

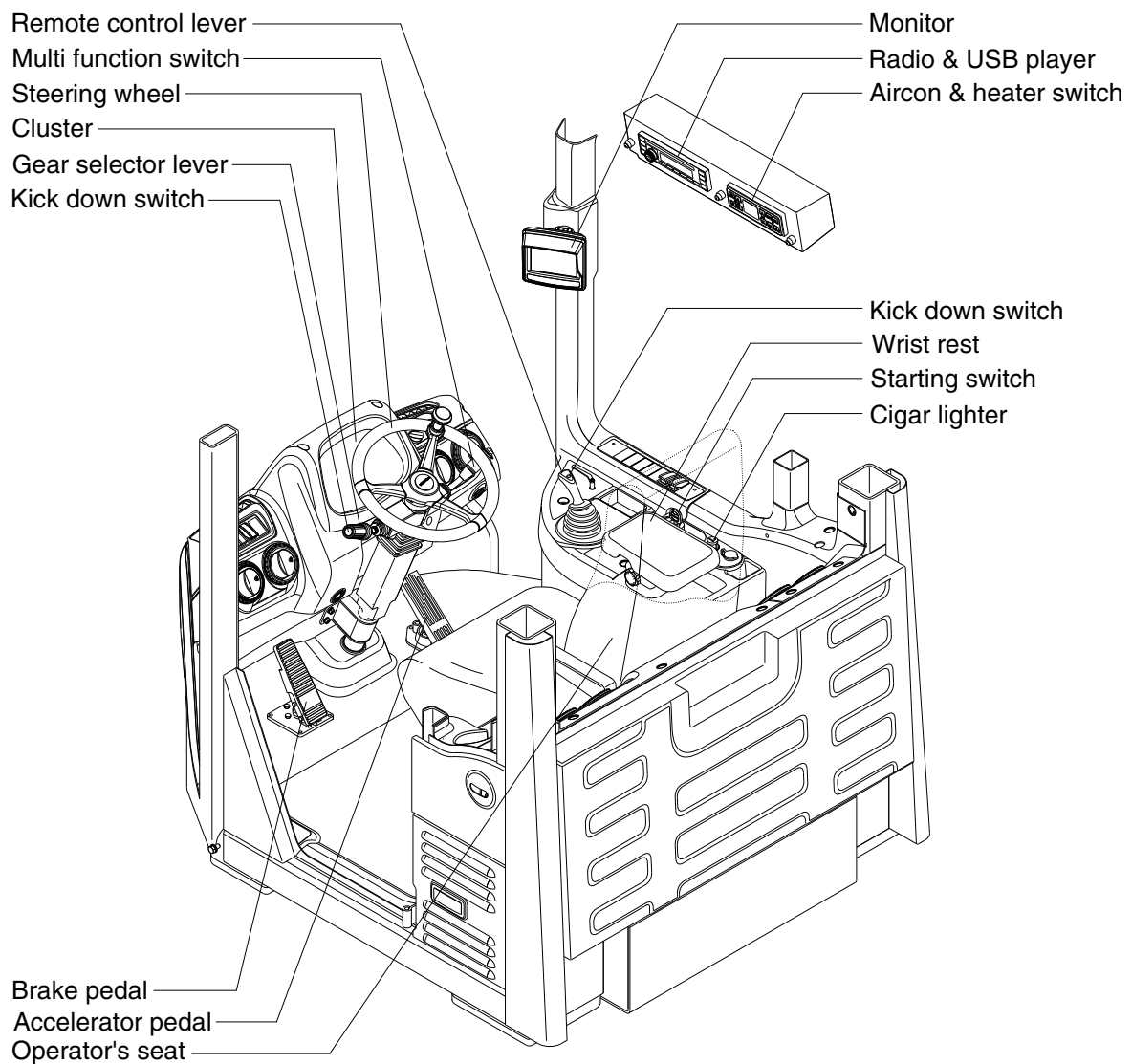
## 3. CONTROL DEVICES

### 1. CAB DEVICES

- 1) The ergonomically designed console box and suspension type seat provide the operator with comfort.

#### 2) ELECTRONIC MONITOR SYSTEM

- (1) The centralized electronic monitor system allows the status and conditions of the machine to be monitored at a glance.
- (2) It is equipped with a safety warning system for early detection of machine malfunction.



7409S3CD01

## 2. CLUSTER

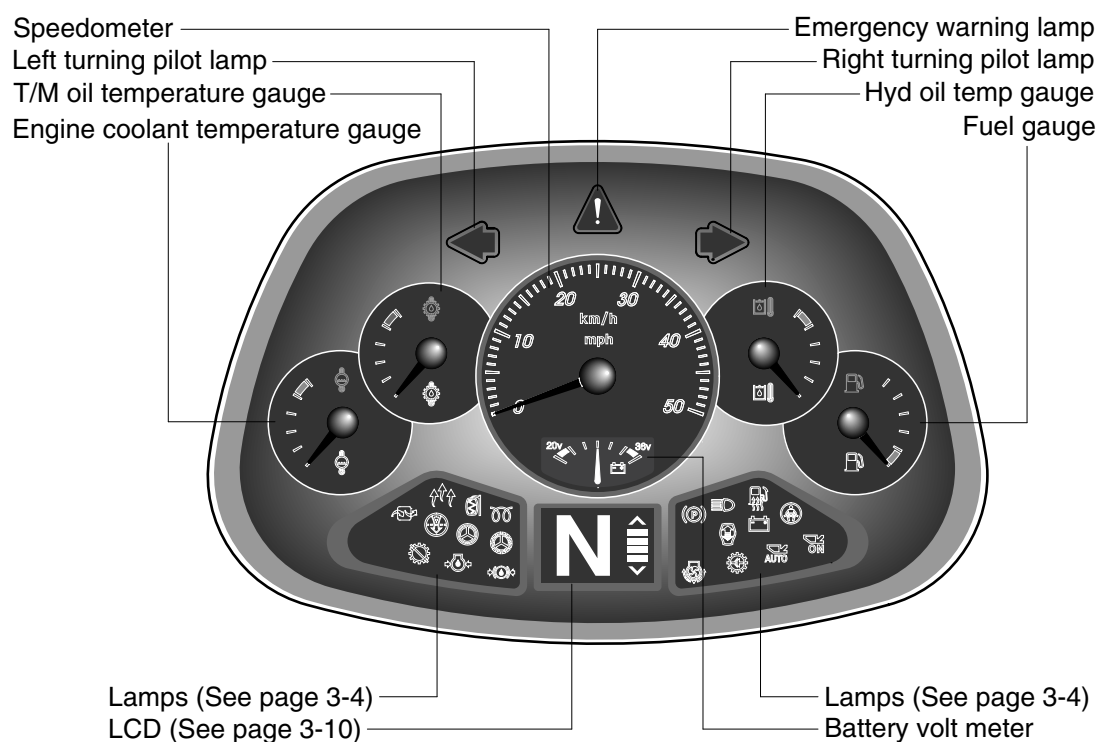
### 1) STRUCTURE

The cluster consists of gauges, lamps and LCD as shown below, to warn the operator in case of abnormal machine operation or conditions for the appropriate operation and inspection.

- Gauges : Indicate operating status of the machine.
- Warning lamps : Indicate abnormality of the machine.
- Pilot lamps : Indicate operating status of the machine.
- LCD : Indicates selected the driving speed and direction.

※ The cluster installed on this machine does not entirely guarantee the condition of the machine. Daily inspection should be performed according to chapter 6, MAINTENANCE.

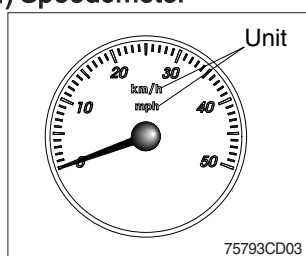
※ When the cluster provides a warning immediately check the problem, and perform the required action.



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### 2) GAUGE

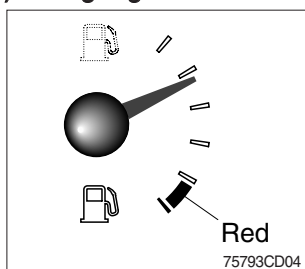
#### (1) Speedometer




① The speedometer displays the speed of machine in mph and km/h.

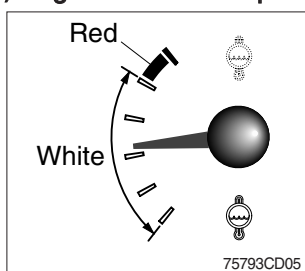
※ The unit (km/h or mph) can be set by the display set up menu of the monitor and selected unit is displayed.  
Refer to page 3-23.


## (2) Fuel gauge



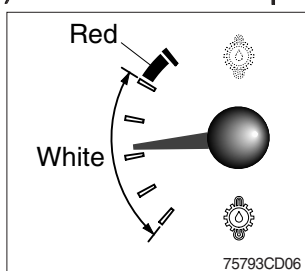
- ① This gauge indicates the amount of fuel in the fuel tank.
  - ② Fill the fuel when the indicator moves red range or  lamp blinks in red, refuel as soon as possible to avoid running out of fuel.
- ※ If the gauge indicates below red range even though the machine is on the normal condition, check the electric device as that can be caused by the poor connection of electricity or sensor.


## (3) Engine coolant temperature gauge



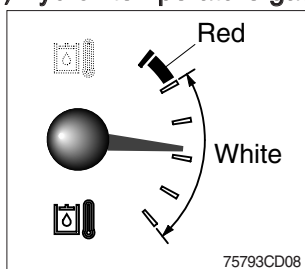
- ① This gauge indicates the temperature of coolant.
  - White range : 40~100°C (104~212°F)
  - Red range : Above 100°C (212°F)
- ② If the indicator is in the red range or  lamp blinks in red, turn OFF the engine and check the radiator and engine.


## (4) Transmission oil temperature gauge



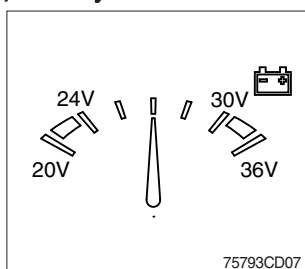
- ① This gauge indicates the temperature of transmission oil.
  - White range : 40~107°C (104~225°F)
  - Red range : Above 107°C (225°F)
- ② If the indicator is in the red range or  lamp blinks in red, it means the transmission is overheated. Be careful that the indicator does not move into the red range.

## (5) Hyd oil temperature gauge



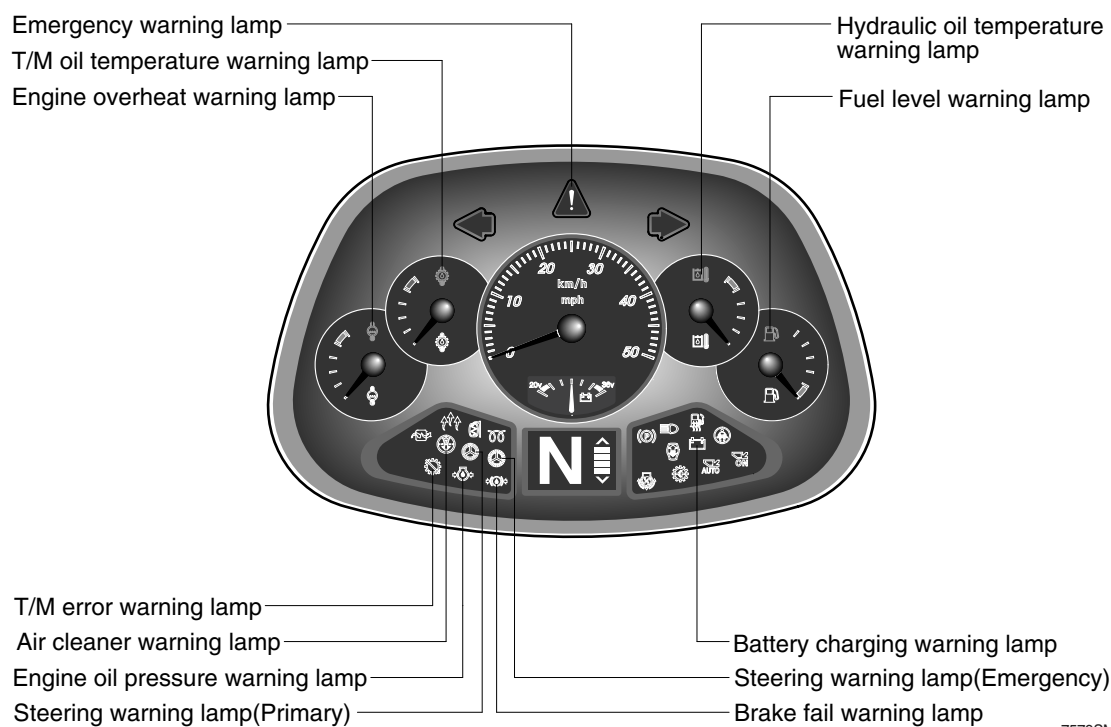
- ① This gauge indicates the temperature of hydraulic oil.
  - White range : 40~105°C (104~221°F)
  - Red range : Above 105°C (221°F)
- ② If the indicator is in the red range or  lamp blinks in red, reduce the load on the system.
- ③ If the gauge stays in the red range, stop the machine and check the cause of the problem.

## (6) Battery volt meter



- ① This gauge indicates the voltage in the charging system when the engine is running.
- ② If the indicator is below 24V, it means that the electricity is being discharged. If the indicator is above 30V, an unusually high voltage may damage the alternator. Check the charging system in both cases.

### 3) WARNING LAMPS

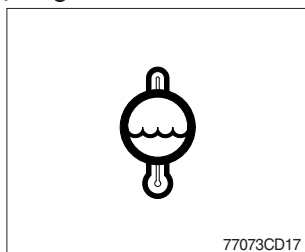


#### (1) Emergency warning lamp



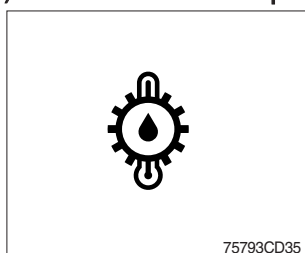
- ① This warning lamp blinks and the buzzer sounds when communication error occur between monitor and MCU.
- ② When this warning lamp blinks, machine must be checked and service immediately.

#### (2) Engine overheat warning lamp



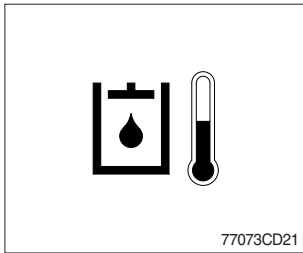
- ① This lamp is turned ON when the temperature of coolant is over the normal temperature (100°C, 212°F).
- ② Check the cooling system when the lamp is ON.

#### (3) Transmission oil temperature warning lamp



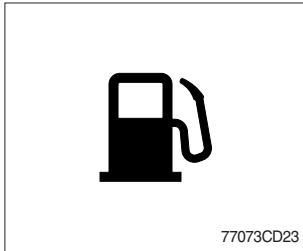
- ① This lamp informs the operator that transmission oil is above the specified temperature.
- ② When this lamp lights up during operation, stop the engine and check the machine.

#### (4) Hydraulic oil temperature warning lamp



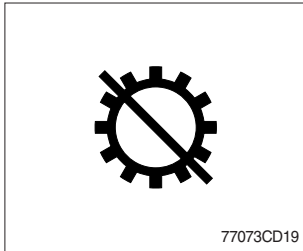
- ① This warning lamp operates and the buzzer sounds when the temperature of hydraulic oil is over 105°C (221°F).
- ② Check the hydraulic oil level when the lamp is turned ON.
- ③ Check for debris between oil cooler and radiator.

#### (5) Fuel level warning lamp



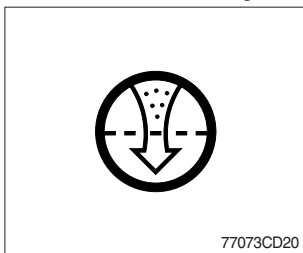
- ① This warning lamp lights ON when the fuel level is low. Refuel the machine as soon as possible.

#### (6) Transmission error warning lamp



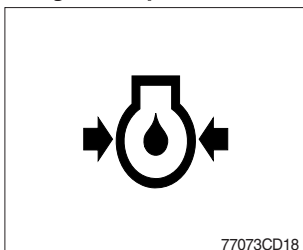
- ① This lamp lights ON and the LCD display shows the error codes when an error occurs in the transmission.
  - ② Immediately pull the machine to a convenient stop. Stop the engine. Investigate the cause.
- ※ **Consult a HYUNDAI dealer to investigate the cause.**
- ※ **Do not operate until the cause has been corrected.**

#### (7) Air cleaner warning lamp



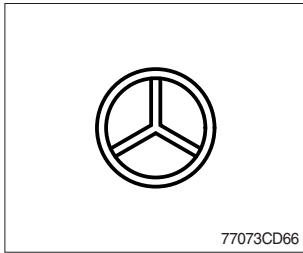
- ① This lamp lights ON when the filter of air cleaner is clogged.
- ② Check the filter and clean or replace it when the lamp is ON.

#### (8) Engine oil pressure warning lamp



- ① This lamp comes ON after starting the engine because of the low engine oil pressure.
- ② If the lamp comes ON during engine operation, shut OFF engine immediately. Check engine oil level.

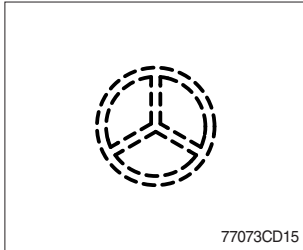
### (9) Steering warning lamp



#### ① Primary

This lamp indicates that the primary steering has failed. When the indicator comes on and the action alarm sounds, steer the machine immediately to a convenient location and stop the machine. Stop the engine and investigate the cause.

※ **Do not operate the machine until the cause has been corrected.**



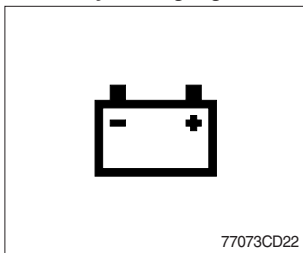
#### ② Emergency

This lamp indicates the emergency steering system is active.

※ **Immediately pull the machine to a convenient stop and stop the engine.**

※ **The emergency steering system can be manually tested. Refer to page 3-28.**

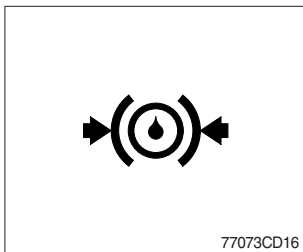
### (10) Battery charging warning lamp



① This lamp is ON when key ON, it is turned OFF after starting the engine.

② Check the battery charging circuit when this lamp comes ON, during engine operation.

### (11) Brake fail warning lamp

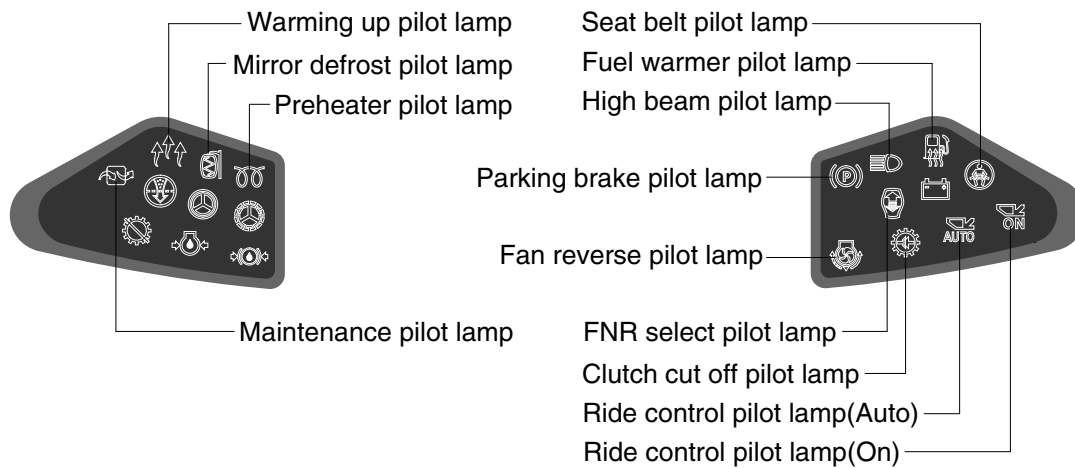


① The lamp lights ON when the oil pressure of service brake drops below the normal range.

② When the lamp is ON, stop the engine and check for its cause.

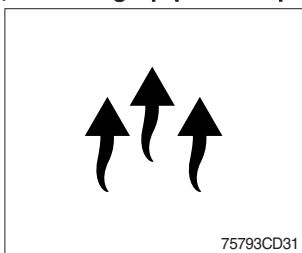
※ **Do not operate until any problems are corrected.**

#### 4) PILOT LAMPS



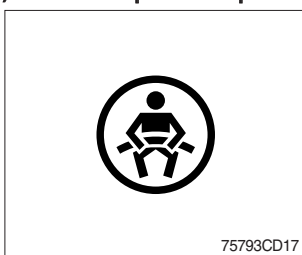
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##### (1) Warming up pilot lamp



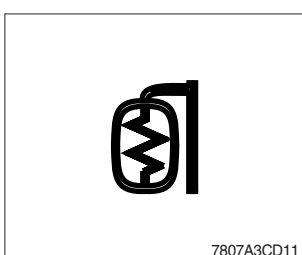
- ① This lamp is turned ON when the coolant temperature is below 30°C (86°F).
- ② The automatic warming up is cancelled when the engine coolant temperature is above 30°C, or when 10 minutes have passed since starting the engine.

##### (2) Seat belt pilot lamp



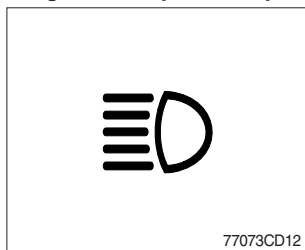
- ① This lamp lights ON for the first five seconds after starting the engine.

##### (3) Mirror defrost pilot lamp



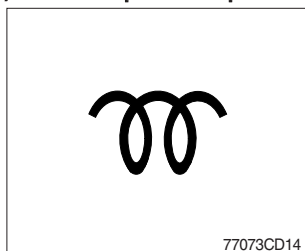
- ① This lamp comes ON when mirror defrost switch is pressed.

#### (4) High beam pilot lamp



- ① This lamp works when the illuminating direction is upward.
- ② This lamp comes ON when the dimmer switch is operated, e.g., when passing another vehicle.

#### (5) Preheat pilot lamp



- ① This lamp lights ON when start switch is turned clockwise to the ON position. Light will turn off after approximately 5~45 seconds, depending on engine temperature, indicating that preheating is completed.
- ② When the lamp goes out the operator should start cranking the engine.

※ Refer to page 4-5.

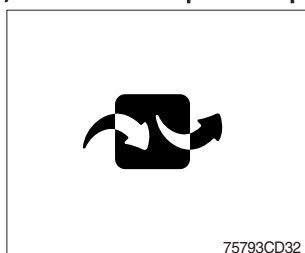
#### (6) Parking brake pilot lamp



- ① When the parking brake is actuated, the lamp lights ON.

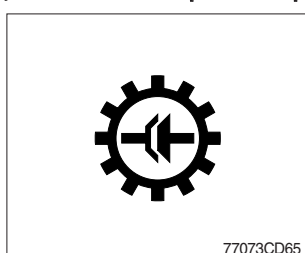
※ Check the lamp is OFF before driving.

#### (7) Maintenance pilot lamp



- ① This lamp will be ON when the consuming parts are needed to change or replace. It means that the change or replacement interval of the consuming parts remains below 30 hours.
- ② Check the message in maintenance information of the monitor menu. Also, this lamp lights ON for 3 minutes when the start switch is ON position.

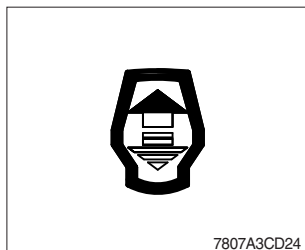
#### (8) Clutch cut off pilot lamp



- ① This lamp lights ON when the clutch cut off mode switch is positioned L, M, H.

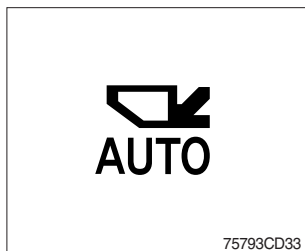
※ Refer to page 3-28.

**(9) FNR select pilot lamp (option)**



- ① The lamp comes ON when FNR select button on the optional FNR remote control lever is pressed.
- ※ Refer to page 3-33.

**(10) Ride control pilot lamp (option)**



- ① **Auto ride control**  
This lamp lights ON when push in the bottom of the ride control switch (auto position).
- ※ Refer to page 3-27.



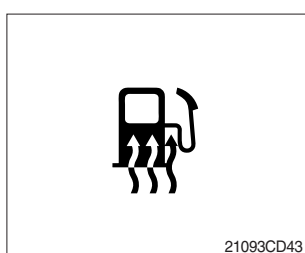
- ② **Manual ride control**  
This lamp lights ON when push in the top of the ride control switch (manual position)
- ※ Refer to page 3-27.

**(11) Fan reverse pilot lamp**



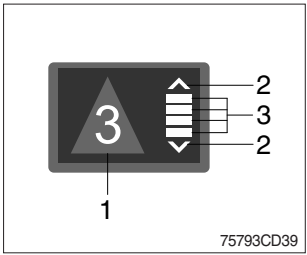
- ① This lamp lights ON when the fan control switch is pressed.
- ※ Refer to page 3-27.

**(12) Fuel warmer pilot lamp**



- ① This lamp is turned ON when the coolant temperature is below 10°C (50°F) or the hydraulic oil temperature 20°C (68°F).
- ② The automatic fuel warming is cancelled when the engine coolant temperature is above 60°C and the hydraulic oil temperature is above 45°C since the start switch was ON position.

5) LCD



(1) The LCD can be used with the gear selector.  
It indicates speed and driving direction.

No	Symbol	Meaning	Remark
1	△, ▽, □	Actual gear display	Forward, reverse, neutral
	1, 2, 3, 4, 5		Actual gear
	P		Parking brake mode active
2	⤴, ⤵	Forward, reverse	Automatic mode
3	▬, ▬, ▬	Gear range display	Automatic mode

### 3. MONITOR

- The monitor is adjustable.
  - Vertical : 14°
  - Horizontal : 30°



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#### 1) BUTTONS

##### (1) Menu button



- ① Main display to main menu, main menu to main display.
- ② AEB cancel button in AEB setting.

##### (2) Left move button



- ① Move in menu (left, up).

##### (3) Camera / ESC button



- ① Enter rear camera mode in main display.
- ② Cancel button except in main display (move previous menu).

##### (4) Right move / Buzzer stop button



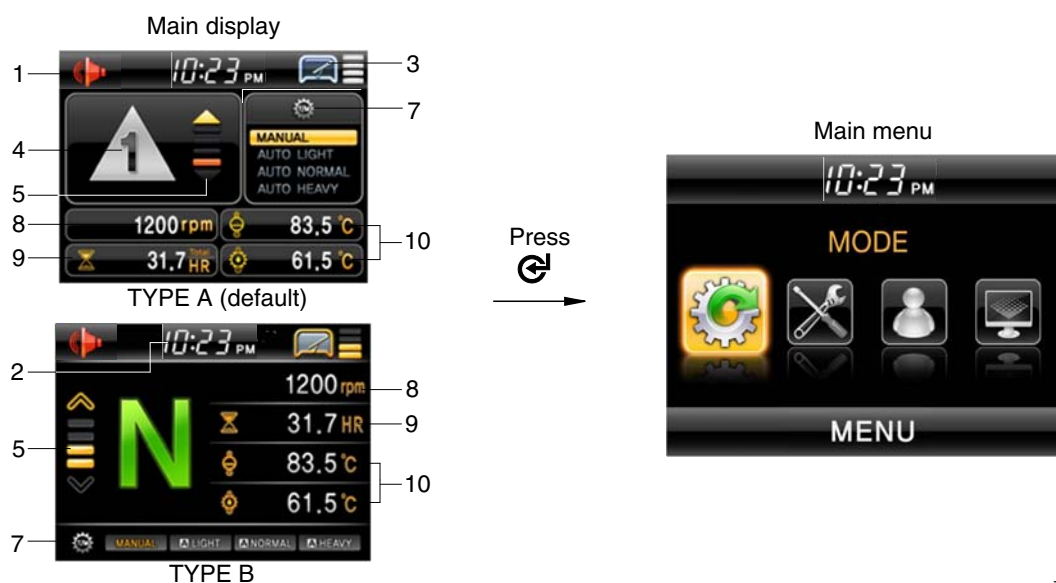
- ① Move in menu (right, down).
- ② Buzzer stop.

##### (5) Enter button



- ① Select menu (enter).
- ② AEB cancel button in AEB setting.

## 2) MAIN MENU




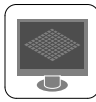


7609S3CD11

- |               |                     |                        |
|---------------|---------------------|------------------------|
| 1 Buzzer      | 4 Actual gear       | 8 Engine rpm           |
| 2 Clock       | 5 Select gear       | 9 Hour meter, odometer |
| 3 Wiper speed | 7 Transmission mode | 10 Monitoring          |

※ Display type can be changed by operator. See page 3-23.

### (1) Structure

No	Main menu	Sub menu	Description
1	 MODE 75793CD12	Speed meter Kick down Wiper speed Fan-auto mode AEB	Pulse setting Mode 1 (down/up), Mode 2 (down only) 4 steps Interval and time setting AEB setting
2	 MONITORING 75793CD13	Fault code Machine monitoring Monitoring history	Active, logged fault (Machine, TCU) Hyd temp, Battery, Coolant temp T/M oil temp Hour meter, ODO meter
3	 MANAGEMENT 75793CD14	Machine security Maintenance Machine information Service contact Service menu	ESL system setting, Change password Replacement, Change interval (oils and filters) Version, Status Service contact S/W download
4	 DISPLAY SET UP 75793CD13	Clock Display Unit Rear camera Language	Clock Brightness setting (Manual/Automatic) Type display (A or B type) Temp (°F/°C), Distance (km/mile), Pressure (bar, Mpa, kgf/m², psi) Reverse mode, Active camera, Display order 18 languages

## (2) Mode

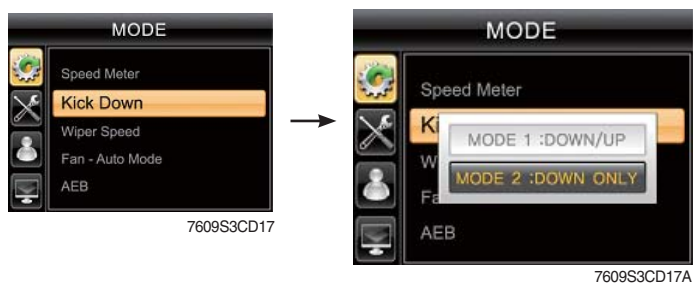
### ① Speed meter



- Press and hold for 3 seconds.
- To change the pulse value, press ◀ or ▶/00.
- To change the position, press .

※ Only for the serviceperson.

### ② Kick down



- Mode 1 (down/up) : Press kick down switch once, shift down and press button again, shift up.
- Mode 2 (down only) : Press kick down switch every time, shift to lower gear respectively.

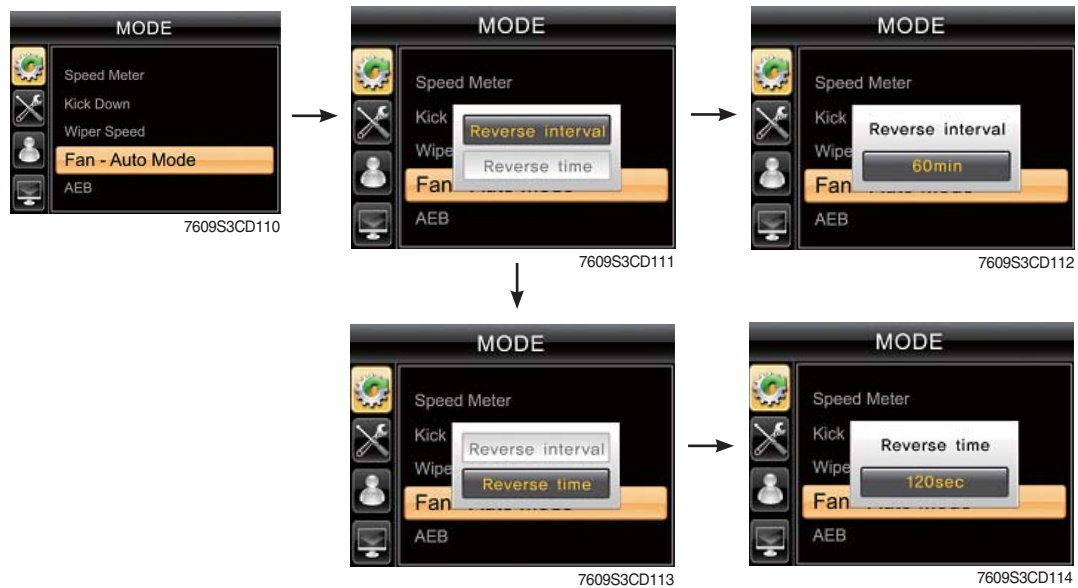
※ Refer to page 3-29.

### ③ Wiper speed



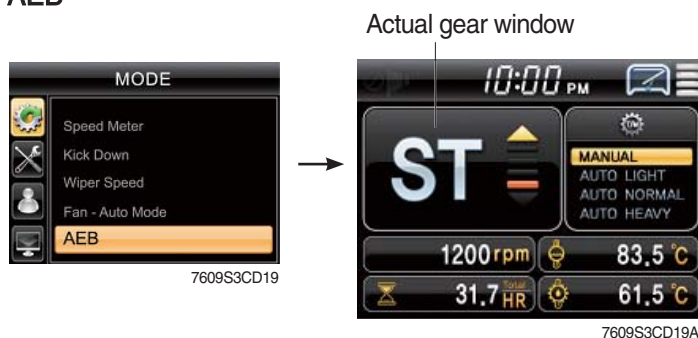
- Setting wipe speed 1 to 4.

#### ④ Fan-auto mode



- Select reverse interval or reverse time.
- Set reverse interval (30~300 min) or reverse time (30~300 sec).
- ※ **Default : Interval (60 min), time (120 sec)**
- ※ **Refer to page 3-27, fan control switch.**

## ⑤ AEB



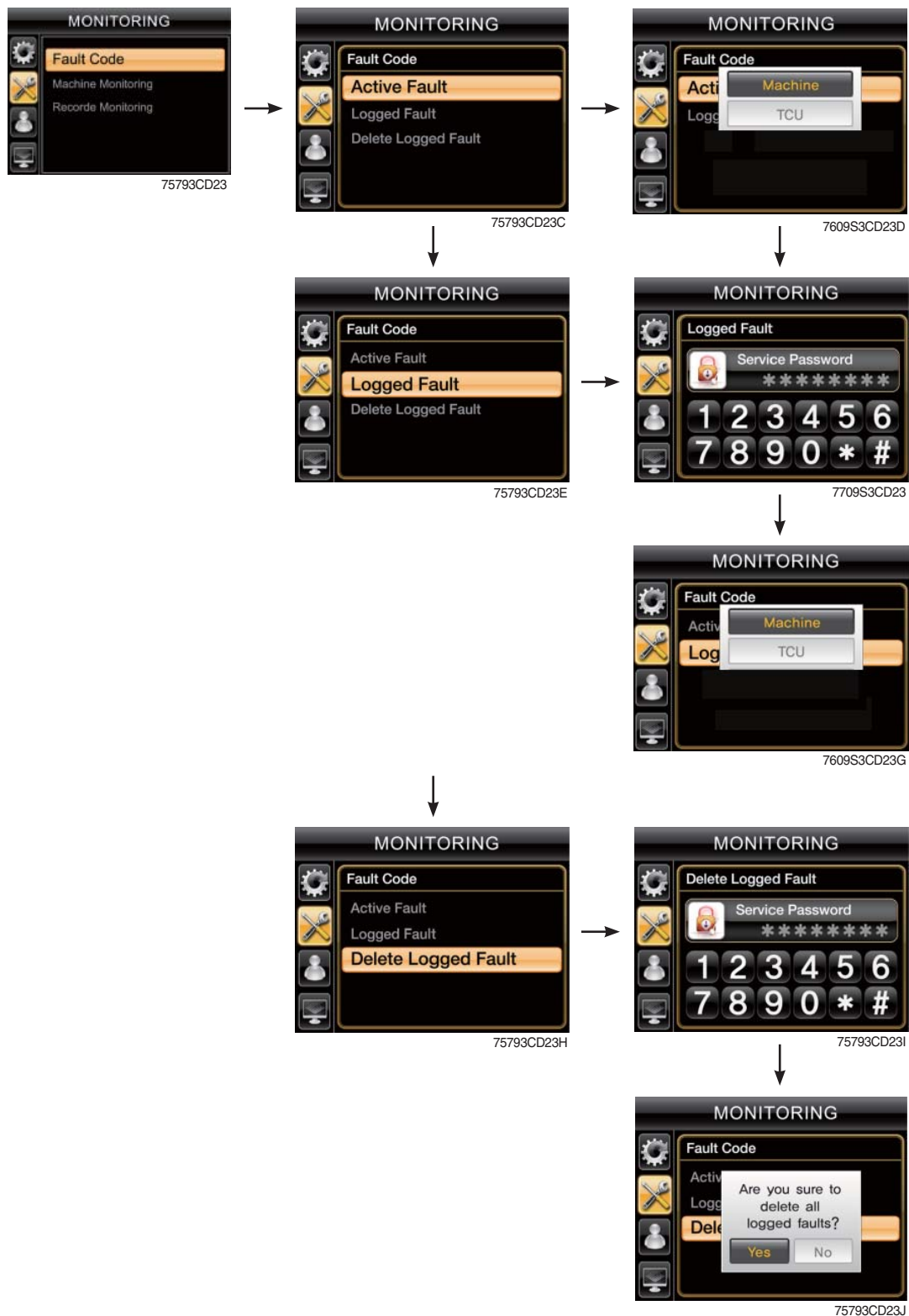
- AEB mode controls the disk clearance of the transmission, automatically.
- To start AEB, press and hold for 3 seconds.
- To cancel AEB, press **MENU**, /**ESC** or .
- If "OK" in actual gear window, press **MENU**, /**ESC** or to complete AEB setting.
- **Display during AEB mode**

Symbol	Meaning
ST	Start AEB
K1~K4, KV, KR	Calibrating clutch K1~K4, KV or KR respectively
OK*	Calibration for all clutches finished
Spanner and Kx*	Kx couldn't be calibrated, AEB finished
△E	Engine speed too low - Raise engine speed
▽E	Engine speed too high - Lower engine speed
△T	Transmission oil temperature too low - Heat up transmission
▽T	Transmission oil temperature too high - Cool down transmission
FO*	Output speed not zero
FN*	Shift lever not in neutral position
FP*	Parking brake not applied

\* : Transmission stays in neutral, you have to restart the TCU (ignition off/on).

### (3) Monitoring

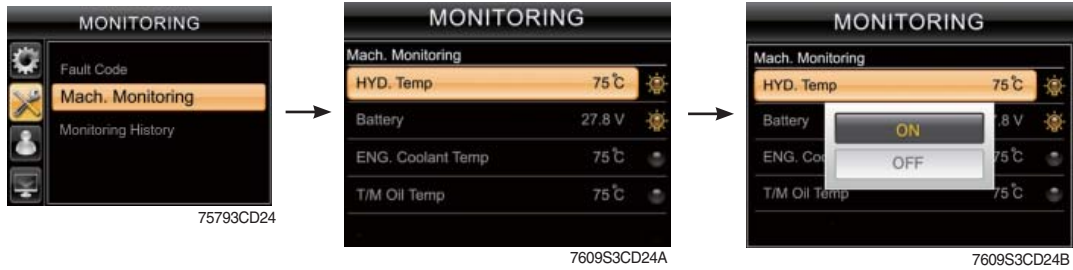
#### ① Fault code



· Monitor the fault code of the Machine /TCU .

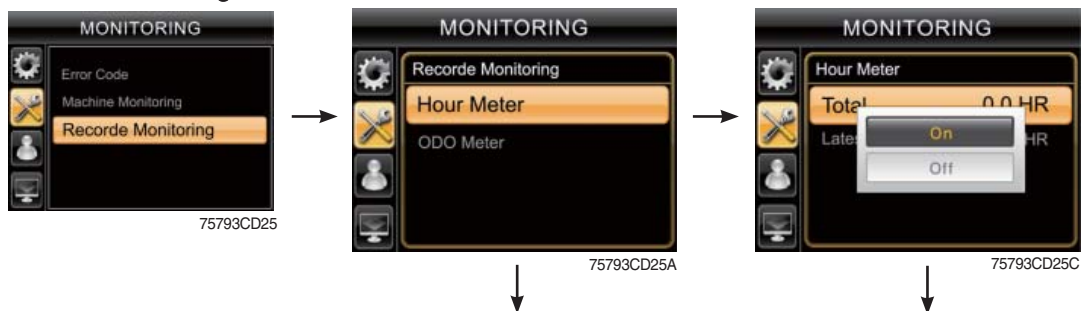
※ Not define will be indicated in case of that there's no fault.

## ② Machine monitoring



- Monitor the status of the machine.
- To check the item in main display, choose it and press .
- The right icon shows ON/OFF status.

## ③ Record monitoring



### · Hour meter

- **Total** : total hour meter

To show the item in the main display, select "ON" and press (this item could not reset).

- **Latest** : the latest hour meter after reset.

To show the item in the main display, select "ON" and press .

To reset the latest hour meter, select "initializing" and press .



### · ODO meter

- **Total** : total ODO meter

To show the item in the main display, select "ON" and press (this item could not reset).

- **Latest** : the latest ODO meter after reset.

To show the item in the main display, select "ON" and press .

To reset the latest odometer, select "initializing" and press .



#### (4) Management

##### ① Machine security



##### · ESL system setting

- ESL : Engine Starting Limit
- ESL mode is designed to be a theft deterrent or will prevent the unauthorized operation of the machine.
- If the ESL mode was selected Enable, the password will be required when the start switch is turned ON.
- Disable : Not used ESL function
- Enable : The password is required whenever the operator start engine.

Interval mode : The password is required when the operator start engine first. But the operator can restart the engine within the interval time without inputting the password.  
The interval time can be set maximum 2 days.

※ Default password : 00000 \*

##### · Interval setting

- If set interval setting to 5 minutes, ESL system is activated after 5 minutes.
- Therefore, the password does not need to restart engine within 5 minutes.



- **Change password**
  - Input 5 to 10 digits and press \*.



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75793CD26H

Enter the current password.



75793CD26L

Enter the new password.



75793CD26N

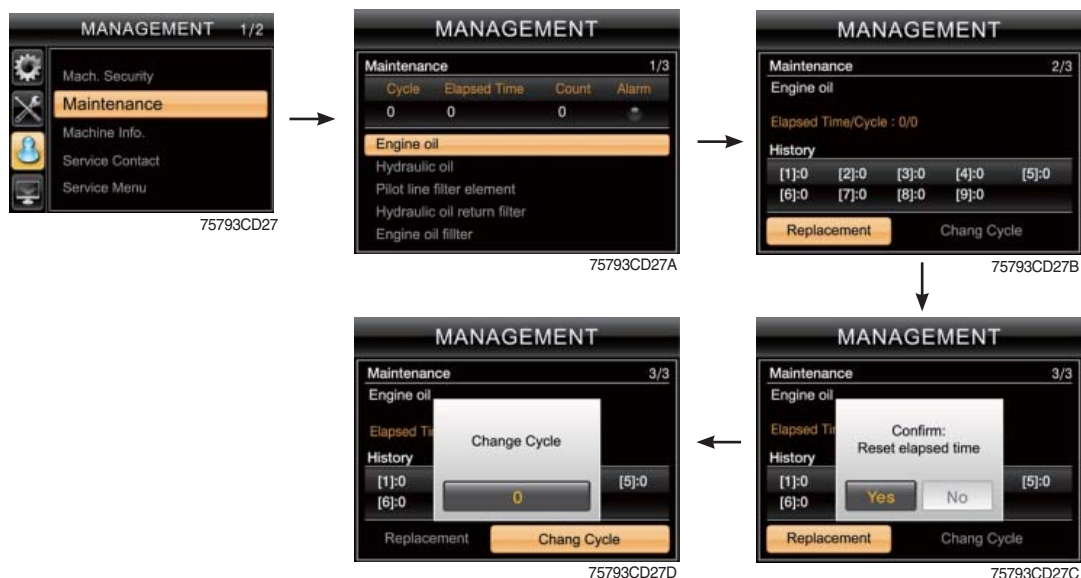
The new password is stored in the MCU.



75793CD26M

Enter the new password again.

## ② Maintenance



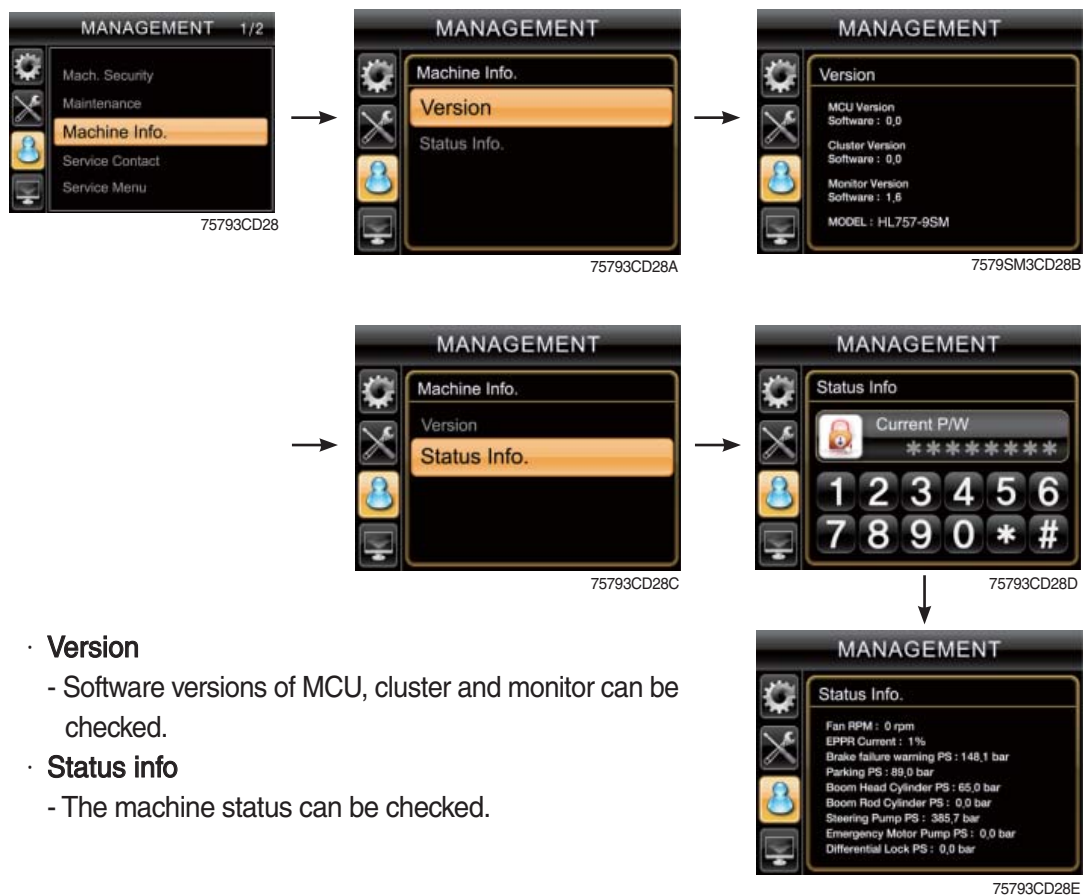
- Alarm (⚠) : Warning
- Replacement : The elapsed time will be reset to zero.
- Change cycle : The change or replace cycle can be changed in the unit of 50 hours.
- To change cycle, press ◀ or ▶/⏏.
- Change or replace interval**

No	Item	Interval
1	Engine oil	250
2	Hydraulic oil	★ <sup>1</sup> 2000 ★ <sup>2</sup> 5000
3	Pilot line filter element	250
4	Hydraulic oil return filter	250
5	Engine oil filter	250
6	Fuel filter element	500
7	Fuel pre-filter	500
8	Hydraulic tank air breather	250
9	Radiator coolant	2000
10	Transmission oil and filter	1000
11	Axle oil (front and rear)	1500

★<sup>1</sup> : Conventional hydraulic oil

★<sup>2</sup> : Hyundai genuine long life hydraulic oil

### ③ Machine information



- **Version**
  - Software versions of MCU, cluster and monitor can be checked.
- **Status info**
  - The machine status can be checked.

### ④ Service contact



- The phone number of the service man can be checked and changed.

### ⑤ Service menu



- The software of monitor can be downloaded.

## (5) DISPLAY SET UP

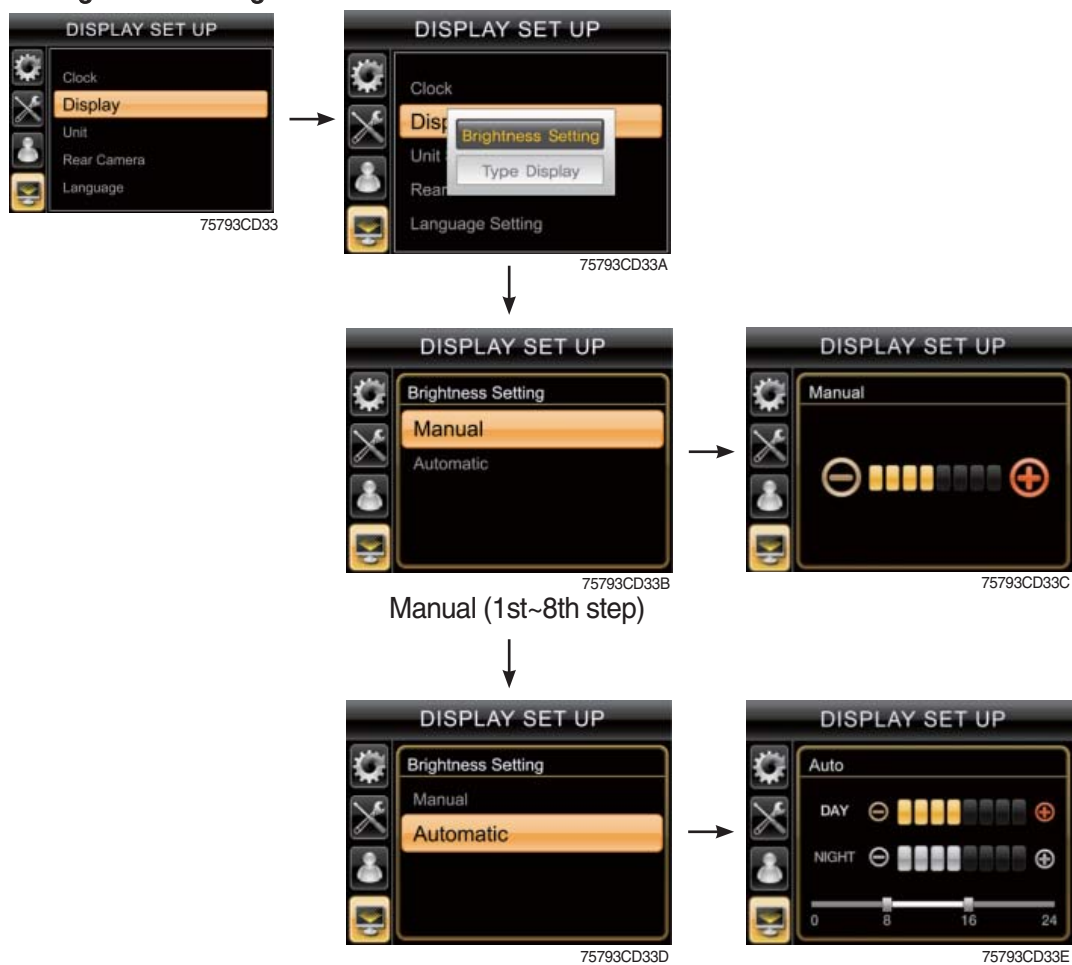
### ① Clock



- To set time, press ◀ or ▶/⌂.
- To move position, press ⌂.

### ② Display

#### · Brightness setting



Auto (day/night)

- ※ If "Automatic" is chosen, brightness for day and night can be differently set up. Also by using the bar in lower side, users can define which time interval belongs to day and night. (in bar figure, gray area represents night time while white shows day time)

· Type display



A type



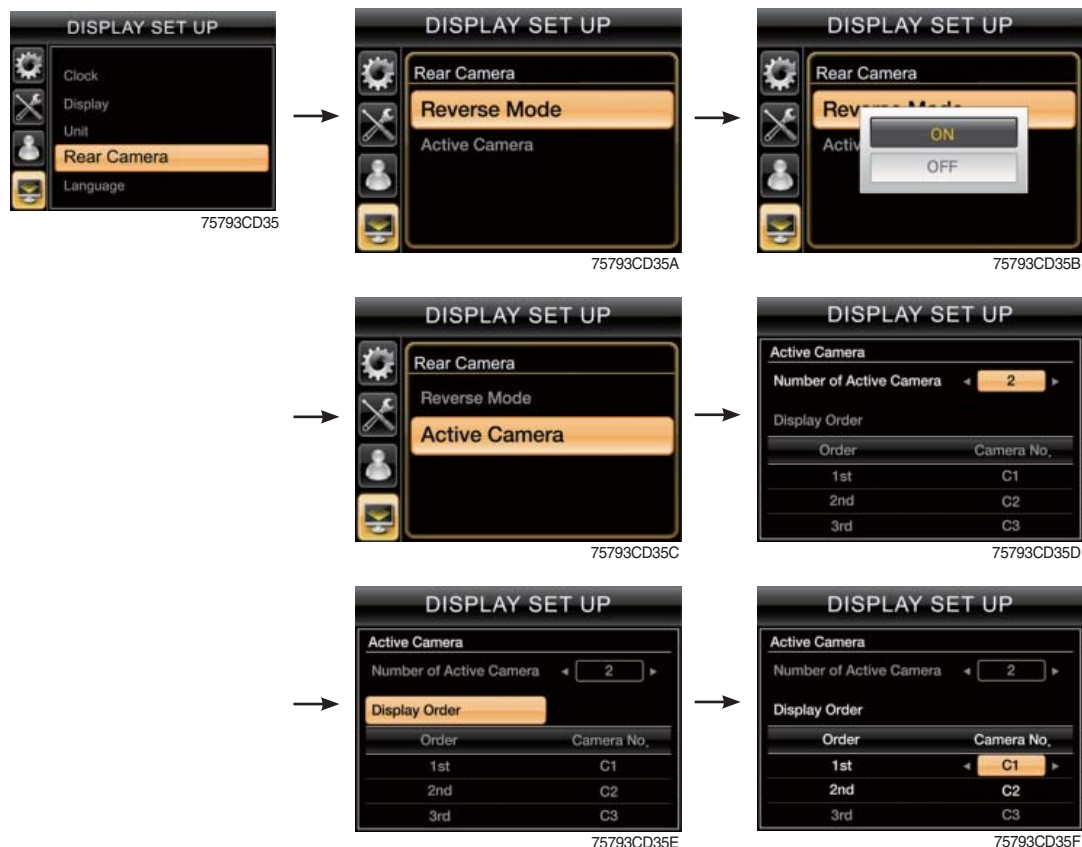
B type

③ Unit



- Temperature : °C ↔ °F
- Distance : km ↔ mile
- Pressure : bar ↔ Mpa ↔ kgf/m<sup>2</sup> ↔ psi

#### ④ Rear camera



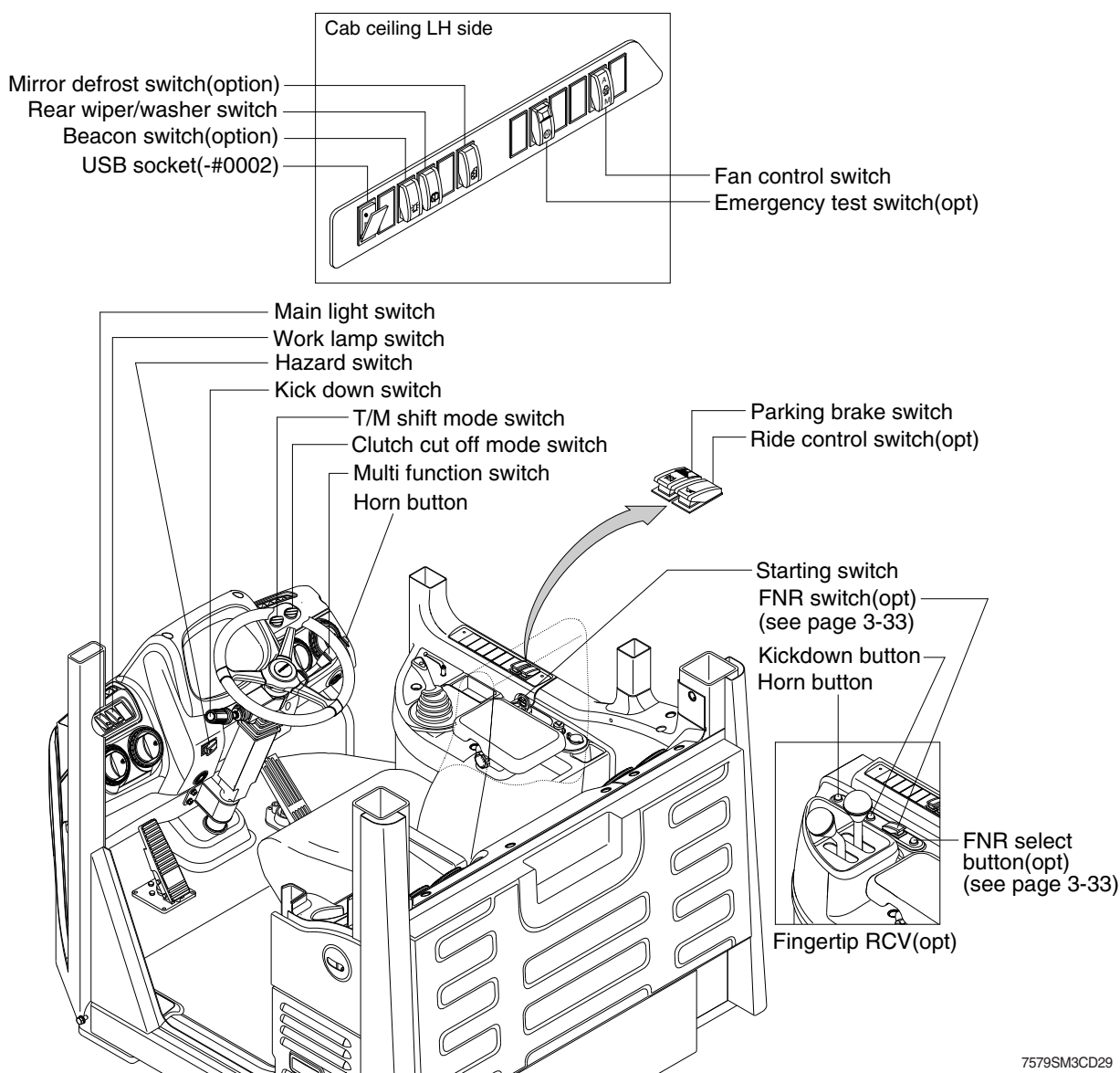
- **Reverse mode**
  - If transmission engages the reverse gear (R1~R3), the camera mode is displayed automatically in main display.
- **Active camera**
  - Three cameras can be installed on the machine.
  - The display order can be set by this menu.
  - If the camera was not equipped, this menu is not useful.
  - In main display, if the **ESC** button is pushed, the first ordered display camera will be viewed.

#### ⑤ Language

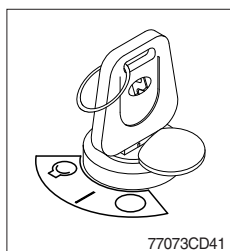


- User can select preferable language and all display are changed the selected language.

## 4. SWITCHES



### 1) STARTING SWITCH



(1) There are three positions, OFF, ON and START.

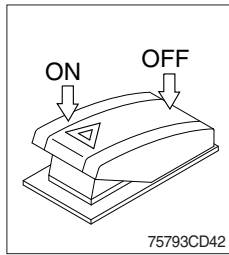
- ○ (OFF) : None of electrical circuits activate.
- | (ON) : All the systems of machine operate.
- ⦿ (START) : Use when starting the engine.

Release key immediately after starting.

※ If you turn ON the starting switch in cold weather, the fuel warmer is automatically operated to heat the fuel by sensing the coolant temperature. Start the engine in 1~2 minutes after turning ON the starting switch. More time may take according to ambient temperature.

※ Key must be in the ON position with engine running maintain electrical and hydraulic function and prevent serious machine damage.

## 2) HAZARD SWITCH

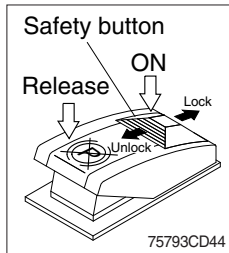


(1) Use for parking, or loading the machine.

(2) Both turn signal lights will flash simultaneously.

※ **If the switch is left ON for a long time, the battery may be discharged.**

## 3) PARKING BRAKE SWITCH



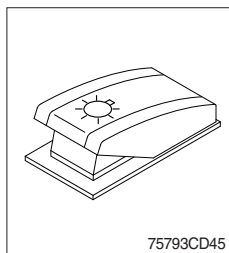
(1) When the switch is pressed to ON position, the parking brake will start to operate and the cluster warning lamp will come ON.

(2) Press the release position in order to disengage the parking brake.

※ **When operating the gear selector lever, be sure to release the parking brake. If the machine is operated with the parking brake engaged, the brake will overheat and may cause the brake system to go out of order.**

※ **This switch can be set to ON or Release position only when the safety button is pulled to the unlock position.**

## 4) MAIN LIGHT SWITCH

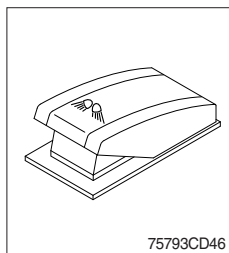


(1) This switch is used to operate the clearance lamp and head light by two steps.

• **First step** : Clearance lamp and cluster illumination lamp come ON. Also, all indicator lamp of switches come ON.

• **Second step** : Head light comes ON.

## 5) WORK LAMP SWITCH

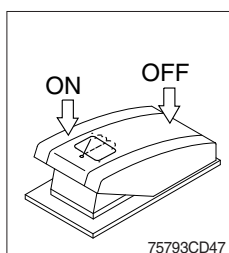


(1) This switch is used to operate the front and rear work lamps by two steps.

• **First step** : Front work lamp located on the cab comes ON.

• **Second step** : Rear work lamp located on the cowl comes ON.

## 6) REAR WIPER AND WASHER SWITCH

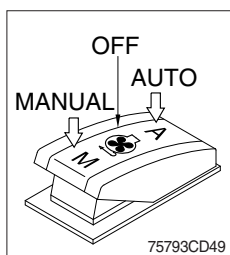


(1) The switch is used to operate the rear wiper and washer by two steps.

• **First step** : The rear wiper operates.

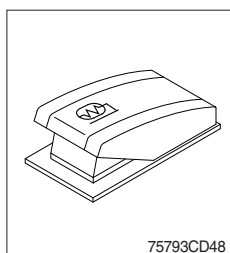
• **Second step** : The washer liquid is sprayed and the rear wiper is operated only while pressing. If release the switch, return to the first step position.

## 7) FAN CONTROL SWITCH



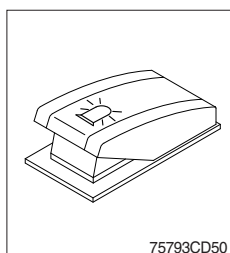
- (1) This switch is used to control the cooling fan.
- (2) This switch has three positions.
  - **AUTO** : The fan automatically works in reverse according to set up interval and time.  
※ Refer to page 3-14.
  - **OFF** : Only forward rotation is possible.
  - **MANUAL** : The fan rotates reverse only while pressing this position.  
If release the switch, return to the OFF position.
- (3) On pressing the switch, the indicator lamp is turned ON.

## 8) MIRROR DEFROST SWITCH (option)



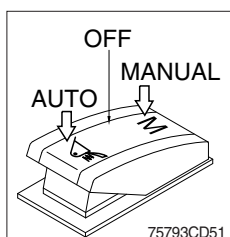
- (1) If the mirror defrost switch is pressed in condition of key ON, it operates for 15 minutes. After 15 minutes, the defrost function stops automatically.
- (2) One more pressing the switch in operation also stops defrost function.
- (3) On pressing the switch, the indicator lamp is turned ON.

## 9) BEACON SWITCH (option)



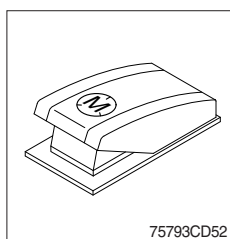
- (1) This switch turns ON the rotary light on the cab.

## 10) RIDE CONTROL SWITCH (option)



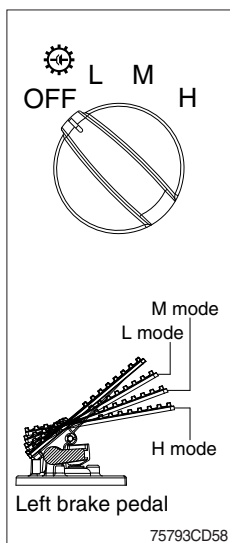
- (1) **AUTO**  
Press in the bottom of the ride control switch in order to turn on the automatic ride control. The automatic ride control automatically turns on when the travel speed exceeds a preset speed of approximately 7 km/h. The automatic ride control automatically shuts off during low speed travel (below 7 km/h).
- (2) **MANUAL**  
Press in the top of the ride control switch in order to turn on the system for ride control regardless speed. The ride control will smooth the ride of the machine during travel.
- (3) **OFF**  
Press the ride control switch to the middle position in order to turn off the system for the ride control.

## 11) EMERGENCY TEST SWITCH (option)



- (1) The emergency steering system can be manually tested. Push the switch in order to determine if the emergency steering and the emergency steering lamp are functional.
- (2) When the switch is pressed, the emergency steering pump motor will run. The emergency steering lamp will light. If the emergency steering lamp does not light, do not operate the machine.

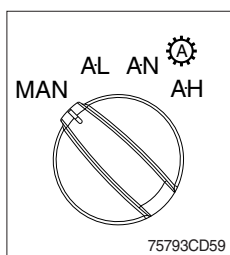
## 12) CLUTCH CUT OFF MODE SWITCH



- (1) Four modes are available for operator's preference and job condition.
  - OFF : The clutch cut off function is disable.
  - L (Low) : The clutch is disengaged early for short-distance and rapid loading.
  - M (Medium) : The clutch is disengaged normally for general digging and loading operation.
  - H (High) : The clutch is disengaged lately for slope ground.
- (2) The clutch cut off functions of the left brake pedal depend on the position of the left brake pedal and the position of the clutch cut off mode switch.

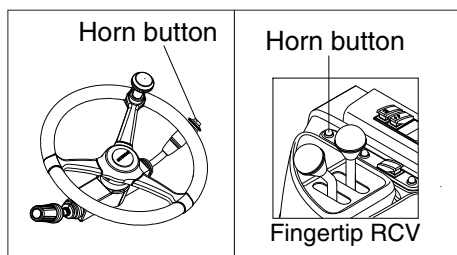
Positions for clutch cut off function			
Clutch cut off mode switch	L	M	H
Left brake pedal	L, M, H	M, H	H

## 13) TRANSMISSION SHIFT MODE SWITCH



- (1) Four modes are available for operator's preference and job condition.
  - MAN (Manual) : Machine is operated by selected gear on lever.
  - AL (Auto Light) : Automatic shifting point is fast for long-distance transportation and fuel efficiency.
  - AN (Auto Normal) : Automatic shifting point is normal without automatic kick-down to 1st gear for general digging and loading operation.
  - AH (Auto Heavy) : Automatic shifting point is normal with automatic kick-down to 1st gear for more powerful operation.

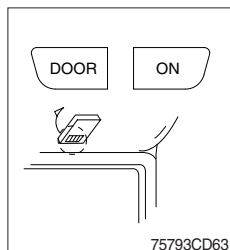
#### 14) HORN BUTTON



74093CD16

- (1) If you press the button on the top of the multi-function switch, the horn will sound.

#### 15) CAB LAMP SWITCH



75793CD63

- (1) This switch turns ON the cab room lamp.

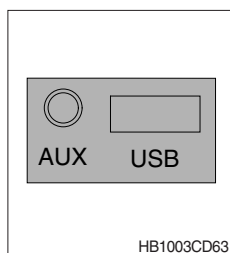
##### ① DOOR

The lamp comes ON when the door is opened.  
When the door is closed the lamp is OFF.

##### ② ON

This switch is used to turn the lamp ON or OFF.

#### 16) USB SOCKET (machine serial No. : -#0002)

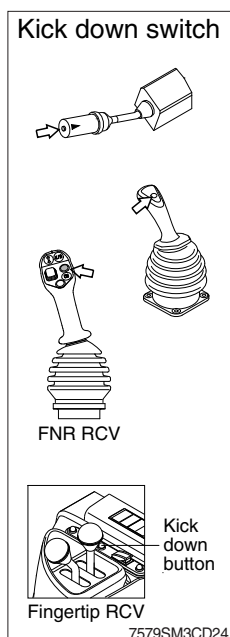


HB1003CD63

- (1) MP3 files are played when a USB device is connected to the USB port.

- (2) In addition, the AUX port enables headphone and other devices.

#### 17) KICK DOWN SWITCH



7579SM3CD24

##### (1) Manual mode

It is effective 2nd speed to 1st speed only and recover to 2nd speed quickly when push the switch one more time.

##### (2) Automatic mode

##### ① Mode 1 (down/up)

It shifts down quickly from current gear to one step lower speed by pushing the switch and recover to current speed quickly when push the switch one more time.

##### ② Mode 2 (down)

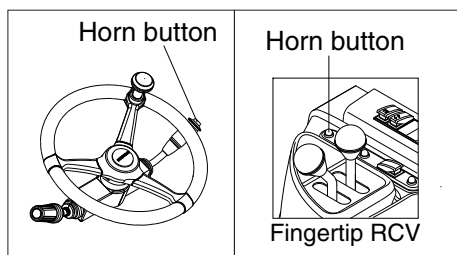
It shifts down from current gear to one step lower speed when push the switch every time.

The kick down function is released in only 1st speed.

※ Refer to page 3-13 for the kick down setting.

※ The normal autoshift function continues after the kick down switch is released.

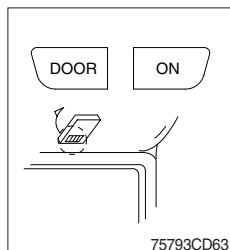
#### 14) HORN BUTTON



74093CD16

- (1) If you press the button on the top of the multi-function switch, the horn will sound.

#### 15) CAB LAMP SWITCH



75793CD63

- (1) This switch turns ON the cab room lamp.

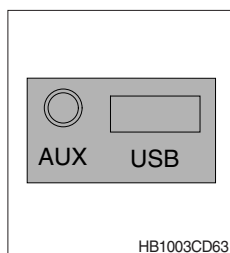
##### ① DOOR

The lamp comes ON when the door is opened.  
When the door is closed the lamp is OFF.

##### ② ON

This switch is used to turn the lamp ON or OFF.

#### 16) USB SOCKET (machine serial No. : -#0002)

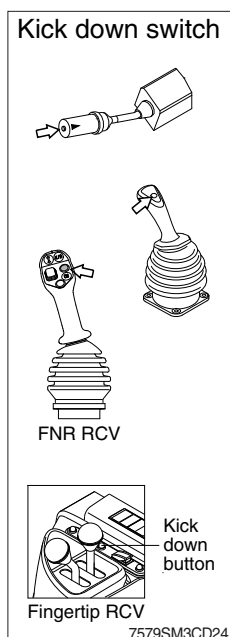


HB1003CD63

- (1) MP3 files are played when a USB device is connected to the USB port.

- (2) In addition, the AUX port enables headphone and other devices.

#### 17) KICK DOWN SWITCH



7579SM3CD24

##### (1) Manual mode

It is effective 2nd speed to 1st speed only and recover to 2nd speed quickly when push the switch one more time.

##### (2) Automatic mode

##### ① Mode 1 (down/up)

It shifts down quickly from current gear to one step lower speed by pushing the switch and recover to current speed quickly when push the switch one more time.

##### ② Mode 2 (down)

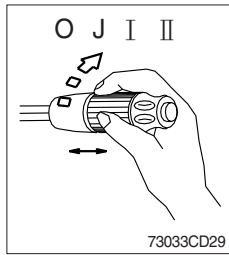
It shifts down from current gear to one step lower speed when push the switch every time.

The kick down function is released in only 1st speed.

※ Refer to page 3-13 for the kick down setting.

※ The normal autoshift function continues after the kick down switch is released.

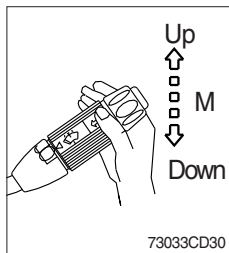
## 18) MULTI FUNCTION SWITCH



### (1) Front wiper and washer switch

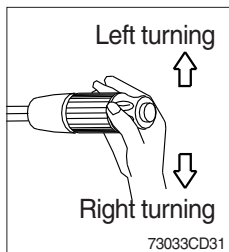
- ① When the switch is in J position, the wiper moves intermittently.
- ② When placed in I or II position, the wiper moves continuously.
- ③ If you push the grip of the lever, washer liquid will be sprayed and the wiper will be activated 2-3 times.

※ Check the quantity of washer liquid in the tank. If the level of the washer liquid is LOW, add the washer liquid (in cold, winter days) or water. The capacity of the tank is 1 liter.



### (2) Dimmer switch

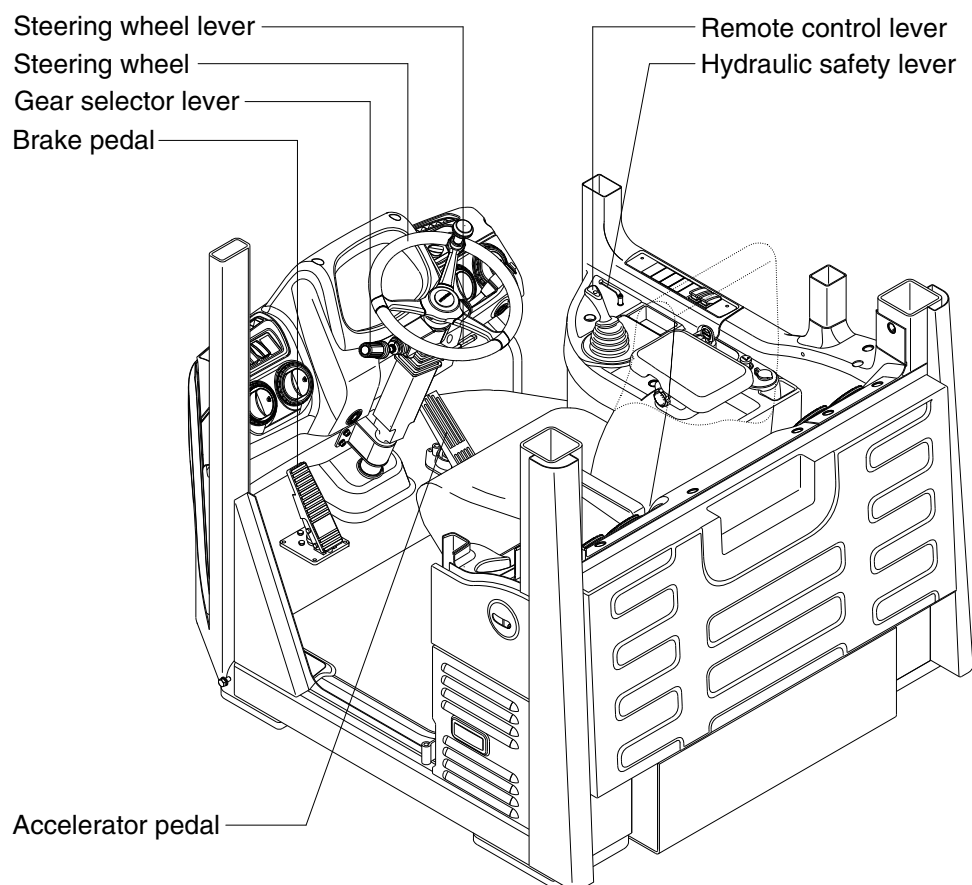
- ① This switch is used to turn the head lights direction.
- ② Switch positions
  - Up : To flash for passing
  - Middle : Head lights low beam ON
  - Down : Head lights high beam ON
- ③ If you release the switch when it's in up position, the switch will return to middle.



### (3) Turning switch

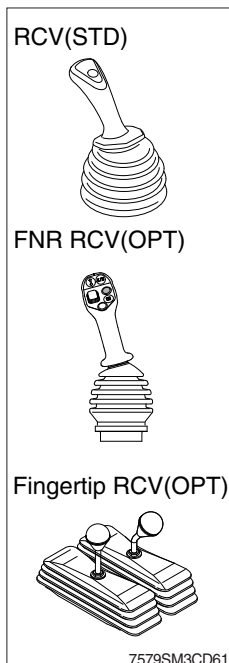
- ① This switch is used to warn or signal the turning direction of the machine to other vehicles or equipment.
- ② Push the lever up for turning left, pull the lever down for turning right.

## 5. CONTROL DEVICE



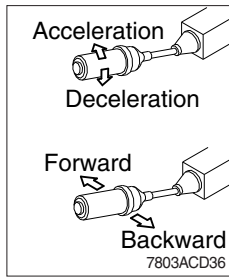
7409S3CD28

### 1) REMOTE CONTROL LEVER



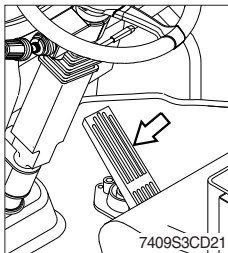
- (1) These joystick are used to control the boom and the bucket.
- (2) Refer to operation of working device in chapter 4 at page 4-9.

## 2) GEAR SELECTOR LEVER



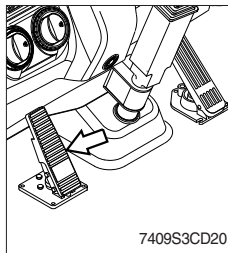
- (1) This lever is used for gear selection, forward 4 stages and reverse 3 stages.
- (2) If you push the gear selector lever, the machine moves forward, but if pull the gear selector lever, the machine moves backward.
- (3) If you turn the gear selector lever forward, the machine increases the speed, but if you turn the gear selector lever backward, the machine reduces the speed.

## 3) ACCELERATOR PEDAL



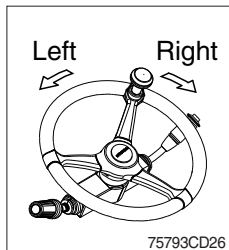
- (1) This pedal controls the engine speed. The engine speed will increase in proportion to the degree of force applied to this pedal.
- (2) Unless this pedal is pressed, the machine will run at low idling.

## 4) BRAKE PEDAL (service brake + clutch cut off function)



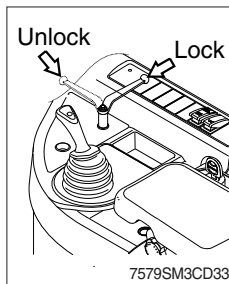
- (1) If the pedal is pushed down, this will generate braking force and bring the machine to a stop.
  - (2) If the power train operation is to be cut off, set the clutch cut off mode switch to ON (L, M, H) and press the pedal.
- ▲ Even if the brake is applied while clutch cut off mode switch is OFF, power train will not cut off.**
- ※ Do not operate the machine with foot the brake pedal unnecessarily, or bring premature wear of brake disc.**
- (3) Clutch cut off function : Refer to page 3-28.

## 5) STEERING WHEEL



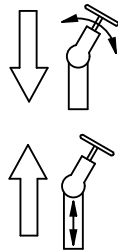
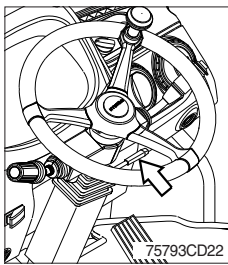
- (1) Two multi-motion cylinders in the center of the machine will operate the steering function.
- (2) If the steering wheel is turned to left, the machine will move to the left and turn it to the right, the machine will move to the right.

## 6) HYDRAULIC SAFETY LEVER



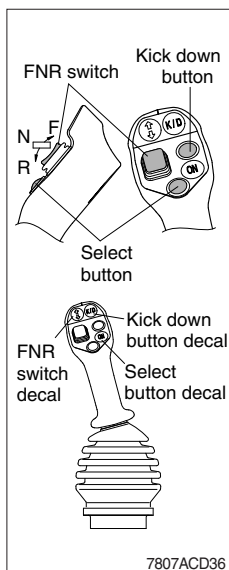
- (1) When the lever is turned to Lock position, the hydraulic pilot line will be cut off, so the work equipment will not operate.

## 7) STEERING WHEEL LEVER



- (1) By pulling down the lever, the wheel is adjustable to tilt.  
· Tilting : 40°
- (2) By pulling up the lever, the wheel is adjustable to telescope.  
· Telescoping : 80 mm

## 8) FNR REMOTE CONTROL LEVER (option)



- (1) This switch is used for forward and backward drive.  
※ **Gear range can be selected by gear selector lever.**

### (2) Select button

- ① If the select button is pressed, the indication lamp on the cluster will be ON and this FNR switch will start to operate.
- ※ **When the engine is running, the machine is on standstill(0 speed), parking brake is released, gear selector lever is in the neutral position, you can use this function after pressing the select button.**

### (3) FNR switch

- F : Forward drive
- N : Neutral
- R : Reverse drive

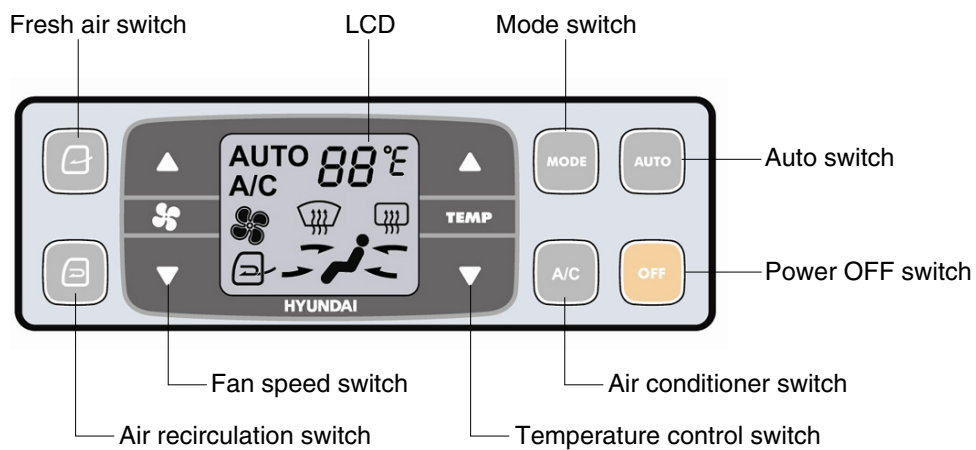
- ① If the upper side of this switch is pushed, the machine moves forward.
- ② If the down side of this switch is pushed, the machine moves backward.
- ③ This function is automatically released when the engine is stopped, parking brake is ON or gear selector lever is out of neutral.

- (4) Kick down button : Refer to page 3-29.

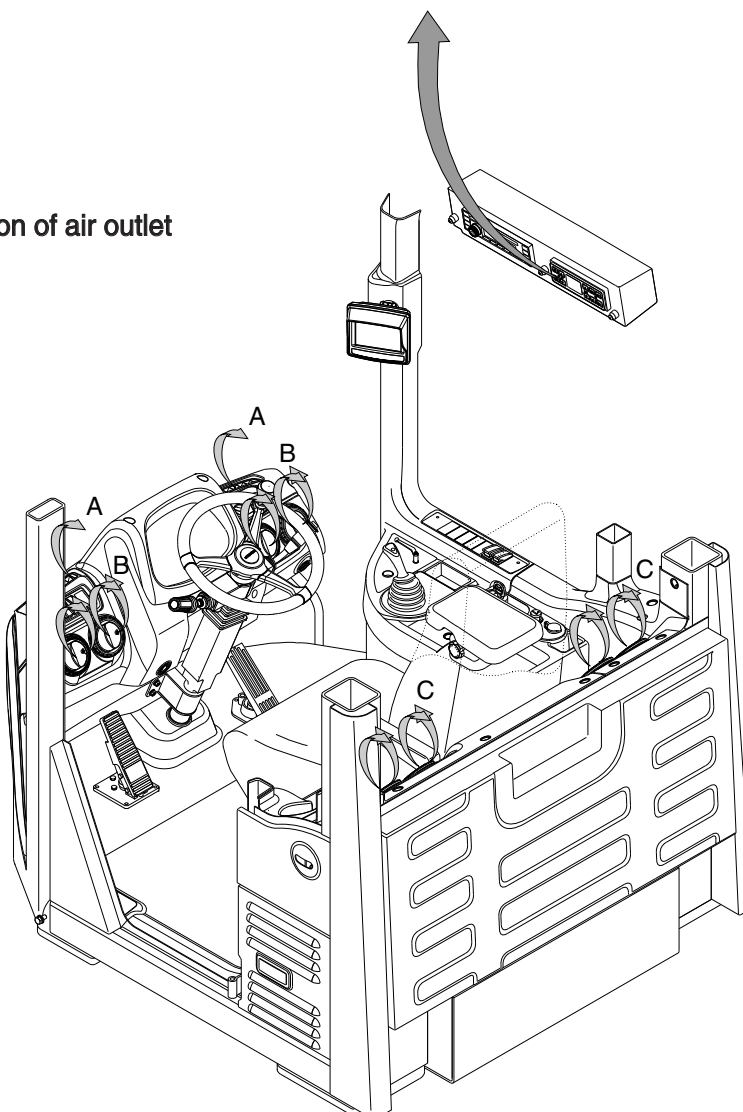
## 6. AIR CONDITIONER AND HEATER

### ■ FULL AUTO AIR CONDITIONER AND HEATER

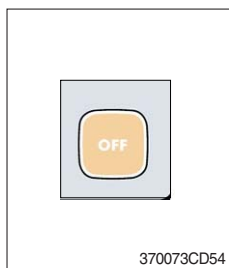
Full auto air conditioner and heater system automatically keeps the optimum condition in accordance with operator's temperature configuration sensing ambient and cabin inside temperature.



#### • Location of air outlet



## 1) POWER OFF SWITCH

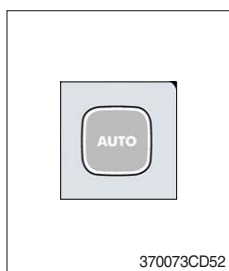


- (1) This switch makes the system and the LCD OFF.  
Just before the power OFF, set values are stored.

### (2) Default setting values

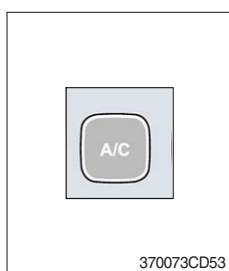
Function	Air conditioner	In/outlet	LCD	Temperature	Mode
Value	OFF	Inlet	OFF	Previous sw OFF	Previous sw OFF

## 2) AUTO SWITCH



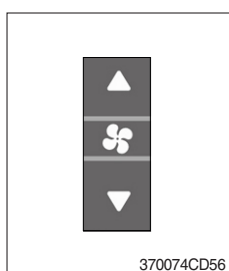
- (1) Turn the starting switch to ON position, LCD lights ON.  
Auto air conditioner and heater system automatically keeps the optimum condition in accordance with operator's temperature configuration sensing ambient and cabin inside temperature.
- (2) This switch can restart system after system OFF.

## 3) AIR CONDITIONER SWITCH (compressor switch)



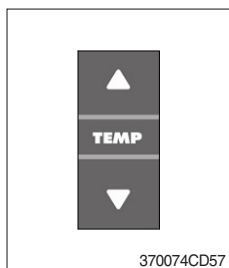
- (1) This switch turns the compressor and the LCD ON.
- (2) In accordance with the temperature sensed by duct (evaporator) sensor, compressor turns ON or OFF automatically.
- ※ **Air conditioner operates to remove vapor and drains water through a drain hose. Water can be sprayed into the cab in case that the drain cock at the ending point of drain hose has a problem.**  
**In this case, exchange the drain cock.**

## 4) FAN SPEED SWITCH



- (1) Fan speed is controlled automatically by set temperature.
- (2) This switch controls fan speed manually.
- There are 8 up/down steps to control fan speed.
  - The maximum step or the minimum step beeps 5 times.
- (3) This switch makes the system ON.

## 5) TEMPERATURE CONTROL SWITCH



(1) Setting temperature indication

- ① Type A : 17~32°C, scale : 1°C
- ② Type B : Lo, 18~31°C, Hi, scale : 1°C

(2) Max cool and max warm beeps 5 times.

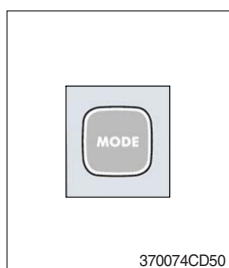
(3) The max cool or the max warm position operates as following table.

Temperature	Compressor	Fan speed	In/Outlet	Mode
Max cool	ON	Max (Hi)	Recirculation	Vent
Max warm	OFF	Max (Hi)	Fresh	Foot

(4) Temperature unit can be changed between celsius (°C) and fahrenheit (°F)

- ① Default status (°C)
- ② Push Up/Down temperature control switch simultaneously more than 5 second displayed temperature unit change (°C → °F)

## 6) MODE SWITCH



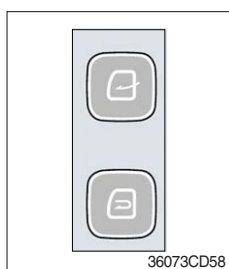
(1) Operating this switch, it beeps and displays symbol of each mode in order. (Human → Human/Rear → Human/Def → Def/Rear)

Mode switch		Human	Human/Rear	Human/Def	Def/Rear
Outlet	A			●	●
	B	●	●	●	
	C		●		●

(2) When defroster switch operating, FRESH AIR/AIR RECIRCULATION switch turns to FRESH AIR mode and air conditioner switch turns ON.

(3) When this switch ON, the system operates with previous configuration.

## 7) FRESH AIR/AIR RECIRCULATION SWITCH



(1) It is possible to change the air-inlet method.

① **Fresh air** ( )

Inhaling air from the outside.

※ **Check out the fresh air filter periodically to keep a good efficiency.**

② **Air recirculation** ( )

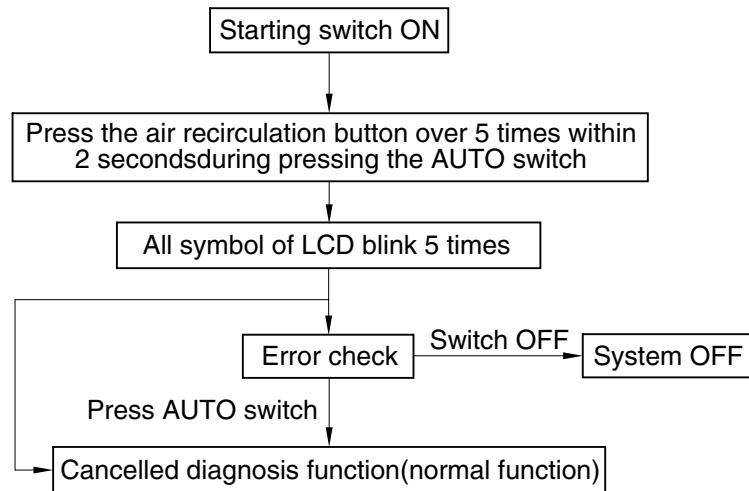
It recycles the heated or cooled air to increase the energy efficiency.

※ **Change air occasionally when using recirculation for a long time.**

※ **Check out the recirculation filter periodically to keep a good efficiency.**

## 8) SELF DIAGNOSIS FUNCTION

### (1) Procedure



3607A3CD69

### (2) Error check

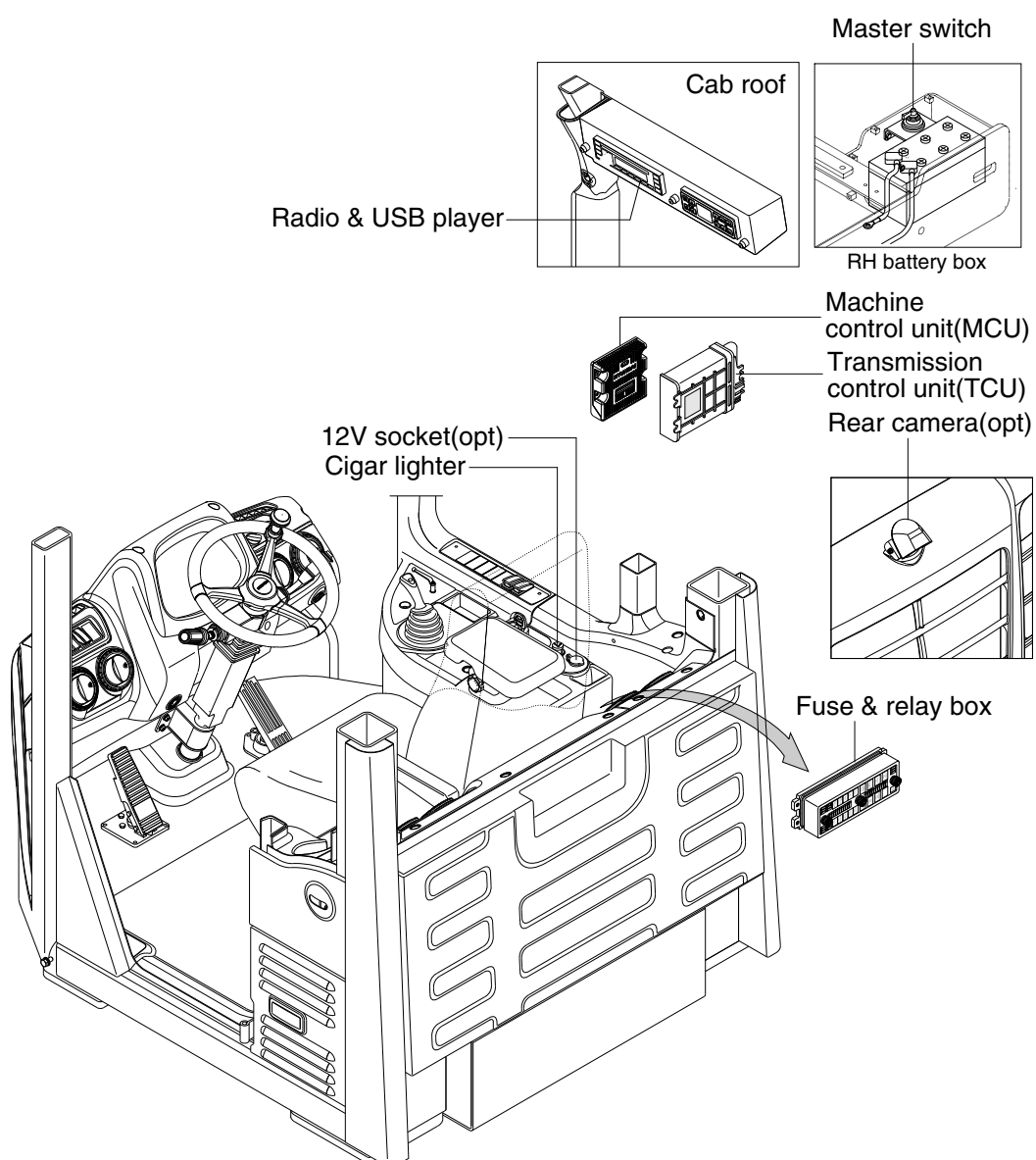
- The corresponding error code flickers on the setup temperature display panel, the other symbol will turn OFF.
- Error code flickers every 0.5 second.
- If error code is more than two, each code flickers 2 times in sequence.
- Error code

Error code	Description	Error code	Description
11	Cabin inside sensor	16	Mode actuator 1
12	Ambient sensor	17	Mode actuator 2
14	Duct (evaporator) sensor	18	Intake actuator
15	Temp actuator	-	-

### (3) Fail safe function

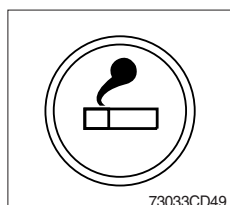
Error description	Fail safe function
Cabin inside sensor (11)	25°C alternate value control
Ambient sensor (12)	20°C alternate value control
Duct (evaporator) sensor (14)	1°C alternate value control
Temp actuator (15)	If opening amount is 0 %, the alternate value is 0 %
	If not, the alternate value is 100 %
Mode actuator 1, 2 (16, 17)	The alternate value is Vent

## 7. OTHERS



7579SM3CD38

### 1) CIGAR LIGHTER



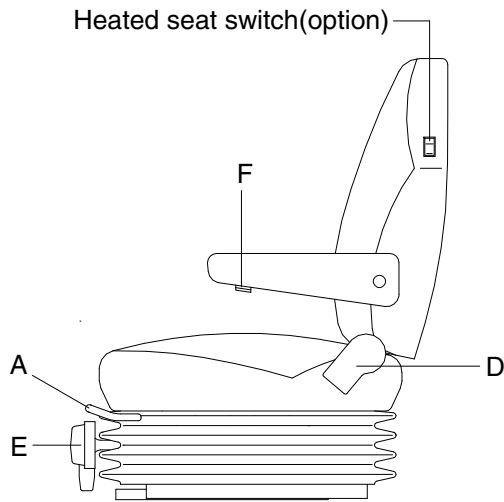
- (1) This can be used when the engine starting switch is ON.
- (2) The lighter can be used when it springs out in a short while after being pressed down.

#### ※ Service socket

Use cigar lighter socket when you need emergency power.  
Do not use the lighter exceeding 24 V, 100 W.

## 2) SEAT

The seat is adjustable to fit the contours of the operator's body. It will reduce operator fatigue due to long work hours and enhance work efficiency.



75793CD102

### (1) Forward/Backward adjustment

- ① Pull lever A to adjust seat forward or backward.
- ② The seat can be moved forward and backward over 210 mm (8 in) in 21 steps.

### (2) Reclining adjustment

Pull lever D to adjust seat back rest.

### (3) Arm rest adjustment

This can be adjusted by turning the handle F to right and left.

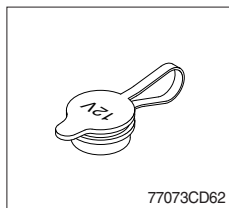
### (4) Weight adjustment (E)

Adjusting handle to the operator's weight.

### (5) Heated seat switch (option)

Press this switch in order to heat the seat.

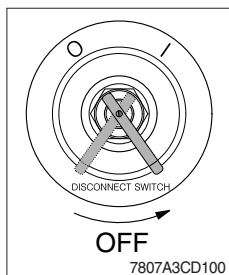
## 3) 12V SOCKET (option)



77073CD62

- (1) Utilize the power of 12 V as your need and do not exceed power of 12 V, 30 W.

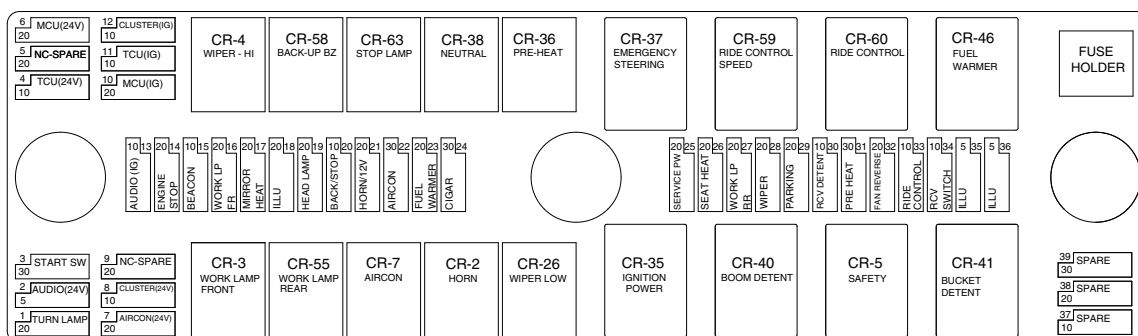
## 4) MASTER SWITCH



7807A3CD100

- (1) This switch is used to shut off the entire electrical system.
  - (2) I : The battery remains connected to the electrical system.  
O : The battery is disconnected to the electrical system.
- ※ **Never turn the master switch to O (OFF) with the engine running. Engine and electrical system damage could result.**

## 5) FUSE & RELAY BOX



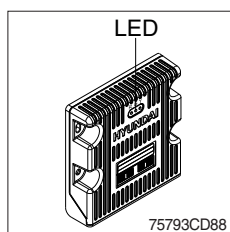
7409S3CD107

- (1) The fuses protect the electrical parts and wiring from burning out.
- (2) The fuse box cover indicates the capacity of each fuse and circuit it protects.

※ Replace a fuse with another of the same capacity.

▲ Before replacing a fuse, be sure to turn OFF the starting switch.

## 6) MACHINE CONTROL UNIT (MCU)



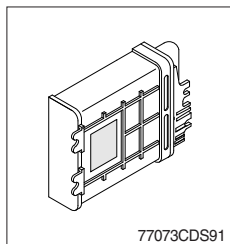
- (1) It consists of electronic parts and controls all lamps and buzzers on cluster in accordance with signals transmitted from the switches, the MCU, TCU, the engine and the hydraulic pressure sensors.

- (2) Three LED lamps on the MCU display as below.

LED lamp	Trouble	Service
G is turned ON	Normal	-
G and R are turned ON	Trouble on MCU	· Change the MCU
G and Y are turned ON	Trouble on serial communication line	· Check if serial communication lines between controller and cluster are disconnected
Three LED are turned OFF	Trouble on MCU power	· Check if the input power wire (24V, GND) of controller is disconnected · Check the fuse

G : green, R : red, Y : yellow

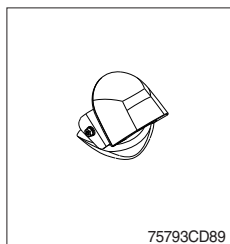
## 7) TRANSMISSION CONTROL UNIT (TCU)



(1) The control unit is shifting the required speeds fully-automatically under consideration of the following criteria.

- Gear selector lever position
- Driving speed
- Load level

## 8) REAR CAMERA (option)



(1) The rear camera is available as a option.

※ **Refer to page 3-24.**

## 9) RADIO AND USB PLAYER



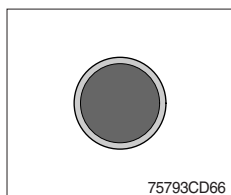
75793CD62

### ■ FRONT PANEL PRESENTATION

- |   |  |  |    |  |   |
|---|--|--|----|--|---|
| 1 |  | ..... Sound function selection button<br>(audio selection)     | 10 |  | ..... Preset memory button 6<br>D+ ..... Directory up |
| 2 |  | ..... Power and volume button                                  | 11 |  | ..... Aux function                                    |
| 3 |  | ..... Mode button<br>(select RADIO / USB / AUX)                | 12 |  | ..... Preset scan (PS)<br>Best station memory (BSM)   |
| 4 |  | ..... UP / DOWN tuning button                                  | 13 |  | ..... Audio mute button                               |
| 5 |  | ..... Preset memory button 1<br>DISP ..... ID3 v2 display      | 14 |  | ..... AM / FM button (radio)                          |
| 6 |  | ..... Preset memory button 2<br>SCN ..... File scan            |    |  |   |
| 7 |  | ..... Preset memory button 3<br>RPT ..... Repeat play selector |    |  |   |
| 8 |  | ..... Preset memory button 4<br>RDM ..... Random play selector |    |  |   |
| 9 |  | ..... Preset memory button 5<br>D- ..... Directory down        |    |  |   |

## ■ GENERAL

### (1) Power and volume button



#### ① Power ON/OFF button

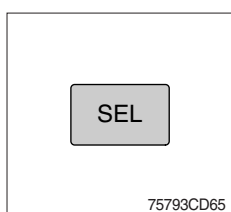
Press power button to turn the unit ON or OFF shortly.

When the power is ON, the previous mode (last memory) will appear.

#### ② Volume up / down control

Turn volume up / down button right to increase the volume level. The level will be shown in VOLUME xx on the LCD display. Turn it left to decrease the volume level. After 5 seconds of volume indication, display will return to the previous mode.

### (2) Sound function selection button (audio selection)




- ① This button is to adjust the sound. Each time you press power button shortly, LCD displays each mode as follows :

BASS → TREBLE → BAL → BEEP → LOUD → VOLUME



※ When this button is pressed, LCD display shows selected function for 5 seconds and then returns back to the previous mode. On selected function, level can be controlled by turning this button. The display will automatically return to normal indication in 5 seconds after the last adjustment is made or when another function is activated.


#### ② Bass control

To adjust the bass level, first select the bass mode by pressing the select button  until BASS indication appears on the LCD display. Within 5 seconds of choosing the bass mode, turn power button right / left to adjust the bass level as desired.

The bass level will be shown on the LCD display from a minimum of BASS -10 to a maximum of BASS +10.

The display will automatically return to the normal indication in 5 seconds after the last adjustment or when another function is activated.


#### ③ Treble control

To adjust the treble level, first select the treble mode by pressing the select button  until TREBLE indication appears on the LCD display. Within 5 seconds of choosing the treble mode, turn power button right / left to adjust the treble level as desired.

The treble level will be shown on the LCD display from a minimum of TREBLE -10 to a maximum of TREBLE +10.

The display will automatically return to the normal indication in 5 seconds after the last adjustment or when another function is activated.

#### ④ Balance control

To adjust the left-right speaker balance, first select the balance mode by pressing the select button  until the BAL indication appears on the LCD display.


Within 5 seconds of choosing the balance mode, turn power button right / left to adjust the balance as desired.

The balance position will be shown on the LCD display from BAL 10L (full left) to BAL 10R (full right).

When the volume level between the left and right speakers is equal, BAL L=R will be shown on the LCD display panel.

The display will automatically return to the normal indication in 5 seconds after the last adjustment or when another function is activated.

#### ⑤ Beep control

To adjust the beep mode, first select the beep mode by pressing the select button  until BEEP indication appears on the LCD display.

The beep mode will be shown on the LCD display from BEEP 2ND, BEEP OFF and BEEP ON by turning power button right / left.

The display will automatically return to the normal indication in 5 seconds after the last adjustment or when another function is activated.


Select BEEP ON when you wish to hear the BEEP sound whenever any function button is pressed.

Select BEEP 2ND when you wish to hear the BEEP sound whenever any tuner pre-set button and/or tune seek buttons are pressed for more than 3 seconds.

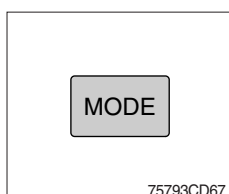
#### ⑥ Loud control

When listening to music at low volume levels, this feature will boost the bass and treble response.

This action will compensate for the reduction in bass and treble performance experienced at low volume.

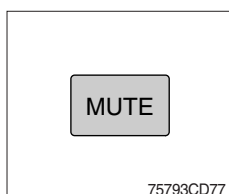
To select the loudness feature, press select button  until LOUD ON or LOUD OFF is displayed, then turn power button left or right to activate or deactivate loudness.

#### (3) Mode button



- ① Press mode button to select RADIO / USB / AUX.

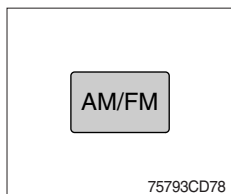
#### (4) Audio mute button



- ① Press mute button momentarily to mute volume and MUTE mark will blink on the LCD display.  
Press the button again to return to the mode in use before the mute mode was activated.

## ■ RADIO

### (1) AM / FM / LW band selector

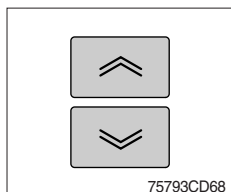


- ① Each time this button is pressed, the radio button is changed. Each time this button is pressed, LCD displays each band as follows :

FM1 → FM2 → FM3 → AM → LW

※ LW band is only available for Europe.

### (2) Up / down tuning

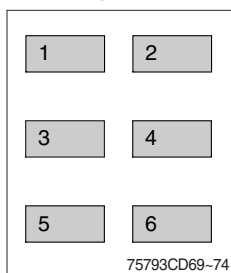


- ① To automatically select a radio station, momentarily press the up tune seek button ⤴ or down tune seek button ⤵ for less than 3 seconds to search for the closest radio station.

To manually select a radio station, press the up tuning & down tuning button for longer than 3 seconds.

The radio frequency will move up or down step by step each time you press button.

### (3) Station pre-set button

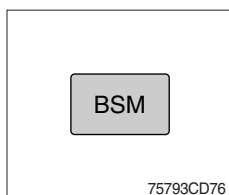


- ① Pressing these buttons shortly will recall your favorite pre-set radio stations.

To store your favorite stations into any of the 6 pre-set memories in each band (AM/FM/LW), use the following procedure :

- Turn the radio ON and select the desired band.
- Select the first station to be pre-set using the manual up/down or automatic seek tuning control button.
- Press the chosen pre-set button to store your selected station into and continue to hold it in. The beep sound will be momentarily heard and the pre-set number will appear on the LCD display indicating that the station is now set into that pre-set memory position and can be recalled at any time, by pressing that pre-set button.

#### (4) Pre-set scan (PS) / Best station memory (BSM) button



##### ① Pre-set scan (PS)

Press BSM button shortly to scan the 6 pre-set station stored the memories on each band (AM/FM/LW).

The unit will stop at each pre-set station (the pre-set number on the LCD display will flash during pre-set scan operation) and remain on the selected frequency. Press the button momentarily again to remain on the station currently being heard.

##### ② Best station memory (BSM)

Pressing BSM button for longer than 2 seconds will activate the BSM tuning feature which will automatically scan and enter each station into memory.

If you have already set the pre-set memories to your favorite stations, activating the BSM tuning feature will erase those stations and enter the new ones.

This BSM feature is most useful when traveling in a new area where you are not familiar with the local stations.

### ■ USB PLAYER

#### (1) USB function

There are two ways to play mp3 files in a USB device : using USB socket in the cab and the USB / AUX cable connected to the front side of the player.

##### · Use of USB socket

- ① Connect a USB device, which saves mp3 files, to USB socket in the cabin.
- ② If a USB device has not been connected, MP3 files are automatically played when you insert it into the USB port.
- ③ If a USB device has connected, MP3 files are played when you press mode for USB.

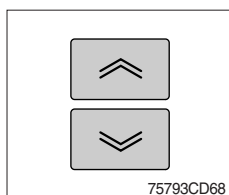
##### · Use of USB/AUX cable (option)



75793CD81

- ① Connect the USB/AUX cable to the player in order to play MP3 files in a USB device.
- ② If a USB device has not been connected, MP3 files are automatically played when you insert it into the cable.
- ③ If a USB device has connected, MP3 files are played when you press mode for USB.

## (2) File selection & cue / review button



### ① File selection function

This button is used to select file up / down. Each time the forward file select ≧ is pressed, file number is increased.

Each time the backward file select ≦ is pressed, file number is decreased.

### ② Cue / review functions

High-speed audible search of file on a USB can be made by this button (the cue and review functions).

Press and hold the cue button ≧ to advance rapidly in the forward direction or the review button ≦ to advance rapidly in the backward direction.

## (3) MP3 directory / file searching

### ① The power button is used to select a particular directory and file.

Press and hold for more than 3 seconds while playing MP3 file.

Turn right / left the power button to search the directory. Press the button when you find the wanted directory.

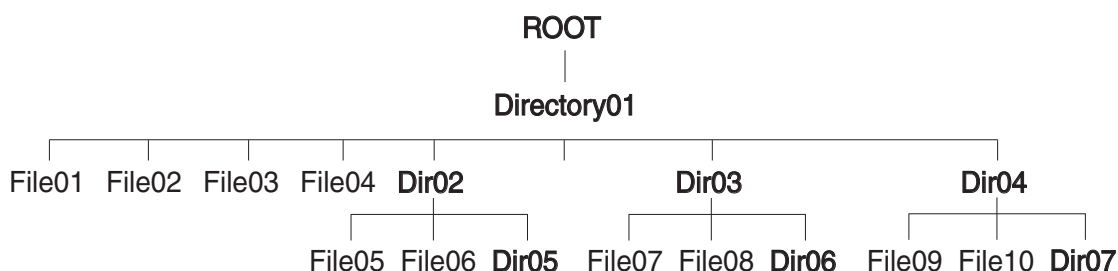
For example, the directory search generally changes in two methods depending on the order of writing as follows.

- Method 1 : ROOT → Dir01 → Dir02 → Dir03 → Dir04 → Dir05 → Dir06 → Dir07
- Method 2 : ROOT → Dir01 → Dir02 → Dir05 → Dir03 → Dir06 → Dir04 → Dir07

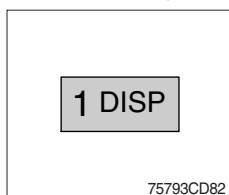
If you want to search the file in the located directory, turn right / left the power button consecutively. Press the button when you find the wanted file. The unit will then play the selected file. For instance, the file search changes in Dir01 as follows.

File01 → File02 → File03 → File04  
↑

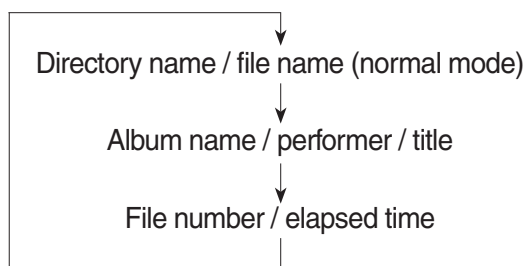
### ※ MP3 direction / file configuration



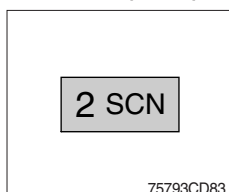
#### (4) ID3 v2 display



- ① Disp button is used to change the display information.  
While playing an MP3 file, you can change the file information shown on the LCD display.  
Each time you press DISP (display), the display changes to show the following.
- ※ If the MP3 disc does not have any ID3 information, the display will show NO ID3 on LCD display.

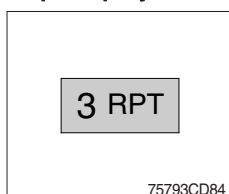


#### (5) File scan (SCN)



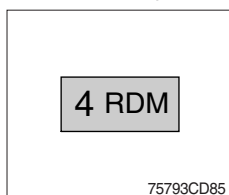
- ① During USB play, press SCN button to play the first 10 seconds of each file on the whole file on the USB (SCN mark will appear on the LCD display).  
When a desired file is reached, press the SCN button again to cancel the function.  
The unit will then play the selected file.
- ※ In case of playing MP3 file, when the SCN (scan) button is pressed and held for longer than 2 seconds, the SCN mark will blink on the LCD display and all files in the selected directory will be introduced until the file scan mode is cancelled by pressing the SCN button again or by activating the random or repeat functions.

#### (6) Repeat play selector (RPT)



- ① During USB play, press RPT button to play the selected file repeatedly (RPT will appear on the LCD display).  
Play of the file will continue to repeat until this button is pressed again and the RPT disappears from the LCD display.
- ※ In case of playing MP3 file, when the RPT button is pressed and held longer than 2 seconds, the RPT mark will blink on the LCD display and play all files in the selected directory and will be repeated until the directory repeat mode is cancelled by pressing the repeat button again or by activating the scan or random functions (RPT mark will disappear from LCD display).

## (7) Random play selector (RDM)

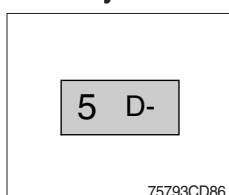


- ① During USB play, press RDM button to play the files on the USB in a random shuffled order (RDM will appear on the LCD display). The file select function will also select file in the random order instead of the normal process.

The random play mode can be cancelled by this button again.

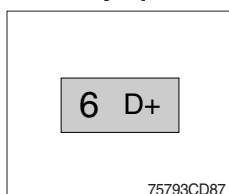
- ※ In case of MP3 file, when the random button is pressed and held longer than 2 seconds, the RDM mark will blink on the LCD display and play all files in directory randomly until the directory random mode is cancelled by pressing the random button again or by activating the scan or repeat functions (RDM mark will disappear from LCD display).

## (8) Directory down



- ① Press D- button briefly while playing MP3. The previous directory is located each time you press this button.

## (9) Directory up

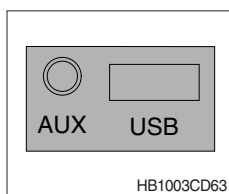


- ① Press D+ button briefly while playing MP3 . The next directory is located each time you press this button.
- ※ If the MP3 file does not have a directory, the unit play MP3 at 10-file intervals.
- ※ If any MP3 file does not exist in USB, this button can not operate.

## ■ AUX PLAYER

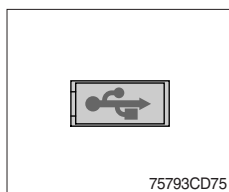
### (1) Aux function

- Use of USB socket (machine serial No. : -#0002)



- ① If you want to listen to music of a external audio device, connect a external audio device into the USB port.
- ② Press mode button to change a current mode for AUX. If audio file of audio device is playing, you can listen to music through speaker.

- Use of USB/AUX cable (option)



- ① If you want to listen to music of a external audio device, connect a external audio device through USB/AUX cable.
- ② Press mode button to change a current mode for AUX. If audio file of audio device is playing, you can listen to music through speaker.