

## FOREWORD

This manual contains a number of instructions and safety recommendations regarding driving, handling, lubrication, maintenance, inspection and adjustment of the backhoe loader.

The manual is to promote safety maintenance and enhance machine performance.

Keep this manual handy and have all personnel read it periodically.

If you sell the machine, be sure to give this manual to the new owners.

This machine complies with EC directive "2006/42/EC".

1. **Read** and **understand** this manual before operating the machine.

This operator's manual may contain attachments and optional equipment that are not available in your area. Please consult your local Hyundai distributor for those items you require.

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

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 uses 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 you and others. In no event should you or others engage in prohibited uses of actions as described in this manual.

2. **Inspect** the jobsite and **follow** the safety recommendations in the **safety hints** section before operating the machine.

3. Use **genuine Hyundai spare parts** for the replacement of parts.

We expressly point out that Hyundai will not accept any responsibility for defects resulting from non-genuine parts or non workmanlike repair.

In such cases Hyundai cannot assume liability for any damage.

Continuing improvements in the design of this machine can lead to changes in detail which may not be reflected in this manual. Consult Hyundai or your Hyundai distributor for the latest available information for your machine or for questions regarding information in this manual.

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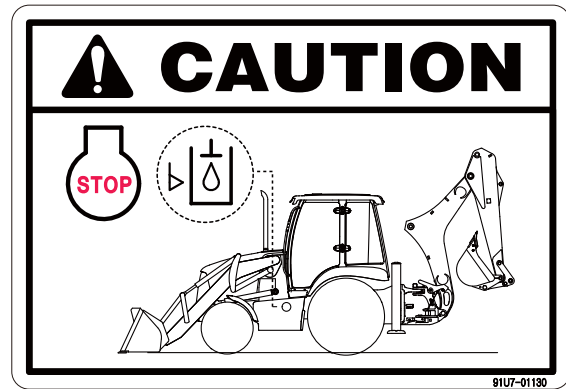
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**9) HYDRAULIC OIL LEVEL (item 22)**

This warning label is positioned on the hydraulic oil tank.

- ▲ **Place the bucket on the ground whenever servicing the hydraulic system.**
- ※ **Check oil level on the level gauge.**
- ※ **Refill the recommended hydraulic oil up to specified level if necessary.**

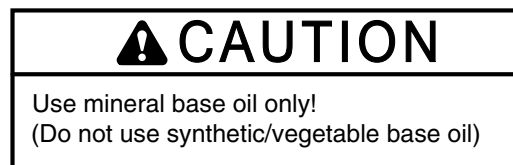


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**10) BRAKE OIL (item 30)**

This warning label is positioned on the engine hood.

- ※ **Use mineral base oil (ISO VG 10, Azolla ZS 10) only.**
- ※ **Do not use synthetic/vegetable base oil. (DOT3, 4, 5, 5.1 and etc.)**



H940C0FW30

## **Fire extinguisher Location**

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

Mount the fire extinguisher in the accepted location per local regulations.

If your machine is equipped with a ROPS structure, strap the mounting plate to the ROPS in order to mount the fire extinguisher. If the weight of the fire extinguisher exceeds 4.5 kg (10 lb), mount the fire extinguisher near the bottom of the ROPS. Do not mount the fire extinguisher at the upper one-third area on the ROPS.

Do not weld the ROPS structure in order to install the fire extinguisher. Also, do not drill holes in the ROPS structure in order to mount the fire extinguisher on the ROPS.

Consult your Hyundai Heavy Industries dealer for the proper procedure for mounting the fire extinguisher.

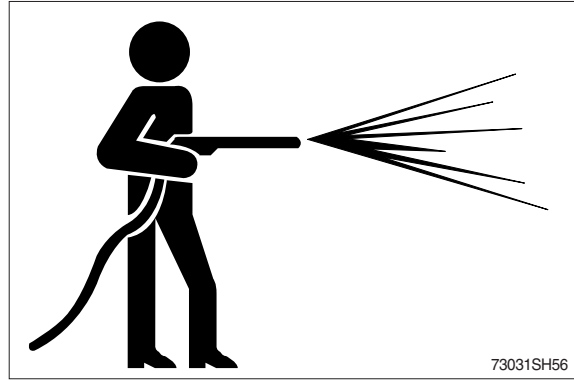
### KEEP THE MACHINE CLEAN

Spilled oil or grease, or scattered tools or broken pieces are dangerous because they may cause you to slip or trip.

Always keep your machine clean and tidy.

If water gets into the electrical system, there is danger that the machine may not move or may move unexpectedly.

Do not use water or steam to clean the sensors, connectors, or the inside of the operator's compartment.



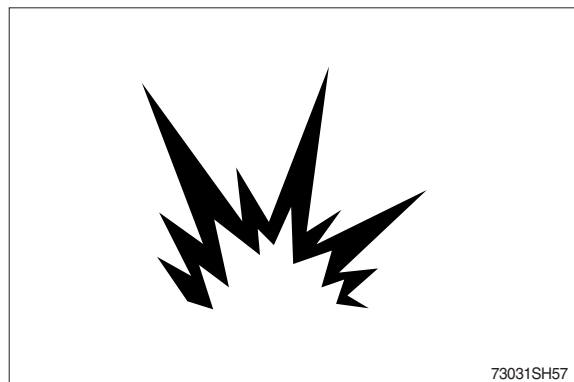
### HANDLING TIRES

If tires are not used under the specified condition, they may overheat and burst or be cut and burst by sharp stones on rough road surfaces.

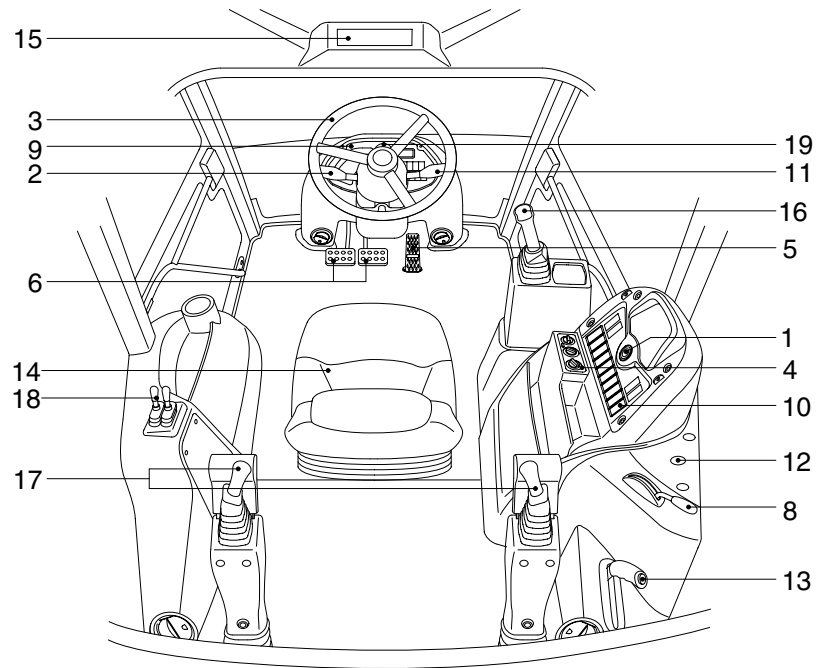
This may lead to serious injury or damage.

To maintain safety, always keep to the suitable conditions.

**▲ Disassembly, reassembly, replacement and repair of tire requires special skills and equipment. Contact a tire repair shop.**

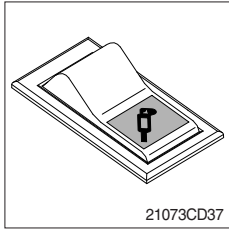


## PILOT



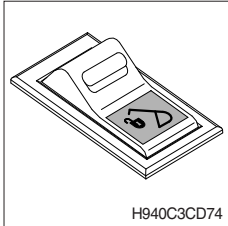
- |    |                          |    |                                |
|----|--------------------------|----|--------------------------------|
| 1  | Start switch             | 11 | Multi-function switch and horn |
| 2  | Gear selector switch     | 12 | 12V power socket               |
| 3  | Steering wheel           | 13 | Boom lock lever                |
| 4  | Aircon and heater switch | 14 | Seat                           |
| 5  | Accelerator pedal        | 15 | Radio/USB player               |
| 6  | Brake pedal              | 16 | Loader controls                |
| 8  | Hand throttle lever      | 17 | Backhoe controls               |
| 9  | Front console            | 18 | Stabilizer controls            |
| 10 | Side console             | 19 | Speed meter                    |

### (9) Breaker switch (option)



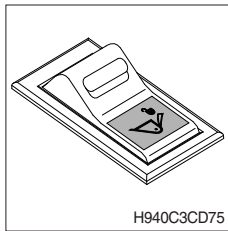
- ① This switch is used to select breaker operation.
- ※ The breaker operates only when this switch is selected.

### (10) Safety switch (backhoe, option)



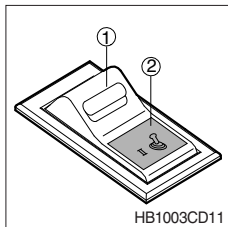
- ① Press down to switch off safety switch.  
The control lever of backhoe and stabilizer lever are disabled from operation.
- ※ Be sure to switch off position when leaving from operator's seat.

### (11) Safety switch (loader, option)



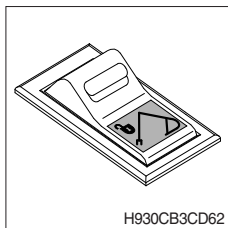
- ① Press down to switch off safety switch.  
The control lever of loader are disabled from operation.
- ※ Be sure to switch off position when leaving from operator's seat.

### (12) Control pattern change switch (if fitted, option)



- ① This switch is used to change the backhoe controls.
  - Position ① : ISO type (+) pattern
  - Position ② : Hyundai A type (+) pattern
- ※ Refer to the page 3-22 for the details.

### (13) Boom lock switch (machine serial No. : H930C(#0333-), H940C(#0460-))



- ① Press the switch to lock position for secure boom lock.
- ② Press the switch to unlock position and raise the boom slightly to release the lock.

## 2) BACKHOE CONTROLS

※ Confirm the operation of control lever and working device.

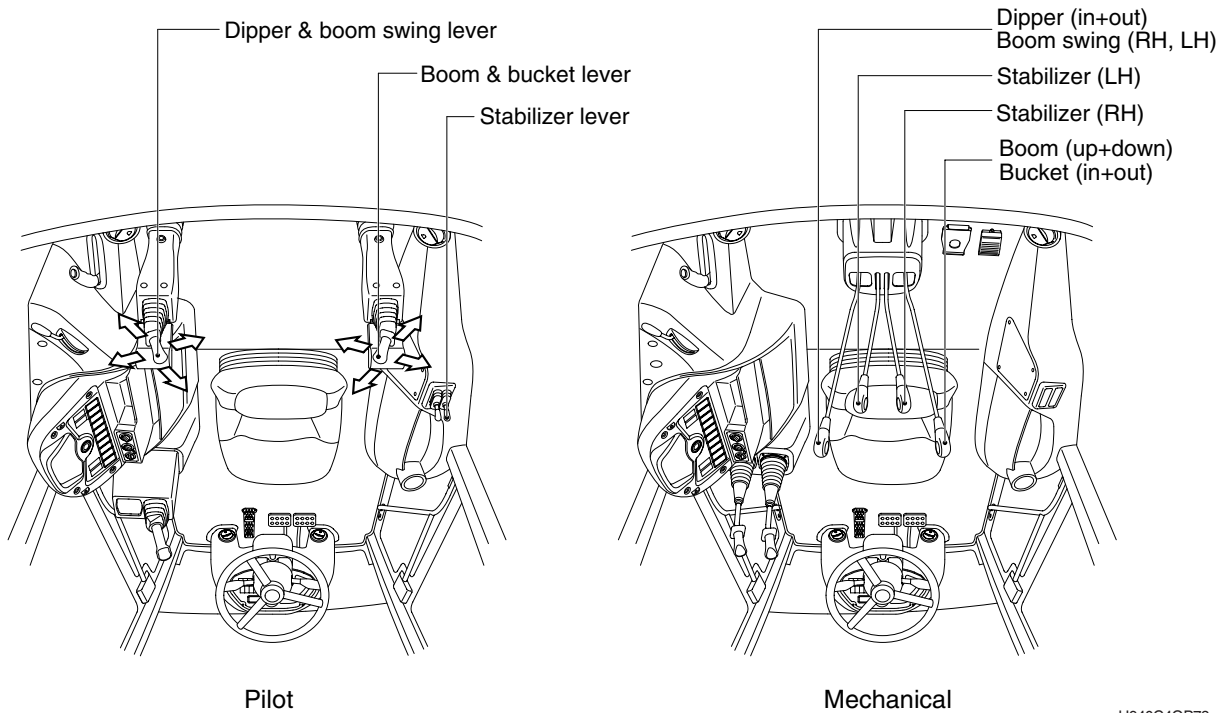
(1) Left control lever controls dipper and boom swing.

(2) Right control lever controls boom and bucket.

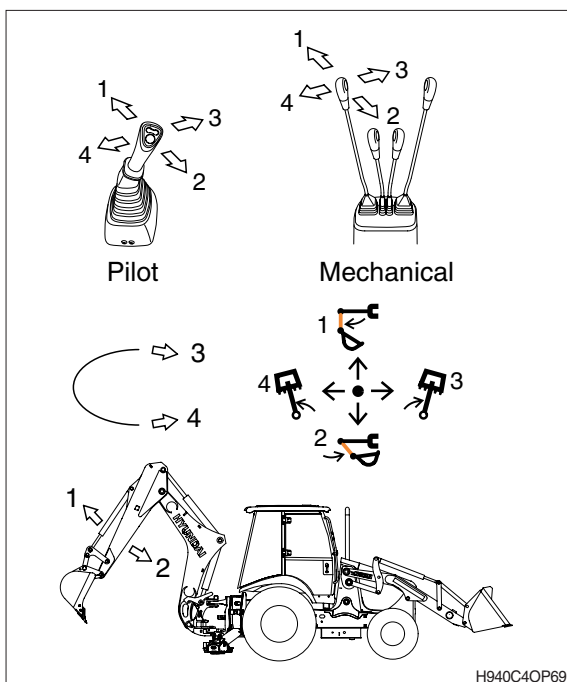
(3) When you release the control lever, control lever returns to neutral position automatically.

### (4) ISO type (+) pattern : standard

When the control pattern change switch is selected position ①. (if equipped). Refer to the page 3-12.



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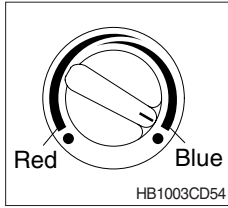


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### ① Dipper & boom swing lever

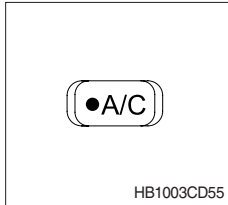
- 1 Dipper roll-out
- 2 Dipper roll-in
- 3 Boom swing right
- 4 Boom swing left

### 3) TEMPERATURE CONTROL SWITCH



- (1) Rotate this switch clockwise to decrease the temperature.
- (2) Rotate anti-clockwise to increase the temperature.

### 4) AIR CONDITIONING ON/OFF SWITCH



- (1) To operate the air conditioning, press this switch to the ON position (the switch will be illuminated).

Rotate the temperature control switch clockwise to decrease the temperature from ambient to cold. To obtain best results from the air conditioning system ensure that all doors and windows are closed.

Air conditioning performance is improved when the re-circulation switch is in position **B**.

- ※ Operate the air conditioning for at least 10 minutes per month.

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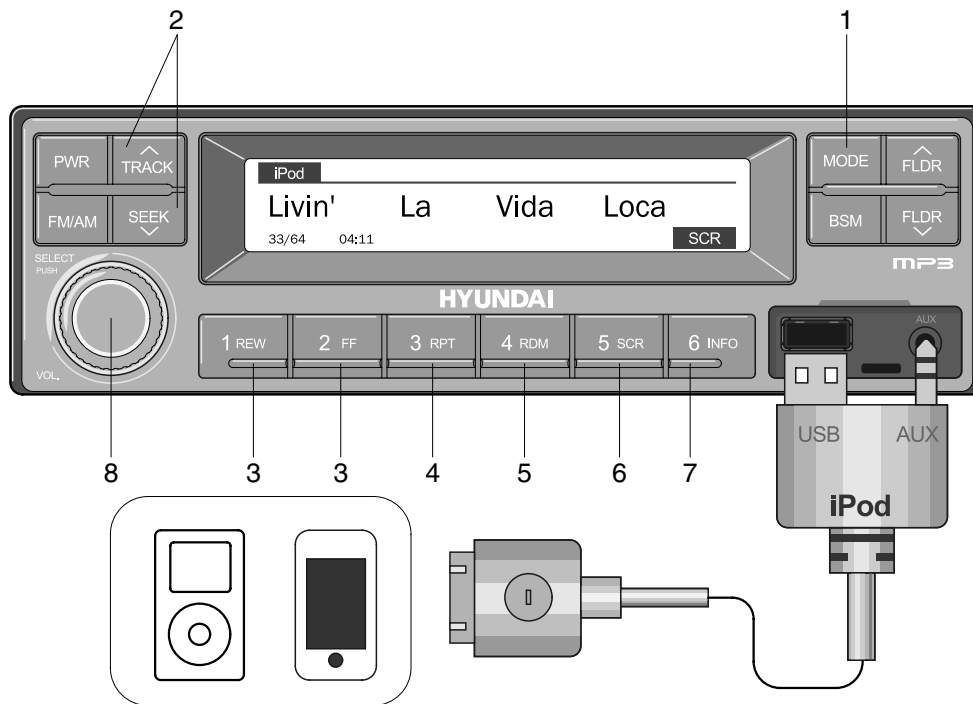
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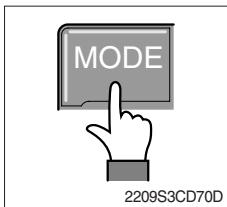
## ■ IPOD CONNECTION



2209S3CD73

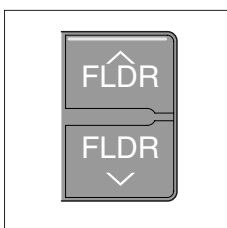
- Operates only when an iPod is connected. Connecting an iPod to the audio will automatically convert to iPod mode. Connecting the USB when the starting switch is in ON state will turn the power on and automatically play the songs within the iPod.
- The iPod cable is supplied separately.

### (1) iPod selection button



- ① While playing a different mode, press the MODE button to convert to iPod mode. Connecting an iPod to the audio will automatically convert to iPod mode even if another mode is playing and automatically play the songs within the iPod.

### (2) TRACK UP/SEEK DOWN button



While playing music, press the TRACK  $\wedge$  button to play the beginning of the next song.

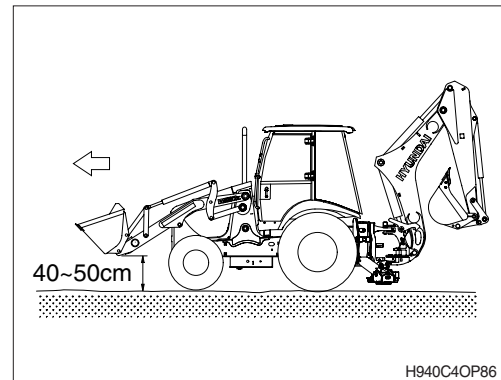
Press the SEEK  $\vee$  button to return to the beginning of the current song. Press the button again to play the beginning of the previous song.

## 5. TRAVELING OF THE MACHINE

### 1) BASIC OPERATION

#### (1) Traveling position

- ① It is the position which the backhoe is in the rear and the loader is forward.
- ② Lift the boom so that the bucket is placed 40-50cm above the ground.
- ③ Set the attachments to the their travelling positions.



#### (2) Preparation

- ① Engage the boom lock and slew lock devices.
  - ※ Please refer to the page 3-26, 27.
- ② Do not jump on or off the machine.
- ③ Wear the seat belt.
- ④ Keep riders off the machine.
  - ※ Riders on a machine are subject to injury such as being struck objects and being thrown off the machine.Only allow the operator on the machine. Keep riders off.
- ⑤ Press the low speed control switch when traveling on the roads.

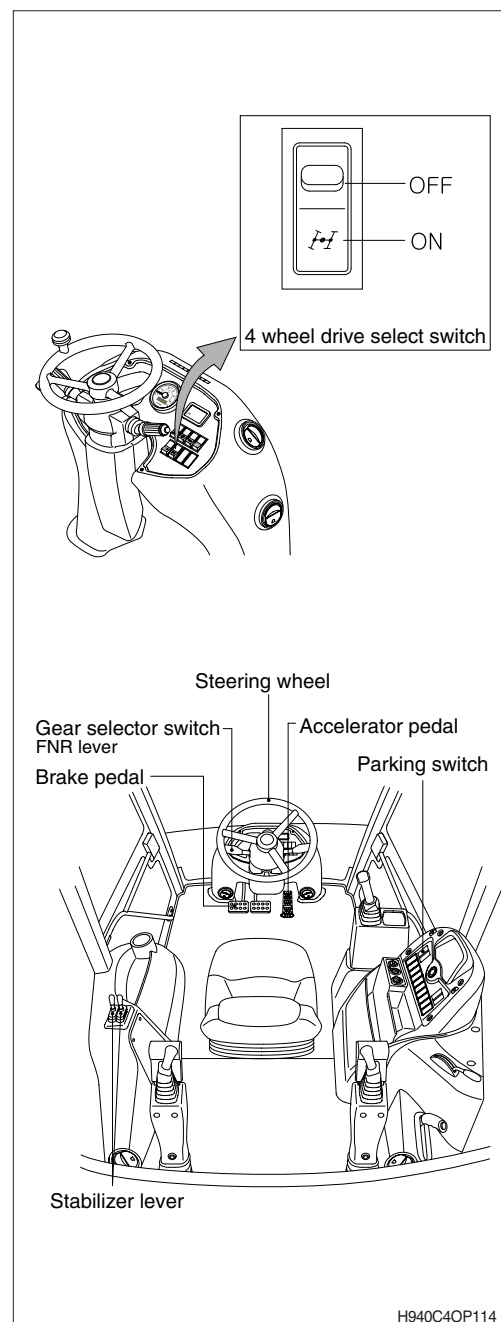
#### (3) Traveling operation

▲ Sound the horn to warn nearby personnel before operating the machine.

▲ Be sure that the brake works normally on the safe place before fast traveling.

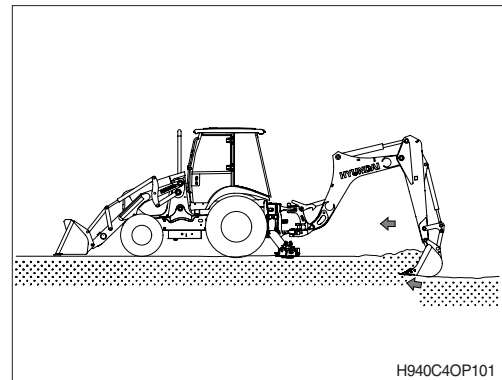
※ When warm-up operation is completed after the engine is started, move the machine according to the following procedure.

- ① Select the wheel drive mode. (for 4WD only)
  - Use 2 wheel drive mode when driving long distance or high speed.
  - Use 4 wheels drive mode when operating in heavy duty site conditions, for instance, deep mud, undulating surfaces, slurry etc.
- ② Release the parking brake.
- ③ Lift up the stabilizer.
- ④ Select traveling speed by the gear speed switch.
- ⑤ Select traveling direction by the FNR lever.
- ⑥ Press gently the accelerator pedal to move the machine.

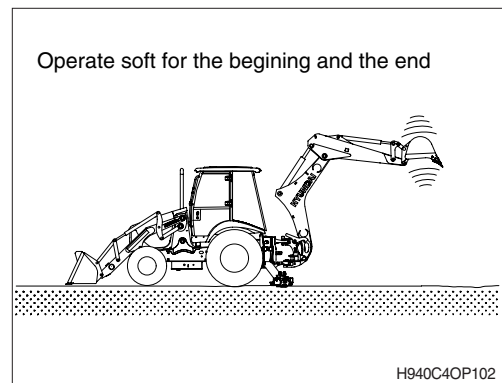


### (3) Excavating work

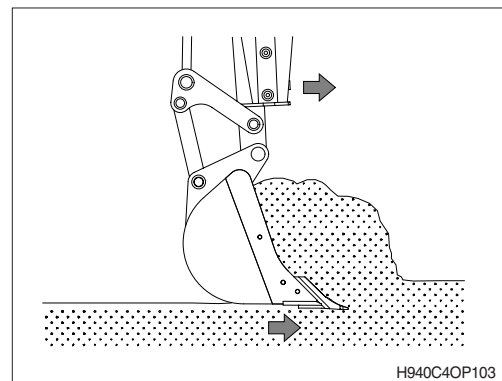
- ① Do the digging work by arm.  
Use the pulling force of arm for digging and use together with the digging force of the bucket if necessary.



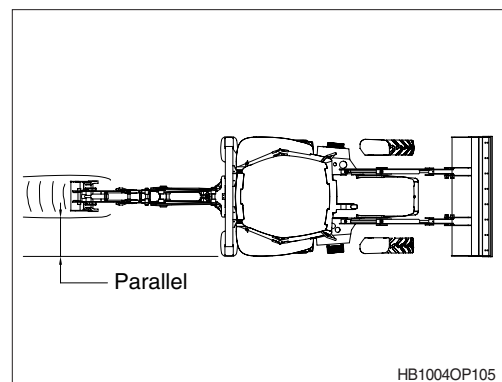
- ② When lowering and raising the boom operate softly for the beginning and the end.  
In particularly, sudden stops while lowering the boom may cause damage to the machine.



- ③ The digging resistance and wearing of tooth can be reduced by putting the end of bucket tooth to the digging direction.

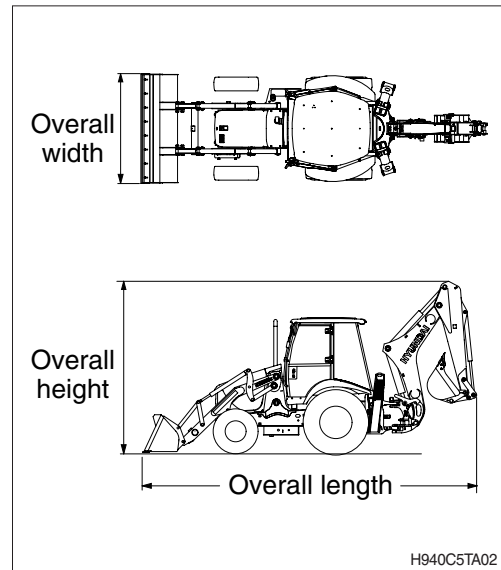


- ④ Set the tracks parallel to the line of the ditch to be excavated when digging ditch. Do not swing while digging.



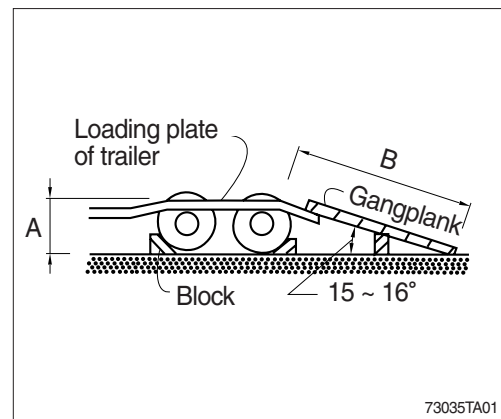
## 2. PREPARATION FOR TRANSPORTATION

- 1) When transporting the machine, observe the various road rules, road transportation vehicle laws and vehicle limit ordinances, etc.
- 2) Make sure the cooling system has proper antifreeze if moving machine to a cold climate.
- 3) Select proper trailer after confirming the weight and dimension from the page 2-2.
- 4) Check the whole route such as the road width, the height of bridge and limit of weight and etc., which will be passed.
- 5) Get the permission from the related authority if necessary.



- 6) Prepare gangplank for safe loading referring to the below table and illustration.

A	B
1.0	3.65 ~ 3.85
1.1	4.00 ~ 4.25
1.2	4.35 ~ 4.60
1.3	4.75 ~ 5.00
1.4	5.10 ~ 5.40
1.5	5.50 ~ 5.75



## 2) RECOMMENDED LUBRICANTS

Use only oils listed below or equivalent.

Do not mix different brand oil.

Service point	Kind of fluid	Capacity ℓ (U.S. gal)	Ambient temperature °C (°F)							
			-50 (-58)	-30 (-22)	-20 (-4)	-10 (14)	0 (32)	10 (50)	20 (68)	30 (86)
Engine oil pan	Engine oil	IVECO : 12 (3.2) PERKINS : 8 (2.1)	* <sup>1</sup> SAE 5W-40							
			SAE 30							
			SAE 10W							
			SAE 10W-30							
			SAE 15W-40							
Transmission	Engine oil	18 (4.6)	SAE 10W-30							
			SAE 15W-40							
Axle	UTTO	Front (4WD) : 8 (2.1) Rear : 16 (4.2)	*Refer to below list							
Hydraulic tank	Hydraulic oil	Tank: 60 (15.9) System: 93 (24.6)	* <sup>1</sup> ISO VG 15							
			ISO VG 46							
			ISO VG 68							
Fuel tank	Diesel fuel	127 (33.5)	* <sup>1</sup> ASTM D975 NO.1							
			ASTM D975 NO.2							
Fitting (grease nipple)	Grease	As required	* <sup>1</sup> NLGI NO.1							
			NLGI NO.2							
Radiator (reservoir tank)	Mixture of antifreeze and soft water* <sup>2</sup>	20 (5.3)	Ethylene glycol base permanent type (50 : 50)							
			* <sup>1</sup> Ethylene glycol base permanent type (60 : 40)							

· SAE : Society of Automotive Engineers

· API : American Petroleum Institute

· ISO : International Organization for Standardization

· NLGI : National Lubricating Grease Institute

· ASTM : American Society of Testing and Material

· UTTO : Universal Tractor Transmission Oil

\* Recommended oil list

- BP TERRAC SUPER TRANSMISSION 10W-30

- CASTROL AGRI TRANS PLUS 10W-30

- MOBILFLUID 426

- SHELL DONAX TD 10W-30

- TOTAL DYNATRANS MPV

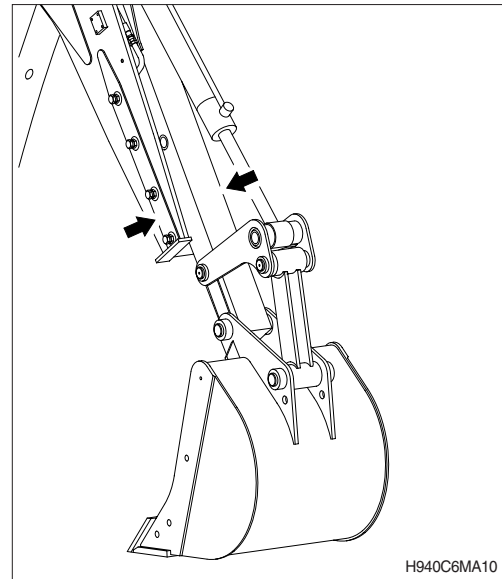
\*<sup>1</sup> Cold region

\*<sup>2</sup> Soft water

City water or distilled water

### 3) EXTENDING DIPPER

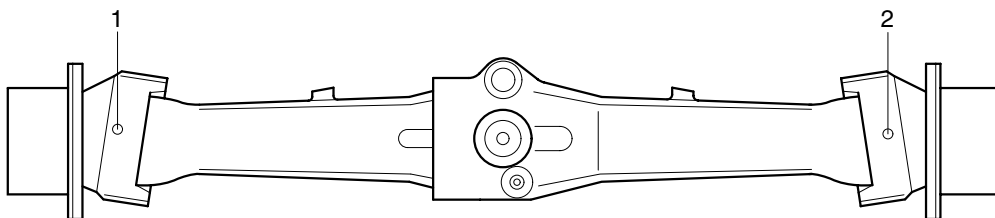
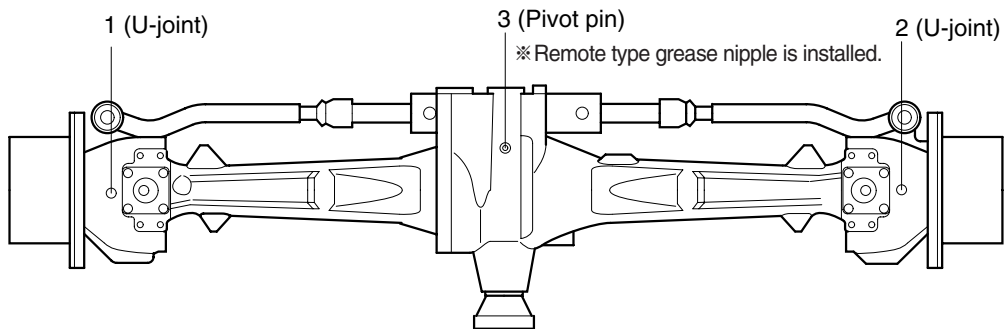
- ※ Extending dipper slides  
Grease : Shell Retinax HDX2



H940C6MA10

### 4) FRONT AXLE (4WD)

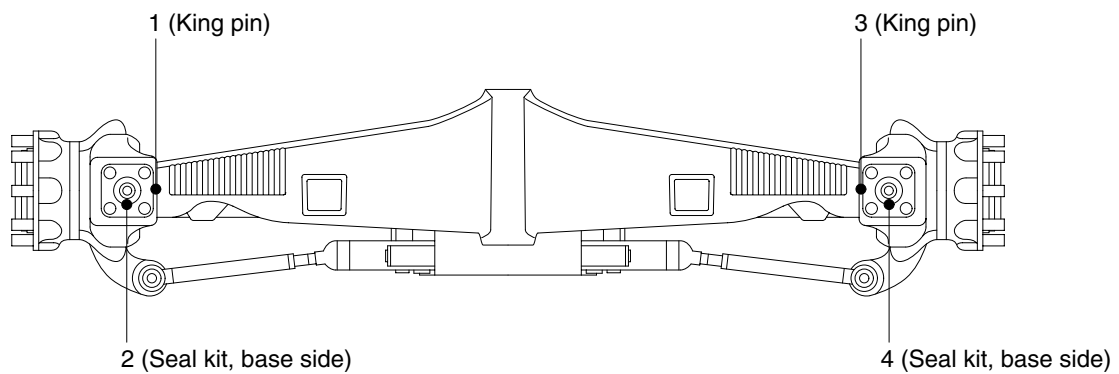
- ※ 3 Grease points



HB1006MA62

### 5) FRONT AXLE (2WD)

- ※ 4 Grease points



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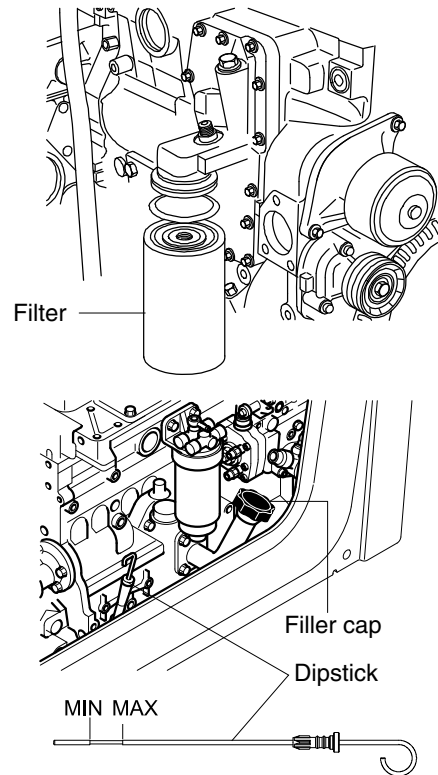
- (6) Clean the area around the oil filter head.
- (7) Remove the oil filter, use a filter wrench if necessary.
- (8) Clean the seal face of the filter head.
- (9) Fit new filter.
  - ① Smear the seal on the new filter with clean engine oil.
  - ② Screw the filter on until it just contacts the filter head.
  - ③ Turn the filter at least a further 3/4 of a turn.

**▲ Do not over fill the engine with oil.**

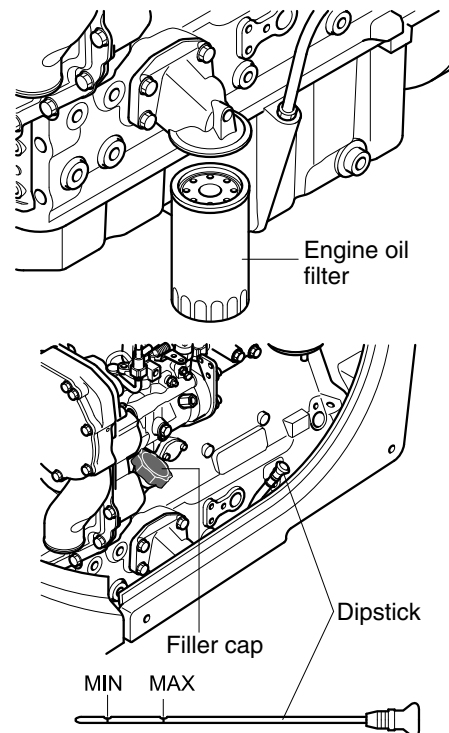
- (10) Through filler point, fill the engine oil to the MAX mark on the dipstick. Wipe off any split oil, refit the filler cap and make sure it is secure.
- (11) Operate the engine at low idle and inspect for leaks at the filter and the drain plug. Shut the engine off and check oil level with dipstick. Allow 15 minutes for oil to drain down before checking.

**▲ Do not overfill the engine with oil.**

IVECO ENGINE



PERKINS ENGINE



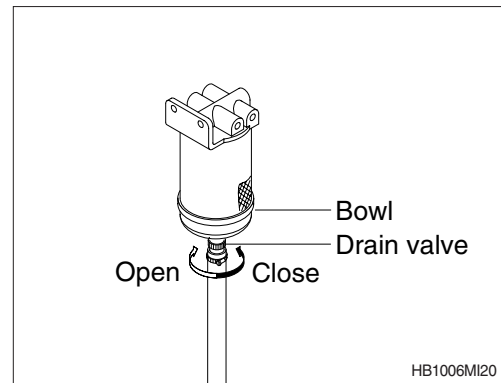
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### 3) PREFILTER

※ Inspect or drain the collection bowl of water daily and replace the element every 600 hours.

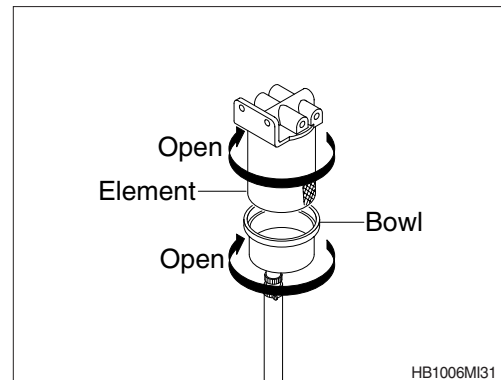
#### (1) Drain water

- ① Open bowl drain valve to evacuate water.
- ② Close drain valve.

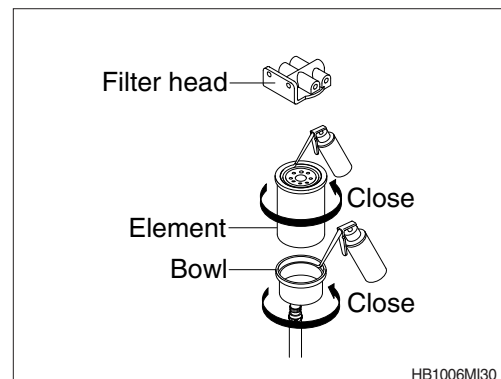


#### (2) Replace element

- ① Drain the unit of fuel. Follow "Drain water" instructions above.
- ② Remove element and bowl from filter head.
  - ※ The bowl is reusable, do not damage or discard.
- ③ Separate element from bowl. Clean bowl and seal gland.



- ④ Lubricate new bowl seal with clean fuel or motor oil and place in bowl gland.
- ⑤ Attach bowl to new element firmly by hand.
- ⑥ Lubricate new element seal and place in element top gland.
- ⑦ Attach the element and bowl to the head.



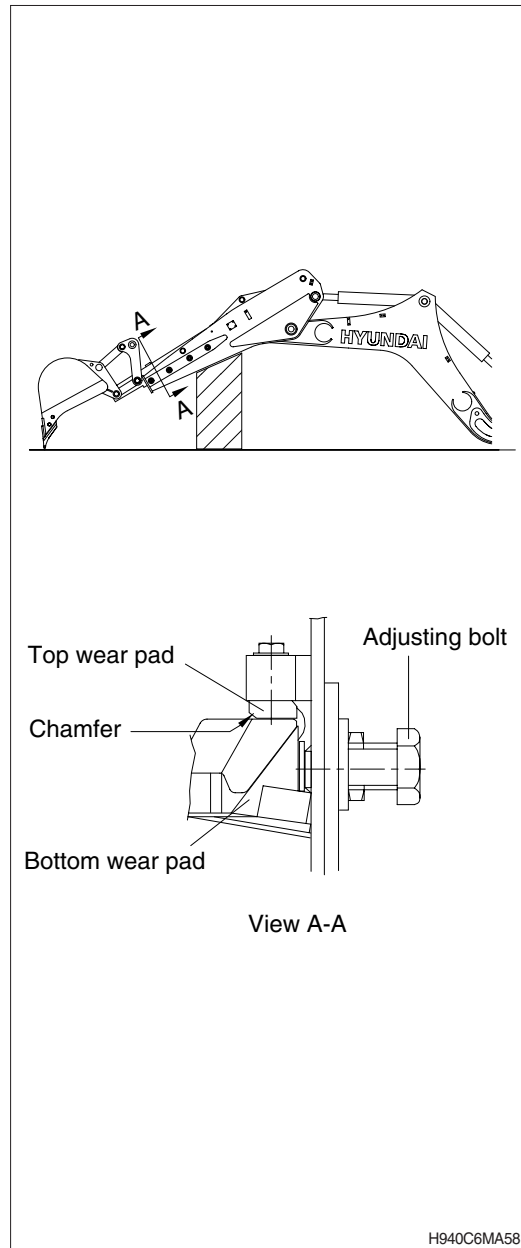
## 17. WEAR PADS

### 1) EXTENDING DIPPER

- ※ Extending dipper is mounted with wear pads in 4 sections.
- ※ Wear pads provide support and guide when the inner dipper is extended or retracted.
- ※ Wear pads are replaceable and located on top and bottom of left and right side of the inner dipper.
- ※ The top wear pads are not adjustable, but the bottom wear pads are adjustable.
- ※ When replacing the top wear pads, replace the bottom wear pads as a set at a same time.

#### (1) Inspection of the top wear pads

- ① Park the machine on flat surface.
  - ② Engage the parking brake and put the FNR lever in neutral.
  - ③ Retract the dipper and place a support block as shown in the figure.
  - ④ Stop the engine and remove the key.
  - ⑤ Inspect the wear and tear on top wear pad and if worn down to the height of the chamfer in the figure, then replace the pad.
- ※ Increase the inspection frequency when Top wear pad approaches its wear limit.
  - ※ When replacing the top wear pads, replace the bottom wear pads as a set at a same time.



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