

# MITSUBISHI TRACTOR

The graphic features the Mahindra logo in red, followed by 'GX 3600S' in a large, bold, grey font with a metallic gradient. Below this, the words 'SERVICE MANUAL' are written in a bold, black, sans-serif font. A red line forms a rectangular frame around the 'GX 3600S' and 'SERVICE MANUAL' text, with small red dots at the top corners where the line meets the model name.

**Mahindra**  
**GX 3600S**  
**SERVICE MANUAL**



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**SECTION -1**

**SAFETY, GENERAL INFORMATION  
AND STANDARD TORQUE SPECIFICATIONS**



## SAFETY



This symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED.

The message that follows the symbol contains important information about safety carefully read the message. Make sure you fully understand the causes of possible injury or death.

To prevent injury always follow the Warning, Caution and Danger notes in this section and throughout the manual.



**WARNING:** Read the operators manual to familiarize you with the correct control functions.



**WARNING:** Operate the machine and equipment controls from the seat position only. Any other method could result in serious injury.



**WARNING:** This is a one man machine, no riders allowed.



**WARNING:** Before starting the engine, study the operator's manual safety messages.

Read all safety signs on the machine clear the area of other persons.

Learn and practice safe use of controls before operating.

It is your responsibility to understand and follow manufacturer's instructions on machine operation, service, and to observe pertinent laws and regulations.



**WARNING:** If you wear clothing that is too loose or do not use the correct safety equipment for your job, you can be injured. Always wear clothing that will not catch on objects. Extra safety equipment that can be required includes hard hats, safety shoes, ear protection, eye or face protection, heavy gloves and reflector clothing.



**WARNING:** When working in the area of the fan belt with the engine running avoid loose clothing if possible and use extreme caution.



**WARNING:** When doing checks and testing on the equipment hydraulics, follow the procedures as they are written. DO NOT change the procedure.



**WARNING:** When putting the hydraulic cylinders on this machine through the necessary cycles to check operation or to remove air from a circuit. Make sure all people are out of the way.

**NOTE:** Operator's Manuals may be obtained from your dealer.



**WARNING:** Always use heat protective gloves when handling heated parts.



**CAUTION:** Lower all attachments to the ground or use stands to safely support the attachments before you do any maintenance or service.



**CAUTION:** Pin sized and smaller streams of hydraulic oil under pressure can penetrate the skin and result in serious infection. If hydraulic oil under pressure can penetrate the skin and result in serious infection. If hydraulic oil under pressure dose penetrates seek medical treatment immediately. Maintain all hoses and tubes in good condition. Make sure all connections are tight. Make a replacement of any tube or hose that is damaged or thought to be damaged. **DO NOT** use your hand to check for leaks. use a piece of cardboard or wood.



**CAUTION:** When removing hardened pins, such as a pivot pin, or a hardened shaft, use a soft head (brass or bronze) hammer or use a driver made from brass or bronze and use a steel hammer.



**CAUTION:** When using the hammer to remove and install pivot pins or separate parts using compressed air or using the grinder, wear eye protection that completely encloses the eyes (approved goggles or other approved eye protection).



**CAUTION:** Use suitable floor (service) larks or chain hoists to raise wheels off the floor. Always block machine in place with suitable safety stands.



**CAUTION:** When servicing or repairing the machine. Keep the shop floor and operator's compartment and steps free of oil, water, grease, tools etc. Use the oil absorbing material and or shop cloths as required. Use safe practices at all times.



**CAUTION:** Some components of this machine are very heavy. Use suitable lifting equipment or additional help as instructed in this Service Manual.



**DANGER:** Engine exhaust fumes can cause death. If it is necessary to start the engine in a closed place remove the exhaust fumes from the area with an exhaust tube extension. Open the doors and get outside air into the area.



**DANGER:** When the battery electrolyte is frozen, the battery can explode if (1), you try to charge the battery or (2), you try to jump start and run the engine. To prevent battery electrolyte from freezing, full charge. If you do not follow these instructions you or others in the area can be injured.



**DANGER:** Batteries contain acid and explosive gas. Explosions can result from sparks, flames or wrong cable connections. To connect the jumper cables correctly to the battery of this machine refer to the Operators Manual. Failure to follow these instructions can cause serious injury or death.

## Usage of this Manual

This manual describes procedures and inspection items for maintenance and adjustment of GX3600

### Structure

This manual consists of sections.

### Section

A section is categorized by components or systems. The number following the group number indicates the categorized system.

### Maintenance and Repair

Block-diagrams and illustrations of parts are used for easier understanding.

Required service value is indicated along the procedure to avoid troubles of referring to other sections.

Numbers are marked in the illustration for the parts with specific removal procedure to correspond to the procedure of the same number.

Only the repair procedures corresponding to one of the below conditions are described.

- In case of difficulty to identify the component or to start the work.
- In case of requiring specialized tools for removal and installation.
- In case of requiring special caution for safety or potential product damage during removal and installation.
- In case of difficulty of understanding the removal/installation method.
- In case of requiring a test or calibration after installation.

The reason of no indication of repair procedures is due to one of the below conditions.

- In case of not corresponding to the above conditions. Complicated work or work requiring special caution for safety or potential product damage or specialized tools.
- In case of parts not repairable due to requiring special device for adjustment after repair.
- In case a replacement to new parts is recommended compared to parts overhaul for economical reason.
- In case of existing other maintenance reference issued by Mitsubishi Agricultural Machinery Co.Ltd. due to its technical reasons.

## **Cautions for Safety and Sanitation**

### **Introduction**

The majority of maintenance and repair work of the vehicle contains potential danger to health. In this section, cautionary items required for accident prevention for works with potential danger and related material and tools are described.

However, all the corresponding works and materials cannot be stated herein; therefore, please take cautions for safety and sanitation at all times at work.

Please make sure to refer to the information for safety of material issued by the manufacturer or supplier before using any products.

### **Acid and Alkali**

Acid and Alkali are used for the battery and cleaning agent.

It may cause an irritation, inflammation, or even burn on your skin, eyes, nose, and throat. Regular protective clothes may not be sufficient.

Avoid adherence to the skin, eyes and clothes and use non-penetrative apron, gloves, and eye protectors. Do not inhale the vapor.

Provide eye-washing kit, tap water, and soaps in case for adherence to the skin, etc.

Warning label is posted.

### **Adhesive and Sealing Agent**

Smoking is prohibited around these substances due to their high flammability, ignitability, and explosiveness.

Store it in safe place far from fire and tidy the work area at use.

Ex.) Cover the workbench with disposable paper or cover.

Use the applicator as much as possible.

Indicate the contents on the container.

### **Flux Based Adhesive and Sealing Agent**

Follow the instruction by the manufacturer.

### **Water Based Adhesive and Sealing Agent**

Water based adhesive and sealing agent may contain a small amount of volatile toxic substance or harmful chemical substance. Take cautions not to let it contact the skin or eyes and ventilate sufficiently.

### **Fiber Based Adhesive and Sealing Agent**

Ex.) Epoxide, formaldehyde fiber based adhesive and sealing agent

It may generate harmful and toxic volatile chemical substance. Make sure to mix the agent only in a well-ventilated place.

If unsettled fiber or hardening agent adheres to your skin, it may cause an inflammation, or toxic substance may enter the body through the skin. Also, it may damage your eyes in case of entry.

### **Acrylic Cyanide and Acrylic Adhesive**

The majority of these adhesives are harmful, causing inflammation on skin, eyes, and respiratory organs. Take cautions not to let it contact the skin or eyes and follow the instructions by the manufacturer.

### **Two-Agent Mixture Adhesive**

People with asthma or allergy in respiratory organs shall not use these agents or work around these agents. Otherwise, it may generate allergic symptoms.

Contact with these agents for long period of time will cause an inflammation in eyes or respiratory organs. Drowsiness or losing conscious may be caused by the agents with high density. Inhalation of gasified agent for a long period of time may cause a adverse effect on human body. Also, its degreasing effect may cause an inflammation on the skin if exposed for a long period of time.

When working on spraying these kinds of agents, it is recommended to work in a well-ventilated and divided room with ventilation system with caution not to inhale the gasified or sprayed agents.

Use gloves, eye protectors, and mask at working with these agents.

### **Antifreeze Solution**

Smoking is prohibited around these substances due to their high flammability, ignitability, and explosiveness.

It is used for cooling system, pneumatic of brake, and washer solution of the vehicle.

Antifreeze solution for cooling may generate vapor if heated. Do not inhale.

Antifreeze solution is harmful to human body only with small amount absorbed through the skin and may lead to a intoxication. Also, it is very dangerous if swallowed by accident. Please consult with a doctor immediately.

Do not use the antifreeze solution as industrial water or cooling water for facilities connected to the cooking or drinking water facilities.

### **Battery Solution**

Gas which was generated during charging may explode. Do not approximate any fire to the battery on charge or immediate after charging.

Ventilate sufficiently during charging.

### **Chemical Substances**

Take cautions at all times for handling and storing the chemical substances. (Solvent, sealing agent, adhesive, coating, fiber form, battery solution, antifreeze solution, brake fluid, fuel, oil, and grease, etc.) Some of these chemical substances are toxic, harmful, corrosive, irritating, flammable or may generate toxic gas or powder.

Some of the effects of being in contact with chemical substances for more than required amount of time may appear immediately or after a certain period of time. Also, the symptoms may be temporal, chronic, superficial, accumulative in the body or mortal.

**Cautionary Items for Chemical Substances**

- Read and follow the instructions in the label or instruction manual attached to the container.
- Remove the chemical substances immediately if attached to the skin or clothes. Clothes notably polluted with chemical substances shall be changed and cleaned.
- Review the working method and protective clothes and prevent the chemical substances from attaching to the skin or eyes and absorption of vapor, smoke, or powder, etc. Make sure to follow the cautionary items listed on the container to prevent the fire or explosion.
- Wash the hands before taking a break, eating and drinking, smoking, or using the restrooms when handling the chemical substances.
- Keep the working area tidy and do not spill the chemical substances on the floor.
- Follow the national or local regulations for storage of chemical substances.
- Store the chemical substances in the place unreachable by children.

**Prohibited Items for Chemical Substances**

- Do not mix without instruction by the manufacturer. Depending on mixing method, it may change to harmful and toxic substances, generate harmful and toxic gas, or contain explosiveness.
- Do not spray the chemical substances, especially solvent-based chemical substances, in a closed area.
- Do not heat or approximate the fire to the chemical substances without instruction by the manufacturer. Some chemical substances are high in flammability or may generate harmful and toxic gas.
- Do not leave the container uncovered. The amount of accumulated evaporated gas may reach to the point to be toxic, harmful, or explosive. The gas heavier than air in specific gravity will be accumulated in the pit, etc.
- Do not put the chemical substance into the unlabeled container.
- Do not clean the hand or clothes with chemical substances. Especially solvent and fuel will degrease the skin and cause an inflammation. Also, it may cause damage to human body by being absorbed through the skin or lead to intoxication.
- Do not sniff the chemical substances deliberately. Inhalation of high dense gas even for a short time is harmful to a human body.

**Corrosion Protection Agent**

Smoking is prohibited around these substances due to their high flammability, ignitability, and explosiveness.

Follow the instruction of the each manufacturer for agents containing solvent, fiber, or oil products. Take cautions not to let it get to the skin or eyes and spray it in a place with ventilation system.

**Dust**

Some of the dusts are irritating or harmful. Do not inhale the powdered chemical substances or dust generated by grinding. If the ventilation at work area is insufficient, use a dust-proof mask.

The dust generated from flammable substances may cause an explosion. Take caution not to accumulate them and not to approximate anything causing sparks.



## Electrical Shock

Electrical shock occurs when faulty electric device is used or when misused.

Make sure to maintain the electric devices in good condition and perform the operation test frequently. Indicate the faulty device and remove it from the working area.

Make sure there are no wear disconnection, distortion, disconnection or cracks in the electrical wire, cable, plug and socket.

Do not let the electric devices in contact with water.

Make sure the electric devices are protected with appropriate volume of fuse.

Operate the electric devices properly and do not use any devices with failure. If the above items are not followed, it may cause a fatal accident.

Take caution not to damage the cable of movable electric devices by getting trapped by lift, etc.

Operators for electric devices must be trained for a basis first-aid.

In case of electrical shock accident;

- Turn off the power and approach to the victim.
- If unable to turn off the power, pull the victim away from the power source by using a dry non-conductive tool.
- Perform an artificial respiration if familiar.
- Call the medical staff.

## Exhaust Gas

The exhaust gas contains suffocative harmful and toxic chemical substances and particles such as carbon monoxide, nitric oxide, aldehyde, lead and hydrogen oxide. When actuating the engine, avoid working in the closed area and work in a place with sufficient exhaustion and ventilation system.

Diesel Engine

When the gas reaches to the dangerous density, it will warn by soot, smell, and irritation.

## Fire

Most of the parts and materials used for vehicle repair are high in flammability and may generate harmful and toxic gas by burning.

Make sure to follow the cautionary items on fire prevention for handling and storage of flammable part, materials, and solvents. Take special caution at working around electrical equipment.

Make sure the area is clear from danger of fire before using the electric devices.

Provide a fire extinguisher at using the electric devices.

## First Aid

It is requested to fulfill the requirements regulated by law as well as train the staff with first aid treatment.

Wash the eye over 10 minutes with clean running water if any chemical substances enter.

Wash with water and soap if attached to the skin.

Immediately take a deep breath with fresh air outside when inhaled gas or vapor. If the condition does not improve, consult the doctor.

If swallowed the chemical substances by accident, show the chemical container or label to the doctor and consult.

Unless not indicated in the container, do not vomit.

## **Fuel**

Avoid physical contact and wash with soap and water if attached to the skin.

## **Diesel Oil**

It is flammable.

Contact of large amount or long period with the oil of high boiling point will cause serious skin damage such as skin cancer.

## **Kerosene**

It is used as heating fuel, solvent, and washing agent.

It is flammable. Smoking is prohibited around kerosene.

If swallowed by accident, it may cause an inflammation in the mouth or throat. If the swallowed kerosene enters the lung, it is very dangerous.

Kerosene may dry the skin and cause an inflammation. If entered eye, it may cause a slight irritation.

The volatility of kerosene is low, and does not generate toxic vapor in normal condition. However, Avoid the contact with vapor generated by heating the kerosene. (Vapor will be generated in the process of degreasing.) Take cautions not to let contact the skin or eyes and ventilate sufficiently while working.

## **General Tools and Devices**

All the tools and devices shall be maintained in good condition and provided with safety device in required positions.

Do not use the tools and devices for other than their original purpose. Do not load on the jack, stand, and lift, etc. more than specified. The damage caused by overload may not appear immediately but cause a fatal accident at the next time of use.

Do not use any tools and devices with failure. Especially tools which rotate at high speed may be dismantled suddenly during operation and cause an accident resulting in injury or death.

Use the eye protectors when using the grinder, chisel, or sanding machine, etc.

Use the dust-proof mask when using the grinder, blasting, asbestos, or atomizer.

Ventilate sufficiently while working and take cautions not to fill with the dust, atomization, and gas.

## **High Pressure Air, Lubricant, and Oil Testing Equipment**

Maintain the high-pressure equipment in good condition and perform a periodical maintenance and inspection. Especially pay attention to the joint and coupling.

Do not point the tip of high-voltage nozzle (diesel injector, etc.) at person. Sprayed fuel can penetrate into the subcutaneous tissues, resulting in serious fatal accident.

## **Lubricating Oil and Grease**

The most of the lubricating oil and grease are irritating to the skin and eyes. Avoid a long term or repetitive contact with mineral oil.

Used engine oil

By long term or repetitive contact with mineral oil, the sebum will be taken, and the skin will be dried, resulting in inflammation. Also, the used engine oil contains pollutant which can cause a skin cancer. Provide a skin-protective measure and washing facility for handling.

Do not use the used engine oil as lubricating oil or apply to the area where may have a contact with the skin.

### **Cautionary Items for Health**

- Avoid a long term or repetitive contact with oil, especially used engine oil.
- Use protective clothes. Use waterproof gloves if necessary.
- Do not insert the waste cloth containing oil into the pocket.
- Take caution not to pollute the clothes, especially the underclothes, with oil.
- Do not use clothes or shoes remarkably polluted with oil. Wash the working uniform periodically.
- Provide a first aid kit in case of injury.
- Apply the protective cream before working for easier removal of adhered oil on the skin.
- Wash the oil adhered to the skin with soap and water until it is completely washed out. (Skin cleaner and nailbrush may be useful.) Provide lost oil of the skin with cream containing lanoline.
- Do not use gasoline, kerosene, thinner, or solvent, etc. to clean the skin.
- If disorder of skin is worsened, consult the doctor immediately.
- Degrease the parts before handling the parts, if possible.
- Use the eye protectors or face shield, etc. in area with possibility that these solvents may enter the eyes.

### **Noise**

Some types of works are performed in area with high noise, resulting in losing a hearing acuity. In such a case, use protective measure to the ears.

### **Coating**

Smoking is prohibited around the coating due to its high flammability and ignitibility.

### **Solvents**

It is contained in cleaning agent, degreasing agent, coating, plastic, fiber, and thinner, etc.

Some of them are high in flammability and ignitibility.

Its degreasing effect may cause an inflammation on the skin if exposed for a long period or repetitively.

If entered the eyes, it may cause a serious inflammation and loss of eyesight.

High dense vapor and atomization will cause an inflammation of eyes or throat, drowsiness, nausea, headache, or even loss of conscious at worst only by short-term contact.

Low dense vapor or atomization can result in a serious effect by long-term and repetitive contact due to un-posted warning.

If swallowed by accident, vomit the solvent swallowed. It is most dangerous to inhale into the lung.

Take cautions not to let it contact the skin or eyes and use gloves, eye protectors, and protective clothes, etc. as required.

Ventilate sufficiently while working and take cautions not to inhale the smoke, vapor, or atomization, etc. Seal up the container. Do not use it in closed area.

When spraying the coating and adhesive, etc. including solvent, use the forced ventilation and protective mask if ventilation is insufficient.

Do not use the heat or fire without specified and detailed instruction by the manufacturer.

### Cautions at Using Lift and Hoist



- Do not make a lift for substitute.
- 

It is very dangerous when lifting up or down the vehicle or parts. Do not work under the parts lifted without any support such as when lifting the engine.

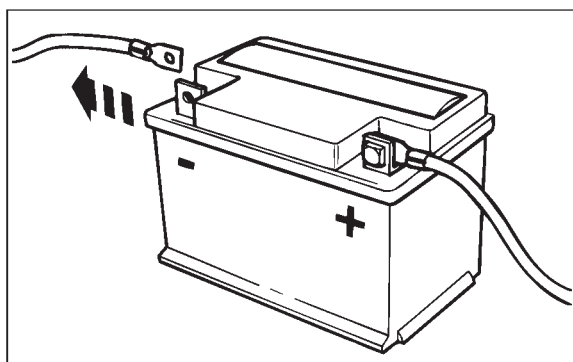
Make sure that the lift equipment such as jack, wheel stand, and cling are in an appropriate condition for work at all times and perform a periodical inspection.

## Standard Maintenance

### Handling Vehicle in Work Area

Take cautions for following items at handling vehicle in work area.

- Brake the parking brake so that the vehicle will not move forward and backward. Also, make a whirl-stop on slopes.
- Provide sufficient ventilation equipment for discharging the exhaust gas or exhaust duct when activating the engine.
- Secure sufficient space for work when removing the tire by jacking up the vehicle.



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### Battery Disconnection

When disconnecting the battery negative cable, make sure to stop the engine and insulate the battery positive cable. (Such as covering with appropriate cloth.)

If the below procedures are required for vehicle repair, make sure to disconnect the battery.

- Jack-up of vehicle
- Engine work
- Work under body
- Installation/removal of electrical equipment

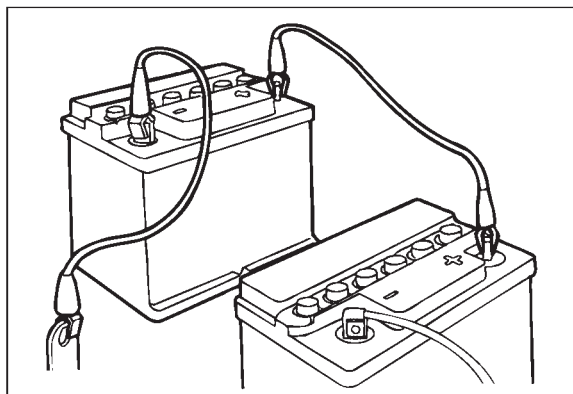
### Reconnection of Battery



Battery on charge may generate explosive hydrogen gas. Take caution not to generate sparks and cover the vent plug or cover with moistened cloth accordingly.

Before reconnecting the battery, make sure that all the electrical system is off in order to prevent the generation of sparks and to protect the high sensitivity electrical equipment from the damage.

When reconnecting the battery, make sure to reconnect the battery terminal positive first after confirming that the electrical contact is satisfactory and the battery terminal is well fixed.



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### Connection of Booster Cable to Battery Down



When connecting the booster cable while generating hydrogen gas immediately after the battery charge is complete, the electric arc may generate and explode. Cover the vent plug or cover with moistened cloth.

---

 **CAUTION**

Battery runs out because of short-circuit of the electric circuit. Therefore, when the battery is dead, there exist circuits with running electricity even with all the normal electric circuits off. If connecting the booster cable in such condition, the electric arc will generate.

Using a booster cable is the only way to start up the vehicle with battery down; however, it is not recommended. The consumed battery may not be reusable if not charged immediately after starting with the booster.

---

- Use the booster cable resistant to the large electric current.
  - The capacity of the battery for starting vehicle and battery down must be the same. Connect the battery for the vehicle and battery down in parallel.
  - Before connecting the booster cable, turn off all the switch type electric circuits. This will reduce the danger of generation of sparks.
- 

 **WARNING**

Take cautions for the cable terminals not to contact with each other and with body earth of the vehicle while the booster cable is connected to the battery. If short-circuiting the fully charged battery with the booster cable, the electric current of over 1,000 ampere will be discharged, and the intense electric arc and sudden temperature increase of the booster cable and battery terminal will occur, which may cause a battery explosion.

---

Make sure to follow the below procedures for connecting the booster cable.

- First, the terminal positive of battery down, then the terminal positive of starting vehicle.
- The terminal negative of battery down, then the earth point (engine lifting bracket, etc.) at over 300 mm away from the battery terminal for the starting vehicle.

Before disconnecting the booster cable, make sure to decelerate the engine speed to the idling speed.

Disconnect the booster cable in the reverse order of the connecting procedure and take caution not to short-circuit the both sides of the cable.

### Parts Cleaning

In order to prevent the intrusion of foreign matters, remove the accumulated dust and grease before removing or disconnecting any parts or assemblies.

Clean the removed parts before inspection and reassembly.

Cleaning procedure

- Dry cleaning.
- Remove the dust with soft brush or wire brush.
- Scrape the dust with metal piece or wood piece.
- Wipe with waste cloth.



Compressed air may contain water. Take caution when cleaning the hydraulic parts.

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- Blow off the dust with compressed air. (Use the eye protectors when using the compressed air.)
  - Remove the dry dust with vacuum device. Make sure to apply this procedure for removal of dust from asbestos.
  - Clean with vapor.
- 



Some solvents are harmful to human body and require caution at handling. Refer to "Safety" in this section and cautionary items at handling by the manufacturer.

---

Various kinds of solvents are used for cleaning of parts for vehicle. Make sure to use the specified solvent for cleaning the parts for hydraulic brake and electrical equipment. Refer to "Solvent, Adhesive, and sealing Agent" in this section.

## Parts Inspection

Reference) Items listed in this section are general guideline for parts inspection.

Detailed information stated in each section of this manual shall have priority.

Parts inspection shall be performed in the process of repair and overhaul for the below objectives.

- Inspection of damages.
- Measurement of degree of wear.
- Assessment for ability of normal function of the parts until next inspection.

### Damages

Damage shall be assessed according to the below category.

#### Failure

Parts or the main part of the parts are damaged to the unusable or irreparable point.

#### Deflection

The parts are bent, twisted, dented or in unadjustable condition.

#### Cracks

Some parts are difficult to find their cracks. For example, the cracks generated in the cylinder head or cylinder block are open when the engine is in high temperature but closed once the engine cools down. In such cases, special methods such as dyestuff or magnetic flux inspection will be required to inspect the existence of cracks and their depth.

#### Corrosion and Pit

Deterioration of the surface of the parts as a result of chemical reaction.

#### Chemical and Physical Reaction

Nonmetal parts suffer from hardening, softening, or cracks. For example, the rubber seal for the brake system may deteriorate by pollutant fluid, or the coated face of the body may be corroded by adhesion of fluid.

#### Breakage and Disconnection

Damages which occur in nonmetal parts such as oil seal and boots, etc.

#### Wear

The limit is important. The limit of wear is stated in "Specification" of the related section. Inspect the parts, if their limit is unstated, for existence of remarkable wear which may affect the function or operation of the parts by visual inspection.

#### Assessment of Usable Period of Parts

It is economical to change the part if the part is assessed to have wears, damages, or deterioration and to have short usable period after inspection.

If the parts affecting the safety of vehicle running such as brake or steering, etc. have remarkable wear, damage, or deterioration, etc. and are assessed to have short usable period after inspection, change the individual part or assembly.

### Calibration of Main Measuring Instruments



If calibration of main measuring instruments is not performed properly, it may lead to a fatal accident or damage of the vehicle.

---

It is extremely important to calibrate the main measuring instruments such as torque wrench, multi-meter, and exhaust gas analyzer, etc. periodically, following the instructions by manufacturer.



## GENERAL INFORMATION



Make sure to place the vehicle in level place, brake the parking brake, and stop the engine before starting disassembling or reassembling.

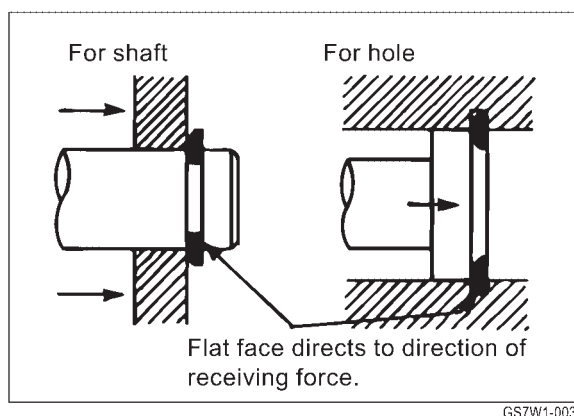
### Cautionary Items at Operation

#### Disassembly and Removal

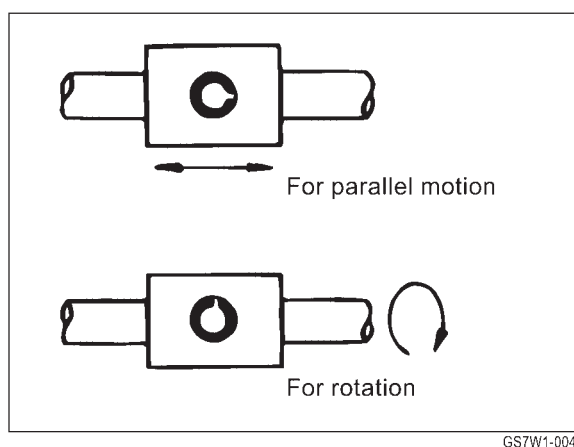
1. Use the corresponding tools and equipment. Use the specialized tools as specified, if required.
2. Provide the working bench and organizing table, etc for disassembled parts as required and disassemble according to the disassembling procedure.
3. Arrange the disassembled parts in good order to prevent the loss of parts.  
Organize each part in a clean place and take caution not to mix. Especially bolt and nut can be prevented their loss by mounting them in the original position.
4. Take caution for adherence or entry of the refuse or chips when disassembling the hydraulic equipment.
5. When disassembling the parts of hydraulic equipment, disconnect the battery negative cable beforehand.
6. Take caution for matching mark at disassembly and mark them if missing, accordingly.
7. Pay attention to the existence of unusualness at disassembly or washing and do not miss the unusualness which cannot be found after disassembly or washing.
8. Take caution for safety, especially for the balance of disassembled equipment or transfer of heavy equipment.  
(Use the jack or chain block as required.)

#### Reassembly and Installation

1. When washing the parts, use the general cleaning agent for industrial parts. Do not use the gas oil for ecological reason. Also, wash the hydraulic parts with specified operating oil.
2. When inspecting the parts, inspect after removing the oil or dirt.
3. When replacing the parts, make sure to use the genuine parts to maintain the performance of the vehicle and for safety.
4. Make sure to change with new packing and O-ring at installation. Also, slightly apply grease to the O-ring and oil seal, etc. before installation.
5. Use Threebond #1206D for liquid packing.
  - When using the liquid packing, remove the old packing completely and apply the packing to the connecting face evenly without any gaps to the height of 1 to 2mm. Apply the packing in the center of flange between the boltholes and inner face for the bolt hole.
  - Assemble within 10 minutes after application and lubricate the oil, etc. 30 minutes after assembly.



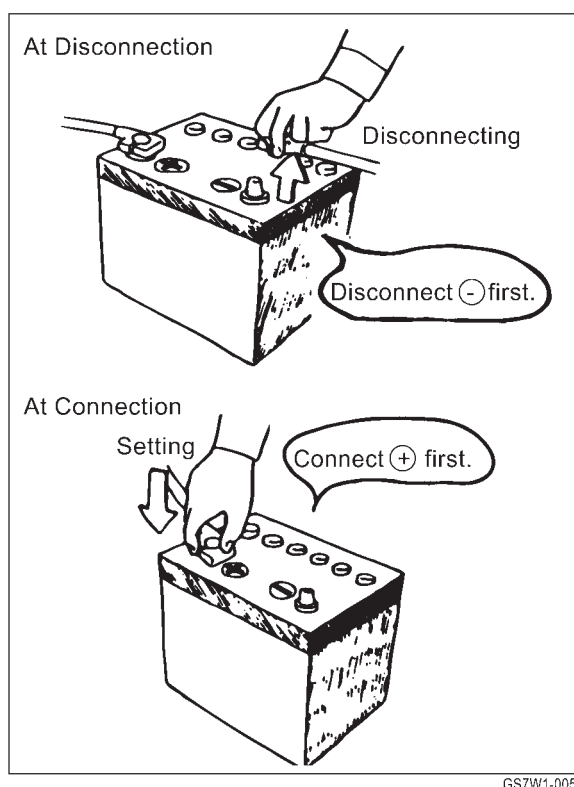
6. Mount C-rings for shaft and hole, as shown in the figure, toward the flat face of the C-rings to the same direction which the force is received.



7. Drive the spring pins, as shown in the figure, toward the split (joint) to the same direction which the force is received.
8. Change with new split cotter pins and make sure split them completely to prevent from coming off.
9. Tighten with specified torque for the parts specified using the torque wrench.

Reference) Refer to the list for tightening torque.

## Cautionary Items at Handling Electrical Equipment and Electrical Wiring

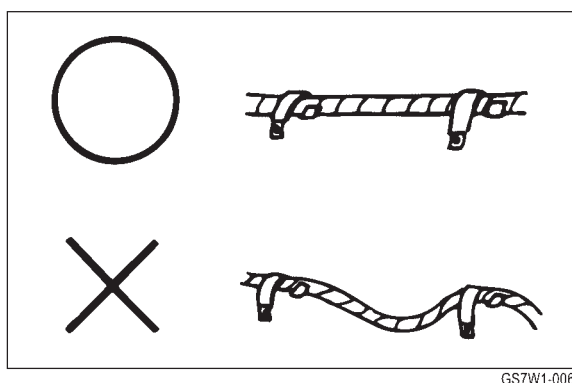


Make sure the safety and take cautions for the below items at handling of electrical equipment and electrical wiring in order to prevent the equipment and peripheral equipment from damaging.

### **! WARNING**

Make sure to turn off the starter switch and disconnect the battery negative cable before starting the inspection of junction.

- Disconnect the negative cable first when disconnecting the battery cable and connect the positive cable first when connecting.
- Inspect the electrical wiring for the damage or looseness of junction once a year.

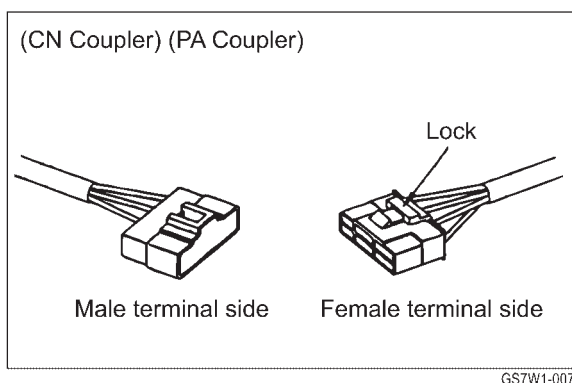


## Wire

1. Tighten the wiring terminal securely.
2. Repair or change the damaged or deteriorated wire immediately.
3. Clamp securely and take caution not to damage the wire by clamping.
4. Take caution not to have the wire contact with dangerous part (rotating equipment, exhaust box, and corner with acute angle, etc.).
5. Set the grommet securely and take caution not to damage the wire.
6. Clamp the wire with no slack, twist, or forced pulling. However, it may require some slacks in moving part.
7. Take caution not to pinch the wire when installing the parts.
8. Connect the battery only after rechecking the terminal protection or clamp condition, etc. after wiring.
9. Use the fuse with specified capacity. It is strictly prohibited to substitute the metal wire or copper wire for the fuse.

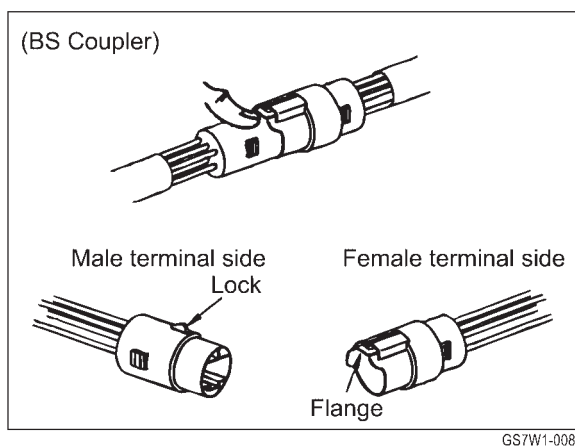
## Battery

1. Do not install the battery with capacity other than specified (Ah).
2. Apply some grease to the battery terminal after connecting the cable and cover with terminal cover.
3. Take caution not to accumulate the refuse or dust on the battery.
4. Remove the battery from the vehicle when charging the battery.



## Coupler

1. When disconnecting the coupler and plug terminal, take caution not to pull the harness.
2. Press the lock and pull to disconnect the CN coupler and PA coupler.



3. Push up the flange and pull out to disconnect the BS waterproof coupler.

### Washing

Do not dash the water directly to the electrical equipment such as main switch or alternator, etc.

### Oil and Refuse

1. If spilt any flammable fluid such as fuel or lubricating oil, etc., wipe off with dry cloth and do not approximate fire.
2. Change the deteriorated fuel pipe.
3. Remove the accumulated refuse on the high heat part, wire harness, and battery, etc.

## STANDARD BOLT TORQUES

### List of Standard Torque

#### Hexagon Head Bolt and Nut

Unit : (N•m {kgf•cm, lbf•ft})

| Strength Classification<br>Designation | 4T                                              | 7T                                            | 8T                                             | 9T                                            | 11T                                             |
|----------------------------------------|-------------------------------------------------|-----------------------------------------------|------------------------------------------------|-----------------------------------------------|-------------------------------------------------|
| M3                                     | 0.3 to 0.5 {3 to 5,<br>0.22 to 0.36}            | -                                             | -                                              | -                                             | -                                               |
| M4                                     | 0.8 to 1.0 {8 to 10,<br>0.58 to 0.72}           | -                                             | -                                              | -                                             | -                                               |
| M5                                     | 2.5 to 3.4 {25 to<br>35, 1.81 to 2.53}          | 5.4 to 6.4 {55 to<br>65, 3.98 to 4.7}         | 6.4 to 7.4 {65 to<br>75, 4.7 to 5.42}          | 6.4 to 7.4 {65 to<br>75, 4.7 to 5.42}         | 8.8 to 9.81 {90 to<br>100, 6.51 to 7.23}        |
| M6                                     | 5.0 to 6.9 {50 to<br>70, 3.62 to 5.06}          | 9.8 to 11.8 {100 to<br>120, 7.23 to 8.7}      | 11.8 to 13.7 {120<br>to 140, 8.68 to<br>10.1}  | 11.8 to 13.7 {120<br>to 140, 8.68 to<br>10.1} | 14.7 to 16.7 {150<br>to 170, 10.85 to<br>12.3}  |
| M8                                     | 11.8 to 16.7 {120<br>to 170, 8.68 to<br>12.3}   | 24.5 to 29.4 {250<br>to 300, 18.1 to<br>21.7} | 29.4 to 34.3 {300<br>to 350, 21.7 to<br>25.3}  | 29.4 to 34.3 {300<br>to 350, 21.7 to<br>25.3} | 36.3 to 41.2 {370<br>to 420, 26.8 to<br>30.4}   |
| M10                                    | 20.6 to 29.4 {210<br>to 300, 15.19 to<br>21.7}  | 39.2 to 44.1 {400<br>to 450, 28.9 to<br>32.5} | 49 to 53.9 {500 to<br>550, 36.2 to 39.8}       | 49 to 53.9 {500 to<br>550, 36.2 to 39.8}      | 72.6 to 82.4 {740<br>to 840, 53.5 to<br>60.7}   |
| M12                                    | 44.1 to 53.9 {450<br>to 550, 32.5 to<br>39.8}   | 83.4 to 93.2 {850<br>to 950, 61.5 to<br>68.7} | 93.2 to 108 {950<br>to 1100, 68.7 to<br>79.6}  | 93.2 to 108 {950<br>to 1100, 68.7 to<br>79.6} | 123 to 137 {1250<br>to 1400, 90.4 to<br>101.2}  |
| M14                                    | 63.7 to 78.5 {650<br>to 800, 47 to 57.9}        | 118 to 132 {1200<br>to 1350, 86.8 to<br>97.6} | 132 to 147 {1350<br>to 1500, 97.6 to<br>108.5} | 147 to 167 {1500<br>to 1700, 108 to<br>123}   | 206 to 226 {2100<br>to 2300, 152 to<br>166}     |
| M16                                    | 88.3 to 107.9 {900<br>to 1100, 65.1 to<br>79.6} | 152 to 172 {1550<br>to 1750, 112 to<br>127}   | 177 to 196 {1800<br>to 2000, 130 to<br>145}    | 216 to 245 {2200<br>to 2500, 159 to<br>181}   | 314 to 343 {3200<br>to 3500, 231 to<br>253}     |
| M18                                    | 118 to 137 {1200<br>to 1400, 86.8 to<br>101.2}  | 206 to 235 {2100<br>to 2400, 152 to<br>174}   | 245 to 275 {2500<br>to 2800, 181 to<br>202}    | 314 to 343 {3200<br>to 3500, 231 to<br>253}   | 441 to 471 {4500<br>to 4800, 325 to<br>347}     |
| M20                                    | 147 to 167 {1500<br>to 1700, 108 to<br>123}     | 235 to 275 {2400<br>to 2800, 174 to<br>202}   | 314 to 353 {3200<br>to 3600, 231 to<br>260}    | 441 to 481 {4500<br>to 4900, 325 to<br>354}   | 618 to 657 {6300<br>to 6700, 456 to<br>485}     |
| M22                                    | 177 to 206 {1800<br>to 2100, 130 to<br>152}     | 422 to 451 {4300<br>to 4600, 311 to<br>333}   | 539 to 579 {5500<br>to 5900, 398 to<br>427}    | 608 to 647 {6200<br>to 6600, 448 to<br>477}   | 843 to 883 {8600<br>to 9000, 622 to<br>651}     |
| M24                                    | 235 to 265 {2400<br>to 2700, 174 to<br>195}     | 539 to 569 {5500<br>to 5800, 398 to<br>419}   | 706 to 745 {7200<br>to 7600, 521 to<br>550}    | 785 to 824 {8000<br>to 8400, 579 to<br>607}   | 1098 to 1138<br>{11200 to 11600,<br>810 to 839} |

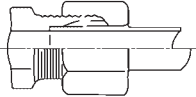
**Flange Nut**

Unit : (N•m {kgf•cm, lbf•ft})

| Strength Classification for Bolt<br>Designation/Type |                 | 4T                                          | 7T                                          |
|------------------------------------------------------|-----------------|---------------------------------------------|---------------------------------------------|
| M4                                                   | Without slotted | 1.5 to 2.0 {15 to 20, 1.08 to 1.45}         | -                                           |
| M5                                                   | Without slotted | 3.9 to 4.4 {40 to 45, 2.89 to 3.25}         | 6.9 to 7.9 {70 to 80, 5.06 to 5.79}         |
|                                                      | With slotted    | 2.9 to 3.4 {30 to 35, 2.17 to 2.53}         | 5.4 to 6.4 {55 to 65, 3.98 to 4.7}          |
| M6                                                   | Without slotted | 6.4 to 8.4 {65 to 85, 4.7 to 6.15}          | 13.7 to 15.7<br>{140 to 160, 10.12 to 11.6} |
|                                                      | With slotted    | 4.9 to 6.9 {50 to 70, 3.62 to 5.06}         | 10.8 to 12.7 {110 to 130, 7.96 to 9.4}      |
| M8                                                   | Without slotted | 16.7 to 21.6<br>{170 to 220, 12.29 to 15.9} | 26.5 to 31.4 {270 to 320, 19.5 to 23.1}     |
|                                                      | With slotted    | 12.3 to 17.2 {125 to 175, 9.04 to 12.7}     | 20.6 to 25.5<br>{210 to 260, 15.19 to 18.8} |
| M10                                                  | Without slotted | 34.3 to 39.2 {350 to 400, 25.3 to 28.9}     | 50 to 54.9 {510 to 560, 36.9 to 40.5}       |
|                                                      | With slotted    | 33.3 to 38.2 {340 to 390, 24.6 to 28.2}     | 48.1 to 53 {490 to 540, 35.4 to 39.1}       |

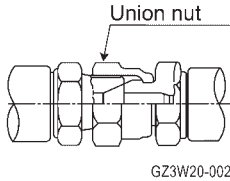
**Bite Type Pipe Joint**

Unit : (N•m {kgf•m, lbf•ft})

| Pipe Size (mm {in}) |                           | Temp. Tightening (1 <sup>st</sup> )      | Tightening (2 <sup>nd</sup> )            | Schematic Drawing                                                                                   |
|---------------------|---------------------------|------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------|
| External Diameter   | Thickness                 |                                          |                                          |                                                                                                     |
| 8 {0.315}           | 1 to 1.5 {0.039 to 0.059} | 29 to 34<br>{3 to 3.5, 21.7 to 25.3}     | 29 to 34<br>{3 to 3.5, 21.7 to 25.3}     | <br>GZ3W20-001 |
| 10 {0.394}          | 1 to 1.5 {0.039 to 0.059} | 29 to 39<br>{3 to 4, 21.7 to 28.9}       | 34 to 49<br>{3.5 to 5, 25.3 to 36.2}     |                                                                                                     |
| 12 {0.472}          | 1 to 2.5 {0.039 to 0.098} | 44 to 59<br>{4.5 to 6, 32.5 to 43.4}     | 49 to 69<br>{5 to 7, 36.2 to 50.6}       |                                                                                                     |
| 15 {0.591}          | 1 to 2.5 {0.039 to 0.098} | 69 to 98<br>{7 to 10, 50.6 to 72.3}      | 88 to 118<br>{9 to 12, 65.1 to 86.8}     |                                                                                                     |
| 18 {0.709}          | 1.5 to 2 {0.059 to 0.079} | 118 to 147<br>{12 to 15, 86.8 to 108.5}  | 147 to 167<br>{15 to 17, 108.5 to 122.9} |                                                                                                     |
| 20 {0.787}          | 2 to 3 {0.079 to 0.118}   | 147 to 177<br>{15 to 18, 108.5 to 130.2} | 167 to 206<br>{17 to 21, 122.9 to 151.9} |                                                                                                     |
| 22 {0.866}          | 2 {0.079}                 | 177 to 206<br>{18 to 21, 130.2 to 151.9} | 196 to 235<br>{20 to 24, 144.6 to 173.6} |                                                                                                     |
| 27.2 {1.071}        | 2.8 {0.11}                | 323 to 343<br>{33 to 35, 238.7 to 253.1} | 343 to 373<br>{35 to 38, 253.1 to 274.8} |                                                                                                     |

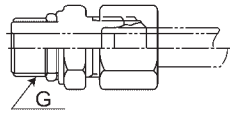
### Hose Joint

Unit : (N•m {kgf•m, lbf•ft})

| Designation of Thread |              | Schematic Drawing                                                                   |
|-----------------------|--------------|-------------------------------------------------------------------------------------|
| G1/8                  | 15 {1.5, 11} |  |
| G1/4                  | 25 {2.6, 19} |                                                                                     |
| G3/8                  | 49 {5, 36}   |                                                                                     |
| G1/2                  | 59 {6, 43}   |                                                                                     |
| G3/4                  | 118 {12, 87} |                                                                                     |

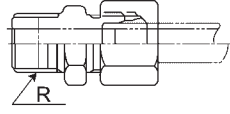
### Parallel Thread Joint for Pipe

Unit : (N•m {kgf•m, lbf•ft})

| Designation of Thread |                                   | Schematic Drawing                                                                   |
|-----------------------|-----------------------------------|-------------------------------------------------------------------------------------|
| G1/8                  | 20 to 25 {2 to 2.5, 14 to 18}     |  |
| G1/4                  | 39 to 49 {4 to 5, 28.9 to 36.2}   |                                                                                     |
| G3/8                  | 49 to 59 {5 to 6, 36.2 to 43.4}   |                                                                                     |
| G1/2                  | 59 to 69 {6 to 7, 43.4 to 50.6}   |                                                                                     |
| G3/4                  | 118 to 127 {12 to 13, 86.8 to 94} |                                                                                     |

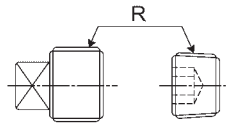
### Taper Thread Joint for Pipe

Unit : (N•m {kgf•m, lbf•ft})

| Designation of Thread |                                     | Schematic Drawing                                                                     |
|-----------------------|-------------------------------------|---------------------------------------------------------------------------------------|
| R1/8                  | 13 to 18 {1.3 to 1.8, 9 to 13}      |  |
| R1/4                  | 21 to 29 {2.1 to 3.0, 15 to 22}     |                                                                                       |
| R3/8                  | 29 to 39 {3.0 to 4.0, 21.7 to 28.9} |                                                                                       |
| R1/2                  | 39 to 49 {4.0 to 5.0, 28.9 to 36.2} |                                                                                       |

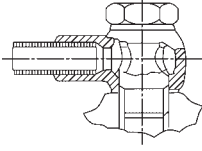
### Taper Thread Pipe Plug

Unit : (N•m {kgf•m, lbf•ft})

| Designation of Thread |                                     | Schematic Drawing                                                                     |
|-----------------------|-------------------------------------|---------------------------------------------------------------------------------------|
| R1/8                  | 5 to 7 {0.5 to 0.7, 4 to 5}         |  |
| R1/4                  | 13 to 18 {1.3 to 1.8, 9 to 13}      |                                                                                       |
| R3/8                  | 21 to 29 {2.1 to 3.0, 15 to 22}     |                                                                                       |
| R1/2                  | 29 to 39 {3.0 to 4.0, 21.7 to 28.9} |                                                                                       |

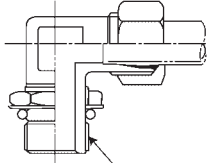
**Taper Thread Pipe Plug**

Unit : (N•m {kgf•m, lbf•ft})

| Designation of Thread | No. of Oil Hole |                                      | Schematic Drawing                                                                                 |
|-----------------------|-----------------|--------------------------------------|---------------------------------------------------------------------------------------------------|
| G1/4                  | 2               | 39 to 44 {4.0 to 4.5, 28.9 to 32.5}  | <br>GZ3W20-006 |
| G3/8                  | 2               | 47 to 54 {4.8 to 5.5, 34.7 to 39.8}  |                                                                                                   |
|                       | 4               | 39 to 44 {4.0 to 4.5, 28.9 to 32.5}  |                                                                                                   |
| G1/2                  | 4               | 47 to 54 {4.8 to 5.5, 34.7 to 39.8}  |                                                                                                   |
| G3/4                  | 4               | 59 to 69 {6.0 to 7.0, 43.4 to 50.6}  |                                                                                                   |
| M12                   | 2               | 20 to 27 {2.0 to 2.8, 14.0 to 20.0 } |                                                                                                   |
| M14                   | 2               | 34 to 39 {3.5 to 4.0, 25.3 to 28.9}  |                                                                                                   |
|                       | 4               | 29 to 34 {3.0 to 3.5, 21.7 to 25.3}  |                                                                                                   |
| M16                   | 2               | 49 to 59 {5.0 to 6.0, 36.2 to 43.4}  |                                                                                                   |
|                       | 4               | 39 to 44 {4.0 to 4.5, 28.9 to 32.5}  |                                                                                                   |

**Parallel Thread Elbow**

Unit : (N•m {kgf•m, lbf•ft})

| Designation of Thread |                                 | Schematic Drawing                                                                                  |
|-----------------------|---------------------------------|----------------------------------------------------------------------------------------------------|
| G1/4                  | 49 to 59 {5 to 6, 36.2 to 43.4} | <br>GZ3W20-007 |
| G3/8                  | 59 to 69 {6 to 7, 43.4 to 50.6} |                                                                                                    |
| G1/2                  | 78 to 88 {8 to 9, 57.9 to 65.1} |                                                                                                    |



**SECTION -2**

**SPECIFICATIONS**



# 1. GENERAL SPECIFICATIONS

| GX3600                        |                      |                         |
|-------------------------------|----------------------|-------------------------|
| <b>[ENGINE]</b>               |                      |                         |
| Model                         |                      | S3L3L                   |
| Type                          |                      | Water cooled Diesel     |
| Injection type                |                      | I.D.I.                  |
| Engine Horsepower(gross)      | HP                   | 35.5                    |
| Engine Horsepower(net)        | HP                   | -                       |
| PTO Horsepower Gear           | HP                   | 31                      |
| Rated Engine Speed            | rpm                  | 2600                    |
| Number of Cylinders           |                      | 3                       |
| Total Displacement            | in <sup>3</sup> (cc) | 101.4(1662)             |
| Bore x Stroke                 | in(mm)               | 3.31x3.94(84x100)       |
| Oil filter                    |                      | Cartridge               |
| Air filter                    |                      | Single Dry              |
| Capacities Fuel Tank          | USgal(L)             | 7.93(30)                |
| Coolant reserve tank          |                      | std                     |
| Alternator                    | A                    | 55                      |
| <b>[DIMENSIONS]</b>           |                      |                         |
|                               |                      | (7.50-16/12.4-24)       |
| Overall Length with 3-PH      | in(mm)               | 118.5(3010)             |
| Overall Length with /O 3-PH   | in(mm)               | 109.4(2780)             |
| Overall Width (min.tread)     | in(mm)               | 55.5(1410)              |
| Height to Top of Frame        | in(mm)               | 56.1(1425)              |
| Height to Top of Steering     | in(mm)               | 55.5(1410)              |
| Wheelbase                     | in(mm)               | 65.0(1650)              |
| Min. Ground Clearance         | in(mm)               | 15.0(380)               |
| Tread Front                   | in(mm)               | 43.9(1115)              |
| Tread Rear                    | in(mm)               | 42.9(1090)              |
| Turning Radius W/Brake        | in(m)                | 98.4(2.5)               |
| Weight Total                  | lbs(kgf)             | 2425.5(1100)            |
| (at full fuel) Front          | lbs(kgf)             | 1091.5(495)             |
| Rear                          | lbs(kgf)             | 1334(605)               |
| <b>[DRIVE-TRAIN]</b>          |                      |                         |
| Gear Transmission             |                      | Constant(main)          |
| Number of Speeds              |                      | F8-R8                   |
| Shuttle (Forward & Revers)    |                      | Synchro                 |
|                               |                      |                         |
|                               |                      |                         |
|                               |                      |                         |
|                               |                      |                         |
| Speed Forward speed           | km/h                 | 1.66-19.34 (at 12.4-24) |
|                               |                      |                         |
| Final Drive                   |                      | SPUR                    |
| Brakes Type                   |                      | Wet-Disc                |
| Parking brake                 |                      | Latch type              |
| Clutch Type (disc diameter)   |                      | Dry - Single            |
| 4WD                           |                      | std                     |
| Inter-axle Ratio (front/rear) |                      | 1.527                   |
| <b>[PTO Type]</b>             |                      |                         |
| Rear PTO Speed                | rpm                  | 590, 850                |
| Type                          |                      | Trans(G)                |
| Shaft size                    |                      | 1-3/8                   |
|                               |                      |                         |
|                               |                      |                         |
|                               |                      |                         |
|                               |                      |                         |

**GX3600****[HYDRAULIC SYSTEM]**

|                             |                           |                |
|-----------------------------|---------------------------|----------------|
| Pump                        |                           | Dual-Gear type |
| Implement Pump Cap.         | gal/min(L/min)            | 7.59(29.0)     |
| Maximum pressure            | psi(kgf/cm <sup>2</sup> ) | 2204.6(155)    |
| Steering Pump Cap.          | gal/min(L/min)            | 3.49(13.2)     |
| Maximum pressure            | psi(kgf/cm <sup>2</sup> ) | 1493.4(105)    |
| Lift Capacity at ball-end   | lbs(kg)                   | 2646(1200)     |
| Lift Capacity at 24" behind | lbs(kg)                   | 1719.9(780)    |
| Lift Control Type Std       |                           | Position       |
| Total pump output           | gal/min(L/min)            | 11.15(42.2)    |
| Auxiliary valve             |                           | N.A.           |
| Hydraulic outlet block      |                           | std.           |

**[3P Linkage]**

|                           |  |             |
|---------------------------|--|-------------|
| Hitch category            |  | Cat. I      |
| Telescopic stabilizers    |  | N.A.        |
| Right lift rod adjustment |  | Turn Buckle |

**[CAPACITIES]**

|                     |        |            |
|---------------------|--------|------------|
| Cooling System      | gal(L) | 1.43(5.4)  |
| Coolant bottle      | gal(L) | 0.079(0.3) |
| Crankcase           | gal(L) | 1.19(4.5)  |
| Transmission & Hyd. | gal(L) | 7.4(28)    |
| Front Axle          | gal(L) | 1.06(4)    |
| Fuel tank           | gal(L) | 7.94(30)   |

**[Operation]**

|                     |  |                |
|---------------------|--|----------------|
| Deck type           |  | Semi Flat Deck |
| Pedal type          |  | Floor Mount    |
| Seat Suspension     |  | N.A.           |
| Steering System     |  | Hyd. P/S       |
| Tilt Steering wheel |  | N.A.           |
| Foldable ROPS       |  | N.A.           |

**[TIRE SIZE AG]**

|                               |  |                                       |
|-------------------------------|--|---------------------------------------|
| AG Tires (Front/Rear)         |  | Std. Size at Japan<br>7.50-16/12.4-24 |
| Turf Tires (Front/Rear)       |  | -                                     |
| Industrial Tires (Front/Rear) |  | -                                     |

**[IMPLEMENT]**

|                           |         |              |
|---------------------------|---------|--------------|
| Front Loader Cap.at pivot | lbs(kg) | -            |
| Allowable Load Total      | lbs(kg) | 5071.5(2300) |
| Allowable Load Front Axle | lbs(kg) | 3087(1400)   |
| Rear Axle                 | lbs(kg) | 3087(1400)   |

29

# SPECIFICATIONS

## 2. GEAR RATIO

### Forward

D=1160mm

| Shift | Sub | Main |    |       | Shuttle |    |       | Sub |    |       | Diff  | Final | Reduction | Eng. rate rpm (rpm) | Travel speed<br>km/h |
|-------|-----|------|----|-------|---------|----|-------|-----|----|-------|-------|-------|-----------|---------------------|----------------------|
|       |     |      |    |       | Forward |    |       |     |    |       | 35/6  | 95/11 |           |                     |                      |
| 1     | L   | 33   | 16 | 2.063 | 34      | 16 | 2.125 | 28  | 19 | 1.474 | 5.833 | 8.636 | 325.39    | 2600                | 1.66                 |
| 2     |     | 29   | 20 | 1.450 | 34      | 16 | 2.125 | 28  | 19 | 1.474 | 5.833 | 8.636 | 228.76    | 2600                | 2.36                 |
| 3     |     | 22   | 26 | 0.846 | 34      | 16 | 2.125 | 28  | 19 | 1.474 | 5.833 | 8.636 | 133.49    | 2600                | 4.04                 |
| 4     |     | 19   | 30 | 0.633 | 34      | 16 | 2.125 | 28  | 19 | 1.474 | 5.833 | 8.636 | 99.92     | 2600                | 5.40                 |
| 5     | H   | 33   | 16 | 2.063 | 34      | 16 | 2.125 | 14  | 34 | 0.412 | 5.833 | 8.636 | 90.92     | 2600                | 5.94                 |
| 6     |     | 29   | 20 | 1.450 | 34      | 16 | 2.125 | 14  | 34 | 0.412 | 5.833 | 8.636 | 63.92     | 2600                | 8.45                 |
| 7     |     | 22   | 26 | 0.846 | 34      | 16 | 2.125 | 14  | 34 | 0.412 | 5.833 | 8.636 | 37.30     | 2600                | 14.47                |
| 8     |     | 19   | 30 | 0.633 | 34      | 16 | 2.125 | 14  | 34 | 0.412 | 5.833 | 8.636 | 27.92     | 2600                | 19.34                |
|       |     |      |    |       |         |    |       |     |    |       |       |       |           | Max speed           | 21.08                |

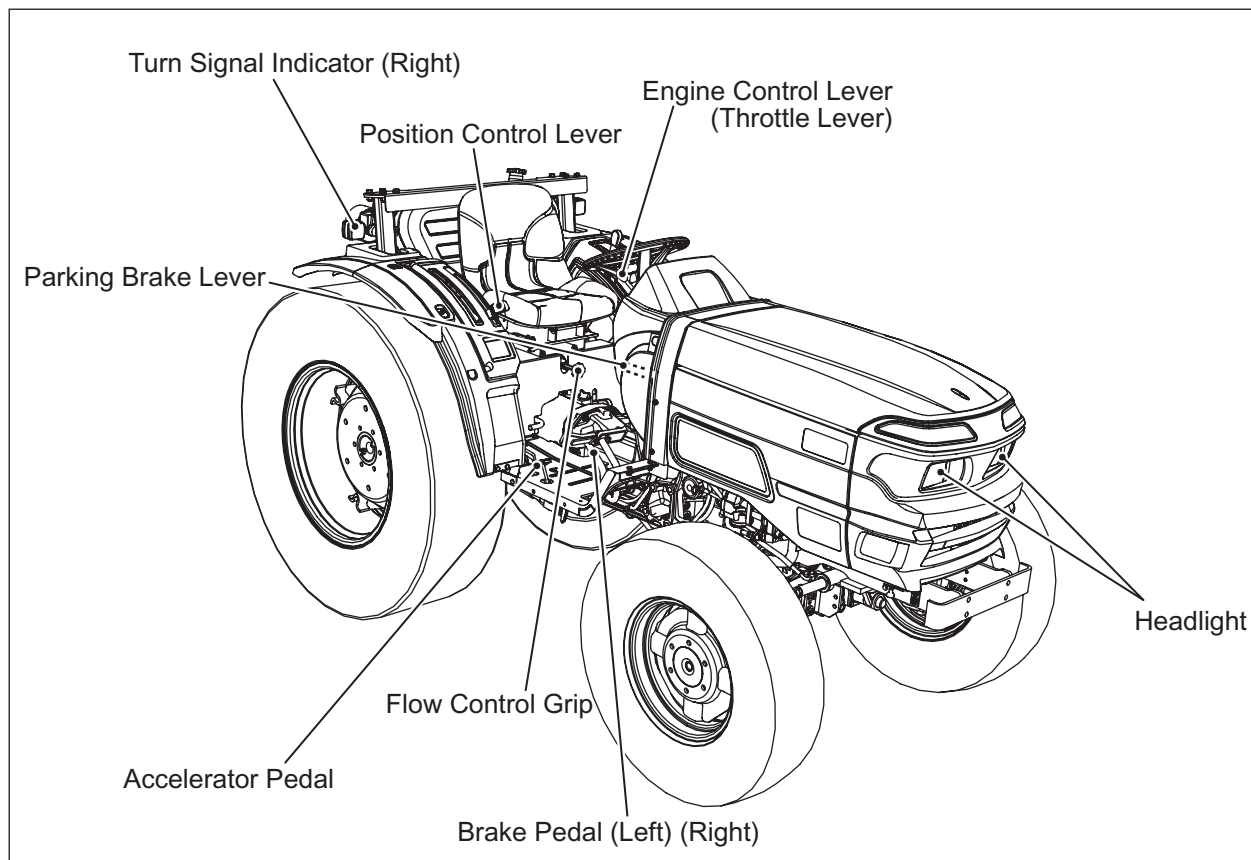
### Reverse

| Shift | Sub | Main |    |       | Shuttle |    |       | Sub |    |       | Diff  | Final | Reduction | Eng. rate rpm (rpm) | Travel speed<br>km/h |
|-------|-----|------|----|-------|---------|----|-------|-----|----|-------|-------|-------|-----------|---------------------|----------------------|
|       |     |      |    |       | Reverse |    |       |     |    |       | 35/6  | 95/11 |           |                     |                      |
| 1     | L   | 33   | 16 | 2.063 | 33      | 13 | 2.538 | 28  | 19 | 1.474 | 5.833 | 8.636 | 388.70    | 2600                | 1.39                 |
| 2     |     | 29   | 20 | 1.450 | 33      | 13 | 2.538 | 28  | 19 | 1.474 | 5.833 | 8.636 | 273.27    | 2600                | 1.98                 |
| 3     |     | 22   | 26 | 0.846 | 33      | 13 | 2.538 | 28  | 19 | 1.474 | 5.833 | 8.636 | 159.47    | 2600                | 3.39                 |
| 4     |     | 19   | 30 | 0.633 | 33      | 13 | 2.538 | 28  | 19 | 1.474 | 5.833 | 8.636 | 119.36    | 2600                | 4.52                 |
| 5     | H   | 33   | 16 | 2.063 | 33      | 13 | 2.538 | 14  | 34 | 0.412 | 5.833 | 8.636 | 108.61    | 2600                | 4.97                 |
| 6     |     | 29   | 20 | 1.450 | 33      | 13 | 2.538 | 14  | 34 | 0.412 | 5.833 | 8.636 | 76.35     | 2600                | 7.07                 |
| 7     |     | 22   | 26 | 0.846 | 33      | 13 | 2.538 | 14  | 34 | 0.412 | 5.833 | 8.636 | 44.56     | 2600                | 12.11                |
| 8     |     | 19   | 30 | 0.633 | 33      | 13 | 2.538 | 14  | 34 | 0.412 | 5.833 | 8.636 | 33.35     | 2600                | 16.19                |
|       |     |      |    |       |         |    |       |     |    |       |       |       |           | Max speed           | 17.65                |

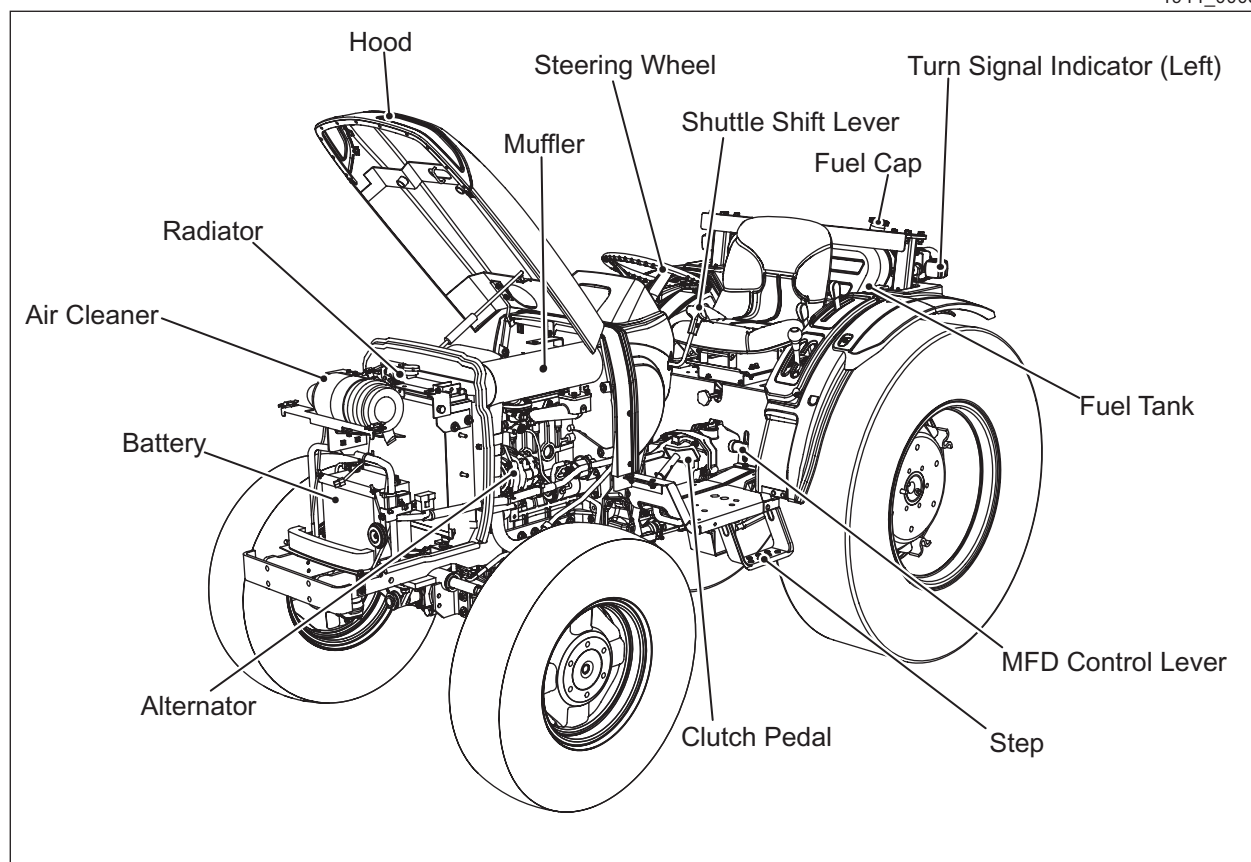
### PTO shaft rpm

|     |  |    |    |       | Eng. rpm (rpm)<br>rpm | PTO shift rpm |
|-----|--|----|----|-------|-----------------------|---------------|
| C 1 |  | 44 | 10 | 4.400 | 2600                  | 591           |
| C 2 |  | 40 | 13 | 3.077 | 2600                  | 845           |

### 3. NAME OF EACH PART

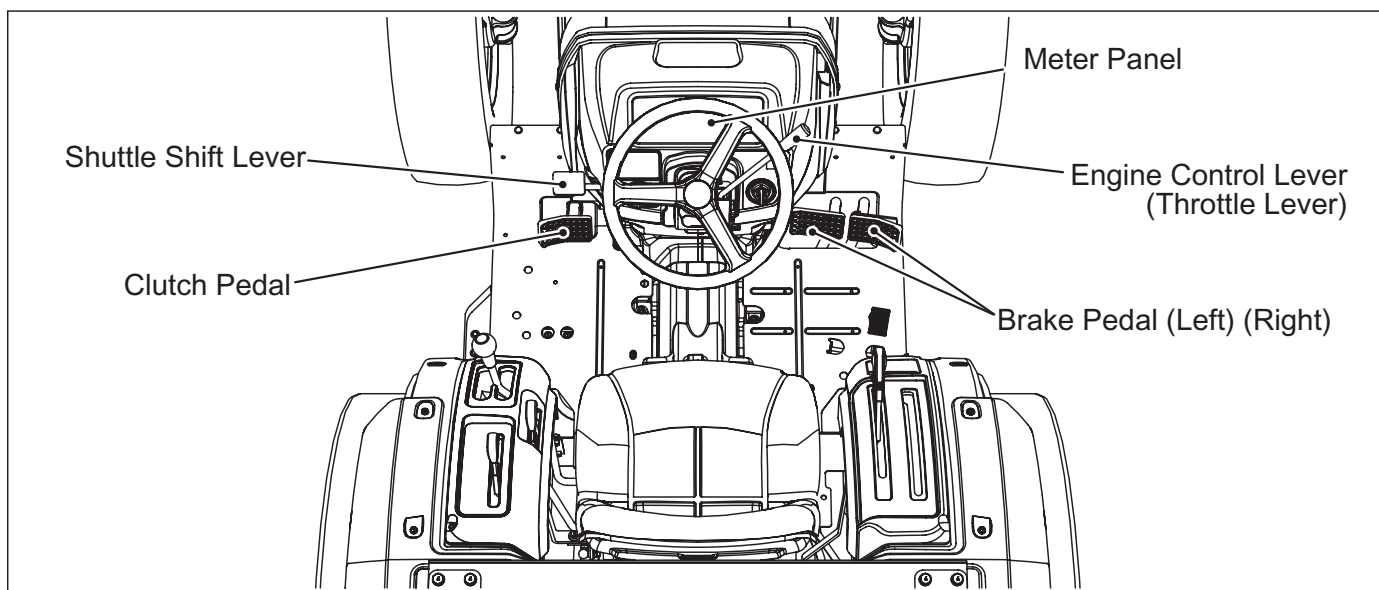


1944\_0005

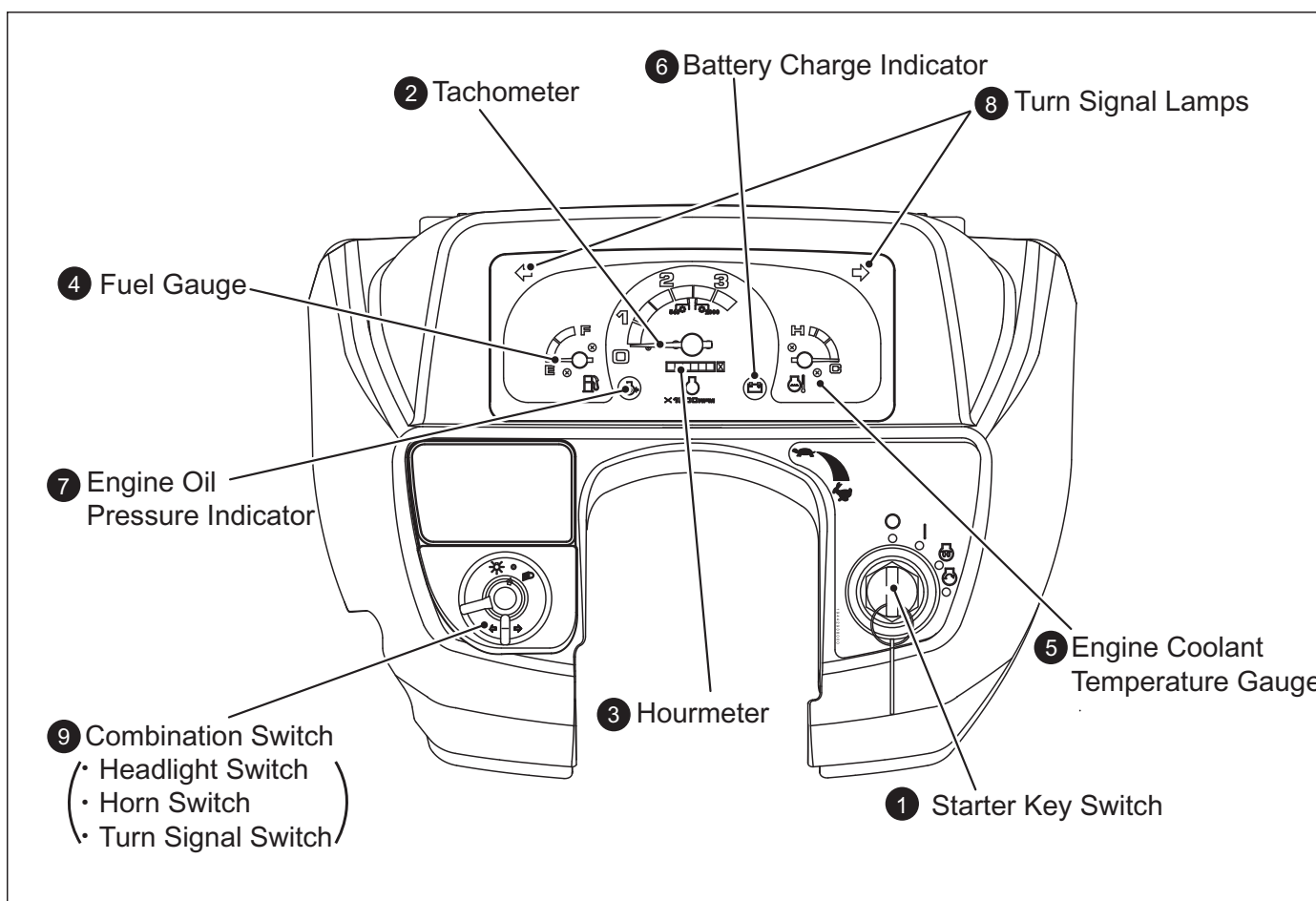


1944\_0006

## [Control Switches and Instruments]



1944\_0007



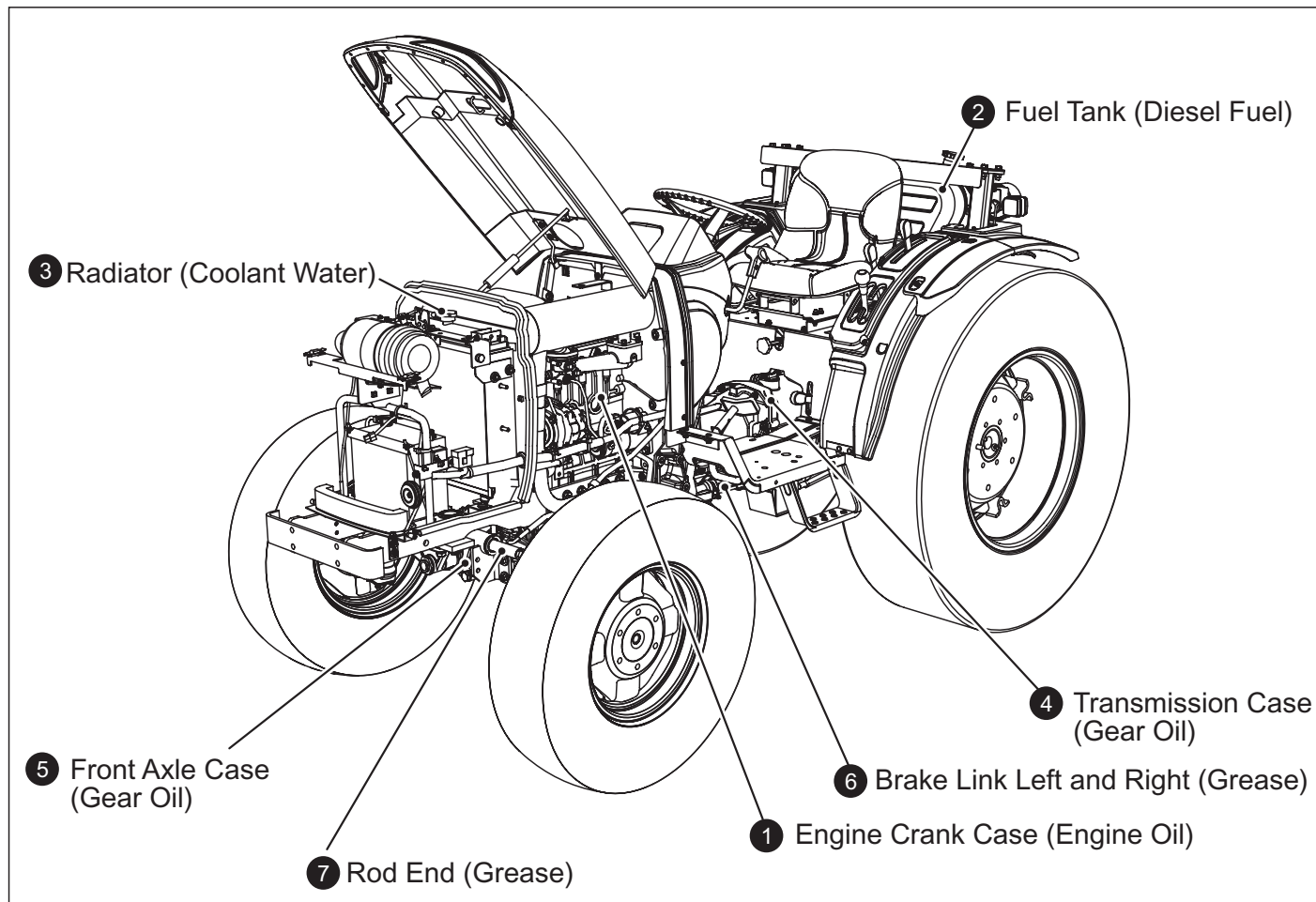
1944\_0008



## 4. LUBRICATION

### 1. Lubrication Points

Perform the inspection and maintenance as required.



1944\_0054

## 2. Lubrication Chart

| No. | Point                        | Type        | Classification |                   | Amount (L)  | Cycle of Replacement                                                                         |
|-----|------------------------------|-------------|----------------|-------------------|-------------|----------------------------------------------------------------------------------------------|
|     |                              |             | API service    | SAE viscosity No. |             |                                                                                              |
| ①   | Engine crank case            | Engine oil  | ※ 1<br>CF      | 15W-40            | 4.5         | Inspect before work and replace every 100 hrs. (Replace after 50 hrs. after 1st inspection.) |
| ②   | Fuel tank                    | Diesel fuel | -              | -                 | 30          | Inspect before work.<br>(Refuel as necessary.)                                               |
| ③   | Radiator                     | Coolant     | -              | -                 | 5.4         | Inspect before work.<br>(Refuel as necessary.)                                               |
| ④   | Transmission case            | Gear oil    | ※ 2<br>GL-4    | #80               | 28          | Replace after 100 hrs. for the 1st inspection and every 200 hrs afterwards.                  |
| ⑤   | Front axle case              | Gear oil    | ※ 3<br>GL-4    | #80               | 4           | Replace after 100 hrs. for the 1st inspection and every 200 hrs afterwards.                  |
| ⑥   | Brake link<br>left and right | Grease      | -              | -                 | accordingly | Inspection before work and lubrication every 50 hrs.                                         |
| ⑦   | Rod end<br>(4 points)        | Grease      | -              | -                 | accordingly | Inspection before work and lubrication every 50 hrs.                                         |

Fuel: Diesel fuel

※ 1: Genuine oil or diesel engine oil API CF grade or higher.

※ 2: Genuine oil or gear oil API GL-4 or higher and applicable for wet brake.

※ 3: Genuine oil or gear oil API GL-4 or higher.

### 3. Inspection and Replacement of Engine Oil

**⚠ WARNING** For injury accident prevention

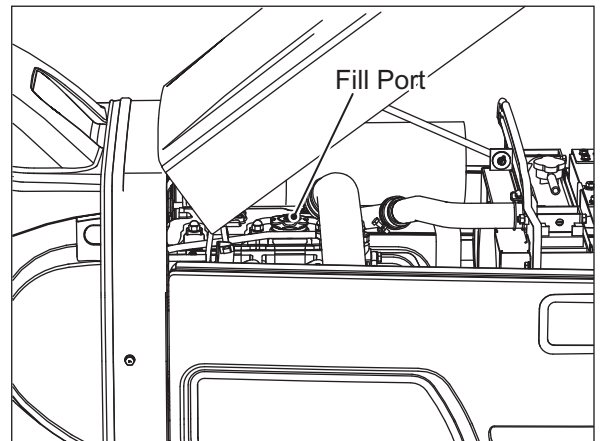
- When inspecting or replacing the engine oil, park the tractor on flat place and stop the engine.
- The oil level gauge and the tail pipe are provided nearby. Do not touch the tail pipe. Also, do not touch the oil level gauge until it cools down.

#### ① Inspection of Engine Oil

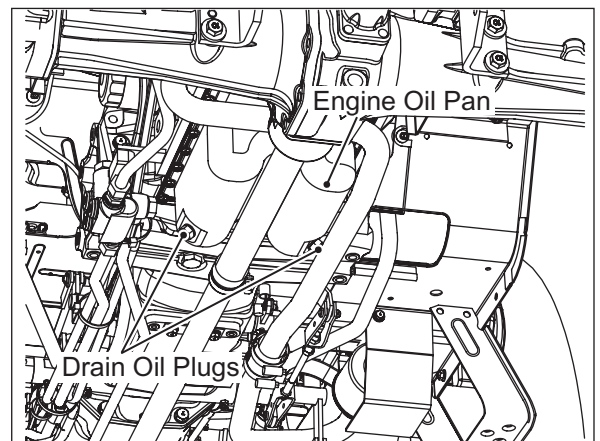
Remove the level gauge and wipe off the tip of the gauge. Insert and remove it once again and make sure that the oil gauge indicates within the range of the upper limit and lower limit (specified amount). When insufficient, supply oil from the inlet up to the upper limit of the oil level gauge and make sure that there is no oil leakage.

#### ② Replacement of Engine Oil

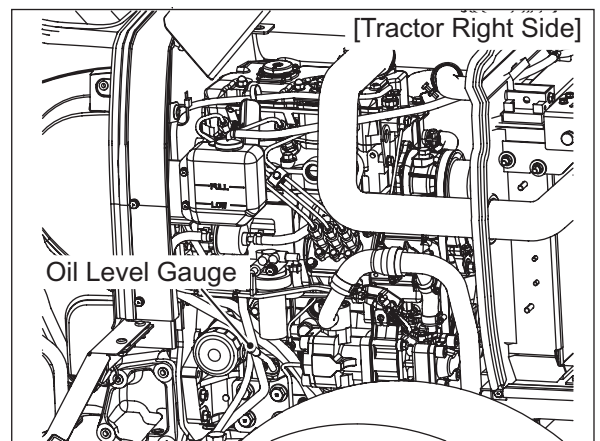
- (1) Remove the drain oil plugs (2 places) of the oil level gauge and the engine oil pan and drain the drain oil.
- (2) Close the drain oil plugs and supply new engine oil to the upper limit of the oil level gauge.



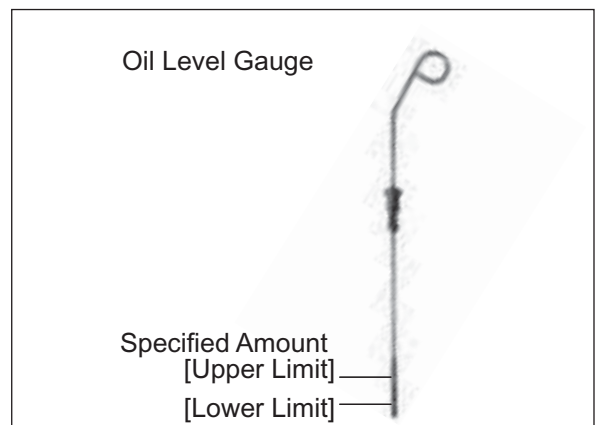
1944\_0055



1944\_0056



1944\_0057



MN00077\_A

## 4. Replacement of Engine Oil Filter

Please provide a cartridge type engine oil filter.

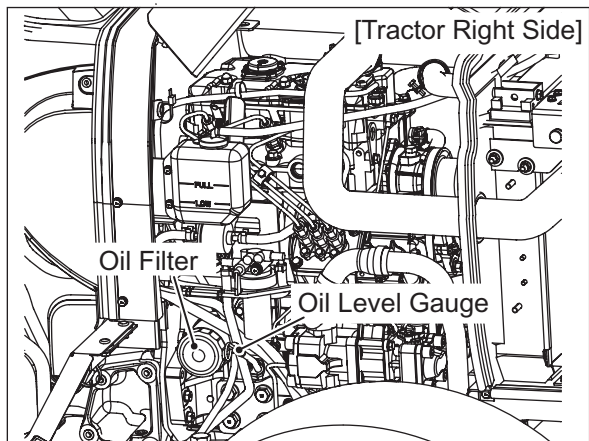
[First time]

Replace after operation for 50 hours.

[Second time and on]

Replace at every operation for 100 hours.

- ❶ Remove the engine oil filter (cartridge type) using a special tool (commercial item) if not loosened manually.
- ❷ After replacing the engine oil filter, oil is supplied more for the volume of the oil filter; therefore, check the oil level at the oil level gauge and supply oil to the upper limit of the oil level gauge if insufficient.



1944\_0058

## 5. Refueling

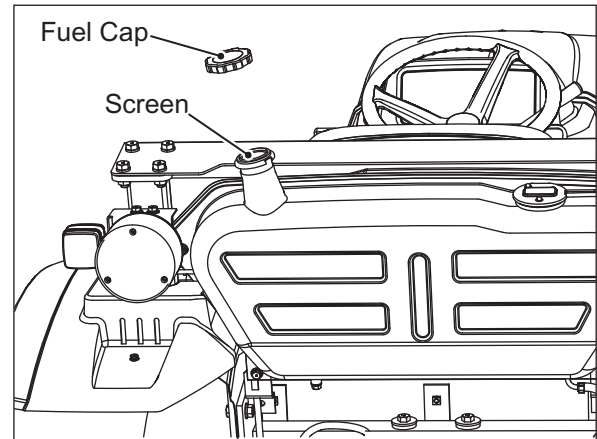


**WARNING**

For fire prevention

- **Keep clear of fire when refueling.**  
The fuel may catch fire, causing a fire.
- **Wipe off split fuel completely.**
- **Check if there is any fuel leakage from the fuel hose or joint and if any, replace it.**

- ❶ Check the remaining amount in the fuel tank and refuel passing the screen.

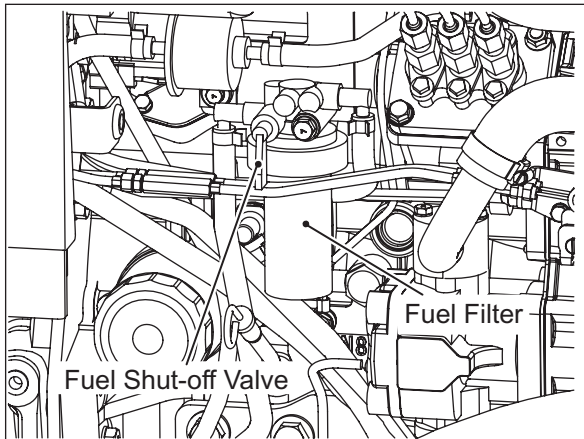


1944\_0059

### NOTE

- **When attaching the engine oil filter, apply oil to the packing side, tighten the engine oil filter manually, and tighten 2/3 rotation approximately after the packing makes contact with the sealing face.**

## 6. Replacement and Cleaning of Fuel Filter



1944\_0089

### ① Replacement

Filters are cleaned every 50 hours, and exchanged every 200 hours.

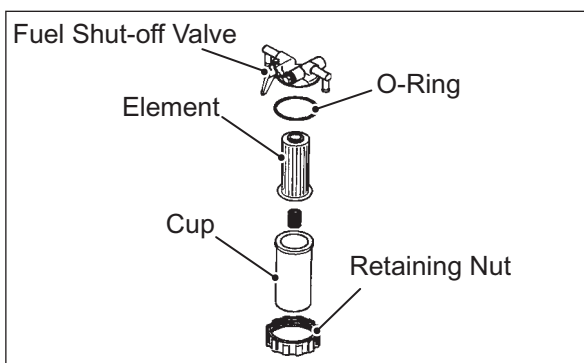
### ② Cleaning

- (1) Close the fuel shut-off valve
- (2) Loosen the filter cup-retaining nut. Remove filter element and clean inside of filter cup.
- (3) Frush the filter element with a new diesel fuel, or exchange it for a new one.
- (4) Assemble filter cup and retaining nut to filter body.

### NOTE

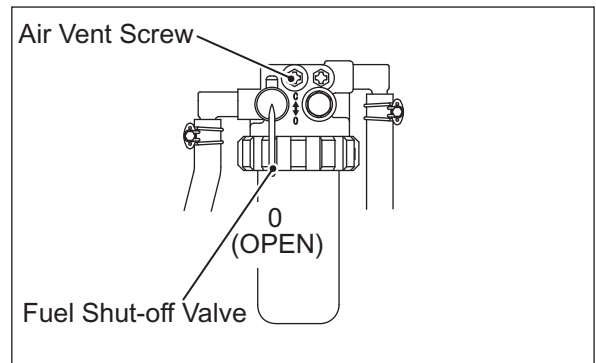
**- Be sure O-ring is in place on the filter body and filter cup.**

- (5) Open the fuel shut-off valve and vent the fuel system. See Air Vent Procedure in this manual.



1944\_0090

## 7. Air Vent Procedure



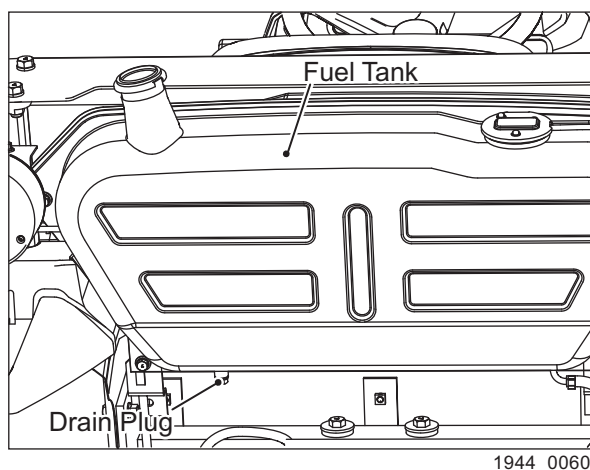
1944\_0091

- (1) Open the Fuel Shut-off Valve.
- (2) Starter Key Switch is turned to the < | > position. (Engine not running.)
- (3) Loosen the air vent screw on the fuel filter. Keep it until the fuel flowing from the fuel filter becomes free of air bubbles. Tighten the air vent screw.
- (4) Fuel system air removal is finished. Then, the engine can be started.
- (5) If the engine won't start, (2)(3) can be operated again.

## 8. Cleaning of Fuel Tank

Remove the drain plug and clean inside the tank in the following cases.

- ❶ After running 300 hours or every two years
- ❷ When water or dust enter in the tank



### NOTE

- Remove the fuel from the filler opening using a pump before removing the drain plug.
- When the drain plug is removed, the remaining fuel is drained; therefore, place a drip pan under the drain plugs on both sides.
- After cleaning the fuel tank, be sure to tighten the drain plugs completely. Also, check that the fuel is not leaking.

## 9. Maintenance of Coolant Water

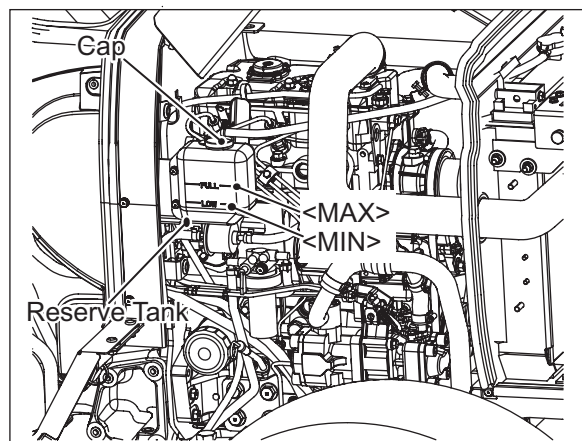
**⚠ WARNING** For burn prevention

- Do not open the radiator cap during operation and immediately after stopping the engine. Hot water blows out, and it may cause a burn. Open the cap slowly after the engine cools down.

If the coolant water of the radiator is handled incorrectly, it shortens the service life of the engine.

### ❶ Inspection of Coolant Water

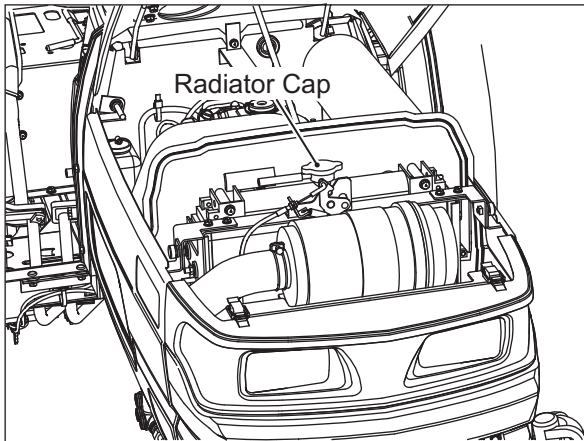
- (1) A reserve tank is provided in the radiator and adjusts the amount of coolant water in the radiator. Perform inspection before operation and supply coolant water if insufficient.
- (2) Open the side cover on left and make sure that the coolant water is within the range between <MAX> (upper limit) and <MIN> (lower limit) in the reserve tank.
- (3) Supply coolant water if the reserve tank is insufficient.



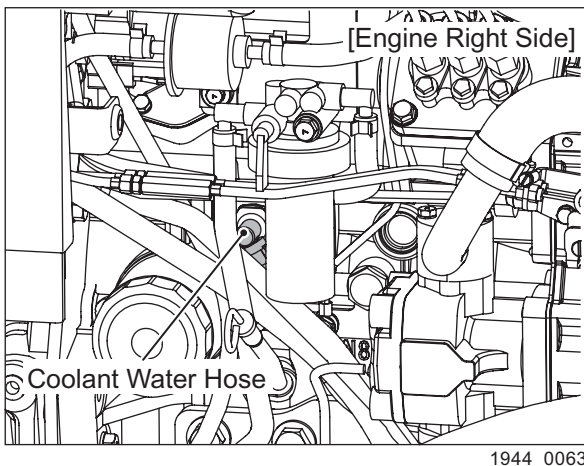


## ② Replacement of Coolant

- (1) Open the hood and remove the radiator cap.



- (2) Remove the side cover on right, remove the engine side coolant water hose, and drain the coolant water. Remove the reserve tank to drain the water of the reserve tank.



- (3) After connecting the coolant water hose, supply tap water, start the engine, and operate it for 15 minutes approximately at high idling to drain the water. Repeat washing with water until the drained water is clear if it is cloudy.
- Use the commercial radiator cleaning agent to clean effectively.
- (4) Connecting the coolant water hose when draining is completed. Supply the coolant water to the maximum point of the filler opening of the radiator and close the radiator cap.

- (5) Supply the coolant water to the <MAX> (upper limit) of the reserve tank.
- When the coolant water is cooled, the coolant water in the reserve tank is sucked in, and the water level is reduced in the reserve tank; thus, supply the coolant water to the <MAX> (upper limit) of the reserve tank.
  - Use antifreeze "long-life coolant" containing anticorrosive agent and lubricating agent for the coolant water in order to prevent corrosion inside the engine and radiator.

### NOTE

- **Use freshwater for the coolant water. Do not use muddy water or briny water.**
- **The coolant water may be frozen in the winter, and it may damage the engine or radiator. Mix it with antifreeze "long-life coolant" for use.**
- **Read the instruction manual of the cleaning agent thoroughly when using cleaning agent for the radiator.**
- **Replace the coolant water and clean inside the radiator every two years.**

## 10. Inspection and Replacement of Transmission Oil

**⚠ WARNING** For injury prevention

- Place the tractor on flat place and stop the engine when inspecting and replacing the transmission oil.

### NOTE

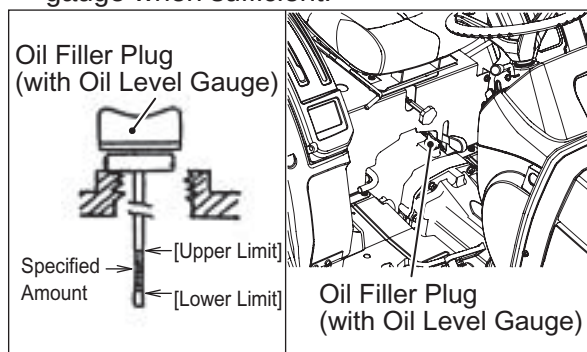
- Check the oil level before starting the engine.

### 1 Inspection

- Remove the oil filler plug and make sure that the oil level gauge indicates within the range between the upper limit and lower limit (specified amount).
- When the engine is running, the oil level lowers. When checking the oil level, stop the engine and wait for five minutes.
- Check the oil level before starting the engine.

### 2 Oil Supply

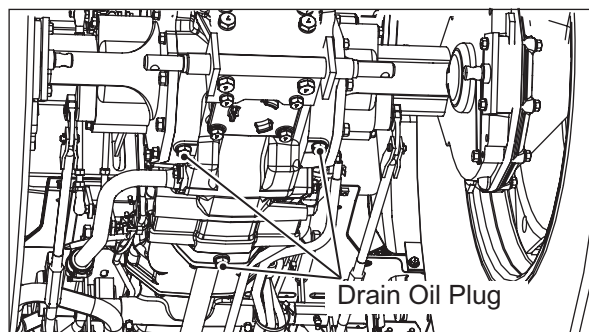
- Supply oil to the upper limit of the oil level gauge when sufficient.



1944\_0064

### 3 Oil Replacement

- (1) Remove the drain oil plug located in the bottom part of the center of transmission housing and drain the oil.



1944\_0065



## 11. Replacement of Hydraulic Oil filter

Provide a cartridge type hydraulic oil filter and replace.

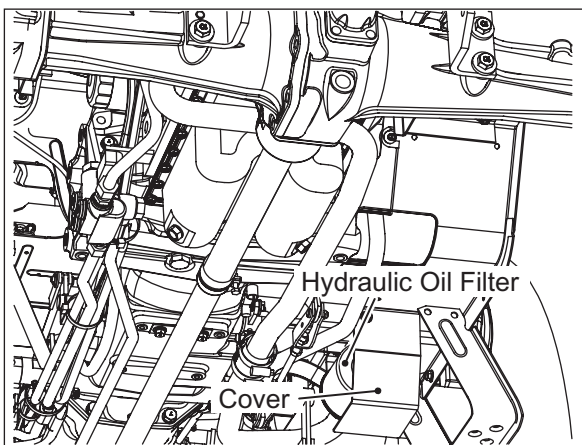
[First time]

Replace after operation for 100 hours.

[Second time and on]

Replace at every operation for 300 hours.

- ① Clean around the hydraulic oil filter removing dirt located on the left below of the step.
- ② Remove the cover from the step by removing bolts.
- ③ Remove the hydraulic oil filter using a special tool (commercial item) if not loosened manually.
- ④ After replacing the hydraulic oil filter, oil is supplied more for the volume of the oil filter; therefore, operate the engine for five minutes and stop the engine, wait for five minutes and check the oil level at the oil level gauge. Supply oil to the upper limit of the oil level gauge if insufficient.



1944\_0066

### NOTE

- When attaching the hydraulic oil filter, apply oil to the packing side, tighten the hydraulic oil filter manually, and tighten 2/3 rotation approximately after the packing makes contact with the sealing face.

## 12. Inspection and Replacement of Front Axle Oil



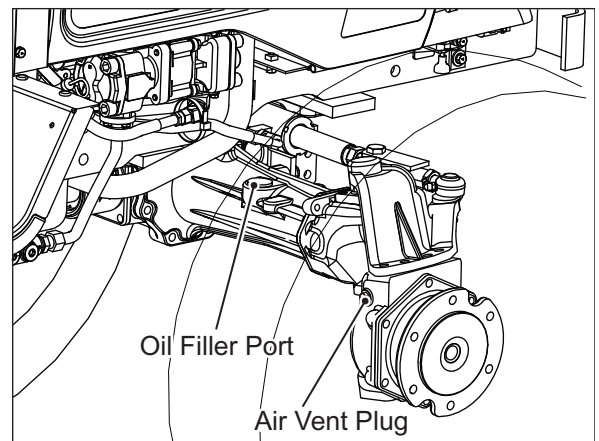
### WARNING

For injury accident prevention

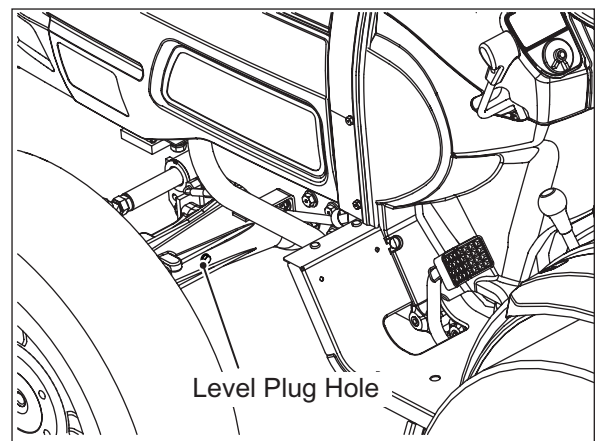
- Place the tractor on flat place and stop the engine when inspecting and replacing the front axle oil.

### ① Inspection and Oil Supply

- If the oil comes out when removing the level plug, it is appropriate. If insufficient, supply oil to the oil filler port until the oil comes out from the oil level hole.



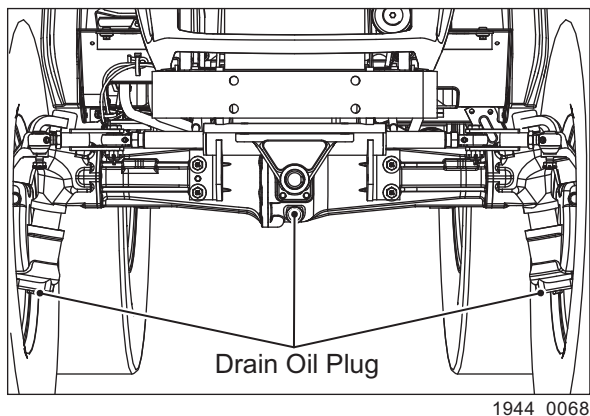
1944\_0067



1944\_0044

## 2 Oil Replacement

- (1) Remove the drain oil plugs (3 places) and drain the oil.
- (2) Close the drain oil plugs.
- (3) Remove the air vent plug located on both gear cases.
- (4) Supply oil through the fill hole.  
Supply gear lube GL-4 or better gear lube until the oil flows out of the air vent plug hole, and install air vent plug.
- (5) Until the oil flows out of the level plug hole.



### NOTE

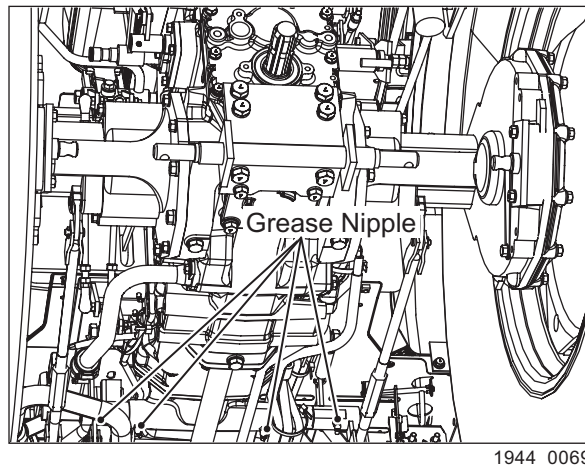
- Check the oil level before starting the engine.

## 13. Lubrication of Each Part

### 1 Brake Link (Left and Right)

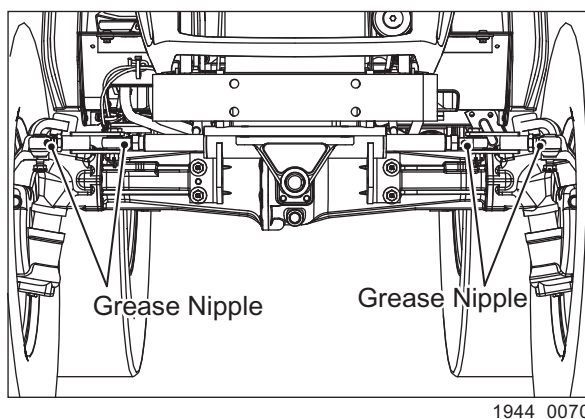
- Lubricate the grease from the grease nipple

(Illustration indicates the brake link.)



### 2 Rod End

- Lubricate an appropriate amount of grease from the grease nipple (4 places).



**SECTION -3**

**MECHANICAL STRUCTURE**

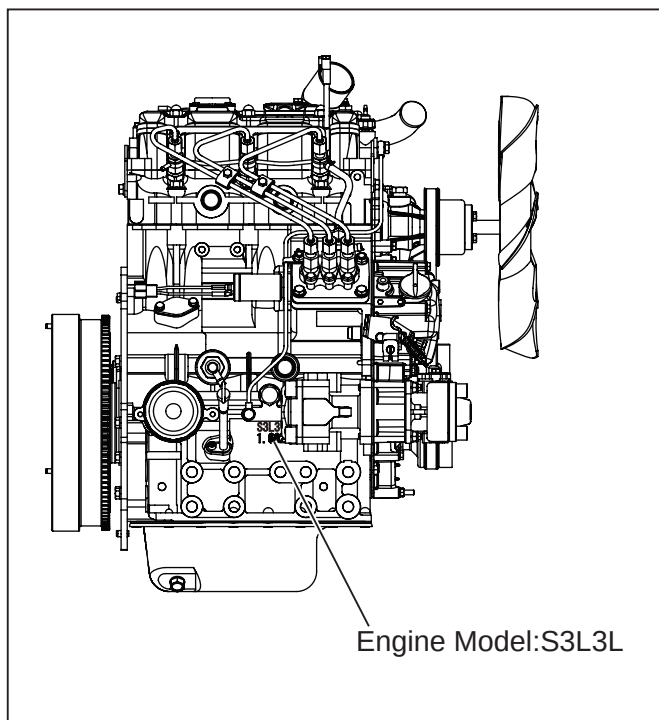


# 1. ENGINE

## 1-1 Engine

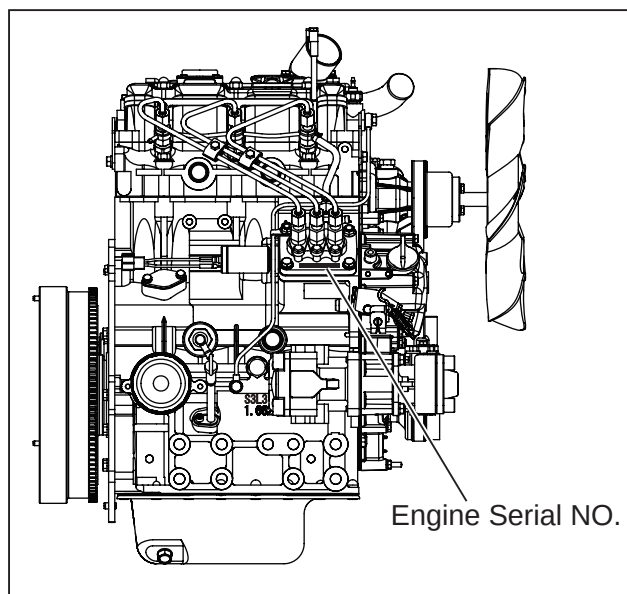
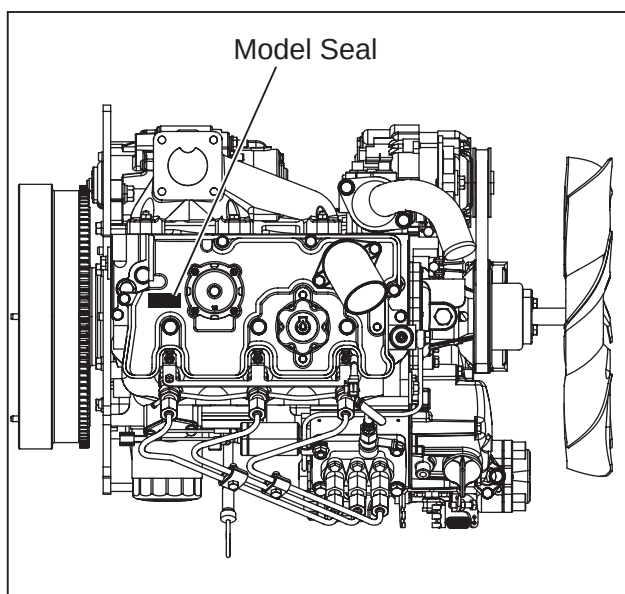
### 1. Engine model

- (1) An indication stating the engine model is put at right side of the engine and lower side of the injection pump.



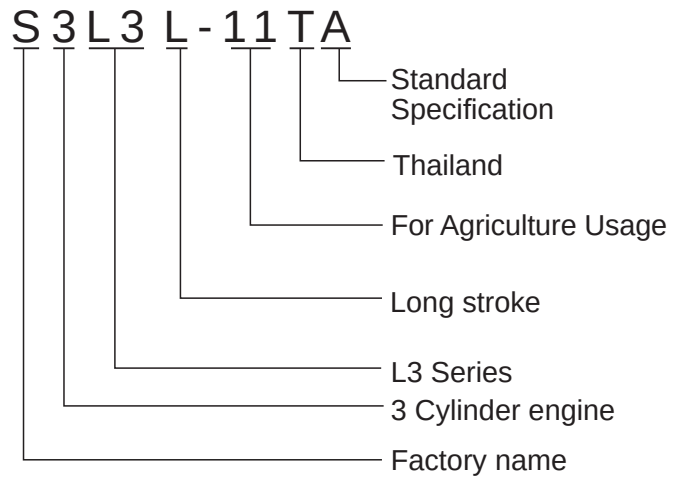
### 2. Engine serial No.

- (1) A sticker stating the engine serial No. is put at the upper surface of the engine and cylinder head cover.
- (2) The engine serial No. is stamped at the injection pump installed face.



### 3. Engine specification

| Item                           | Unit               | Specification                             |
|--------------------------------|--------------------|-------------------------------------------|
| Type                           | -                  | Water cooled vertical 4 cycle 3 cylinders |
| Model                          | -                  | S3L3L-11TA                                |
| Displacement                   | L (cc)             | 1.662(1662)                               |
| Rated RPM                      | rpm                | 2600                                      |
| Rated out put                  | kw (ps)            | 26.5(36.0)                                |
| Max. Torque                    | N.m (kg-m)         | 106(10.8)                                 |
| RPM at max. torque             | rpm                | 1800                                      |
| Max. rpm at no load            | rpm                | 2810(±25)                                 |
| Min. rpm at no load            | rpm                | 995(±25)                                  |
| Fuel consumptiont              | g/kwh (g / psh)    | 260(191)                                  |
| Fan                            | RPM (Max. / Rated) | rpm 3737/3458                             |
|                                | Dia.               | mm 340                                    |
| Pulley ratio crank shaft / fan | -                  | 1.33                                      |

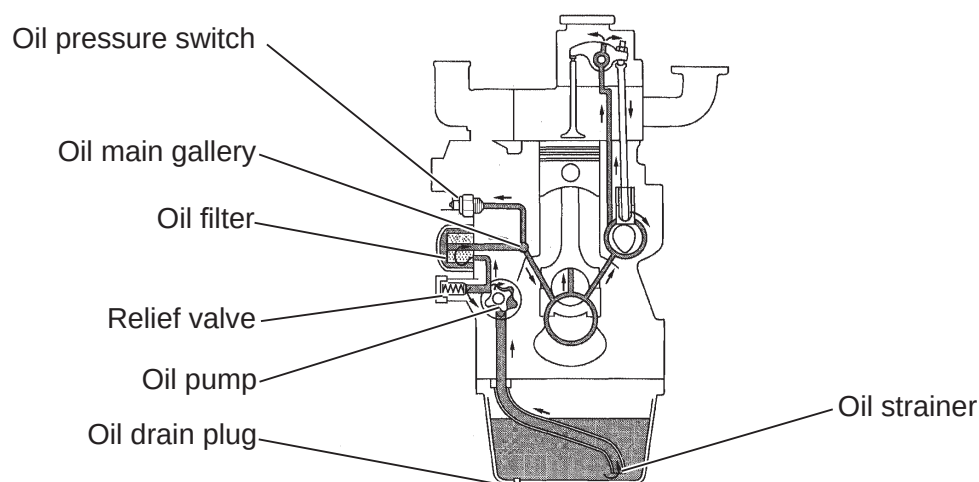


## 1-2 Oil system

### 1. Specification

| Item                           | Model | S3L3L                                 |
|--------------------------------|-------|---------------------------------------|
| Lubrication / Percolation type |       | Full flow spin-on cartridge filter    |
| Oil                            |       | API classification CF or over         |
| Oil capacity (L)               |       | 4.5                                   |
| Oil pump type                  |       | Trochoid gear pump                    |
| Relief valve pressure          |       | 0.3~0.4MPa (3~4 kgf/cm <sup>2</sup> ) |
| Oil filter                     |       | Cartridge filter type                 |

### 2. Structure

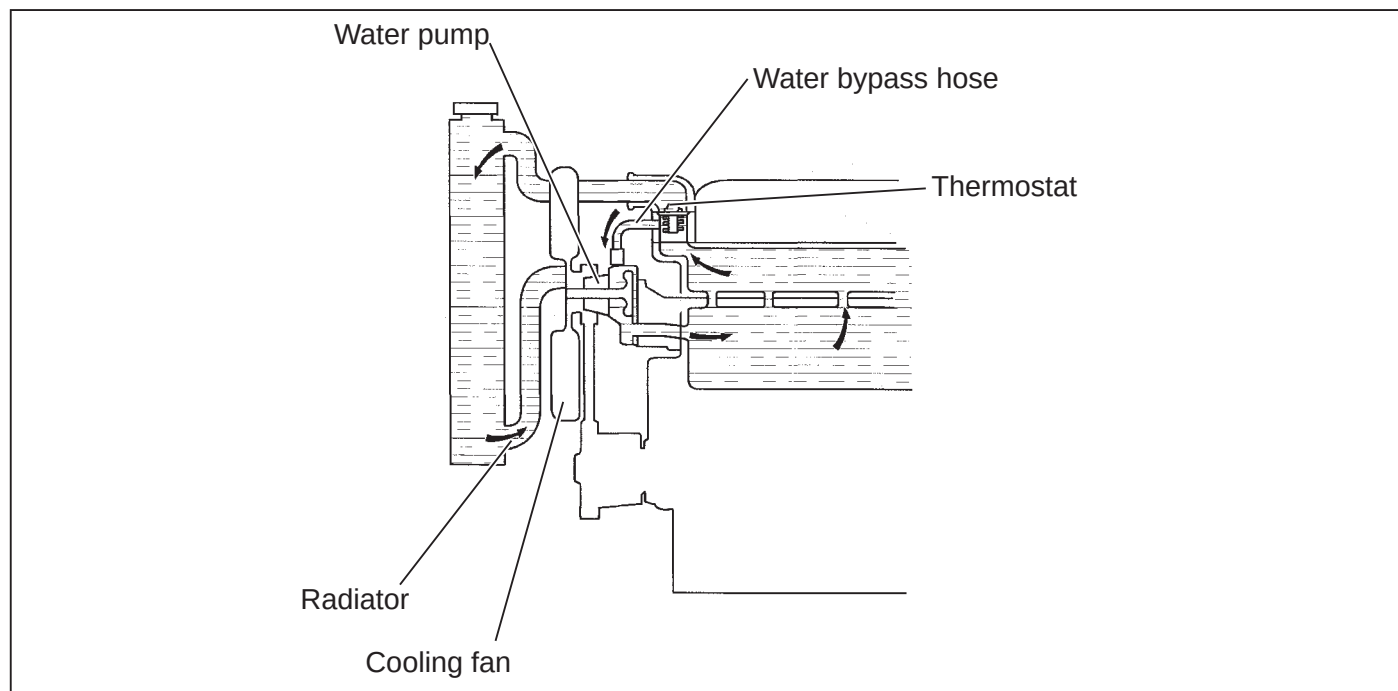


## 1-3 Cooling system

### 1. Specification

| Item \ Model       |                | S3L3L                            |
|--------------------|----------------|----------------------------------|
| Type               |                | Forced circulation by water pump |
| Fan                | Type           | Suction type                     |
|                    | Diameter       | φ340                             |
|                    | Drive          | Belt                             |
|                    | Pully Ratio    | 1 : 1.33                         |
| Water Pump         | Type           | Centrifugal pump                 |
|                    | Drive          | Belt                             |
| Water Capacity (L) |                | 2.8                              |
| Thermostat         | Type           | Wax pellet type                  |
|                    | Begins to Open | 71±1.5°C / Full open 82°C        |

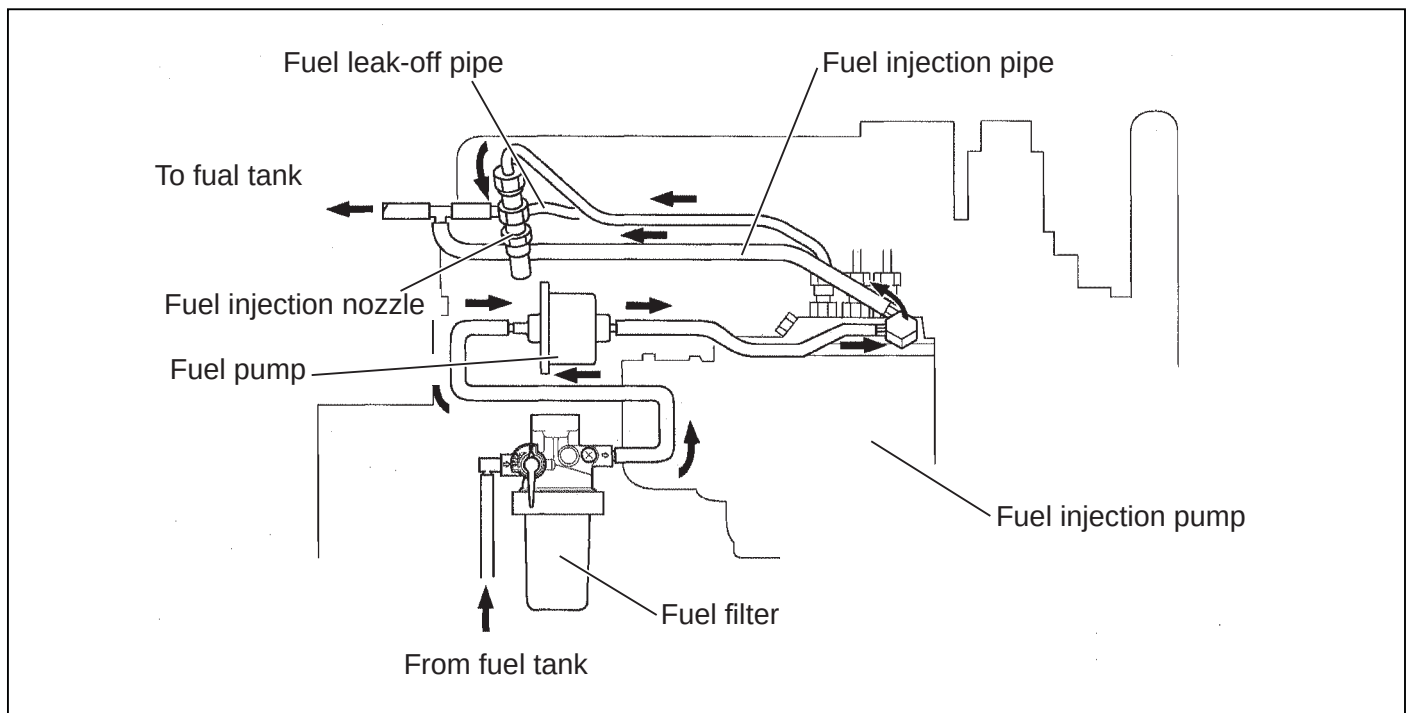
### 2. Structure



## 1-4 Fuel system

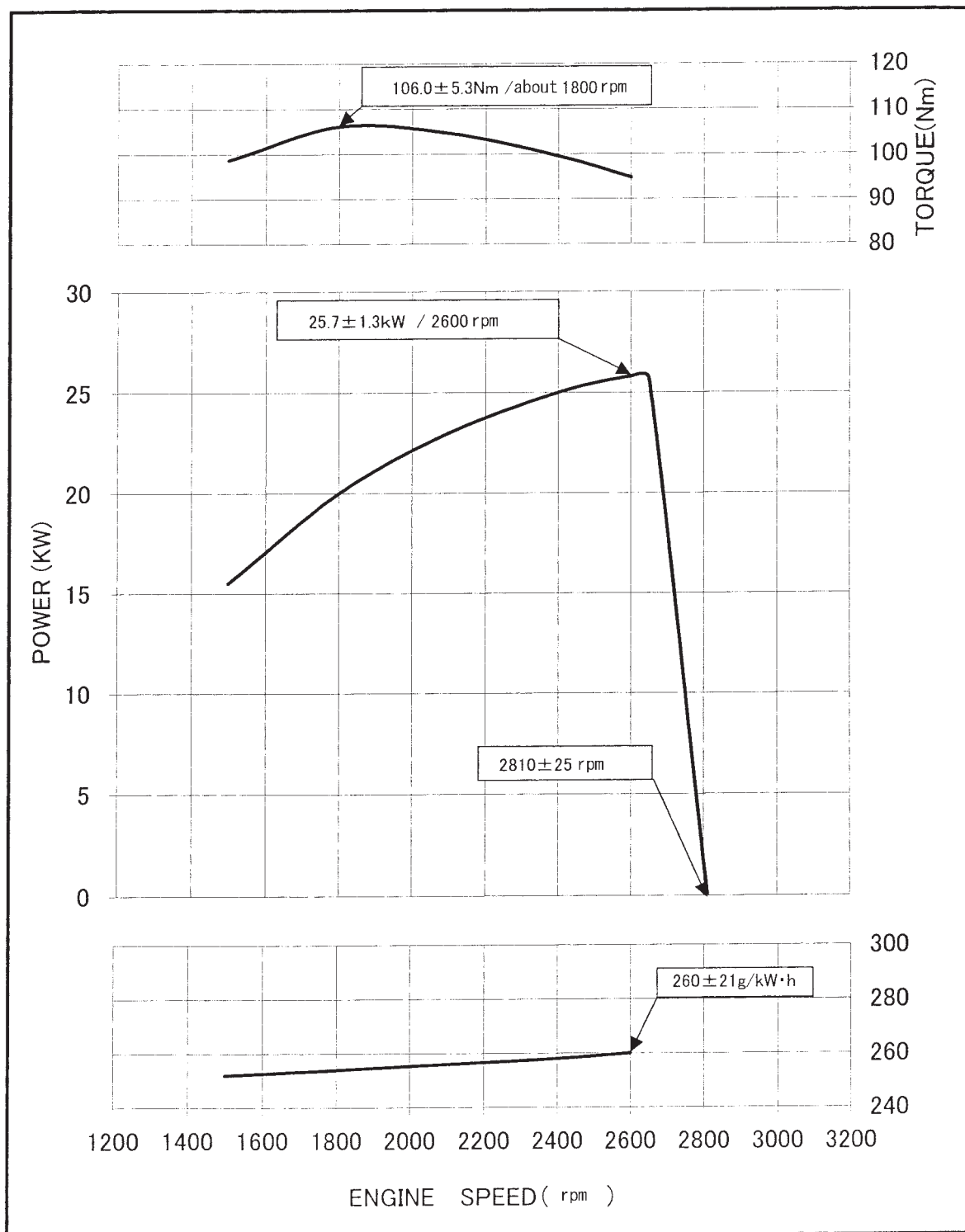
### 1. Specification

| Item             | Model               | S3L3L                                  |
|------------------|---------------------|----------------------------------------|
|                  | Type                | Bosch,PFR type                         |
| Injection Pump   | Diameter of Plunger | φ6.0mm                                 |
|                  | Type                | Throttle type                          |
| Injection Nozzle | Injection Pressure  | 14.7 MPa                               |
|                  | Type                | Paper- element cartridge separate type |
| Fuel Filter      | Type                | Electric(diaphragm)                    |



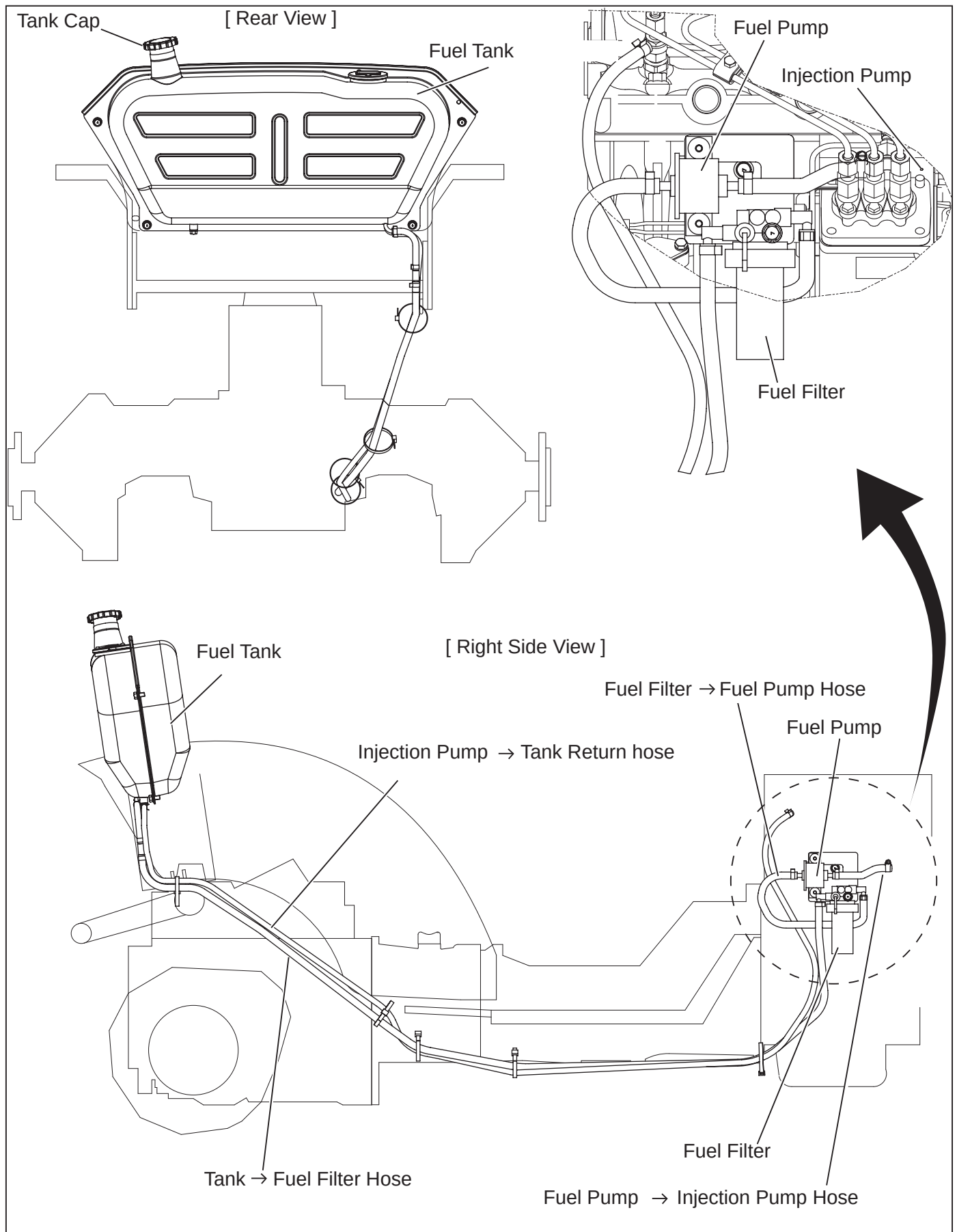


## 1-5 Performance Curves

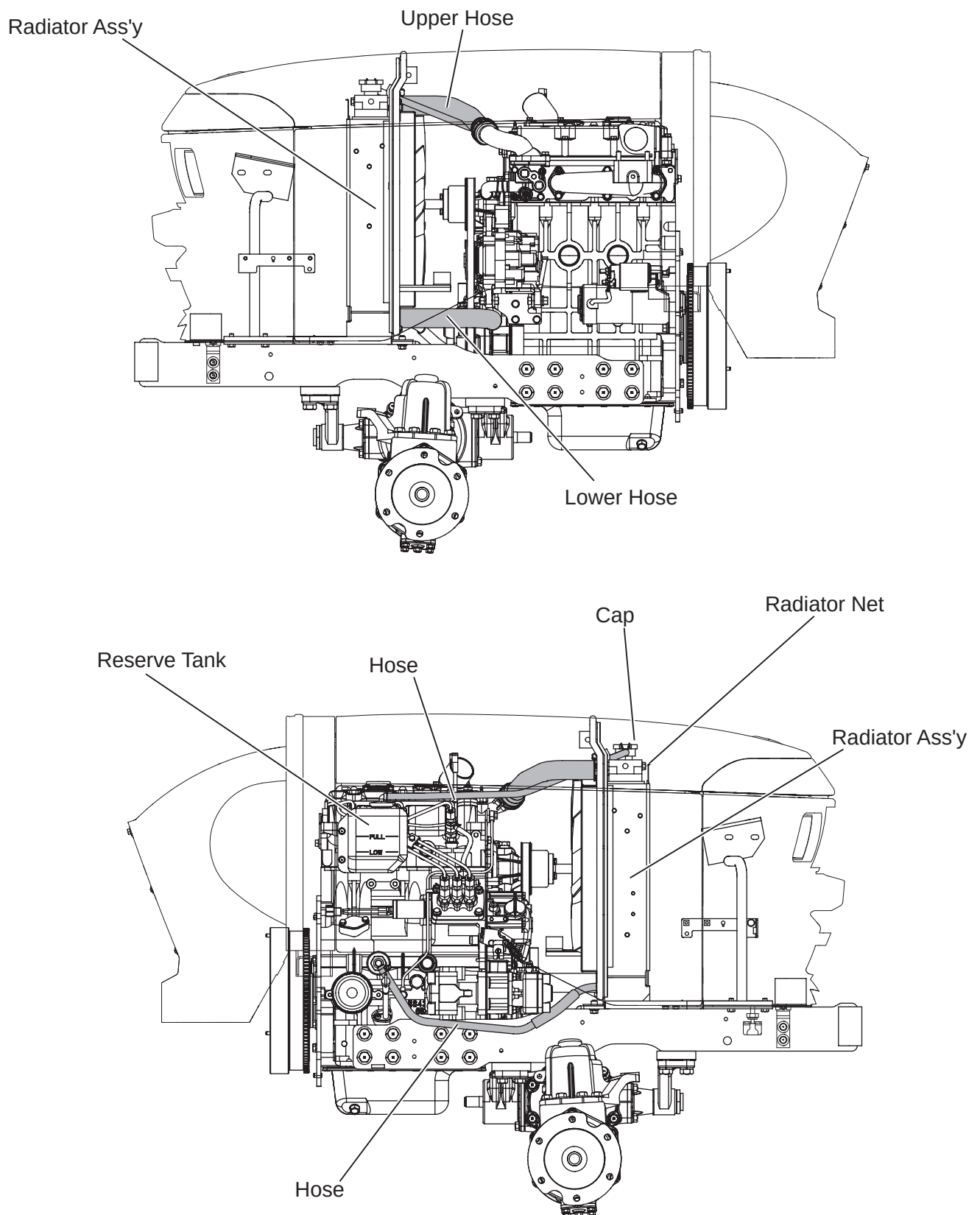


## 2. ENGINE COMPONENT & RELATED DEVICE

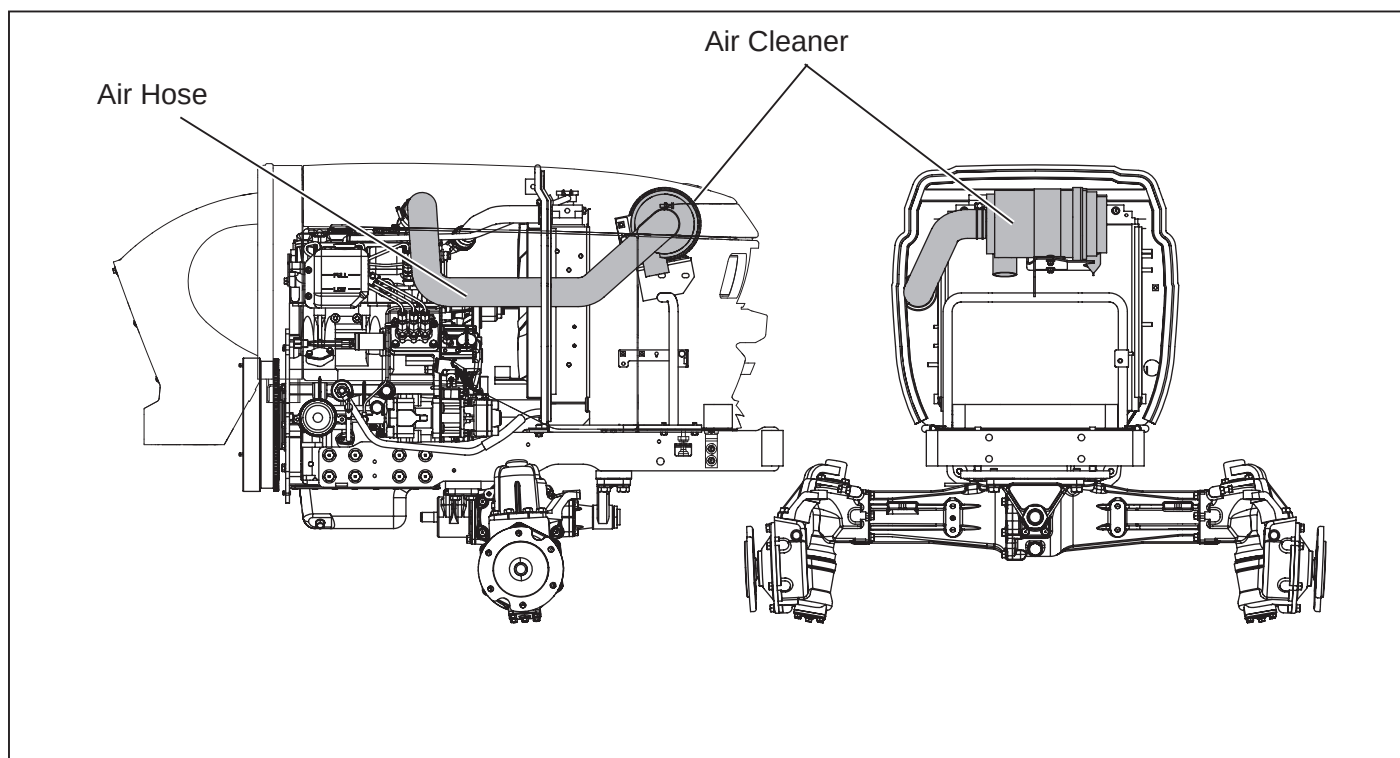
### 2-1 Fuel System



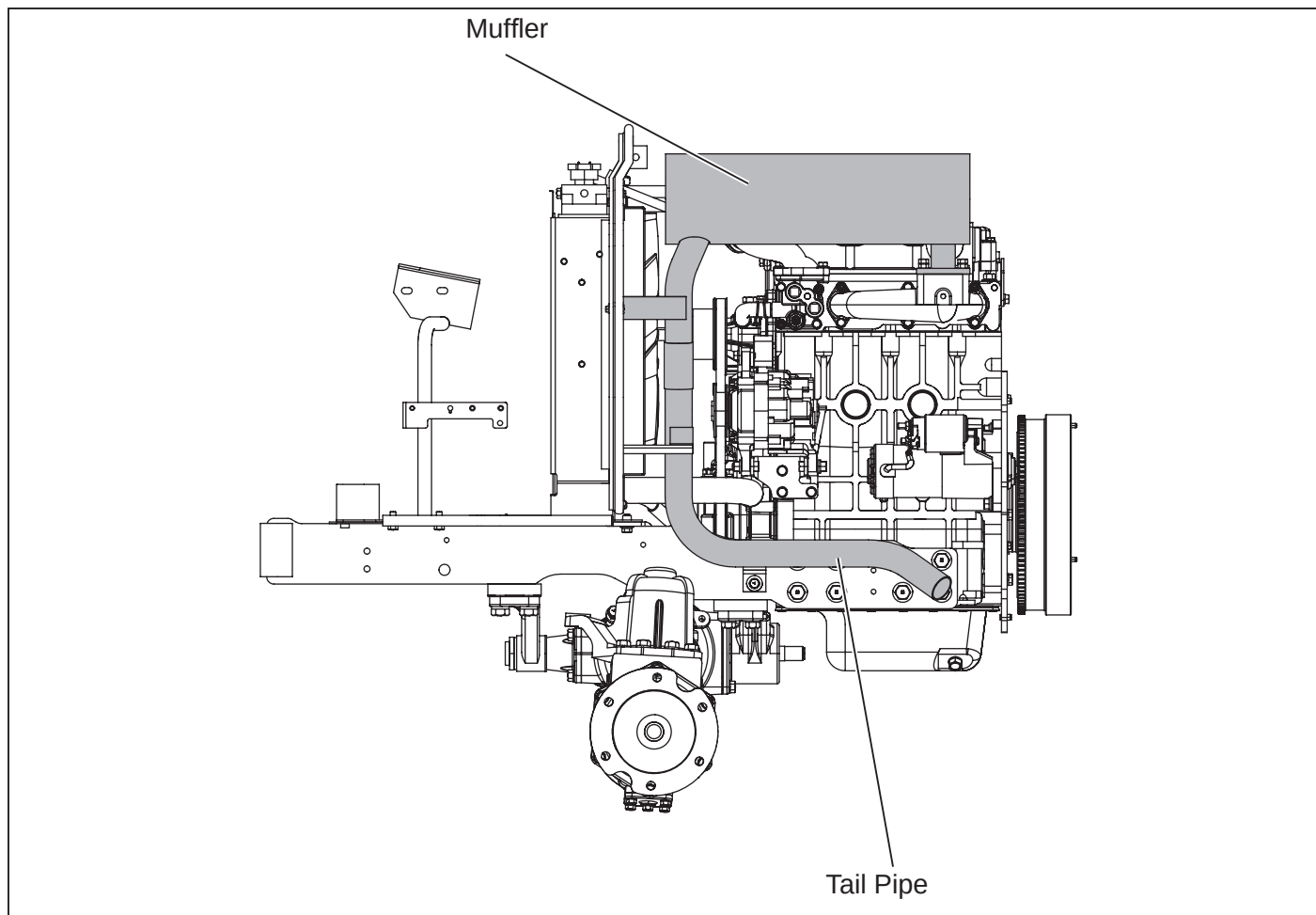
## 2-2 Cooling System



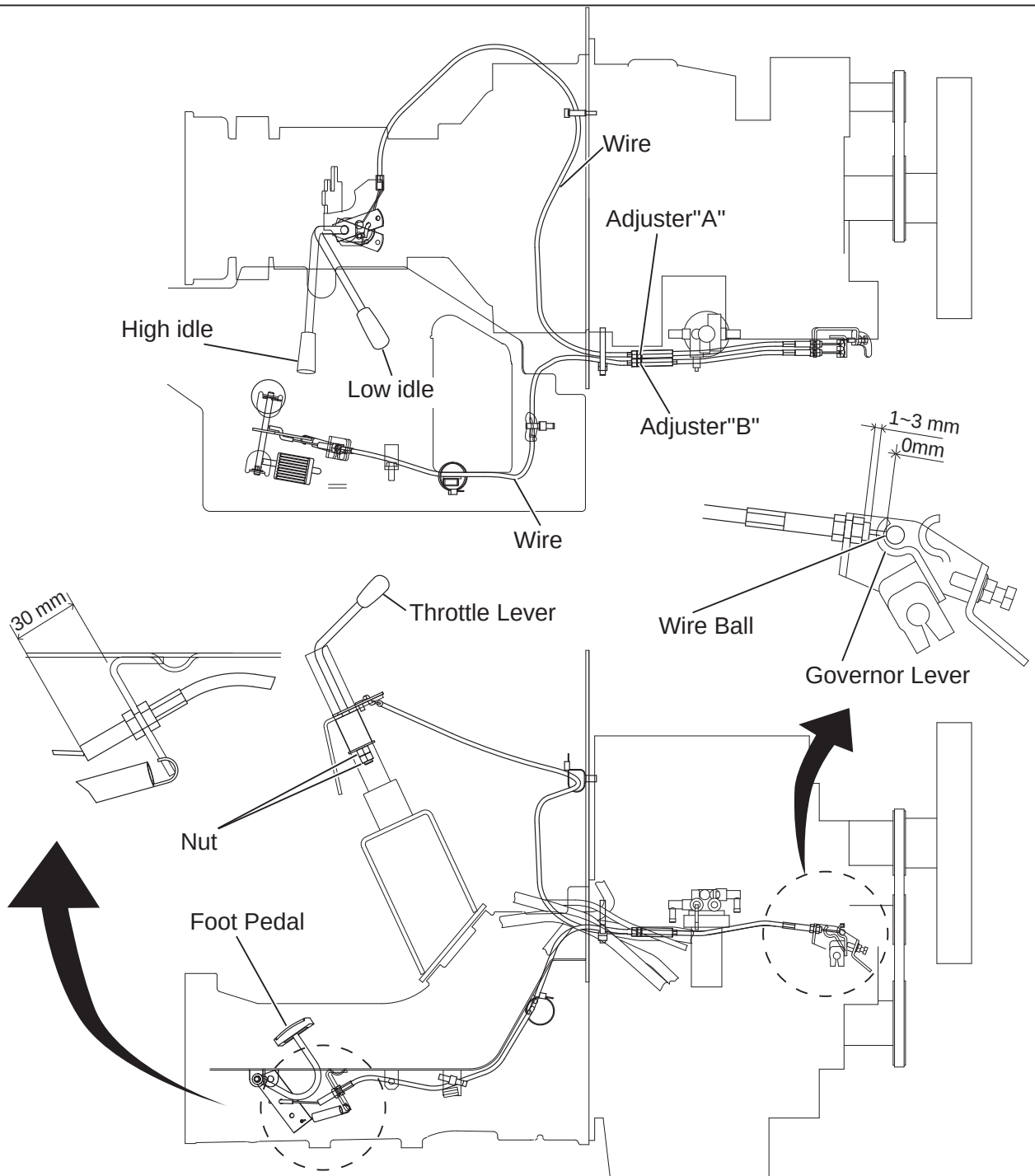
## 2-3 Air Cleaner



## 2-4 Muffler



## 2-5 Engine control

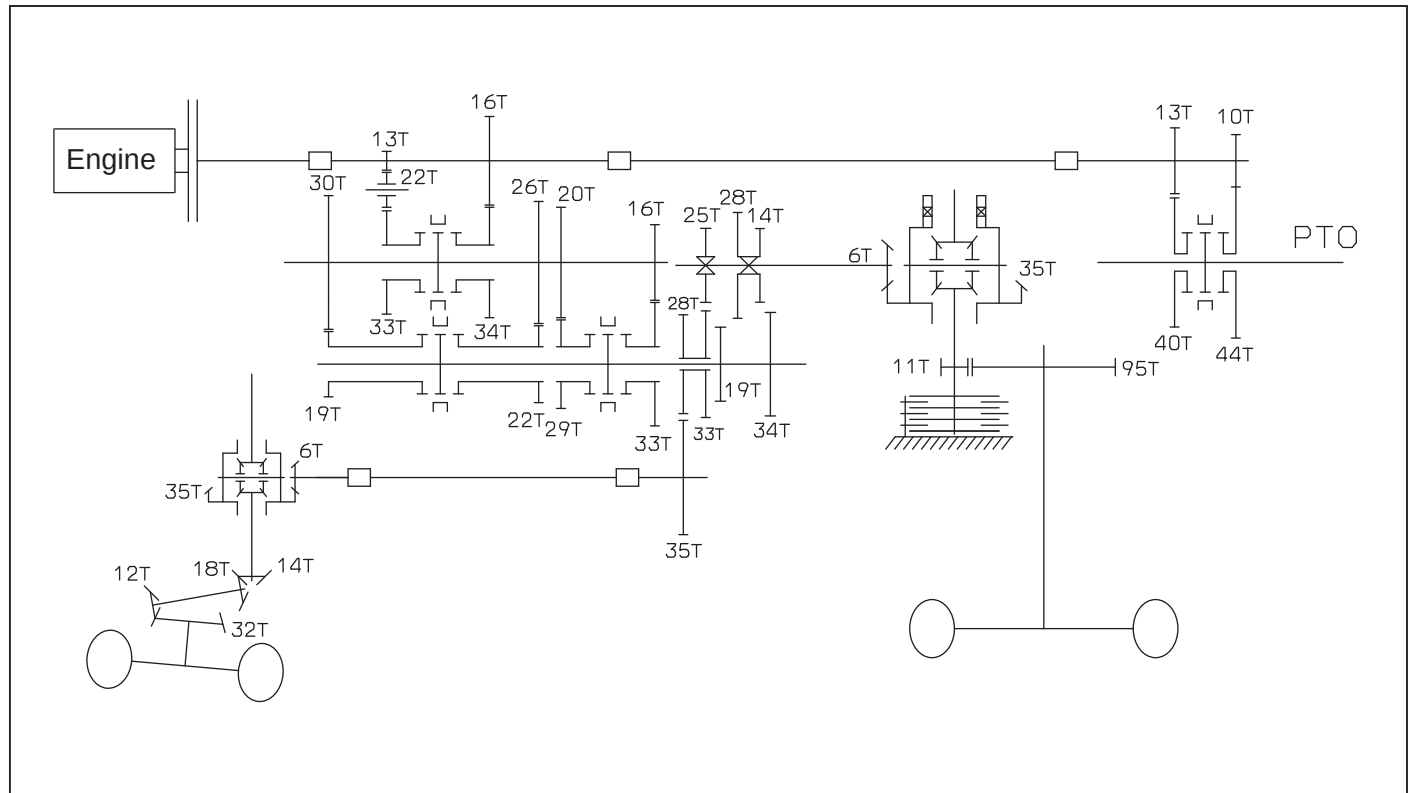


### [Adjustment]

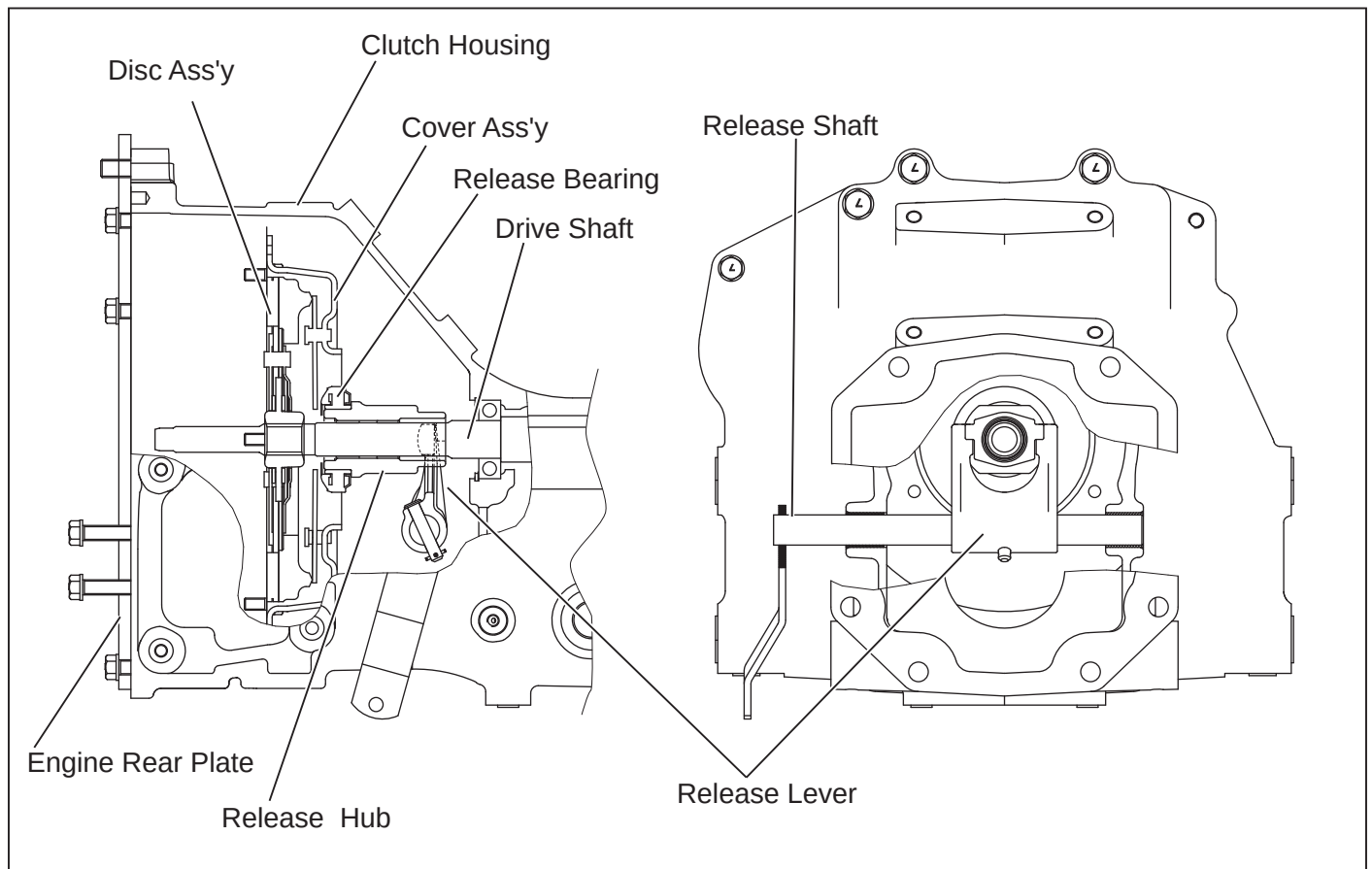
1. Adjust the operation force at edge of the Throttle lever to be 29.4 to 78.4 N {3 to 8 kgf , 32.5 to 57.8 lbf } tip using the nut and lock it.
2. Pull the throttle lever to the high-speed side and adjust by the adjuster "A" for the wire to have the clearance between governor lever and wire ball to be 0mm {0in}.
3. Step on the foot pedal. Adjust by the adjuster "B" for the wire to have the clearance between governor lever and wire ball to be 0mm .
4. When returning the both accelerator lever and foot pedal to the lower idle side, make sure the governor lever makes a contact with the low idle stopper.
5. Engine rpm at Low idle and High idle
  - Low Idle :  $995 \pm 25$  rpm
  - High Idle :  $2810 \pm 25$  rpm

### 3. POWER TRANSMITTING

#### 3-1 Power Transmitting Diagram

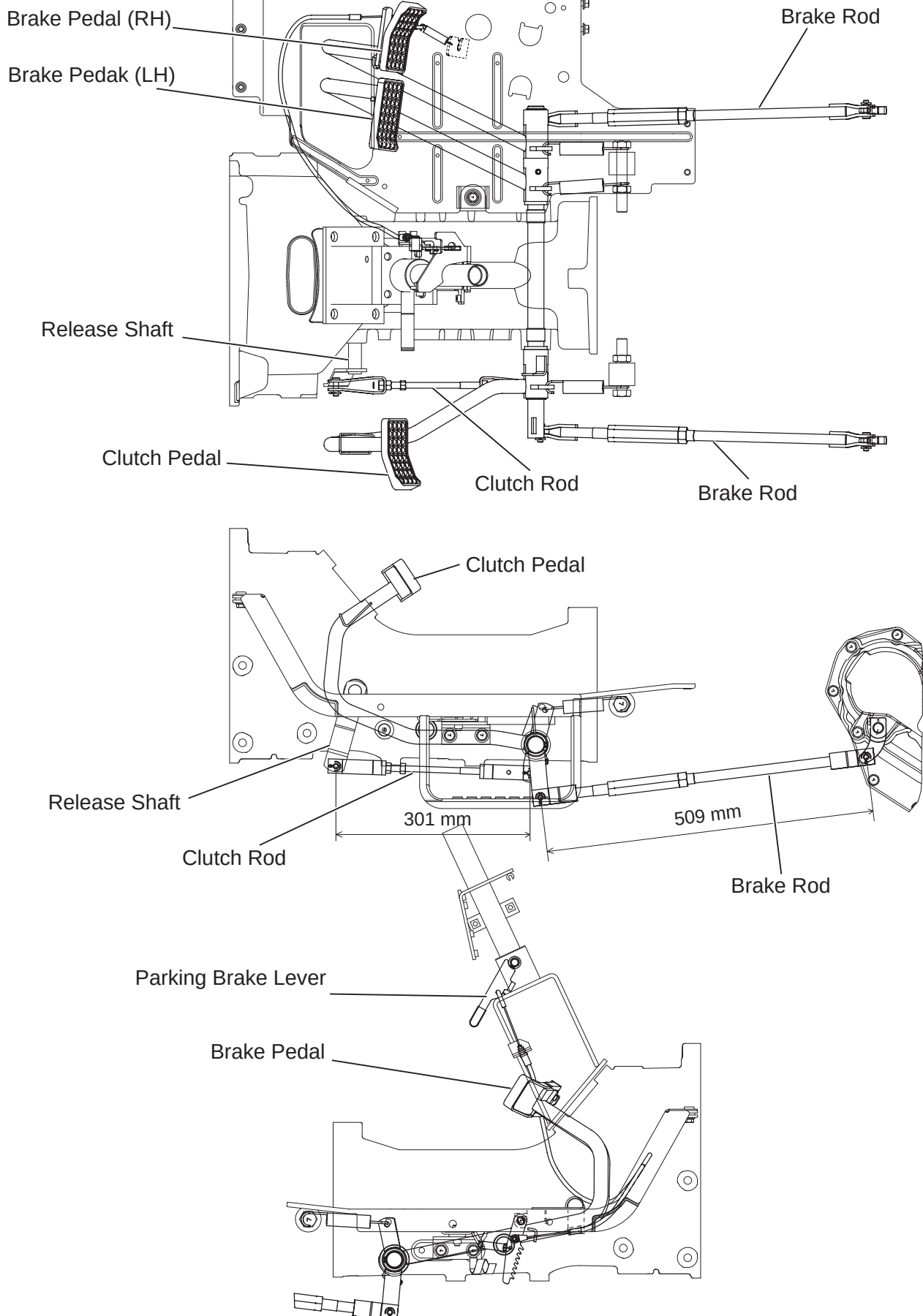


#### 3-2 Clutch Structure



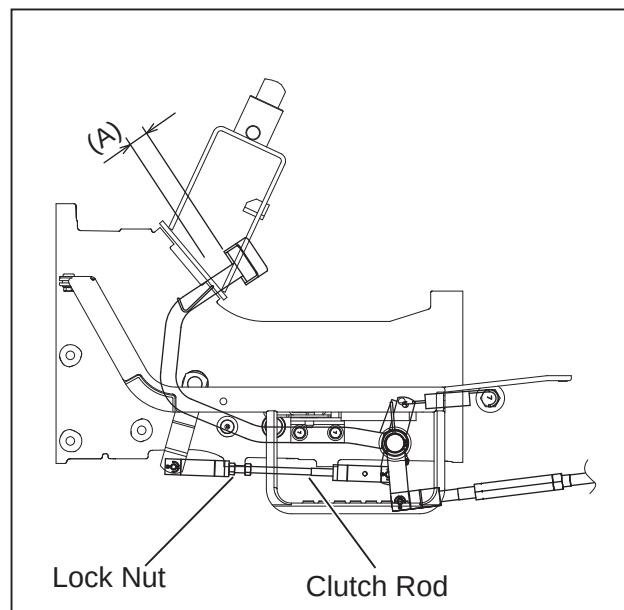
### 3-3 Clutch Control, Brake Control

#### 1. Structure



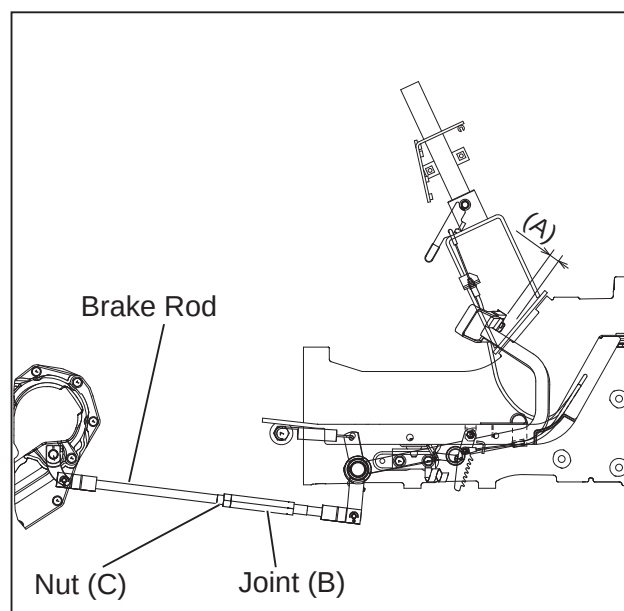
## 2. Clutch Adjustment

- 1) Amount of clutch pedal play (A) should be adjusted 20-30mm by clutch rod.  
After adjusted it, make sure to tight lock nut.



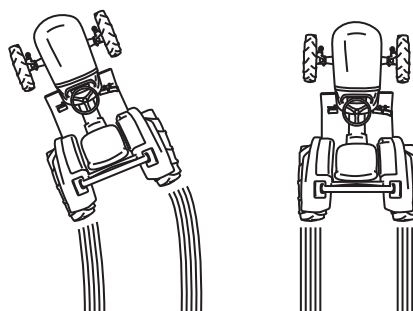
## 3. Brake adjustment

- 1) Amount of brake pedal play (A) should be adjusted 35-45mm by joint (B).  
Then tighten nut (C) firmly.  
Both side of brake should be adjusted same manner and height of pedal must be equal.
- 2) After proceed 1), try actual running test to make sure both side of brake perform same level.  
And if not, adjust again.



[One Side Braking]

[Normal]

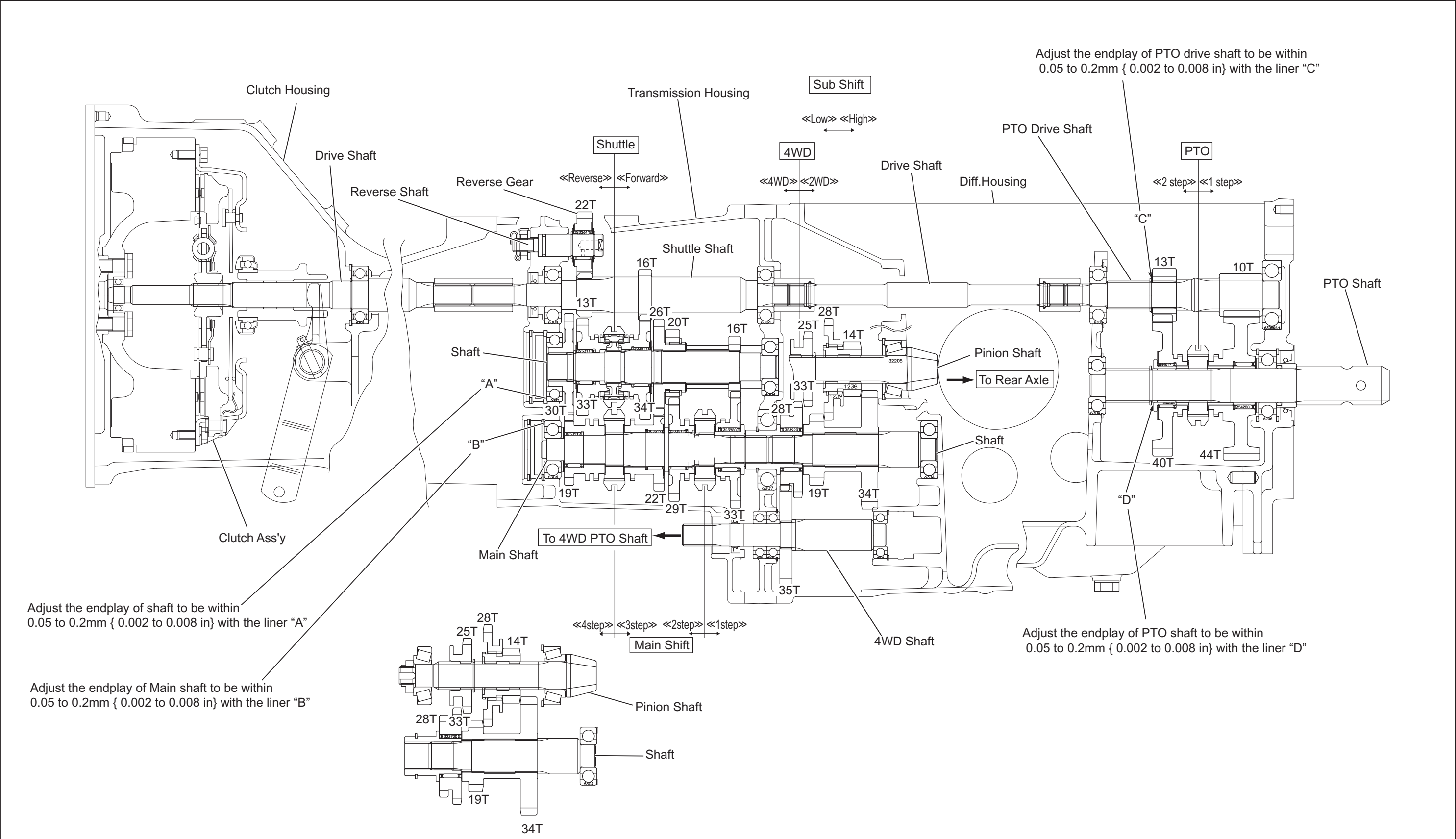




4. TRANSMISSION

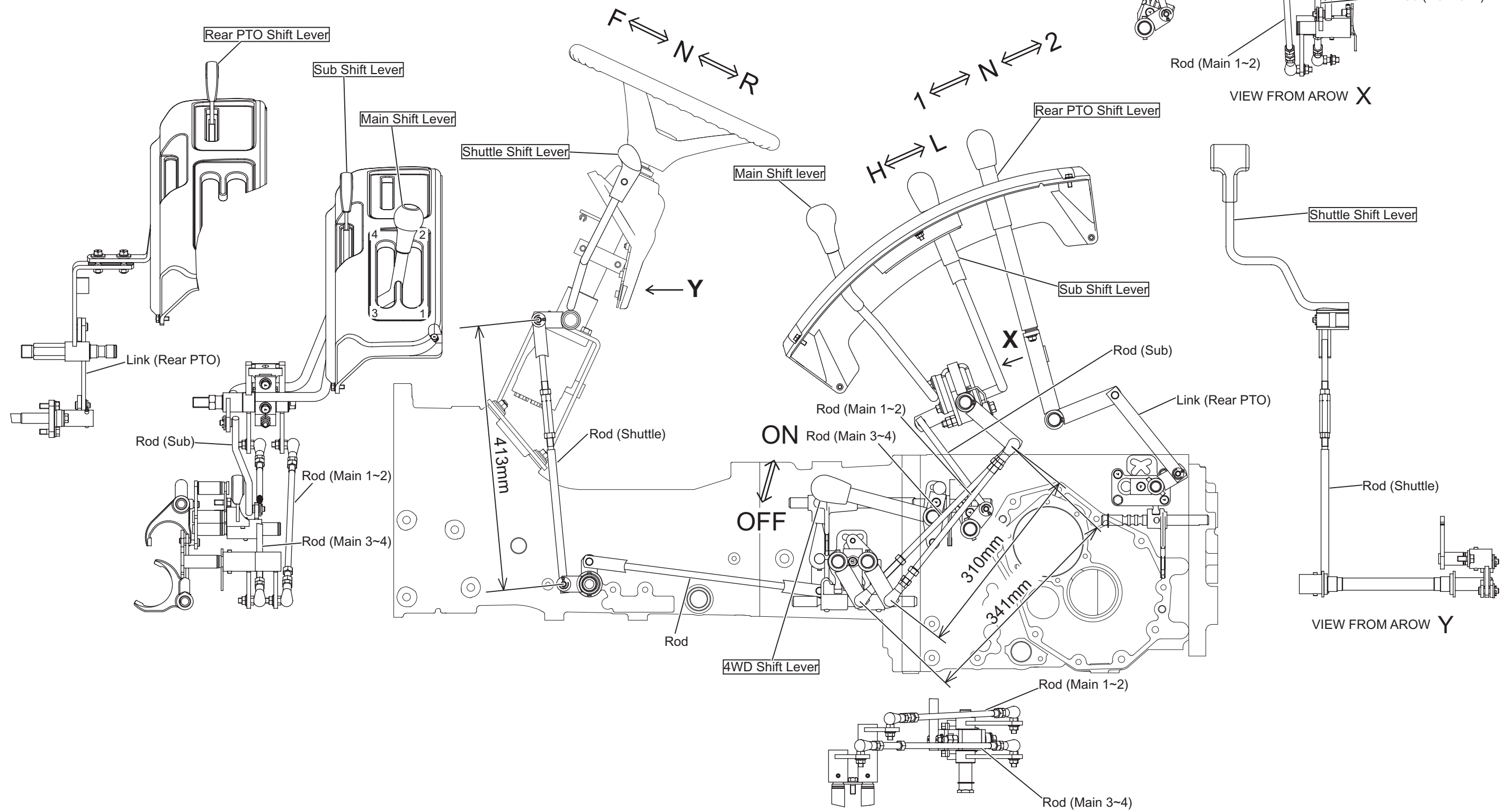
4-1 Structure

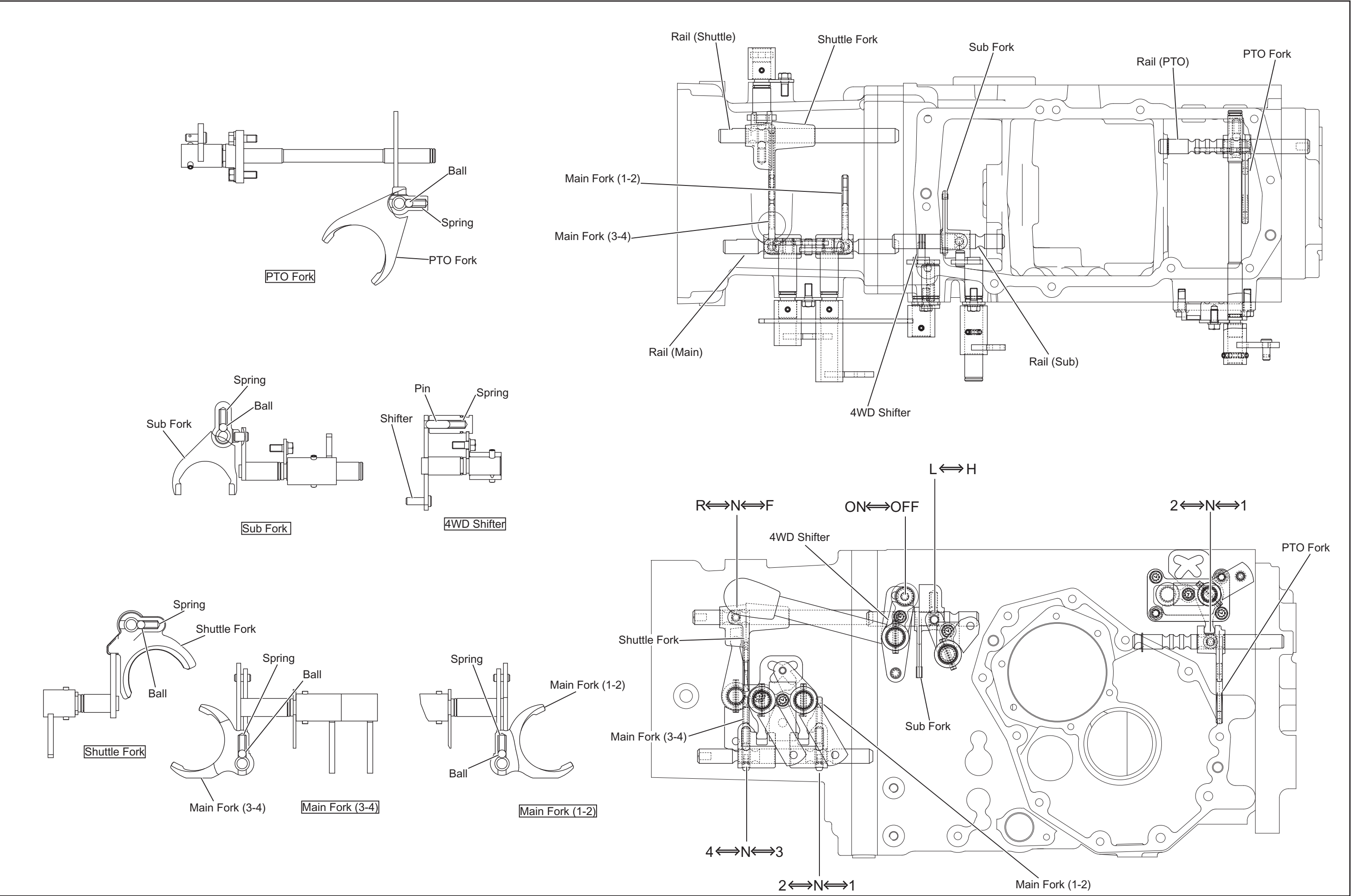
- \* Traveling speed designed as F8-R8 with 4steps of main shift, 2steps of sub shift and forward and reverse full shuttle.
- \* PTO speed designed as 2 steps.



## 4-2 Transmission shifter structure

- \* Main shifter, sub shifter and PTO shifter are constantmesh and slide type direct change with shift fork and rail.
- \* Shuttle shifter is synchromesh and slide by wire type with shift fork and rail.
- \* 4WD shifter is shift arm type with shift piece.







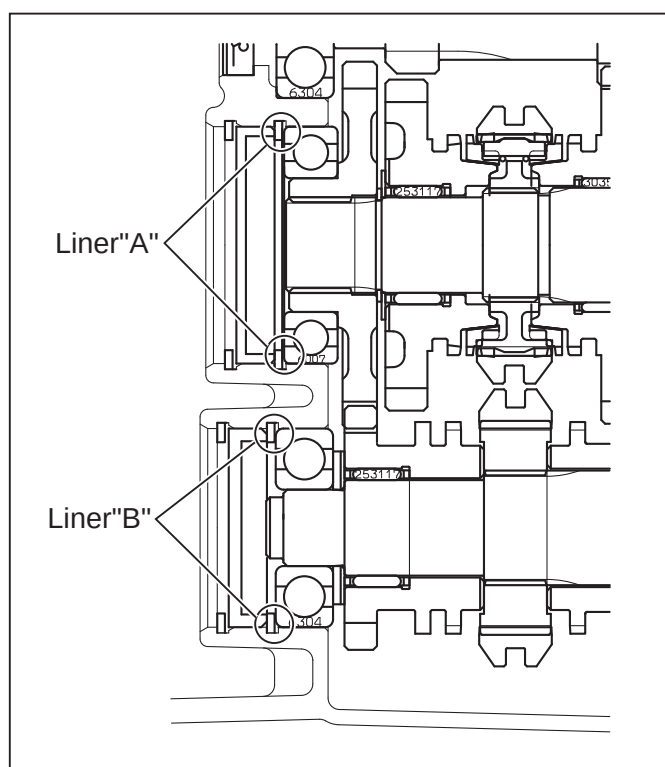
Technical drawings of the rear differential assembly, including a side view and a cross-sectional view.

**Side View Labels:**

- Grease
- 22T
- 16T
- 20T
- 25T
- 28T
- 30T
- 33T
- 34T
- 35T
- Pinion Shaft
- 4WD Shaft
- Shaft

**Cross-sectional View Labels:**

- Grease
- Liner "A"
- Liner "B"
- Pinion Shaft
- 4WD Shaft
- Shaft

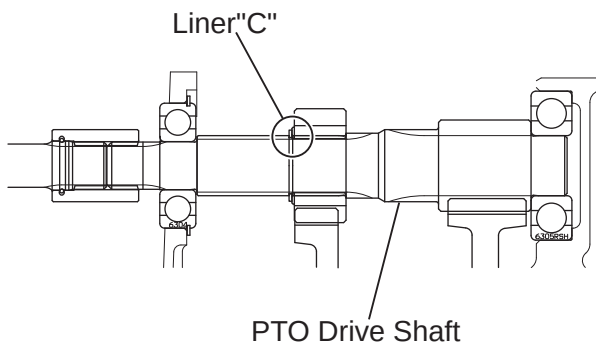
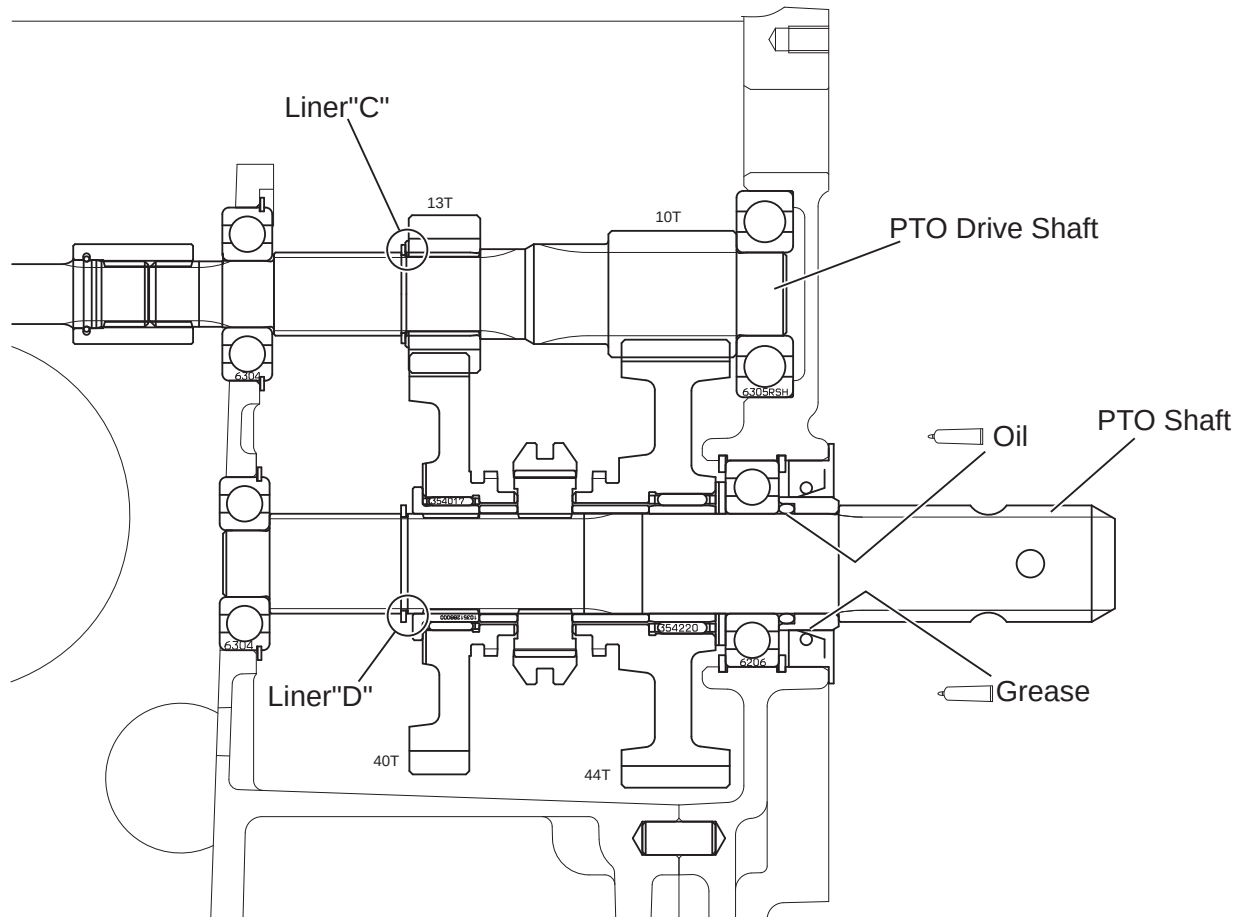


- (Unit: mm {in})

| Item      | Thickness   | Parts No.     |
|-----------|-------------|---------------|
| Liner "A" | 0.2 {0.008} | 0730 0006 202 |
|           | 0.6 {0.024} | 0730 0006 206 |
|           | 1.0 {0.039} | 0730 0006 210 |

- (Unit: mm {in})

| Item      | Thickness   | Parts No.     |
|-----------|-------------|---------------|
| Liner "B" | 0.2 {0.008} | 0730 0005 202 |
|           | 0.6 {0.024} | 0730 0005 206 |



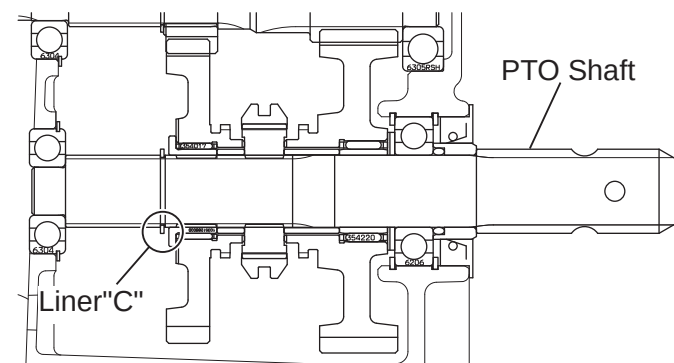
3. Adjust the endplay shown in the drawing to be within 0.05 to 0.20mm {0.002 to 0.008in} with liner "C"

(Unit: mm {in})

| Item      | Thickness   | Parts No.     |
|-----------|-------------|---------------|
| Liner "C" | 0.1 {0.004} | 0731 0006 001 |
|           | 0.2 {0.008} | 0731 0006 002 |
|           | 0.4 {0.016} | 0731 0006 004 |

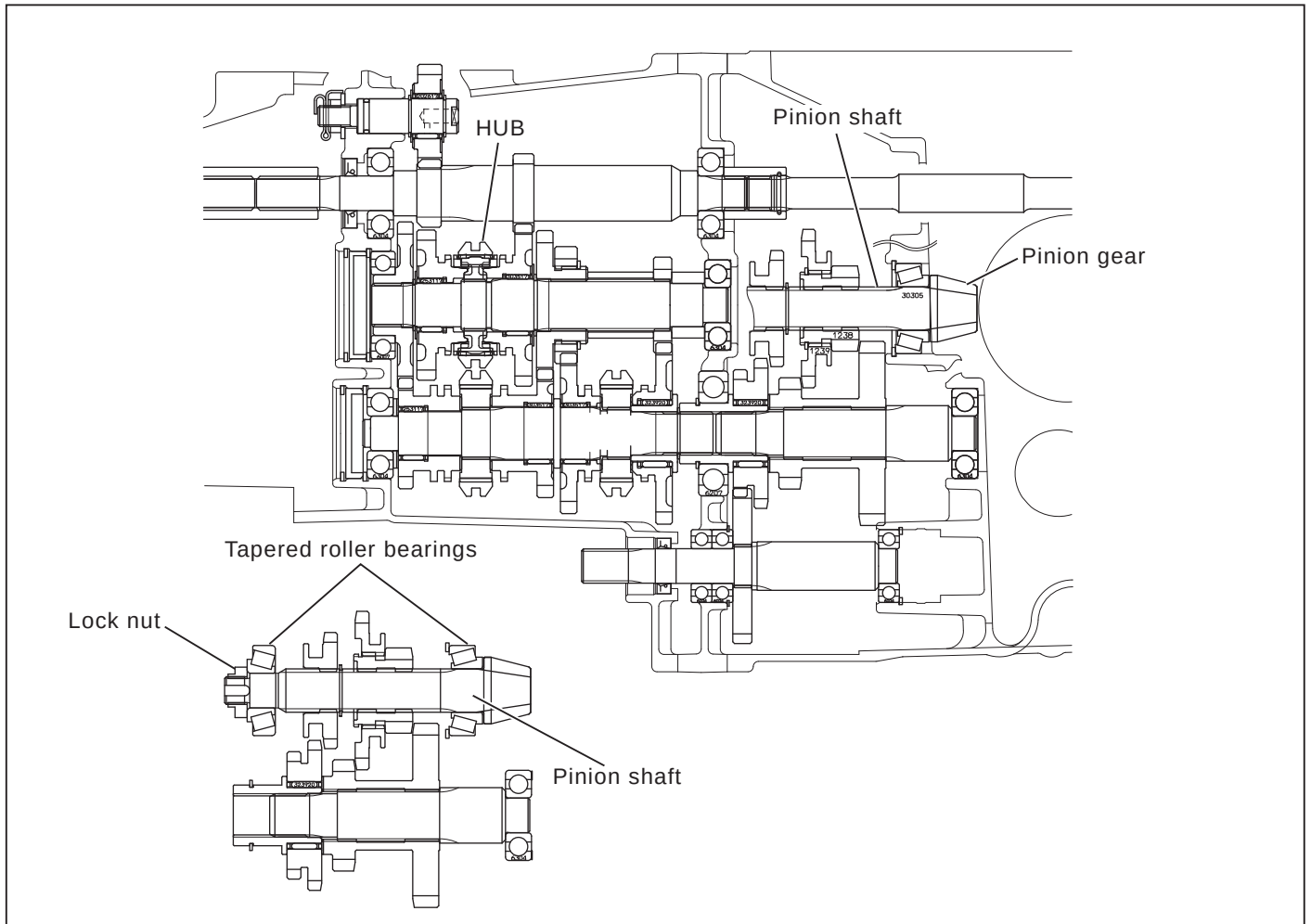
4. Adjust the endplay shown in the drawing to be within 0.05 to 0.20mm {0.002 to 0.008in} with liner "D"

(Unit: mm {in})



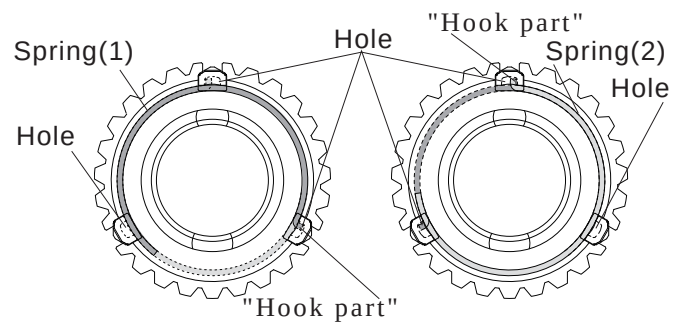
| Item      | Thickness   | Parts No.     |
|-----------|-------------|---------------|
| Liner "D" | 0.1 {0.004} | 0731 0003 001 |
|           | 0.2 {0.008} | 0731 0003 002 |
|           | 0.4 {0.016} | 0731 0003 004 |
|           | 0.8 {0.031} | 0731 0003 008 |
|           | 1.0 {0.039} | 0731 0003 010 |

#### 4-4 Note for Assembling the Transmission.



##### Note to assembling the HUB

1. Attaching "hook part" of the spring to the hole of HUB.
2. Insert the "hook part" of the spring(1) and spring(2) in the respectively different hole.
3. If the spring(1) and spring(2) are hung on the same hole, HUB may break.

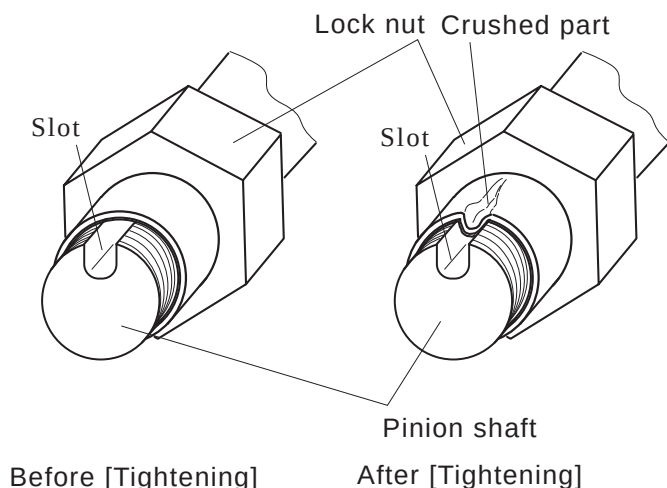


[ "HUB" front View ]

[ "HUB" back View ]

##### Note to tightening lock nut

1. Tightening lock nut so that the start torque of the pinion gear may become 0.98 to 1.27Nm, and pressurizing is given to taper bearings.
2. In order that a lock nut may not loosen, it crushes so that it may get into the slot of the pinion shaft.



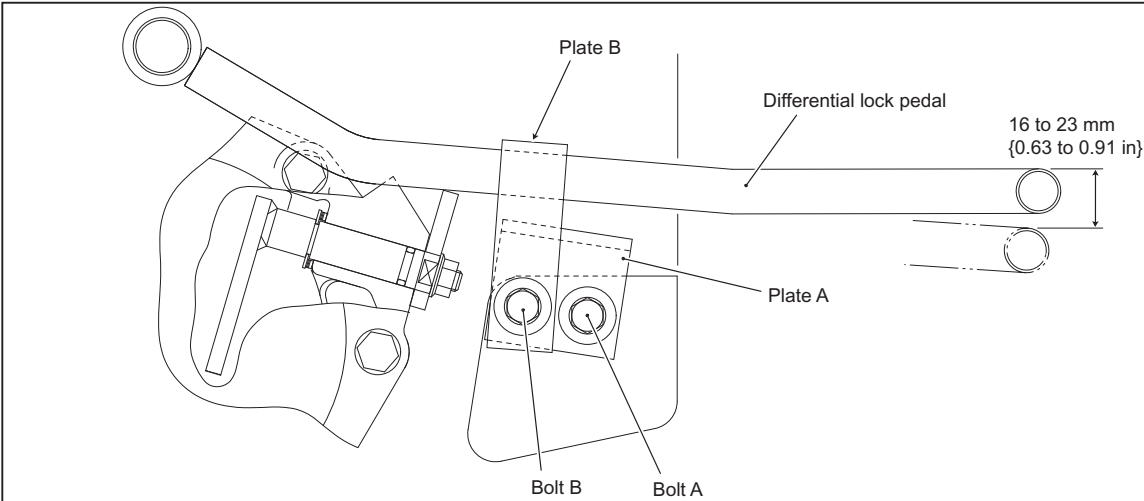
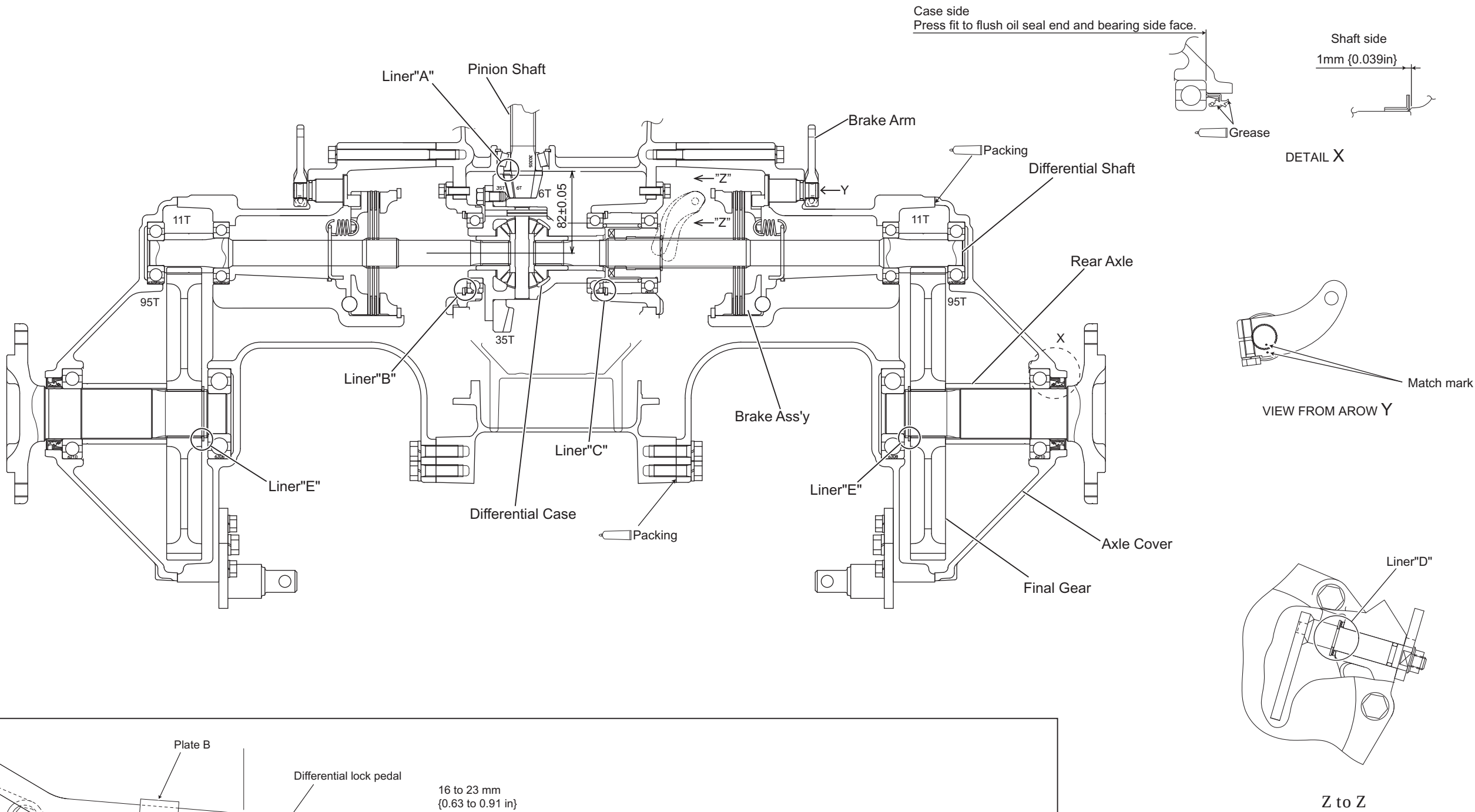




5. REAR AXLE, BRAKE, DEFERENTIAL LOCK

5-1 Rear Axle Structure

The rear axle adopts a pedal-operated ball lock. Type differential lock The brake is a large wet disc brake.



- Adjustment of Differential Lock Pedal
- 1) Step on the pedal and touch the pedal to the plate "A". Tighten the bolt "A".
  - 2) Release the pedal and touch to the plate "B". Tighten the bolt "B".
  - 3) Make sure ON and OFF for the differential lock.



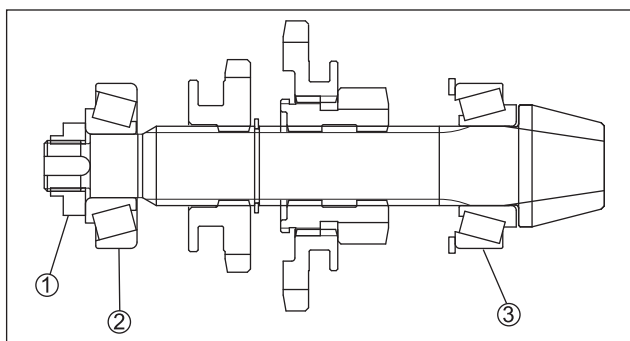
## 5-2 Assembly of Rear Axle.

### 1 Assembly of Pinion Shaft

- Adjust the liner "A" to have the distance from the pinion rear face to the differential case center  $82 \pm 0.05\text{mm}$   $\{3.23 \pm 0.0020\text{in}\}$ .

(Unit: mm {in})

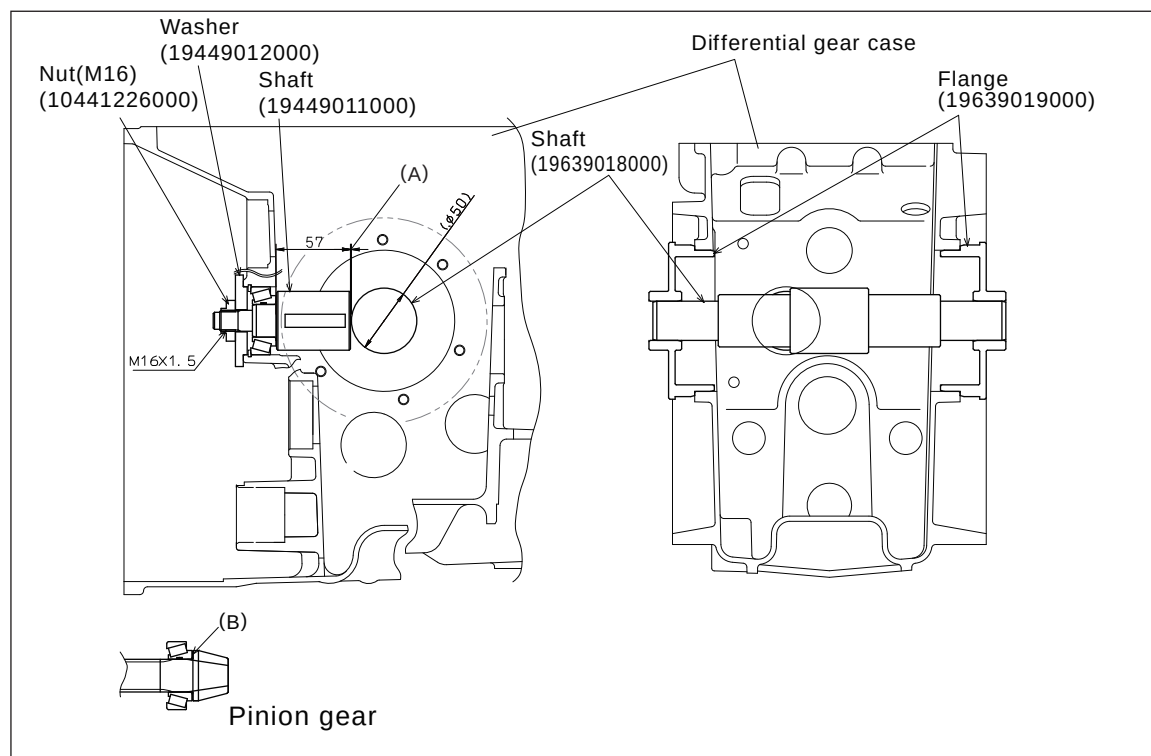
| Item      | Thickness   | Parts No.     |
|-----------|-------------|---------------|
| Liner "A" | 0.15 {0.06} | 0731 0002 501 |
|           | 0.2 {0.008} | 0731 0002 502 |
|           | 0.4 {0.016} | 0731 0002 504 |
|           | 0.8 {0.032} | 0731 0002 508 |



- Tightened the nut ① and pressurized the bearing ②③ to the following starting torque of differential pinion gear.  $0.98 \text{ to } 1.27\text{N}\cdot\text{m}$   $\{10 \text{ to } 13 \text{ kgf} \cdot \text{cm} \ 0.72 \text{ to } 0.94 \text{ lbf} \cdot \text{ft}\}$

### 2 Adjusting method that uses special tool

- As shown in the following figure, assemble a special tools to a differential gear case.
- Measuring dimension (A).
- Inserting the liner of the same thickness of dimension (A) to (B).



### 3 Assembly of Differential Case

1. Make sure the backlash of the differential pinion gear and side gear is within 0.1 to 0.3mm {0.004 to 0.012in}.
2. Place the spring pin with the slit toward as shown in the figure. (Vertical to the shaft)
3. Apply lubricant (MOS<sub>2</sub>) to the gears and assemble it.

### 4 Installation of Differential Case Assembly

1. Adjust the backlash of pinion shaft and differential ring gear to be within 0.10 to 0.30mm {0.004 to 0.012in} with the liner "B".
2. After adjusting the backlash, adjust the lateral free play of differential case assembly to be within 0 to 0.10mm {0 to 0.004in} with the liner "C".

(Unit: mm {in})

| Item              | Thickness   | Parts No.     |
|-------------------|-------------|---------------|
| Liner "B" and "C" | 0.4 {0.016} | 1007 0618 200 |
|                   | 0.2 {0.008} | 1007 0618 100 |
|                   | 0.1 {0.004} | 1007 0618 000 |
|                   | 1.6 {0.063} | 1025 1535 000 |

### 5 Liner Adjustment of Rear Axle Shaft and Differential Lock Shifter

1. Adjust the clearance between the axle case and shifter to be within 0.20 to 0.60mm {0.008 to 0.0024in} with the liner "D".

(Unit: mm {in})

| Item      | Thickness   | Parts No.     |
|-----------|-------------|---------------|
| Liner "D" | 0.4 {0.016} | 0731 0001 504 |
|           | 1.2 {0.047} | 0731 0001 512 |

2. Adjust the endplay of rear axle shaft to be within 0.05 to 0.2mm {0.002 to 0.008in} with the liner "E".

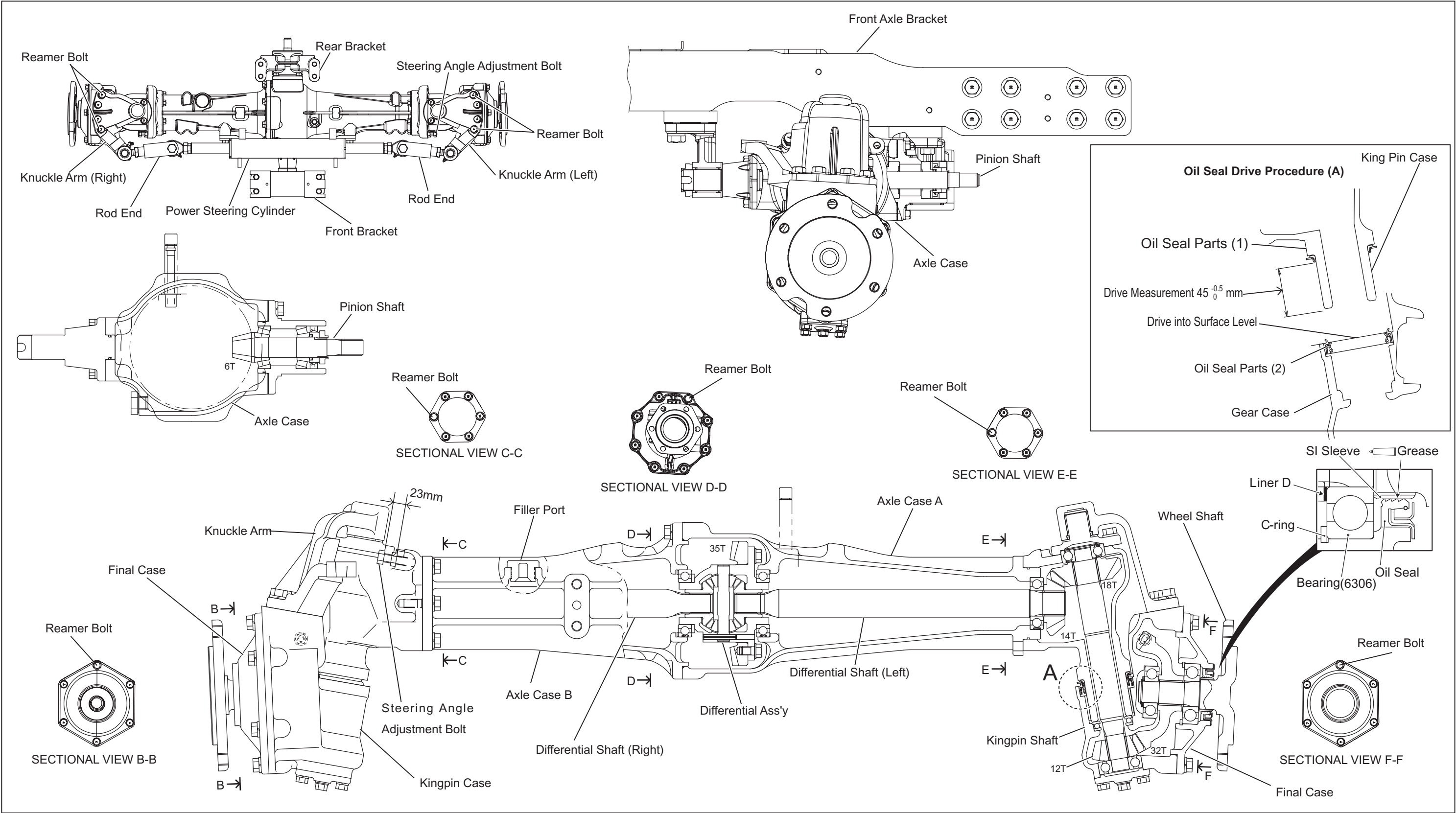
(Unit: mm {in})

| Item      | Thickness   | Parts No.     |
|-----------|-------------|---------------|
| Liner "E" | 0.6 {0.024} | 0730 0005 206 |
|           | 0.2 {0.008} | 0730 0005 202 |

6. FRONT AXLE (4WD)

6-1 Front Axle Structure

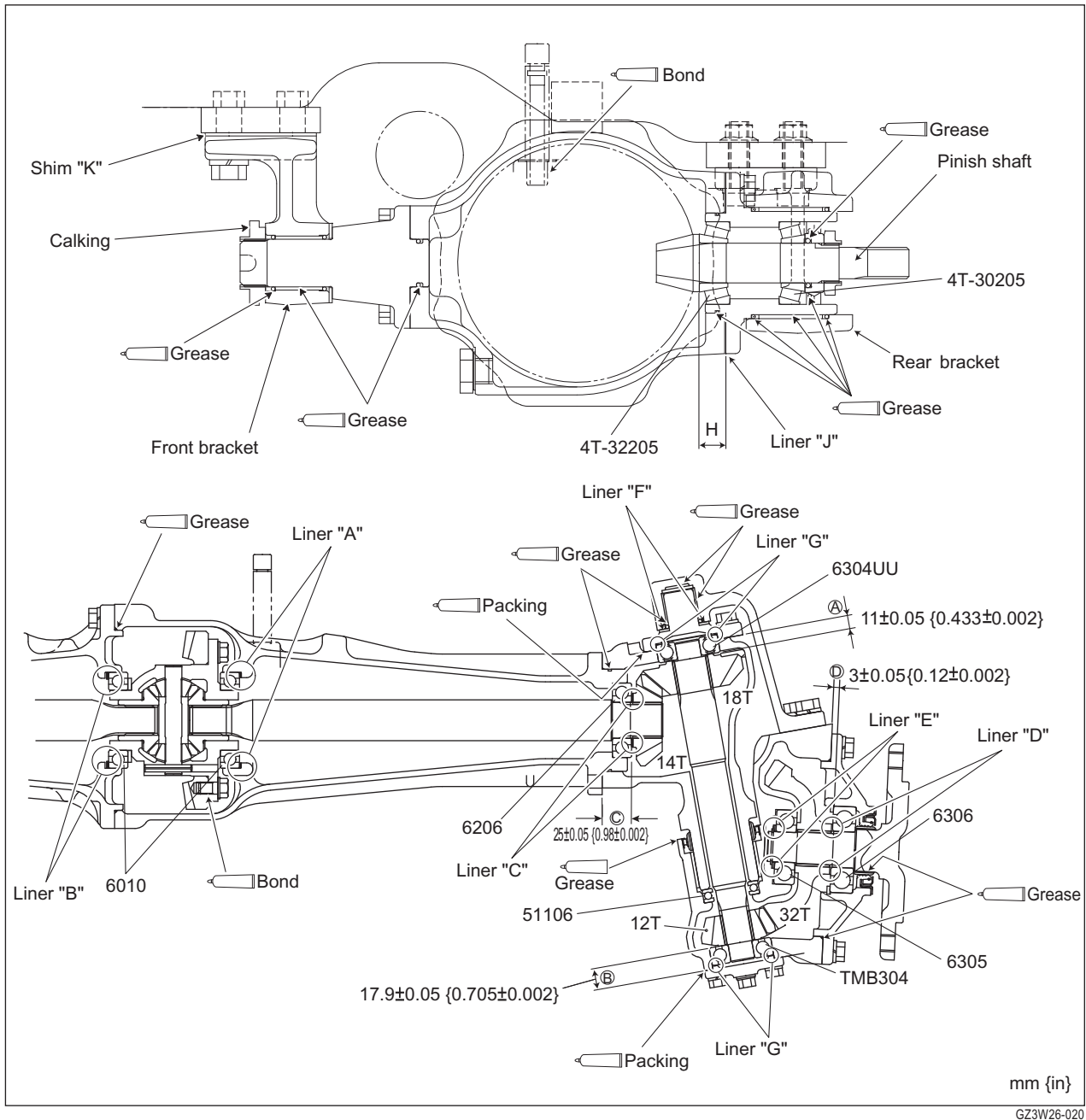
- The front axle shaft is center pivot Elliott type.
- The front axle adopts bevel type, which provides small turning radius with steering angle of 50° and caster angle of 5°.
- The front axle has power transmission system to the front axle drive part from the mission part using 4WD shaft.

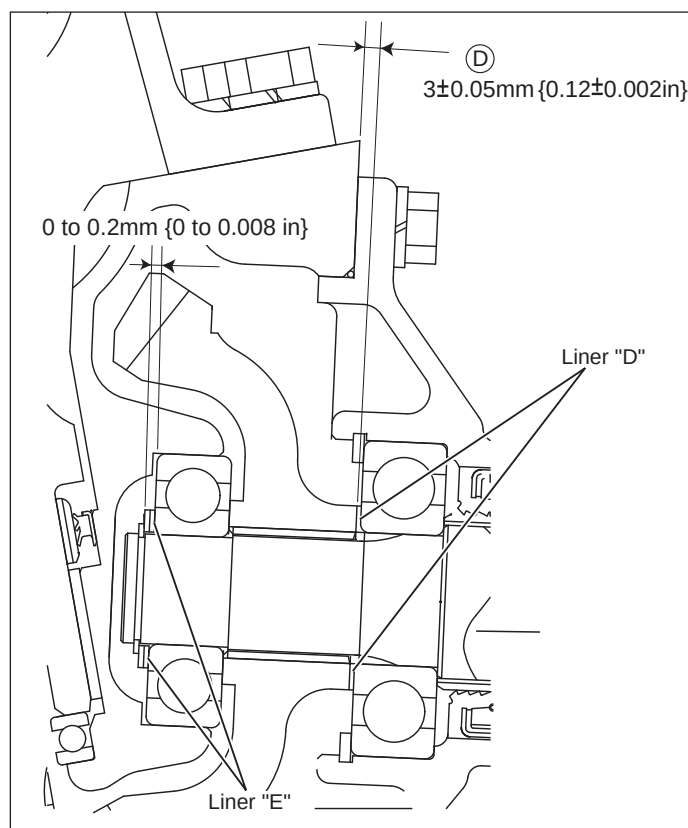
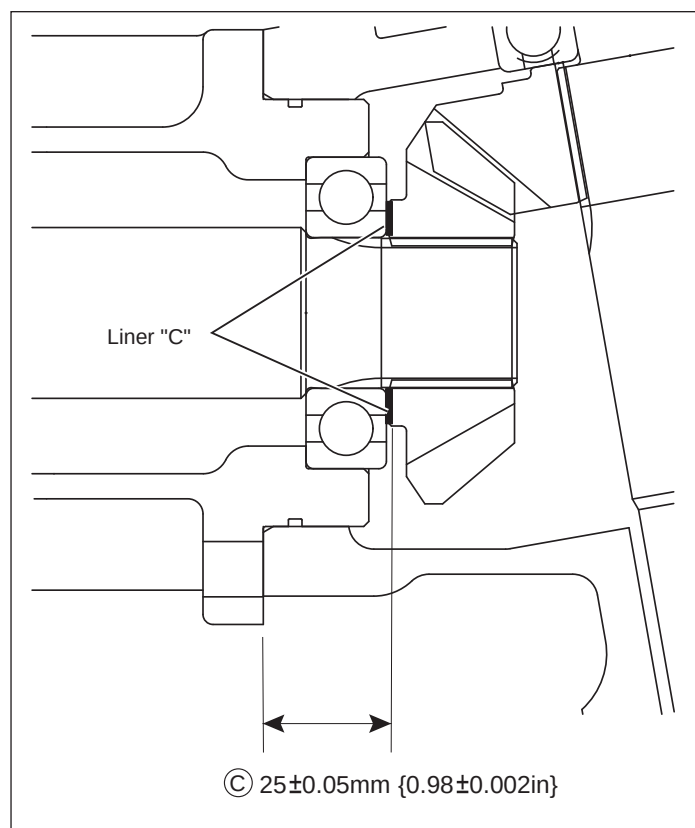
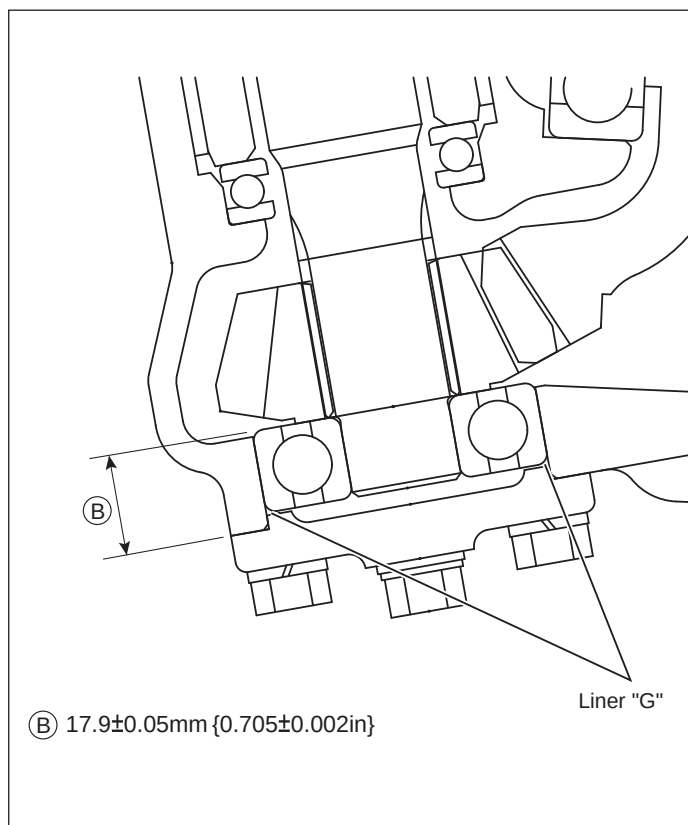
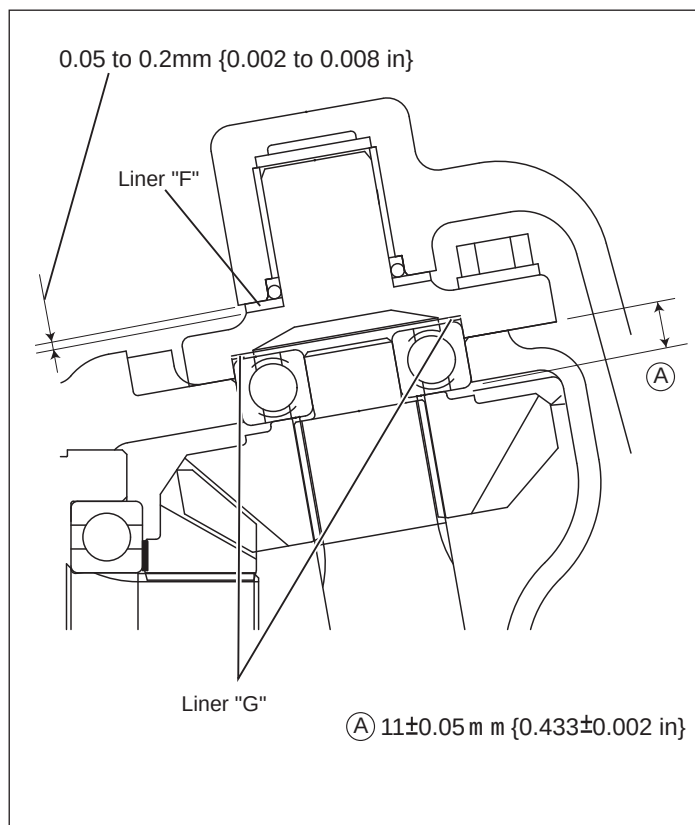




## 6-2 ASSEMBLY AND INSTALLATION OF FRONT AXLE

Follow the reverse procedure of removal and disassembly for assembly and installation of front axle.

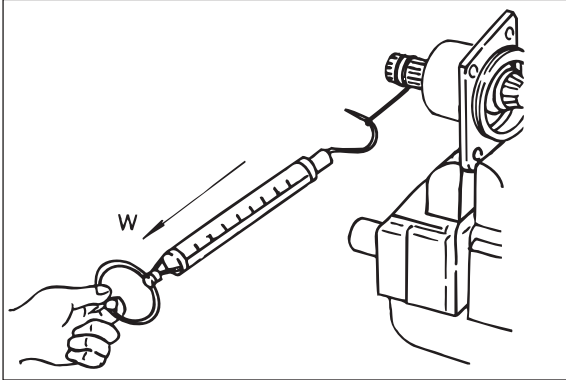






## 1. Assembly of Front Axle

- 1 Apply the lithium grease to the bush of the front and rear brackets for assembly.
- 2 Screw and crimp the nut in the condition which the front bracket is set with slight backlash, none excessive.
- 3 Apply the adhesives equivalent to Threebond #1782 to the breather pipe and press it.



GS7W3-167

### 4 Assembly of Pinion Shaft

1. Adjust the preload for pinion shaft within 0.39 to 0.59N•m {4 to 6kgf•cm, 28.9 to 43.4lbf•ft} (at oil seal assembling) by tightening the nut. Crimp the nut after adjustment.

### **CAUTION**

As an easier method for measuring the preload, after temporarily tightening the nut, wind the shaft of pinion shaft with rope and pull with spring balance. (F = 39.2 to 58.8N {4.0 to 6.0kgf, 8.8 to 13.2lbf})

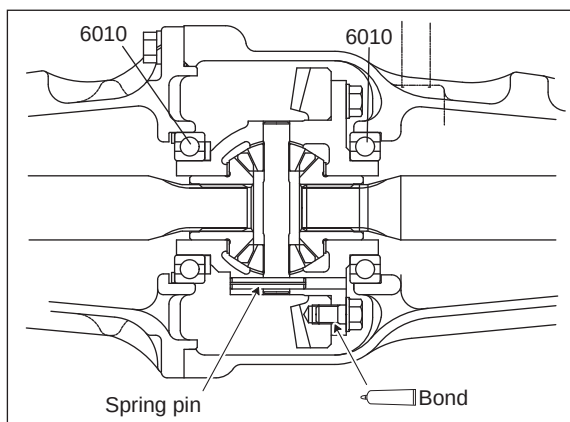
2. Measure the distance H and determine the thickness of liners as follows.

$$\text{Liner thickness} = H - 16\text{mm} \{0.63\text{in}\}$$

3. Placing direction of the oil seal for pinion shaft shall be as shown in the figure. (Spring stays inside.)

(Unit: mm {in})

| Item      | Thickness    | Usable Limit  |
|-----------|--------------|---------------|
| Liner "J" | 0.10 {0.004} | 1023 2136 001 |
|           | 0.20 {0.008} | 1023 2137 001 |
|           | 0.40 {0.016} | 1023 2138 001 |



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### 5 Assembly of Differential Case Assembly

1. Make sure the backlash for the pinion gear and side gear is within 0.10 to 0.30mm {0.004 to 0.012in}.
2. Apply the adhesives equivalent to Threebond #1374 to the locking bolt for the ring gear and tighten with torque at 68.7 to 78.5N•m {700 to 800kgf•cm, 50.6 to 57.9lbf•ft}.
3. Place the spring pin with the slit toward as shown in the figure. (Vertical to the shaft)
4. Apply the lubricant ( $\text{MOS}_2$ ) to the gears and assemble it.

## 6 Installation of Differential Case Assembly

1. Adjust the backlash for pinion shaft and differential ring gear to be within 0.25 to 0.35mm {0.01 to 0.014in} with the liner "A".
2. After adjusting the backlash, adjust the lateral backlash for differential case assembly to be within 0 to 0.10mm {0 to 0.004in} with the liner "B".

(Unit: mm {in})

| Item              | Thickness    | Usable Limit  |
|-------------------|--------------|---------------|
| Liner "A" and "B" | 0.10 {0.004} | 1007 0618 000 |
|                   | 0.20 {0.008} | 1007 0618 100 |
|                   | 0.40 {0.016} | 1007 0618 200 |

## 7 Assembly of Kingpin

1. Determine the thickness of liner "G" that dimension Ⓐ becomes  $11.0 \pm 0.05\text{mm}$  { $0.433 \pm 0.002$  in} on top and dimension Ⓑ becomes  $17.9 \pm 0.05\text{mm}$  { $0.705 \pm 0.002$  in} on bottom.

(Unit: mm {in})

| Item      | Thickness    | Usable Limit  |
|-----------|--------------|---------------|
| Liner "G" | 0.15 {0.006} | 0730 0005 201 |
|           | 0.20 {0.008} | 0730 0005 202 |
|           | 0.30 {0.012} | 0730 0005 203 |

2. Assemble with caution not to turn over the lip of the oil seal.
3. Adjust so that dimension Ⓒ may become  $25 \pm 0.5\text{mm}$  { $0.98 \pm 0.002$  in} by inserting or removing the liner "C".

(Unit: mm {in})

| Item      | Thickness     | Usable Limit  |
|-----------|---------------|---------------|
| Liner "C" | 0.075 {0.003} | 67700-30300   |
|           | 0.40 {0.016}  | 0731 0003 004 |
|           | 0.80 {0.031}  | 0731 0003 008 |
|           | 1.00 {0.039}  | 0731 0003 010 |
|           | 1.20 {0.047}  | 0731 0003 012 |

## 8 Assembly of Axle Shaft

1. Adjust so that dimension Ⓓ may become  $3 \pm 0.5\text{mm}$  { $0.12 \pm 0.002$  in} by inserting or removing the liner "D".

(Unit: mm {in})

| Item      | Thickness    | Usable Limit  |
|-----------|--------------|---------------|
| Liner "D" | 0.15 {0.006} | 0731 0003 001 |
|           | 0.40 {0.016} | 0731 0003 004 |
|           | 0.80 {0.031} | 0731 0003 008 |
|           | 1.00 {0.039} | 0731 0003 010 |
|           | 1.20 {0.047} | 0731 0003 012 |

2. Adjust the lateral clearance "E" for axle shaft to be within 0 to 0.20mm {0 to 0.008in} with the liner "E".
3. Apply the liquid packing (Threebond #1208D) to the holder and cover. Wrap the mounting bolt with seal tape and tighten.

(Unit: mm {in})

| Item      | Thickness    | Usable Limit  |
|-----------|--------------|---------------|
| Liner "E" | 0.10 {0.004} | 1135 3016 000 |
|           | 0.40 {0.016} | 0731 0002 504 |
|           | 0.80 {0.031} | 0731 0002 508 |
|           | 1.00 {0.039} | 0731 0002 510 |
|           | 1.20 {0.047} | 0731 0002 512 |

## 9 Assembly of Knuckle Arm

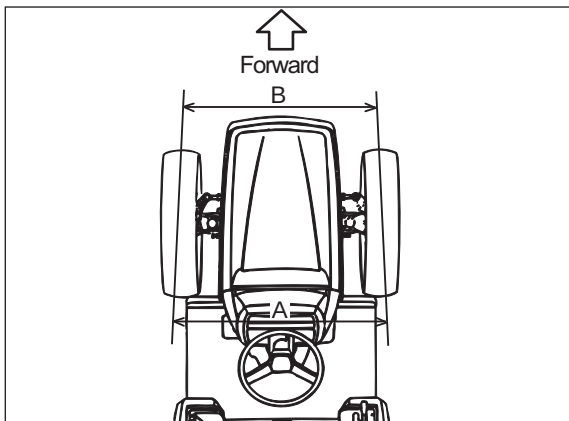
- Adjust the clearance "F" between the knuckle arm and holder to be within 0.05 to 0.20mm {0.002 to 0.008in} with the thrust liner "F".
- Apply the lithium grease to the bush for the knuckle arm.

(Unit: mm {in})

| Item                | Thickness    | Usable Limit  |
|---------------------|--------------|---------------|
| Thrust<br>Liner "F" | 0.80 {0.031} | 1438 1319 600 |
|                     | 1.00 {0.039} | 1438 1319 500 |
|                     | 1.20 {0.047} | 1438 1319 400 |
|                     | 1.40 {0.055} | 1438 1319 300 |

## 2. Inspection and Maintenance

### 1. Toe In



GS7W3-195

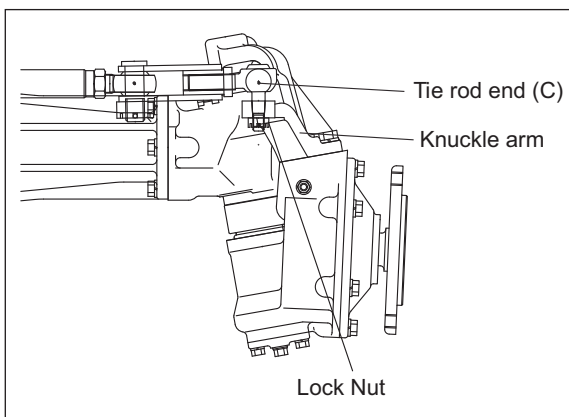
Toe in functions as an important role to control the stability of the vehicle. Tendency for control loss of vehicle while running may be caused by misalignment of toe in. In such case, inspect and adjust.

(Unit: mm {in})

| Item           | Referential Value     |
|----------------|-----------------------|
| Toe In (A - B) | 0 to 10.0 {0 to 0.39} |



- Adjust the both sides of tie rod end at the same time.
- Make sure the nonexistence of looseness for front tire while adjusting.



- Loosen the locknut for tie rod end.
- Remove the nut for tie rod end from the knuckle arm.
- Adjust the length of tie rod end by turning only the tie rod end.
- Tighten the locknut after adjusting.

**Torque: 147 to 167N•m {1500 to 1700kgf•cm, 108 to 123lbf•ft}**

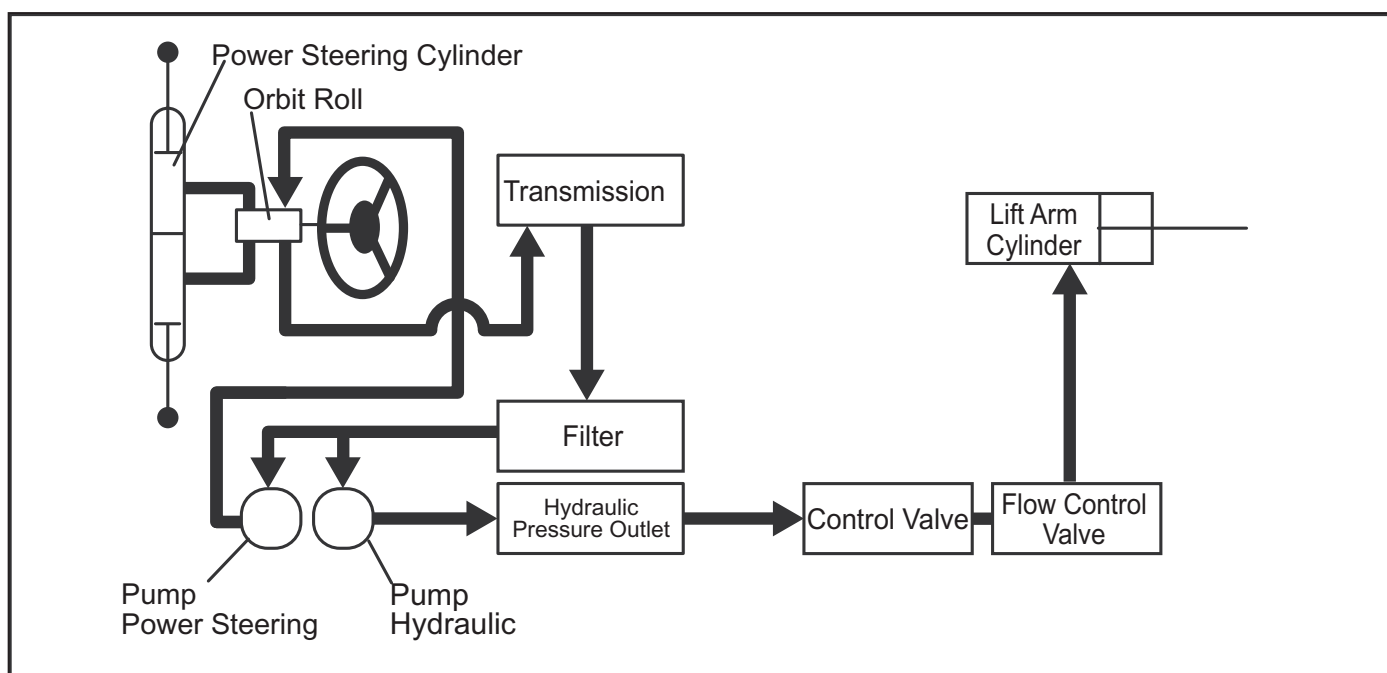
## 7. HYDRAULIC SYSTEM

### 7-1 Hydraulic System Outline

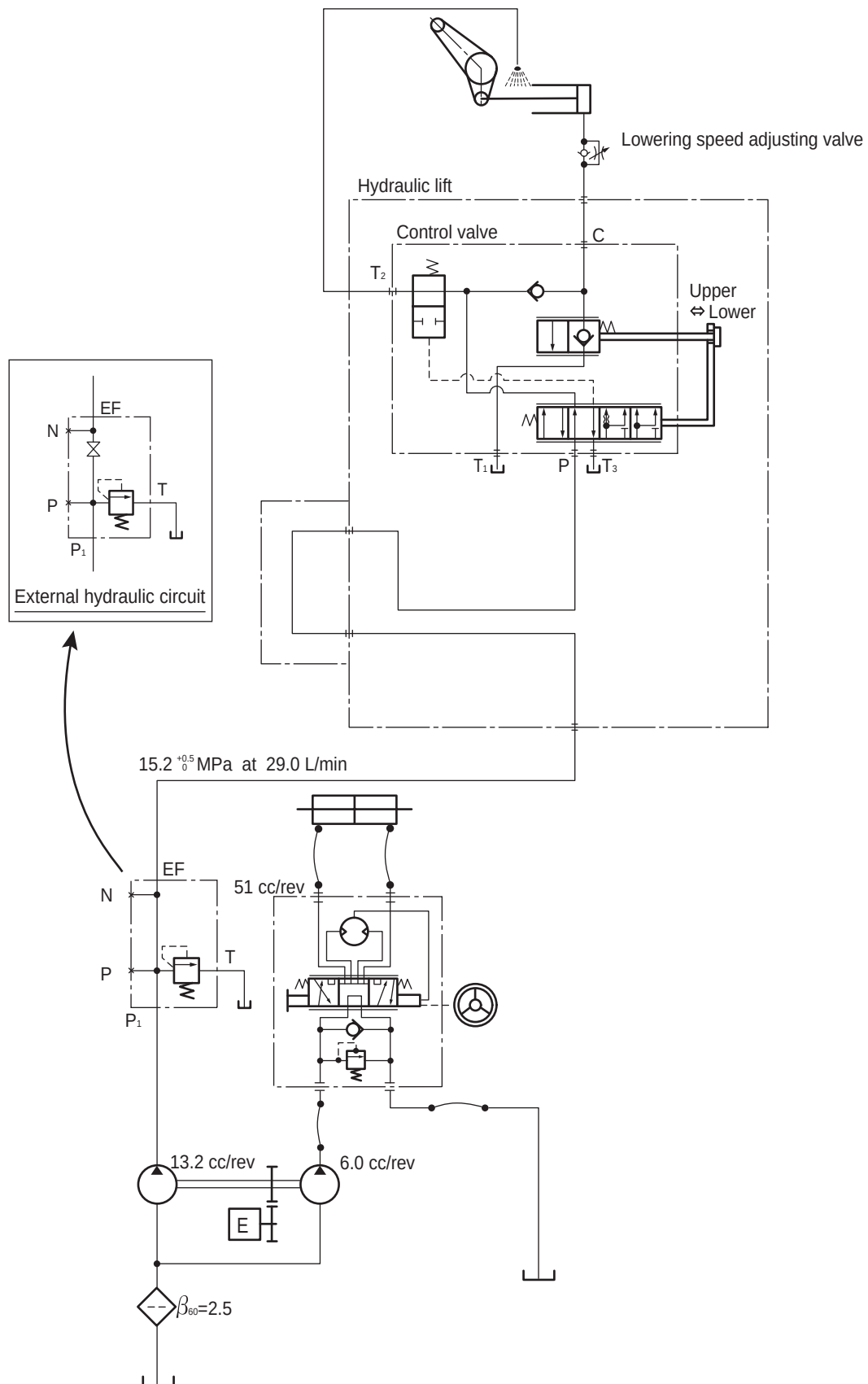
#### 1. Outline of structure

Position control system and mechanical auto depth control system are provided as a lift control system for 3-point link.

#### 2. Image of hydraulic system

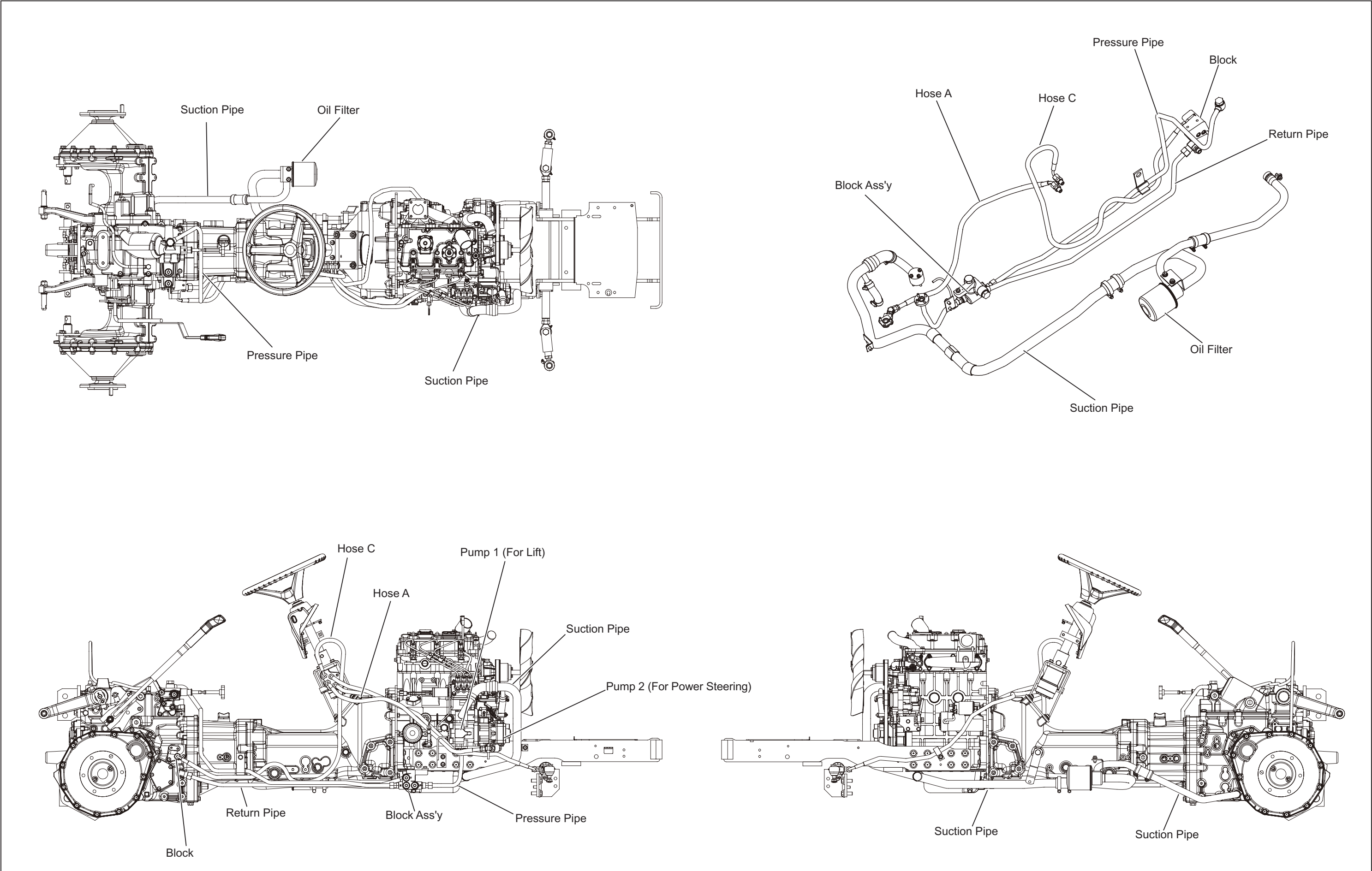


## 7-2 Hydraulic Circuit





7-3 Hydraulic Pipe, Hydraulic Devices Location Chart







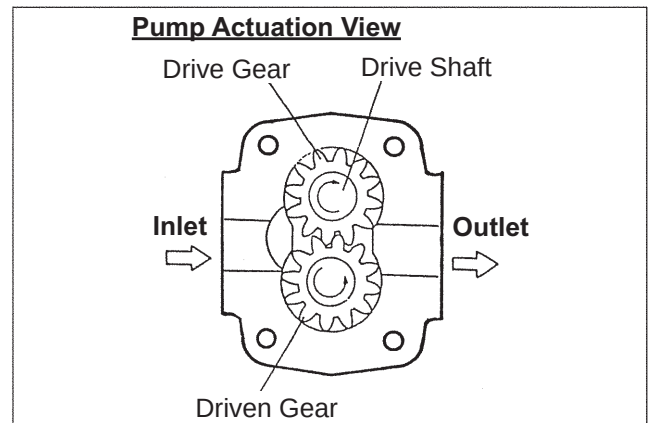
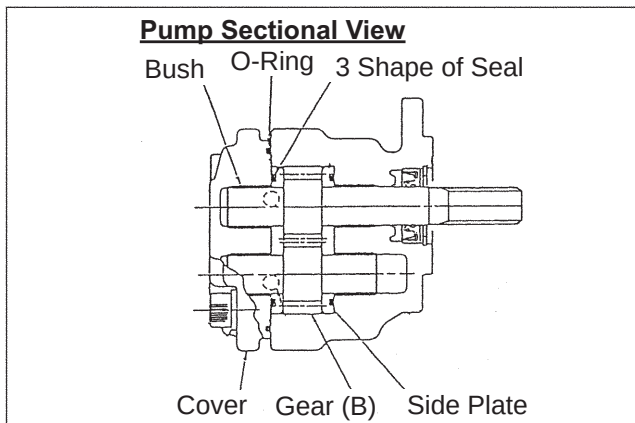
## 7-4 Hydraulic Pump

### 1. Outline

Gear Pump has two gears in mesh, closely fitted inside housing. The drive shaft drives the drive gear, which in turn drives the driven gear. The shaft bushing and machined surfaces or side plates are used to seal in the working gears.

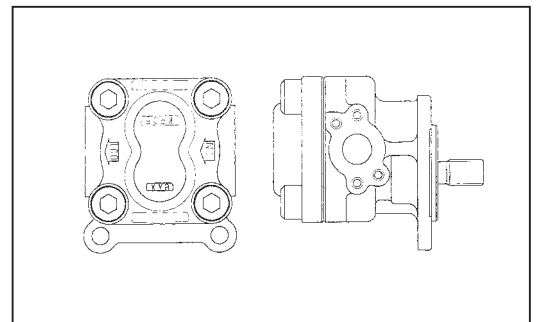
As the gears rotate and come out of mesh, they trap inlet oil between the gear teeth and housing. The trapped oil is carried around to the outlet chamber. As the gears mesh again they form a seal which prevents oil from backing up to the inlet.

The oil forced out at the outlet port and sent through the system.



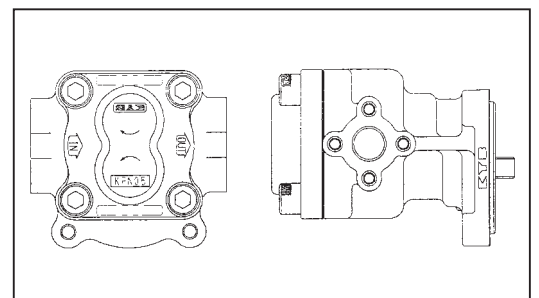
### 2. Sub Pump (For Power Steering)

| Pump Model         | Gear Type                                  |
|--------------------|--------------------------------------------|
| Model              | KAYABA INDUSTRY<br>KPN05 60 ARMS           |
| Discharge Amount   | 6.0cc / rev {0.366in <sup>3</sup> /rev}    |
| Relief Pressure    | 15.2MPa {155kgf/cm <sup>2</sup> , 2205psi} |
| Rotating Direction | Left (from the pump shaft side)            |
| Application        | For Power Steering                         |



### 3. Main Pump (For Power Lift)

| Pump Model         | Gear Type                                  |
|--------------------|--------------------------------------------|
| Model              | KAYABA INDUSTRY<br>KPN05 132C              |
| Discharge Amount   | 13.2cc / rev {0.805 in <sup>3</sup> /rev}  |
| Relief Pressure    | 15.2MPa {155kgf/cm <sup>2</sup> , 2205psi} |
| Rotating Direction | Right (from the pump shaft side)           |
| Application        | For Hydraulic Cylinder                     |

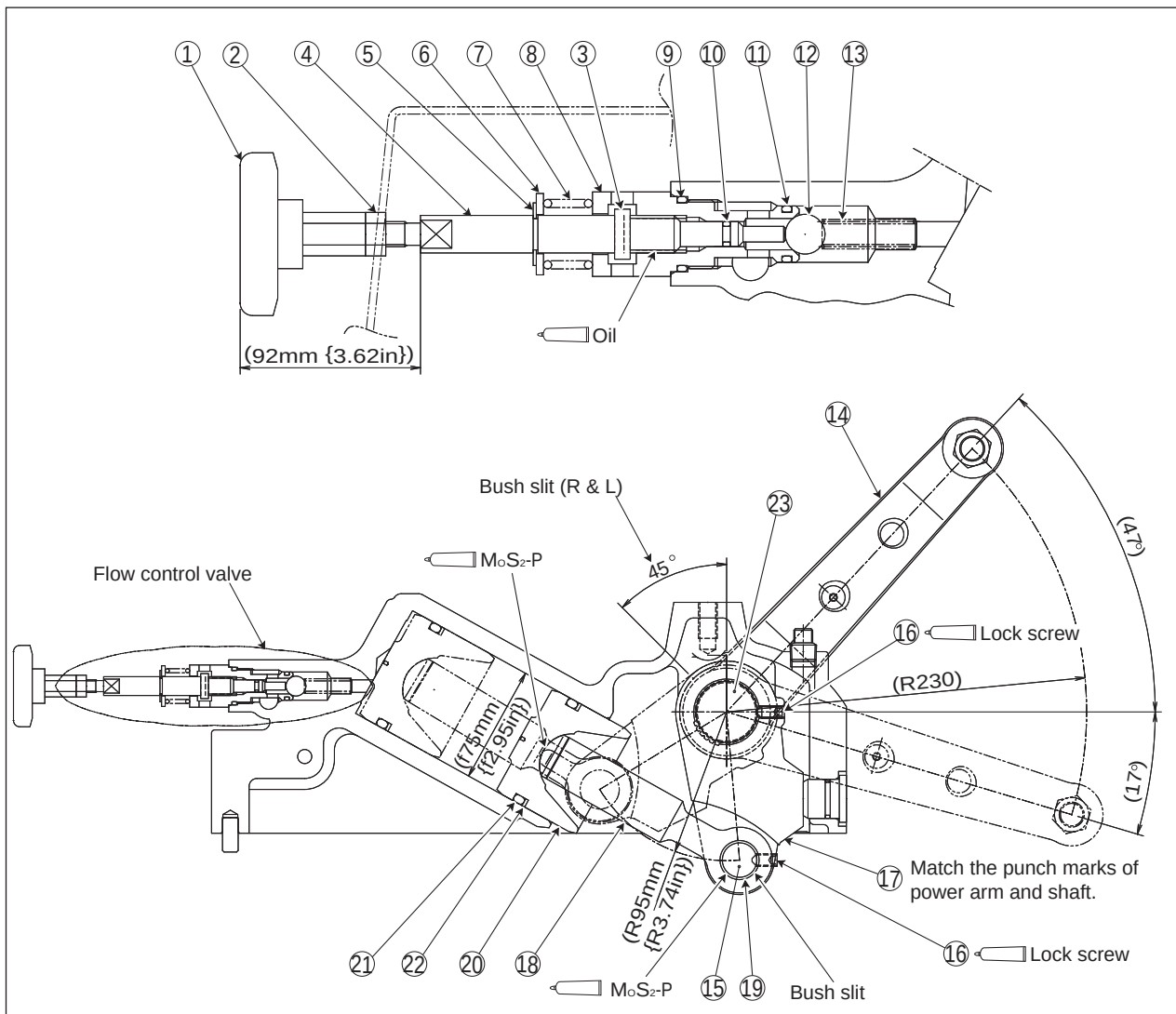


## 7-5 STRUCTURE OF POSITION CONTROL SYSTEM

- P/C system (Position Control) is equipped as a lift control for 3-point hitch.
- The cylinder is single acting type. (Only raise the hitch by hydraulic pressure and lower by gravity.)
- The lock, functioning as well as flow control valve (lowering speed adjusting valve), located in forepart of lift case shall be used for adjustment of lowering speed for the lift arm.
- Position of the lift arm is controlled by P/C lever.

### 1. Specifications (Hydraulic Cylinder)

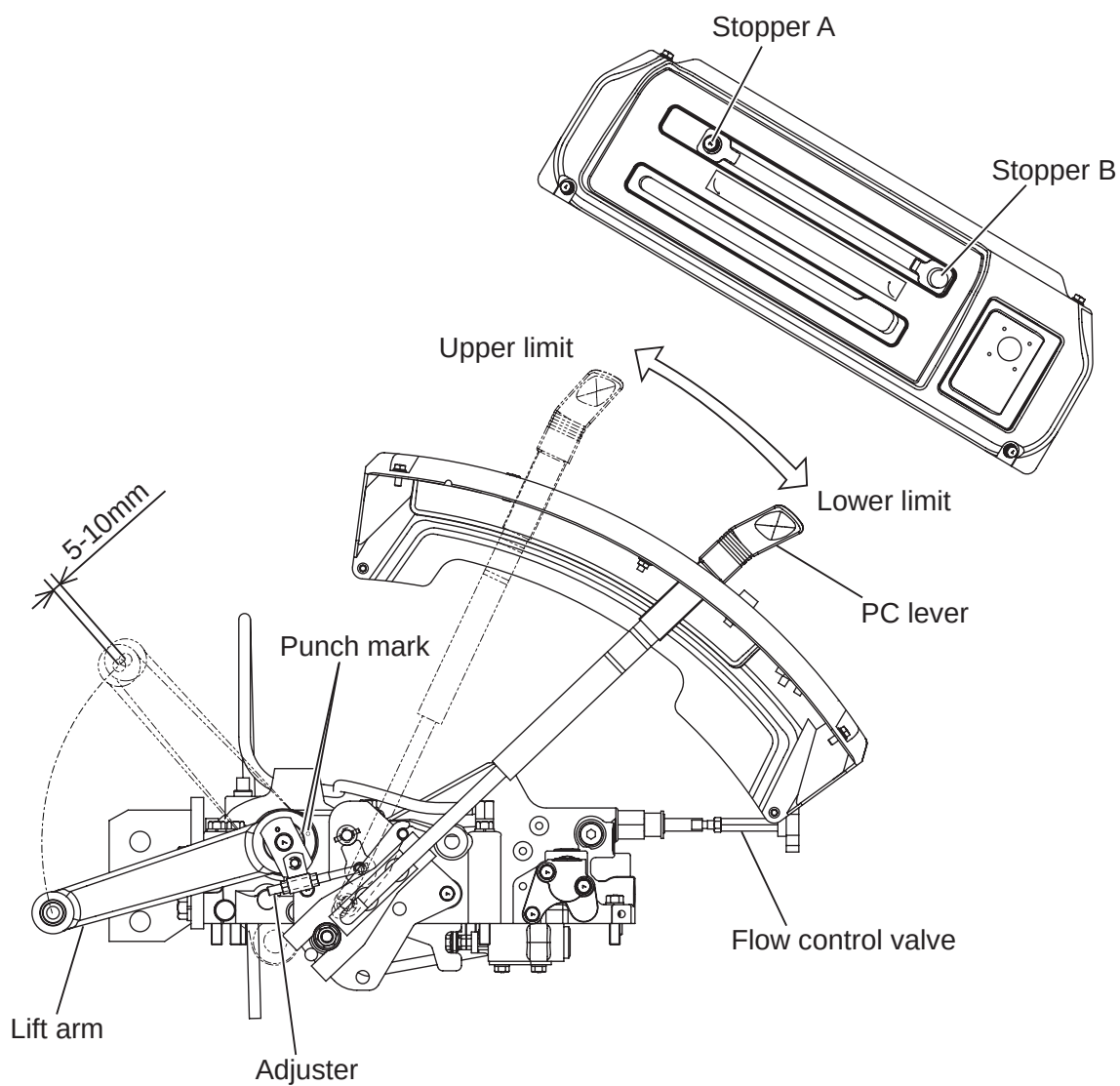
|                            |                                            |
|----------------------------|--------------------------------------------|
| Cylinder Diameter × Stroke | ø 75 × 100.7mm { ø 2.95 × 3.965in }        |
| Maximum Dynamic Lift       | 1200kgf { 2646lbf }                        |
| Preset Maximum Pressure    | 15.2MPa (155kgf/cm <sup>2</sup> , 2205psi) |



GZ3W31-010

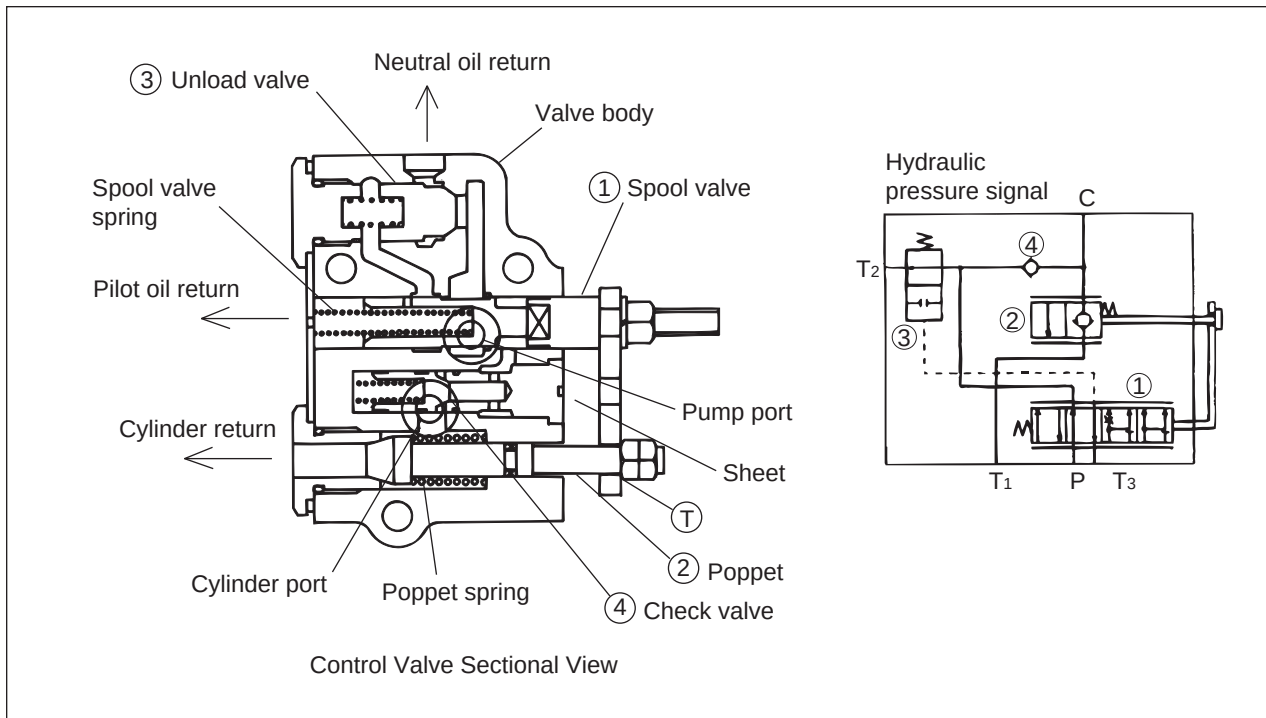
| No. | Parts      | No. | Parts      |
|-----|------------|-----|------------|
| 1   | Knob       | 2   | Nut        |
| 3   | Spring Pin | 4   | Screw      |
| 5   | Ring       | 6   | Washer     |
| 7   | Spring     | 8   | Sleeve     |
| 9   | O-ring     | 10  | O-ring     |
| 11  | O-ring     | 12  | Ball       |
| 13  | Spring     | 14  | Lift Arm   |
| 15  | Pin        | 16  | Screw      |
| 17  | Power Arm  | 18  | Piston Rod |
| 19  | Bush       | 20  | Piston     |
| 21  | O-ring     | 22  | Ring       |
| 23  | Lift Shaft |     |            |

## 2. P/C System (Position Control)



## 7-6 CONTROL VALVE

### 1. Structure



#### 1. Spool Valve

It indirectly operates the unload valve and check valve.

#### 2. Poppet

It opens only when lowering the lift arm and is closed to the sheet by poppet spring.

#### 3. Unload Valve

It is indirectly operated by movement of the spool valve. It opens when the spool is in neutral position and lowering to return the oil from the pump to the transmission case.

#### 4. Check Valve

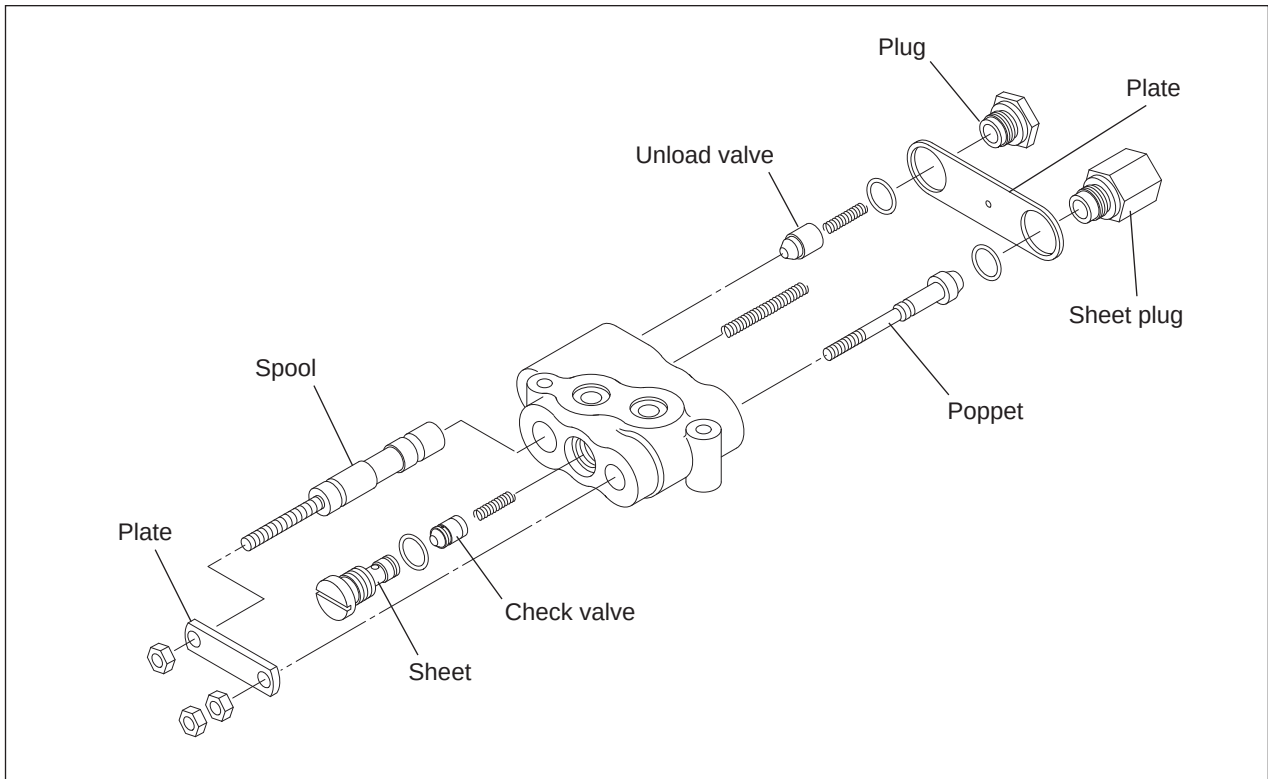
It is indirectly operated by movement of the spool valve. It opens only when lifting.

### 2. Specifications

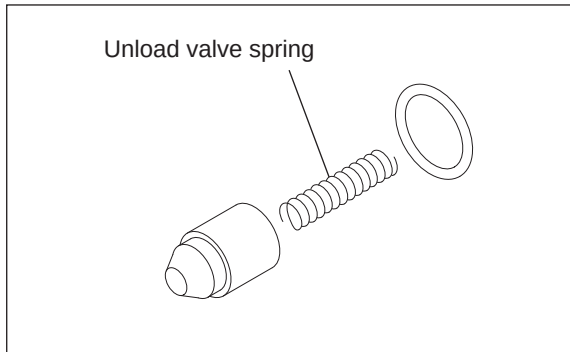
|                         |                               |                                                                           |
|-------------------------|-------------------------------|---------------------------------------------------------------------------|
| Maximum Discharge       |                               | 24L/min {6.341 gal/min}                                                   |
| Maximum Usable Pressure |                               | 15.2MPa {155kgf/cm <sup>2</sup> , 2205psi}                                |
| Pressure Loss           | P → T (neutral) pressure loss | 20L/min when below 0.78MPa {8kgf/cm <sup>2</sup> , 114psi}                |
|                         | P → C (lifting) pressure loss | 20L/min {5.28gal/min} when below 1.37MPa {14kgf/cm <sup>2</sup> , 199psi} |
| Operating Oil           |                               | Multi STOU Oil Temperature: 40°C to 50°C                                  |

### 3. Disassembly of Control Valve

#### 1. Valve Details



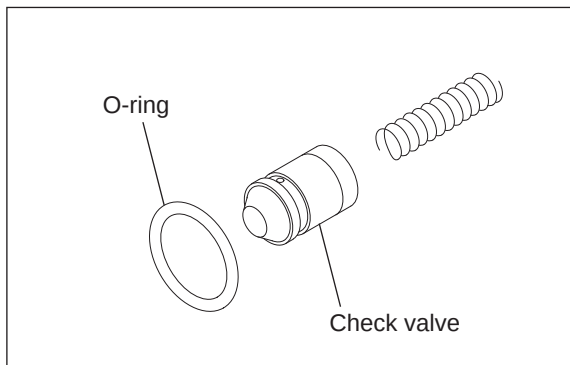
PR8W4-047



PR8W4-048

#### 1) Unload Valve

- Unload valve spring  
Part No.: 1180 2471 240
- O-ring  
Part No.: 0830 0100 150  
Size: P15 Hs70 JIS B2401

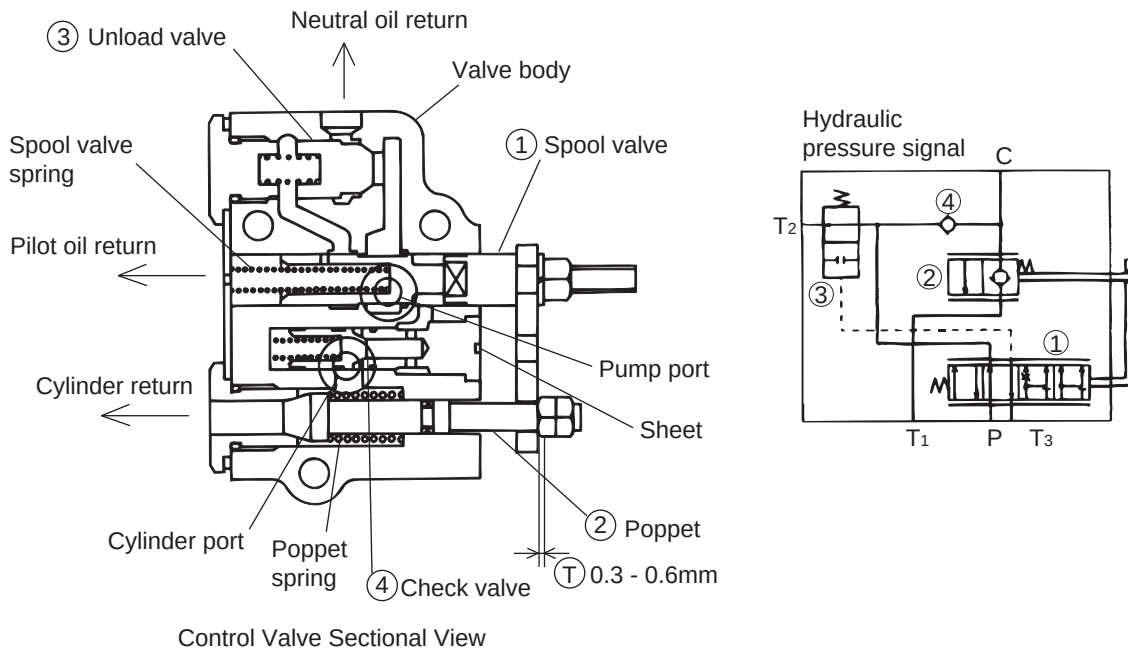


PR8W4-049

#### 2) Check Valve

- Check valve  
Part No.: 1003 2416 180
- O-ring  
Part No.: 0830 1100 090  
Size: P9 Hs90 JIS B240 1

## 4. Assembly of Control Valve



GZ3W31-024A

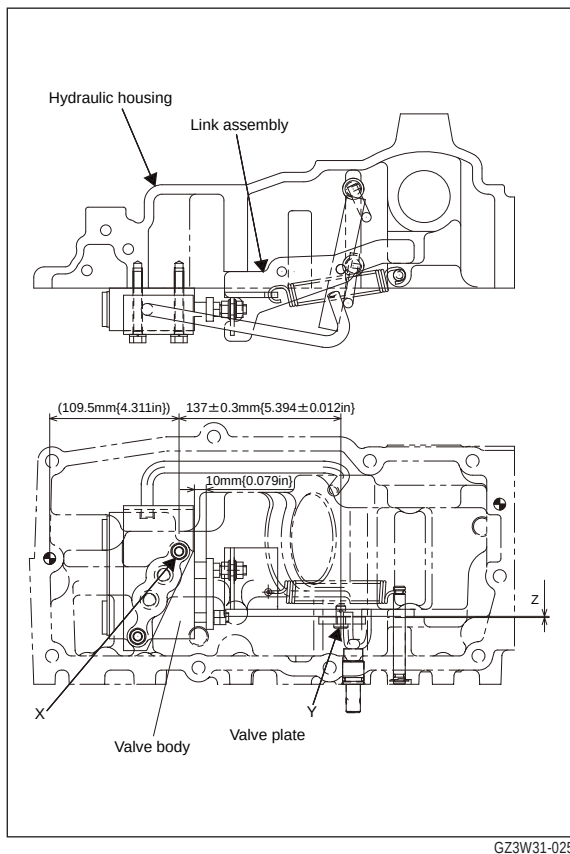
### 1. Assembling Procedure

- 1) Line up all the parts disassembled and check the O-ring for scratches and wears. If any defects, change it.
- 2) Check the spool, movement of plunger, and sheet part for any flaws . If any flaws, smooth them with oilstone.
- 3) Clean with cleaning fluid.
- 4) Make sure the assembling position and direction at assembly.
- 5) Apply some grease to O-ring when assembling it.

### 2. Adjusting Procedure

- 1) Remove the plug and the spring of unload valve.
- 2) The position, which changes the sound when moving the spool while blowing in the air from the plug, is the neutral position for the spool.
- 3) Set the clearance "T" with the nut connecting the plate and poppet within 0.3 to 0.6mm {0.012 to 0.024in} in this position and lock.

## 5. Installation of Hitch Control Valve



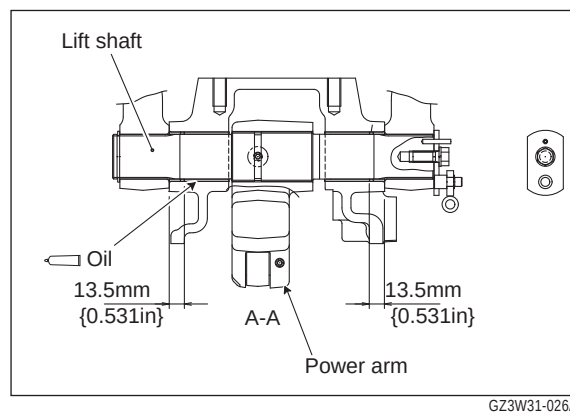
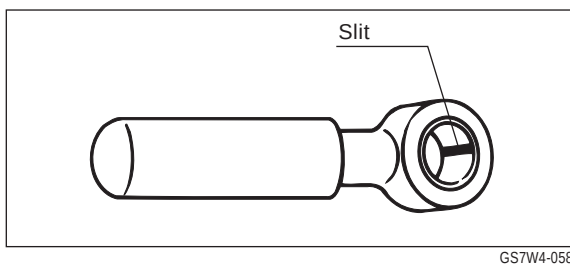
### **CAUTION**

Make sure the O-ring is attached before assembly.

1. Set the clearance between the valve plate and valve body to 10mm {0.394in}.
2. Make sure that the clearance "Z" between the hydraulic housing and link assembly is within 0.5 to 2.0mm {0.02 to 0.079in}
3. Adjust the measurement of the center of valve mounting bolt "X" and arm pin "Y" for level link to  $137 \pm 0.3\text{mm}$  {5.394 ± 0.012in} with W nut.

## 6. Assembly of Hydraulic Piston Rod

Wash the hydraulic equipment parts and assemble with caution for entry of foreign matters.  
Apply some oil to the O-ring, bush and seal for assembly.

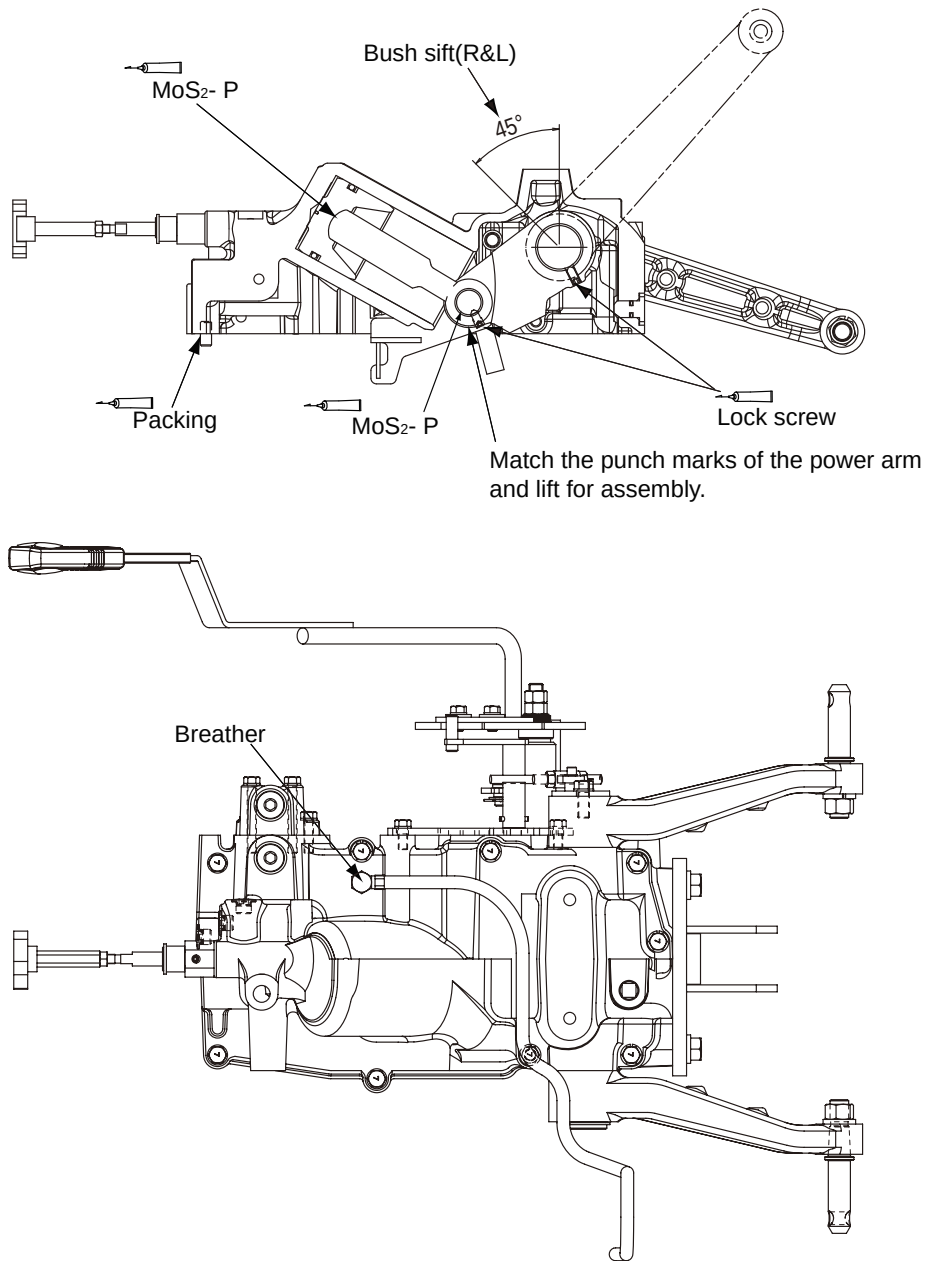


1. Toward the slit of the bush on piston rod as shown in the figure for mounting.  
Reference) Apply some lubricant, MoS2-P, to the bush inner diameter (pin oscillating part) and oscillating part of the piston and piston rod.
2. Toward the slit of the bush (left and right) for lift shaft as shown in the figure for mounting.
  - 1) Toward the slit of the bush as shown in the figure for mounting.
  - 2) The depth of press fit for bush shall be 13.5mm {0.531in} on both lift and right.
 Reference) Apply some lubricant, MoS2-P, to the spline part of the shaft.

3. Match the punch marks of the power arm and lift shaft for assembly.
4. Match the punch marks of the lift arm and lift shaft for assembly.
5. Wrap the seal tape around the breather and mount it with the hole forward.
6. Apply some liquid packing (ThreeBond #1208D) to the mounting face of the lift case for assembly.

**Torque: 39.2 to 44.1N•m {400 to 450kgf•cm, 28.9 to 36.2lbf•ft}**

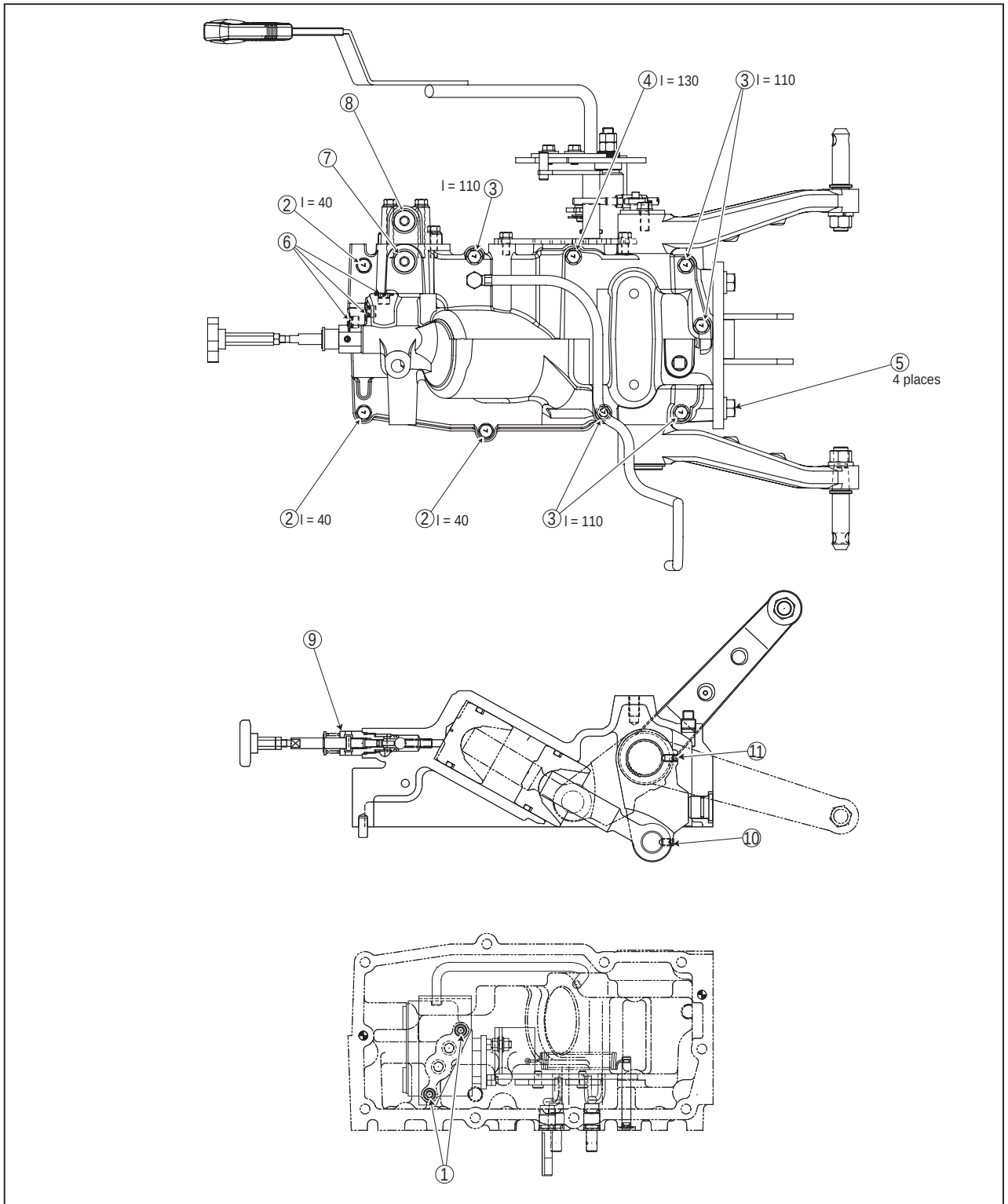
7. Refer to the table for torque for each part. (Standard torque unless specified.)



GZ3W31-026C



## 7. Torque for Each Parts



| No.     | Parts  | Size | Torque (N•m {kgf•cm, lbf•ft})           |
|---------|--------|------|-----------------------------------------|
| 1       | Bolt   | M8   | 24.5 to 29.4 {250 to 300, 18.1 to 21.7} |
| 2, 3, 4 | Bolt   | M10  | 39.2 to 44.1 {400 to 450, 28.9 to 32.5} |
| 5       | Bolt   | M14  | 147 to 167 {1500 to 1700, 108 to 123}   |
| 6       | Plug   | G1/4 | 34 to 39 {350 to 400, 25.3 to 28.9}     |
| 7, 8    | Plug   | G3/8 | 49 to 59 {500 to 600, 36.2 to 43.4}     |
| 9       | Sleeve | M22  | 84 to 93 {850 to 950, 61.5 to 68.7}     |
| 10, 11  | Screw  | M8   | 15 to 18 {150 to 180, 10.85 to 13}      |

## 8. Inspection and Adjustment

### 1 Bush Clearance

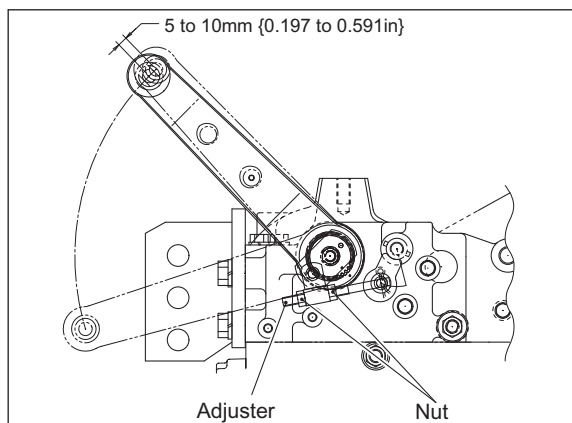
Check the clearance of the bush and change the ones exceeding the usable limit.



- Check the shaft for oscillating face with the bush for fouling and change accordingly.
- Change the bush if the internal gray fiber layer is worn.

(Unit: mm {in})

| Item                               | Reference Value                  | Usable Limit |
|------------------------------------|----------------------------------|--------------|
| Clearance bet. Lift Shaft and Bush | 0.09 to 0.2 {0.0035 to 0.0079}   | 0.30 {0.012} |
| Clearance bet. Piston Rod and Bush | 0.075 to 0.216 {0.003 to 0.0085} | 0.30 {0.012} |



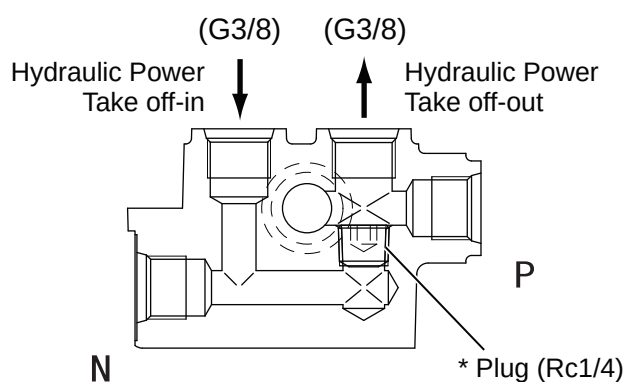
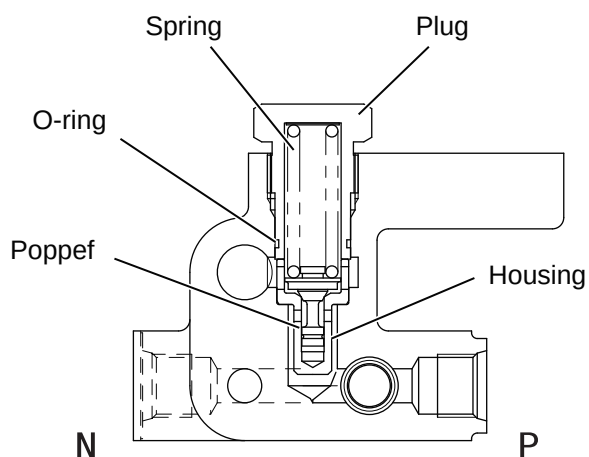
GZ3W31-031

### 2 Adjustment of Position Control Lever

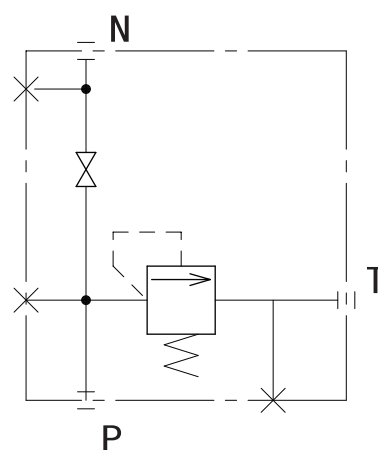
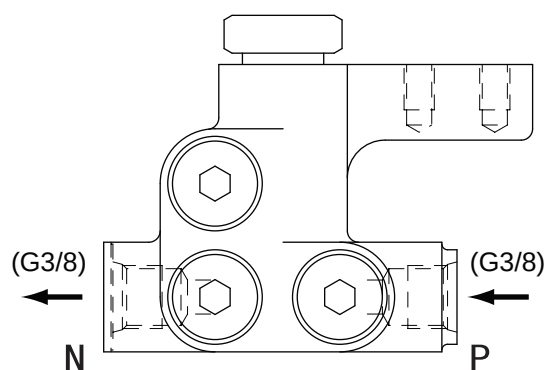
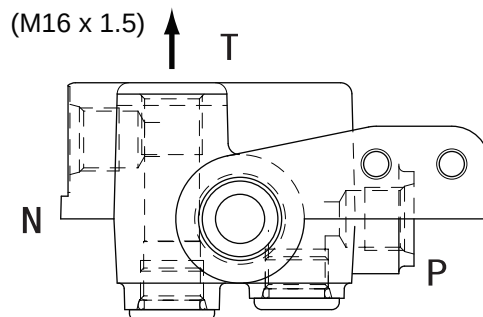
Adjust the nut for adjuster to stop the lift arm at 5 to 15mm {0.197 to 0.591in} before at the tip of the lift arm from the upper limit position.

## 7-7 Releaf Valve

### 1. Releaf Valve



\* When installing a Hydraulic take off block, install a plug (Rc1/4).  
(It is not provided at shipment.)

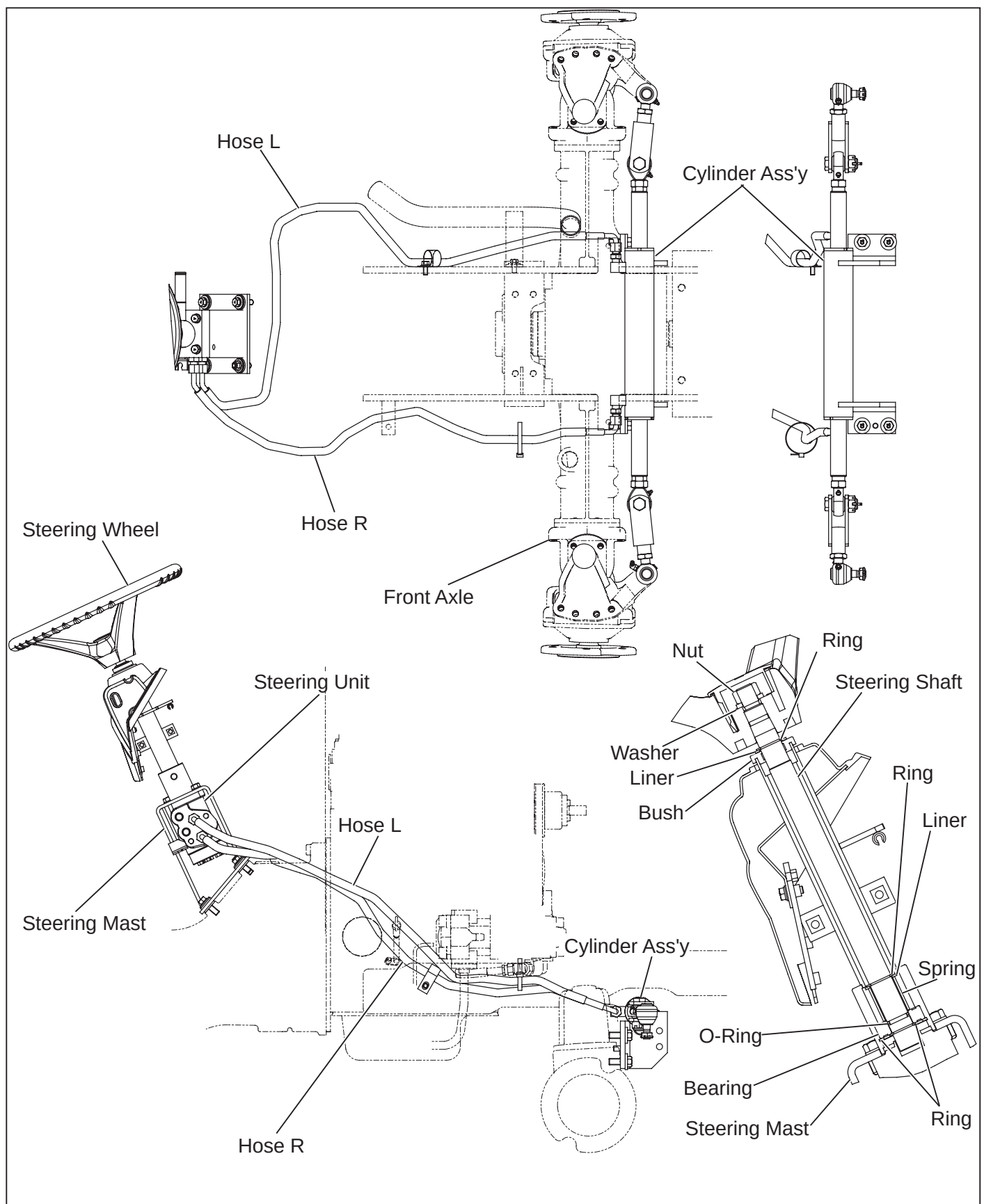


Hydraulic Chart

Releaf Valve :  $15.2 \begin{smallmatrix} +0.5 \\ 0 \end{smallmatrix}$  MPa  
 $(155 \begin{smallmatrix} +5 \\ 0 \end{smallmatrix} \text{ kgf/cm}^2)$

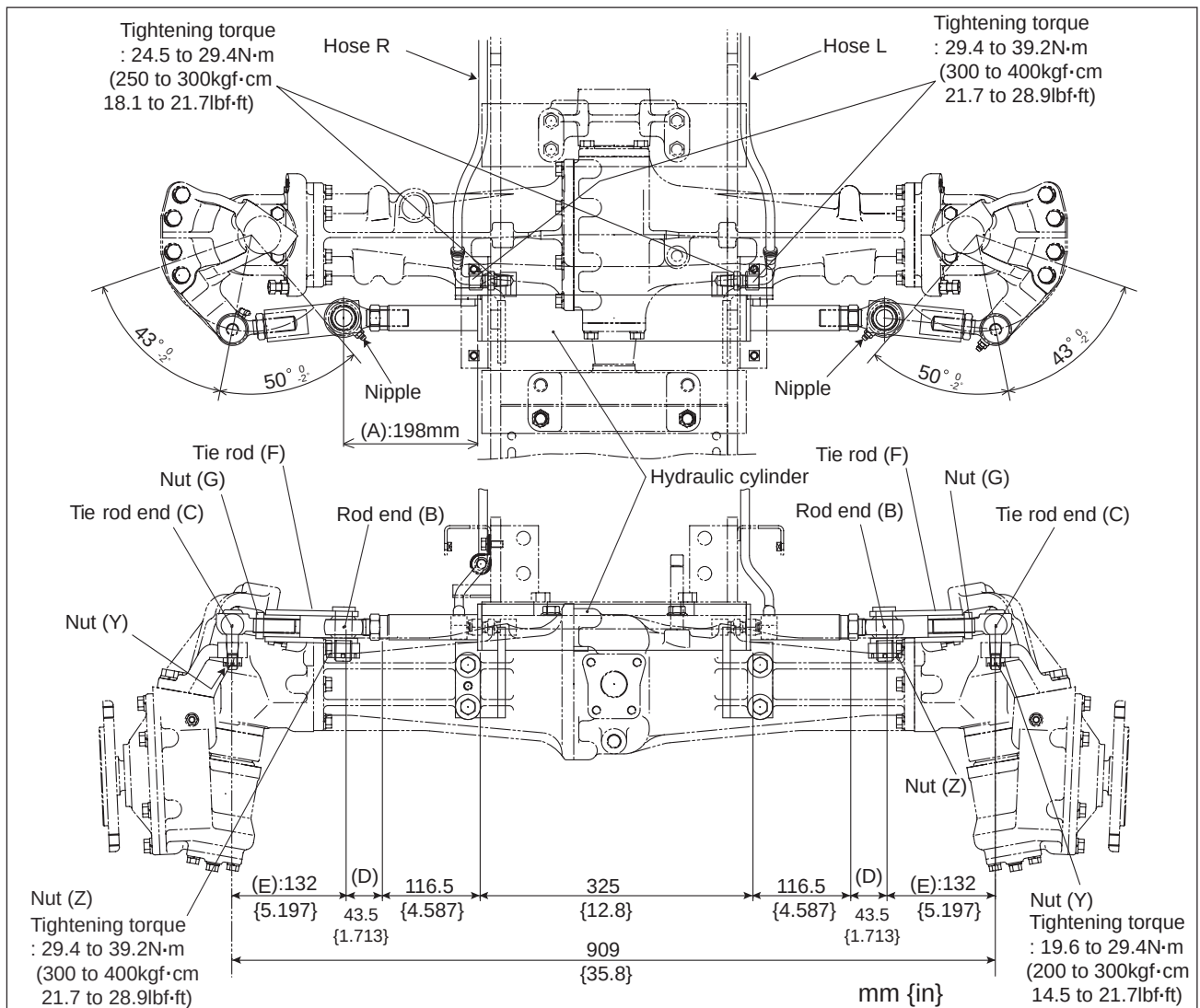
## 7-8 Power Steering

### 1. Structure



## 2. Assembly of Cylinder Assembly

1. Steering wheel is turned to the limit and rod length (A) is set to 198mm {7.8in}. At this time, a steering angle on both sides is adjusted to the interior angle ( $50^{\circ} \pm 2^{\circ}$ ) and the external angle ( $43^{\circ} \pm 2^{\circ}$ ) by the rod end (B).
2. Length (D) is adjusted by the rod end (B) to 43.5mm {1.7in}. At this time, the nipple is turned to turn to forward of the body. The nipple on both sides is adjusted so that the difference of an angle may turn to less than  $10^{\circ}$ .
3. Adjust the length (E) of tie rod end to 132mm {5.2in} as shown in the figure and adjust the toe in by turning only the tie rod (F).
4. Adjust the upper surface of rod end (B) and tie rod (F) and tie rod end (C) doesn't incline back and forth, and fixes with the nut (G).
5. Execute the tightening torque instruction in figure. In addition, (Y) and (Z) nuts tightens by the torque of 9.8Nm, (100kgf·cm, 7.23lbf·ft) and the position of the ditch is matched.
6. The split pin which is fixing the (Y) and (Z) nuts should bend a tip on both sides.



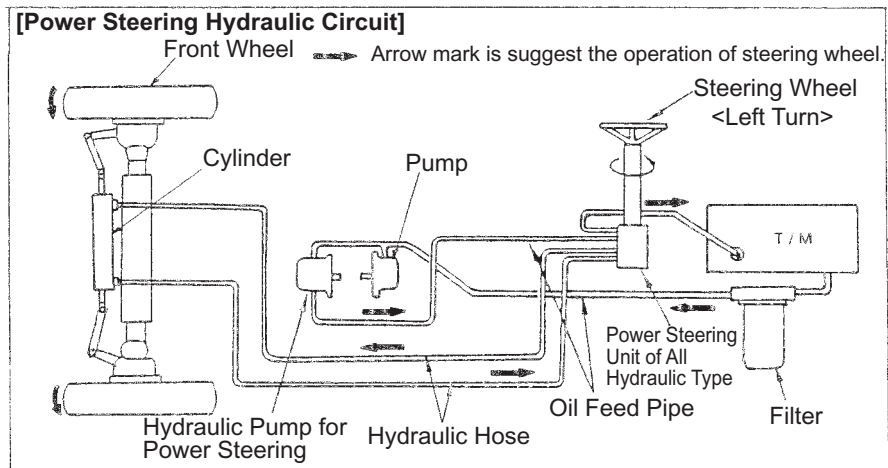
## 3. Bleeding Procedure for Power Steering

After inspecting and adjusting the assembly of each part, Take the following procedure for air bleeding.

1. Set the engine speed to 1500 to 2000rpm.
2. Relieve for approximately 3 seconds on the maximum steering angle by operating the steering wheel to left and right.
3. Repeat the procedure 2 in both left and right direction 3 to 4 times.

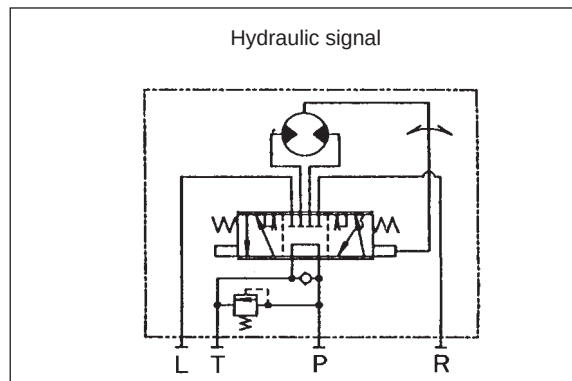
## 4. Steering Unit

There are nothing mechanical connection between steering unit, hydraulic cylinder and pump. Steering unit consists of few drive parts and rotary valve change the direction of hydraulic flow. Hydraulic flow will be connecting to metering device (gerotor) after switching the rotary valve as handle wheel turn.



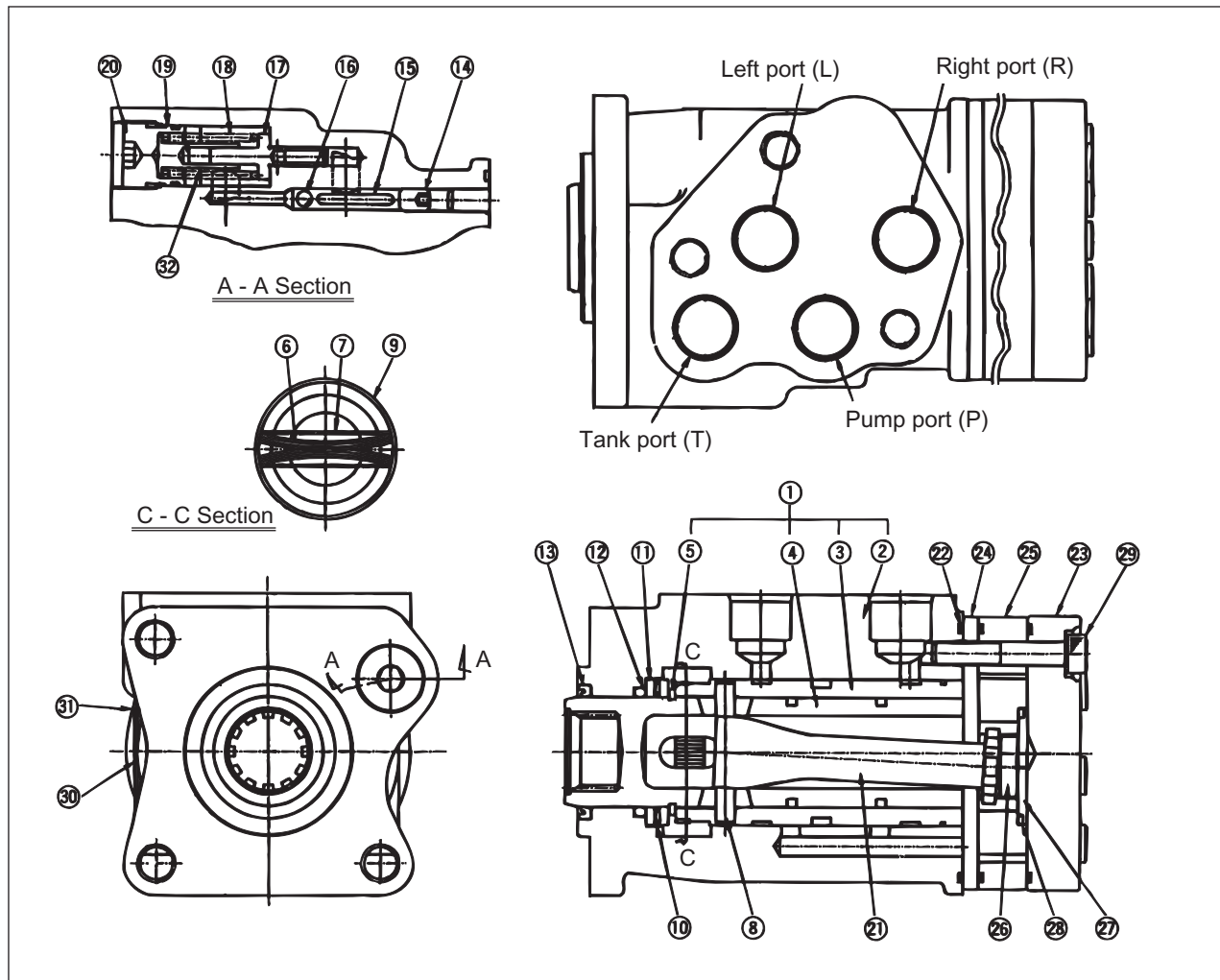
### 1.Specifications

|                  |                                            |
|------------------|--------------------------------------------|
| Valve System     | Open Center                                |
| Load Effect      | Non-load reaction                          |
| Model            | RU051B105F6A (EATON FLUID POWER)           |
| Max. Temperature | 95° (oil temperature)                      |
| Preset Pressure  | 10.3MPa (105kgf/cm <sup>2</sup> , 1493psi) |
| Rated Flow       | 8L/min {2.1gal/min}                        |



GZ3W27-009

## 2. Structure



GS7W3-176

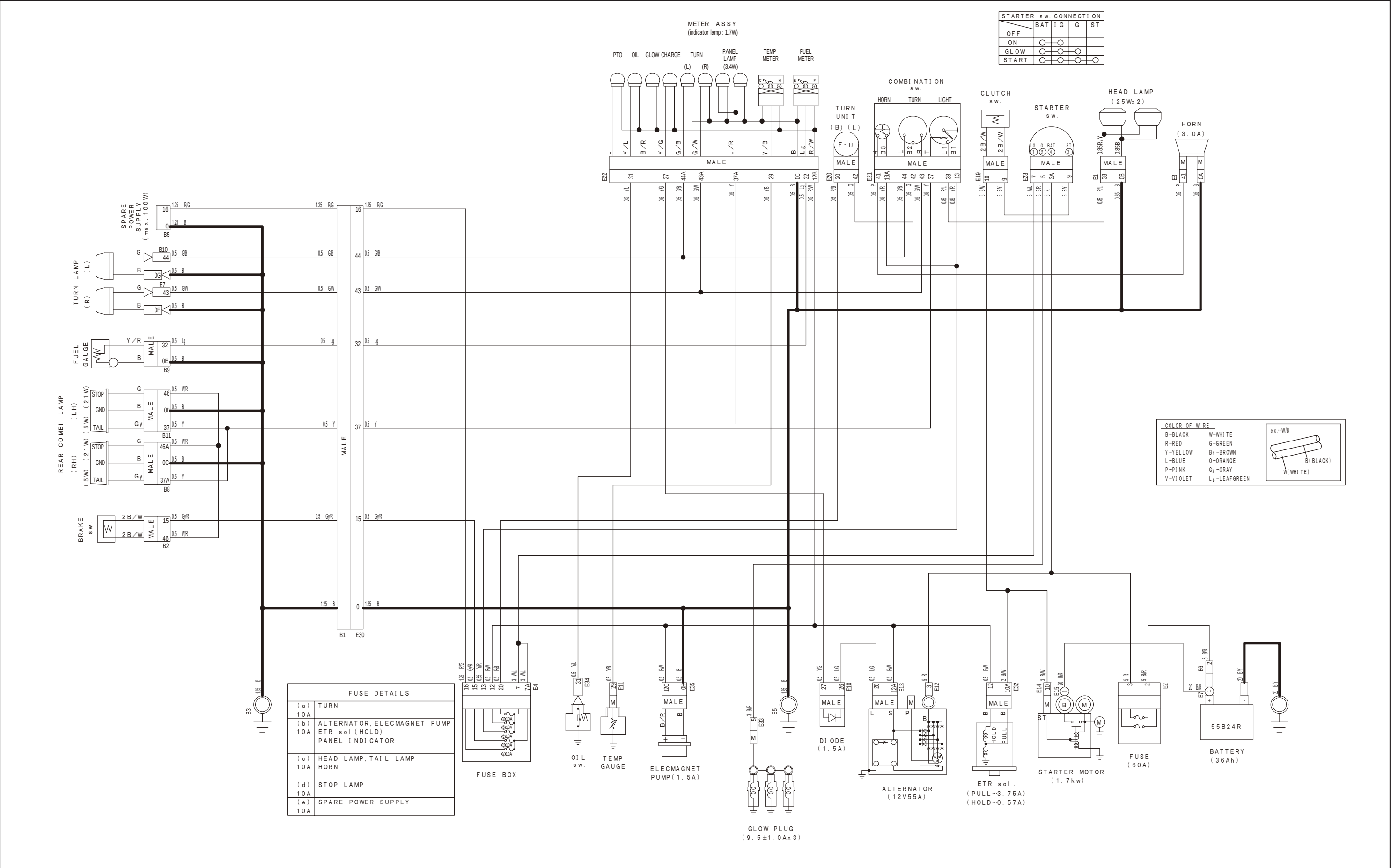
|    |                        |    |                         |
|----|------------------------|----|-------------------------|
| 1  | Control Parts Assembly | 2  | Housing                 |
| 3  | Sleeve                 | 4  | Spool                   |
| 5  | Retaining Ring         | 6  | Centering Spring        |
| 7  | Flat Spring            | 8  | Pin                     |
| 9  | Spring Retaining Ring  | 10 | Thrust Needle Bearing   |
| 11 | Bearing Race           | 12 | Oil Seal                |
| 13 | Dust Seal              | 14 | Retainer Screw Assembly |
| 15 | Retainer Pin           | 16 | Ball                    |
| 17 | Relief Poppet          | 18 | Spring                  |
| 19 | O-ring                 | 20 | Relief Adjust Plug      |
| 21 | Drive                  | 22 | O-ring                  |
| 23 | End Cap                | 24 | Spacer Plate            |
| 25 | Gerotor                | 26 | Spacer                  |
| 27 | Plate                  | 28 | O-ring                  |
| 29 | Cap Screw              | 30 | Nameplate               |
| 31 | Rivet                  | 32 | Damper Collar           |



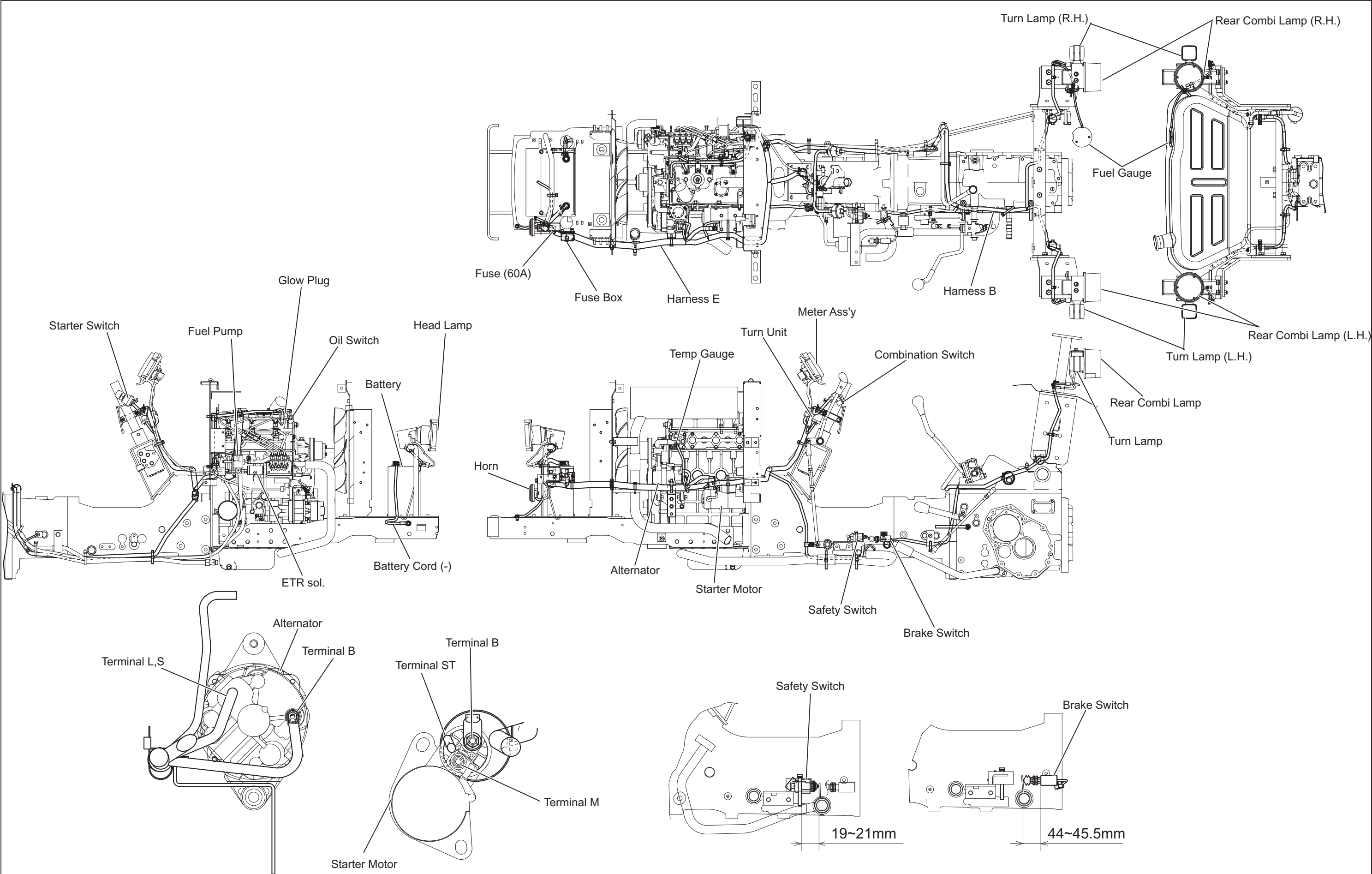


8. ELECTRIC EQUIPMENT

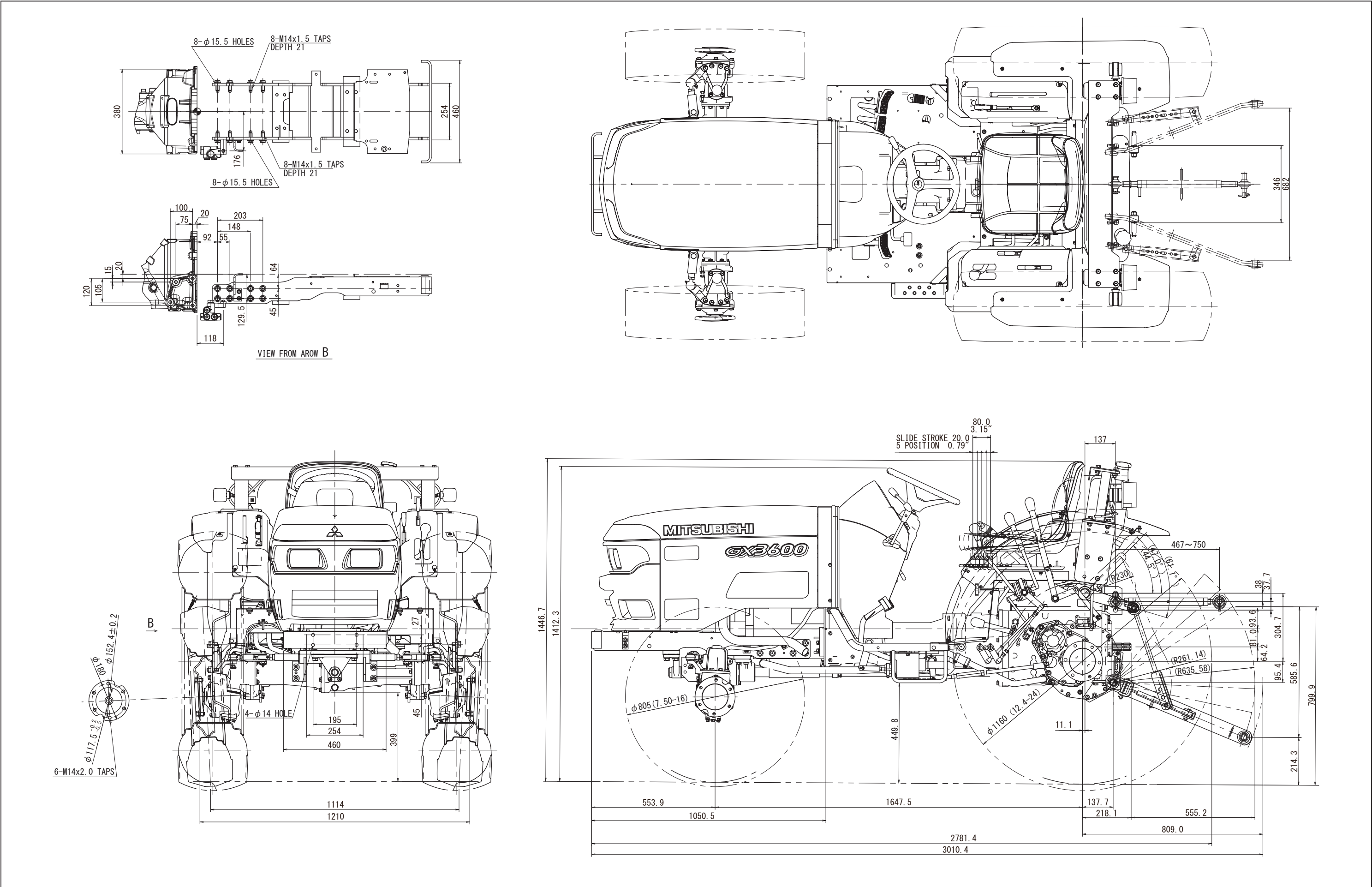
8-1 Electric circuit diagram

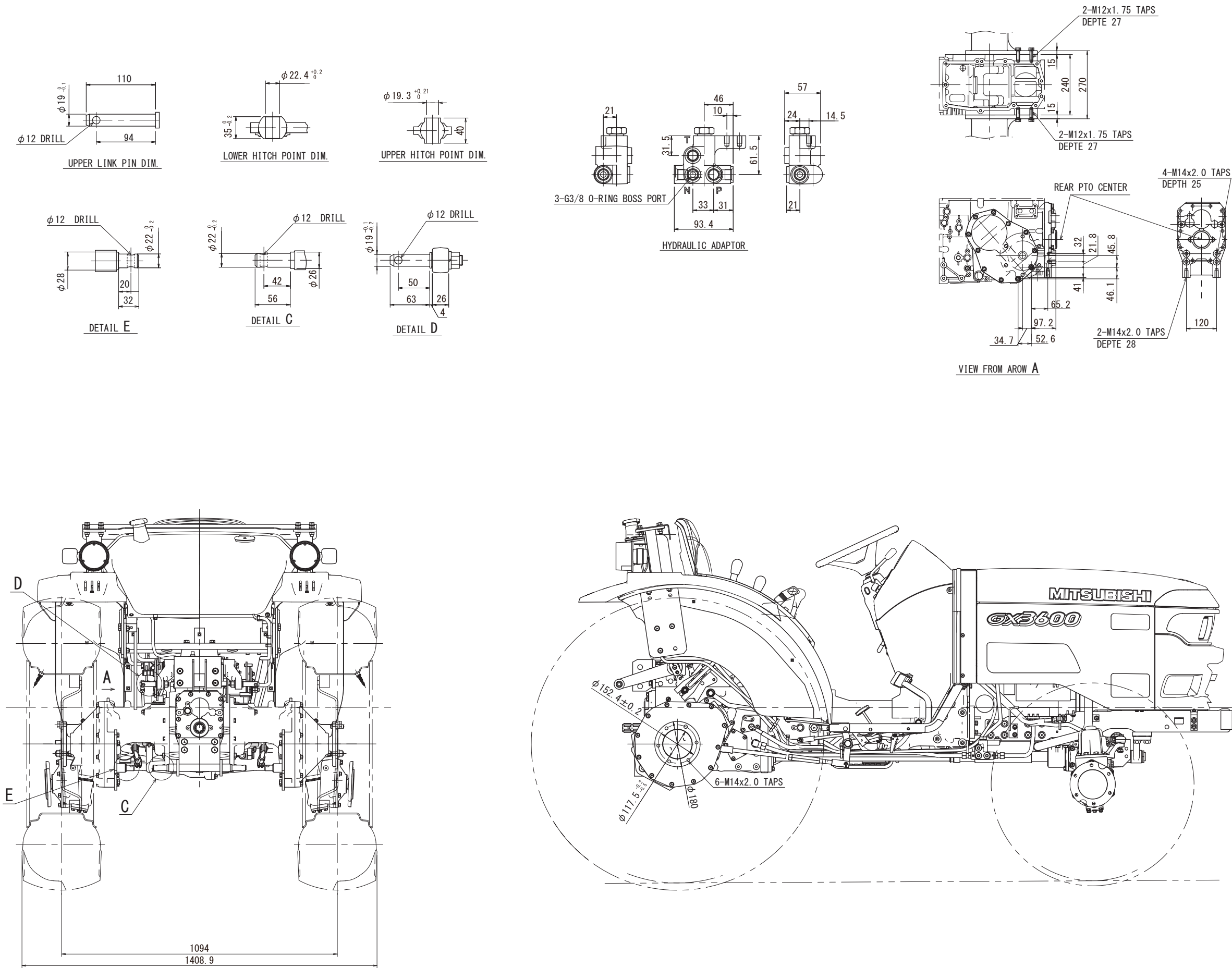


8-2 Harness



9. DIMENSION FOR IMPLEMENT FIT









**MITSUBISHI AGRICULTURAL MACHINERY CO.,LTD.**

**GOTANDA NOMURASHOKEN BLDG. 6TH FLOOR**

**1-5-1, NISHIGOTANDA SHINAGAWA - KU**

**TOKYO JAPAN**

