

OPERATOR'S MANUAL

MOVING YOU FURTHER

WHEEL LOADER

HL630VL
HL635VL

 **HYUNDAI**
CONSTRUCTION EQUIPMENT

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WARNING

Improper operation and maintenance of this machine can be hazardous and could result in serious injury or death.

Operator and maintenance personnel should read this manual thoroughly before beginning operation or maintenance.

Keep this manual in the storage compartment to the rear of the operator's seat, and have all personnel involved in working on the machine read the manual periodically.

Some actions involved in operation and maintenance of the machine can cause a serious accident, if they are not done in a manner described in this manual.

The procedures and precautions given in this manual apply only to intended use of the machine.

If you use your machine for any unintended uses that are not specifically prohibited, you must be sure that it is safe for any others. In no event should you or others engage in prohibited uses or actions as described in this manual.

Hyundai delivers machines that comply with all applicable regulations and standards of the country of which it has been sent. If this machine has been purchased in another country or purchased from someone in another country, it may lack certain safety devices and specifications that are necessary for use in your country. If there is any question about whether your product complies with the applicable standards and regulations of your country, consult HYUNDAI or your distributor before operating the machine.

Coolant

- During operation, the temperature of the engine coolant is higher and there is pressure in the engine. All piping lines connected to radiator or to engine have hot water or steam in them. The contact with them will cause severe burns.
- When checking the coolant liquid level, the engine must be shut off, and the water filler cover must be cooled down to the extent that it can be opened by naked hand.
- Slowly loosen the water filler cover for the cooling system to release the pressure.
- The coolant of cooling system contains Alkali, so it is prohibit to make it contact with skin and eyes. It is not appropriate to be drunk. Moreover, cooling down the coolant before drain it out.

Asbestos Dust Hazard Prevention

Inhaling asbestos dust can be hazardous to your health. If the material you work with contain asbestos fiber, please obey the following regulations:

- Use dust-filtration mask.
- Prohibit using compressed air to purge.
- Use water to clean to prevent from kicking up dust.
- Whenever you operating the machine, make the air blow against your back.
- Obey the related laws and regulation on site.



Fig 17

Injury arising from working equipment

Do not put hands, arms, or other body parts between the moving components (e.g., between the working devices and cylinder or between equipment and working devices).

The gaps between equipment and working devices will change during operating the operation lever. In this case, the careless operation will cause serious faults or personal injury.

If it is necessary to enter the places between moving parts, fix securely the working equipment to make it not move.



Fig 18

Matters needing attention on travelling on slope

Do not jump onto the incontrollable machine to shut it off, otherwise you will have the risk of serious injury.

Travelling on the slope will cause the machine to tip-over or slipping.

Keep the bucket at a position 20-30cm (8-12in) over the ground while the machine is travelling on the hill, on the dyke or on the slope. Please immediately lower the bucket onto ground in an emergency to assist the stop of the machine.

Do not travel on grasses, tree leaves or wet steel plate. Even a small slope can make the machine slip towards one side. Therefore, drive slowly to ensure the machine always travelling right under the slope or right over the slope. Avoid changing the travelling direction while the machine is travelling on the slope, otherwise it will cause tip over or sideslip.

Operate the machine under or over the slope as much as possible. Avoid traversing the slope.

Prohibited operations

Do not shovel the working face under the highland, otherwise it will cause the highland to collapse, making falling objects tramp onto the top of the machine.

Working with heavy load on soft, unsmooth or cracked ground may cause the possibility of dangerous side force and tipover. Travelling without load or with unbalanced load is also dangerous.

Do not use jack or other inappropriate objects as the support while working.

Do not exceed the load ability of the machine (the maximum load and stability depend on the equipment structure) while operating in order to prevent the accidents induced from the equipment damage and tipover for the overload of the machine.

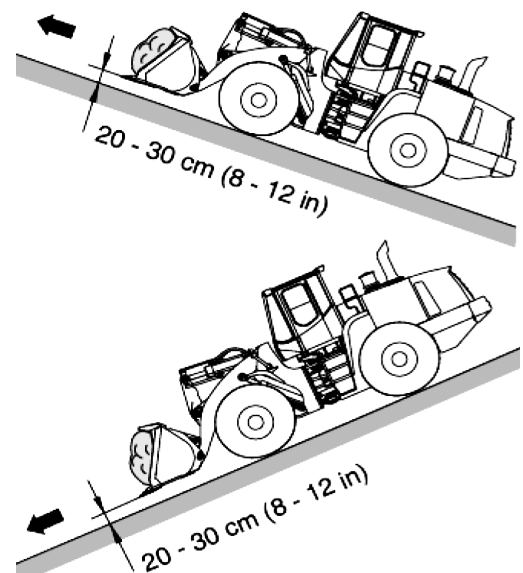


Fig 23

Avoid being crushed or cut

When performing maintenance, if you must operate the engine, ensure at least two persons must work together. One person is sitting on the driver seat to operate the control device and shut off the engine.

Unless otherwise instructed by others, Do not adjust the machine when the machine or the engine is running.

Be far away from the running or moving parts.

Keep objects far away from the fan blades which may throw off or cut the objects.

Do not use bent or peeled cables. When handling the cables, please wear the gloves.

The dowels will fly off when you knock them. The flied dowel may cause the personal injury. Ensure that there is nobody around when you knock the dowels. Wear the protective goggles when you are knocking to prevent the eyes from being hurt.

Equipment supports and stops

Do not let any load and equipment hang in the air. Please lower all objects down to ground before you leave the cab. Do not use hollow, cracked, unstable or rocking objects to support. Never work under the equipment supported only by a jack.



Fig 35

Schematic

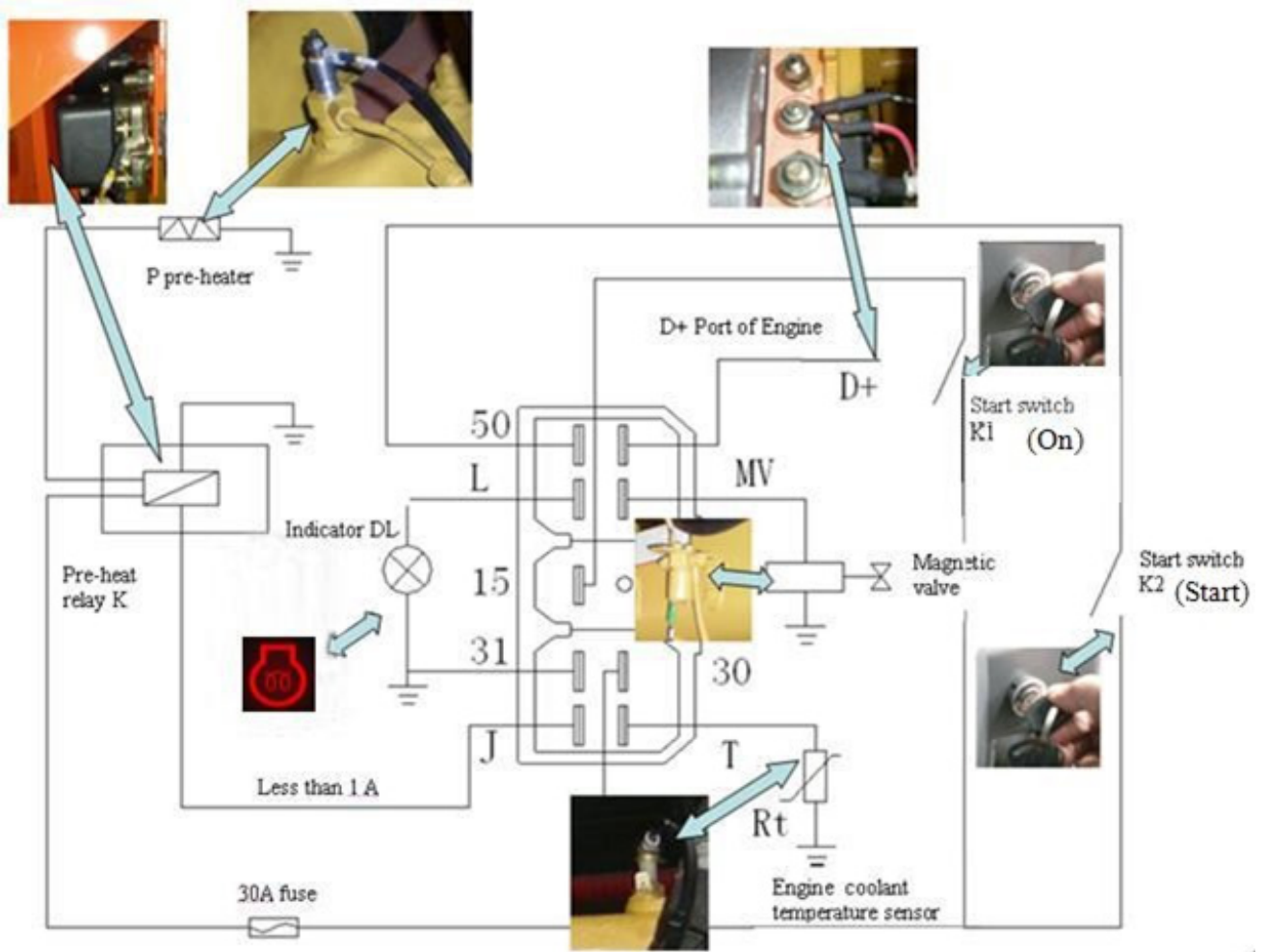


Fig 11

3. Hazard Warning Light Switch

The hazard warning light is used when machine is stopped because of a malfunction or when an emergency occurs. When this switch is pressed, all directional indicator lights on front and back of machine will turn “ON” and “FLASH,” warning others in the area. At the same time the directional indicator lights on instrument panel will turn “ON” to warn the operator

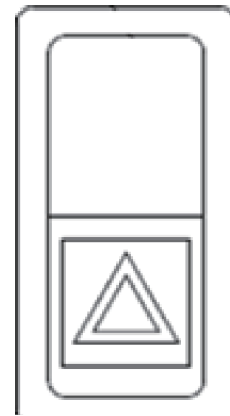


Fig 22

4. Instrument small lamps

The small lamp switch can control the four small lamps in front and rear to be lit up or off simultaneously. In addition, it can also control the indicators for all rocker switches and instrument lighting.

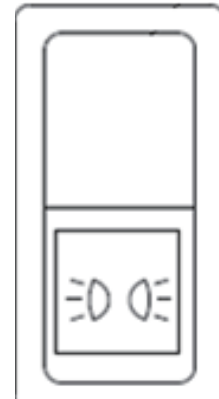


Fig 23

5. Front Work lamp switch

Work lamp switch control the two work lamps in the ceiling of the cab to be lit up or off simultaneously

NOTE: Do not turn “ON” the work lights when traveling on public roads



Fig 24

6. Front lamp switch

This switch is the Main Switch to control front lamp to be lit up or off

The “ON” and “OFF” conditions of the front lamp including low beam and high beam are control by this front lamp switch, and when you turn off this switch the front lamp including low beam and high beam is not available

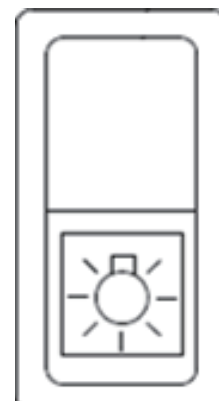


Fig 25

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INSTRUMENT PANEL

1. Timepiece

It is used to indicate the working time of the machine, in hours. The working scope of the timepiece is: 0 - 9999.99 hours. When the engine is started, the timing begins

2. Horn switch

There are two horn switches in this machine: "A" at the center of steering wheel and "B" at the end of combo handle; the functions of both switches are the same. Switching on any horn switch of them will blare



Figure 61

There are three horn switches equipped for the single pilot handle in this machine. "C" on left side of the single pilot lever; the functions of these three switches are the same. The driver can decide to use which switch based on his operation customs.



Figure 62

ADJUSTMENT OF REAR-VIEW MIRROR

There is one rear-view mirror each above, on the left and right side of the cab of this machine. Before operating this machine, you must adjust the field of view to ensure the driver has a good field of rear view.

Untighten the bolt connecting rear-view mirror support and cab and rotate the support to adjust the position of the rear-view mirror relative to the cab; Untighten the bolt connecting rear-view mirror and support and rotate the rear-view mirror to adjust the elevation angle of the rear-view mirror. After the above adjustment, it is necessary to tighten the bolt.

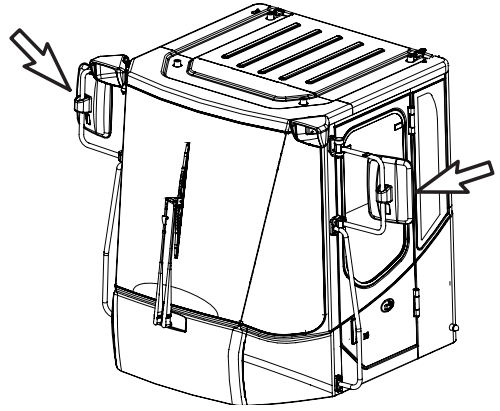


Fig 72

The steering wheel cannot restore to original position after rotation, and the machine rotation angle is kept unchanged. Therefore, after the machine finishes the steering, you should reversely rotate the steering wheel to eliminate the relative angle between front and rear frames of the machine and make the machine drive along the straight direction. After completion of the steering operation, you should toggle the steering lamp to the middle position, and the steering lamp and the steering indicator will go off immediately.

When performing the steering at higher speed, you must release the throttle pedal and, if necessary, use service braking to decrease the machine speed and then conduct the steering operation so as to ensure the driving safety.



WARNING

Strictly prohibit conduct the steering operation on the slope. You should drive the machine down to the flat ground to perform these operations.

8. Braking operation of machine

When the braking is needed for the machine, it is necessary to first release the throttle pedal and then smoothly depresses the service brake pedal. At this time, the braking can be applied.



WARNING

When the machine is driving at high speed, you cannot abruptly depress the throttle pedal to the bottom to prevent from the safety accidents or machine damage due to braking too suddenly unless in the emergency.

3. Operation method

- V-type operation method

Loader is dead against stock pile, and the included angle between truck and loader driving direction is 60° , and it stops at a place 12-15m away from the stock pile. When the loader is fully loaded, it will retreat directly back to the place 12-15m away from the stock pile. It can make turn while driving, and lifting the bucket simultaneously. After unloading, it will retreat to the original place to perform the next shoveling and loading operation.

- Shuttling operation method

The Shuttling operation method is mainly used for the united operation between loader and fleet. When the loader is fully loaded, it will retreat back to the place with a distance of 2-3 times of the truck width. Then, one truck travels from one side of the loader to be in front of the loader and stops, and then the loader travels further forward and lifts the arm. After unloading, the loader retreats back to the original place. If the truck is not fully loaded, the truck will travel forward another truck space. After the loader accomplishes the next shoveling and loading operation, it will retreats to the original place, and the truck which has not been fully loaded then retreats to be in front of the loader, and the loader will perform the unloading. In this way, repeat the operations until the truck is fully loaded, then start the loading and unloading for the next truck. This operation method requires the loader driver and the truck driver to cooperate skillfully. They can use horns, lights or gesture to communicate if necessary.

Safety instructions

1. In order to prevent some accidental operation during maintenance, you must first identify the hydraulic system control level be positioned in the middle and hang the Warning mark (warning sign).
2. Confirm that the overflowed liquids are thoroughly cleared, especially those liquids around the engine.
3. Check all fuel pipeline for the tightening of joint, pipeline, fuel filter, and O-ring seal.
4. If it is needed to start engine for check or experiment, ensure that all irrelevant personnel have left and that the operation shall be performed according to the standard.

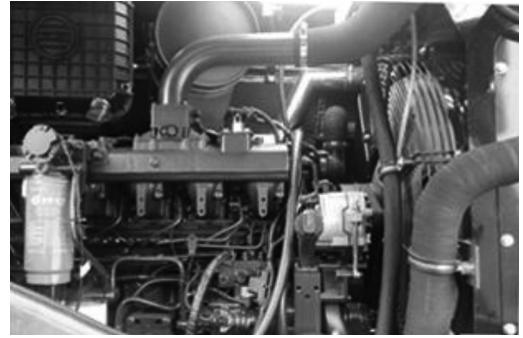


Fig 2

Check fluid level of battery

The battery installed in this machined is the one without needing maintenance, and you need not add electrolyte into the battery. When the charge indicator is transparent, it indicates that the electrolyte is less, and the possible reason is leakage or the faults in charging system. Immediately perform the troubleshooting and replace the fault battery. (Fig.5)

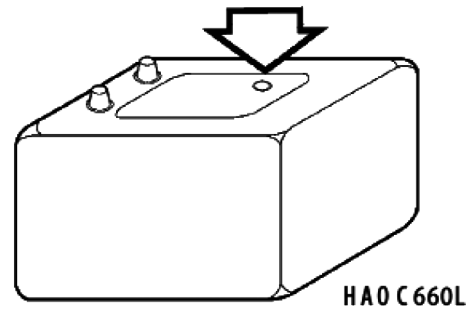


Fig 5

Check the charge state

Check the charge state by observing the indicator color set inside.

- Green: Normal
- Black: Charge is inadequate. Check the generator.
- Transparent: Electrolyte is inadequate. Replace with a new battery.

Check terminals of battery

Ensure the battery is fixed securely. Clean the battery terminals and battery wire connectors. The soda and water can neutralize the electrolyte on battery surface, terminals and wire connectors. Coat Vaseline or grease on the connector to prevent the corrosion.(Fig6)



Fig6

Replace battery

When the charge indicator is transparent, it is necessary to replace the battery. The batteries shall be replaced in pairs.

The mixed-use of new and old battery will shorten the service life of the new battery

STORAGE FOR A LONG TIME

Store the machine as shown in the following table if it will stop for more than one month

Conditions	Maintenance requirements
1. Cleaning	1. Flush the chassis and wheel drive assy using HP water gun. Check for the damage or the loose components.
2. Lubrication	1. Execute all routine lubrication operations. 2. Coat a layer of oil on the surface of the exposed metal parts, such as hydraulic oil cylinder lever. 3. Coat oil on all control connecting components and at the control oil cylinder (control valve plug etc) .
3. Battery	1. Fully charge the battery, remove battery or battery wires, and keep them in reserve.
4. Cooling system	1. Check whether the anti-freeze fluid level in cooling fluid reservoir is correct. 2. Check every 90 days or 750 hours the anti-freezing conditions of anti-freeze fluid or coolant using gravimeter. Refer to the required level for filling anti-freeze fluid.
5. Hydraulic system	1. Start the engine once every month by referring to "Temperature Increase Method for Hydraulic System" specified in this manual.

STEERING HYDRAULIC SYSTEM

Characteristics of faults	Cause	Remedy
Hard to make steering	Oil temperature too low	Increase the oil temperature , then start working
	Load sensing oil way blocked	Clean it
	Pressure of steering pump low	Adjust overflow valve block pressure according to the regulations
	Partial bolts for metering motor of full hydraulic steering gear tightened too tightly	Loosen the bolts
Vehicle steering not stable	Flow amplifying valve action is not sensitive	Repair or replace the flow amplifying valve
Both leftward and rightward steering slowly	Regulation valve leaking	Repair or replace priority valve
	Steering pump flow inadequate	Repair or replace steering pump
Steering normally when steering resistance is small; Steering slowly when steering resistance is large	Steering overflow valve seat leaking severely	Repair vale seat or replace seal ring
	Steering cylinder leaking severely	Repair or replace steering cylinder seal ring
Vehicle not steering while steering wheel is rotated	Steering gear fault	Repair or replace steering gear
	Steering overflow valve fault	Repair steering overflow valve
	Steering column fault	Repair steering column
Steering wheel auto rotates while driver nor operating	Full hydraulic steering gear valve housing blocked	Remove impurities in valve
	Full hydraulic steering gear spring plate broken	Replace spring plate
Steering pump noisy and steering cylinder acts slowly	Air in steering oil way	Start vehicle, make several times of leftward/rightward steering
	Steering pump worn, and flow inadequate	Replace steering pump
	Oil viscosity inadequate	Change oil as per correct brands
	Hydraulic oil inadequate	Fill enough hydraulic oil
	Internal leaking in steering cylinder	Repair cylinder or replace seal

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