

1 General

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1.1 Safety information

1.1.1 A word to the technician

Read and understand the safety section in this service manual before operating or servicing the machine. Read and understand the safety sections in the manuals for all attachments before operating or servicing attachments. The technician has the key to safety. Good safety practices protect everyone.

Study the safety information in this service manual. Make the safety information a working part of the safety program. The safety information in this service manual applies specifically to this type of machine. Always do all other usual and customary safe working precautions. Remember - The technician has the responsibility for safety. Good safety practices can prevent serious injury or death.

The safety section points out some basic safety situations that can occur during the operation and maintenance of the machine. The safety section also suggests possible ways to deal with these situations. The safety section does not replace safety practices in other parts of this service manual.

Practice good safety to help prevent injury or death.

Learn how to operate the machine and how to use the controls correctly.

Do not let other persons operate the machine without instruction and training.

Follow all safety precautions and instructions in the manuals and on safety signs affixed to the machine and all attachments.

Use only approved attachments and equipment.

Make sure the machine has the correct equipment needed by the local regulations.



WARNING:

An operator should not use alcohol or drugs which can affect their alertness or coordination. An operator on prescription or 'over the counter' drugs needs medical advice on whether or not they can properly operate machines. If any attachments used on this equipment have a separate Operator Manual, see that manual for other important safety information.

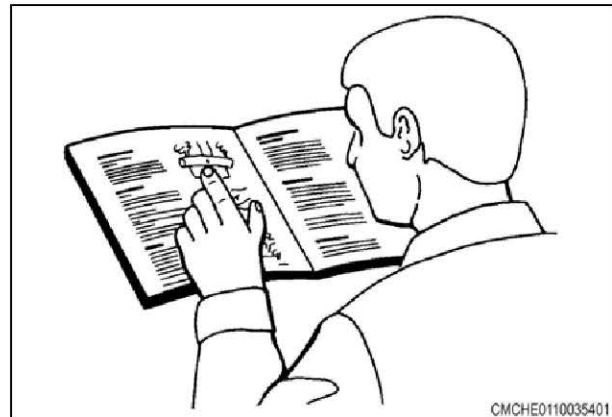


Fig. 1

1.1.2 Service manual



WARNING:

Some pictures in the manual show the shields removed to permit a clearer view. Never operate the machine with any shields removed.

This service manual has been prepared with the latest service information available at publication. Read and understand the service manual carefully before doing any service on the machine.

Right-hand and left-hand, as used in this manual, are determined by facing the direction of machine travel when in use.

Photos, illustrations, and data used were current at the time of printing, due to possible production changes, the machine can vary slightly. The manufacturer reserves the right to redesign and change the machine as necessary without notification.

1.1.3 Safety symbol

The safety symbol tells you about a potentially hazardous area!

Look for the safety symbol in this manual and on the machine. The safety symbols tell you that there is important safety instructions in the manual.

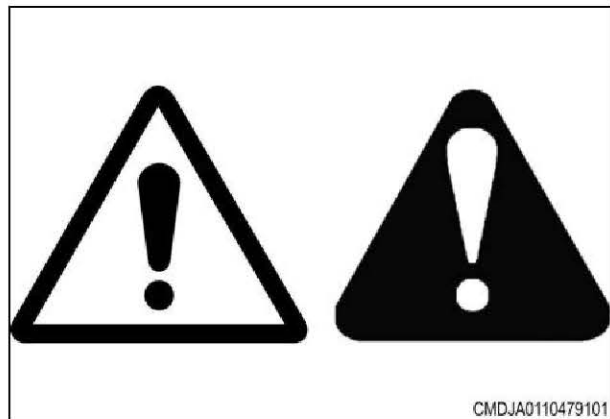


Fig. 2

1.1.4 Safety messages

The words DANGER, WARNING or CAUTION are used with the safety symbol. Learn these safety messages and obey the recommended precautions and safety instructions.



DANGER:

If you do not obey the recommended precautions and safety instructions, DEATH OR INJURY will occur.



WARNING:

If you do not obey the recommended precautions and safety instructions, DEATH OR INJURY can occur.



CAUTION:

If you do not obey the recommended precautions and safety instructions, INJURY can possibly occur.



Fig. 3

1.1.5 Information messages

The words important and note are not related to personal safety, and are used to give information about the operation and servicing of the machine.

IMPORTANT: Identifies special instructions or procedures which, if not followed, can cause damage to the machine, the process, or the area around the machine.

NOTE: Information to make procedures easier.

1.1.6 Safety signs



WARNING:

Do not remove the safety signs. Replace safety signs that you cannot read, are damaged, or are missing.

Clean the machine surface with a weak soap and water solution before you replace the safety signs. Replacement safety signs are available from your dealer.

Always make sure that safety signs are in the correct locations and that you can read the safety signs. Illustrations of safety sign locations are in this section.

Keep the safety signs clean. If necessary, use a weak soap and water solution.

1.1.7 Important safety information

IMPORTANT: Any Modifications to the machine or systems not authorized by AGCO will void the AGCO Warranty. This includes, but is not limited to hitches.



WARNING:

When replacement parts are required for this product, AGCO recommends using AGCO replacement parts or parts with equivalent specifications including, but not limited to, physical dimensions, type, strength and material. Failure to heed this warning can get untimely failures, product damage, personal injury or death.

Failure to obey basic safety rules and precautions can cause personal injuries during product operation, maintenance, or repair. Know dangerous situations before an injury occurs.

A person must be alert to possible dangers. This person must also have the necessary training, skills and tools to do these operations correctly.

Incorrect operation, lubrication, maintenance or repair of this product can be dangerous and can result in injury or death.

Read and understand all the information about the operation, lubrication, maintenance, and repair before operating on this machine.

The product and this manual give safety precautions and warnings. Bodily injury or death can occur to you or to other persons if all warnings are not heeded.

Not every possible circumstance that can involve a potential danger can be anticipated. The warnings in this publication and on the product are, thus, not all inclusive. If a tool or procedure, not recommended by AGCO, is used, make sure they are safe for everyone.

An operator must make sure the product will not be dangerous or damaged by the operation, lubrication, maintenance or repair procedures selected. Information, specifications, and illustrations in this publication come from information available at the time of publication production.

Specifications, torques, pressures, measurements, adjustments, illustrations, and other items can change at any time. These changes can change the service that is given to the product. Get the complete and most current information before starting a job. AGCO dealers have the most current information available.

1.1.8 General hazard information



CAUTION:
Carefully read the operator's manual before operating the machine. See all instructions and safety rules when operating or doing maintenance.

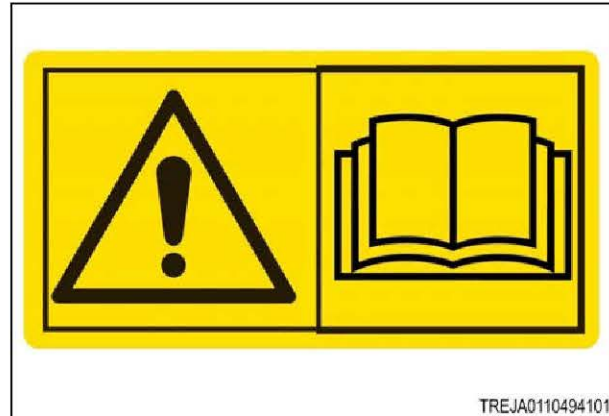


Fig. 4

Do not start the engine until the area is free of personnel. Honk the horn two times to alert others. This will help in avoiding personal injury because machine movement can occur.

Know the width of the equipment to keep correct clearance when operating the machine near fences or near boundary obstacles.

Wear a hard hat, protective glasses, and other protective equipment, as required.

Do not wear loose clothing or jewelry that can catch on controls or on other parts of the machine.

Make sure that all protective guards and all covers are attached in position on the machine.



Fig. 5

Keep the machine free from unwanted material. Remove debris, oil, tools, and other items from the deck, from walkways, and from steps.

Secure lunch boxes, tools, and other loose items that are not a part of the machine.

Know the appropriate work location hand signals and the personnel that are authorized to give the hand signals. Get hand signals from one person only.

Never put maintenance fluids into glass containers. Drain all liquids into an approved container.

Discard any drained fluids and discard any filter elements according to local regulations.

Use all cleaning solutions with precaution.

Report all necessary repairs.

Do not let untrained or not approved personnel on the machine.

Do not smoke when servicing an air conditioner. Also, do not smoke if refrigerant gas can be present. Inhaling the fumes that are released from a flame that contacts air conditioner refrigerant can cause bodily harm or death.

Inhaling gas from air conditioner refrigerant through a lighted cigarette can cause bodily harm or death.

Unless being instructed differently, complete the maintenance under the following conditions:

- Turn the battery disconnect switch to "off" position.
- The machine is parked on level ground.
- Implements are lowered to the ground.

- Transmission control lever is in the park position.
- The engine is stopped.
- The engine start switch is turned off and the switch key is removed.
- The machine has cooled down.

Any additional precautions must be observed based on the conditions and environment where the machine is being used.

1.1.9 Pressurized air

Air under pressure can cause personal injury. When pressurized air is used for cleaning, wear a protective face shield, protective clothing and protective shoes.

The maximum air pressure for cleaning purposes must be below 205 kPa (30 psi).

1.1.10 Asbestos information

AGCO equipment and replacement parts are asbestos free. AGCO recommends the use of only correct AGCO replacement parts.

1.1.11 Electrical storm injury prevention

When lightning is striking in the vicinity of the machine, the operator should not attempt to dismount or mount the machine.

If you are in the operator's station during an electrical storm, stay in the operator's station. If you are on the ground during an electrical storm, stay away from the machine.

1.1.12 Mount and dismount the machine

Mount the machine and dismount the machine only at locations that have steps and/or hand holds. Before mounting the machine, clean the steps and the hand holds. Inspect the stairs and hand holds. Make any necessary repairs.

When dismounting the machine, descend the steps backwards, and maintain a three-point contact with the steps and hand holds. Three-point contact is two feet and one hand or one foot and two hands.

Never mount a moving machine. Never dismount a moving machine. Never jump off the machine except in an emergency.

Do not carry tools or supplies when you try to mount the machine or when you try to dismount the machine. Use a hand line to pull equipment onto the platform.

Do not use any controls as hand holds when you enter the operator compartment or when you exit the operator compartment.

1.1.13 Before you start the engine

Start the engine only from the operator compartment. Never short across the starter terminals or batteries. Shorting can damage electrical system or cause unexpected machine movement.

Adjust the seat so full pedal travel can be achieved with operator's back against seat back.

Make sure the machine is equipped with a lighting system sufficient for job conditions. Make sure all machine lights are working properly.

Before starting the engine or moving the machine, make sure no one is under, around or on machine. Make sure area is free of personnel.

To honk horn the key must be turned to "run" to enable the horn. As a warning honk horn twice, to alert others.



Fig. 6

1.1.14 Start the engine

Move all hydraulic controls to the hold position before starting the engine.

Make sure the transmission control lever is in the park position.

Diesel engine exhaust contains products of combustion which can be dangerous. Always operate the engine in a well ventilated area. If in a closed in area, vent the exhaust to the outside.



WARNING:

Machine will turn if turning the steering wheel when the transmission control lever is in neutral and the engine is idling.



WARNING:

Do not use ether at any time. Use will cause engine damage and/or personal injury.

Do not start the engine until the area is free of personnel to prevent personal injury because of unexpected machine movement.

1.1.15 Before operation

Clear all personnel from around the machine and the area.

Clear all obstacles from machine's path. Be careful of dangers, (electrical power lines, ditches, etc).

Make sure all the windows are clean and attached in the closed position.

Adjust the rearview mirrors for best visibility near the machine. Make sure the horn, backup alarm (if equipped) and all other warning devices are working correctly.

On the drawbar-towed implements, fasten a transport chain of sufficient capacity between the machine drawbar support and implement. Give only enough slack in the chain to permit turning.

Only one instructor must be permitted to ride in the machine cab. Instructor must be seated in the instructor seat with the seat belt fastened.

1.1.16 Procedures for operation

When the engine is running, the articulated steering is active. The machine will articulate when the transmission is in park, neutral, or in any gear.

Only operate the machine while in the operator's seat. Securely fasten the seat belt while operating the machine. Only operate the controls while the engine is operating.

Check for the correct operation of all the controls and the protective devices.

As a warning honk the horn twice to alert others in the area to prevent personal injury because of machine movement.

During operation of the machine, report any damage recorded. Make any necessary repairs.

A rollover of machine can occur when working on hills, banks, or slopes. A rollover of machine can also occur when crossing ditches, ridges, or other unanticipated obstacles.

Hold the attachments approximately 40 cm (16 in) above the ground level while driving the machine. Do not drive the machine near an overhang, near the edge of a cliff, or near edge of an excavation.

If the machine begins to sideslip on a grade, immediately reduce load and turn machine downhill.

Be careful to avoid any ground condition which will cause machine to tip over.

Keep the machine under control. Do not overload the machine beyond capacity.

Make sure the towing devices are sufficient for the application.

Make sure the components on the 3-point linkage are sufficient for the application.

Connect the trailing equipment only to a drawbar or hitch.

Never straddle a wire cable.

When maneuvering to connect equipment, make sure no personnel are between machine and trailing equipment. Block up hitch of trailing equipment to align equipment with drawbar.

Know the maximum dimensions of the machine.

When operating on icy or muddy roads, reduce the travel speed to prevent losing control of machine.

After operating in muddy conditions, permit sufficient time for tires to reject debris and moisture before making high speed maneuvers. Tires that are wet and tires that are muddy can impede machines's steering.

Reduce travel speed if the stability of the machine is noticeably reduced.

Select a gear that controls machine speed when declining a hill.

Use the service brakes if required, to control machine speed. Never coast down a hill with transmission in neutral.

Do not let passengers anywhere on the machine except on an approved passenger seat. Instructors must have the instructor seatbelt securely fastened during any operation.

1.1.17 Park the machine

1. Park the machine on a solid, level surface.
2. Move the transmission control lever to the park position.
3. Lower all the implements to the ground.
4. Before stopping the engine, move the throttle control lever to the low idle position. Operate the engine at low idle speed for five minutes to let the turbocharger cool.
5. Stop the engine and take the key with you.
6. Chock the front wheels or rear wheels.
7. Turn the battery disconnect switch to the off position.
8. Remove the battery disconnect switch key.

1.1.18 Operator station

Do not drill holes or weld on the cab rollover protective structure. (ROPS)

Any modifications to the inner operator station must not extend into the operator space.

Any item brought into the cab must not extend into defined operator space. Secure loose items. Objects must not pose an impact hazard in rough terrain or if there is a rollover.

1.1.19 Cut and crush prevention

Support the equipment correctly when performing work below the equipment. Do not rely on the hydraulic cylinders to hold up the equipment. An implement can fall if a control lever is moved or if a hydraulic line breaks.

Never start the machine engine by shorting across the starter solenoid terminals. Machine movement can occur causing runovers .

Never make adjustments while the machine is moving or while the engine is operating.

Whenever there are attachment control linkages, the clearance in the linkage area will change with movement of the attachment.

Stay clear of all rotating parts and all moving parts.

Keep objects away from moving fan blades. The fan blades will throw objects and the fan blades can cut.

Do not use a wire tow cable that is kinked or frayed. Wear gloves when touching wire cable.

When hitting a retainer pin, the retainer pin can fly out causing personal injury. Make sure that there are no people in the area when hitting a retainer pin. To prevent eye injury, wear protective glasses when hitting a retainer pin.

Chips or other debris can fly off objects when hitting the objects. Make sure that others are clear of the area before hitting any object.

1.1.20 Rollover protective structure

Do not make any modifications to the rollover protective structure (ROPS) as this will change protection provided. Do not change structure by welding, cutting, adding weight, or drilling holes into structure.

Any change not specifically authorized by AGCO invalidates AGCO certification for ROPS. The protection offered by ROPS will be impaired if ROPS has structural damage or alteration. Damage to structure can be caused by a turn over or by falling objects.

Do not mount items (fire extinguishers, first aid kits, work lights, etc.) by welding brackets or drilling holes in ROPS. See dealer for mounting guide lines.

1.1.21 Burn prevention

Do not touch any part of an operating engine. Other components such as the transmission, the axles and the oil reservoir can also be hot. Let the engine cool before performing any maintenance on the engine. Release all pressure in air, oil, lubrication, fuel and cooling systems before disconnecting any line fittings or related items.



Fig. 7

1.1.22 Coolant

When the engine is at operating temperature, the engine coolant is hot. The coolant is also under pressure. The radiator and all the lines to the heater or engine contain hot coolant.

Any contact with hot coolant or with the steam can cause severe burns. Allow the cooling system components to cool before the cooling system is drained.

Check the coolant level only after the engine has been stopped.

Make sure the filler cap is cool before removing. The filler cap must be cool enough to touch with a bare hand. Remove the filler cap slowly to relieve the pressure.

The cooling system conditioner contains alkali. Alkali can cause personal injury.

Do not allow alkali to contact skin, eyes or mouth.



Fig. 8

1.1.23 Oils

Pressurized hot oil and hot components can cause personal injury. Do not allow hot oil to contact skin. Do not allow hot components to contact skin.

Remove the hydraulic tank filler cap only after the engine has been stopped.

The filler cap must be cool enough to touch with a bare hand. Follow the standard procedure in this manual to remove the hydraulic tank and transmission filler caps.

1.1.24 High pressure lines

Do not bend or strike the high pressure lines. Do not install any lines that are bent or damaged.

Repair any loose or damaged lines. Leaks can cause fires. Consult your dealer for repair or for replacement parts.



DANGER:

Diesel fuel or hydraulic fluid under pressure can penetrate the skin or eyes. This can cause serious personal injury, blindness, or death.

1.1.25 Fluid penetration

Always use a board or cardboard when checking for a leak. Leaking fluid under pressure can penetrate the body tissue. Fluid penetration can cause serious injury and possible death. A pin hole leak can cause severe injury. If fluid is injected into the skin, get treatment immediately. Get treatment from a doctor familiar with this type of injury.

Check the lines, the tubes and the hoses carefully. Do not use your bare hand instead, use a board or cardboard to check for leaks. Tighten all connections to the recommended torque.

Replace the hose if any of the following conditions are present:

- End fittings are damaged or leaking.
- Outer coverings are rubbed or cut.
- Wires are showing.
- Outer coverings are ballooning.
- The flexible part of the hose has a kink.
- Outer coverings have embedded armoring.
- The end fittings are displaced.

IMPORTANT: Take care to contain fluids during the performance of the inspection, the maintenance, the testing, the adjusting, and the repair of the machine. Have a suitable container large enough ready to collect the fluid before opening any compartment or disassembling any component containing fluids. See the local regulations and mandates when discarding fluids.

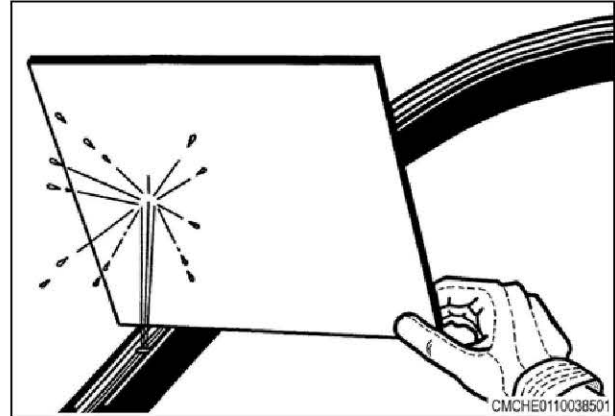


Fig. 9

1.1.26 Batteries

A lead acid battery generates flammable and explosive gases. Keep sparks and flames away from the battery.



WARNING: Sulfuric acid in battery electrolyte is poisonous.

The acid is strong enough to burn skin, eat holes in clothing and cause blindness if got into eyes.

If acid contacts skin or clothing, flush with water immediately. If acid contacts eyes get immediate medical aid.

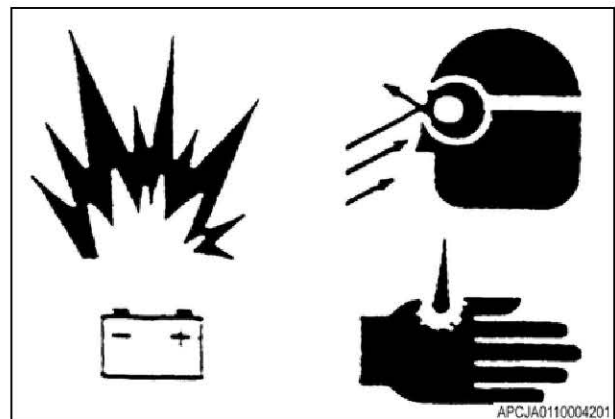


Fig. 10

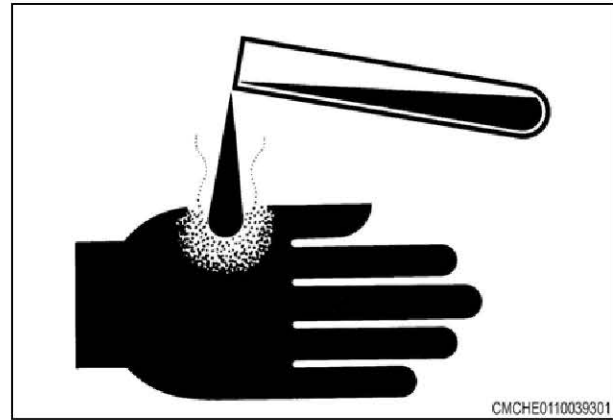
Wash hands after touching batteries and connectors.



WARNING: Batteries contain electrolyte which is an acid that can cause personal injury.

Do not let the electrolyte contact the skin or eyes.

Always wear protective glasses for servicing batteries.



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Fig. 11

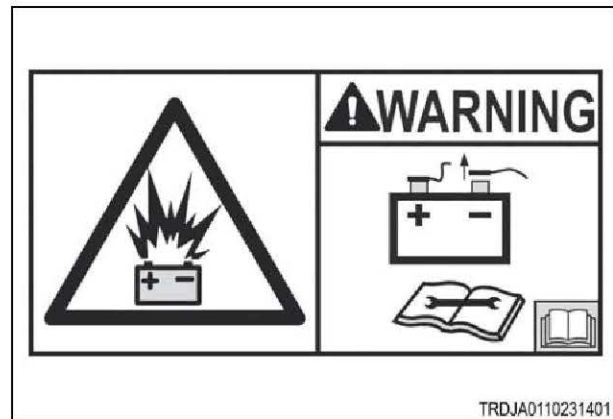
Never check battery charge by placing a metal object across the terminal posts. Use a voltmeter or a hydrometer.



WARNING: Gases from a battery can explode.

Incorrect jumper cable connections can cause an explosion causing an injury.

Keep open flames or sparks away from the top of the battery. Do not smoke in the battery charging areas. To prevent an explosion, never charge a frozen battery.



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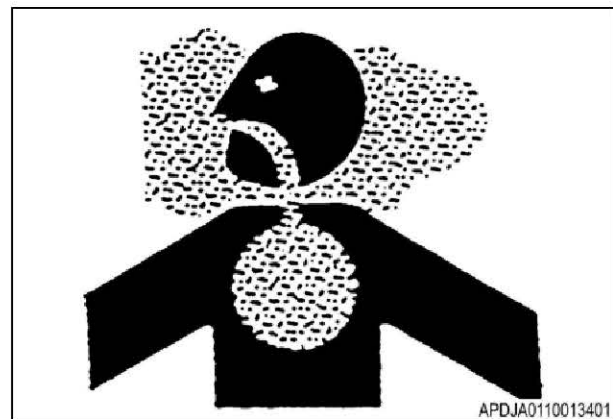
Fig. 12

1.1.27 Exhaust fumes

Always work in a correct ventilated area.

Engine exhaust fumes can cause sickness or death. If necessary to run engine in a closed area, use correct equipment to safely remove exhaust fumes from area.

Always open the doors and get outside air into area.



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Fig. 13

1.1.28 Noise prevention

Wear proper hearing protective devices such as earmuffs or earplugs to prevent loss of hearing due to high noise levels.

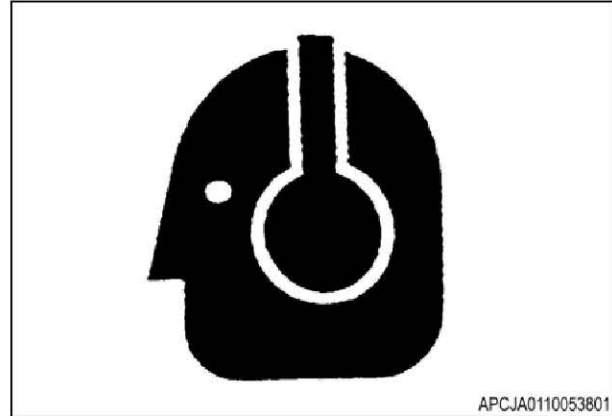


Fig. 14

1.1.29 Fire and explosion prevention

Use caution when refueling a machine. Do not smoke while refueling and do not refuel near open flames or sparks. Always stop engine before refueling. Fill fuel tank outdoors.

All fuels, most lubricants, and some coolant mixtures are flammable.

Flammable fluids leaking or spilled onto hot surfaces or electrical components can cause a fire.

Fire may cause personal injury and property damage.

Remove all flammable materials such as fuel, oil, and debris from machine.

Do not let any flammable materials to accumulate on machine.

Store fuels and lubricants in correctly identified containers away from not approved persons. Store rags with oil and any flammable materials in protective containers.

Do not smoke in areas used for storing flammable materials.

Do not operate machine near any flame.

Do not weld on lines or tanks that contain flammable fluids. Do not flame cut lines or tanks containing flammable fluid. Clean any such lines or tanks fully with a nonflammable solvent before welding or flame cutting.

Check all electrical wires daily. Repair any wires loose or frayed before operating machine. Clean and tighten all electrical connections.

Dust generated from repairing nonmetallic hoods or nonmetallic fenders can be flammable and/or

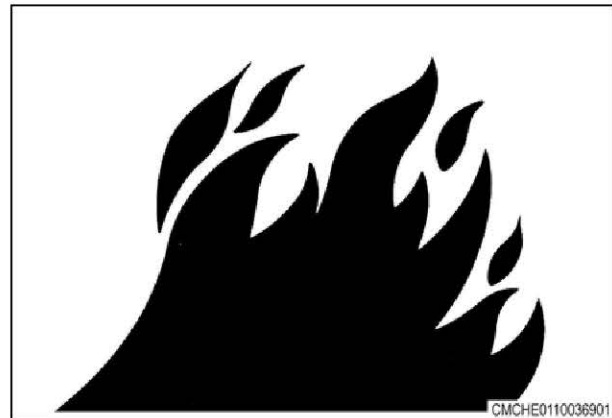


Fig. 15

explosive. Repair such components in a well ventilated area away from open flames or sparks.

Inspect all lines and hoses for wear or for deterioration and replace if necessary.

Route hoses correctly. Lines and hoses must have sufficient support and secure clamps. Tighten all connections to recommended torque.

1.1.30 Fire extinguisher

Make sure that a fire extinguisher is available and be familiar with the operation. Inspect and service the fire extinguisher regularly. Obey the recommendations on the instruction plate.

An optional mounting bracket can be installed on the front frame rail.

The bracket is designed to hold a 4.5 kg (10 lb)extinguisher.

Do not weld a bracket on the cab ROPS frame to install the fire extinguisher.

Do not drill holes in the cab ROPS frame to mount the fire extinguisher.

Make sure all the clamps , the guards, and the heat shields are installed correctly to prevent vibration, rubbing, and excessive heat during the machine operation.

1.1.31 Public road transportation

Always walk around and visually examine the machine before moving on a public road. As a warning to others in the area, honk the horn two times before starting engine. Do a check for damage and/or defective components that can make a dangerous condition. Make sure all machine systems operate correctly including (but not limited to):

- front road lamps
- tail and brake lamps
- amber hazard lights
- parking brake
- horn
- windshield wiper and washer
- rear view mirrors
- etc.

Repair or replace a component not in correct operating order.

Do not drive at a speed causing machine to lose control.

Obey all traffic rules. Operate the machine with hazard lights on, unless prevented by law. The operation of work lamps while driving on public roads is prohibited. Use of road lamps while moving on public roads is the operator's responsibility.

NOTE:

When the Speed Indication Symbol (SIS) is installed in the rear window, be sure to close the rear window when transporting the machine on the road.

1.2 Serial number definition

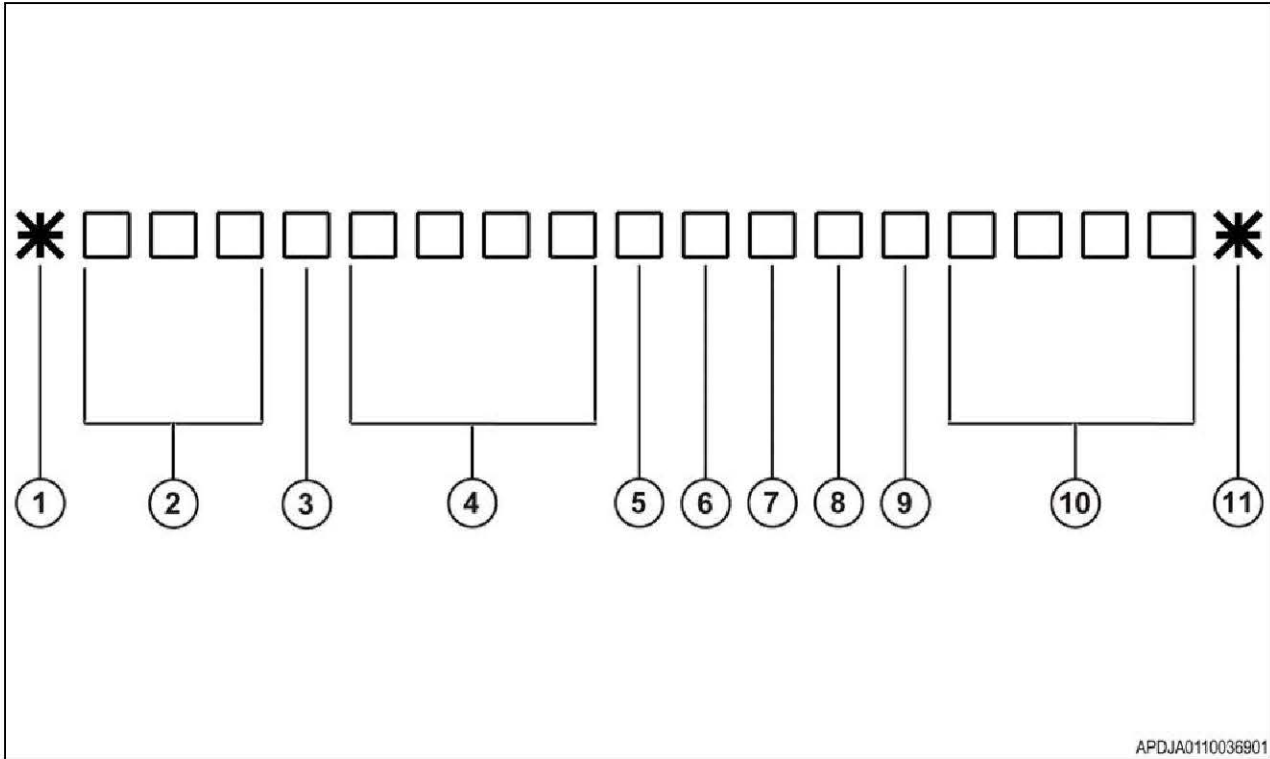


Fig. 16

Definition of the serial number.

- | | | | |
|---|---------------------------------|----|--|
| 1 | Beginning Symbol | 8 | Option Code |
| 2 | World Manufacturer Code | 9 | Option Code |
| 3 | Brand Code | 10 | Machine Sequence Number - sequence number will start over at the beginning of each model year. The first machine of each model year will start with sequence 1001. |
| 4 | Model Identifier (Model Number) | 11 | Ending Symbol |
| 5 | Check Letter | | |
| 6 | Model Year Code | | |
| 7 | Location Built Code | | |

NOTE: For serial number breaks in this manual, only the information from the model year code and following will be given.

1.3 Proper disposal of waste

Improper disposal of waste can pollute the environment and ecology. A few examples of potentially harmful equipment waste can include, but not limited to, items such as oil, fuel, coolant, brake fluid, filters, battery chemicals, tires, etc.

Use leak proof containers when draining fluids. Do not use food or beverage containers to collect waste fluids, as food or beverage container(s) may mislead someone into drinking from them.

Do not pour or spill waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.

Inquire with local environmental or recycling center on the proper way to recycle or dispose waste.

1.4 Lubricant viscosities and refill capacities

1.4.1 Lubricant viscosities for ambient temperatures

Proper oil viscosity grade is determined by the minimum outside temperature while the machine is started and while operated.

To determine the proper oil viscosity grade, refer to the minimum column in the following table.

This information reflects the coldest ambient temperature condition for starting and for operating a cold machine.

Refer to the maximum column in the table to select the oil viscosity grade for operating the machine at the highest temperature anticipated.

Use the highest oil viscosity allowed for ambient temperature when starting the machine.

Machines operated continuously, should use oils having higher oil viscosity in final drives and in differentials.

Oils with higher oil viscosity will maintain the highest possible oil film thickness.

Consult a dealer if additional information is needed.

1.4.2 Lubricant viscosities

| Compartment or system | Oil type and classification | Oil viscosities | Celsius | | Fahrenheit | |
|---------------------------------------|--|-----------------|---------|---------|------------|---------|
| | | | Minimum | Maximum | Minimum | Maximum |
| Engine crankcase AP168, AP168-4 | CJ-4 or ACEA E9 AGCO Parts Premium Extra Engine Oil | SAE 10W-40 | -25 | 40+ | -13 | 104 |
| | | SAE 15W-40 | -20 | 40+ | -4 | 104 |
| Hydraulic system | AGCO®Perman® 821XL | SAE 10W-30 | -25 | 40 | -13 | 104 |
| Transmission and axles | AGCO®Perman® 821XL | SAE 10W-30 | -25 | 40 | -13 | 104 |

1.4.3 Fill capacities

| Approximate fill capacities | |
|---|-------------------|
| Engine coolant | 66 L (18.5 gal) |
| Fuel (w/after-treatment system) | 1514 L (400 gal) |
| Implement/ steering hydraulic circuit | 121 L (32 gal) |
| Transmission and axles | 170 L (45 gal) |
| Fuel (LRC only) | 1514 L (400 gal) |
| Diesel exhaust fluid (DEF) | 198 L (52.4 gal) |
| Engine oil | 59 L (15.6 gal) |
| A/C refrigerant (R - 134a) | 1.85 kg (4.07 lb) |
| Windshield washer fluid | 5 L (1.32 gal) |
| Lubrication (articulation and drivelines) | 1 kg (2.2 lb) |

1.5 Service intervals

IMPORTANT:

Always stop the engine and take the key with you before starting service work.

When required:

- Cab recirculation filter - clean/inspect/replace
- Cab air filter - clean/replace
- Check the HVAC drain lines and clean as needed
- Primary engine air filter - clean
- Batteries - replace
- Air conditioner and alternator belt - replace
- Fan belt - replace
- Fan drive - clean
- Cooling cores - clean
- Drawbar wearplates and swing stops - replace
- Engine air cleaner - inspect/replace
- Fuel tank water and sediment - drain
- Fuses, circuit breakers, and relays - replace/reset
- Quick hitch - lubricate
- Fuel system water separator - drain
- Window washer reservoir - fill
- Window wipers - inspect/replace
- Windows - clean
- Water temperature regulator

1.5.1 Maintenance chart

| Maintenance work | Service interval / running hours | | | | |
|---|----------------------------------|-----|------------------|------------------|------|
| | 10 | 100 | 400 | 800 | 4500 |
| Check the engine oil level | x ^[1] | | | | |
| Check the coolant level | x ^[1] | | | | |
| Check for oil, fuel or coolant leakages | x ^[1] | | | | |
| Clean the cooling system (from outside) | | x | | | |
| Check the condition of the belt | | x | | | |
| Change the engine oil and the oil filter | | | x ^[2] | | |
| Change the fuel filters | | | | x ^[3] | |
| Do a check for a possible engine software update ^[4] | | | x | | |
| Turbocharger and intercooler inspection in a repair workshop | | | | | x |
| Change the SCR supply module main filter | Once a year. ^[5,6] | | | | |
| Change the SCR supply module inlet filter | Once a year. ^{[5] [6]} | | | | |
| Change coolant | Every two years. | | | | |

[1] or once a day.

[2] or once a year (at the end of the season).

[3] or once a year (at the end of the season) or earlier if the engine control system notifies by specific service code.

[4] Always do an engine software update, if there is an update available.

1. General

- [5] or after 1200 running hours.
- [6] In North America: Every two years or after 1600 running hours.

1.5.2 Maintenance schedule

Initial checks: Make sure that all hose clamps on the engine are tight at 10 hours and again at 50 hours. If it is necessary, tighten and torque the hose clamps. Do the checks again when a hose is replaced.

| Every 10 hours or daily | Every 50 hours | Every 250 hours | Every 400 hours | Every 1000 hours | Other | Service Item |
|-------------------------|----------------|------------------|-----------------|------------------|--|---|
| x | | | | | | Fill the fuel system |
| x | | | | | | Check the power train oil level |
| x | | | | | | Check the hydraulic system oil level |
| x | | | | | | Check / drain the fuel water separator |
| x | | | | | | Examine the engine air filter restriction indicator |
| | x | | | | | Drain the air tank |
| | x | | | | | Lubricate the articulation pivot pins |
| | x | | | | | Lubricate the articulation cylinder pins |
| | x | | | | | Lubricate the 3-point linkage |
| | | x | | | | Examine the batteries |
| | | x | | | | Get a sample of the power train system oil for analysis |
| | | x ^[1] | | | Every 1500 hours | Replace the power train oil and filters |
| | | x | | | | Get a sample of the hydraulic implement system oil for analysis |
| | | x ^[2] | | | Every 1500 hours | Replace the implement oil and filters |
| | | x | | | | Get a sample of the engine oil for analysis |
| | | | x | | | Clean or replace the hydraulic system breather |
| | | | x | | | Examine/replace the fuel cap filter |
| | | | | x | | Clean / replace the fuel cap |
| | | | | x ^[3] | | Replace the fuel tank breather |
| | | | | x | | Replace the primary engine air filter |
| | | | | | Every third primary filter replacement | Replace the safety (secondary) engine air filter |

| Every 10 hours or daily | Every 50 hours | Every 250 hours | Every 400 hours | Every 1000 hours | Other | Service Item |
|-------------------------|----------------|---|-----------------|------------------|-------|--|
| | | | | x | | <i>Replace the case drain filter</i> |
| | | | | x | | <i>Examine the ROPS</i> |
| | | | | x | | <i>Examine the seat belt</i> |
| | | .1200 hours or annually, that which occurs first. | | | | <i>Replace the DEF / AdBlue pump - main filter</i> |
| | | 1200 hours or annually, that which occurs first. | | | | <i>Replace the DEF / AdBlue tank breather</i> |
| | | Every 1500 hours. | | | | <i>Clean the power train oil suction screen</i> |
| | | Every 2000 hours. | | | | <i>Replace the air dryer cartridge</i> |
| | | Every two years or at 3000 hours. | | | | <i>Replace the refrigerant accumulator</i> |

- [1] initial occurrence, filters only.
- [2] initial occurrence, filters only.
- [3] or once a year, that which occurs first.

1.6 Engine specifications - MT900E

| MT955E | MT965E | MT975E |
|--|---|---|
| AP168-4, aftertreatment system, wastegate turbo, air to air intercooled, 12 cylinders, twin series turbo chargers | | |
| 365 kW (490 hp) | 403 kW (540 hp) | 440 kW (590 hp) |
| standard maximum power | | |
| 394 kW (529 hp) | 435 kW (583 hp) | 475 kW (637 hp) |
| torque at rated power | | |
| 1660 Nm (1226 lbf ft) | 1830 Nm (1351 lbf ft) | 2000 Nm (1476 lbf ft) |
| maximum torque | | |
| 2360 Nm (1741 lbf ft) | 2600 Nm (1918 lbf ft) | 2840 Nm (2096 lbf ft) |
| high idle | | |
| 2200 rpm in gears 1-15 forward, neutral, reverse, park; 2300 rpm in 16th gear forward | 2200 rpm in gears 1-15 forward, neutral, reverse, park; 2300 rpm in 16th gear forward | 2200 rpm in gears 1-15 forward, neutral, reverse, park; 2300 rpm in 16th gear forward |
| governed speed at rated power | | |
| 2100 rpm | 2100 rpm | 2100 rpm |
| low idle | | |
| 1000 rpm | 1000 rpm | 1000 rpm |
| electrical system | | |
| 12 V | 12 V | 12 V |
| maximum altitude at full power | | |
| 2000 m (6560 ft) | 2000 m (6560 ft) | 2000 m (6560 ft) |
| bore and stroke | | |
| 111 mm x 145 mm (4.37 in x 5.71 in) | 111 mm x 145 mm (4.37 in x 5.71 in) | 111 mm x 145 mm (4.37 in x 5.71 in) |
| displacement | | |
| 1025 cu in (16.8 L) | 1025 cu in (16.8 L) | 1025 cu in (16.8 L) |

| MT945E | MT955E | MT965E | MT975E |
|---|-----------------------|-----------------------|-----------------------|
| AP168, wastegate turbo, air to air intercooled, 12 cylinders, twin series turbo chargers | | | |
| 336 kW (450 hp) | 365kW (489 hp) | 403 kW (540 hp) | 440 kW (590 hp) |
| standard maximum power | | | |
| 363 kW (487 hp) | 394 kW (528 hp) | 435 kW (583 hp) | 475 kW (637 hp) |
| torque at rated power | | | |
| 1526 Nm (1125 lbf ft) | 1658 Nm (1223 lbf ft) | 1830 Nm (1351 lbf ft) | 2001 Nm (1476 lbf ft) |
| maximum torque | | | |
| 2167 Nm (1598 lbf ft) | 2360 Nm (1740 lbf ft) | 2600 Nm (1918 lbf ft) | 2842 Nm (2096 lbf ft) |
| high idle | | | |

| MT945E | MT955E | MT965E | MT975E |
|---|---|---|---|
| 2200 rpm in gears 1-15 forward, neutral, reverse, park; 2300 rpm in 16th gear forward | 2200 rpm in gears 1-15 forward, neutral, reverse, park; 2300 rpm in 16th gear forward | 2200 rpm in gears 1-15 forward, neutral, reverse, park; 2300 rpm in 16th gear forward | 2200 rpm in gears 1-15 forward, neutral, reverse, park; 2300 rpm in 16th gear forward |
| governed speed at rated power | | | |
| 2100 rpm | 2100 rpm | 2100 rpm | 2100 rpm |
| low idle | | | |
| 1000 rpm | 1000 rpm | 1000 rpm | 1000 rpm |
| electrical system | | | |
| 12 V | 12 V | 12 V | 12 V |
| maximum altitude at full power | | | |
| 2000 m (6560 ft) | 2000 m (6560 ft) | 2000 m (6560 ft) | 2000 m (6560 ft) |
| bore and stroke | | | |
| 111 mm x 145 mm (4.37 in x 5.71 in) | 111 mm x 145 mm (4.37 in x 5.71 in) | 111 mm x 145 mm (4.37 in x 5.71 in) | 111 mm x 145 mm (4.37 in x 5.71 in) |
| displacement | | | |
| 1025 cu in (16.8 L) | 1025 cu in (16.8 L) | 1025 cu in (16.8 L) | 1025 cu in (16.8 L) |

1.7 Torque specifications



CAUTION: Wrong parts

Mismatched or incorrect fasteners can cause damage or malfunction, or personal injury.

Take care to avoid mixing metric dimensioned fasteners and inch dimensioned fasteners.

Exceptions to these torques are in the service manual, if necessary.

Before installation of any hardware, make sure the components are in near new condition. Bolts and threads must not be worn or damaged. Threads must not have burrs or nicks. Hardware must be free of rust and corrosion. Clean hardware with a non corrosive cleaner.

Do not lubricate the fastener threads except for rust preventive. Rust preventive should be applied by supplier of that component for purposes of shipping and storage. Other applications for lubricating components may also be specified in service manual.

1.7.1 Constant torque hose clamps

Because of extreme temperature changes, hose will heat set. Heat setting can cause hose clamps to loosen. Loose hose clamps can cause leaks and cause component failures. Constant torque hose clamp will help prevent these failures.

Constant torque hose clamp is installed correctly under the following conditions:

- Screw tip (1) extends 6.35 mm (.25 in) (A) beyond housing.
- Belleville springs are collapsed nearly flat after screw (2) is tightened to a torque of 11 Nm (8.1 lbf ft) .

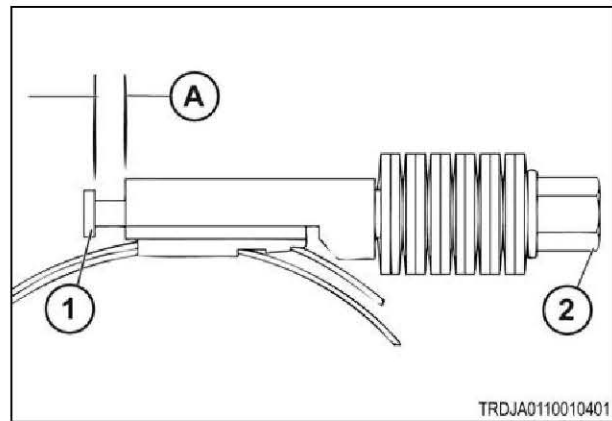


Fig. 17

1.7.2 Inch fasteners

This chart shows the assembly torque values for inch fasteners.

| Standard Thread Size | High | | Low | | | |
|-------------------------|----------------------|---------------------|----------------------|---------------------|------------|------------|
| | Pound Feet lbf ft | Newton Meters Nm | Pound Feet lbf ft | Newton Meters Nm | | |
| 1/4 - 20 | 8 to 10 | 9 to 15 | 9 to 11 | 10 to 16 | 3.5 to 4.5 | 5 to 7 |
| 5/16 - 18 | 16 to 20 | 21 to 31 | 18 to 22 | 21 to 35 | 9 to 11 | 10 to 16 |
| 3/8 - 16 | 31 to 39 | 38 to 56 | 36 to 44 | 40 to 60 | 16 to 20 | 19 to 31 |
| 7/16 - 14 | 45 to 55 | 65 to 85 | 54 to 66 | 65 to 95 | 27 to 33 | 32 to 48 |
| 1/2 - 13 | 67 to 83 | 85 to 125 | 81 to 99 | 100 to 140 | 40 to 50 | 48 to 72 |
| 9/16 - 12 | 110 to 130 | 130 to 190 | 117 to 143 | 145 to 205 | 55 to 65 | 70 to 100 |
| 5/8 - 11 | 145 to 175 | 175 to 255 | 160 to 190 | 200 to 280 | 75 to 95 | 95 to 135 |
| 3/4 - 10 | 245 to 305 | 320 to 420 | 290 to 350 | 370 to 490 | 135 to 165 | 160 to 240 |

| Standard | | | High | | Low | |
|-------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|
| Thread Size | Pound Feet lbf ft | Newton Meters Nm | Pound Feet lbf ft | Newton Meters Nm | Pound Feet lbf ft | Newton Meters Nm |
| 7/8 - 9 | 410 to 510 | 540 to 700 | 470 to 570 | 610 to 790 | 215 to 265 | 285 to 365 |
| 1 - 8 | 590 to 730 | 800 to 1000 | 700 to 850 | 900 to 1200 | 335 to 405 | 435 to 565 |
| 1 1/8 - 7 | 860 to 1060 | 1150 to 1450 | 965 to 1175 | 1300 to 1600 | 465 to 565 | 610 to 790 |
| 1 1/4 - 7 | 1190 to 1450 | 1600 to 2000 | 1395 to 1705 | 1850 to 2350 | 880 to 1070 | 875 to 1125 |
| 1 3/8 - 6 | 1600 to 1960 | 2100 to 2700 | 1790 to 2190 | 2400 to 3000 | 1185 to 1445 | 1850 to 1150 |
| 1 1/2 - 5 | 2050 to 2510 | 2750 to 3450 | 2385 to 2915 | 3200 to 4000 | 1515 to 1845 | 1500 to 1900 |

Standard taperlock studs

| Thread Size | Pound Feet lbf ft | Newton Meters Nm |
|-------------|-------------------|------------------|
| 1/4 | 6 | 8 |
| 5/16 | 13 | 17 |
| 3/8 | 26 | 35 |
| 7/16 | 33 | 45 |
| 1/2 | 48 | 65 |
| 5/8 | 80 | 110 |
| 3/4 | 125 | 170 |
| 7/8 | 190 | 260 |
| 1 | 300 | 400 |
| 1 1/8 | 390 | 525 |
| 1 1/4 | 550 | 750 |
| 1 3/8 | 700 | 950 |
| 1 1/2 | 880 | 1200 |

Four-bolt split flange

Make sure the sealing surfaces are free of burrs, damage, and scratches or any unwanted particles. Lubricate the O-ring. Set the flanges and the half clamps. Put the lock washers on the bolts and put the bolts through the half clamps. Hand tighten the bolts. Tighten the bolts in a cross sequence in small amounts to the torque amount for the series of flange.

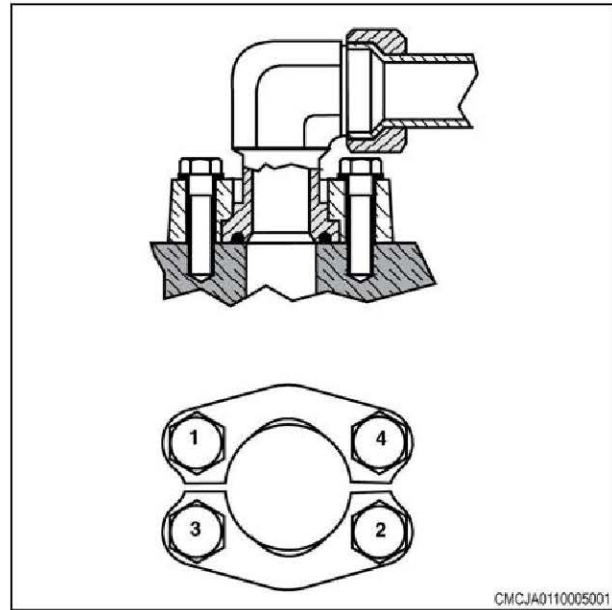


Fig. 18

| Code 61 (3000 psi) | | | | |
|---------------------|-------------|-----------|----------|----------|
| Dash Size | Flange Size | Bolt Size | Torque | |
| | | | In. lbs. | ft. lbs. |
| 12 | 3/4 | 3/8 -16 | 300 ± 50 | 25 ± 4.5 |
| 16 | 1 | 3/8 - 16 | 375 ± 50 | 31 ± 4.5 |
| 20 | 1 ¼ | 7/16 - 14 | 488 ± 62 | 41 ± 5 |
| 24 | 1 ½ | 1/2 - 13 | 625 ± 75 | 52 ± 6 |
| 32 | 2 | 1/2 - 13 | 725 ± 75 | 60 ± 6 |

| Code 62 (6000 psi) | | | | |
|---------------------|-------------|-----------|----------|----------|
| Dash Size | Flange Size | Bolt Size | Torque | |
| | | | In. lbs. | ft. lbs. |
| 12 | 3/4 | 3/8 -16 | 300 ± 50 | 30 ± 4.5 |
| 16 | 1 | 7/16 - 14 | 375 ± 50 | 46 ± 4.5 |
| 20 | 1 ¼ | 1/2 - 13 | 825 ± 75 | 69 ± 6 |
| 24 | 1 ½ | 5/8 - 11 | 1500±100 | 125 ± 8 |

Fig. 19

Straight thread fittings

The straight thread hydraulic fittings require accurate tightening. Overtightening of the hydraulic fittings will damage the sealing surfaces and will require the replacement of the damaged parts.

Correct initial tightening depends on the mating parts to be connected. Continue as follows:

An adapter fitting (37° flare) connected to a double flare tube assembly. Tighten the fitting finger tight and wrench the fitting 1/2 turn (for single flare, 1/4 turn).

An adapter fitting (37° flare) connected to a hose. Tighten the fitting finger tight and wrench 1/4 turn.

An O-ring adapter fitting connected to a solid port: Tighten the fitting until the backup washer contacts the face of the boss after aligning the fitting.

Tighten after initial tightening, as in service work: Tighten both the tube and the hose connections finger tight and wrench 1/4 turn. O-ring fittings must be tightened as for initial assembly.

JIC SWIVEL NUTS (37° SEAT). The maximum recommended torque values for JIC (37° seat) swivel nuts, either swaged or brazed type, follow. Swivel nuts usually withstand this torque for a minimum of 15 repeated assemblies.

The torque required to seal female swivel fittings or hose couplings to a male connector depends on many variables. Fluid medium, pressure, surface finish, and so on are some of these variables. Use the following values only as a guide for the torque maximum values to apply to the fittings.

| DASH SIZE | TUBE O. D. (REF) | TORQUE MAX | | |
|-----------|------------------|------------|--------|--------|
| | | Nm | lbf in | lbf ft |
| -4 | 1/4 | 12 | 110 | 9 |
| -5 | 5/16 | 20 | 180 | 15 |
| -6 | 3/8 | 27 | 240 | 20 |
| -8 | 1/2 | 40 | 360 | 30 |
| -10 | 5/8 | 54 | 480 | 40 |
| -12 | 3/4 | 95 | 840 | 70 |
| -14 | 7/8 | 110 | 980 | 80 |
| -16 | 1 | 120 | 1080 | 90 |
| -20 | 1 1/4 | 160 | 1440 | 120 |
| -24 | 1 1/2 | 180 | 1575 | 130 |
| -32 | 2 | 400 | 3600 | 300 |
| -40 | 2 1/2 | 540 | 4800 | 400 |
| -48 | 3 | 680 | 6000 | 500 |

O-ring face seal (ORFS) fittings

| ORFS Connectors, ORFS Hose Couplings, ORFS Plugs, and ORFS Tube Assembly Nut Torques | | | | | | |
|--|-------|----------|-------------------------|-------------------------|----------------------------|-------------------------|
| Ref Nominal Tube OD | | | Standard Torque | | High Pressure Drive Torque | |
| | | | Dynamic Assembly Torque | Dynamic Assembly Torque | Dynamic Assembly Torque | Dynamic Assembly Torque |
| mm | Inch | THD Size | Nm | lbf ft | Nm | lbf ft |
| 6.35 | 0.25 | 9/16 | 25 +3 | 18 +2.5 | 31 +3 | 23 +2.5 |
| 9.52 | 0.375 | 11/16 | 40 +4 | 41 +3 | 50 +4 | 37 +3 |
| 12.7 | 0.5 | 13/16 | 55 +5 | 41 +4 | 69 +5 | 51 +4 |
| 15.88 | 0.625 | 1 | 86 +8 | 63 +6 | 108 +8 | 80 +6 |
| 19.05 | 0.75 | 1-3/16 | 125 +15 | 92 +11 | 156 +15 | 115 +11 |
| 25.4 | 1 | 1-7/16 | 165 +15 | 122 +11 | 206 +15 | 152 +11 |
| 31.75 | 1.25 | 1-11/16 | 200 +20 | 147 +15 | 250 +20 | 184 +15 |
| 38.1 | 1.5 | 2 | 245 +20 | 180 +15 | 306 +20 | 225 +15 |

1.7.3 Metric fasteners

This chart shows the assembly torque values for metric fasteners.

| Thread Size | Standard | | High | | Low | |
|-------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|
| | Pound Feet lbf ft | Newton Meters Nm | Pound Feet lbf ft | Newton Meters Nm | Pound Feet lbf ft | Newton Meters Nm |
| M6 x 1 | 8 to 10 | 9 to 15 | 9 to 11 | 10 to 16 | 3.5 to 4.5 | 5 to 7 |
| M8 x 1.25 | 19 to 23 | 21 to 35 | 20 to 24 | 23 to 37 | 10 to 12 | 12 to 18 |
| M10 x 1.5 | 37 to 45 | 45 to 65 | 40 to 48 | 48 to 72 | 20 to 24 | 23 to 37 |

| Thread Size | Standard | | High | | Low | |
|-------------|-------------------|------------------|-------------------|------------------|-------------------|------------------|
| | Pound Feet lbf ft | Newton Meters Nm | Pound Feet lbf ft | Newton Meters Nm | Pound Feet lbf ft | Newton Meters Nm |
| M12 x 1.75 | 67 to 83 | 80 to 120 | 72 to 88 | 85 to 125 | 31 to 39 | 40 to 60 |
| M14 x 2 | 108 to 132 | 130 to 190 | 120 to 140 | 145 to 205 | 55 to 65 | 65 to 95 |
| M16 x 2 | 160 to 190 | 200 to 280 | 180 to 220 | 230 to 310 | 80 to 100 | 105 to 145 |
| M20 x 2.5 | 305 to 375 | 400 to 520 | 350 to 430 | 460 to 600 | 165 to 205 | 210 to 290 |
| M24 x 3 | 530 to 640 | 700 to 900 | 600 to 730 | 800 to 1000 | 285 to 345 | 375 to 475 |
| M30 x 3.5 | 1060 to 1300 | 1400 to 1800 | 1200 to 1460 | 1600 to 2000 | 565 to 685 | 750 to 950 |
| M36 x 4 | 1800 to 2200 | 2400 to 3000 | 2055 to 2515 | 2750 to 3450 | 990 to 1210 | 1300 to 1700 |

Standard taperlock studs

| Thread Size | Pound Feet lbf ft | Newton Meters Nm |
|-------------|-------------------|------------------|
| M6 | 6 | 8 |
| M8 | 13 | 17 |
| M10 | 26 | 35 |
| M12 | 48 | 65 |
| M16 | 80 | 110 |
| M20 | 125 | 170 |
| M24 | 300 | 400 |
| M30 | 550 | 750 |
| M36 | 880 | 1200 |

Metric bolt and cap screws

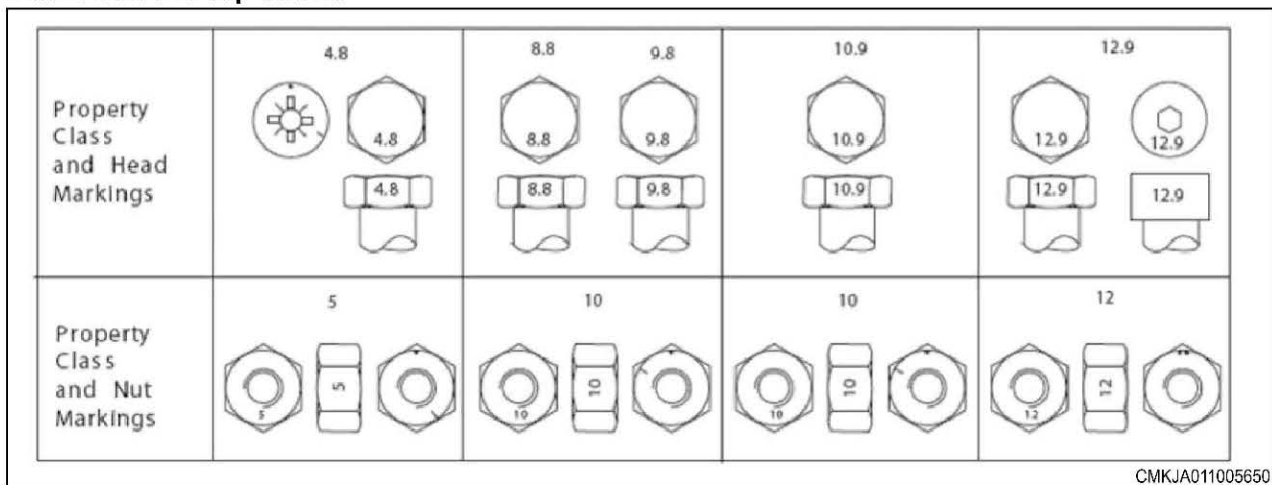


Fig. 20

| Size | Class 4.8 | | | | Class 8.8 or 9.8 | | | | Class 10.9 | | | | Class 12.9 | | | |
|------|------------|-----------|------|-----------|------------------|-----------|------|-----------|------------|-----------|------|-----------|------------|-----------|------|-----------|
| | Lubricated | | Dry | | Lubricated | | Dry | | Lubricated | | Dry | | Lubricated | | Dry | |
| | Nm | lbf ft | Nm | lbf ft | Nm | lbf ft | Nm | lbf ft | Nm | lbf ft | Nm | lbf ft | Nm | lbf ft | Nm | lbf ft |
| M6 | 4.8 | 3.5 | 6 | 4.5 | 9 | 6.5 | 11 | 8.5 | 13 | 9.5 | 17 | 12 | 15 | 11.5 | 19 | 14.5 |
| M8 | 12 | 8.5 | 15 | 11 | 22 | 16 | 28 | 20 | 32 | 24 | 40 | 30 | 37 | 28 | 47 | 35 |
| M10 | 23 | 17 | 29 | 21 | 43 | 32 | 55 | 40 | 63 | 47 | 80 | 60 | 75 | 55 | 95 | 70 |
| M12 | 40 | 29 | 50 | 37 | 75 | 55 | 95 | 70 | 110 | 80 | 140 | 105 | 130 | 95 | 165 | 120 |
| M14 | 63 | 47 | 80 | 60 | 120 | 88 | 150 | 110 | 175 | 130 | 225 | 165 | 205 | 150 | 260 | 190 |
| M16 | 100 | 73 | 125 | 92 | 190 | 140 | 240 | 175 | 275 | 200 | 350 | 225 | 320 | 240 | 400 | 300 |
| M18 | 135 | 100 | 175 | 125 | 360 | 195 | 330 | 250 | 375 | 275 | 475 | 350 | 440 | 325 | 560 | 410 |
| M20 | 190 | 140 | 240 | 180 | 375 | 275 | 475 | 350 | 530 | 400 | 675 | 500 | 625 | 460 | 800 | 580 |
| M22 | 260 | 190 | 330 | 250 | 510 | 375 | 650 | 475 | 725 | 540 | 925 | 675 | 850 | 625 | 1075 | 800 |
| M24 | 330 | 250 | 425 | 310 | 650 | 475 | 825 | 600 | 925 | 675 | 1150 | 850 | 1075 | 800 | 1350 | 1000 |
| M27 | 490 | 360 | 625 | 450 | 950 | 700 | 1200 | 875 | 1350 | 1000 | 1700 | 1250 | 1600 | 1150 | 2000 | 1500 |
| M30 | 675 | 490 | 850 | 625 | 1300 | 950 | 1650 | 1200 | 1850 | 1350 | 2300 | 1700 | 2150 | 1600 | 2700 | 2000 |
| M33 | 900 | 675 | 1150 | 850 | 1750 | 1300 | 2200 | 1650 | 2500 | 1850 | 3150 | 2350 | 2900 | 2150 | 3700 | 2750 |
| M36 | 1150 | 850 | 1450 | 1075 | 2250 | 1650 | 2850 | 2100 | 3200 | 2350 | 4050 | 3000 | 3750 | 2750 | 4750 | 3500 |

1.8 Machine specifications

1.8.1 Machine specifications MT900E

| Machine specifications MT900E | |
|--|--|
| Transmission | <p>Transmission is a direct drive full power shift.</p> <p>Transmission has the following standard features:</p> <ul style="list-style-type: none"> • 16 forward gears • Four reverse gears • Seven rotating countershaft clutches, two stationary planetary clutches • Programmable electronic controls • All gears accessible with use of a single hand lever forward/reverse |
| Electrical system | <p>Standard lighting package consists of the following lights:</p> <ul style="list-style-type: none"> • Four headlamps are mounted on the front of the hood for roading. • Two side work lamps are mounted on the front of the hood. • Two front work lamps are mounted between the mirror supports. • Two work lamps are mounted in the rear fenders. • Two work lamps are mounted on the rear roof of the machine. • Machine has hazard lamps and turn signals. • Three exterior courtesy lamps are mounted in the over hang of cab roof. <p>Deluxe lighting package consists of standard lighting package in addition to the following lamps:</p> <ul style="list-style-type: none"> • Four additional work lamps are mounted on the rear roof of the machine. <p>Power output: trailer hookup - 7 pin connector at rear of machine</p> <p>Batteries: four 12 volt maintenance free GP31</p> <p>Alternator capacity: 150 Amps each (quantity two)</p> |
| High Intensity Discharge (HID) Lighting (Optional) | <ul style="list-style-type: none"> • Two headlamps on the front of the hood • Two side work lamps on the front of the hood • Two work lamps on the rear roof |
| Brakes | <p>Machine uses oil cooled multi-disc brakes. Located at each wheel of machine is one multiple disc brake. The brakes are actuated by service brake pedal.</p> <p>Parking brake is an oil cooled multi-disc brake. Parking brake works on input shaft for differential steer unit.</p> |

| Machine specifications MT900E | |
|--|---|
| Hydraulic System | <p>Implement hydraulic system has the following characteristics:</p> <ul style="list-style-type: none"> • Closed center • Load sensing • Pressure and flow compensating pump <p>Hydraulic pump for implement hydraulic system</p> <ul style="list-style-type: none"> • Type - variable displacement axial piston pump • Maximum flow - 220 liter/min (58 gal/min) and 322 liter/min (85 gal/min) • Maximum pressure - 20 000 kPa (2900 psi) |
| Steering system | <p>Machine is equipped with an articulated steering system. The machine pivots in the center to control the direction of travel.</p> <p>Steering system consists of the following components:</p> <ul style="list-style-type: none"> • Two steering cylinders • Steering/priority valve • Steering unit |
| 3-point linkage | <p>3-point linkage is electronically controlled. 3-point linkage will receive category III, category IVN, and category IV implements.</p> <p>Lift Capacity for non-steerable 3-point linkage. All models</p> <ul style="list-style-type: none"> • Category III and IVN 8845 kg (19 500 lb) • Category IV 8845 kg (19 500 lb) |
| Power Take Off | <p>Machine is equipped with an optional electronically modulated 1000 RPM power take-off (PTO). This PTO shaft is a 44.5 mm (1.75 in) 20 tooth spline and the PTO shaft is a fixed shaft.</p> |
| Drawbar - CAT IV, (optional), CAT V (standard) | <p>Standard drawbar can be permitted to swing or can be in a fixed position.</p> |
| DEF tank | <p>Tank sized for one DEF fill for every three fuel fills based on standard fuel capacity. Actual DEF fill will vary with engine load. Tank fill capacity 198 L (52.4 gal).</p> |
| Drivelines | <p>Transmission: 9C size, permanently lubricated U-joint</p> |
| | <p>Front axle: 9C size, permanently lubricated U-joint, and slip joint</p> |

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|-------------------------------|---|
| | Rear axle: 9C, permanently lubricated U-joint, and greasable support bearing |
| | Articulation: 9C, permanently lubricated U-joint, and greasable slip joint |
| Engine block heater | Warms engine coolant to make cold weather starts easier, 120 volt or 240 volt |

| Drawbar capacity | | |
|---|---|---------------------|
| The vertical weight capacity of the drawbar is dependent on the category. | | |
| | Distance from PTO shaft to the hold for the drawbar pin | Maximum down force |
| Category IV | 500 mm (19.7 in) | 4536 kg (10 000 lb) |
| Category V | 500 mm (19.7 in) | 5670 kg (12 500 lb) |

NOTE:
Drawbar can be permitted to swing or can be in a fixed position.

| Tire size | Rolling circumference mm (in) |
|-------------|-------------------------------|
| 480/80 R46 | 5842 mm (230 in) |
| 520/85 R42 | |
| 710/70 R38 | |
| 480/80 R50 | 6172 mm (243 in) |
| 520/85 R46 | |
| 620/70 R46 | |
| 650/85 R38 | |
| 710/70 R42 | |
| 800/70 R38 | |
| 1100/45 R46 | 6375 mm (251 in) |

1.8.2 Shipping weights MT900E

| Weight chart | | | | |
|---|-----------|--------|---|------|
| Configuration | Shipping | | Estimated operating axle weight percentages | |
| | kg (mass) | lb | front | rear |
| Standard | 18 400 | 40 530 | 61 | 39 |
| With front counter weight bracket | 18 900 | 41 650 | 63 | 37 |
| With front counter weight GP 20 weights | 19 800 | 43 670 | 68 | 32 |

| Weight chart | | | | |
|---|--------|--------|----|----|
| With front counter weight GP 32 weights | 20 400 | 44 890 | 71 | 29 |
| With full front and four factory installed weights on rear axle | 21 300 | 46 890 | 68 | 32 |
| Standard with four factory installed rear weights | 19 300 | 42 530 | 58 | 42 |
| Shipping weight includes at least 300 L (79.2 gal) fuel - No hubs for duals. No spacer or dual/triple. Weight is based on 710/70 R42 tires averaged weight of all tire manufacturers. | | | | |