453B * PLUG MAIN HOLE * 11453B * PLUG MAIN HOLE K. P11CUN-KSFA		#	11453-1210 M (S1145-31210)	02	-
0511-	* 11265 * COVER, WATER GALLERY * 11265 * COVER, WATER GALLERY K. P11CUN-KSFA		#	11265-1132 M (S1126-51132)	05	-	0511-	* 11453C * PLUG MAIN HOLE * 11453C * PLUG MAIN HOLE K. P11CUN-KSFA		#	11453-1220 M (S1145-31220)	02	-
0511-	* 11401 * BLOCK SUB-ASSY, CYLINDER * 11401 * BLOCK SUB-ASSY, CYLINDER K. P11CUN-KSFA		#	11401-E0860 M (11401-E0861)	01	-	0511-	* 11453D * PLUG MAIN HOLE * 11453D * PLUG MAIN HOLE K. P11CUN-KSFA		#	11453-1200 M (S1145-31200)	01	-
0511-	* 11408 * PIPE SUB ASSY, OIL JET * 11408 * PIPE SUB ASSY, OIL JET K. P11CUN-KSFA		#	11408-1310 M (S1140-81310)	06	-	0511-	* 11467 * LINER, CYL, S/S * 11467 * LINER, CYL, S/S K. P11CUN-KSFA	A	#	11467-3130 M (S1146-73130)	06	-
0511-	* 11439 * PLATE, SEAL * 11439 * PLATE, SEAL K. P11CUN-KSFA		#	11439-1030 M (S1143-91030)	01	-	0511-	* 11467-3140 * 11467-3140 K. P11CUN-KSFA	B	#	11467-3140 M (S1146-73140)	06	-
0511-	* 11452 * GUIDE, OIL LEVEL GAGE * 11452 * GUIDE, OIL LEVEL GAGE K. P11CUN-KSFA		#	11452-E0100	01	-	0511-	* 11467-3150 * 11467-3150 K. P11CUN-KSFA	C	#	11467-3150 M (S1146-73150)	06	-
0511-	* 11453 * PLUG MAIN HOLE * 11453 * PLUG MAIN HOLE K. P11CUN-KSFA		#	11453-1030 M (S1145-31030)	01	-	0511-	* 11491 * BRACKET, INJ. PUMP * 11491 * BRACKET, INJ. PUMP K. P11CUN-KSFA		#	11491-1500 M (S1149-11500)	01	-
0511-	* 11453A * PLUG MAIN HOLE * 11453A * PLUG MAIN HOLE K. P11CUN-KSFA		#	11453-1140 M (S1145-31140)	01	-	0511-	* 11521 * BOLT, BEARING CAP * 11521 * BOLT, BEARING CAP K. P11CUN-KSFA		#	11521-1172 M (S1152-11172)	14	-
0511-	* 11811 * BEARING, CAMSHAFT, NO1 * 11811 * BEARING, CAMSHAFT, NO1 K. P11CUN-KSFA		#	11811-1070 M (S1181-11070)	01	-	0511-	* 11811 * BEARING, CAMSHAFT, NO1 * 11811 * BEARING, CAMSHAFT, NO1 K. P11CUN-KSFA		#	11811-1070 M (S1181-11070)	01	-

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11-00 CYLINDER BLOCK

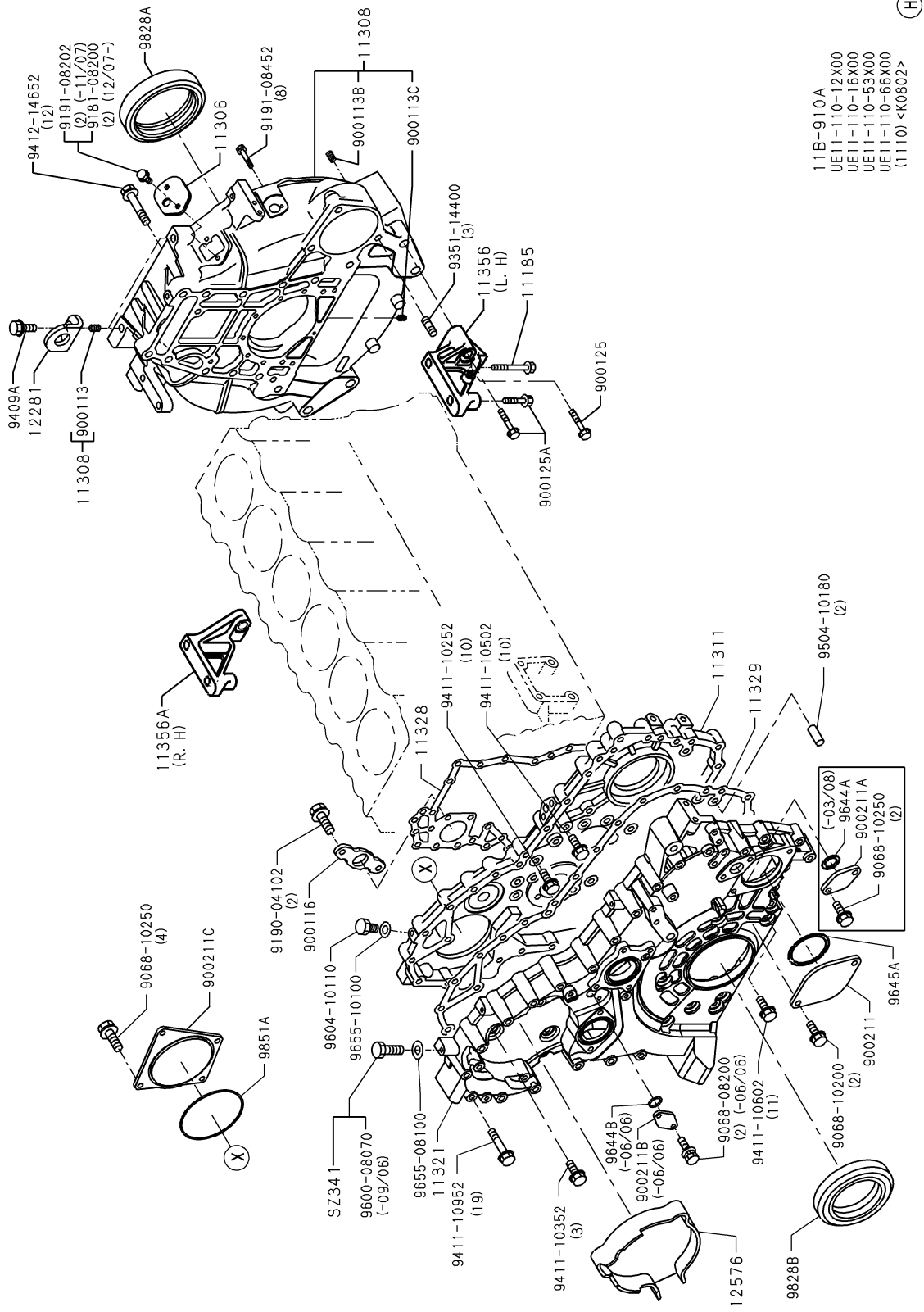
PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T
0511-	* 11821 * BEARING, CAMSHAFT, N02 * 11821 * BEARING, CAMSHAFT, N02 K. P11CUN-KSFA	# 11821-1070 M (S1182-11070)			01	-	0511-	* 12149 * VALVE, OIL DRAIN * 12149 * VALVE, OIL DRAIN K. P11CUN-KSFA	# 12149-1040 M (S1214-91040)			01	-
0511-	* 11831 * BEARING, CAMSHAFT, N03 * 11831 * BEARING, CAMSHAFT, N03 K. P11CUN-KSFA	# 11831-1060 M (S1183-11060)			01	-	0511-	* 12151 * GASKET, OIL PAN * 12151 * GASKET, OIL PAN K. P11CUN-KSFA	# 12151-3031 M (S1215-13031)			01	-
0511-	* 11841 * BEARING, CAMSHAFT, N04 * 11841 * BEARING, CAMSHAFT, N04 K. P11CUN-KSFA	# 11841-1020 M (S1184-11020)			01	-	0511-	* 13755 * PIN, STOPPER * 13755 * PIN, STOPPER K. P11CUN-KSFA	# 13755-1020 M (S1375-51020)			12	-
0511-	* 11851 * BEARING, CAMSHAFT, N05 * 11851 * BEARING, CAMSHAFT, N05 K. P11CUN-KSFA	# 11851-1050 M (S1185-11050)			01	-	0511-	* 15301 * GAGE SUB-ASSY, OIL LEVEL * 15301 * GAGE SUB-ASSY, OIL LEVEL K. P11CUN-KSFA	# 15301-E0160 M (15301-E0161)			01	-
0511-	* 11861 * BEARING, CAMSHAFT, N06 * 11861 * BEARING, CAMSHAFT, N06 K. P11CUN-KSFA	# 11861-1040 M (S1186-11040)			01	-	0511-	* 15602 * VALVE SUB ASSY, OIL PRESS * 15602 * VALVE SUB ASSY, OIL PRESS K. P11CUN-KSFA	# 15602-1151 M (S1560-21151)			01	-
0511-	* 11871 * BEARING, CAMSHAFT, N07 * 11871 * BEARING, CAMSHAFT, N07 K. P11CUN-KSFA	# 11871-1050 M (S1187-11050)			01	-	0511-	* 15605 * VALVE SUB ASSY, OIL CHECK * 15605 * VALVE SUB ASSY, OIL CHECK K. P11CUN-KSFA	# 15605-1250 M (S1560-51250)			06	-
0511-	* 12101 * PAN SUB ASSY, OIL * 12101 * PAN SUB ASSY, OIL K. P11CUN-KSFA	# 12101-5681 M (S1210-15681)			01	-	0511-	* 29601 * PIPE SUB ASSY, OIL * 29601 * PIPE SUB ASSY, OIL K. P11CUN-KSFA	# 29601-2000 M (S2960-12000)			01	-
0511-	* 12131 * STIFFENER OIL PAN * 12131 * STIFFENER OIL PAN K. P11CUN-KSFA	# 12131-2850 M (S1213-12850)			01	-	0511-	* 900129 * COLLAR * 900129 * COLLAR K. P11CUN-KSFA	# 9001-29116 M (S2910-29010)			02	-

11-00 CYLINDER BLOCK

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 900129A * COLLAR * P11CUN-KSFA	# 9001-29167 M (SZ910-29037)			02	-	0511-	* 9659B * WASHER, SOFT * P11CUN-KSFA	BOSCH A.S. 139510-0100	# 9659-10105 M (SZ430-10004)		01	-
0511-	* 9029A * BOLT * P11CUN-KSFA	# 9029-08106 M (SZ119-08002)			12	-	0511-	* 9659C * WASHER, SOFT * P11CUN-KSFA		# 9659-22118 M (SZ202-22003)		01	-
0511-	* 9389A * SCREW, SET * P11CUN-KSFA	# 9389-14111 M (SZ113-14006)			12	-	0511-	* 9851A * O-RING * P11CUN-KSFA		# 9851-16101 M (SZ301-16001)		01	-
0511-	* 9509A * PIN * P11CUN-KSFA	# 9509-12103 M (SZ250-12002)			02	-	0511-	* 9851B * O-RING * P11CUN-KSFA		# 9851-15103 M (SZ301-15003)		01	-
0511-	* 9629A * PLUG * P11CUN-KSFA	# 9629-10101 M (SZ344-10001)			07	-	0511-	* 9851C * O-RING * P11CUN-KSFA		# 9851-14102 M (SZ301-14002)		07	-
0511-	* 9639A * PLUG, EXPANSION * P11CUN-KSFA	# 9639-36106 M (SZ331-36005)			01	-	0511-	* 9851D * O-RING * P11CUN-KSFA		# 9851-09127 M (SZ301-09020)		02	-
0511-	* 9639B * PLUG, EXPANSION * P11CUN-KSFA	# 9639-40105 M (SZ331-40003)			13	-	0511-	* 9851E * O-RING * P11CUN-KSFA		# 9851-10139 M (SZ301-10026)		02	-
0511-	* 9644A * O-RING * P11CUN-KSFA	# 9644-01321 M (SN711-00132)			01	-	0511-	* 9855A * JOINT, PIPE * P11CUN-KSFA		# 9855-12168 M (SZ404-12078)		01	-

11-10 TIMING GEAR COVER AND FLYWHEEL HOUSING
PL1CUN-KSFA

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11-10 TIMING GEAR COVER AND FLYWHEEL HOUSING

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	P	PART NO.	Q T Y	REV. REF F-T
0511-	* 11185 * BOLT, CYL HEAD * 11185-2600 K. P11CUN-KSFA	# 11185-2600 M (S1118-52600)			02	-	0511-	* 11356A * STAY, F/H * 11356-1881 K. P11CUN-KSFA	# 11356-1881 M (S1135-61881)				01	-
0511-	* 11306 * COVER SUB-ASSY, FLYWHEEL HOUSING DUST * 11306-0040 K. P11CUN-KSFA	11306-E0040			01	-	0511-	* 12281 * HANGER, ENG * 12281-1380 K. P11CUN-KSFA	# 12281-1380 M (S1228-11380)				02	-
0511-	* 11308 * HOUSING SUB-ASSY, FLYWHEEL * 11308-0070 K. P11CUN-KSFA	11308-E0070			01	-	0511-	* 12576 * SEAL * 12576-3250 K. P11CUN-KSFA	# 12576-3250 M (S1257-63250)				01	-
0511-0609	* 11321 * CASE, T/G * 11321-1701 K. P11CUN-KSFA	# 11321-1701 M (S1132-11701)			01	-	0511-	* 900113 * HELISERT * 900113-13127 K. P11CUN-KSFA	# 9001-13127 M (SZ910-13015)				02	-
0511-0606	* 11322 * COVER, T/G CASE * 11322-4921 K. P11CUN-KSFA	# 11322-4921 M (S1132-24921)			01	-	0511-	* 900113C * HELISERT * 900113C-13139 K. P11CUN-KSFA	# 9001-13139 M (SZ910-13024)				01	-
0607-0803 0804-	* 11328 * GASKET, T/G CASE * 11328-1200 K. P11CUN-KSFA	# 11328-1200 M (S1132-81200)			01	-	0511-	* 900116 * SPACER * 900116-16599 K. P11CUN-KSFA	# 9001-16599 M (SZ910-16321)				01	-
0511-	* 11356 * STAY, F/H * 11356-24426 K. P11CUN-KSFA	# 11356-24426 M (SZ910-24426)			02	-	0511-	* 900125 * BOLT * 900125-25224 K. P11CUN-KSFA	# 9001-25224 M (SZ910-24426)				02	-

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11-10 TIMING GEAR COVER AND FLYWHEEL HOUSING

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	P	PART NO.	Q T Y	REV. REF F-T
0511-	* 900125A * BOLT * 900125A * BOLT K. P11CUN-KSFA	# 9001-25225 M (SZ910-24427)			04	-	0511-	* 9645A * O-RING * 9645A * O-RING K. P11CUN-KSFA				# 9645-08435 M (SN732-10843)	01	-
0511-	* 900211 * FLANGE * 900211 * FLANGE K. P11CUN-KSFA	# 9002-11219 M (SZ920-11059)			01	-	0511-	* 9828A * SEAL, OIL * 9828A * SEAL, OIL K. P11CUN-KSFA				# 9828-01223 M (SZ311-01041)	01	-
0511-0803	* 900211A * FLANGE * 900211A * FLANGE K. P11CUN-KSFA	# 9002-11349 M (SZ920-11148)			01	-	0511-	* 9828B * SEAL, OIL * 9828B * SEAL, OIL K. P11CUN-KSFA				# 9828-96108 M (SZ311-96004)	01	-
0511-0606	* 900211B * FLANGE * 900211B * FLANGE K. P11CUN-KSFA	# 9002-11407 M (SZ920-11195)			01	-	0511-	* 9851A * O-RING * 9851A * O-RING K. P11CUN-KSFA				# 9851-01194 M (SZ301-01051)	01	-
0511-	* 900211C * FLANGE * 900211C * FLANGE K. P11CUN-KSFA	# 9002-11427 M (SZ920-11210)			01	-	0610-	* SZ341 * PLUG, STRAIGHT SCREW W/HEAD * SZ341 * PLUG, STRAIGHT SCREW W/HEAD K. P11CUN-KSFA				SZ341-08001	01	-
0511-	* 9409A * BOLT * 9409A * BOLT K. P11CUN-KSFA	# 9409-14101 M (SZ119-14012)			02	-								
0511-0803	* 9644A * O-RING * 9644A * O-RING K. P11CUN-KSFA	# 9644-03731 M (SN711-00373)			01	-								
0511-0606	* 9644B * O-RING * 9644B * O-RING K. P11CUN-KSFA	# 9644-02135 M (SN732-00213)			01	-								

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12-00 MAIN MOVING PARTS

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T
0511-	* 040130 * PISTON AND RING AND LINER * 040130-198 K. P11CUN-KSFA	A	#	040130-198 M (S0401-30198)	01	-	0511-	* 13266 * NUT, CONROD * 13266-1170 K. P11CUN-KSFA		#	13266-1170 M (S1326-61170)	12	-
0511-	* 040130-199 K. P11CUN-KSFA	B	#	040130-199 M (S0401-30199)	01	-	0511-	* 13272 * BUSHING, CONROD, REPAIR STD * 13272-1350 K. P11CUN-KSFA		#	13272-1350 M (S1327-21350)	06	-
0511-	* 040130-229 K. P11CUN-KSFA	C	#	040130-229 M (S0401-30229)	01	-	0511-	* 13400 * CRANKSHAFT ASSY * 13400-3373 K. P11CUN-KSFA		#	13400-3373 M (S1340-03373)	01	-
0511-	* 040132 * PIN KIT, PISTON * 040132-116 K. P11CUN-KSFA		#	040132-116 M (S0401-32116)	01	-	0511-	* 13407 * DAMPER SUB ASSY, CRANKSHAFT * 13407-1671 K. P11CUN-KSFA		#	13407-1671 M (S1340-71671)	01	-
0511-	* 11011 * WASHER SET, CRANKSHAFT THRUST, STD * 11011-1330 K. P11CUN-KSFA		#	11011-1330 M (S1101-11330)	01	-	0511-	* 13450 * FLYWHEEL ASSY * 13450-4230 K. P11CUN-KSFA		#	13450-4230 M (S1345-04230)	01	-
0511-	* 11701 * BEARING SET, CRANKSHAFT * 11701-1851 K. P11CUN-KSFA		#	11701-1851 M (S1170-11851)	01	-	0511-	* 13453 * GEAR, FLYWHEEL RING * 13453-1290 K. P11CUN-KSFA	TEETH=137	#	13453-1290 M (S1345-31290)	01	-
0511-	* 13201 * BEARING SET, CONROD, STD * 13201-1880 K. P11CUN-KSFA		#	13201-1880 M (S1320-11880)	01	-	0511-	* 13455 * BOLT, FLYWHEEL * 13455-1780 K. P11CUN-KSFA		#	13455-1780 M (S1345-51780)	09	-
0511-	* 13260 * ROD ASSY, CONNECTING * 13260-1590 K. P11CUN-KSFA		#	13260-1590 M (S1326-01590)	06	-	0511-	* 13470 * PULLEY ASSY, CRANKSHAFT * 13470-4370 K. P11CUN-KSFA		#	13470-4370 M (S1347-04370)	01	-

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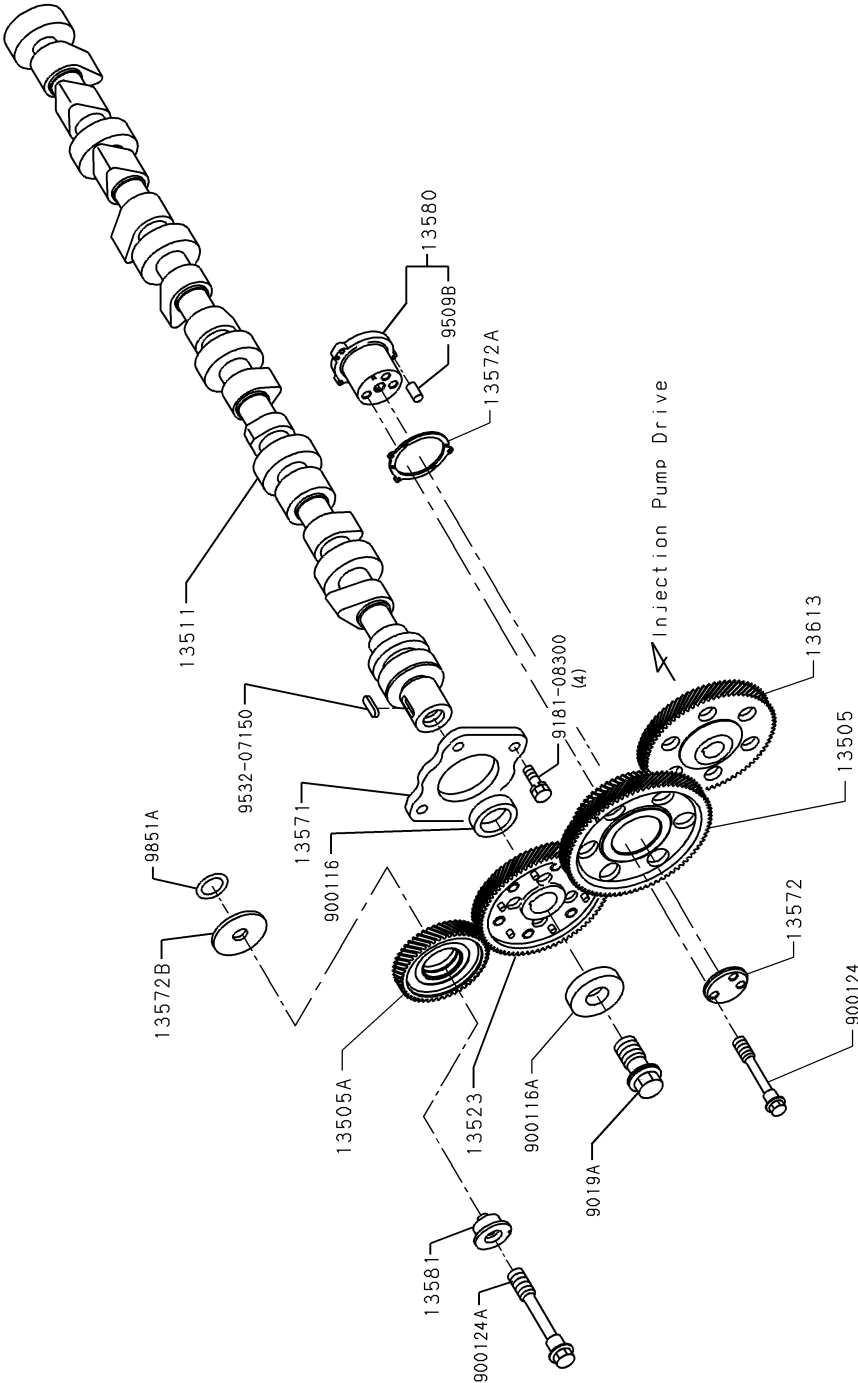
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12-00 MAIN MOVING PARTS

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	P	PART NO.	Q T Y	REV. REF F-T
0511-	* 13471 * PULLEY, CRANKSHAFT * P11CUN-KSFA		#	13471-5550 M (S1347-15550)	01	-	0511-	* S1304 * RING SUB SET, PISTON * P11CUN-KSFA				S1304-E0100	06	-
0511-	* 13471A * PULLEY, CRANKSHAFT * P11CUN-KSFA		#	13471-5560 M (S1347-15560)	01	-	0511-	* S130B * PISTON & PISTON RING SET * P11CUN-KSFA				S130B-E0210	06	-
0511-	* 13521 * GEAR, CRANKSHAFT * P11CUN-KSFA		#	13521-1430 M (S1352-11430)	01	-								
0511-	* 13531 * GEAR, OIL PUMP DRIVE * P11CUN-KSFA		#	13531-1162 M (S1353-11162)	01	-								
0511-	* 900124 * BOLT * P11CUN-KSFA		#	9001-24203 M (SZ910-24061)	06	-								
0511-	* 900124A * BOLT * P11CUN-KSFA		#	9001-24511 M (SZ910-24270)	06	-								
0511-	* 9629A * PLUG * P11CUN-KSFA		#	9629-13107 M (SZ345-13005)	06	-								
0511-	* 9819A * RING, RETAINER * P11CUN-KSFA	T=2.0	#	9819-47114 M (SZ521-47002)	12	-								

13-00 CAMSHAFT AND IDLE GEAR
P11CUN-KSFA

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UE11-110-15X00
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13-00 CAMSHAFT AND IDLE GEAR

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T
0511-	* 13505 * GEAR SUB ASSY, IDLE * 13505A * GEAR SUB ASSY, IDLE K. P11CUN-KSFA	# 13505-2090 M (S1350-52090)			01	-
0511-	* 13581 * SHAFT, IDLE GEAR * 13581A * SHAFT, IDLE GEAR K. P11CUN-KSFA	# 13581-2081 M (S1350-52081)			01	-
0511-	* 13613 * GEAR, INJ PUMP DRIVE * 13613A * GEAR, INJ PUMP DRIVE K. P11CUN-KSFA	# 13613-1771 M (S1361-31771)			01	-
0511-	* 900116 * SPACER * 900116A * SPACER K. P11CUN-KSFA	# 900116-16190 M (SZ910-16063)			01	-
0511-	* 900124 * BOLT * 900124A * BOLT K. P11CUN-KSFA	# 900124-24514 M (SZ910-24272)			03	-
0511-	* 90019A * BOLT * 90019A * BOLT K. P11CUN-KSFA	# 90019-14129 M (SZ105-14001)			01	-

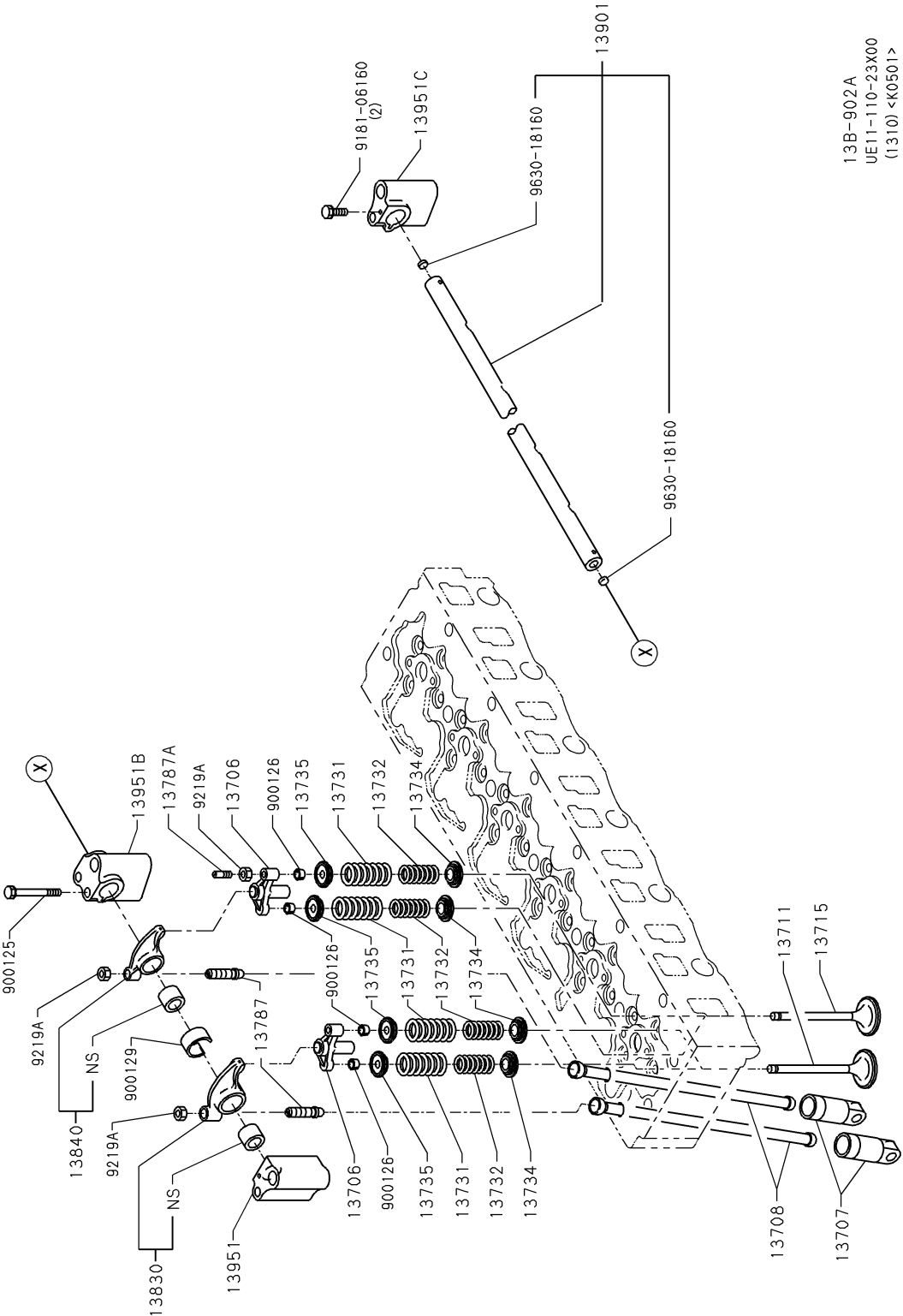
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13-00 CAMSHAFT AND IDLE GEAR

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	*-----* * 9509B * PIN *-----* K. P11CUN-KSFA		# 9509-04105 M (SZ254-04002)	03	-	
0511-	*-----* * 9851A * O-RING *-----* K. P11CUN-KSFA		# 9851-23102 M (SZ301-23001)	01	-	

13-10 VALVE SYSTEM
P11CUN-KSFA

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UE11-110-23X00
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13-10 VALVE SYSTEM

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T
0511-	* 13706 * CROSSHEAD SUB ASSY * 13706 * CROSSHEAD SUB ASSY K. P11CUN-KSFA		#	13706-1261 M (S1370-61261)	12	-	0511-	* 13735 * SEAT, VALVE SP6, UPR * 13735 * SEAT, VALVE SP6, UPR K. P11CUN-KSFA		#	13735-1360 M (S1373-51360)	24	-
0511-	* 13707 * LIFTER ASSY, VALVE * 13707 * LIFTER ASSY, VALVE K. P11CUN-KSFA			13750-E0010	12	-	0511-	* 13787 * SCREW, VALVE ADJ * 13787 * SCREW, VALVE ADJ K. P11CUN-KSFA		#	13787-1090 M (S1378-71090)	12	-
0511-	* 13708 * ROD SUB ASSY, VALVE * 13708 * ROD SUB ASSY, VALVE K. P11CUN-KSFA	PUSH	#	13708-1410 M (S1370-81410)	12	-	0511-	* 13787A * SCREW, VALVE ADJ * 13787A * SCREW, VALVE ADJ K. P11CUN-KSFA		#	13787-1400 M (S1378-71400)	12	-
0511-	* 13711 * VALVE, INTAKE, STD * 13711 * VALVE, INTAKE, STD K. P11CUN-KSFA		#	13711-1790 M (S1371-11790)	12	-	0511-	* 13830 * ARM ASSY, VALVE ROCKER * 13830 * ARM ASSY, VALVE ROCKER K. P11CUN-KSFA		#	13830-1620 M (S1383-01620)	06	-
0511-	* 13715 * VALVE, EXH, STD * 13715 * VALVE, EXH, STD K. P11CUN-KSFA		#	13715-1860 M (S1371-51860)	12	-	0511-	* 13840 * ARM ASSY, VALVE ROCKER EXH * 13840 * ARM ASSY, VALVE ROCKER EXH K. P11CUN-KSFA		#	13840-1410 M (S1384-01410)	06	-
0511-	* 13731 * SPRING, VALVE, OUTER * 13731 * SPRING, VALVE, OUTER K. P11CUN-KSFA		#	13731-1530 M (S1373-11530)	24	-	0511-	* 13901 * SHAFT SUB ASSY, VALVE ROCKER * 13901 * SHAFT SUB ASSY, VALVE ROCKER K. P11CUN-KSFA		#	13901-1260 M (S1390-11260)	01	-
0511-	* 13732 * SPRING, VALVE, INNER * 13732 * SPRING, VALVE, INNER K. P11CUN-KSFA		#	13732-1420 M (S1373-21420)	24	-	0511-	* 13951 * SUPPORT, VALVE ROCKER * 13951 * SUPPORT, VALVE ROCKER K. P11CUN-KSFA		#	13951-2270 M (S1395-12270)	01	-
0511-	* 13734 * SEAT, VALVE SP6, LWR * 13734 * SEAT, VALVE SP6, LWR K. P11CUN-KSFA		#	13734-1260 M (S1373-41260)	24	-	0511-	* 13951B * SUPPORT, VALVE ROCKER * 13951B * SUPPORT, VALVE ROCKER K. P11CUN-KSFA		#	13951-2290 M (S1395-12290)	05	-

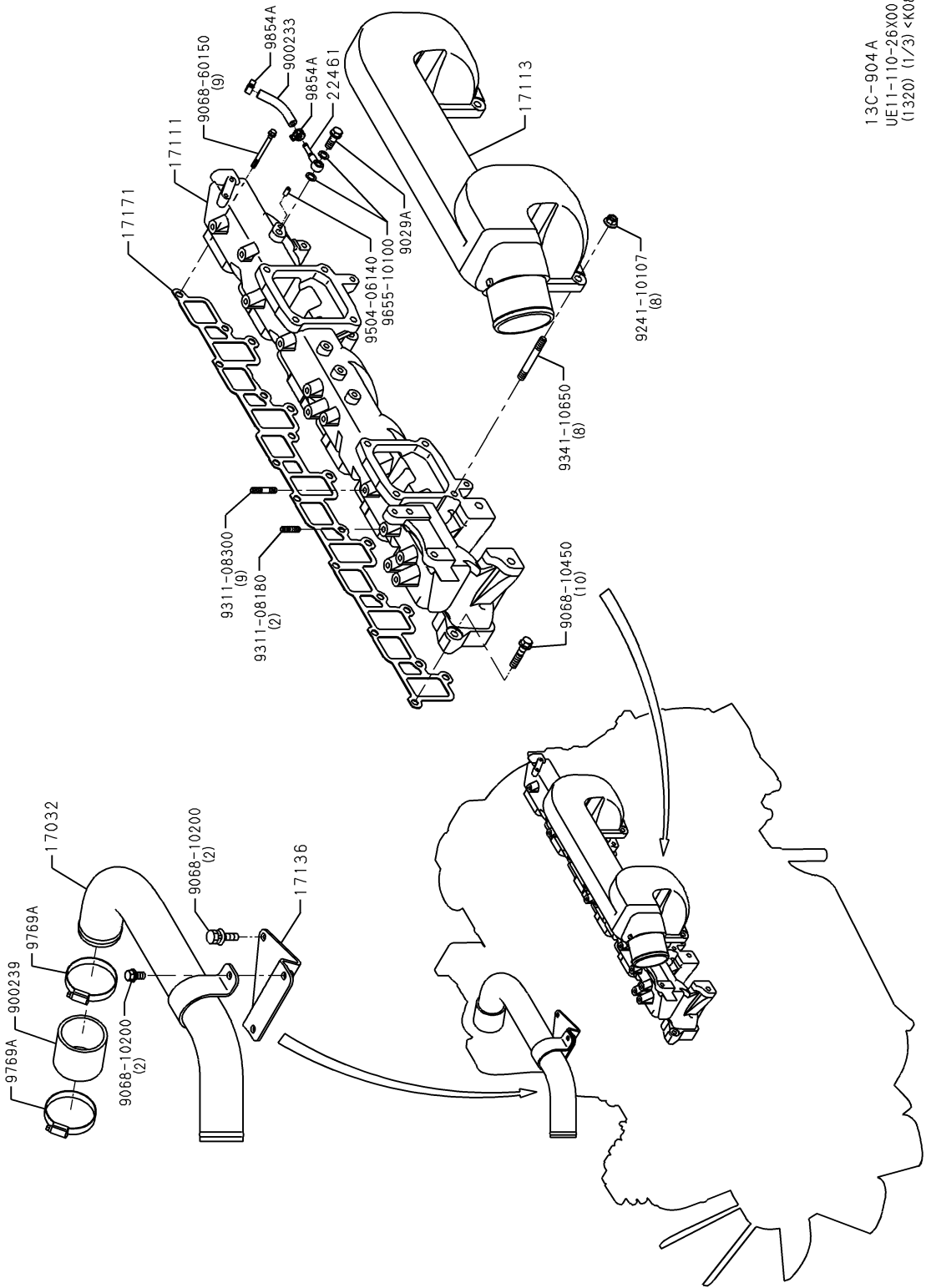
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13-10 VALVE SYSTEM

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	*-----* * 13951C * SUPPORT, VALVE ROCKER *-----* K. P11CUN-KSFA		# 13951-2320 M (S1395-12320)	01	-								
0511-	*-----* * 900125 * BOLT *-----* K. P11CUN-KSFA		# 9001-25222 M (SZ910-24424)	12	-								
0511-	*-----* * 900126 * LOCK, VALVE SP6 RETAINER *-----* K. P11CUN-KSFA		# 9001-26120 M (SZ910-26011)	48	-								
0511-	*-----* * 900129 * COLLAR *-----* K. P11CUN-KSFA		# 9001-29222 M (SZ910-29080)	06	-								
0511-	*-----* * 9219A * NUT *-----* K. P11CUN-KSFA		# 9219-10107 M (SZ170-10057)	24	-								

13-20 AIR INTAKE AND EXHAUST SYSTEM
P11CUN-KSFA ILLUSTR. NO.1 OF 3

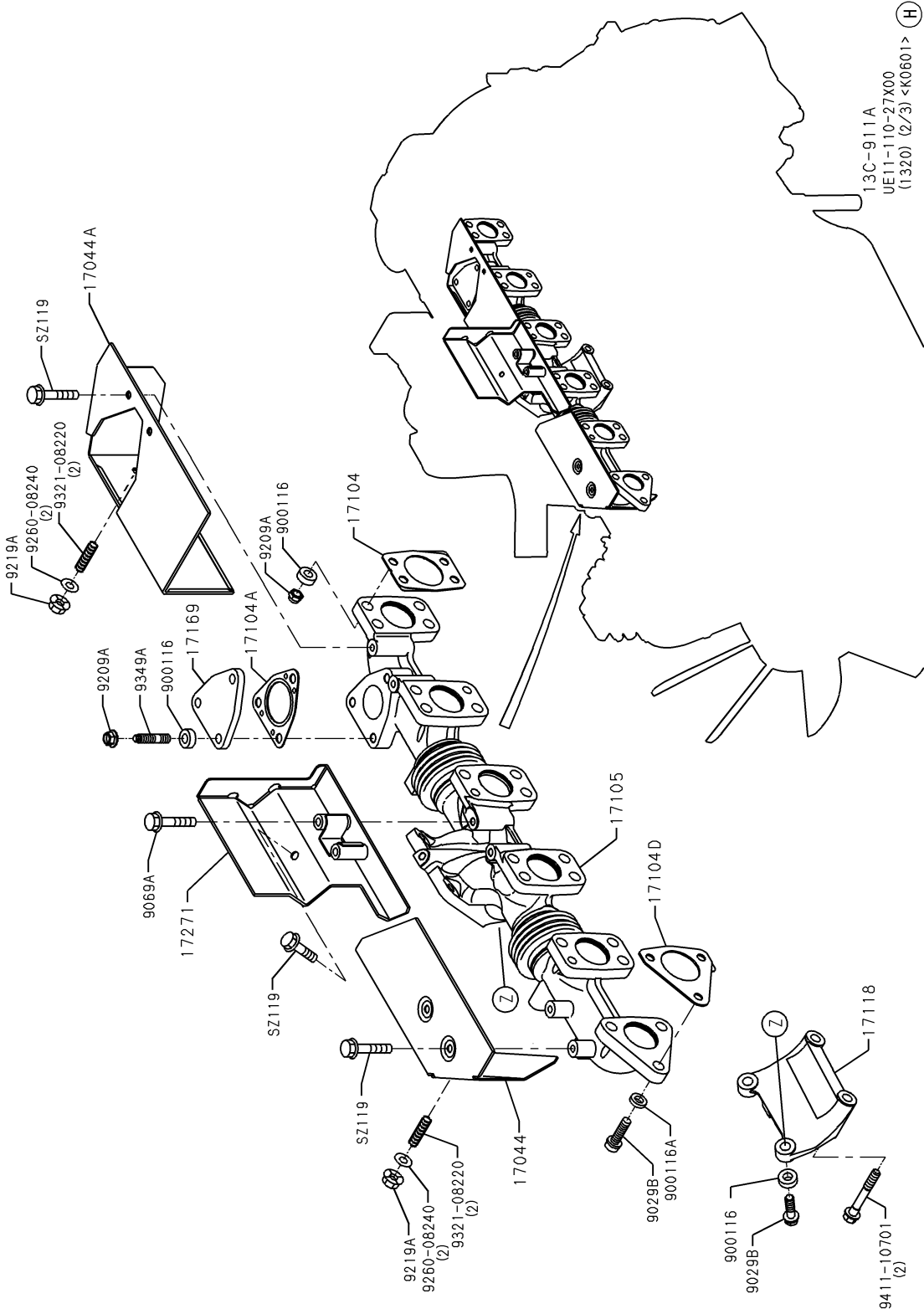
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13C-904A
UE11-110-26X00
(1320) (1/3) <K0801> (H)

13-20 AIR INTAKE AND EXHAUST SYSTEM
P11CUN-KSFA ILLUSTR. NO.2 OF 3

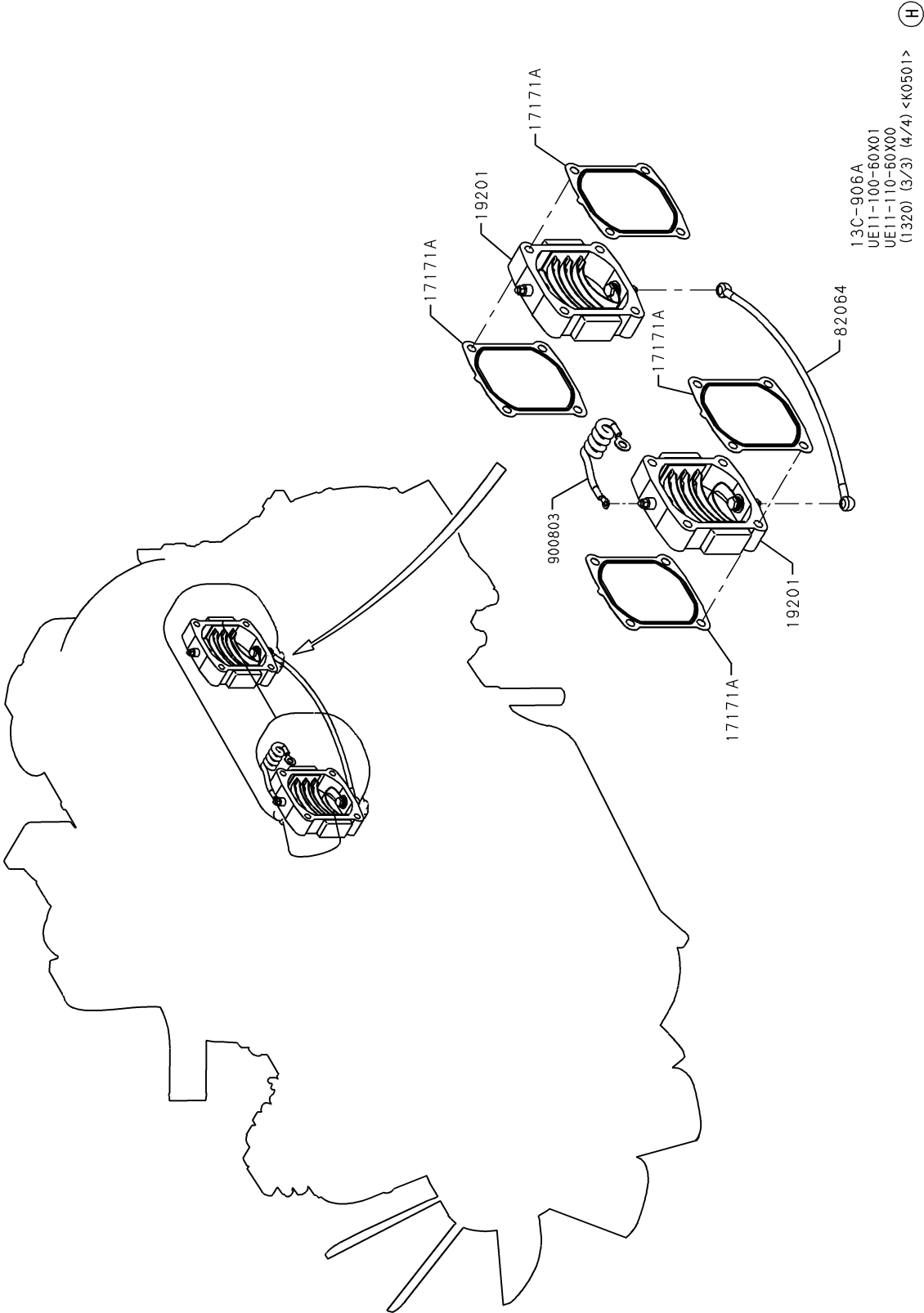
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13-20 AIR INTAKE AND EXHAUST SYSTEM

P11CUN-KSFA ILLUSTR. NO.3 OF 3

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13-20 AIR INTAKE AND EXHAUST SYSTEM

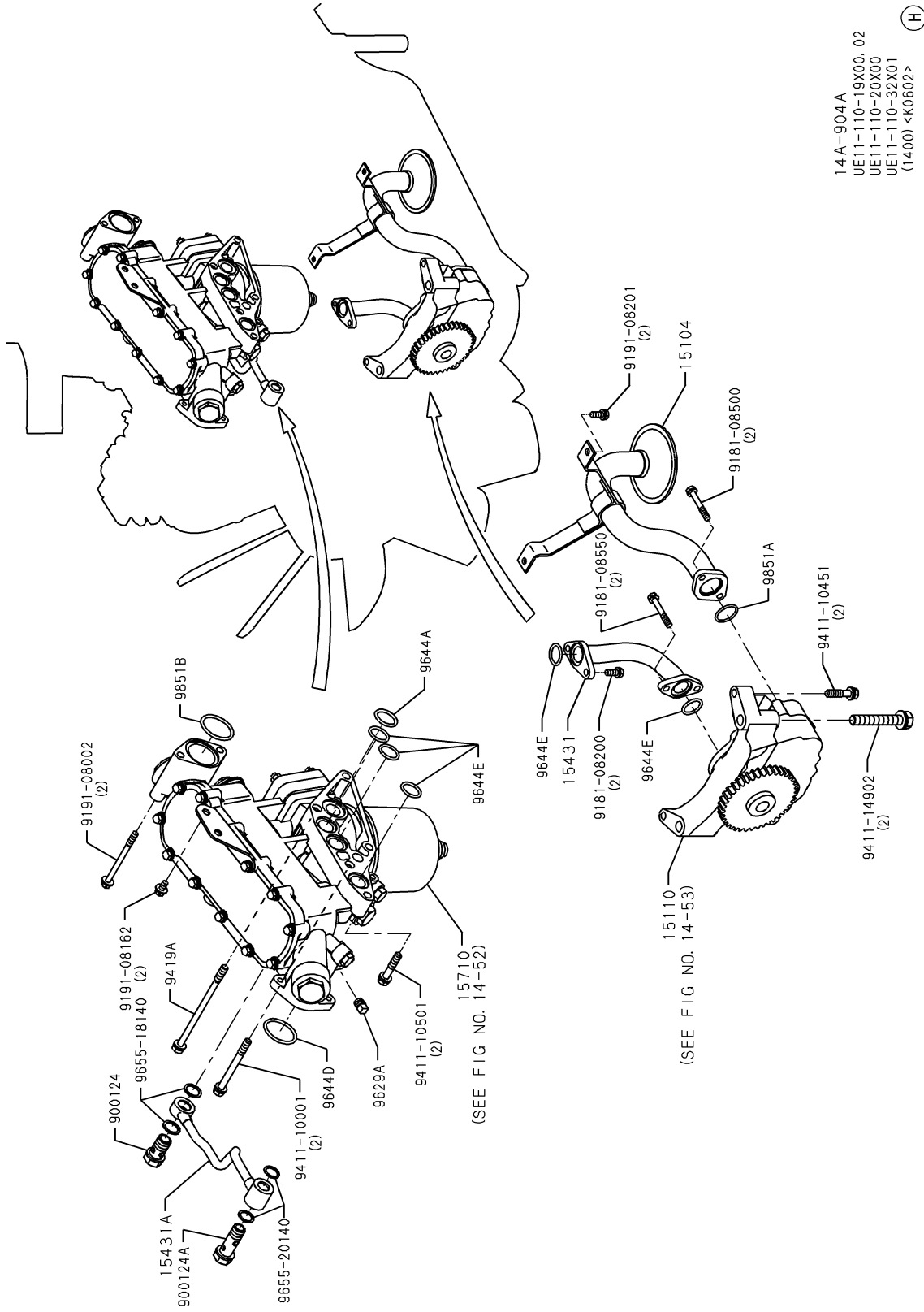
PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 17032 * PIPE SUB ASSY, INTAKE * 17032-1370 K. P11CUN-KSFA		# M	17032-1370 (S1703-21370)	01	-
0511-	* 17044 * INSULATOR SUB ASSY, EXH * 17044-4420 K. P11CUN-KSFA		# M	17044-4420 (S1704-44420)	01	-
0511-	* 17044A * INSULATOR SUB ASSY, EXH * 17044A-4430 K. P11CUN-KSFA		# M	17044-4430 (S1704-44430)	01	-
0511-	* 17104 * GASKET, SUB ASSY, EXH MFLD * 17104-1860 K. P11CUN-KSFA		# M	17104-1860 (S1710-41860)	05	-
0511-	* 17104A * GASKET, SUB ASSY, EXH MFLD * 17104A-1960 K. P11CUN-KSFA		# M	17104-1960 (S1710-41960)	01	-
0511-	* 17104D * GASKET, SUB ASSY, EXH MFLD * 17104D-1850 K. P11CUN-KSFA		# M	17104-1850 (S1710-41850)	01	-
0511-	* 17105 * MANIFOLD SUB ASSY, EXHAUST * 17105-1160 K. P11CUN-KSFA		# M	17105-1160 (S1710-51160)	01	-
0511-	* 17111 * MANIFOLD, INTAKE * 17111-E0020 K. P11CUN-KSFA			17271-E0020	01	-
0511-	* 19201 * HEATER SUB ASSY, AIR INTAKE * 19201-1141 K. P11CUN-KSFA		# M	19201-1141 (S1920-11141)	02	-

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13-20 AIR INTAKE AND EXHAUST SYSTEM

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 22461 * PIPE, BOOST COMPENSATOR * 22461-1100 K. P11CUN-KSFA		# 22461-1100 M (SZ246-11100)		01	-
	* 82064 * HARNESS SUB ASSY, ENG * 82064-6930 K. P11CUN-KSFA		# 82064-6930 M (S8206-46930)		01	-
	* 900116 * SPACER * 900116A * SPACER K. P11CUN-KSFA	T=8.0	# 9001-16442 M (SZ910-16217)		25	-
	* 900233 * HOSE, AIR * 900233-33926 K. P11CUN-KSFA	T=4.5	# 9001-16115 M (SZ910-16009)		03	-
0511-	* 900239 * HOSE, AIR * 900239-39567 K. P11CUN-KSFA		# 9002-33926 M (SZ920-33436)		01	-
0511-	* 900803 * STRAP, BAND * 900803-03167 K. P11CUN-KSFA		# 9002-39567 M (SZ920-33776)		01	-
0511-	* 9029A * BOLT * 9029A-08216 K. P11CUN-KSFA		# 9008-03167 M (SZ980-03047)		01	-
0511-			# 9029-10248 M (SZ401-10014)		01	-

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 9029B * BOLT * 9029B-10198 K. P11CUN-KSFA		# 9029B-10198 M (SZ105-10001)		05	-
	* 9069A * BOLT, FLANGE * 9069A-08153 K. P11CUN-KSFA	L=55	# 9069-08153 M (SZ105-08059)		02	-
	* 9209A * NUT * 9209A-10202 K. P11CUN-KSFA		# 9209-10202 M (SZ178-10007)		23	-
	* 9219A * NUT * 9219A-08105 K. P11CUN-KSFA		# 9219-08105 M (SZ177-08005)		04	-
0511-	* 9349A * STUD * 9349A-10139 K. P11CUN-KSFA		# 9349-10139 M (SZ126-10005)		03	-
0511-	* 9769A * CLAMP * 9769A-70105 K. P11CUN-KSFA		# 9769-70105 M (SZ460-70004)		02	-
0511-	* 9854A * CLIP * 9854A-12101 K. P11CUN-KSFA		# 9854-12101 M (SZ466-12003)		02	-
0511-	* SZ119 * BOLT, W/WASHER * SZ119-08216 K. P11CUN-KSFA		SZ119-08216		05	-



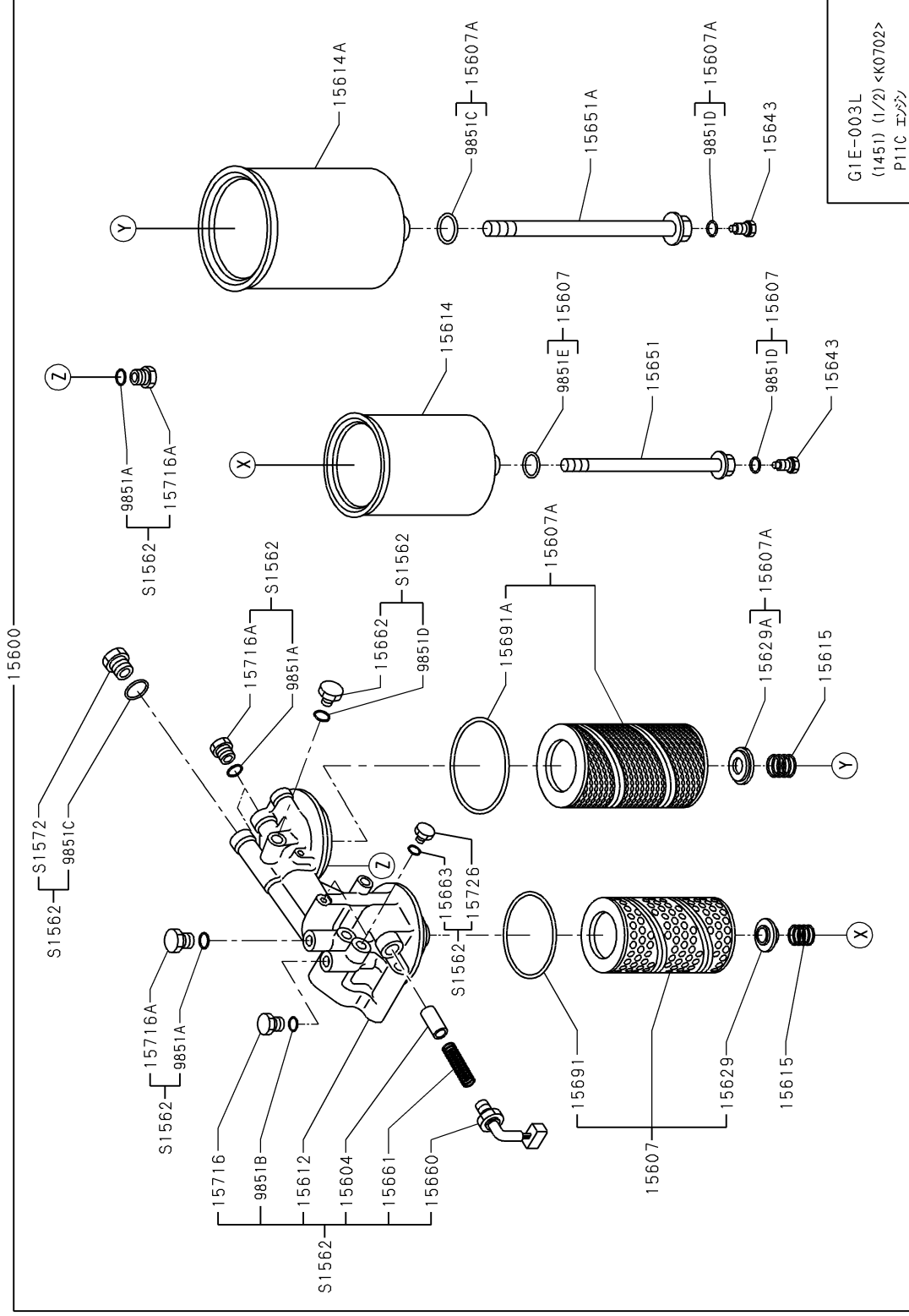
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14-00 LUBRICATION

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 15104 * STRAINER SUB ASSY,OIL * 15104 * STRAINER SUB ASSY,OIL K. P11CUN-KSFA		# 15104-1860 M (S1510-41860)	01	-	
	* 15110 * PUMP ASSY,OIL L/STNR * 15110 * PUMP ASSY,OIL L/STNR K. P11CUN-KSFA		# 15110-2124 M (S1511-02124)	01	-	
	* 15431 * PIPE,OIL FEED * 15431 * PIPE,OIL FEED K. P11CUN-KSFA		# 15431-1470 M (S1543-11470)	01	-	
	* 15431A * PIPE,OIL FEED * 15431A * PIPE,OIL FEED K. P11CUN-KSFA		# 15431-1520 M (S1543-11520)	01	-	
0511-	* 15710 * COOLER ASSY, OIL * 15710 * COOLER ASSY, OIL K. P11CUN-KSFA		15710-E0040	01	-	
	* 900124 * BOLT * 900124 * BOLT K. P11CUN-KSFA		# 9001-24389 M (SZ910-24181)	01	-	
0511-	* 900124A * BOLT * 900124A * BOLT K. P11CUN-KSFA		# 9001-24395 M (SZ910-24184)	01	-	
	* 9419A * BOLT * 9419A * BOLT K. P11CUN-KSFA		# 9419-10112 M (SZ119-10136)	03	-	

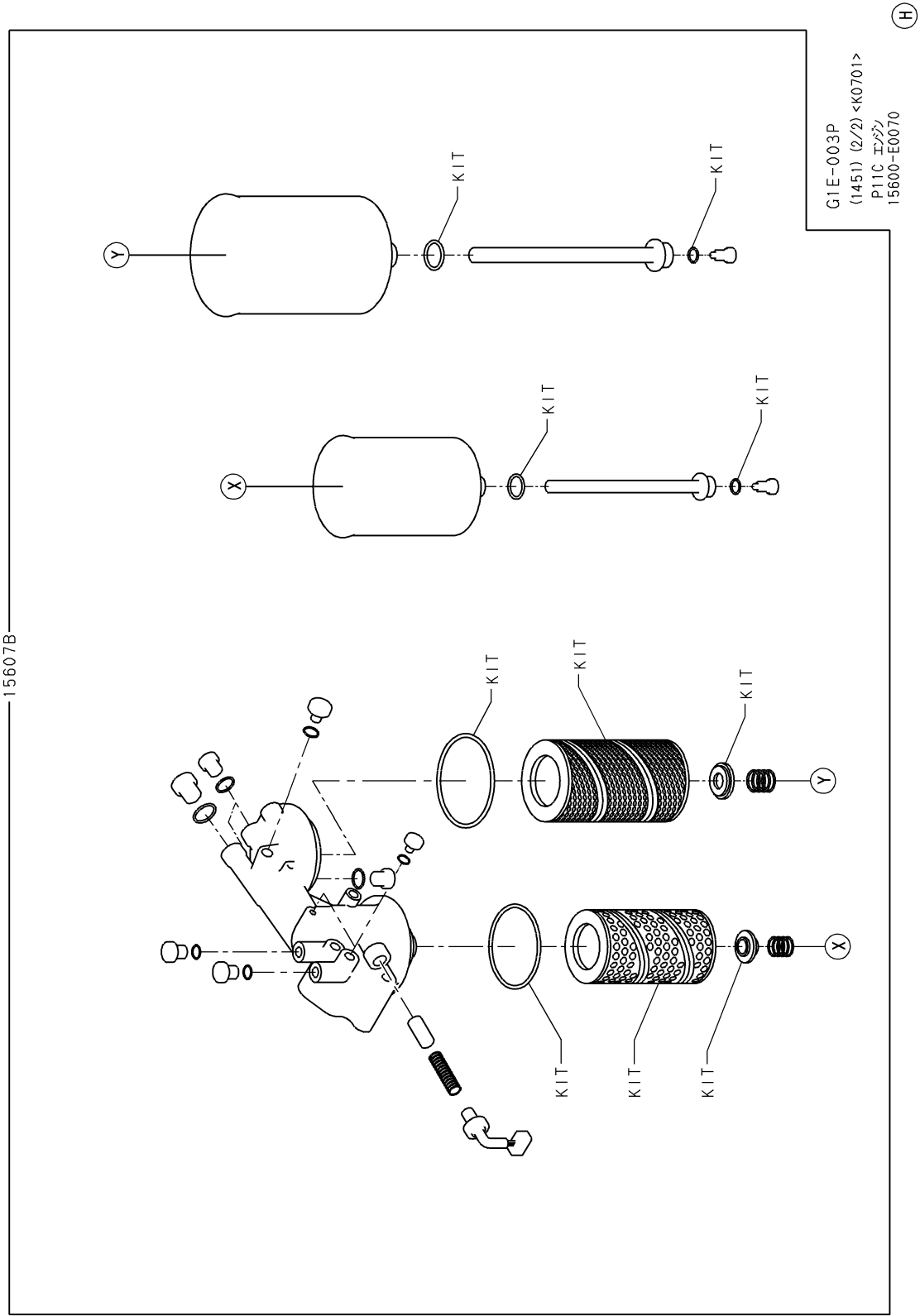
14-51 OIL FILTER

P11CUN - KSFA ILLUST NO.1 OF 2



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15600-E0070

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14-51 OIL FILTER

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-0710 0711-	* 15600 * FILTER ASSY, OIL *-----* K. P11CUN-KSFA K. P11CUN-KSFA			15600-E0070 15600-E0070	01 01	- -	0511-	*-----* * 15614A * COVER,OIL FILTER ELEMENT,LWR *-----* K. P11CUN-KSFA			# 15614-2410 M (S1561-42410)	01	-
	* 15604 * VALVE SUB ASSY,OIL SAFETY *-----* K. P11CUN-KSFA			# 15604-1110 M (S1560-41110)	01	-	0511-	*-----* * 15615 * SPRING,OIL FILTER ELEMENT SUPT *-----* K. P11CUN-KSFA			# 15615-1190 M (S1561-51190)	01	-
0511-0710 0711-	*-----* * 15607 * ELEMENT SET,OIL FILTER *-----* K. P11CUN-KSFA K. P11CUN-KSFA			# 15607-2270 M (S1560-72270) # S1560-72340 M (15601-E0080)	01 01	- -	0511-	*-----* * 15629 * WASHER *-----* K. P11CUN-KSFA			# 15629-1020 M (S1562-91020)	01	-
	----- * 15607A * ELEMENT SET,OIL FILTER *-----* K. P11CUN-KSFA K. P11CUN-KSFA			# 15607-2150 M (S1560-72150) # S1560-72360 M (15601-E0070)	01 01	- -	0511-	*-----* * 15629A * WASHER *-----* K. P11CUN-KSFA			# 15629-1030 M (23334-1010)	01	-
0711-	*-----* * 15607B * ELEMENT SET,OIL FILTER *-----* K. P11CUN-KSFA			S1560-72410	01	-	0511-	*-----* * 15643 * PLUG,OIL FILTER DRAIN *-----* K. P11CUN-KSFA			# 15643-1020 M (S1564-31020)	02	-
	----- * 15612 * COVER,OIL FILTER ELEMENT *-----* K. P11CUN-KSFA			# 15612-2572 M (S1561-22572)	01	-	0511-	*-----* * 15651 * BOLT *-----* K. P11CUN-KSFA			# 15651-1611 M (S1565-11611)	01	-
0511-	*-----* * 15614 * COVER,OIL FILTER ELEMENT,LWR *-----* K. P11CUN-KSFA			# 15614-2420 M (S1561-42420)	01	-	0511-	*-----* * 15660 * PLUG ASSY,OIL *-----* K. P11CUN-KSFA			# 15660-1150 M (S1566-01150)	01	-

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14-51 OIL FILTER

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 15661 * SPRING, OIL VALVE * 15661 * K. P11CUN-KSFA		# 15661-1460 M (S1566-11460)		01	-
	* 15662 * PLUG, OIL VALVE * 15662 * K. P11CUN-KSFA		# 15662-1010 M (S1566-21010)		01	-
	* 15663 * GASKET, OIL PLUG * 15663 * K. P11CUN-KSFA		# 15663-1110 M (S1566-31110)		02	-
0511-	* 15691 * GASKET, OIL FILTER * 15691 * K. P11CUN-KSFA		# 15691-1390 M (S1569-11390)		01	-
	* 15691A * GASKET, OIL FILTER * 15691A * K. P11CUN-KSFA		# 15691-1380 M (S1569-11380)		01	-
	* 15716 * PLUG, VALVE SPG * 15716 * K. P11CUN-KSFA		# 15716-1130 M (S1571-61130)		01	-
0511-	* 15716A * PLUG, VALVE SPG * 15716A * K. P11CUN-KSFA		# 15716-1120 M (S1571-61120)		04	-
	* 15726 * PLUG, BLIND * 15726 * K. P11CUN-KSFA		# 15726-1040 M (S1572-61040)		02	-

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 9851A * O-RING * 9851A * K. P11CUN-KSFA		# 9851-14108 M (SZ301-14006)		04	-
	* 9851B * O-RING * 9851B * K. P11CUN-KSFA		# 9851-12112 M (63032-00070)		01	-
	* 9851C * O-RING * 9851C * K. P11CUN-KSFA		# 9851-18102 M (SZ301-18002)		02	-
0511-	* 9851D * O-RING * 9851D * K. P11CUN-KSFA		# 9851-08101 M (SZ301-08001)		03	-
	* 9851E * O-RING * 9851E * K. P11CUN-KSFA		# 9851-16114 M (SZ301-16009)		01	-
	* S1562 * CAP ASSY, OIL FILTER * S1562 * K. P11CUN-KSFA		S1562-03900		01	-
0511-	* S1572 * PLUG, BLIND * S1572 * K. P11CUN-KSFA		S1572-61310		01	-

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14-52 OIL COOLER

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 15612 * COVER,OIL FILTER ELEMENT * 15612 * COVER,OIL FILTER ELEMENT K. P11CUN-KSFA	* 15612 * COVER,OIL FILTER ELEMENT * 15612 * COVER,OIL FILTER ELEMENT K. P11CUN-KSFA	# 15612-2720 M (S1561-22720)	01	-	
	* 15621 * GASKET,OIL FILTER BODY * 15621 * GASKET,OIL FILTER BODY K. P11CUN-KSFA		# 15621-1080 M (S1562-11080)	01	-	
	* 15643 * PLUG,OIL FILTER DRAIN * 15643 * PLUG,OIL FILTER DRAIN K. P11CUN-KSFA		# 15643-1020 M (S1564-31020)	01	-	
	* 15661 * SPRING,OIL VALVE * 15661 * SPRING,OIL VALVE K. P11CUN-KSFA		# 15661-1420 M (S1566-11420)	01	-	
0511-	* 15662 * PLUG,OIL VALVE * 15662 * PLUG,OIL VALVE K. P11CUN-KSFA	* 15662 * PLUG,OIL VALVE * 15662 * PLUG,OIL VALVE K. P11CUN-KSFA	# 15662-1240 M (S1566-21240)	01	-	
	* 15671 * BRACKET,OIL FILTER * 15671 * BRACKET,OIL FILTER K. P11CUN-KSFA		# 15671-1720 M (S1567-11720)	01	-	
0511-	* 15675 * VALVE,OIL RELIEF * 15675 * VALVE,OIL RELIEF K. P11CUN-KSFA	* 15675 * VALVE,OIL RELIEF * 15675 * VALVE,OIL RELIEF K. P11CUN-KSFA	# 15675-1010 M (S1567-51010)	01	-	
0511-	* 15710 * COOLER ASSY, OIL * 15710 * COOLER ASSY, OIL K. P11CUN-KSFA	* 15710 * COOLER ASSY, OIL * 15710 * COOLER ASSY, OIL K. P11CUN-KSFA	15710-E0040	01	-	

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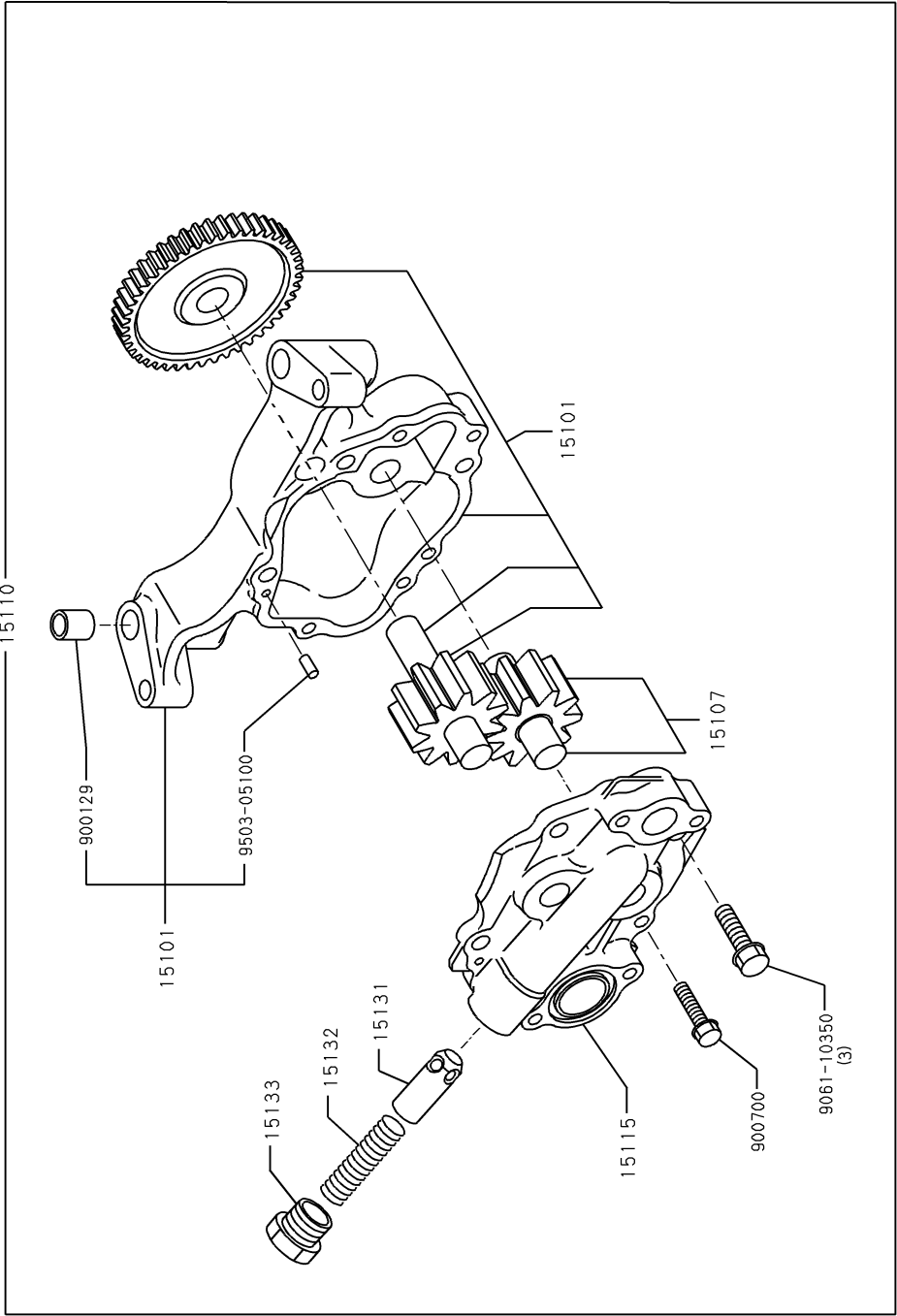
14-52 OIL COOLER

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 15726A * PLUG, BLIND * 15726B * PLUG, BLIND K. P11CUN-KSFA		# 15726-1160 M (S1572-61160)		02	-
	* 15726B * PLUG, BLIND * 15726C * PLUG, BLIND K. P11CUN-KSFA		# 15726-1140 M (S1572-61140)		01	-
	* 15726C * PLUG, BLIND * 15726D * PLUG, BLIND K. P11CUN-KSFA		# 15726-1130 M (S1572-61130)		01	-
0511-	* 23314 * PLUG, FILTER * 23315 * PLUG, FILTER K. P11CUN-KSFA		# 23314-1020 M (S2331-41020)		01	-
	* 23322 * PLUG, DRAIN * 23323 * PLUG, DRAIN K. P11CUN-KSFA		# 23322-1070 M (S2332-21070)		01	-
0511-	* 9209A * NUT * 9209B * NUT K. P11CUN-KSFA		# 9209-10108 M (SZ170-10007)		04	-
	* 9851A * O-RING * 9851B * O-RING K. P11CUN-KSFA		# 9851-16115 M (SZ301-16010)		02	-
0511-	* 9851B * O-RING * 9851C * O-RING K. P11CUN-KSFA		# 9851-42105 M (SZ301-42005)		02	-
	* 9851C * O-RING * 9851D * O-RING K. P11CUN-KSFA		# 9851-09101 M (9644-00811)		01	-
0511-	* 9851D * O-RING * 9851E * O-RING K. P11CUN-KSFA		# 9851-06109 M (SZ301-06004)		01	-
	* 9851E * O-RING * 9851F * O-RING K. P11CUN-KSFA		# 9851-39106 M (SZ301-39005)		01	-
0511-	* 9851F * O-RING * 9851G * O-RING K. P11CUN-KSFA		# 9851-12112 M (63032-00070)		01	-
	* 9851G * O-RING * 9851H * O-RING K. P11CUN-KSFA		# 9851-21107 M (SZ301-21003)		01	-
0511-	* 9851H * O-RING * 9851I * O-RING K. P11CUN-KSFA		# 9851-14108 M (SZ301-14006)		02	-
	* 9851I * O-RING * 9851J * O-RING K. P11CUN-KSFA		# 9851-28112 M (SZ301-28009)		01	-
0511-	* 9851J * O-RING * 9851K * O-RING K. P11CUN-KSFA		# 9851-18102 M (SZ301-18002)		01	-
	* 9851K * O-RING * 9851L * O-RING K. P11CUN-KSFA					

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14-52 OIL COOLER

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T
PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T
0511-	*-----* * 9851L * O-RING *-----* K. P11CUN-KSFA	# 9851-26103 M (SZ301-26002)			02	-
0511-	*-----* * 9851M * O-RING *-----* K. P11CUN-KSFA	# 9851-20106 M (SZ301-20004)			02	-
0511-	*-----* * 9851N * O-RING *-----* K. P11CUN-KSFA	# 9851-01164 M (SZ301-01028)			01	-
0511-	*-----* * 9851P * O-RING *-----* K. P11CUN-KSFA	# 9851-20107 M (9644-01921)			01	-
0511-	*-----* * 9851Q * O-RING *-----* K. P11CUN-KSFA	# 9851-08101 M (SZ301-08001)			01	-
0511-	*-----* * S1148 * COCK, DRAIN *-----* K. P11CUN-KSFA	S1148-51100			01	-
0511-	*-----* * S1562 * CAP ASSY,OIL FILTER *-----* K. P11CUN-KSFA	S1562-03910			01	-
0511-	*-----* * S1565 * BOLT *-----* K. P11CUN-KSFA	S1565-11800			01	-
0511-	*-----* * S1571 * PLUG, VALVE SPG *-----* K. P11CUN-KSFA	S1571-61230			02	-
0511-	*-----* * S1572 * PLUG, BLIND *-----* K. P11CUN-KSFA	S1572-61310			01	-
0511-	*-----* * S1572A * COVER,OIL COOLER *-----* K. P11CUN-KSFA	S1572-11180			01	-
0511-	*-----* * S1572B * COVER,OIL COOLER *-----* K. P11CUN-KSFA	S1572-11190			01	-



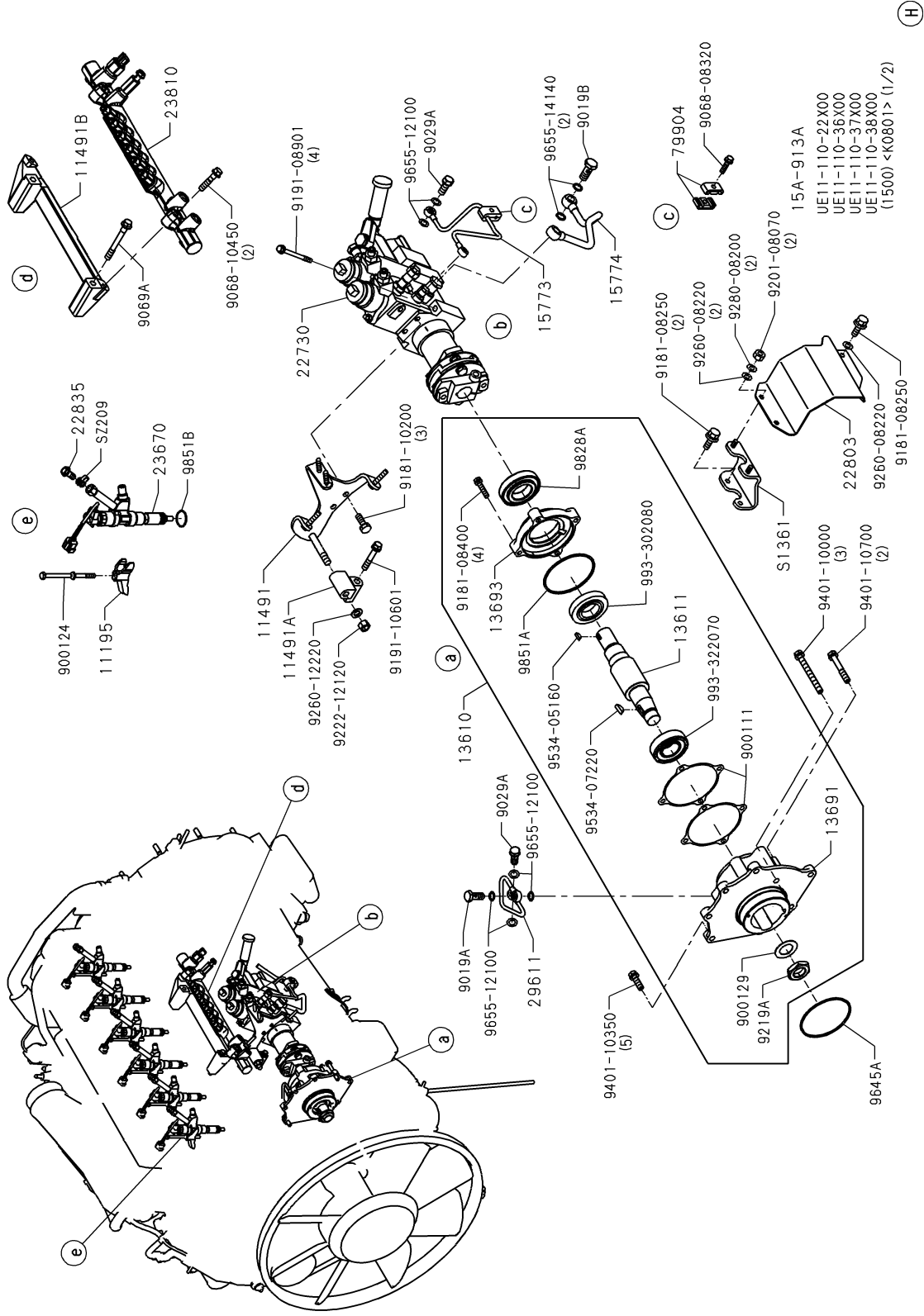
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14-53 OIL PUMP

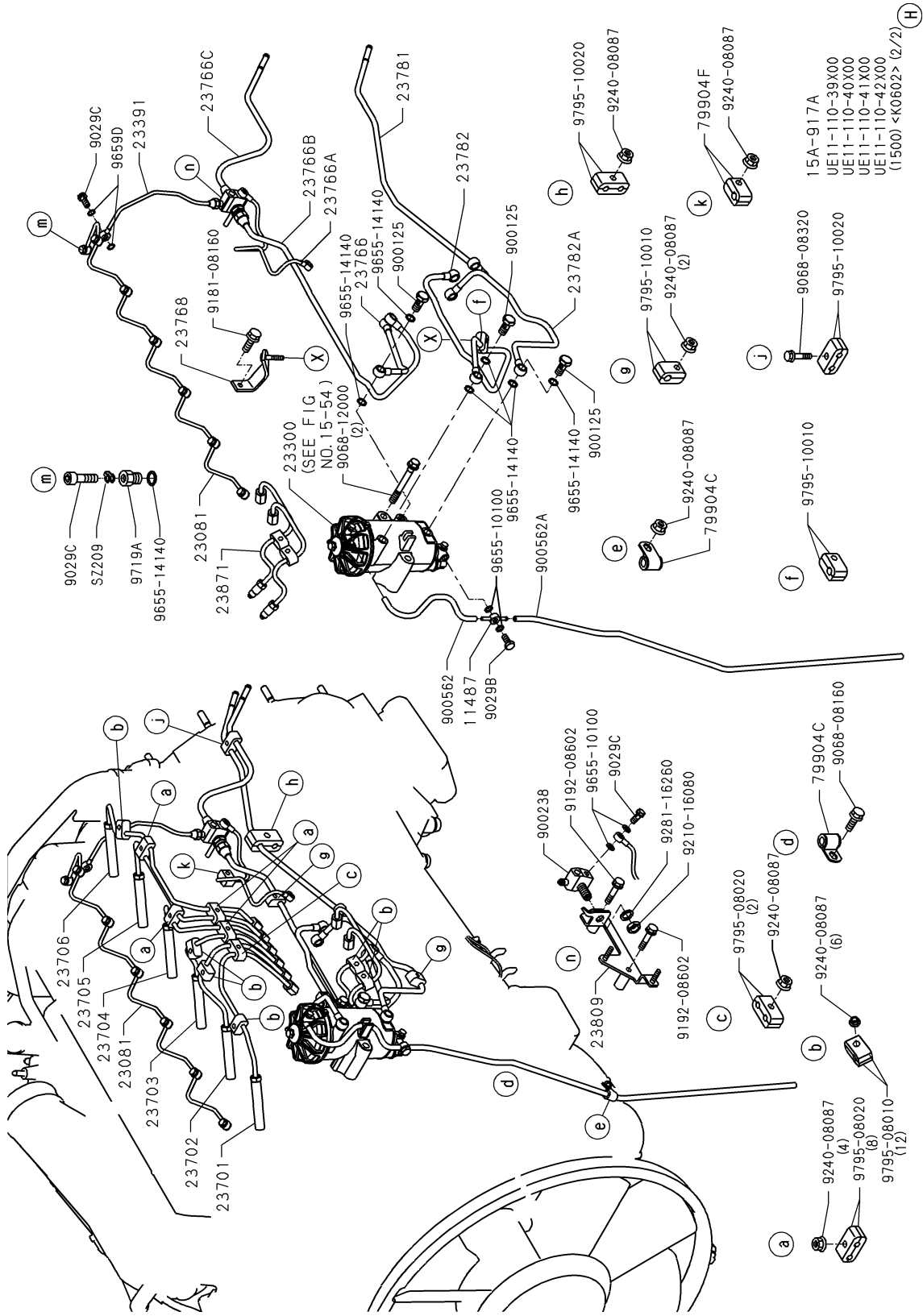
PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	*-----* * 15101 * BODY SUB ASSY,OIL PUMP *-----* K. P11CUN-KSFA					
	----- * 15107 * GEAR SUB ASSY,OIL PUMP *-----* K. P11CUN-KSFA			# 15101-1734 M (S1510-11734)	01	-
	----- * 15110 * PUMP ASSY,OIL L/STNR *-----* K. P11CUN-KSFA			# 15107-1531 M (S1510-71531)	01	-
0511-	*-----* * 15115 * COVER,OIL PUMP *-----* K. P11CUN-KSFA			# 15110-2124 M (S1511-02124)	01	-
0511-	*-----* * 15131 * VALVE,OIL PUMP RELIEF *-----* K. P11CUN-KSFA			# 15115-1661 M (S1511-51661)	01	-
0511-	*-----* * 15132 * SPRING,OIL PUMP RELIEF VALVE *-----* K. P11CUN-KSFA			# 15131-1101 M (S1513-11101)	01	-
0511-	*-----* * 15133 * PLUG,OIL PUMP RELIEF VALVE *-----* K. P11CUN-KSFA			# 15132-1111 M (S1513-21111)	01	-
0511-	*-----* * 900129 * COLLAR *-----* K. P11CUN-KSFA			# 15133-1061 M (S1513-31061)	01	-
0511-				# 9001-29163 M (SZ910-29035)	02	-



15-00 FUEL SYSTEM

PIICUN-KSFA ILLUST NO.2 OF 2

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15-00 FUEL SYSTEM

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 11195 * CLAMP, NOZZLE HOLDER * 11195 * K. P11CUN-KSFA		# 11195-1010 M (S1119-51010)		06	-
	* 11487 * PIPE, DRAIN * 11487 * K. P11CUN-KSFA		# 11487-1090 M (S1148-71090)		01	-
	* 11491 * BRACKET, INJ. PUMP * 11491 * K. P11CUN-KSFA		# 11491-2440 M (S1149-12440)		01	-
	* 11491A * BRACKET, INJ. PUMP * 11491A * K. P11CUN-KSFA		# 11491-1550 M (S1149-11550)		01	-
0511-	* 11491B * BRACKET, INJ. PUMP * 11491B * K. P11CUN-KSFA		# 11491-2430 M (S1149-12430)		01	-
	* 13610 * SHAFT ASSY, INJ PUMP * 13610 * K. P11CUN-KSFA		# 13610-2270 M (S1361-02270)		01	-
0511-	* 13611 * SHAFT, INJ PUMP DRIVE * 13611 * K. P11CUN-KSFA		# 13611-1750 M (S1361-11750)		01	-
0511-	* 13691 * CASE, BRG HOLDER * 13691 * K. P11CUN-KSFA		# 13691-1890 M (S1369-11890)		01	-

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15-00 FUEL SYSTEM

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R		Q T Y	REV. REF F-T
			/	P		
0511-	* 23391 * PIPE FUEL LEAKAGE * 23391-2590 M (S2339-12590) K. P11CUN-KSFA				01	-
	* 23670 * INJECTOR ASSY * 23670-E0350 M (23670-E0351) K. P11CUN-KSFA				06	-
	* 23701 * PIPE SUB-ASSY, INJECTION, NO.1 * 23701-E0060 K. P11CUN-KSFA				01	-
	* 23702 * PIPE SUB-ASSY, INJECTION, NO.2 * 23702-E0060 K. P11CUN-KSFA				01	-
0511-	* 23703 * PIPE SUB-ASSY, INJECTION, NO.3 * 23703-E0060 K. P11CUN-KSFA				01	-
	* 23704 * PIPE SUB-ASSY, INJECTION, NO.4 * 23704-E0060 K. P11CUN-KSFA				01	-
0511-	* 23705 * PIPE SUB-ASSY, INJECTION, NO.5 * 23705-E0030 K. P11CUN-KSFA				01	-
	* 23706 * PIPE SUB-ASSY, INJECTION, NO.6 * 23706-E0030 K. P11CUN-KSFA				01	-
0511-	* 23766 * PIPE, THROUGH FEED * 23766-2820 M (S2376-62820) K. P11CUN-KSFA				01	-
	* 23768 * PIPE, THROUGH FEED * 23768-2290 M (S2376-62290) K. P11CUN-KSFA				01	-
0511-	* 23766C * PIPE, THROUGH FEED * 23766-2961 M (S2376-62961) K. P11CUN-KSFA				01	-
	* 23768 * BRACKET, FUEL PIPE * 23768-2960 M (S2376-82960) K. P11CUN-KSFA				01	-
0511-	* 23781 * PIPE, FUEL * 23781-5930 M (S2378-15930) K. P11CUN-KSFA				01	-
	* 23782 * PIPE, FUEL FEED * 23782-2930 M (S2378-22930) K. P11CUN-KSFA				01	-
0511-	* 23782A * PIPE, FUEL FEED * 23782-2890 M (S2378-22890) K. P11CUN-KSFA				01	-
	* 23809 * BRACKET SUB ASSY, FUEL PIPE * 23809-1500 M (S2380-91500) K. P11CUN-KSFA				01	-

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-0801-	*-----* * 23810 * RAIL ASSY, COMMON *-----* K. P11CUN-KSFA K. P11CUN-KSFA *-----*			23810-E0110 23810-E0150	01 01	-
	* 23871 * PIPE, INJ, NO1(S/P TO RAIL) *-----*					
	K. P11CUN-KSFA					
	----- * 29611 * PIPE, OIL *-----*					
0511-	K. P11CUN-KSFA		# M	23871-1090 (SZ387-11090)	02	-
0511-	K. P11CUN-KSFA		# M	29611-2170 (SZ961-12170)	01	-
0511-	K. P11CUN-KSFA		# M	79904-1250 (S7990-41250)	02	-
0511-	K. P11CUN-KSFA		# M	79904-1640 (S7990-41640)	02	-
0511-	K. P11CUN-KSFA		# M	79904-1240 (S7990-41240)	02	-
0511-	K. P11CUN-KSFA		# M	90011-11156 (SZ910-11027) # 9001-11157 (SZ910-11028)	X X	-
0511-	K. P11CUN-KSFA		# M	900124 * BOLT *-----*	06	-

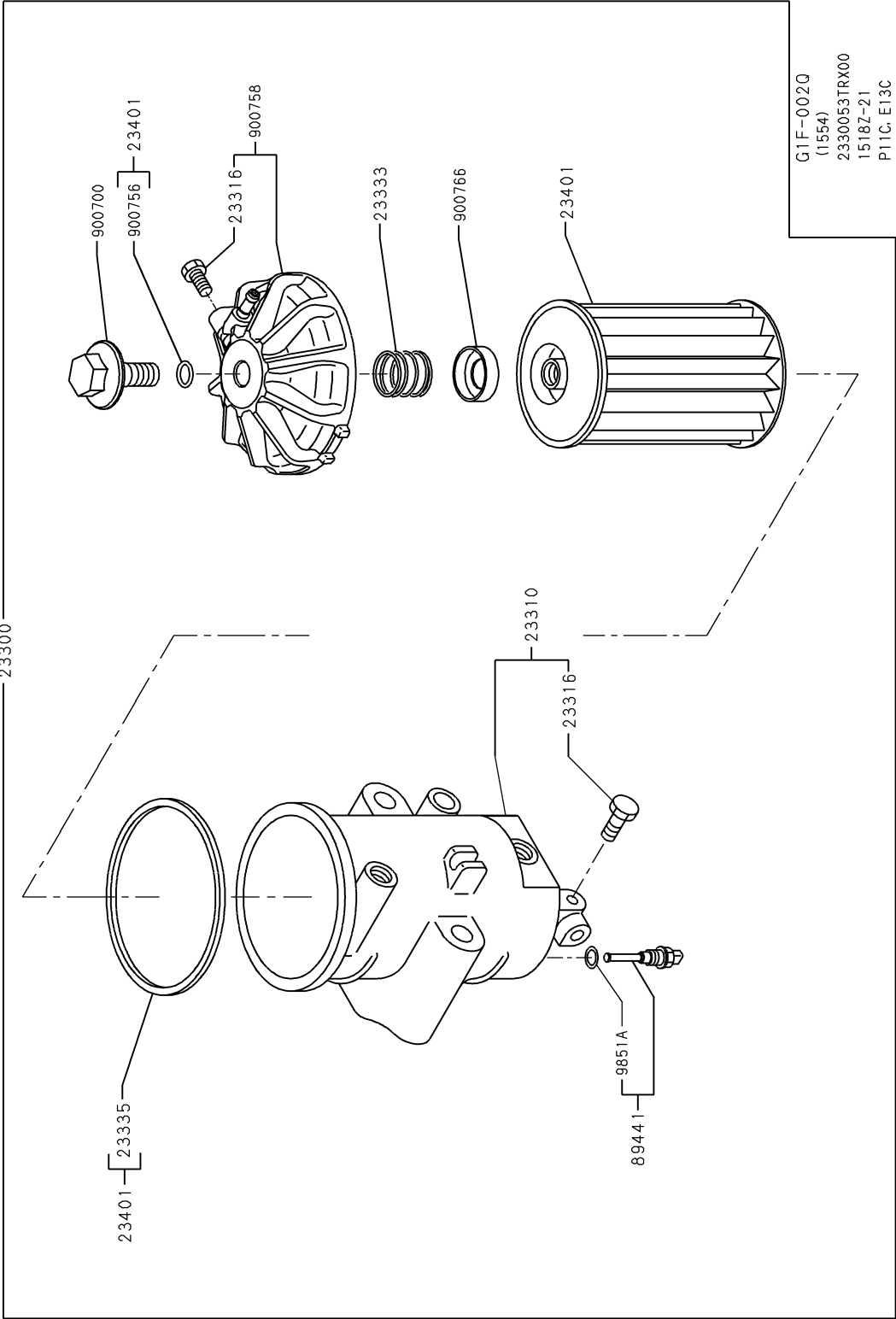
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15-00 FUEL SYSTEM

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T
0511-	* 9029B * BOLT * 9029C * BOLT K. P11CUN-KSFA	# 9029-10193 M (SZ401-10004)			01	-
0511-	* 9029C * BOLT * 9029D * BOLT K. P11CUN-KSFA	# 9029-10275 M (SZ401-10020)			02	-
0511-	* 9069A * BOLT, FLANGE * 9069B * BOLT, FLANGE K. P11CUN-KSFA	# 9069-10176 M (SZ105-10053)			02	-
0511-	* 9219A * NUT * 9219B * NUT K. P11CUN-KSFA	# 9219-27108 M (SZ170-27006)			01	-
0511-	* 9645A * O-RING * 9645B * O-RING K. P11CUN-KSFA	# 9645-09935 M (SN732-10993)			01	-
0511-	* 9719A * UNION * 9719B * UNION K. P11CUN-KSFA	# 9719-14103 M (SZ404-14001)			01	-
0511-	* 9828A * SEAL, OIL * 9828B * SEAL, OIL K. P11CUN-KSFA	# 9828-37107 M (SZ313-37001)			01	-
0511-	* 9851A * O-RING * 9851B * O-RING K. P11CUN-KSFA	# 9851-01210 M (SZ301-01064)			01	-
0511-	* 9851B * O-RING * 9851C * O-RING K. P11CUN-KSFA	# 9851-28111 M (SZ301-28008)			06	-
0511-	* S1361 * BRACKET, DRIVE SHAFT COVER * S1362 * BRACKET, DRIVE SHAFT COVER K. P11CUN-KSFA	S1361-E0010			01	-
0511-	* SZ209 * WASHER * SZ210 * WASHER K. P11CUN-KSFA	SZ209-10025			07	-

15-54 FUEL FILTER
P11CUN-KSFA

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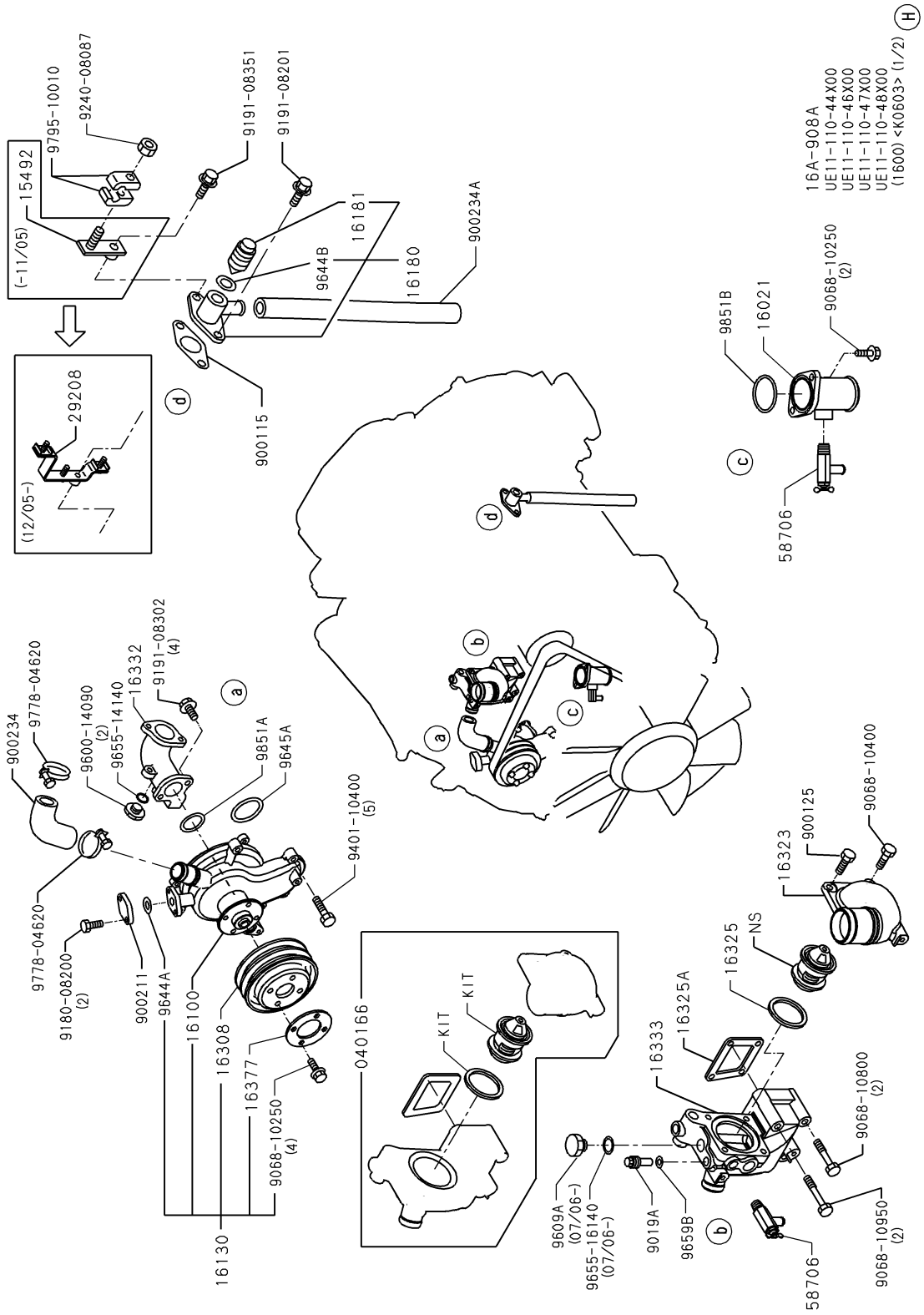


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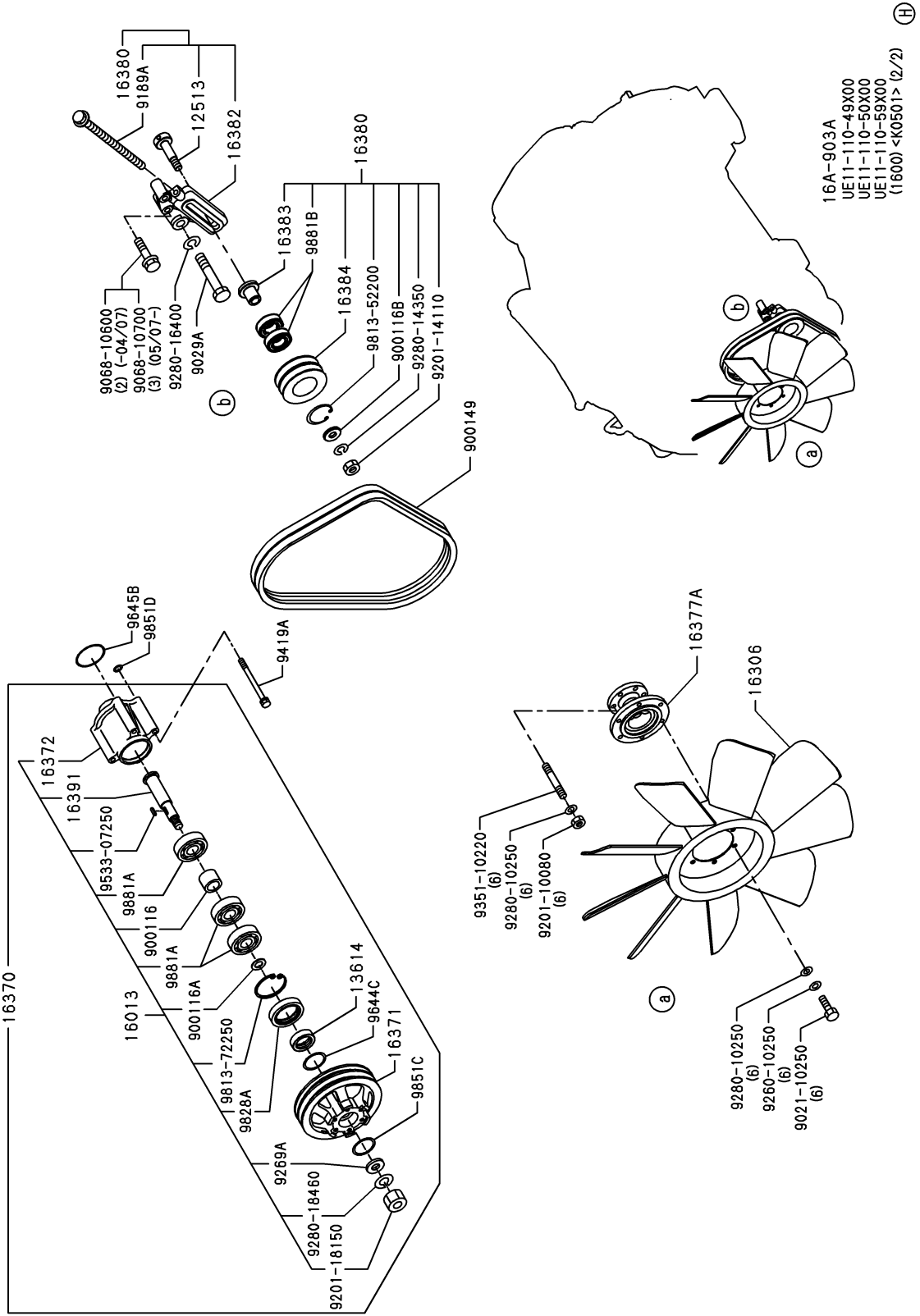
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15-54 FUEL FILTER

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	P	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	P	PART NO.	Q T Y	REV. REF F-T
0511-	* 23300 * FILTER ASSY, FUEL * 23300 * K. P11CUN-KSFA		#	M	23300-2710 (S2330-02710)	01	-	0511-	* 900756 * O-RING * 900756 * K. P11CUN-KSFA		#	M	9007-56206 (S9007-56206)	01	-
0511-	* 23310 * COVER ASSY, FUEL FILTER * 23310 * K. P11CUN-KSFA		#	M	23310-1880 (S2331-01880)	01	-	0511-	* 900758 * CAP * 900758 * K. P11CUN-KSFA		#	M	9007-58115 (S9007-58115)	01	-
0511-	* 23316 * PLUG, AIR * 23316 * K. P11CUN-KSFA		#	M	23316-1040 (S2331-61040)	02	-	0511-	* 900766 * HOLDER * 900766 * K. P11CUN-KSFA		#	M	9007-66120 (S9007-66120)	01	-
0511-	* 23333 * SPRING, FILTER ELEMENT SET * 23333 * K. P11CUN-KSFA		#	M	23333-1130 (S2333-31130)	01	-	0511-	* 9851A * O-RING * 9851A * K. P11CUN-KSFA		#	M	9851-18102 (SZ301-18002)	01	-
0511-	* 23335 * GASKET, ELEMENT * 23335 * K. P11CUN-KSFA		#	M	23335-1100 (S2333-51100)	01	-								
0511-	* 23401 * ELEMENT SET, FUEL FILTER * 23401 * K. P11CUN-KSFA		#	M	23401-1690 (S2340-11690)	01	-								
0511-	* 89441 * SENSOR * 89441 * K. P11CUN-KSFA		#	M	89441-7900 (S8944-17900)	01	-								
0511-	* 900700 * BOLT * 900700 * K. P11CUN-KSFA		#	M	9007-00293 (S9007-00293)	01	-								



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 UE11-110-46X00
 UE11-110-47X00
 UE11-110-48X00
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16-00 COOLING SYSTEM

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 040166 * THERMOSTAT KIT * K. P11CUN-KSFA					
	* 12513 * SHAFT, GEN BKT * K. P11CUN-KSFA		# 040166-044 M (S0401-66044)		01	-
	* 13614 * SLEEVE * K. P11CUN-KSFA		# 12513-1240 M (S1251-31240)		01	-
	* 15492 * HOLDER, CLIP * K. P11CUN-KSFA		# 13614-1100 M (S1361-41100)		01	-
0511-0511	* 16013 * HOLDER SUB ASSY, FAN DRIVE BRG * K. P11CUN-KSFA		# 15492-1810 M (S1549-21810)		01	-
	* 16021 * PIPE SUB ASSY, COOLANT PUMP SUCTION * K. P11CUN-KSFA		# 16013-1511 M (S1601-31511)		01	-
0511-	* 16100 * PUMP ASSY, COOLANT * K. P11CUN-KSFA		# 16021-1490 M (S1602-11490)		01	-
0511-	* 16130 * PUMP ASSY, COOLANT W/PULLEY * K. P11CUN-KSFA		# 16100-3811 M (S1610-03811)		01	-
0511-			# 16130-1021 M (S1613-01021)		01	-

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16-00 COOLING SYSTEM

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R		Q T Y	REV. REF F-T
			/	P		
0511-0606	* 16333 * CASE THERMOSTAT					
	* 16333 * K. P11CUN-KSFA					
	* 16333 * K. P11CUN-KSFA					
	* 16370 * HOLDER ASSY, FAN DRIVE					
0511-	* 16370 * K. P11CUN-KSFA					
0511-	* 16371 * PULLEY, FAN					
	* 16371 * K. P11CUN-KSFA					
	* 16372 * HOLDER, FAN DRIVE					
	* 16372 * K. P11CUN-KSFA					
0511-	* 16377 * SPACER, FAN PULLEY					
0511-	* 16377 * K. P11CUN-KSFA					
	* 16377A * SPACER, FAN PULLEY					
	* 16377A * K. P11CUN-KSFA					
	* 16380 * PULLEY ASSY, BELT TENSION					
0511-0704	* 16380 * K. P11CUN-KSFA					
0705-	* 16382 * BRACKET, TENSION PULLEY					
	* 16382 * K. P11CUN-KSFA					
	* 16382 * K. P11CUN-KSFA					
	* 16382 * K. P11CUN-KSFA					

16-00 COOLING SYSTEM

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 900116B* SPACER * 900116B* K. P11CUN-KSFA		# 9001-16598 M (SZ910-16320)	01	-	
0511-	* 900125 * BOLT * 900125 * K. P11CUN-KSFA		# 9001-25236 M (SZ910-24433)	03	-	
0511-	* 900149 * V-BELT SET * 900149 * K. P11CUN-KSFA		# 9001-49343 M (SZ910-49176)	01	-	
0511-	* 900211 * FLANGE * 900211 * K. P11CUN-KSFA		# 9002-11326 M (SZ920-11131)	01	-	
0511-	* 900234 * HOSE, WATER * 900234 * K. P11CUN-KSFA		# 9002-34464 M (SZ920-34215)	01	-	
0511-	* 900234A* HOSE, WATER * 900234A* K. P11CUN-KSFA		# 9002-34185 M (SZ920-34056)	01	-	
0511-	* 9019A * BOLT * 9019A * K. P11CUN-KSFA		# 9019-16246 M (SZ109-16003)	01	-	
0511-	* 9029A * BOLT * 9029A * K. P11CUN-KSFA		# 9029-16111 M (SZ101-16086)	01	-	

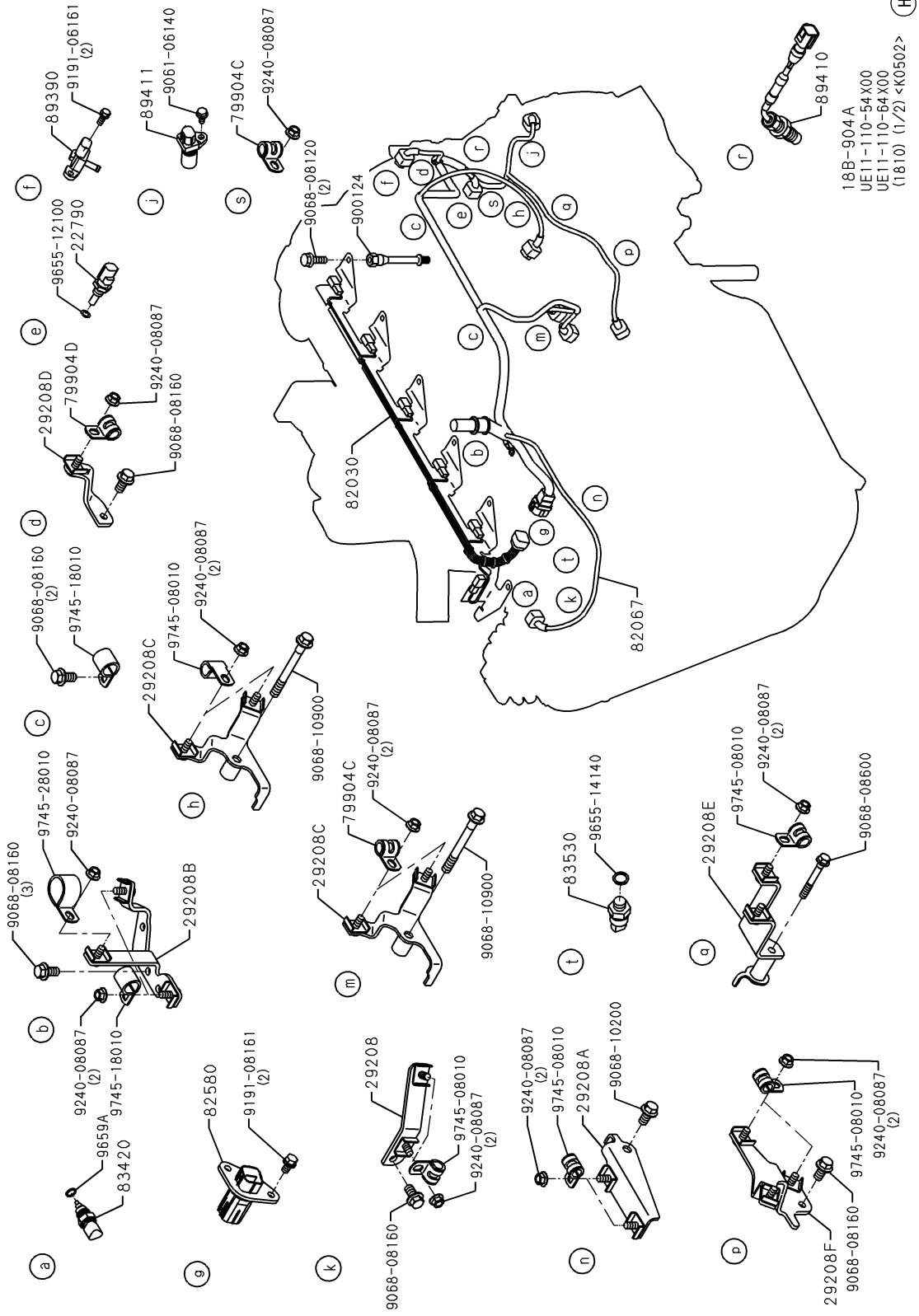
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16-00 COOLING SYSTEM

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	*-----* * 9645B * O-RING *-----* K. P11CUN-KSFA		# 9645-06935 M (SN732-10693)	01	-	
	----- * 9659B * WASHER, SOFT *-----* K. P11CUN-KSFA		# 9659-10111 M (SZ430-10005)	01	-	
	----- * 9828A * SEAL, OIL *-----* K. P11CUN-KSFA		# 9828-58111 M (SZ313-58001)	01	-	
0511-	*-----* * 9851A * O-RING *-----* K. P11CUN-KSFA		# 9851-46106 M (SZ301-46006)	01	-	
	----- * 9851B * O-RING *-----* K. P11CUN-KSFA		# 9851-54102 M (SZ301-54002)	01	-	
	----- * 9851C * O-RING *-----* K. P11CUN-KSFA		# 9851-22105 M (SZ301-22003)	01	-	
0511-	*-----* * 9851D * O-RING *-----* K. P11CUN-KSFA		# 9851-12107 M (SZ301-12005)	01	-	
	----- * 9881A * BEARING, BALL *-----* K. P11CUN-KSFA		# 9881-30108 M (SZ371-30005)	03	-	
	----- * 9881B * BEARING, BALL *-----* K. P11CUN-KSFA		# 9881-25117 M (SZ371-25012)	02	-	

18-10 ELECTRICAL PARTS (ENGINE) **PLIICUN-KSFA ILLUSTR NO.1 OF 2**

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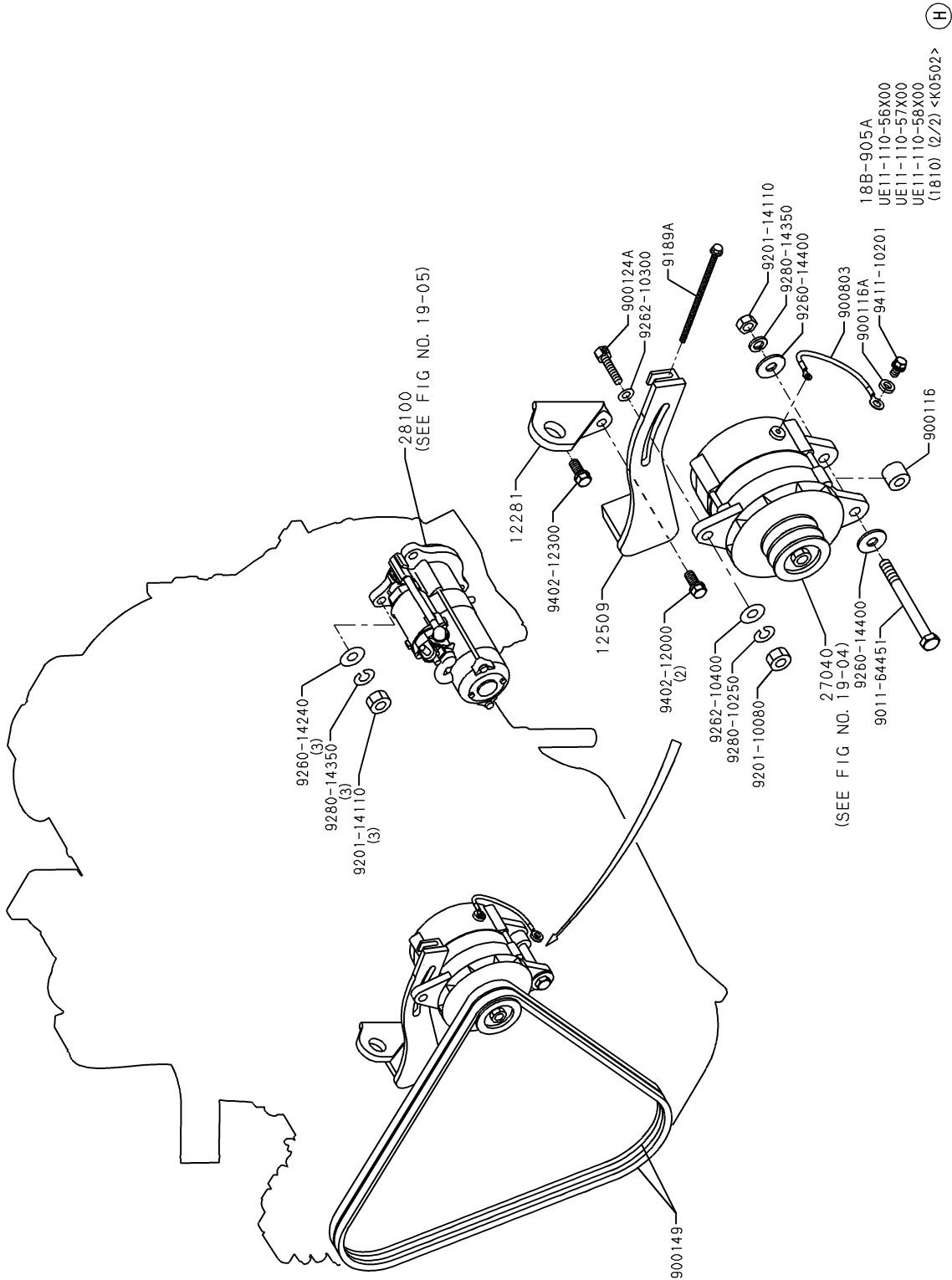


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18-10 ELECTRICAL PARTS (ENGINE)

P11CUN-KSFA ILLUSTR. NO.2 OF 2

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18-10 ELECTRICAL PARTS (ENGINE)

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	P	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	P	PART NO.	Q T Y	REV. REF F-T
0511-	* 12281 * HANGER, ENGINE *-----* K. P11CUN-KSFA				12281-E0080	01	-	0511-	* 29208C * BRACKET SUB ASSY *-----* K. P11CUN-KSFA				# 29208-3570 M (S2920-83570)	02	-
0511-	* 12509 * BRACE SUB ASSY, GEN *-----* K. P11CUN-KSFA				# 12509-2050 M (S1250-92050)	01	-	0511-	* 29208D * BRACKET SUB ASSY *-----* K. P11CUN-KSFA				# 29208-3130 M (S2920-83130)	01	-
0511-	* 22790 * SENSOR ASSY, FUEL TEMPERATURE *-----* K. P11CUN-KSFA				# 22790-1010 M (S2279-01010)	01	-	0511-	* 29208E * BRACKET SUB ASSY *-----* K. P11CUN-KSFA				# 29208-3580 M (S2920-83580)	01	-
0511-	* 27040 * ALTERNATOR ASSY, W/REG *-----* K. P11CUN-KSFA	24V-50A			# 27040-2400 M (S2704-02400)	01	-	0511-	* 29208F * BRACKET SUB ASSY *-----* K. P11CUN-KSFA				# 29208-3590 M (S2920-83590)	01	-
0511-	* 28100 * STARTER ASSY *-----* K. P11CUN-KSFA	24V-6KW			# 28100-2875 M (S2810-02875)	01	-	0511-	* 79904C * CLIP SUB ASSY *-----* K. P11CUN-KSFA				# 79904-1640 M (S7990-41640)	03	-
0511-	* 29208 * BRACKET SUB ASSY *-----* K. P11CUN-KSFA				# 29208-3550 M (S2920-83550)	01	-	0511-	* 79904D * CLIP SUB ASSY *-----* K. P11CUN-KSFA	BOCSH B.S. 1224-4163			# 79904-2820 M (S7990-42820)	01	-
0511-	* 29208A * BRACKET SUB ASSY *-----* K. P11CUN-KSFA				# 29208-3560 M (S2920-83560)	01	-	0511-	* 82030 * HARNESS ASSY *-----* K. P11CUN-KSFA				# 82030-6600 M (S8203-06600)	01	-
0511-	* 29208B * BRACKET SUB ASSY *-----* K. P11CUN-KSFA				# 29208-3370 M (S2920-83370)	01	-	0511-	* 82067 * HARNESS SUB ASSY, ENG *-----* K. P11CUN-KSFA				# 82067-1010 M (S8206-71010)	01	-

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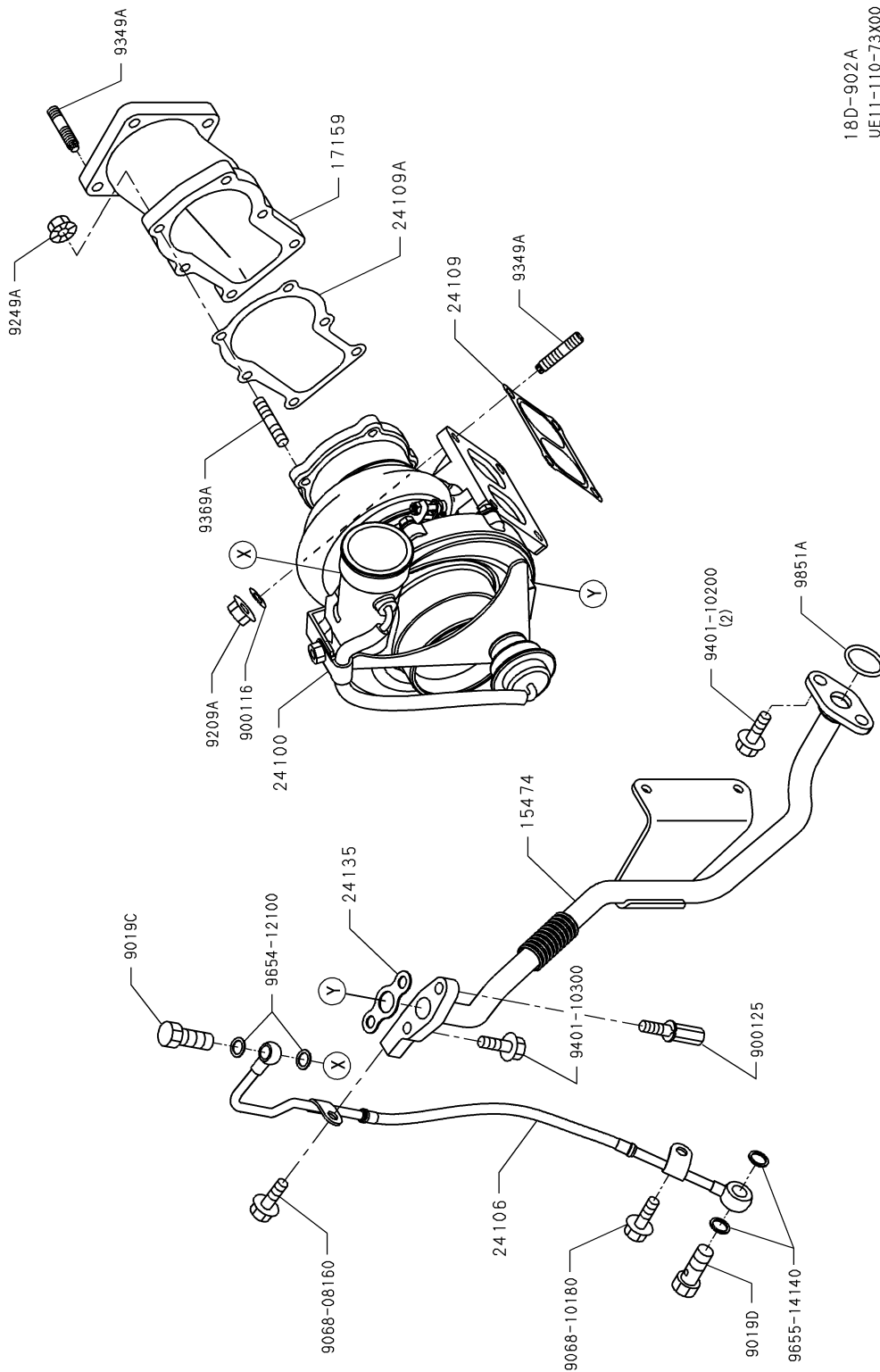
18-10 ELECTRICAL PARTS (ENGINE)

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	P	PART NO.	Q T Y	REV. REF F-T
0511-	* 82580 * CONNECTOR ASSY *-----* K. P11CUN-KSFA		# 82580-9880 M (S8258-09880)			01	-
0511-	* 83420 * GAGE ASSY, WATER TEMP SENDER *-----* K. P11CUN-KSFA		# 83420-1250 M (S8342-01250)			01	-
0511-	* 83530 * SWITCH ASSY, OIL PRESSURE *-----* K. P11CUN-KSFA		83530-E0220			01	-
0511-	* 89390 * SENSOR ASSY, PRESSURE *-----* K. P11CUN-KSFA		# 89390-1080 M (S8939-01080)			01	-
0511-	* 89410 * SENSOR ASSY, SPEED *-----* K. P11CUN-KSFA		# 89410-1290 M (S8941-01290)			01	-
0511-	* 89411 * SENSOR ASSY, SPEED *-----* K. P11CUN-KSFA		# 89411-1280 M (S8941-11280)			01	-
0511-	* 900116 * SPACER *-----* K. P11CUN-KSFA	T=22.5 T=22.5	# 9001-16602 M (SZ910-16327)			01	-
0511-	* 900116A * SPACER *-----* K. P11CUN-KSFA	T=4.5	# 9001-16115 M (SZ910-16009)			01	-
0511-	* 900124 * BOLT *-----* K. P11CUN-KSFA		# 9001-24516 M (SZ910-24274)			06	-
0511-	* 900124A * BOLT *-----* K. P11CUN-KSFA		# 9001-24406 M (SZ910-24193)			01	-
0511-	* 900149 * V-BELT SET *-----* K. P11CUN-KSFA		# 9001-49381 M (SZ910-49209)			01	-
0511-	* 900803 * STRAP, BAND *-----* K. P11CUN-KSFA		# 9008-03105 M (SZ980-03003)			01	-
0511-	* 9189A * BOLT *-----* K. P11CUN-KSFA		# 9189-08158 M (SZ119-08048)			01	-
0511-	* 9659A * WASHER, SOFT *-----* K. P11CUN-KSFA		# 9659-10111 M (SZ430-10005)			01	-

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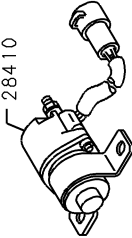
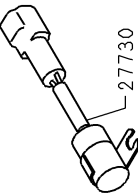
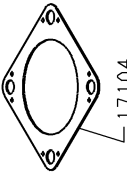
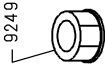
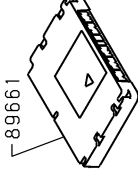
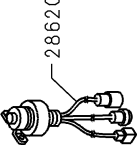
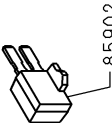
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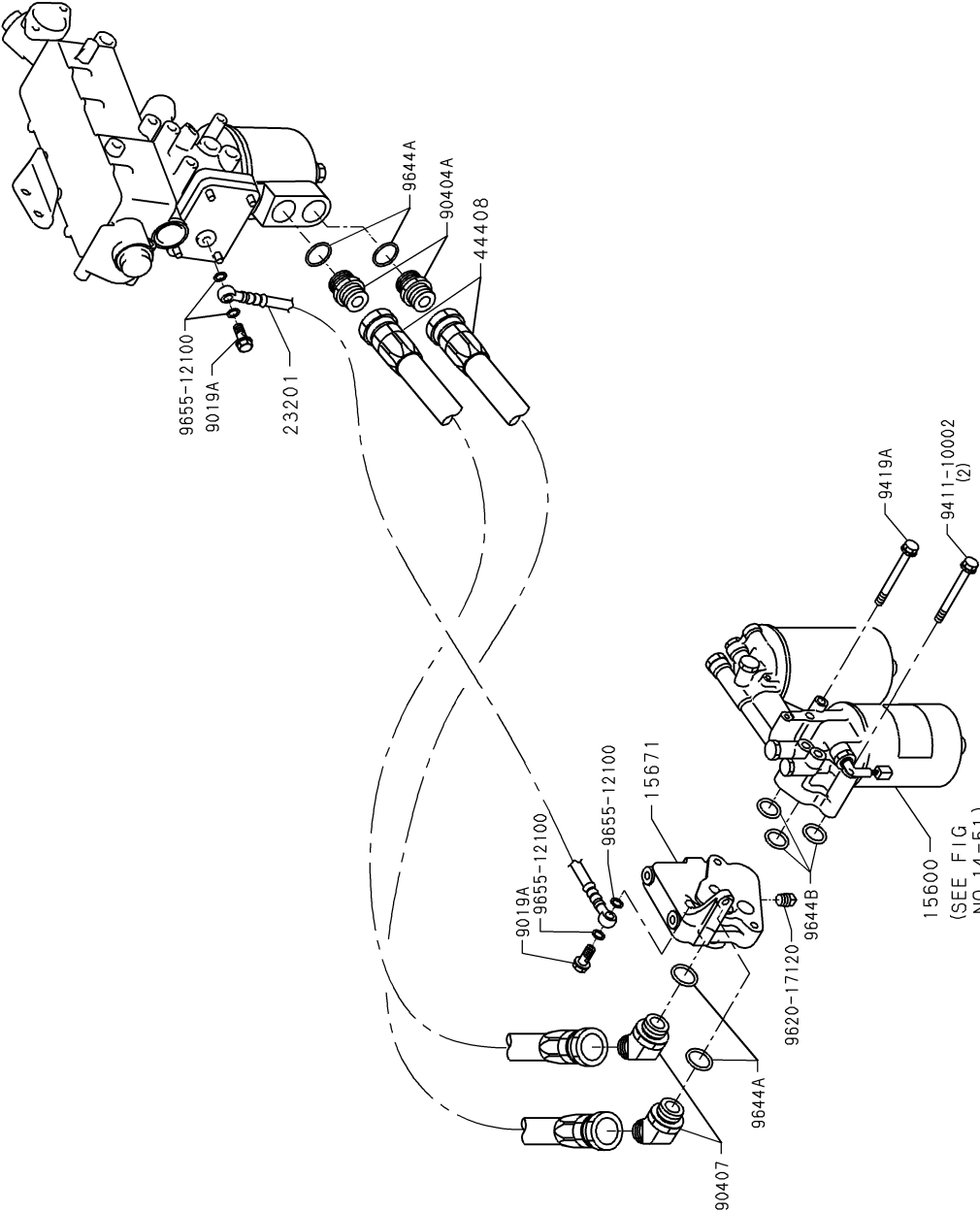
18-30 TURBOCHARGER

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R /	PART NO.	Q T Y	REV. REF F-T
0511-	* 15474 * PIPE, TURBO OIL OUTLET * P11CUN-KSFA			15474-E0010	01	-	0511-	* 900125 * BOLT * P11CUN-KSFA			# 9001-25245 M (SZ910-24437)	01	-
0511-	* 17159 * CONNECTOR, EXH MFLD * P11CUN-KSFA			# 17159-2730 M (S1715-92730)	01	-	0511-	* 9019C * BOLT * P11CUN-KSFA			# 9019-12108 M (SZ401-12001)	01	-
0511-	* 24100 * TURBOCHARGER ASSY * P11CUN-KSFA			# 24100-4680 M (SZ410-04680)	01	-	0511-	* 9019D * BOLT * P11CUN-KSFA			# 9019-14184 M (SZ401-14004)	01	-
0511-	* 24106 * PIPE SUB ASSY, OIL INLET * P11CUN-KSFA			# 24106-1450 M (SZ410-61450)	01	-	0511-	* 9209A * NUT * P11CUN-KSFA			# 9209-10202 M (SZ178-10007)	04	-
0511-	* 24109 * GASKET, SUB ASSY * P11CUN-KSFA			# 24109-1260 M (SZ410-91260)	01	-	0511-	* 9249A * NUT, FLANGE * P11CUN-KSFA			# 9249-08102 M (SZ177-08012)	06	-
0511-	* 24109A * GASKET, SUB ASSY * P11CUN-KSFA			# 24109-1880 M (SZ410-91880)	01	-	0511-	* 9349A * STUD * P11CUN-KSFA			# 9349-10138 M (SZ126-10004)	08	-
0511-	* 24135 * GASKET, OIL, OUTLET * P11CUN-KSFA			# 24135-1071 M (SZ413-51071)	01	-	0511-	* 9369A * STUD * P11CUN-KSFA			# 9369-08102 M (SZ116-08027)	06	-
0511-	* 900116 * SPACER * P11CUN-KSFA	T=3.0		# 9001-16450 M (SZ910-16223)	04	-	0511-	* 9851A * O-RING * P11CUN-KSFA			# 9851-31103 M (SZ301-31003)	01	-

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(1840) <K0503>

(H)



18E-905A
UE11-110-90X00
(1840) <K0602>
P11C 1222

(H)

18-40 ENGINE ACCESSORY PARTS

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	*-----* * 15600 * FILTER ASSY, OIL *-----* K. P11CUN-KSFA			15600-E0070	01	-
	----- * 15671 * BRACKET, OIL FILTER *-----* K. P11CUN-KSFA			15671-E0020	01	-
	----- * 17104 * GASKET, SUB ASSY, EXH MFLD *-----* K. P11CUN-KSFA		# 17104-1580 M (S1710-41580)		01	-
	----- * 23201 * HOSE SUB-ASSY *-----* K. P11CUN-KSFA		23201-E0060		01	-
0511-	*-----* * 27730 * RELAY ASSY, CUTOUT *-----* K. P11CUN-KSFA		# 27730-1050 M (S2773-01050)		01	-
0511-	*-----* * 28410 * RELAY ASSY, START BLOCK *-----* K. P11CUN-KSFA		# 28410-1292 M (S2841-01292)		01	-
0511-	*-----* * 28620 * RELAY ASSY, INTAKE AIR HEATER *-----* K. P11CUN-KSFA		# 28620-1180 M (S2862-01180)		01	-
0511-	*-----* * 44408 * HOSE SUB ASSY, OIL *-----* K. P11CUN-KSFA		# 44408-2160 M (S4440-82160)		02	-
0511-	*-----* * 85902 * DIODE SUB ASSY *-----* K. P11CUN-KSFA		# 85902-1200 M (S8590-21200)		01	-

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	*-----* * 85920 * RELAY ASSY *-----* K. P11CUN-KSFA	ECU MAIN	# 85920-2630 M (S8592-02630)		01	-
	----- * 89567 * BRACKET, COMPUTER *-----* K. P11CUN-KSFA		# 89567-1030 M (S8956-71030)		01	-
	----- * 89567A * BRACKET, COMPUTER *-----* K. P11CUN-KSFA		# 89567-1040 M (S8956-71040)		01	-
	----- * 89661 * COMPUTER, ENGINE CONTROL *-----* K. P11CUN-KSFA		89661-E0010		01	-
0511-	*-----* * 9019A * BOLT *-----* K. P11CUN-KSFA		# 9019-12108 M (SZ401-12001)		02	-
0511-	*-----* * 90404A * CONNECTOR, STRAIGHT *-----* K. P11CUN-KSFA		SZ404-33008		02	-
0511-	*-----* * 90407 * ELBOW *-----* K. P11CUN-KSFA		SZ407-25006		02	-
0511-	*-----* * 9249A * NUT, FLANGE *-----* K. P11CUN-KSFA		# 9249-10102 M (SZ178-10012)		04	-
0511-	*-----* * 9419A * BOLT *-----* K. P11CUN-KSFA		# 9419-10110 M (SZ119-10134)		01	-

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18-40 ENGINE ACCESSORY PARTS

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T	PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	*-----* * 9644A * O-RING *-----* K. P11CUN-KSFA												
	----- * 9644B * O-RING *-----* K. P11CUN-KSFA			# 9644-02835 M (SN732-00283)	04	-							
0511-				# 9644-02535 M (SN732-00253)	03	-							

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(60/60)



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19-04 ALTERNATOR

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 27017 * COIL SUB ASSY, GEN FIELD * 27017 * K. P11CUN-KSFA		# M	27017-1250 (S2701-71250)	01	-
0511-	* 27040 * ALTERNATOR ASSY, W/REG * 27040 * K. P11CUN-KSFA	24V-50A 24V-50A	# M	27040-2400 (S2704-02400)	01	-
0511-	* 27310 * FRAME ASSY, ALTERNATOR DRIVE SIDE * 27310 * K. P11CUN-KSFA		# M	27310-2050 (S2731-02050)	01	-
0511-	* 27311 * FRAME, DRIVE END * 27311 * K. P11CUN-KSFA		# M	27311-1710 (S2731-11710)	01	-
0511-	* 27312 * PLATE, RETAINER * 27312 * K. P11CUN-KSFA		# M	27312-1590 (S2731-21590)	01	-
0511-	* 27317 * BOLT, THROUGH * 27317 * K. P11CUN-KSFA		# M	27317-1610 (S2731-71610)	03	-
0511-	* 27317A * BOLT, THROUGH * 27317A * K. P11CUN-KSFA		# M	27317-1650 (S2731-71650)	04	-
0511-	* 27317B * BOLT, THROUGH * 27317B * K. P11CUN-KSFA		# M	27317-1660 (S2731-71660)	03	-

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 27317C * BOLT, THROUGH * 27317C * K. P11CUN-KSFA		# M	27317-1850 (S2731-71850)	01	-
0511-	* 27330 * ROTOR ASSY, ALTERNATOR * 27330 * K. P11CUN-KSFA		# M	27330-2030 (S2733-02030)	01	-
0511-	* 27350 * HOUSING ASSY, ALTERNATOR END FRAME * 27350 * K. P11CUN-KSFA		# M	27350-3060 (S2735-03060)	01	-
0511-	* 27353 * HOLDER * 27353 * K. P11CUN-KSFA		# M	27353-1790 (S2735-31790)	01	-
0511-	* 27356 * HOLDER, W/RECTIFIER * 27356 * K. P11CUN-KSFA		# M	27356-1490 (S2735-61490)	01	-
0511-	* 27358 * CONNECTOR, W/LEAD WIRE * 27358 * K. P11CUN-KSFA		# M	27358-1770 (S2735-81770)	01	-
0511-	* 27359 * FRAME, RECTIFIER END * 27359 * K. P11CUN-KSFA		# M	27359-2480 (S2735-92480)	01	-
0511-	* 27364 * BOLT, TERMINAL * 27364 * K. P11CUN-KSFA		# M	27364-1380 (S2736-41380)	01	-

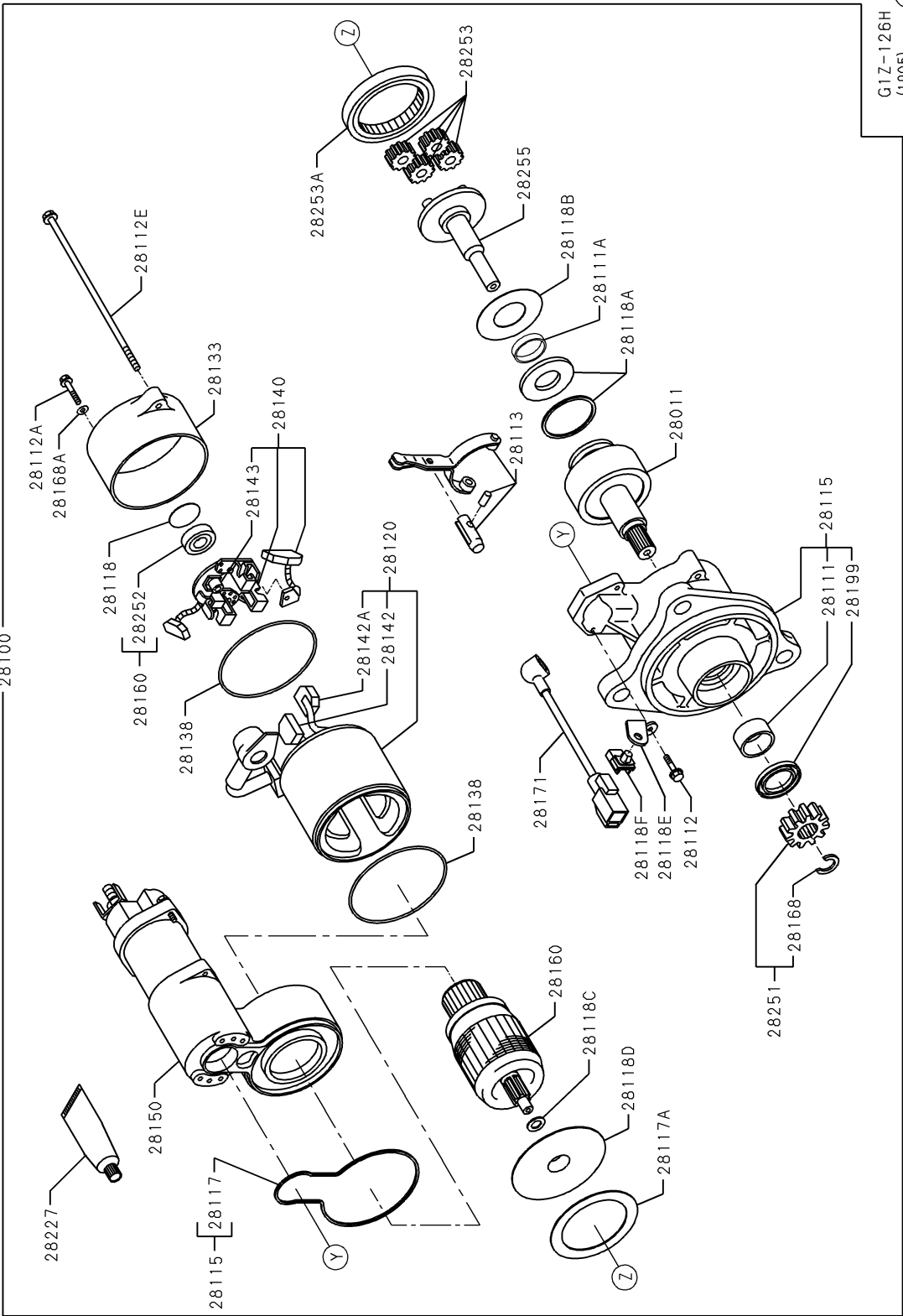
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19-04 ALTERNATOR

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 27378 * INSULATOR, TERMINAL * 27378 * INSULATOR, TERMINAL K. P11CUN-KSFA	* 27378 * INSULATOR, HOLDER BRUSH * 27378 * INSULATOR, HOLDER BRUSH K. P11CUN-KSFA	# 27378-1760 M (S2737-81760)	01	-	
	* 27383 * INSULATOR, HOLDER BRUSH * 27383 * INSULATOR, HOLDER BRUSH K. P11CUN-KSFA		# 27383-1520 M (S2738-31520)	04	-	
	* 27383A * INSULATOR, HOLDER BRUSH * 27383A * INSULATOR, HOLDER BRUSH K. P11CUN-KSFA		# 27383-1510 M (S2738-31510)	01	-	
	* 27389 * INSULATOR, TERMINAL * 27389 * INSULATOR, TERMINAL K. P11CUN-KSFA		# 27389-1340 M (S2738-91340)	03	-	
0511-	* 27391 * NUT * 27391 * NUT K. P11CUN-KSFA	* 27391 * NUT * 27391 * NUT K. P11CUN-KSFA	# 27391-1080 M (S2739-11080)	01	-	
	* 27391A * NUT * 27391A * NUT K. P11CUN-KSFA		# 27391-1090 M (S2739-11090)	01	-	
0511-	* 27392 * COVER * 27392 * COVER K. P11CUN-KSFA	* 27392 * COVER * 27392 * COVER K. P11CUN-KSFA	# 27392-1500 M (S2739-21500)	01	-	
0511-	* 27410 * STATOR ASSY * 27410 * STATOR ASSY K. P11CUN-KSFA	* 27410 * STATOR ASSY * 27410 * STATOR ASSY K. P11CUN-KSFA	# 27410-2090 M (S2741-02090)	01	-	

19-05 STARTING MOTOR
P11CUN-KSFA

475110



G1Z-126H
(1905) **H**

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19-05 STARTING MOTOR

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 28011 * CLUTCH SUB ASSY, START * 28011 * K. P11CUN-KSFA		# 28011-1630 M (S2801-11630)	01	-	
0511-	* 28100 * STARTER ASSY * 28100 * K. P11CUN-KSFA	24V-6KW 24V-6KW	# 28100-2875 M (S2810-02875)	01	-	
0511-	* 28111 * BOSH, DRIVE HOUSING * 28111 * K. P11CUN-KSFA		# 28111-1490 M (S2811-11490)	01	-	
0511-	* 28111A * BOSH, DRIVE HOUSING * 28111A * K. P11CUN-KSFA		# 28111-1480 M (S2811-11480)	01	-	
0511-	* 28112 * BOLT, HOUSING SET * 28112 * K. P11CUN-KSFA		# 28112-2620 M (S2811-22620)	02	-	
0511-	* 28112A * BOLT, HOUSING SET * 28112A * K. P11CUN-KSFA		# 28112-2000 M (S2811-22000)	02	-	
0511-	* 28112E * BOLT, HOUSING SET * 28112E * K. P11CUN-KSFA		# 28112-2630 M (S2811-22630)	02	-	
0511-	* 28113 * LEVER, PINION DRIVE * 28113 * K. P11CUN-KSFA		# 28113-1380 M (S2811-31380)	01	-	

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19-05 STARTING MOTOR

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	PART NO.	Q T Y	REV. REF F-T
0511-	* 28118E * PLATE * 28118F * PLATE K. P11CUN-KSFA		# 28118-1560 M (S2811-81560)		01	-
	* 28118E * PLATE * 28118F * PLATE K. P11CUN-KSFA		# 28118-1570 M (S2811-81570)		01	-
	* 28120 * YOKE ASSY, START * 28120 * YOKE ASSY, START K. P11CUN-KSFA		# 28120-1910 M (S2812-01910)		01	-
	* 28133 * FRAME, COMMUTATOR END * 28133 * FRAME, COMMUTATOR END K. P11CUN-KSFA		# 28133-2410 M (S2813-32410)		01	-
0511-	* 28138 * PACKING * 28138 * PACKING K. P11CUN-KSFA		# 28138-1370 M (S2813-81370)		02	-
	* 28140 * HOLDER ASSY, START * 28140 * HOLDER ASSY, START K. P11CUN-KSFA	BRUSH	# 28140-1700 M (S2814-01700)		01	-
0511-	* 28142 * BRUSH, START * 28142 * BRUSH, START K. P11CUN-KSFA		# 28142-1790 M (S2814-21790)		01	-
	* 28142A * BRUSH, START * 28142A * BRUSH, START K. P11CUN-KSFA		# 28142-1800 M (S2814-21800)		01	-
0511-	* 28143 * SPRING, START * 28143 * SPRING, START K. P11CUN-KSFA		# 28143-1200 M (S2814-31200)		04	-
	* 28150 * SWITCH ASSY, START * 28150 * SWITCH ASSY, START K. P11CUN-KSFA	MAGNET	# 28150-2581 M (S2815-02581)		01	-
0511-	* 28160 * ARMATURE ASSY, START * 28160 * ARMATURE ASSY, START K. P11CUN-KSFA		# 28160-1770 M (S2816-01770)		01	-
	* 28168 * RING RETAINER * 28168 * RING RETAINER K. P11CUN-KSFA		# 28168-1430 M (S2816-81430)		01	-
0511-	* 28168A * RING RETAINER * 28168A * RING RETAINER K. P11CUN-KSFA		# 28168-1370 M (S2816-81370)		02	-
	* 28171 * CONNECTOR, W/LEAD WIRE * 28171 * CONNECTOR, W/LEAD WIRE K. P11CUN-KSFA		# 28171-1190 M (S2817-11190)		01	-
0511-	* 28199 * PROTECTOR, DUST * 28199 * PROTECTOR, DUST K. P11CUN-KSFA	START	# 28199-1110 M (S2819-91110)		01	-
	* 28227 * GREASE, STARTER REPAIR * 28227 * GREASE, STARTER REPAIR K. P11CUN-KSFA	SERV	# 28227-1010 M (S2822-71010)		X	-
0511-	K. P11CUN-KSFA	MULT TEMP AC-N	# 28227-1020 M (S2822-71020)		X	-

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19-05 STARTING MOTOR

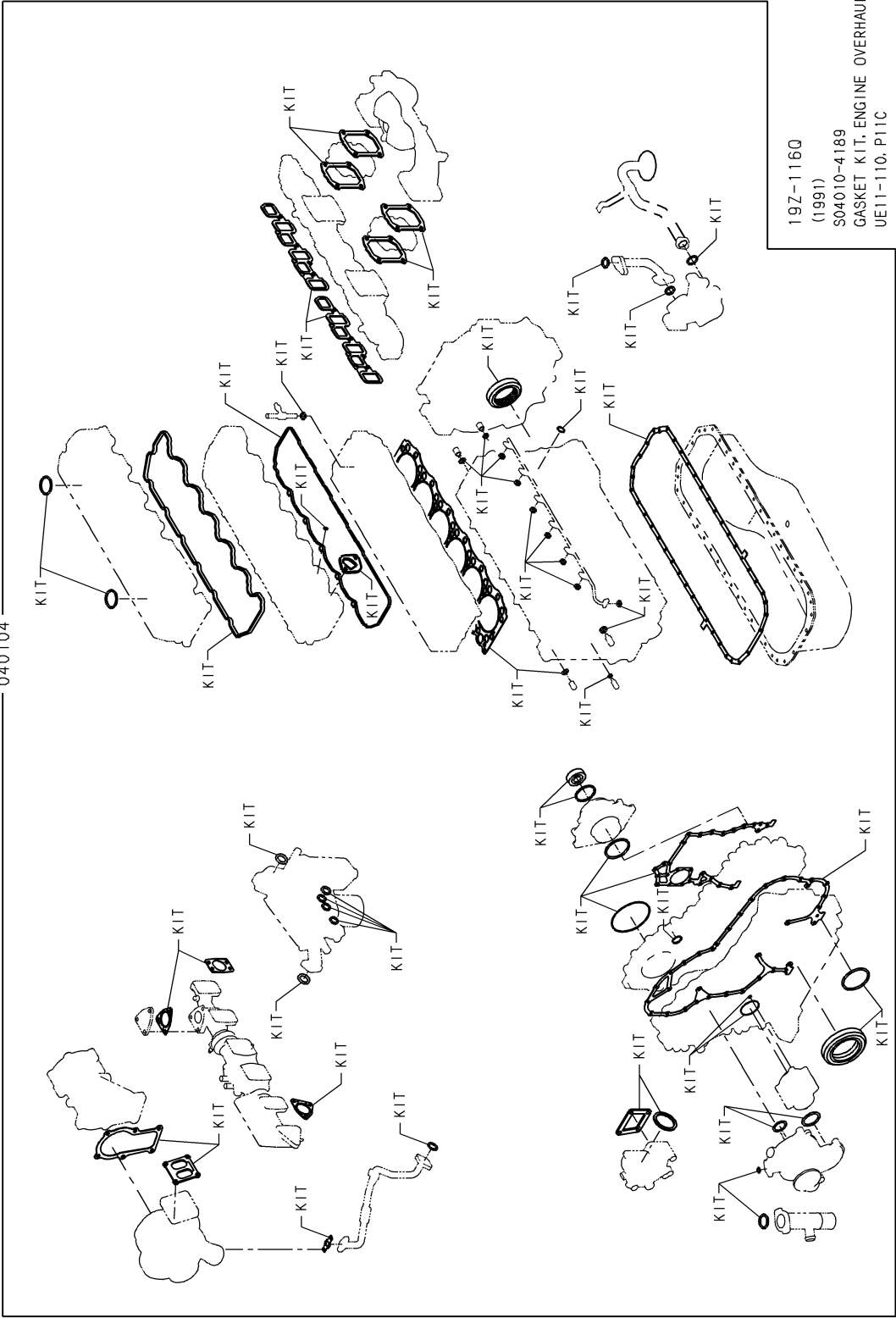
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0511-	*-----* * 28240 * COVER ASSY, CONTACTOR W/TERMINAL *-----* K. P11CUN-KSFA			# 28240-1700 M (S2824-01700)	01	-							
0511-	*-----* * 28251 * PINION, START *-----* K. P11CUN-KSFA			# 28251-1080 M (S2825-11080)	01	-							
0511-	*-----* * 28252 * BEARING *-----* K. P11CUN-KSFA			# 28252-1880 M (S2825-21880)	01	-							
0511-	*-----* * 28253 * GEAR *-----* K. P11CUN-KSFA			# 28253-1070 M (S2825-31070)	04	-							
0511-	*-----* * 28253A * GEAR *-----* K. P11CUN-KSFA			# 28253-1080 M (S2825-31080)	01	-							
0511-	*-----* * 28255 * SHAFT ASSY, START *-----* K. P11CUN-KSFA			# 28255-1050 M (S2825-51050)	01	-							

19-91 GASKET KIT (ENGINE OVERHAUL)

P11CUN-KSFA

475110

040104



19Z-1160
(1991)
S04010-4189
GASKET KIT, ENGINE OVERHAUL
UE11-110, P11C

(H)

PROD. DATE	DESCRIPTION & MODELS	REMARKS	R / P	Q T Y	REV. REF F-T
0511-	*-----* * 040104 * GASKET KIT, ENGINE *-----* K. P11CUN-KSFA	OVERHAUL	# S0401-04189 M (S0401-04422)	01	-

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11122-1190	3	11122	11467-3150	8	11467	13531-1162	16	13531	15474-E0010	59	15474	15726-1020	35	15726
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