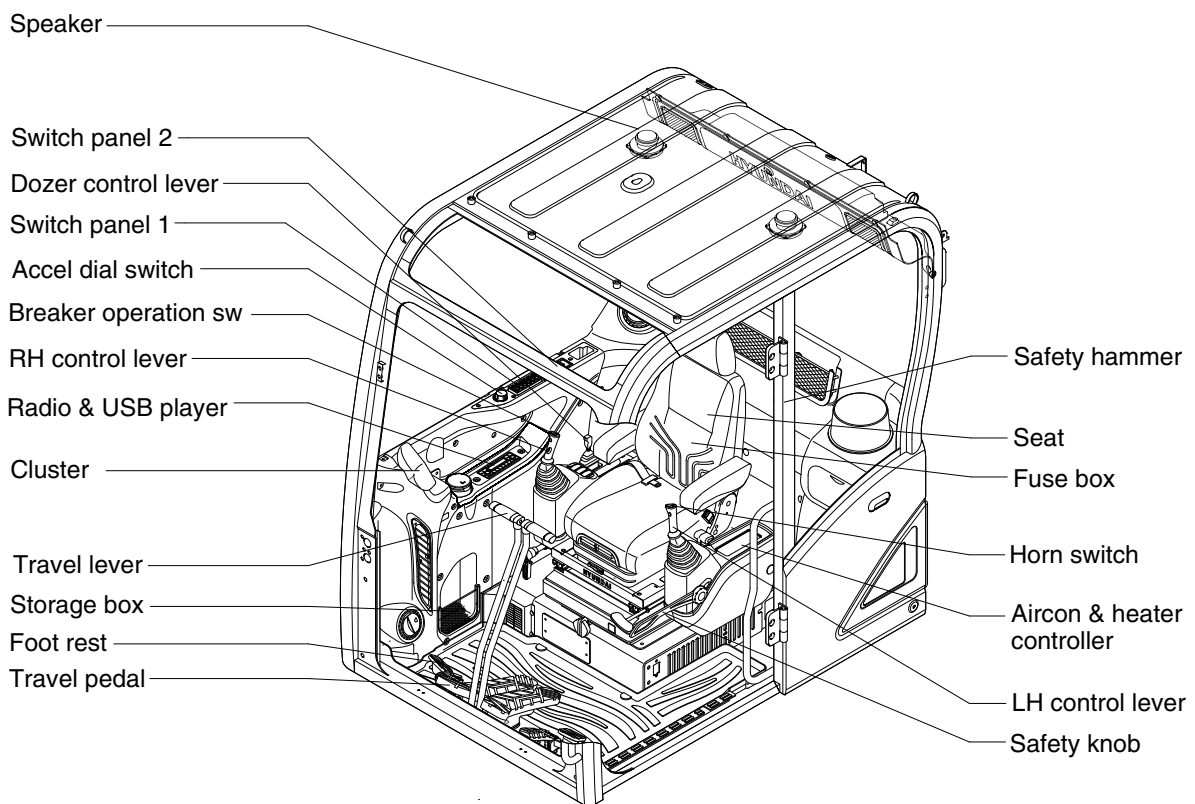


## 1. CAB DEVICES

- 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.
- (3) The maintenance work is vary convenient because you can check machine problems related to the electrical device by operating the cluster.



65A3CD04A

## 2. CLUSTER

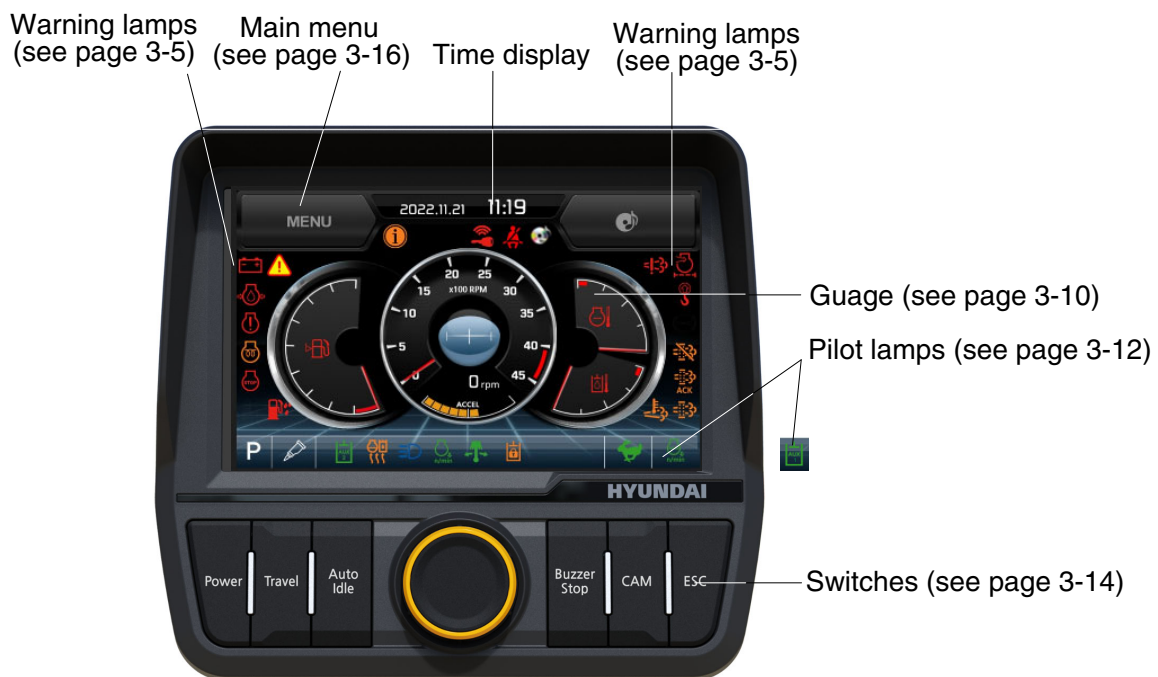
### 1) STRUCTURE

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

Also, The LCD is to set and display for modes, monitoring and utilities with the switches.

The switches or touch screen are to set the machine operation modes.

- ※ **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.**



65A3CD100A

- ※ **The warning lamp pops up, lights ON (on the left-top side) and the buzzer sounds when the machine has a problem.**  
**The warning lamp lights ON until the problem is cleared. Refer to page 3-5 for details.**

## 2) GAUGE

### (1) Operation screen

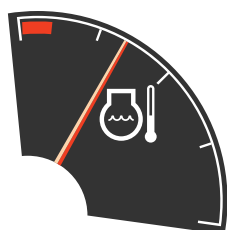
When you first turn starting switch ON, the operation screen will appear.





HX60A3CD101A

- |                             |                    |              |
|-----------------------------|--------------------|--------------|
| 1 Engine coolant temp gauge | 3 Fuel level gauge | 5 Accel dial |
| 2 Hydraulic oil temp gauge  | 4 Engine rpm gauge | 6 Clinometer |

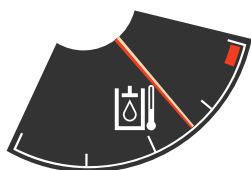
### (2) Engine coolant temperature gauge





290F3CD53

- ① This gauge indicates the temperature of coolant.
  - Black range : General state
  - Red range : Engine overheated state
- ② If the indicator is in the red range or  lamp lights ON in red, turn OFF the engine and check the engine cooling system.
- ※ If the gauge indicates the red range or  lamp lights ON even though the machine is in the normal condition range, check the electric device as this can be caused by poor connection of sensor or connector, and poor grounding of the instrument, etc.

### (3) Hydraulic oil temperature gauge





290F3CD54

- ① This gauge indicates the temperature of hydraulic oil.
  - Black 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 lights ON in red, reduce the load on the system. If the gauge stays in the red range, stop the machine and check the cause of the problem.
- ※ If the gauge indicates the red range or  lamp lights ON in red even though the machine is in the normal condition range, check the electric device as this can be caused by poor connection of sensor.

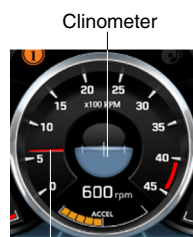
#### (4) Fuel level gauge



HX60A3CD55A

- ① This gauge indicates the amount of fuel in the fuel tank.
  - Black range : 9% or more
  - Red range : below 9%
- ② Fill the fuel when in the red range, or  lamp lights ON in red.
- ※ If the gauge indicates the red range or  lamp lights ON in red even though the machine is in the normal condition range, check the electric device as this can be caused by poor connection of sensor.

#### (5) Engine rpm gauge and clinometer



Engine rpm

HX60A3CD105K

- ① This displays the engine speed.
- ② This displays the tilt of machine.

#### (6) Accel dial gauge



290F3CD59

- ① This gauge indicates the level of accel dial from 0 to 10 step.

### 3) COMMUNICATION ERROR AND LOW VOLTAGE WARNING POP-UP

#### (1) Communication error pop-up



HX60A3CD107A

- ① Cluster displays this communication error pop-up when it has communication error with MCU.
- ② Communication error pop-up displays at operation screen only. Just buzzer alarm at the other screen.
- ③ If communication with MCU become normal state, it will disappear automatically.

#### (2) Low voltage warning pop-up



HX60A3CD108

- ① Cluster displays this low voltage warning pop-up when the battery voltage is low.
- ② Low voltage warning pop-up displays at operation screen only. Just buzzer alarm at the other screen.
- ③ This pop-up will disappear with using touch screen or buzzer stop switch. While the battery voltage is low, buzzer sounds every minute.
- ④ When the battery voltage is higher than 11.5 V, the pop-up off.



## 4) WARNING LAMPS



65A3CD109A

※ Each warning lamp on the left-top of the LCD pops up on the center of LCD and the buzzer sounds when the each warning is happened. The pop-up warning lamp moves to the original position and lights up when the buzzer stop switch is pushed or the pop-up is touched. And the buzzer stops. Refer to page 3-17 for the switch.

### (1) Engine coolant temperature warning lamp



290F3CD61

- ① The warning light is turned ON and buzzer is sounded when the engine coolant temperature is overheated.
- ② The engine speed is also decreased unless the coolant temperature is reduced again. Here, do not turn OFF the engine. When the engine is turned OFF, the coolant temperature is overheated even more to cause engine rattle due to the surge.

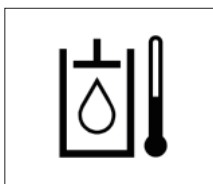
※ Check the temperature gauge of the engine coolant. The coolant is overheated when the gauge in the red range. Here, the coolant temperature warning lamp is turned ON, and the engine speed is decreased automatically.

The engine performs 'low-speed idle' run until the gauge is returned to the black range. Even when the gauge returns to the black range, do not turn OFF the engine, and perform idle run additionally for 3~5 min. Ignoring this may cause surge from the heat to result in damage to the engine.



The reason for idle run of the engine is to disperse the overheated heat slowly to reduce the temperature.

After proper measures are finished check the coolant level again, and inspect whether the fan belt is loose, and whether there are any foreign substances around the radiator. When the coolant temperature returns to normal temperature, the engine speed is restored to normal speed again.

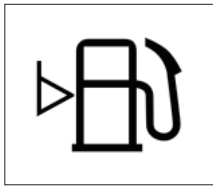
### (2) Hydraulic oil temperature warning lamp



290F3CD62

- ① This warning lamp pops up on the center of LCD and the buzzer sounds when the hydraulic oil temperature is over 105°C.
- ② The pop-up  lamp moves to the original position and lights ON when the buzzer stop switch is pushed or pop-up is touched. Also, the buzzer stops and  lamp keeps ON.
- ③ Check the hydraulic oil level and hydraulic oil cooling system.

### (3) Fuel level warning lamp



290F3CD63

- ① This warning lamp lights up and the buzzer sounds when the level of fuel is below 9%.
- ② Fill the fuel immediately when the lamp is ON.

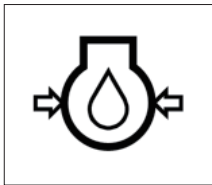
### (4) Emergency warning lamp



290F3CD64

- ① This warning lamp pops up and the buzzer sounds when each of the below warnings occurs.
  - MCU input voltage abnormal
  - Accel dial circuit abnormal or open
- ※ **The pop-up warning lamp moves to the original position and lights ON when the buzzer stop switch is pushed or pop-up is touched. Also the buzzer will stop.**
- This is same as following warning lamps.**
- ② When this warning lamp lights up, machine must be checked and serviced immediately.

### (5) Engine oil pressure warning lamp



290F3CD65

- ① This warning lamp lights up when the engine oil pressure is low.
- ② If the lamp lights up, shut off the engine immediately. Check oil level.
- ※ **Serious damage can be caused to the engine when the engine is operated continuously while the warning lamp is turned ON.**

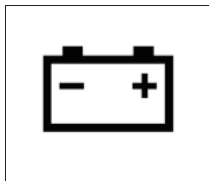
### (6) Check engine warning lamp



290F3CD66

- ① Warning lamp is turned ON when the engine must be checked.
- ※ **When the warning lamp is turned ON, stop the machine and find the cause for repair.**

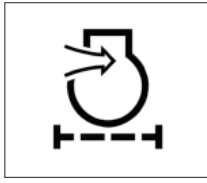
### (7) Battery charging warning lamp



290F3CD67

- ① This warning lamp lights up when the battery charging voltage is low.
- ② Check the battery charging circuit when this lamp lights up.

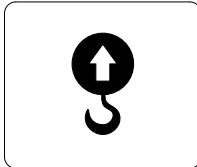
#### (8) Air cleaner warning lamp



290F3CD68

- ① This warning lamp lights up when the air cleaner is clogged.
- ② Check, clean or replace the filter.

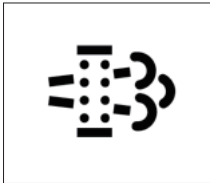
#### (9) Overload warning lamp (opt)



21093CD36

- ① When the machine is overloaded, the overload warning lamp lights up when the overload switch is ON. (if equipped)
- ② Reduce the machine load.

#### (10) DPF (Diesel Particulate Filter) Warning Lamp



290F3CD70

- ① This lamp is turned ON or OFF to inform that regeneration is required.
- ② For details, please refer to the after-treatment system below.

#### ※ After-treatment System

The after-treatment system uses DOC and DPF to satisfy the exhaust regulations.

The oxidation catalyst of DOC reduces the emission of hydrocarbon and carbon monoxide through the catalyst, and the particle materials (PM) discharged from the engine are collected.

DPF regeneration is composed of “forced regeneration” during driving and “manual regeneration” performed by the driver.

When the regeneration is not performed successfully according to the procedure, warning lamp relevant to the each operating condition is turned ON.

When the warning lamp is turned ON, park the machine on a safe place, and perform the regeneration process manually according to the following procedure.



The warning lamp is turned OFF when the regeneration process is performed successfully.

DPF regeneration mode is classified into the following stages according to the soot accumulation level on the DPF.

- Soot level of 80% or less : Normal operating condition
- Soot level of 80~100% : AUTO regeneration during driving
- Soot level of 100~120% : Regeneration initiated by the driver (Manual Regeneration)
- Soot level of 120% or more : Inquiry to the Service Center or agent required  
(DPF warning lamp turned OFF, check engine warning lamp turned ON, engine power reduced)

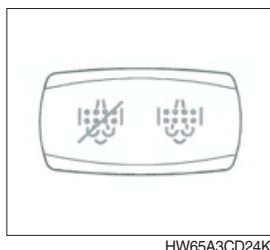
**▲ Engine power can be reduced when the regeneration process is not performed manually after the warning lamp is turned ON.**

### ※ DPF Regeneration Procedure

Procedure	Soot Amount	DPF Warning Lamp 	Check engine warning lamp 	Decrease in Torque	Remark
1	Less than 99%	-	-	-	No action (Manual regeneration according to the equipment)
2	100~105%	-	-	-	Regeneration is started. Performed in high temperature (560~640°C)
3	106~110%	Blinking slowly	-	-	Forced regeneration induced (Alarm)
4	111~120%	Blinking slowly	Turned ON	Torque reduced weakly	Forced regeneration induced (Decrease in Torque)
5	121% or more	Blinking quickly	Blinking	Torque reduced severely	Regeneration is inactivated. Inquire to the service center or to the agent to start the service regeneration to solve the decrease in torque

- DPF warning lamp is turned ON when the DPF soot exceeds 100%.
- DPF warning lamp is blinked when the DPF soot level exceeds 105%.
- When the DPF soot level exceeds 111%, the DPF warning lamp blinks slowly, and the check engine warning lamp is turned ON to reduce the engine power.
- When the DPF soot level exceeds 121%, the DPF warning lamp blinks slowly, and the check engine warning lamp is turned ON to reduce the engine power.
- DPF regeneration is composed of the active regeneration occurred during driving and forced regeneration activated manually by the driver.
- When the DPF soot level is less than 105%, active regeneration is activated automatically during driving.  
However, the system informs the driver to perform forced regeneration manually when the level is 105% or more.  
The check engine warning lamp is turned ON when the level is 120% or more, and engine power is reduced to 50%. The driver must inquire to the service center or to the agent.
- DPF soot level of 105% or less : Active regeneration
- DPF soot level of 105~120% : Forced regeneration + Engine power reduced
- DPF soot level of 105~120% : Driver is informed that forced regeneration is required.
- DPF soot level of 120% or more : Regeneration not possible, and inquiry required to the service center or to the agent

### ※ Manual (Forced) DPF regeneration method



DPF regeneration procedure is activated manually by the driver when the driver selects to initiate the regeneration procedure.

Because the operating condition is inappropriate for the hot engine exhaust temperature (Ex.: Work near the inflammable materials), manual regeneration may be required if the driver prohibited the active regeneration procedure for long period.

#### ① Manual regeneration condition

- Coolant (Engine oil) temperature : 40 °C or more
- Engine RPM: Low-speed idle run
- Parking brake must be applied (Only relevant to the wheel-type machine)
- When the soot concentration is accumulated to 20% or more

#### ② Manual (Forced) regeneration procedure

Park the machine on a well-ventilated area, and keep away from inflammable materials to set the machine as shown below.

- Operate the machine until the engine coolant and oil temperature becomes 40°C or more.
- Engine speed is set to low speed.
- Put the gear lever on neutral, and apply the parking brake. (Only relevant to wheel-type machine)
- Safety knob is placed on the locking position.
- When the regeneration mode is in "Prohibit", DPF switch is pressed to the manual regeneration position.

#### ③ Regeneration switch is activated to initiate the regeneration procedure.

#### ※ DPF warning lamp is lighted on the monitor.

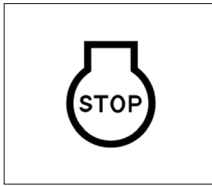
While the engine speed is in low speed, the speed is increased gradually to 2000 RPM, and the regeneration procedure is initiated.

Manual regeneration can be continued for maximum of 30 min. or more according to the soot accumulation amount.

HEST lamp is lighted during the regeneration, and HEST lamp is turned OFF when regeneration is stopped.

#### ※ The driver can stop the manual regeneration by lifting the safety knob to the "Release Lock" position, or by pressing the DPF switch to the "Prohibit" position.

### (11) Stop engine warning lamp



290F3CD252

- ① If this warning lamp lights up, stop the engine immediately and check the engine.
  - ② Check the fault codes on the monitor.
- ※ **Please contact your HD Hyundai Construction Equipment service center or local dealer.**

### (12) Water in fuel warning lamp



HX60A3CD110

- ① This warning lamp lights up when the water separator is full of water or malfunctioning.
- ② When this lamp lights up, stop the machine and drain water from the water separator.

### (13) Seat belt reminder warning lamp

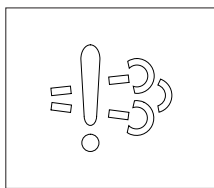


300A3CD25

- ① When operator does not fasten the operator's seat belt, the seat belt reminder warning lamp lights up and the buzzer sounds.
- ② Fasten the seat belt.



#### (14) Exhaust System Failure Warning Lamp



HW60A3CD53A

- ① This warning lamp is turned ON in 3 cases such as when the quantitative distribution is stopped, poor reagent quality and monitoring malfunction, etc.
- ② Please refer to the exhaust gas control system below.

#### ※ Exhaust Gas Control System

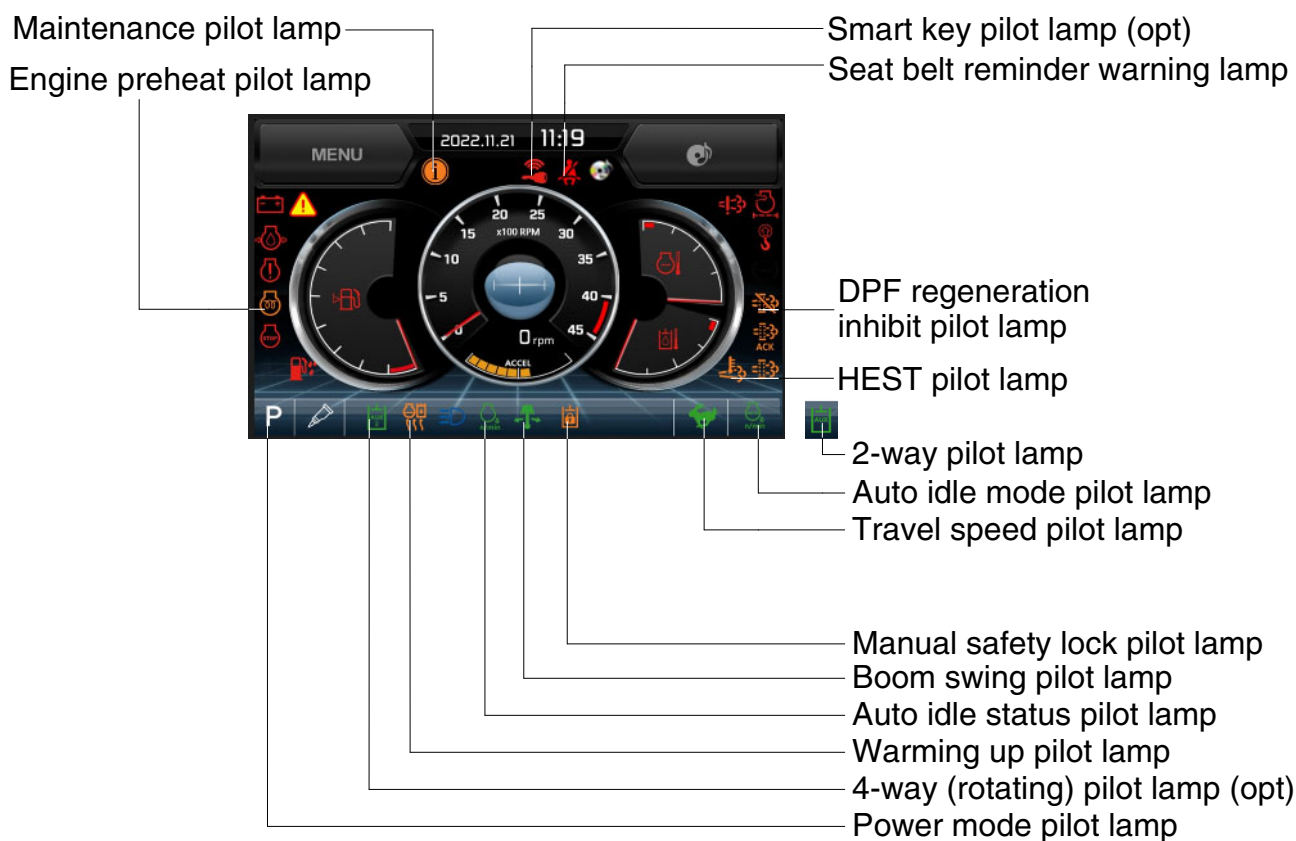
This machine is equipped with the engine exhaust gas emission control system that satisfies the exhaust gas emission regulations. The owner/driver has the responsibility of proper operation and maintenance on the exhaust control system provided in the guaranteed provisions related to emission.

The engine exhaust system is mounted on the DPF. DPF is a emission reduction device that reduces the diesel particulate matter or soot from the exhaust gas of the diesel engine. DPF is stored until the particulate matter is combusted. The process of combustion and elimination of the stored particulate matter is referred to as "Regeneration". After the regeneration process is completed, residue is remaining, and it must be removed from the DPF regularly.

**▲ The temperature of the exhaust gas and components of the exhaust system are in very high temperature during regeneration. There are risks of fire or burn, and it can also result in death, severe injury or property loss. Inflammable materials and explosive gas must be kept far away from the exhaust system during regeneration.**

Item	Stage	Reducing Agent Level/Time	Notification Method	Decrease in Torque	Symbol
EGR Valve Problem	Warning	Immediately	Always	-	
	Level 1	+36 hours	Blinking slowly	Torque Limit : ~25%	
	Serious	+64 hours (100 hours)	Blinking quickly + Buzzer	Torque Limit : ~50% Speed Limit : 60%	

## 5) PILOT LAMPS



65A3CD112

### (1) Mode pilot lamps

No	Mode	Pilot lamp	Selected mode
1	Power mode		Heavy duty power work mode
			Standard power mode
2	Travel mode		Low speed traveling
			High speed traveling
3	Auto idle mode		Auto idle mode
			Auto idle status

### (2) Preheat pilot lamp



290F3CD79

- ① Turning the start key switch to the ON position starts preheating in cold weather.
- ② Start the engine after this lamp goes OFF.

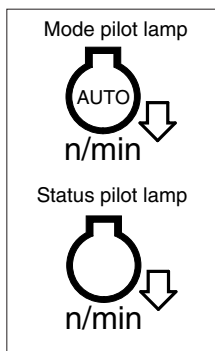
### (3) Warming up pilot lamp



290F3CD80

- ① This lamp lights up 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 (86°F), or when 10 minutes have passed since starting the engine.

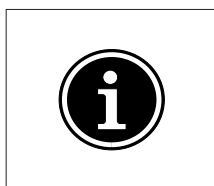
### (4) Auto idle status/ mode pilot lamp



85A3CD106

- ① The auto idle mode pilot lamp will light up when the idle mode is selected.
- ② The auto idle status pilot lamp will be ON when all levers and pedals are in the neutral position, and the auto idle mode is selected.
- ③ One of the lever or pedal is operated, the status lamp will go OFF and the engine speed returns to the previous conditions.

### (5) Maintenance pilot lamp

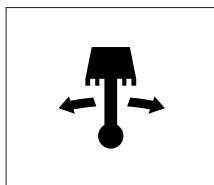


HX60A3CD116

- ① This lamp lights up when consumable parts are in need of replacement. It means that the change or replacement interval of parts is 30 hours from the required change interval.
- ② Check the message in maintenance information of main menu. Also, this lamp lights up for 3 minutes when the start switch is switched to the ON position.

※ Refer to page 3-19.

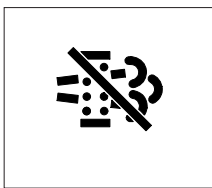
### (6) Boom swing pilot lamp



HX603CD82

- ① This lamp lights up when the boom offset switch is pressed.

#### (7) DPF regeneration inhibit warning lamp

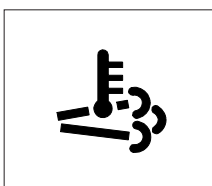


85A3CD107

- ① This warning lamp indicates, the DPF switch is pushed to the inhibit position, therefore automatic and manual regeneration can not occur.

※ Refer to page 3-40 for the DPF switch.

#### (8) HEST (High exhaust system temperature) warning lamp



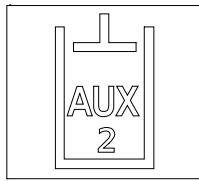
85A3CD109

- ① This warning lamp indicates, when illuminated, that exhaust temperatures are high due to regeneration of the DPF.
- ② The lamp will also illuminate during a manual regeneration.
- ③ When this lamp is illuminated, be sure the exhaust pipe outlet is not directed at any surface or material that can melt, burn, or explode.

**▲** When this lamp is illuminated, the exhaust gas temperature could reach 600°C [1112°F], which is hot enough to ignite or melt common materials, and to burn people.

※ The lamp does not signify the need for any kind of equipment or engine service; It merely alerts the equipment operator to high exhaust temperatures. It is common for the lamp to illuminate on and off during normal equipment operation as the engine completes regeneration cycles.

**(9) 4-way (rotating) pilot lamp (opt)**

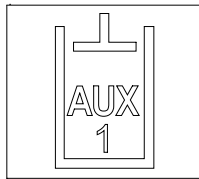


HW60A3CD48A

- ① This lamp lights up when the boom swing selection switch is set to the rotator (not used boom swing) and the 4-way operation switch on the LH control lever is pressed.

※ **Refer to the page 3-42.**

**(10) 2-way pilot lamp**



HW65A3CD49

- ① This lamp lights up when the option flow control function is activated in the cluster.

※ **Refer to the page 3-23.**

### (11) Manual safety lock pilot lamp

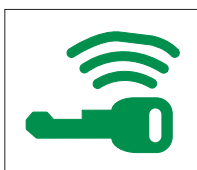


140WA3CD37

① This lamp lights up when the safety knob is set to the LOCK position.

※ Refer to page 3-45 for the safety knob.

### (12) Smart key pilot lamp (opt)



300A3CD36A

① This lamp lights up when the engine is started by the start button.

② This lamp is red when the authentication fails, it will be green when the authentication is successful.

※ Refer to the page 3-27.



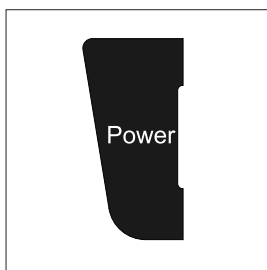
## 6) SWITCHES



65A3CD117A

※ When the switches are selected, the pilot lamps are displayed on the LCD. Refer to the page 3-12 for details.

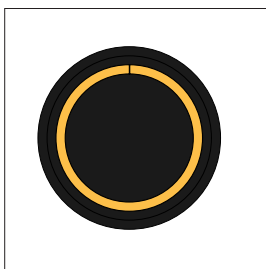
### (1) Power mode switch



HX60A3CD118

- ① This switch is to select the machine power mode and when pressed, the power mode pilot lamp will be displayed on the section of the monitor.
  - P : Heavy duty power work.
  - S : Standard power work.
- ② The pilot lamp changes S → P → S in this order.

### (2) Select switch



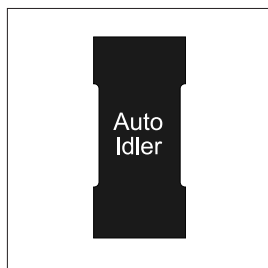
HX60A3CD119

- ① This switch is used to select or change the menu or input value.
- ② Knob push
  - Short (below 0.5 sec) : Select menu
- ③ Knob rotation
 

This knob changes menu and input value.

  - Right turning : Down direction / Increase input value
  - Left turning : Up direction / Decreased input value

### (3) Auto idle switch



HX60A3CD120

① This switch is used to activate or cancel the auto idle function.

※ Refer to the page 3-12 for details.

### (4) Buzzer stop switch

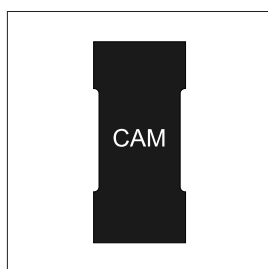


HX60A3CD121

① The buzzer sounds when the machine has a problem.

In this case, push this switch and buzzer stops, but the warning lamp lights up until the problem is cleared.

### (5) Camera switch

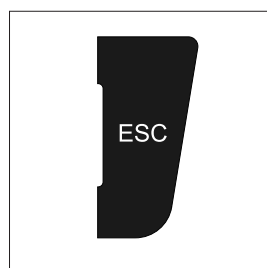


HX60A3CD122

① In the operation screen, pushing this switch will display the view of the camera on the machine (if equipped).

※ Please refer to page 3-34 for the camera.

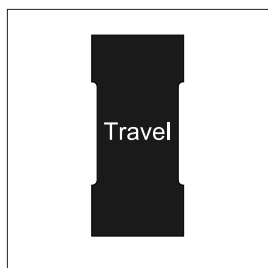
### (6) Escape switch



HX60A3CD123



① This switch is used to return to the previous menu or parent menu.

### (7) Travel speed control switch



HX60A3CD104

① This switch is used to select the travel speed alternatively.

-  : Low speed
-  : High speed

※ Do not change the setting of the travel speed switch while machine is moving. Machine stability may be adversely affected.

⚠ Serious injury or death can result from sudden changes in machine stability.

## 7) MAIN MENU

Main menu screen



HX60A3CD124A







Sub menu screen



HW60AH3CD125A

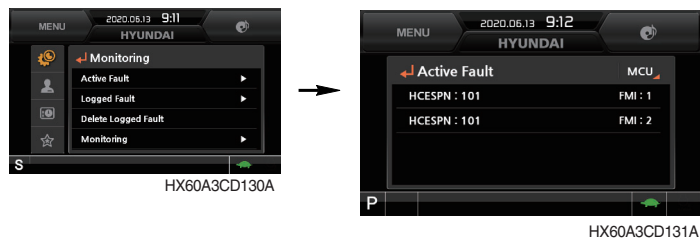
- ※ Please refer to the select switch, page 3-17 for selection and change of menus and input values.
- ※ In the operation screen, tap MENU or press the select switch to access the sub-menu screen.

### (1) Structure

No	Main menu	Sub menu	Description
1	 Monitoring	Active fault - Machine Active fault - Engine Logged fault - Machine/engine Delete logged fault Monitoring - Machine Monitoring - Switch Monitoring - Output	MCU ECU MCU, ECU MCU, ECU Engine rpm, oil temp, voltage and pressure etc. Digital switch status Digital output status
2	 Management	Maintenance information Option flow control  ESL mode setting Change password Machine information A/S phone number Cluster update CAN update Service menu	Elapsed time, Change interval, Replacement etc. Opt attach set, Proportional flow control set, Confirmation ESL mode setting Password change Cluster, MCU, Engine, Machine A/S phone number, A/S phone number change Application, System Program download, Update Power shift, Operating hour, Gauge type, Rpm, AVCU set, Language update etc
3	 Display	Clock Brightness Unit Language	Current time set Manual, Auto Temperature, Pressure, Flow, Distance, Volumn 22 kinds
4	 Utilities	Entertainment Camera setting  Clinometer setting Manual Emergency mode  Quick cooling mode	Video/music file playing Setup of number of active cameras, display sequences, and camera numbers Initializing slope sensor Display cluster manual Back-up switch for failed cluster switch and accel dial To maximize engine cooling performance

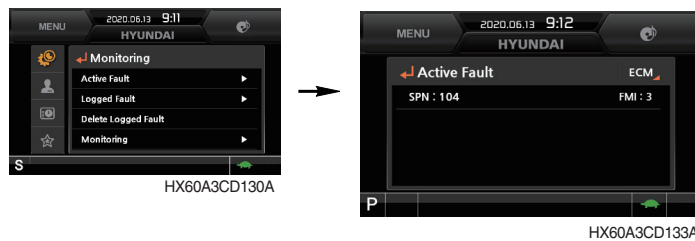
## (2) Monitoring

### ① Active fault - Machine



- The active faults of the machine MCU can be checked by this menu.

### ② Active fault - Engine



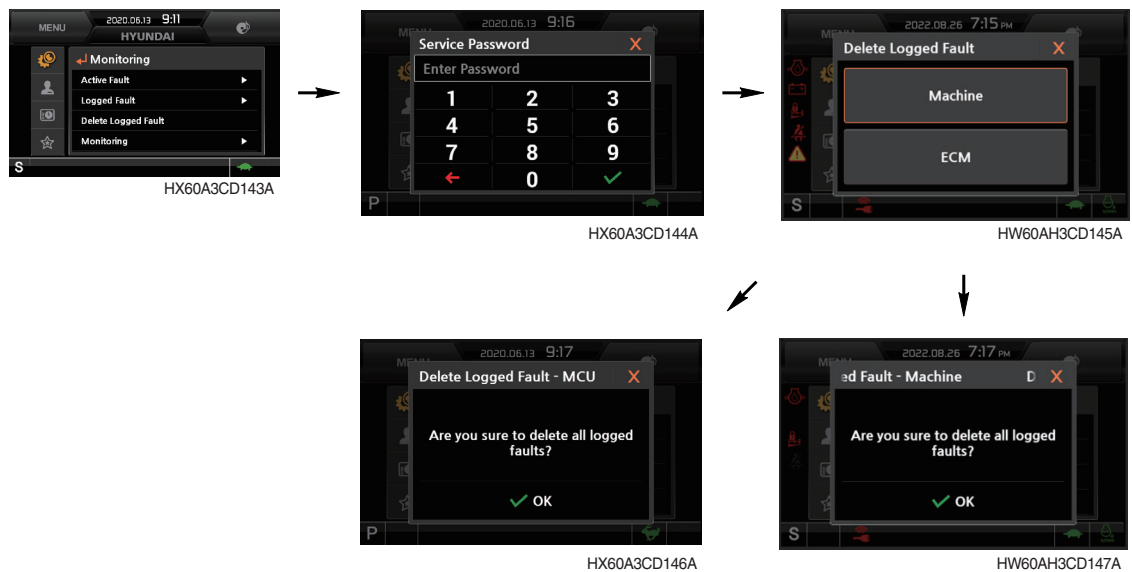
- The active faults of the engine ECU can be checked by this menu.

### ③ Logged fault - Machine/ Engine



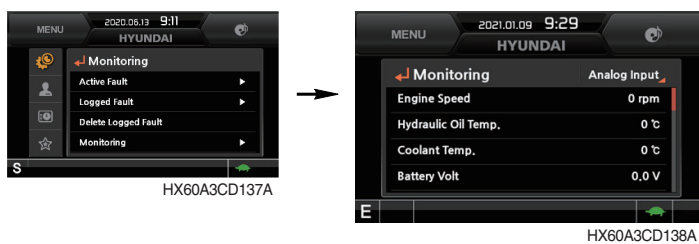
- The logged faults of the machine MCU or engine ECU can be checked by this menu.
- This menu can be used only HCE service man.

#### ④ Delete logged fault



- The logged faults of the MCU, engine ECU can be deleted by this menu.  
(It is possible under the engine stop conditions)

#### ⑤ Monitoring (machine status)



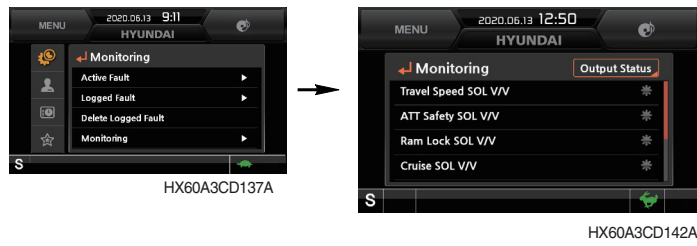
- The machine status such as the engine rpm, oil temperature, voltage and pressure etc. can be checked by this menu.

#### ⑥ Monitoring (switch status)



- The digital switch status of the machine can be checked by this menu.
- The activated switch will display in blue color.

### ⑦ Monitoring (output status)

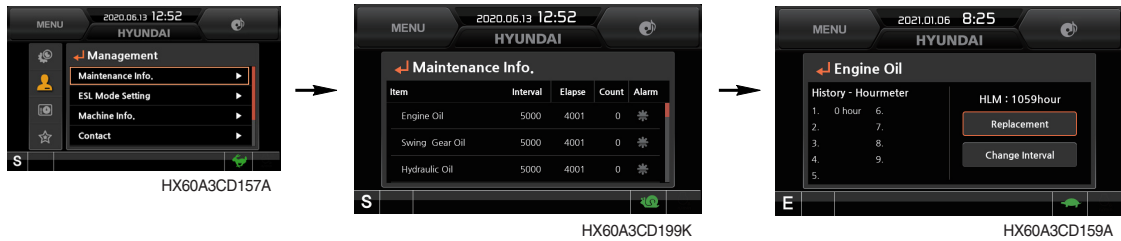


- The digital output status of the machine can be checked by this menu.
- The digital output status will display in blue color.



### (3) Management

#### ① Maintenance information



- Elapsed time : Display the elapsed time after the maintenance.
- Change interval : The change intervals can be changed in hour increments of 50.
- Change history : Display the change history for the maintenance.
- Replacement : The elapsed time will be reset to zero (0).
- Change or replace interval

※ Refer to the page 6-16.

#### ② Option flow control

##### a. Option attach selection



- Three kinds of option attachment can be selected by this menu.

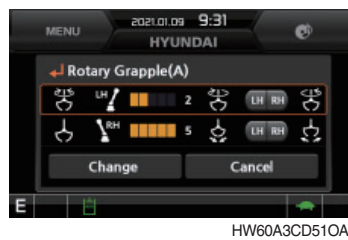
- Rotary grapple (4-way)
- Grapple (2-way)
- Auger (2-way)

※ There are two user modes (type A or B) in each option attachment.

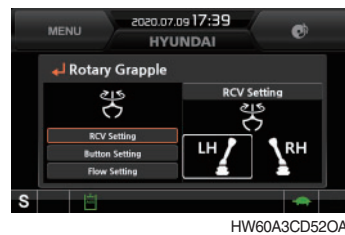
## b. Proportional flow control setting

The preferable value of each option attachment can be set by this menu.

### a) Rotary setting



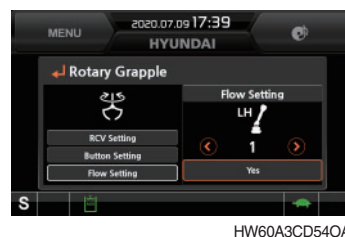
- Select rotary RCV, button and flow can be set by this menu



- RCV setting
  - Enable set LH or RH RCV for rotary operation.
  - Select LH for rotary → RH set for grapple automatically



- Button setting (CW rotation)
  - Select LH for CW rotation → RH set for CCW rotation automatically



- Flux setting
  - Enable set from level 1 to level 5.

## b) Grapple setting



- Select grapple  
RCV, button and flow can be set by this menu

- RCV setting
  - Enable set LH or RH RCV for grapple operation.
  - Select LH for grapple → RH set for rotary automatically

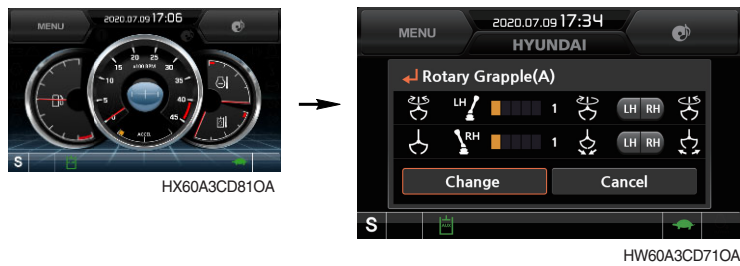
- Button setting (Close)
  - Select RH for Close → LH set for open automatically

- Flow setting
  - Enable set from level 1 to level 5.

- Flow setting value can be saved by pressing change button.

- ※ Setting value saved once, it memorized in each icon and the last setting value is activated.
- ※ Saved setting can be used by pressing Icon button only.
- ※ There are two kinds (A and B) in each option attach setting and six kinds of option attach setting can be saved totally (2 of 4-way, 4 of 2-way).

### c) Confirmation



※ Symbol (  ) is activated on the low side of main screen when option attach function is used.

※ Previous setting value can be checked by following procedure.

– Menu > Management > option attach

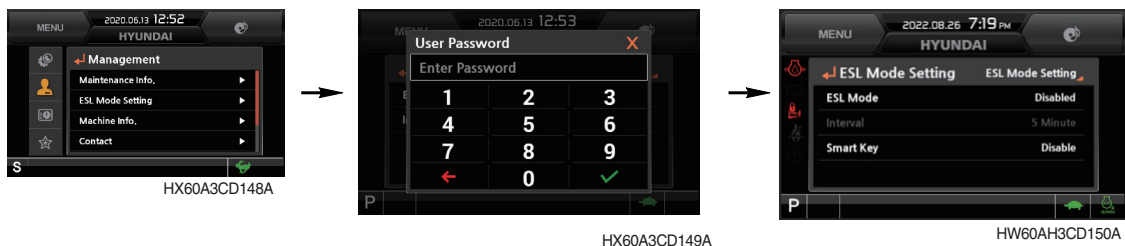
#### a) Rotary setting

- Rotary RCV : LH
- Rotary flow level : 3
- CW rotation : LH
- CCW rotation : RH

#### b) Grapple setting

- Grapple RCV : RH
- Grapple flow level : 3
- Open : LH
- Close : RH

### ③ ESL mode setting



– ESL : Engine Starting Limit

– ESL mode is designed to be a theft deterrent or will prevent the unauthorized operation of the machine.

– When you Enable the ESL mode, the password will be required when the starting switch is turned to the on position.

– Disable : ESL function is disabled and password is not required to start engine.

Enable (always) : The password is required whenever the operator starts engine.

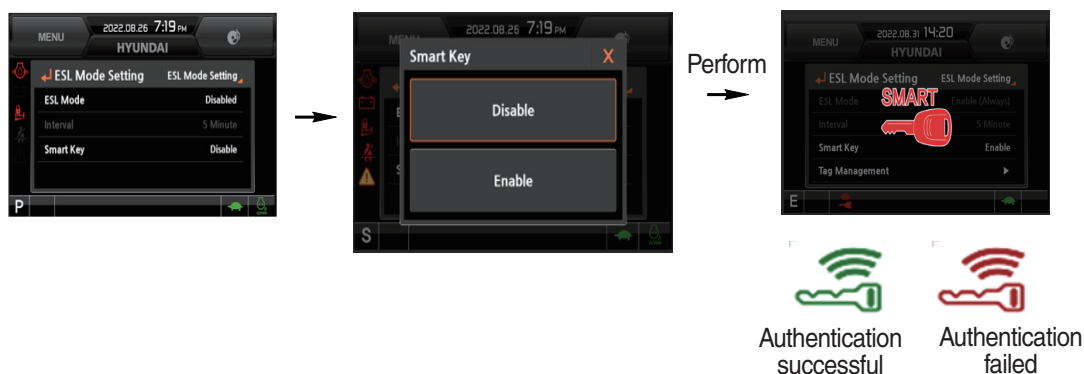
Interval : The password is required when the operator starts engine first. But the operator can restart the engine within the interval time without inputting the password.

※ The interval time can be set to a maximum 4 hours.

※ Default password : 00000

Password length : 5~10 digits

## Start Limit - Smart Key Setting (When smart key is installed)



### - Smart Key Exclusive

When the Smart key option (optional) is installed, Smart key menu is shown, and performance or non-performance of Smart key authentication can be set through the Smart key menu.

When the Smart key is not in the cabin, the approval procedure is rejected, and password must be entered.

## Start Limit - Tag Management

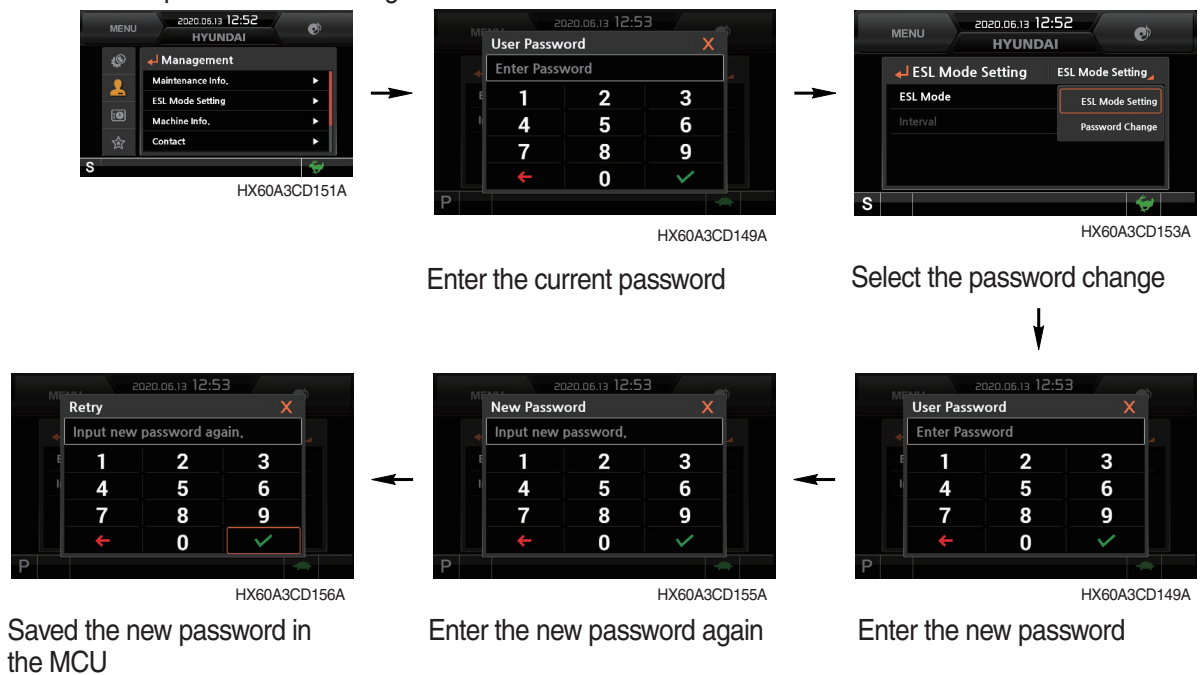


- The tag management menu is activated only when the Smart key menu is set through performance. Tag can be registered or deleted.
  - When registering the tag : Locate only the tag preferred for registration inside the cabin.
  - When deleting the tag : All registered tags are deleted.

### ※ Engine Starting Condition

Case	ESL Mode	Smart Key	Condition
1	Disable	Disable	- With registered tag : Engine can be started without password input. - Without registered tag : Engine can be started without password input.
2	Disable	Enable	If Smart Key is enabled, ESL Mode is automatically enabled. This Case 2 work the same as the Case 4.
3	Enable	Disable	- With registered tag : Engine can be started with password input. - Without registered tag : Engine can be started with password input.
4	Enable	Enable	- With registered tag : Engine can be started without password input. - Without registered tag : Engine can be started with password input.

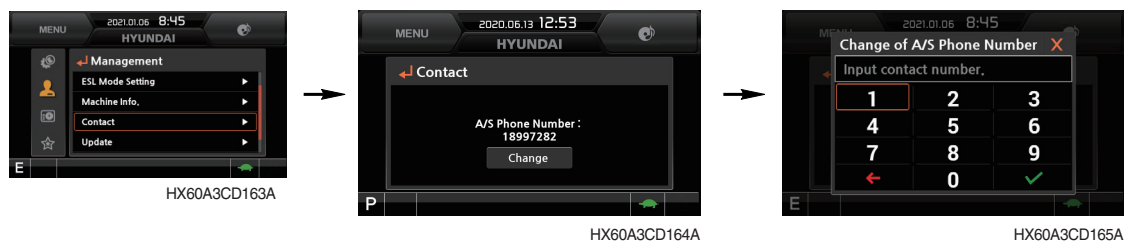
④ Password change  
 – The password is 5~10 digits.



⑤ Machine information

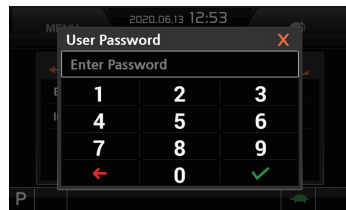


⑥ A/S phone number

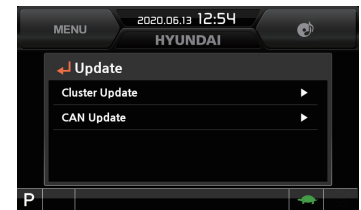




## ⑦ Cluster update



Enter the user password



Select the cluster update

- The cluster and CAN device can be updated by this menu.
- ※ Do not turn power off while updating.

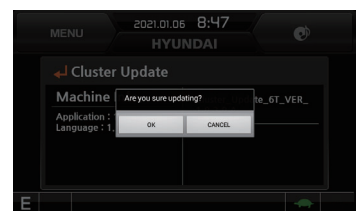
### a. Application update



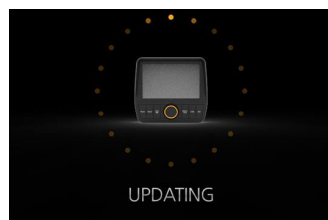
Select application item



Select file to update



Select OK



Completed

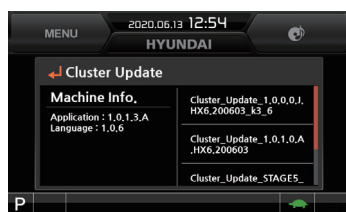


In process

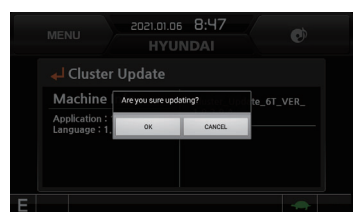
### b. System update



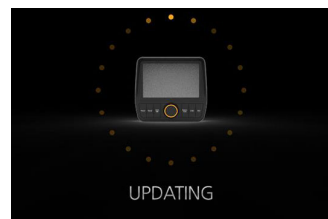
Select system item



Select file to update



Select OK

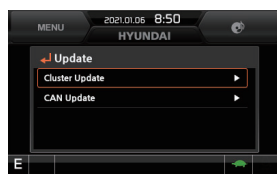


Completed

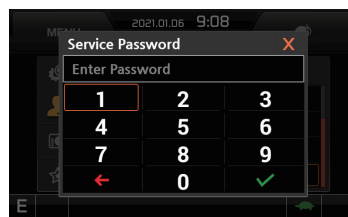


In process

## ⑧ CAN update



HX60A3CD169A



HX60A3CD149A

Enter the user password



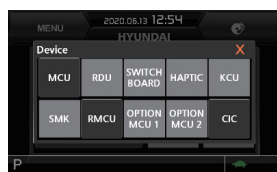
HX60A3CD179A

Select the CAN update

· The application program can be downloaded and updated by this menu.

※ Do not turn power off while updating.

### a. Download



HX60A3CD180A

Select update device



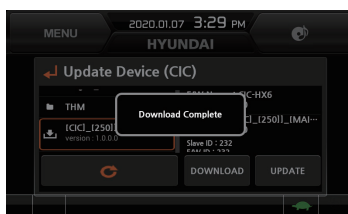
HX60A3CD181A

Select download

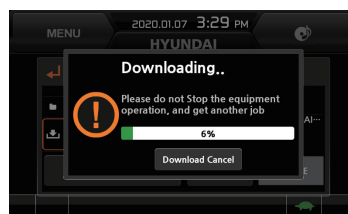


HX60A3CD182A

Select download after choose update file

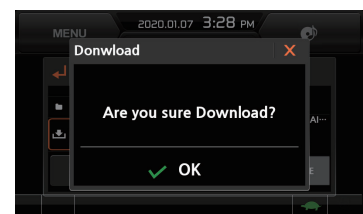


HX60A3CD185A



HX60A3CD184A

Stop download when select the cancel



HX60A3CD183A

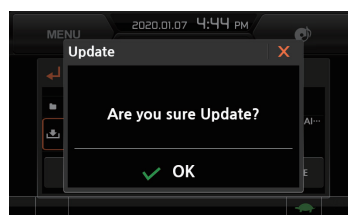
Confirm download

### b. Update



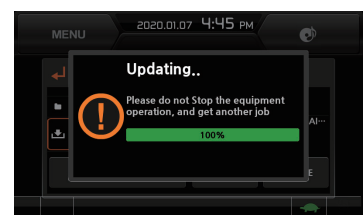
HX60A3CD186A

Select update after the download.



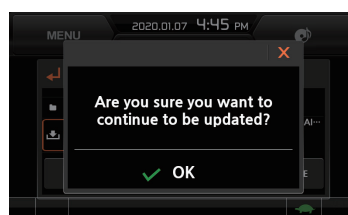
HX60A3CD187A

Confirm the update



HX60A3CD188A

In process update



HX60A3CD190A

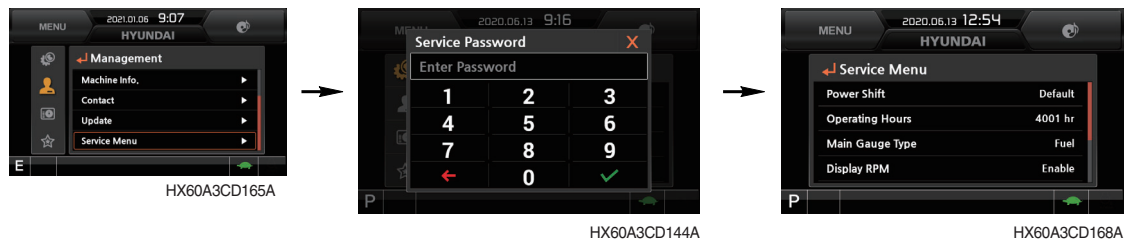
Select the OK to update another application program



HX60A3CD175A

Completed update

## ⑨ Service menu



Enter the manager password

- Power shift : Power shift mode (default/option can be set by this menu.
- Operating hours : Operating hours in individual modes since the machine line out can be checked by this menu.
- Main gauge type : The engine rpm or fuel level gauge can be display on the main gauge of the main screen by this menu.
- Display RPM : Display the numeric value of engine rpm on the main gauge of the main screen can be set by this menu.
- AVCU setting : Standard, 2-Way or 4-Way dependent upon the machine options can be selected by this menu.
- Adding language : The language displayed on the cluster can be update by this menu when it is required to correct language.

※ This menu can be used only HCE service man. Do not attempt unauthorized adjustment.

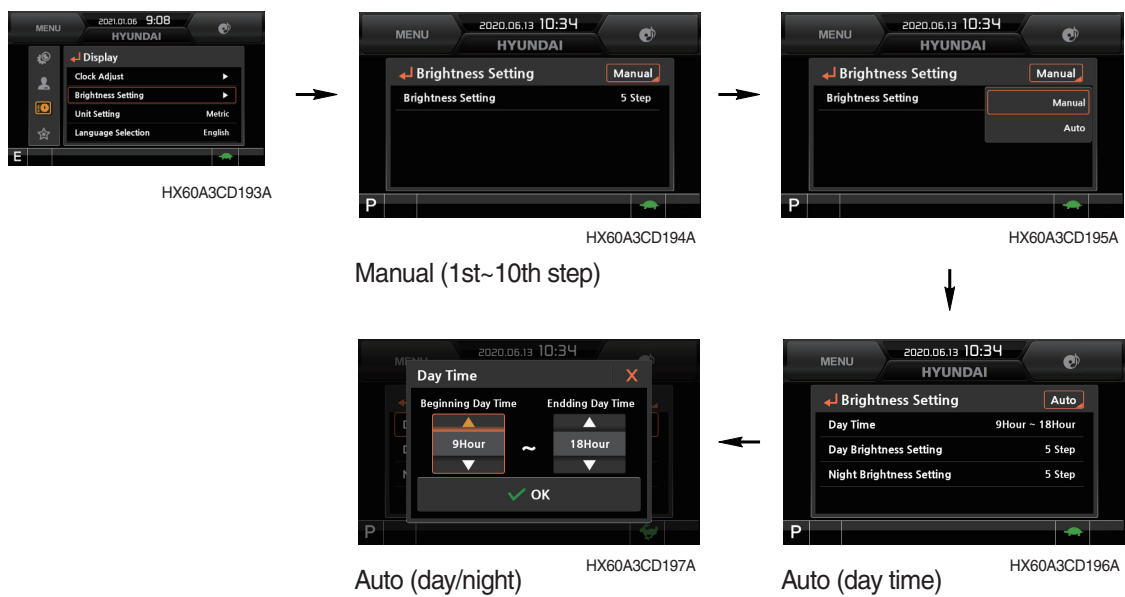
#### (4) Display

##### ① Clock adjust



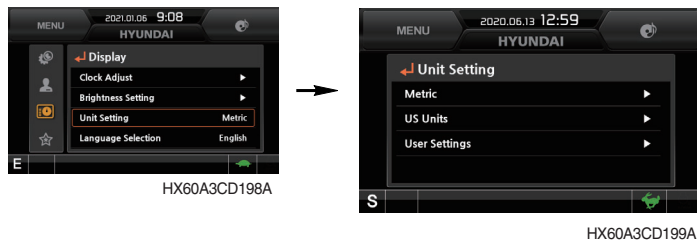
- The first row of boxes indicate Year/Month/Day.
- The second row shows the current time. (AM, PM/0:00~12:59)

##### ② Brightness



- If "Auto" is chosen, brightness for day and night can be set accordingly. Also, users can define which day time interval. (Set day starting time and ending time)

### ③ Unit set



- Metric units : Units change to metric units.
- US units : Units change to U.S. units
- User setting : Units change to user setting units

Item	Metric units	U.S. units	User setting
Temperature	°C	°F	°C, °F
Distance	km	mile	km, mile
Pressure	bar	Mpa	bar, Mpa, kgf/cm <sup>2</sup> , psi
Flow	lpm	gpm	lpm, gpm
Volume	l	gal	l, gal

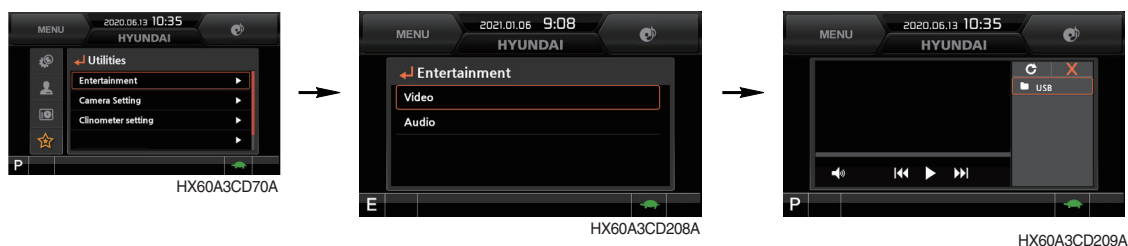
### ④ Language selection



- User can select preferable language (22 languages) and all displays are changed the selected language.

## (5) Utilities

### ① Entertainment



- Play MP4 or codec file of external hard disk through USB port.
- The USB port is located left side of the cluster.
- Over 1100 engine rpm, the screen turns into the operation screen with MP4 or codec file playing for the safety. The video is played again when the engine revolution is 1100 rpm or less.

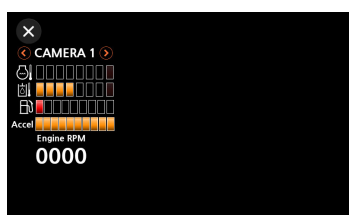
**▲ The video play is prohibited for the safety reason when the machine is operated.**

### ② Camera setting



- Three cameras can be installed on the machine and display order can be set by this menu.
- If the camera is not equipped, this menu is not useful.
- Turning the select switch in clockwise direction, the next ordered will be shown and in counter-clockwise direction, the previously ordered will be shown. Also, the camera channel can be changed by touching the screen.
- Display change to reduction size or display is not visible by pushing the select switch or touch the screen.

(display reduction size → hiding → display)



HX60A3CD204

- The camera display is terminated by pressing the ESC switch or touch the X icon on the screen.

## ■ Rear / RH view camera UI setting (Option)

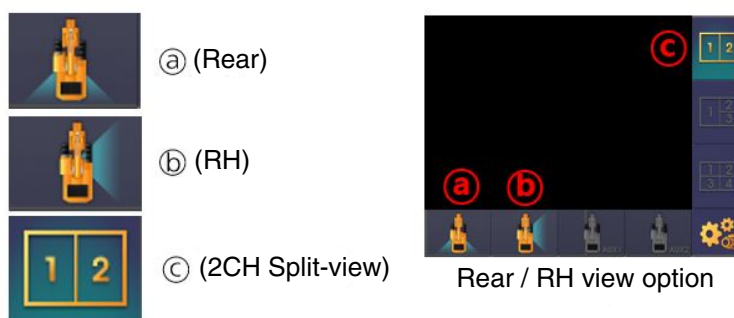
### 1) Camera control switch

- Select the CAM switch to activate Rear / RH view camera from the beginning screen.
- While in that mode, select the ESC switch to return to the home screen.



### 2) Cam image control (CIC) mode

- Touch ① (Rear), ② (RH) button on screen to set single-view camera mode.
- Touch ③ (2CH-split-view) button to set split-view camera mode.

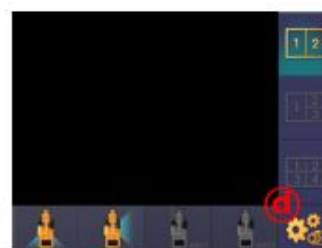


### 3) Split-view Camera order setting

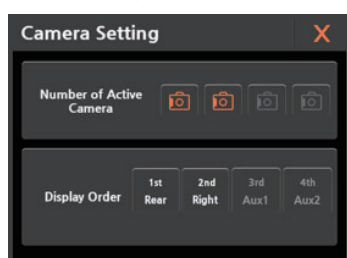
- Touch ④ (camera setting) button to set split-view camera order.



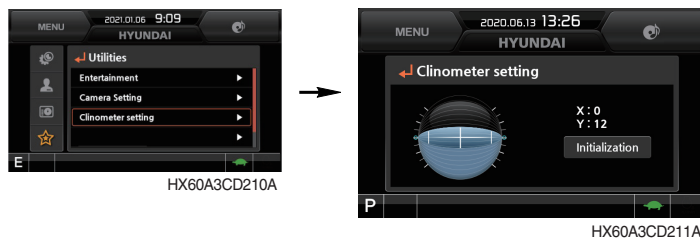
④(Camera Setting)



- You can change split-view camera order on display order menu.

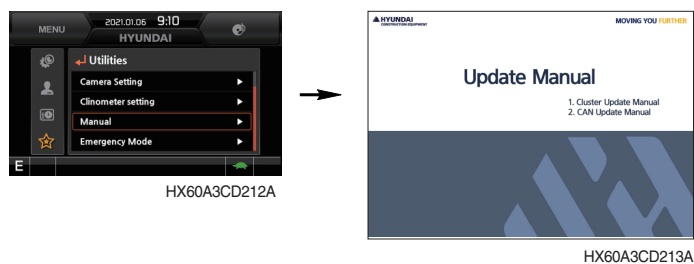


### ③ Clinometer setting



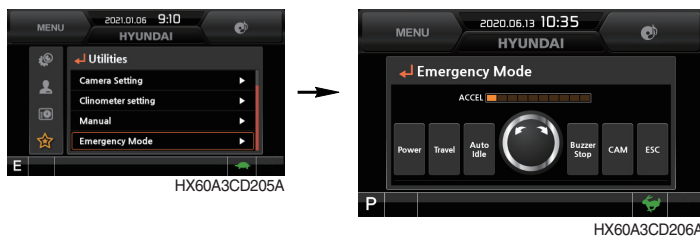
- When the machine is on the flatland, if you touch "initialization" on cluster, the values of X, Y will reset to "0".
- You can confirm tilt of machine in cluster's operating screen.

### ④ Manual



- Manual of the cluster can be read on the monitor.

### ⑤ Emergency mode



- When switches of the monitor and the accel dial fails, switches are displayed on LCD, and you are allowed to perform operation by touching the screen.
- Such operation is allowed only on this mode screen.

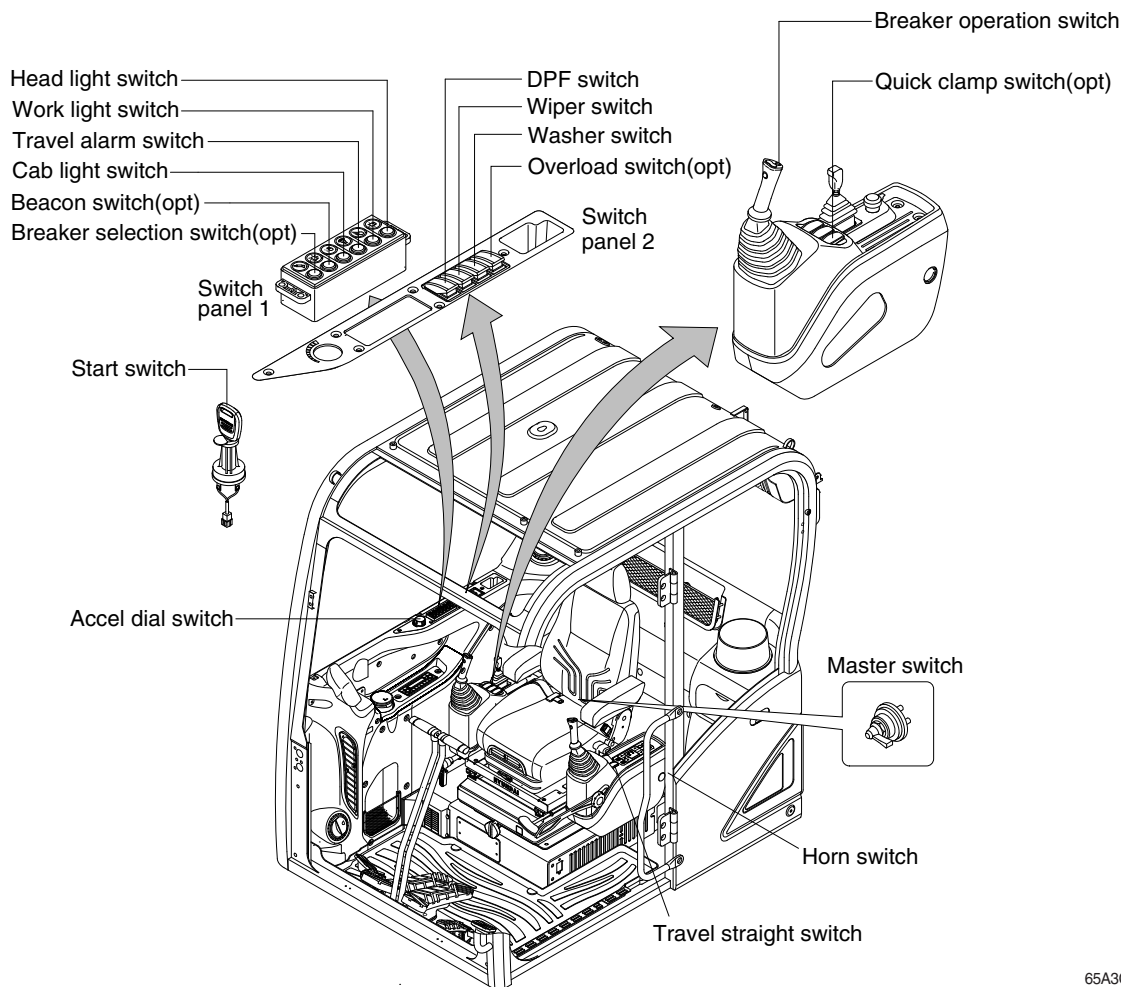
### ⑥ Quick Cooling Mode



- While the machine is stopped and discontinued with operation, engine can be operated in maximum RPM for maximum rotation of the radiator fan. (Max. for 5 minutes)
  - Setting : When the machine is stopped, the safety knob is lowered to set the quick cooling mode in the locked state
  - Release : Released when the operating time exceeds 5 minutes, when the safety knob is cleared, and when the quick cooling mode release button is pressed

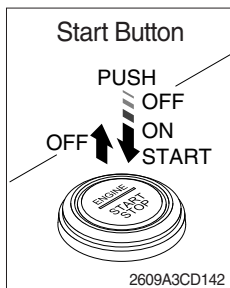
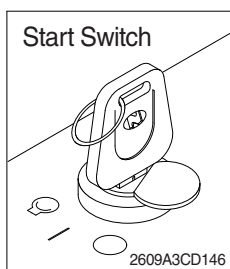


### 3. SWITCHES



65A3CD03B

#### 1) START SWITCH AND BUTTON (OPTIONAL)



Start button and Smart key tag (Optional)

##### (1) There are 3 switches of OFF, ON and START.

- ○ (OFF) : As the position possible for inserting and removing the key, engine is stopped when the key is in the OFF position while the engine is operating.
- | (ON) : The overall machine system is operated.
- ⦿ (START) : It is used to start the engine. Remove your hand after engine is started.

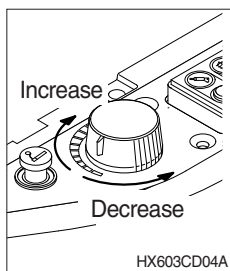
※ When the start switch is turned ON in the winter season, the coolant temperature is detected to operate the fuel heater automatically, and the fuel is heated.

When the start switch is turned ON, the engine is started in 1~2 minutes. More time may be required according to the outdoor temperature.

※ Starting switch controller tries engine starting at least 3 seconds even if switch is released after driver's start trial (key switch : start position / starting button : long push) to prevent short-time cranking (which can not starting engine). If no-start conditions (unlock safety knob) are resolved (lock safety knob) during the 3 seconds of engine starting attempt, engine can be started.

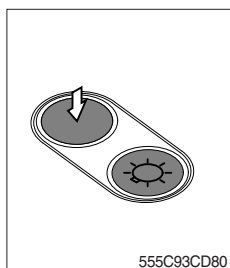
※ To maintain the electrical and hydraulic functions, and to prevent machine damage, the start switch is placed on the ON position when the engine is operating.

## 2) ACCEL DIAL



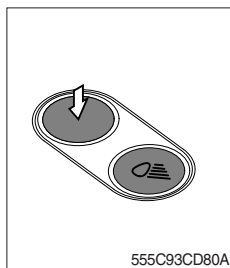
- (1) There are 10 dial setting.
- (2) Setting 1 is low idle and setting 10 is high idle.
  - By rotating the accel dial to right : Engine speed increased.
  - By rotating the accel dial to left : Engine speed decreased.

## 3) HEAD LIGHT SWITCH



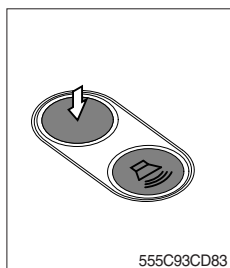
- (1) This switch is used to operate the head light.
  - Press the switch once, the head light comes ON and the pilot lamp ON.
  - Press the switch once more, the head light and pilot lamp turn off.

## 4) WORK LIGHT



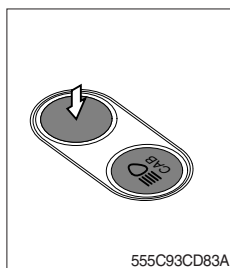
- (1) This switch is used to operate the work light.
  - Press the switch once, the work light comes ON and the pilot lamp ON.
  - Press the switch once more, the work light and pilot lamp turn off.

## 5) TRAVEL ALARM SWITCH



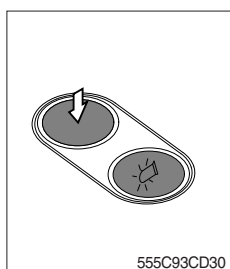
- (1) This switch is used to alarm surroundings when the machine travels to forward and backward.
- (2) On pressing this switch, the alarm operates only when the machine is traveling.

## 6) CAB LIGHT SWITCH



(1) This switch turns on the cab light on the cab.

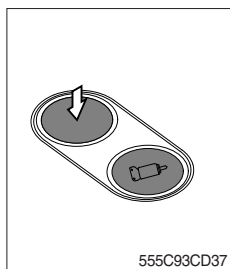
## 7) BEACON SWITCH (opt)



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

(2) The below indicator lamp is turned ON when operating this switch.

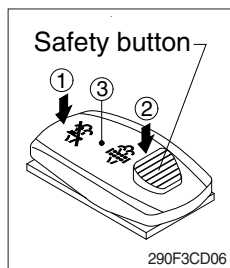
## 8) BREAKER SELECTION SWITCH (opt)



(1) This switch is used to operate breaker.

※ The breaker operates only when this switch is pressed.

## 9) DPF (Diesel Particulate Filter) Switch



(1) This switch is used to select the regeneration function on DPF.

### (2) Prohibit Switch (①)

- ① When set to the prohibit position, the AUTO or manual DPF regeneration is not allowed.
- ② It is used to prevent DPF regeneration when operating the machine in the environment that is dangerous in high temperature.
- ③ This position is recommended for operation limited to only when it becomes dangerous in high temperature.
- ④ Even when the DPF regeneration switch is in "Prohibit" position, initialization/forced regeneration can be requested according to the condition, and the warning lamp can be turned ON or OFF.



: The DPF regeneration indicating lamp can be blinking on the cluster.



: The DPF warning lamp may be turned ON or blinking.

### (3) AUTO Position (③)

In this position, DPF regeneration is performed automatically.

### (4) Manual Regeneration Position (②)

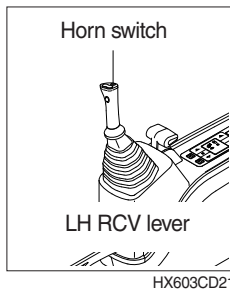
- ① In this position, the machine is not used while the engine is in low-speed idle run, and manual DPF regeneration is performed when the DPF soot level is in the sufficient level to permit regeneration.
- ② While the DPF regeneration is performed, the HEST lamp is turned ON.

※ For details, please refer to page 3-8.

※ The safety button must be pulled back to move to the manual position (②).

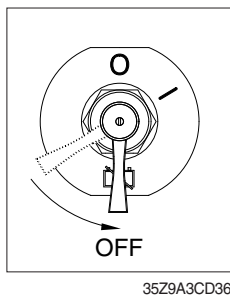
In addition, it is returned to AUTO position when released from the manual position (②).

## 10) HORN SWITCH



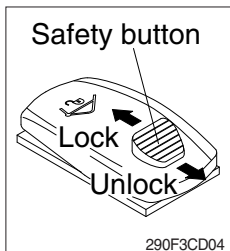
- (1) This switch is at the top of left side control lever.  
On pressing, the horn sounds.

## 11) MASTER SWITCH



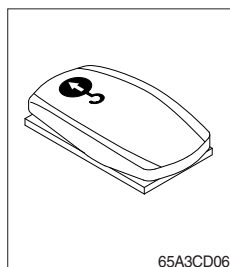
- (1) This switch is used to shut off the entire electrical system.  
(2) I : The battery remains connected to the electrical system.  
O : The battery is disconnected to the electrical system.  
※ **Never turn the master switch to O (OFF) with the engine running. It could result in engine and electrical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

## 12) QUICK CLAMP SWITCH (opt)



- (1) This switch is used to engage or disengage the moving hook on quick clamp.  
※ **Refer to the page 8-10 for details.**

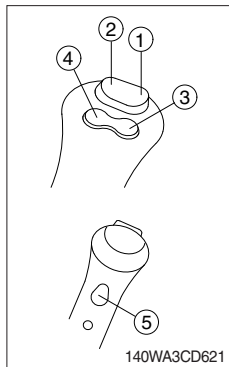
## 13) OVERLOAD SWITCH (option)



- (1) When this switch is activated, buzzer makes sound and overload warning lamp lights up in the event that the machine is or becomes in an overloaded situation.  
(2) When the switch is inactivated, buzzer stops and warning lamp goes off.

## 14) LH RCV LEVER SWITCH

### (1) Proportional type



The switches on the LH RCV lever is function as below.

① **CW rotating switch/RH boom swing**

When this switch is pressed, the clockwise rotating will operate.

② **CCW rotating switch/LH boom swing**

When this switch is pressed, the counterclockwise rotating will operate.

③ **Horn switch**

When this switch is pressed, the horn will sound.

④ **Not used**

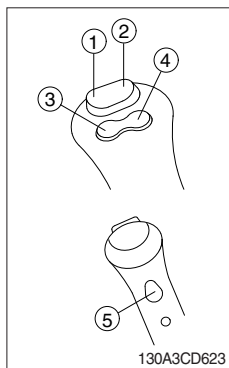
⑤ **Boom swing/rotating switch (opt)**

This switch is used to operate boom swing or rotation (if equipped rotating piping).

- Switch and flow can be set on cluster.

## 15) RH RCV LEVER SWITCH

### (1) Proportional type



The switches on the RH RCV lever is function as below.

① **2-way clamp switch**

When this switch is pressed, the clamp will only operate when the crusher operation mode is selected.

② **2-way release switch**

When this switch is pressed, the release or breaker will operate when the crusher operation mode or breaker operation mode is selected.

③ **Quick clamp switch**

This switch is used to engage or disengage the moving hook on quick clamp.

Refer to the page 8-6.

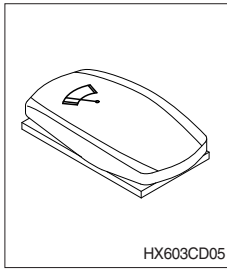
④ **Breaker switch**

When this switch is pressed, the breaker will only operate when the breaker selection switch on the switch panel is selected.

⑤ **Proportional type ON/OFF switch**

The 4-way operation is activated only by turning on the proportional control ON/OFF switch located on the left control level.

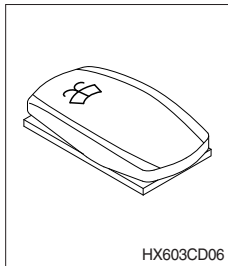
## 16) WIPER SWITCH



- (1) This switch is used to operate the wiper.  
The wiper operates.

△ If wiper does not operate with the switch in the ON position, turn the switch off immediately. Check the cause. If the switch remains ON, motor failure can result.

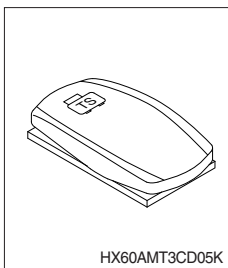
## 17) WASHER SWITCH



- (1) This switch is used to operate the washer.

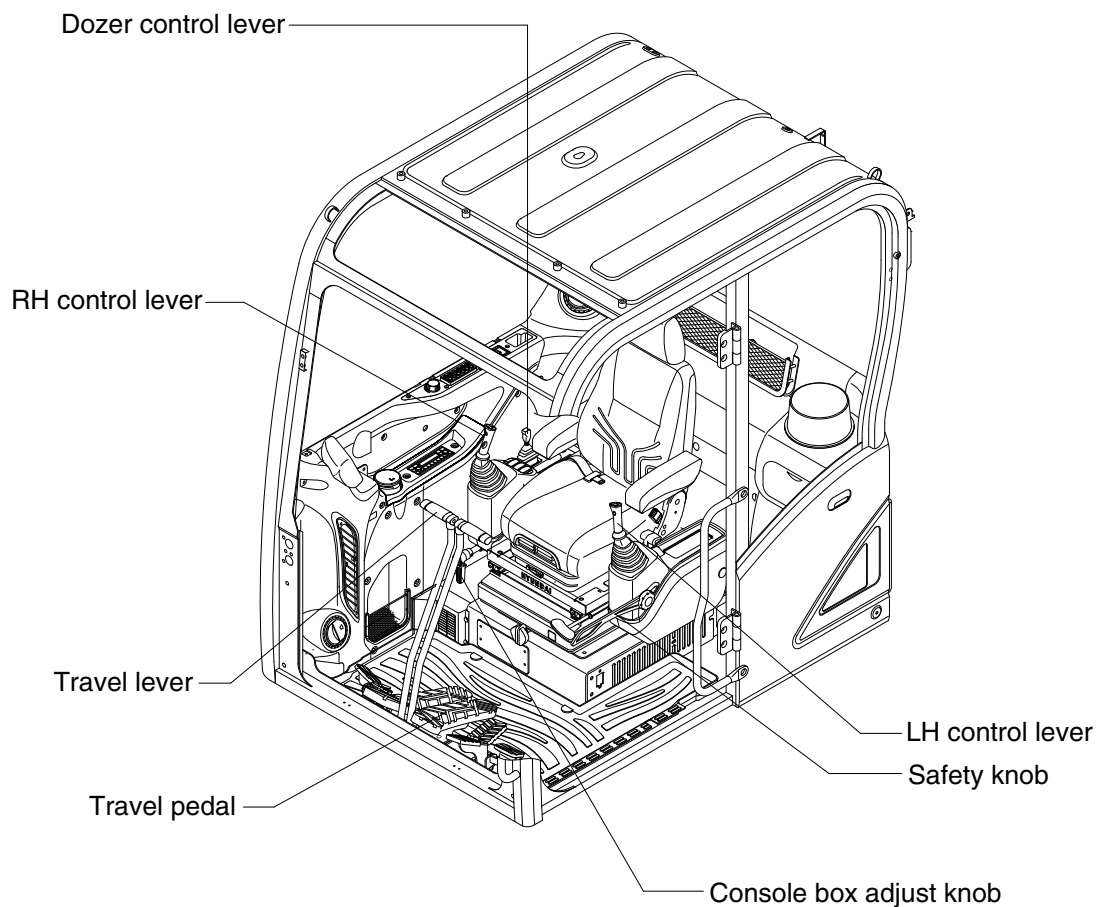
· The washer liquid is sprayed and the wiper is operated only while pressing this switch. If release the switch, return to the first position.

## 18) TRAVEL STRAIGHT SWITCH (option)



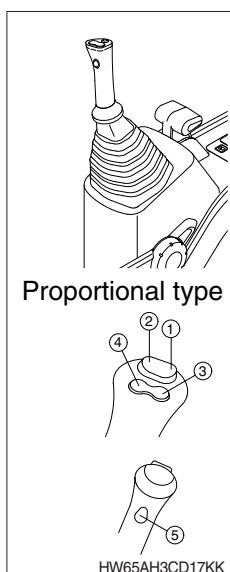
- (1) When the travel straight switch is in the ON position, the machine will travel straight by use of only the left pedal or the left lever.

## 4. LEVERS AND PEDALS



65A3CD03C

### 1) LH CONTROL LEVER



(1) This joystick is used to control the swing and the arm.

※ Refer to operation of working device in chapter 2 for details.

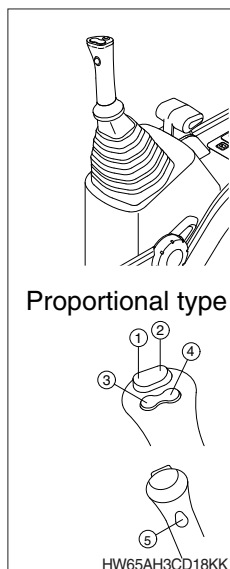
(2) The switch functions are as below.

No.	Proportional type
①	Rotating-CW
②	Rotating-CCW
③	Horn
④	Not used
⑤	Boom swing/rotating switch (opt)

※ Refer to page 3-42 for the details of the switch function.



## 2) RH CONTROL LEVER



(1) This joystick is used to control the boom and the bucket.

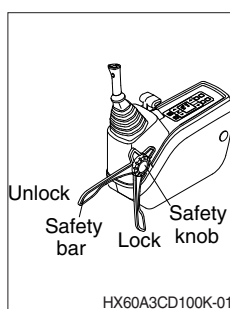
※ Refer to operation of working device in chapter 2 for details.

(2) The switch functions are as below.

No.	Proportional type
①	2-way clamp
②	2-way release
③	Quick clamp switch
④	Breaker
⑤	Proportional type ON/OFF switch

※ Refer to page 3-42 for the details of the switch function.

## 3) SAFETY KNOB



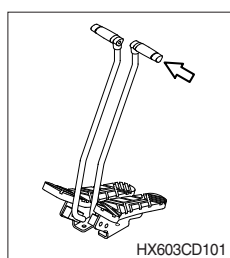
(1) All control levers and pedals are disabled from operation by locating the safety knob to the LOCK position as shown.

※ Be sure to turn the safety knob to the LOCK position when entering or leaving the operators seat/cabin.

(2) The machine is operational by turning the safety knob to the UNLOCK position.

※ Do not use the safety bar for a handle when getting on or off the machine.

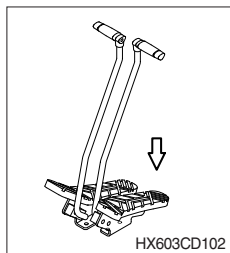
## 4) TRAVEL LEVER



(1) This lever is mounted on travel pedal and used for traveling by hand. The operation principle is same as the travel pedal.

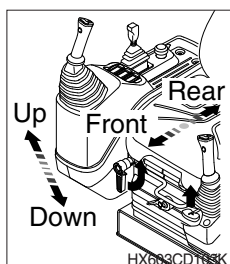
(2) Refer to traveling of the machine in chapter 2 for details.

## 5) TRAVEL PEDAL



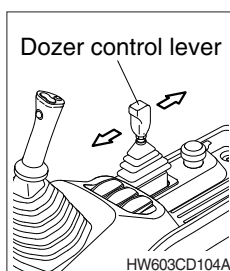
- (1) This pedal is used to move the machine forward or backward.
- (2) If left side pedal is pressed, left track will move.  
If right side pedal is pressed, right track will move.
- (3) Refer to traveling of machine in chapter 2 for details.

## 5) SEAT AND CONSOLE BOX ADJUST LEVER



- (1) This lever is used to move the seat and console box to fit the contours of the operator's body.
- (2) Pull the lever to adjust forward or backward over 90 mm (3.5").

## 6) DOZER CONTROL LEVER

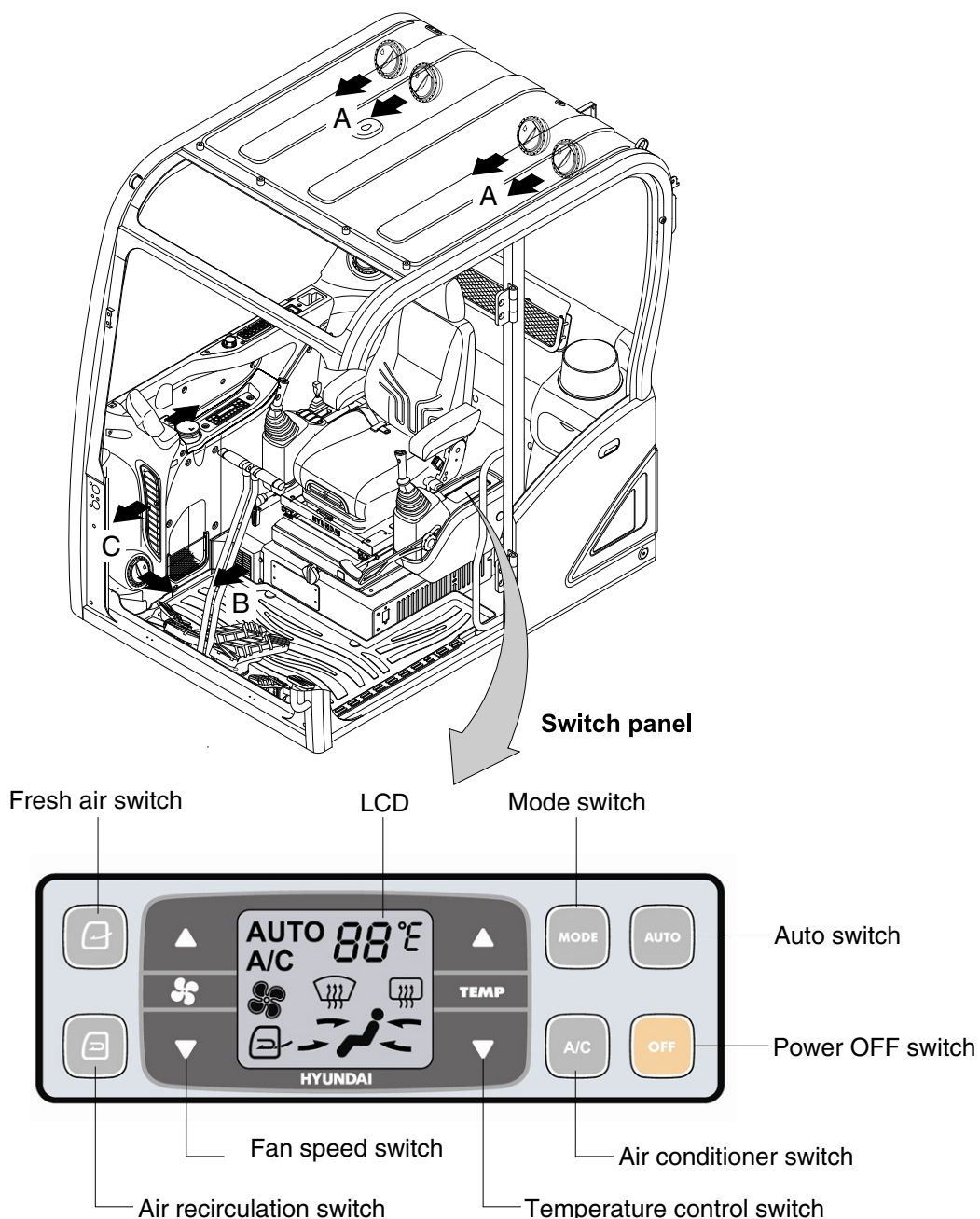


- (1) This lever is used to operate the dozer blade.
- (2) If the lever is pushed forward, the dozer blade will be going down.  
If the lever is pulled back, the dozer blade will be going up.

## 5. FULL AUTO AIR CONDITIONER AND HEATER

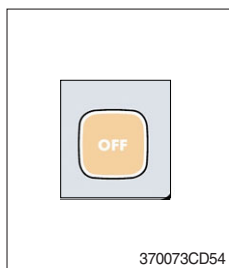
Full auto air conditioner and heater system automatically keeps the optimum condition in accordance with operator's temperature configuration sensing ambient and cabin inside temperature.

- Location of air flow ducts



65A3CD05B

## 1) POWER OFF SWITCH

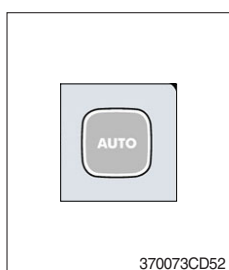


- (1) This switch makes the system and the LED OFF.  
Just before the power OFF, set values are stored.

### (2) Default setting values

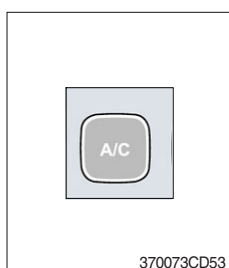
Function	Air conditioner	In/outlet	LCD	Temperature	Mode
Value	OFF	Inlet	OFF	Previous sw OFF	Previous sw OFF

## 2) AUTO SWITCH



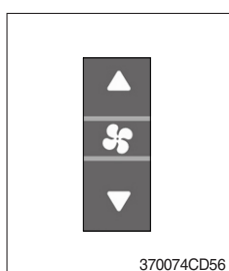
- (1) Turn the starting switch to ON position, LCD lights ON.  
Auto air conditioner and heater system automatically keeps the optimum condition in accordance with operator's temperature configuration sensing ambient and cabin inside temperature.
- (2) This switch can restart system after system OFF.

## 3) AIR CONDITIONER SWITCH (compressor switch)



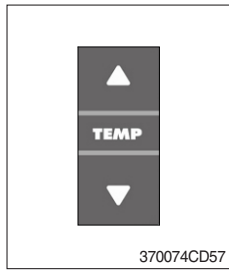
- (1) This switch turns the compressor and the LCD ON.
- (2) In accordance with the temperature sensed by duct (evaporator) sensor, compressor turns ON or OFF automatically.
- ※ **Air conditioner operates to remove vapor and drains water through a drain hose. Water can be sprayed into the cab in case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

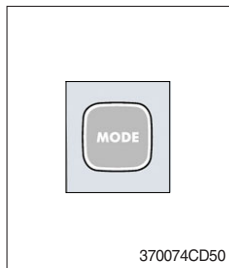


- (1) Setting temperature indication (17~32°C, scale : 1°C)
- (2) Max cool and max warm beeps 5 times.
- (3) The max cool or the max warm position operates as following table.

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

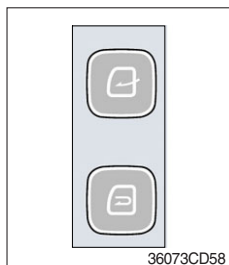


- (1) Operating this switch, it beeps and displays symbol of each mode in order. (Vent → Vent/Foot → Foot → Foot/Def → Vent)

Mode switch		Vent	Vent/Foot	Foot	Foot/Def
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.

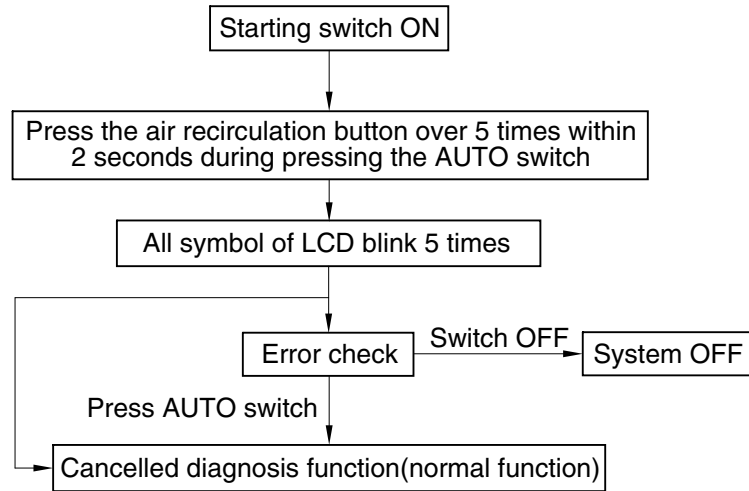
## 7) FRESH AIR/AIR RECIRCULATION SWITCH



- (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



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### (2) Error check

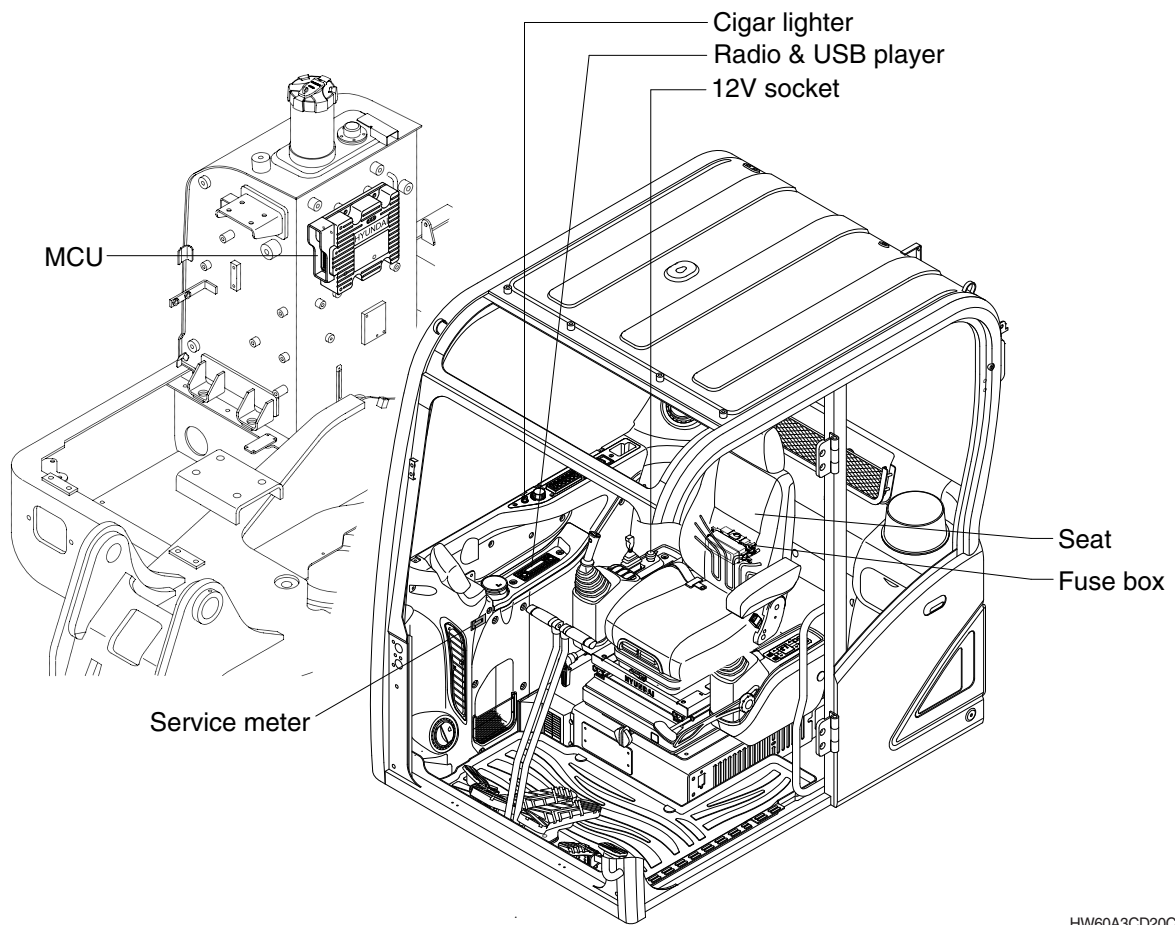
- The corresponding error code flickers on the setup temperature display panel, the other symbol bol will turn OFF.
- Error code flickers every 0.5 second.
- If error code is more than two, each code flickers 2 times in sequence.
- Error code

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

### (3) Fail safe function

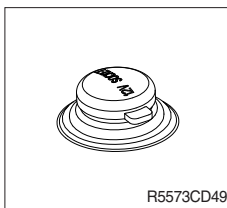
Error description	Fail safe function
Cabin inside sensor (11)	25°C alternate value control
Ambient sensor (12)	20°C alternate value control
Coolant temp sensor (13)	More than 10 minutes after engine start up, the alternate value is ON
Duct (evaporator) sensor (14)	1°C alternate value control
Temp actuator (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

## 6. OTHERS



HW60A3CD20C

### 1) 12V SOCKET (opt)

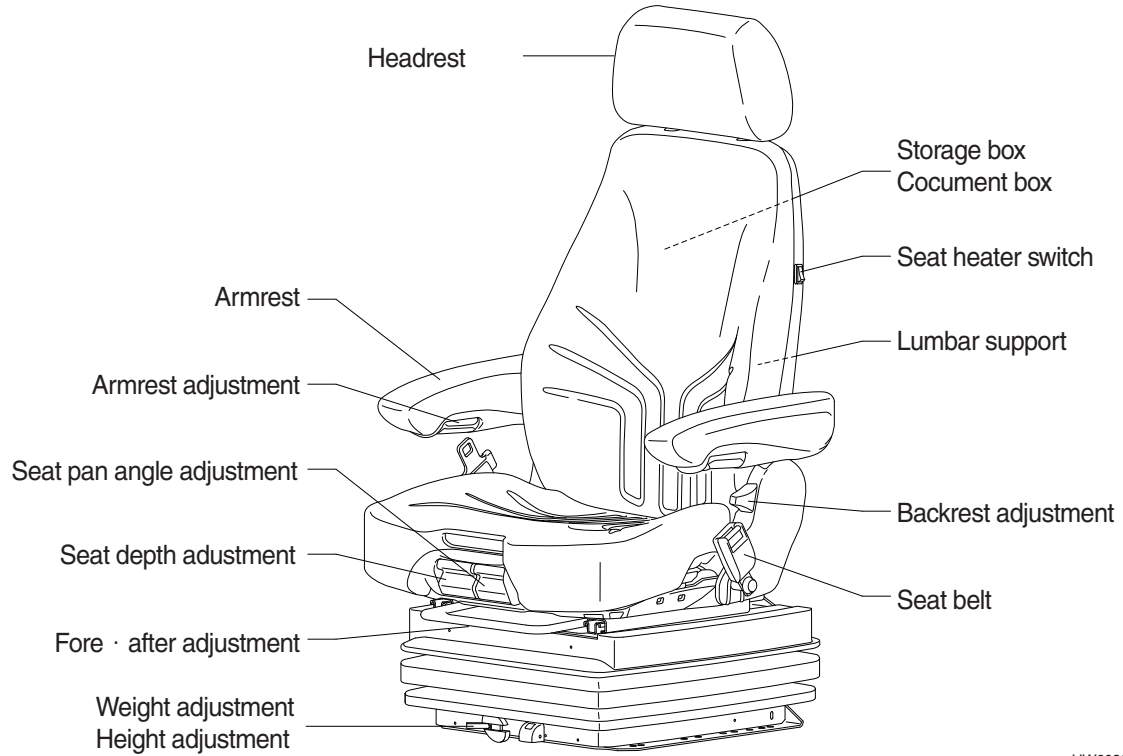


(1) Utilize the power of 12V as your need and do not exceed power of 12V, 120W.

## 2) SEAT (SUSPENSION, STD)

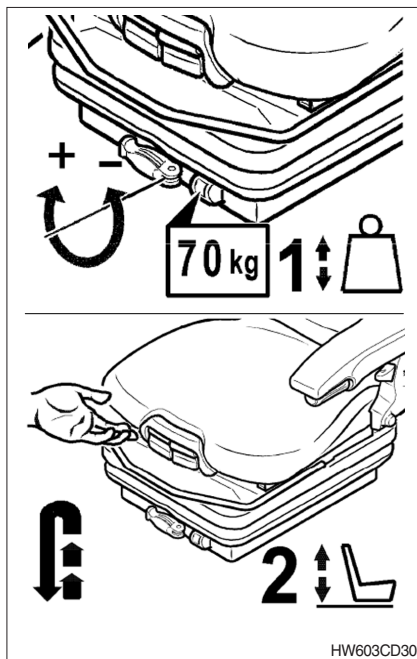
The seat is adjustable to fit the contours of the operator's body. It will reduce operator fatigue due to long work hours and enhance work efficiency.

※ The seat belt reminder warning lamp pops up and the buzzer sounds until seat belt is fastened.



HW603CD31

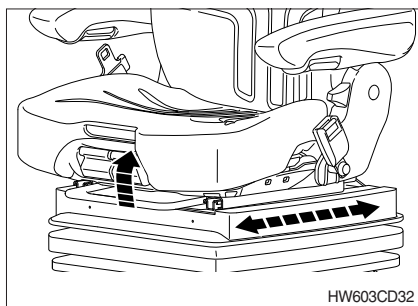
### (1) Weight and height adjustment



- ① The seat has to be adjusted for the operator's weight and height by tilting the handle (+) up or down (-) with the operator not sitting on the seat.



## (2) Fore/after adjustment



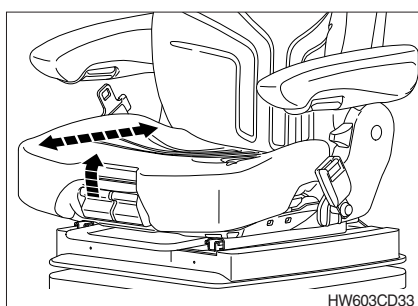
- ① The fore/after adjustment is released by lifting the locking lever.

**⚠ Do not operate the locking lever while operating the machine.**

※ After the adjustment, the locking lever must latch into the desired position with an audible click. It should not be possible to move the operator's seat into another position when it is locked.

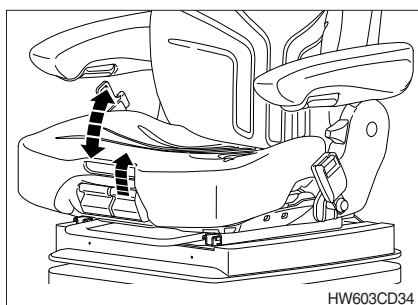
※ Do not lift the locking lever with your leg.

## (3) Seat depth adjustment



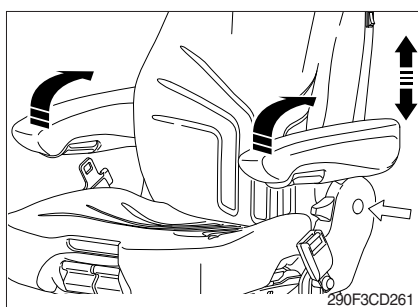
- ① The depth of the seat pan can be individually adjusted.
- ② To adjust the depth of the seat cushion, pull the right handle upwards. By moving the seat pan backwards or forwards the desired seating position can be reached.

## (4) Seat pan angle adjustment



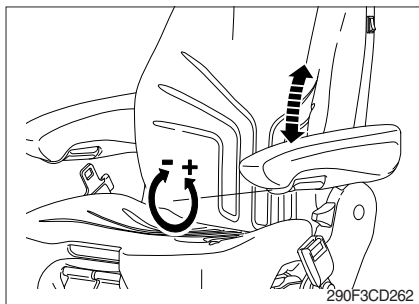
- ① The angle of the seat pan can be individually adjusted.
- ② To adjust the angle of the seat pan, pull the left handle upwards. By exerting pressure on or off the front or rear part of the seat pan it can be moved to the desired position.

## (5) Armrests



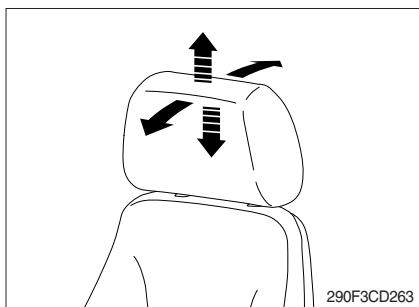
- ① The armrests can be folded up if desired and the height can be individually adjusted.
- ② To adjust the height of armrest, separate the round cap (see arrow) from the cover and loosen the hexagon nut (13 mm). Adjust the armrests to the desired position (5 steps) and retighten the nut. Reinstall the cap.
  - Tightening torque : 2.6 kgf·m (18.8 kgf·m)

### (6) Armrest adjustment



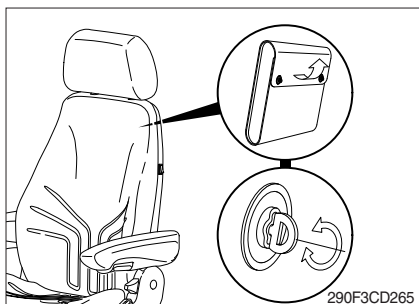
- ① The inclination of the armrest can be modified by turning the adjustment knob.
- ② When turning the knob to the outside (+), the front part of the armrest will be lifted; when turning the knob to the inside (-), it will be lowered.

### (7) Headrest



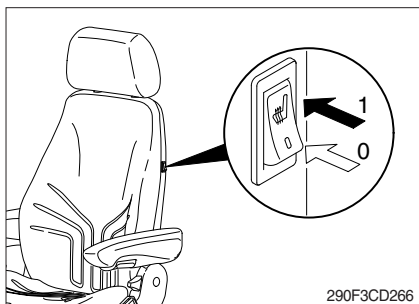
- ① The headrest can be individually adjusted for height by pulling it upward over the various increments up the end stop.
- ② By pushing forwards or rearwards the angle of the headrest can be adjusted individually.
- ③ To remove the headrest, pull it over the end stop.

### (8) Document box



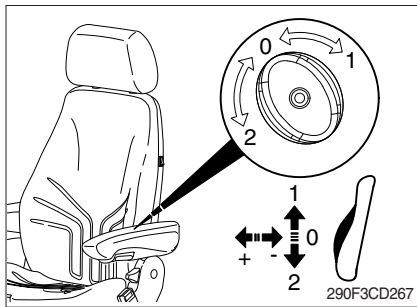
- ① The document box is placed on the rear side of the backrest.
- ② To open the document box, first twist the turn lock closures 90° to the left or the right and then fold the cover of the document box upwards.

### (9) Seat heater switch



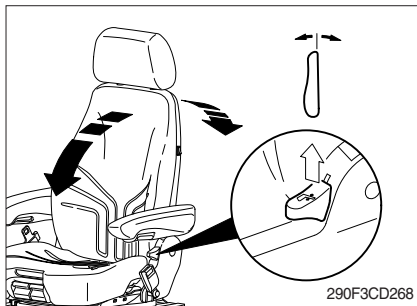
- ① The seat heater can be turned on/off by pressing the switch.

### (10) Lumbar support



- ① By turning the adjustment knob to the left (2) or right (1), both the height and curvature of the backrest cushion can be individually adjusted.
- ② This increases both the seating comfort and should improve the performance of the operator.

### (11) Backrest adjustment



- ① Pull up the locking lever to release the backrest catch. When releasing the backrest, do not load the backrest by pressing against it.
  - ② By exerting pressure on or off the front or rear part of the seat pan it can be moved to the desired position. Release the locking lever to lock the backrest.
- ※ It should not be possible to move the backrest into another position after it has been locked.

### (12) Maintenance



Dirt can impair the function of the seat, so make sure you keep your seat clean.

Upholstery does not need to be removed from the seat frame for cleaning.

**▲ Take care with the backrest - it may jerk forward and cause injury.**

When cleaning the backrest cushion, the backrest must be held in place when operating the backrest lever.

※ Do not clean the seat with a pressure washer.

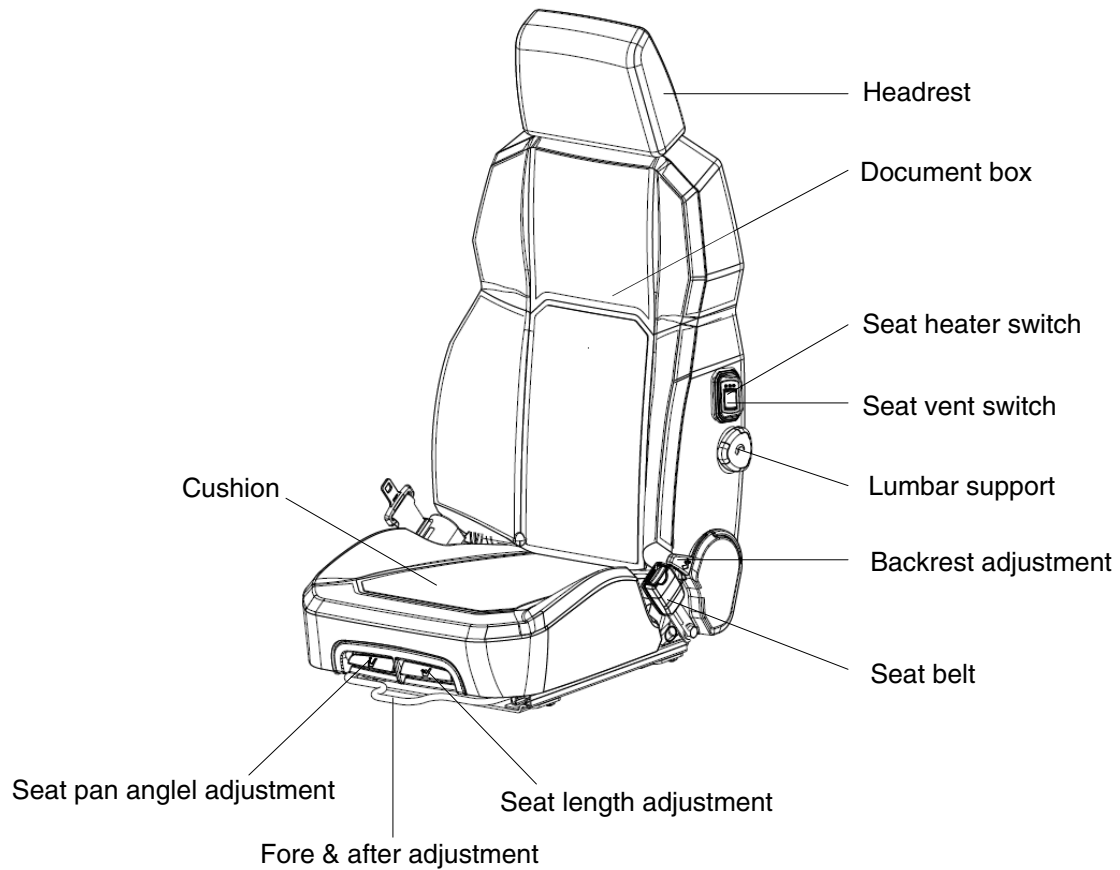
During cleaning, the upholstery should never be soaked.

Use standard commercially available upholstery or plastics cleaning agent. Test first for compatibility on a small, concealed area.

## ■ SEAT (HEAT & VENT, OPTION)

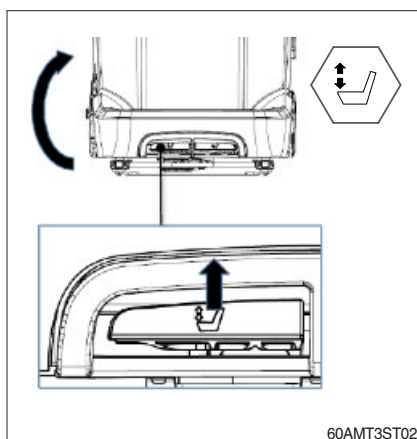
The seat is adjustable to fit the contours of the operator's body. It will reduce operator fatigue in the event of long work hours and it should enhance work efficiency.

※ The seat belt reminder warning lamp pops up and the buzzer sounds until the seat belt is fastened.



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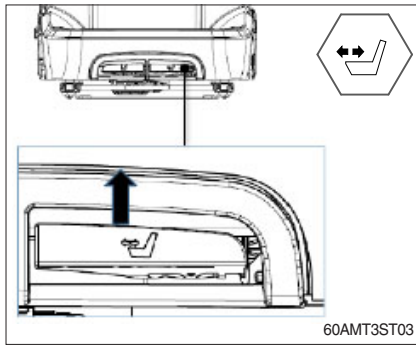
### (1) Cushion tilt



① The angle of the seat cushion can be individually adjusted. This optimises comfort, supporting your legs where they need it most.

- Pull and lift the handle upwards to raise cushion and set to one of three increments.
- Pull and lift handle and push down to lower seat cushion.

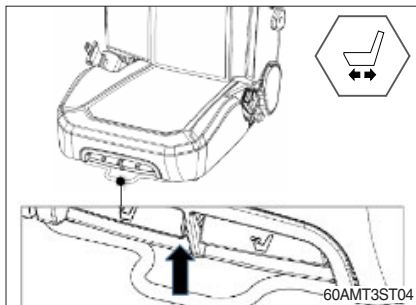
## (2) Cushion extension



① The seat cushion can be extended as desired, until required seating position is reached. This optimises comfort for users of different heights.

- Pull and lift the handle upwards and pull seat cushion out to extend.
- Pull and lift handle upwards and push seat cushion back to reduce cushion depth.

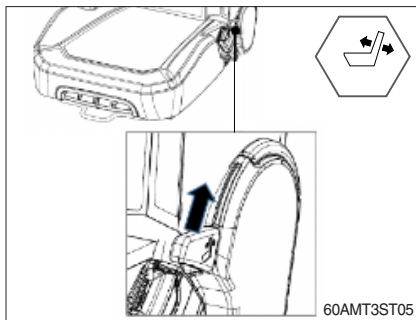
## (3) Fore/after adjustment



① The seat upper can be forward / backward as desired, until required seating position is reached. This optimises comfort for users of different positions.

- Pull and lift the handle upwards and move seat forward / backward as desired.

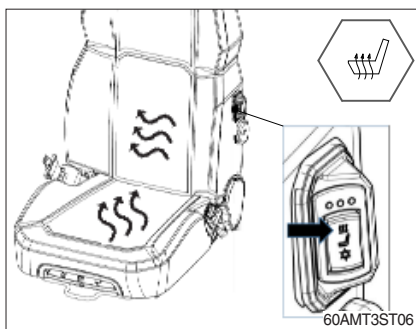
## (4) Backrest recliner



① To recline the seat, pull backrest recline lever upwards, whilst applying pressure on the backrest until desired angle is reached.

② Before releasing lever to lock position, take care that the seat offers sufficient clearance to the controls for operation.

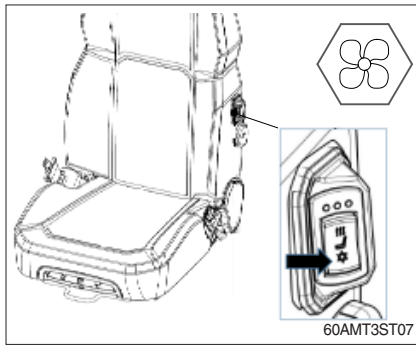
## (5) Heater



① Operating the heater is important for maintaining driver comfort and alertness. 3 heat settings are available.

- To turn on, press button once. This is the full power setting.
- To reduce heat, button can be pushed again for mid-lever heat and again for lowest heat setting. Press again to turn off.

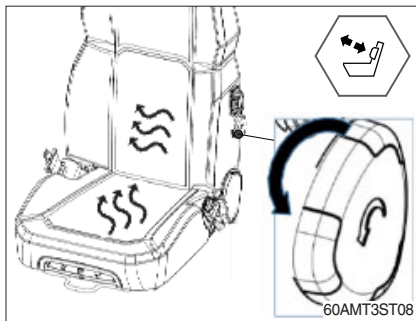
## (6) Ventilation



① Air ventilation improves driver comfort and alertness, maintaining productivity. 3 cool settings are available.

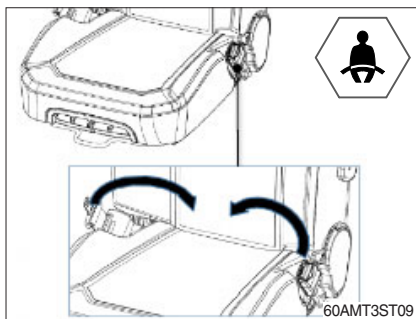
- To turn on, press button once. This is the full power setting.
- To reduce cooling, button can be pushed again for mid-level cool, and again for lowest cool setting. Press again to turn off.

## (7) Mechanical lumbar



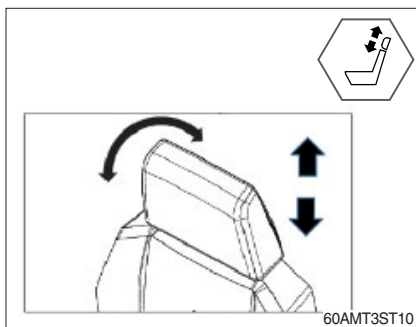
- ① The lumbar can be adjusted mechanically.
- ② Turn handle counterclockwise to achieve desired lumbar setting. Continuing to rotate the handle will return the lumbar to its initial position.

## (8) Seat belt



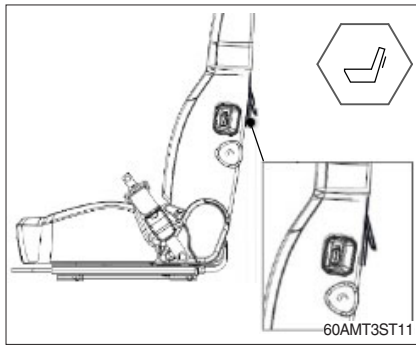
- ① A 2 point retractable seat belt is an available option to offer added driver security.
- ② Pull the belt to extend and push into buckle clip. An audible 'click' will sound once belt is securely fastened.

## (9) Headrest



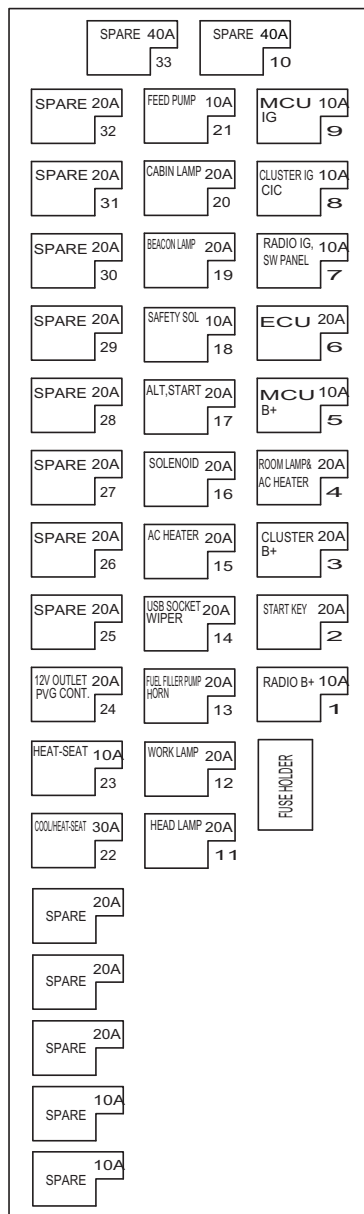
- ① The headrest provides extra upper back and head support when operating the vehicle. Pull firmly upwards to extend and push firmly downwards to lower.
- ② The headrest can be manually inclined forwards and reclined backwards to offer optimum head support.

#### (10) Document pouch



- ① Situated on the back of the seat, the document pouch offers an area to store paperwork.

### 3) FUSE BOX



HX653CD13

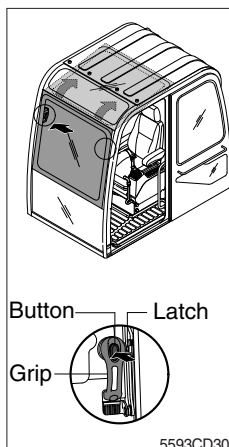
(1) The fuses protect the electrical parts and wiring from burning out.

(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.

### 4) UPPER WINDSHIELD



5593CD30

(1) Perform the following procedure in order to open the upper windshield.

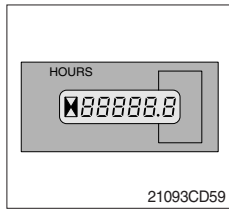
- ① Release both latches in order to release the upper windshield.
- ② Hold both grips that are located at both side the windshield frame push the windshield upward.
- ③ Hold both grips that are provided on the windshield frame and back into the storage position until auto lock latch is engaged.

(2) Perform the following procedure in order to close the upper windshield.

Reverse step ① through step ③ in order to close the upper windshield.



## 5) SERVICE METER



- (1) This meter shows the total operation hours of the machine.
- (2) Always ensure the operating condition of the meter during the machine operation. Inspect and service the machine based on hours as indicated in chapter 6, maintenance.

## 6) RADIO AND USB PLAYER (MACHINE SERIAL NO. : -#0032)

### ■ WITH BLUETOOTH



9403CD100

### ■ FRONT PANEL PRESENTATION

















- |   |  |   |    |  |   |
|---|--|---|----|--|---|
| 1 |  | ..... Power ON/OFF,<br>Volume UP/DOWN button            | 10 |  | ..... Station preset 5<br>DIR- ..... Directory down button        |
| 2 |  | ..... Manual UP/DOWN Tuning,<br>File search, SEL button | 11 |  | ..... Station preset 6<br>DIR+ ..... Directory up button          |
| 3 |  | ..... Mode button,<br>Audio mute button                 | 12 |  | ..... Scan play button (SCAN)<br>Best station memory (BSM) button |
| 4 |  | ..... Call & Pair button                                | 13 |  | ..... Auto tune up, Seek up button                                |
| 5 |  | ..... Call end button                                   | 14 |  | ..... Auto tune down, Track down button                           |
| 6 |  | ..... Station preset 1<br>DIS ..... Display button      | 15 |  | ..... USB connector   |
| 7 |  | ..... Station preset 2                                  | 16 |  | ..... AUX IN Jack   |
| 8 |  | ..... Station preset 3<br>RPT ..... Repeat play button  | 17 |  | ..... MIC hole  |
| 9 |  | ..... Station preset 4<br>RDM ..... Random play button  |    |  |   |

## RADIO AND USB PLAYER (WITHOUT BLUETOOTH)



9403CD101

### FRONT PANEL PRESENTATION

- |  |   |
|--|---|
| <p>1  ..... Power ON/OFF,<br/>Volume UP/DOWN button</p> <p>2  ..... Manual UP/DOWN Tuning,<br/>File search, SEL button</p> <p>3  ..... Mode button,<br/>Audio mute button</p> <p>4  ..... Radio seek up button</p> <p>5  ..... Radio seek down button</p> <p>6  ..... Station preset 1<br/>DIS ..... Display button</p> <p>7  ..... Station preset 2</p> <p>8  ..... Station preset 3<br/>RPT ..... Repeat play button</p> <p>9  ..... Station preset 4<br/>RDM ..... Random play button</p> | <p>10  ..... Station preset 5<br/>DIR- ..... Directory down button</p> <p>11  ..... Station preset 6<br/>DIR+ ..... Directory up button</p> <p>12  ..... Scan play button (SCAN)<br/>Best station memory (BSM) button</p> <p>13  ..... Track up button</p> <p>14  ..... Track down button</p> <p>15  ..... USB connector</p> <p>16  ..... AUX IN Jack</p> |
|--|---|

## ■GENERAL

### (1) Power and volume button



#### ① Power ON / OFF button

Press power button (1) to turn the unit on or off.

#### ② Volume UP/DOWN control knob

Turn VOL knob (1) right to increase the volume level.

Turn VOL knob (1) left to decrease the volume.

After 5 seconds the display will return to the previous display mode.

#### ③ Initial volume level set up

I-VOL is the volume level the unit will play at when next turned on. To adjust the I-VOL level, press and hold VOL button (1) for longer than 2 seconds. The current volume level displays on the display panel.

Then turn button (1) right or left to set the volume level as the I-VOL level.

#### ④ Clock ON/OFF control

The CLOCK was default at off status. To turn CLOCK ON, press and hold VOL button (1) for longer than 2 seconds to display I-VOL, then short press VOL again, turn VOL knob while CLOCK OFF display, then the CLOCK ON will be displayed.

※ Due to time tolerance, the clock display on the Audio unit might have little difference.

#### ⑤ Clock adjustment

With CLOCK ON selected, press VOL knob again after CLOCK ON display, the hour will blink, turn VOL knob right or left to adjust hour.

Simply press VOL again, the minute will blink, turn VOL knob to adjust minute. Then press VOL again to confirm the clock once finished.

## (2) Menu Selection



- ① This button can adjust the sound effect and other things.  
Each time you press this button (2), LCD displays as follows :

BAS → TREB → BAL L=R → FAD F=R → EQ → LOUD ON →  
BEEP 2ND

On each setting, the level can be controlled by turning TUNE knob (2).  
When the last adjustment is made, after 5 seconds, the display will automatically return to the previous display mode.

### ② Bass control

To adjust the bass tone level, first select the bass mode by pressing SEL button (2) repeatedly until BASS appears on the display panel. Then turn knob (2) right or left within 5 seconds to adjust the bass level as desired. The bass level will be shown on the display panel from a minimum of BASS-7 to a maximum of BASS+7.

### ③ Treble control

To adjust the treble tone level, first select the treble mode by pressing SEL button (2) repeatedly until TREB appears on the display panel. Then turn knob (2) right or left within 5 seconds to adjust the treble level as desired. The treble level will be shown on the display panel from a minimum of TREB -7 to a maximum of TREB +7.

### ④ Balance control

To adjust the left-right speaker balance, first select the balance mode by pressing SEL button (2) repeatedly until BAL indication appears on the display panel. Then turn knob (2) right or left within 5 seconds to adjust the balance as desired. The balance position will be shown by the bars on the display panel from BAL 10R (full right) to BAL 10L (full left).

### ⑤ Fader control

To adjust the front-rear speaker balance, first select the fader mode by pressing SEL button (2) repeatedly until FADER indication appears on the display panel. Then turn knob (2) right or left within 5 seconds to adjust the front-rear speaker level as desired. The fader position will be shown by the bars on the display panel from FAD 10F (full front) to FAD 10R (full rear).

### ⑥ EQ control

You can select an equalizer curve for 4 music types (CLASSIC, POP, ROCK, JAZZ). Press button (2) until EQ is displayed, then turn knob (2) right or left to select the desired equalizer curve. Each time you turn the knob, LCD displays as follows :

EQ OFF → CLASSIC → POP → ROCK → JAZZ

※ When the EQ mode is activated, the BASS and TREBLE modes are not displayed.

#### ⑦ 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 button (2) until LOUD is displayed, then turn knob (2) right or left to activate or deactivate loudness.

#### ⑧ Beep control

To adjust the BEEP mode, first select the BEEP mode by pressing button (2) repeatedly until BEEP indication appears on the display panel. Then turn knob (2) left or right within 5 seconds to select BEEP 2ND, BEEP OFF or BEEP ON.

- BEEP 2ND : You will only hear the beep sound when the buttons are held down for more than 2 seconds.
- BEEP OFF : You can not hear the sound beep when you press the buttons.
- BEEP ON : You can hear the beep sound each time you press the buttons.

#### (3) Mute control

- ① Press and hold MUTE button (3) for over 2 seconds to mute sound output and MUTE ON will blink on the LCD. Press the button again to cancel MUTE function and resume to normal playing mode.

#### (4) Mode selection

- ① Repeat press MODE button (3) to switch between FM1, FM2, AM, USB, AUX, BT MUSIC.
- ※ If there is no USB, AUX, Bluetooth Phone connected, it would not display USB, AUX, BT when you press button (3).

## ■ RADIO

### (1) Mode button



- ① Repeat press MODE button to select FM1, FM2 or AM.

### (2) Manual tuning button



- ① To manually tune to a radio station, simply turn encoder TUNE (2) left or right to increase or decrease the radio frequency.

### (3) Auto tuning button



- ① To automatically select a radio station, simply press Seek up or Track down button.

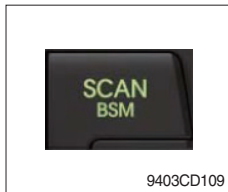


### (4) Station preset button



- ① In radio mode, pressing buttons (6) to (11) will recall the radio stations that are memorized. To store desired stations into any of the 6 preset memories, in either the AM or FM bands, use the following procedure :
  - a. Select the desired station.
  - b. Press and hold one of the preset buttons for more than 2 seconds to store the current station into preset memory. Six stations can be memorized on each of FM1, FM2, and AM.

#### (5) Preset scan (PS) / Best station memory (BSM) button



① Press BSM button (12) momentarily to scan the 6 preset stations stored in the selected band. When you hear your desired station, press it again to listen to it.

Press BSM button (12) for longer than 2 seconds to activate the Best Station Memory feature which will automatically scan and enter each station into memory.

※ If you have already set the preset memories to your favorite stations, activating the BSM tuning feature will erase those stations and enter into the new ones. This BSM feature is most useful when travelling in a new area where you are not familiar with the local stations.



## ■ USB PLAYER

### (1) USB playback



- ① The unit was equipped with a front USB jack and also a rear USB Jack.

With a USB device plugged in the front USB jack, it will be detected as front USB mode. And with a USB device plugged in the rear USB jack, it will be detected as rear USB. To get to a USB mode, press MODE (3) button momentarily or insert the USB device in front or rear USB jack.

- ※ If no mp3 or wma files in USB device, it will convert to the previous mode after display NO FILE.

### (2) Track Up / Down button



- ① Press SEEK up (13) or TRACK down (14) to select the next or previous track. Press and hold the buttons to advance the track rapidly in the forward or backward direction.



### (3) MP3 directory / File searching



- ① Button (2) is used to select a particular directory and file in the device. Turn button (2) right or left to display the available directories. Press button (2) momentarily when the desired directory is displayed, then turn button (2) right or left again to display the tracks in that directory. Press button (2) to begin playback when the desired file is displayed.

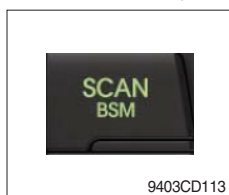
### (4) Directory Up / Down button



- ① During MP3/WMA playback, simply press DIR- button (10) to select the previous directory (if available in the device); simply press DIR+ button (11) to select the next directory (if available in the device).

- ※ If the USB device does not contain directories, it would play MP3/WMA tracks at 10- file when you press DIR- button (10), and play MP3/WMA tracks at 10+ file when you press DIR+ (11) button.

#### (5) Track Scan Play (SCAN) button



- SCAN playback : Simply press SCAN (12) button to play the first 10 seconds of each track.
- SCAN folder : Press and hold SCAN button for longer than 2 seconds to scan play the tracks in current folder.
- SCAN off : Simply press it again to cancel SCAN feature.

#### (6) Track Repeat Play (RPT) button



- REPEAT playback : Simply press RPT (8) button to play current track repeatedly.
- REPEAT folder : Press and hold RPT for longer than 2 seconds to repeat play the tracks in current folder.
- REPEAT off : Simply press it again to cancel REPEAT feature.

#### (7) Track Random Play (RDM) button



- RANDOM playback : Simply press RDM (9) button to play the tracks in the device in a random sequence.
- RANDOM folder : Press and hold RDM button for longer than 2 seconds to random play the tracks in current folder.
- RANDOM off : Simply press it again to cancel RANDOM feature.

#### (8) ID3 v2 (DISP)



- ① While a MP3 file is playing, press DISP button (6) to display ID3 information. Repeat push DISP button (6) to show directory name / file name and album name / performer / title.

※ If the MP3 disc does not have any ID3 information, it will show NO ID3.

\* USB Information and Notice

a. Playback FILE SYSTEM and condition allowance.

- FAT, FAT12, FAT16 and FAT32 in the file system.

- V1.1, V2.2 and V2.3 in the TAG (ID3) version.

b. Display up to 32 characters in the LCD display.

c. No support any of MULTI-CAED Reader.

d. No high speed playback but only playing with normal full speed.

※ DRM files in the USB may cause malfunction to playback in the radio unit.

※ The temperature below -10 Celsius, the audio unit with USB hook up would be affected to play well.

## ■AUX OPERATION

It is possible to connect your portable media player to the audio system for playback of the audio tracks via the cab speakers.

To get the best results when connecting the portable media to the audio system, follow these steps :

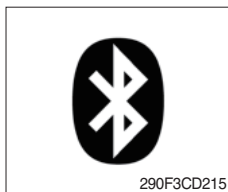
- Use a 3.5 mm stereo plug cable to connect the media player headphone socket at each end as follows.
- Adjust the portable media player to approximately 3/4 volume and start playback.
- Press the MODE button (3) on the audio unit to change into AUX mode.
- The volume and tone can now be adjusted on the audio unit to the desired level.

- ※ The audio quality of your media player and the audio tracks on it may not be of the same sound quality as the audio system is CD Player.
- ※ If the sound of the media player is too low compared with the radio or CD, increase the volume of the player.
- ※ If the sound of the media player is too loud and/or distorted, decrease the volume of the player.
- ※ When in AUX mode, only the Volume, Bass, Treble, EQ and Mode functions of the audio unit can be used.

## ■BLUETOOTH (if equipped)

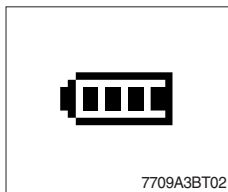
### (1) Using a bluetooth wireless connection

- ① Your audio unit supports bluetooth wireless technology. You can set up a wireless link with bluetooth cellular phone.
  - ② Keep PAIRING the cellular phone with audio unit in a few minutes as the phone are being switched on well enough.
- ※ Since this audio unit is on standby to connect with your cellular phone via bluetooth wireless technology, using this audio unit without running the engine can result battery drainage.
  - ※ This audio unit phone call reception is on standby when ignition switch is set to ACC OFF or ON. The line-of-sight distance between this audio unit and your cellular phone must be 10 meters or less for sending and receiving voice and data via bluetooth wireless technology. However the transmission distance may become shorter than the estimated distance depending on the environment in use.
  - ※ Digital Noise & Echo suppression system provides the best sound clarity with little or no distortion (Echo & side tone will happen depending on cellular phone or service network).
  - ※ To ensure the quality of calling, you should select a proper bluetooth VR level. This audio unit has already set with the best bluetooth VR level.



#### a. Bluetooth icon

It will blink while establishing the bluetooth pairing.  
It will light after a bluetooth device connected.



#### b. Battery icon

It indicates the battery status of the connected bluetooth device.



#### c. Single strength icon

It indicates the signal strength of the connected bluetooth device.

## (2) Pairing in hands free modes



- ① Press and hold CALL button (4) for 2 seconds until you hear beep sound, then appears PAIR STR on the display.
- ② For the next procedure, go to cellular phone pairing mode.
- ③ If it is in pairing status with audio unit and cellular phone, PAIRING will show on the display.
- ④ If you want to exit pairing mode, press CALL END button (5) briefly while pairing, then it will show PAIR CLR on the display.
- ⑤ Bluetooth Icon and PAIR OK appear on the display when pairing is successful.

## (3) Cellular phone pairing mode

- ① Browse your cellular phone menu and find the connectivity or bluetooth connection section.
  - ② Select search for a new handsfree device function and allow the phone to find the mobile.
  - ③ HYUNDAI should appear on your cellular phone screen.
  - ④ Press connect menu among the handsfree option on your cellular phone.
  - ⑤ The cellular phone should prompt for a pin code. Insert the pin code 1234.
  - ⑥ The cellular phone should confirm that it has established a new paired connection.
  - ⑦ Close the menu. The pairing is now completed. It appears PAIR FAIL on the display for 3 seconds.
- ※ Each cellular phone type has distinct phone menu so you may need to refer to your manufactures instruction for the correct procedure on how to connect a new bluetooth device.
  - ※ Please retry to the pairing instruction if HYUNDAI does not appear on the cellular phone screen.
  - ※ Please select authorized, if there is authorized menu in the menu of bluetooth connection in your cellular phone.
  - ※ Once the bluetooth pairing is completed between your cellular phone and this audio unit, the both units will be automatically recognized on its pairing and when you turn on the key in your car even though this audio unit is turned off.
  - ※ This audio unit can store up to 6 phones pairings. If the memory is full, the first stored paired phone will be deleted.
  - ※ The connecting priority will be given to the last connected cellular phone.
  - ※ If you want to change the connecting priority, try to connect this audio unit from the cellular phone.

#### (4) Bluetooth connection and disconnection

- ① When established bluetooth connection between this audio unit and the cellular phone, bluetooth icon on the display appears and then the display shows HF/AV CONN when handsfree & AV profile connected.



- ② To disconnect bluetooth link  
Press and hold CALL END button (4) for 2 seconds, it shows DIS CON and disappears bluetooth icon on the display.



- ③ To disconnect bluetooth link  
Press CALL button (3) briefly, it blinks bluetooth icon on the display while bluetooth is being connected. If the connection is completed, it appears bluetooth icon on the display.

※ When your cellular phone battery is at low charge, the bluetooth connection may occasionally be lost. To maintain good connectivity ensure that your phone battery is adequately charged.

※ In case of failure of bluetooth pairing :

- Delete item in paired list on your phone.
- Reset both phone by power off/on and the audio unit by ACC off/on.

※ Connecting priority of handsfree profile is higher than headset profile.

※ The headset mode does not support caller ID, reject call and call Transfer.

#### (5) Using the audio unit as a handsfree device

- ① When the audio unit is ringing, it shows CALL and follows with the phone number \*\*\*\*\* on the display.



- ② To accept call  
Press CALL button (4), it appears ANSWER CALL and follows TALKING on the display.

- ③ To end call  
To end call, press CALL END button (5), it appears REJECT on the display.

※ If reject call is activated in your phone, then your cellular phone does not support reject call function.

#### (6) Audio transfer between the audio unit and phone

The audio transfer function is for switching the call from the audio unit to the cellular phone for private conversation.



- ① Press CALL button (4) briefly during conversation, it appears CALL TRANS on the display. To switch back to the audio unit, press button (4) briefly during private conversation, then it appears CALL TRANS on the display again.

- ※ This function will be a cause of disconnection of bluetooth link in some nokia phones, but you do not worry just press button (4) during private conversation, then switch back to the audio unit automatically.
- ※ The quality of calling between cellular phone and audio unit is better than calling between one audio unit and another one.

#### (7) Last call number dialing



- ① Press CALL button (4) briefly, it appears CALL TO, then simply press CALL button once again, it would make the last call with phone number display on LCD.

If Reject call is activated in your phone, then your cellular phone does not support Reject Call function.

- ※ If you are using SAMSUNG phone, then you may need to press once more send button. First press button shows phone contact list in your phone, then second press make the last call.

#### (8) To make a call by cellular phone

The audio transfer function is for switching the call from the audio unit to the cellular phone for private conversation.

- ① The audio unit activated automatically when you make a call by cellular phone.
- ② When you make a call processing by cellular phone, it shows CALLING on the display.
- ③ When you receive a call, the phone number \*\*\*\*\* appears on the display.

**(9) Using the audio unit as bluetooth music**

The audio unit supports A2DP (Audio Advanced Distribution Profile) and AVRCP (Audio Video Remote Control Profile), and both profiles are available to listen music at the audio unit via cellular phone which is supporting the two profiles above.

- ① To play music, search the menu on your cellular phone as below :  
i.e : Menu→ File manager→ Music→ Option→ Play via bluetooth.  
It appears BT MP3 on the display.
  - ② During BT MP3 playing, you could select the previous or next track by pressing SEEK up or TRACK down button on audio unit or operate via your cellular phone.
  - ③ To stop music, press button (5) briefly and it will automatically switch into the previous mode.
  - ④ To resume music playing, press the play button on your cellular phone.
- ※ This function maybe different depends on cellular phone. Please follow the cellular phone menu.  
Some kinds of phone need to pair once more for bluetooth MP3 connection.
  - ※ This function will be caused to disconnect A2DP, AVRCP depends on cellular phone.
  - ※ Information about songs (e.g.: the elapsed playing time, song title, song index, etc.) cannot be displayed on this audio unit.



## ■ RESET AND PRECAUTIONS

### (1) Reset function

Interfere noise or abnormal compressed files in the MP3 disc or USB instrument may cause extraordinary operation (or unit frozen/locking up). It's strongly recommended to use appropriate USB storage not cause any malfunction to the audio unit. In the unlikely event that the player fails to operate correctly, try out to reset unit by any of following two methods.

① Press and hold   simultaneously for about 5 seconds. (without Bluetooth)

② Press and hold   simultaneously for about 5 seconds. (with Bluetooth)

※ Take out the fuse for the audio system in the vehicle once and then plug again.

※ It will be necessary to re-enter the radio preset memories as these will have been erased when the microprocessor was reset.

After resetting the player, ensure all functions are operation correctly.

### (2) Precautions

When the inside of the car is very cold and the player is used soon after switching on the heater, moisture may form on the disc or the optical parts of the player and proper playback may not be possible.

If moisture forms on the optical parts of the player, do not use the player for about one hour. The condensation will disappear naturally allowing normal operation.

① Operation voltage : 9~32 volts DC, negative

② Output power : 40 watts maximum (20 watts x 2 channels)

③ Tuning range

Area	Band	Frequency range	Step
USA	FM	87.5~107.9 MHZ	200K
	AM	530~1710 KHZ	10K
EUROPE	FM	87.5~108.0 MHZ	50K
	AM	522~1620 KHZ	9K
ASIA	FM	87.5~108.0 MHZ	100K
	AM	531~1602 KHZ	9K
LATIN	FM	87.5~107.9 MHZ	100K
	AM	530~1710 KHZ	10K

#### ● AREA Selection :

- To select an area, press and hold related buttons at FM1 band for about 3 seconds.
- USA Area: Press and hold mode + 1DIS buttons for 3 seconds
- EUROPE Area: Press and hold mode + 2 buttons for 3 seconds
- ASIA Area: Press and hold mode + 3RPT buttons for 3 seconds
- LATIN Area: Press and hold mode + 4RDM buttons for 3 seconds.

④ USB version : USB 1.1

⑤ Bluetooth version : V2.1

⑥ Bluetooth supported profile :

- A2DP : Advanced Audio Distribution Profile
- AVRCP : Audio/Video Remote Control Profile
- HFP : Hands-Free Profile

## 6) RADIO AND USB PLAYER (MACHINE SERIAL NO. : #0033-)

### ■ WITH BLUETOOTH



19A3RD02

- 1 USB port with cover : Open the cover and connect the USB storage device.
- 2 ENTER/AST button with tune dial.
- 3 Display window for play / reception / menu state and information.
- 4 POWER button with VOLUME dial : turns power on, mute function on/off or selects a menu item (press), control the volume level or menu item.
- 5 AUX port with cover : Open the cover and plugging the external audio device.
- 6 Call / call end button :
  - when a call comes in : accepts a call (press); rejects a call (press and hold)
  - during a call connection : ends a call (press) ; switches between hands-free and private call modes (press and hold)
  - in standby mode: opens call list (press) ; makes a call a recently connected number (press and hold)
- 7 BAND button : enters Radio mode or changes the radio band (press).
- 8 Preset button :
  - Radio: Recall each stored station (press) ; store each station (press and hold).
  - USB : changes playback mode (press 1 II, 2 RPT or 3 RDM buttons); shows available information about the current track (press 4 INFO button) ; move to folder down/up (press 5 D-/6 D+ buttons).
  - Bluetooth audio : pause/resume playback (press 1 II) ; shows information of the connected Bluetooth device (press 4 INFO button).
- 9 MODE button : selects USB, Bluetooth audio or AUX play mode (press).
- 10 MENU button : enters Menu setting mode or returns to the previous menu (press).

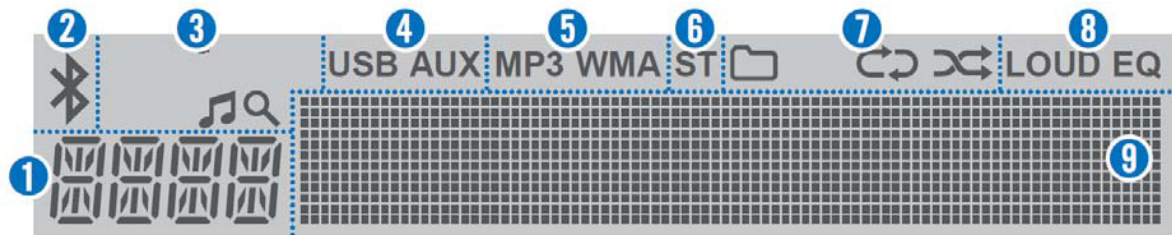
## ■ WITHOUT BLUETOOTH






19A3RD01

- |   |  |
|---|--|
| <p>1 USB port with cover : Open the cover and connect the USB storage device.</p> <p>2 ENTER/AST button with tune dial.</p> <p>3 Display window for play/reception/menu state and information.</p> <p>4 POWER button with VOLUME dial : turns power on, mute function on/off or selects a menu item (press), control the volume level or menu item.</p> <p>5 AUX port with cover : Open the cover and plugging the external audio device.</p> <p>6 FM button : enters FM Radio mode.</p> <p>7 AM button : enters AM Radio mode.</p> | <p>8 Preset button :<br/>           - Radio : Recall each stored station (press) ; store each station (press and hold).<br/>           - USB : changes playback mode (press 1 II, 2 RPT or 3 RDM buttons) ; shows available information about the current track (press 4 INFO button) ; move to folder down/up (press 5 D-/6 D+ buttons).</p> <p>9 MODE button : selects USB or AUX play mode (press).</p> <p>10 MENU button : enters Menu setting mode or returns to the previous menu (press).</p> |
|---|--|

## ■ DISPLAY WINDOW (LCD)

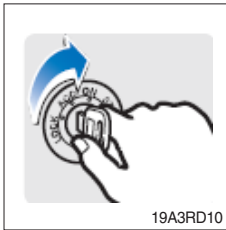


19A3RD03

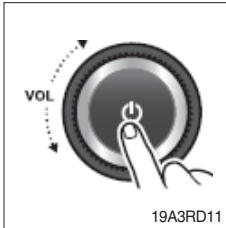
- |  |  |
|--|--|
| <p>1 Function display area for showing the function mode.</p> <p>2 Bluetooth indicator for the Bluetooth connection.</p> <p>3 Search indicator for USB play list.</p> <p>4 USB/AUX indicators for the USB or External device connection.</p> <p>5 MP3/WMA indicators for USB's Audio Stream detections.</p> <p>6 ST (Stereo) indicators for FM stereo reception.</p> | <p>7 Playback mode indicators for USB playback mode.</p> <p>  : Folder mode.<br/>  : Repeat playback.<br/>  : Random playback. </p> <p>8 LOUD/EQ indicators for sound effect.</p> <p>LOUD : Loudness mode.</p> <p>EQ : EQ mode.</p> <p>9 Multi-function display area for showing the play, reception or menu information.</p> |
|--|--|

## ■ GENERAL

### (1) Power and volume button



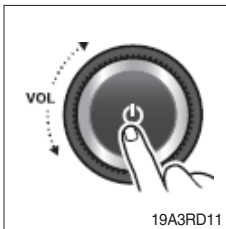
- ① Turn the starting switch to ON position.



- ② Press the POWER button to turn the power on.

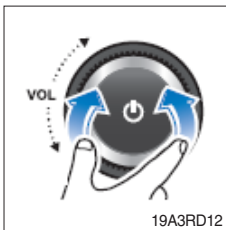
- If the source is ready, playback also starts.
- To turn on the power directly.

By connecting an USB into the USB port or pressing the BAND, MODE (while the USB is connected), you can also turn on the power and the unit then plays.



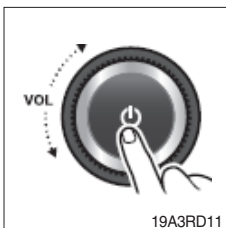
- ③ When power is on, press and hold the POWER button to turn power off.

### (2) Adjusting volume directly



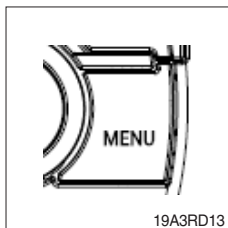
- ① Turn the VOLUME dial to control volume.
  - Available volume range : 00 (mute)~41.

### (3) Muting the sound quickly

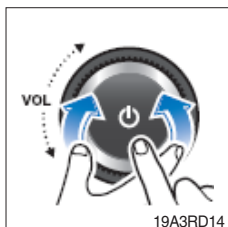


- ① Press the MUTE button to turn mute on.
  - "MUTE" will flash on the display and mute the sound.
  - Press the MUTE button again or turn VOLUME dial to restore sound.

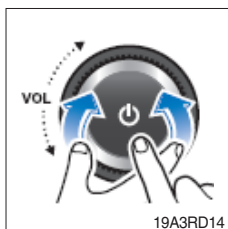
#### (4) Setting the sound



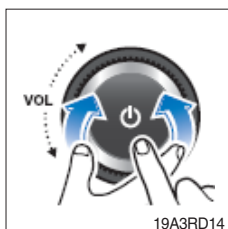
- ① Press MENU button to enter the Settings menu mode.
  - After entering MENU mode, press MENU button to return to the previous item.



- ② Turn VOLUME dial to select the "SOUND" or "EQUALIZER" as below, then press this dial.
  - SOUND : sets the sound mode.
  - EQUALIZER : selects the equalizer style.



- ③ Turn VOLUME dial to select the desired Sound setting mode, then press this dial.
  - BASS : sets the bass sound level (-5~+5).
  - MIDDLE : sets the middle sound level (-5~+5).
  - TREBLE : sets the treble sound level (-5~+5).
  - BALANCE : sets the sound balance between the right and left speakers (LEFT 15~RIGHT 15).
  - EQUALIZER : selects the one of the 7 EQ styles (EQ OFF, POP, ROCK, COUNTRY, VOICE, JAZZ, CLASSIC).
  - PREVIOUS : Return to previous menu screen.

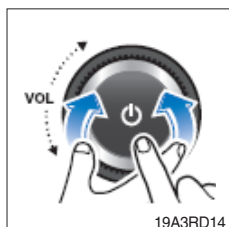


- ④ Turn VOLUME dial to adjust the value of the level, balance or style, then press this dial.

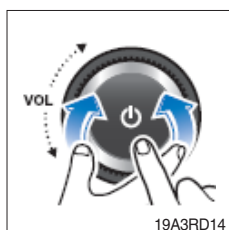
## (5) Setting the system functions



- ① Press MENU button to enter the Settings menu mode. Turn VOLUME dial to select "SYSTEM" as below, then press this dial.



- ② Turn the VOLUME dial to select the "BT ON/OFF", "SCROLL", "LOUD" or "BEEP" then press this dial.
- BT (Bluetooth) ON/OFF : activate (On) or deactivate (Off) the Bluetooth function. – (only ARA-9010HB).
  - SCROLL : activate (On) or deactivate (Off) the text scroll feature for LCD display screen.
  - LOUD : activate (On) or deactivate (Off) the loudness sound effect.
  - BEEP : activate (On) or deactivate (Off) the beep sound feature.
  - PREVIOUS : Return to previous menu screen.

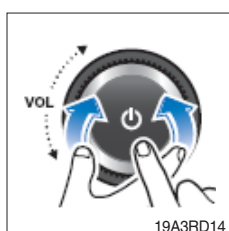


- ③ Turn VOLUME dial to select ON or OFF, then press this dial.

## (6) Setting the region



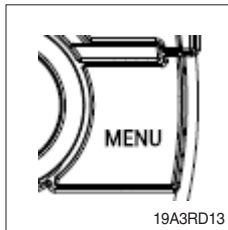
- ① Press MENU button to enter the Settings menu mode. Turn VOLUME dial to select "AREA" as below, then press this dial.
- AREA : sets the region for radio.



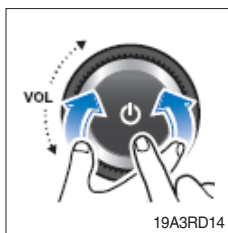
- ② Turn the VOLUME dial to select the desired area as below, then press this dial.
- If the region setting is not selected correctly to your country or region, the radio reception can not be received. Retry the setting the region of radio reception correctly.
  - The region setting is required only for the first time.

- **ASIA/M.East**  
FM : 87.5~108.0 MHz (100 kHz step)  
AM : 531~1,602 kHz (9 kHz step)
- **AMERICA**  
FM : 87.5~107.9 MHz (200 kHz step)  
AM : 530~1,710 kHz (10 kHz step)
- **LATIN**  
FM : 87.5~108.0 MHz (100 kHz step)  
AM : 530~1,710 kHz (10 kHz step)
- **EUROPE**  
FM : 87.5~108.0 MHz (50 kHz step)  
AM : 531~1,620 kHz (9 kHz step)
- **JAPAN**  
FM : 76~90 MHz (100 kHz step)  
AM : 522~1,629 kHz (9 kHz step)
- **Russia (OIRT)**  
FM : 65.0~74.0 MHz (30 kHz step)  
AM : 522~1,602 kHz (9 kHz step)

## (7) Checking/updating the system Software

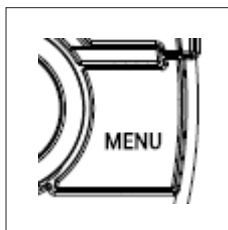


- ① Press MENU button to enter the Settings menu mode. Turn VOLUME dial to select "SOFTWARE" as below, then press this dial.
  - SOFTWARE : check/update the system software.



- ② To check the system software, turn the VOLUME dial to select the "VERSION CHECK", then press this dial.
- ③ To update the system software, turn the VOLUME dial to select the "UPDATE", then press this dial.
  - Download the latest system software to a USB device for update to this unit, then open the cover and plug the USB device to the USB port.
  - Perform update with the start switch "ON" when the battery is sufficiently charged by driving the vehicle. When the battery is discharged while updating, the system may get damaged with the update stopped.

## (8) Setting the Bluetooth mode (only ARA-9010HB)



- ① Press MENU button to enter the Settings menu mode. Turn VOLUME dial to select "BLUETOOTH" as below, then press this dial.
  - Bluetooth : Bluetooth setting mode.

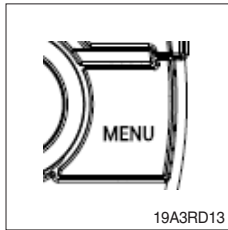




- ② Turn VOLUME dial to select the desired Bluetooth setting mode, then press this dial.
  - PAIR : register a Bluetooth device.
  - SELECT : selects/connects a device from registered Bluetooth devices.
  - DELETE : removes a device from registered Bluetooth device.
  - MIC VOL : adjusts the Bluetooth microphone.
  - H/F VOL : adjusts the Bluetooth hands-free volume.
  - Phone Book : activates/deactivates the phone book download feature from connected device.
  - BT INFO : shows the Bluetooth information of this system.
  - PREVIOUS : returns to previous menu screen.
- ③ To change the connected Bluetooth device, turn the VOLUME dial to select the "SELECT", then press this dial. Turn the VOLUME dial to select the desired device list, then press this dial.
- ④ To delete the Bluetooth device, turn the VOLUME dial to select the "DELETE", then press this dial. Turn the VOLUME dial to select the desired device list, then press this dial.
  - If the currently connected device is delete, this unit attempts to connect with the following priority Bluetooth device automatically.
- ⑤ To adjust the Bluetooth microphone initial volume, turn the VOLUME dial to select the "MIC VOL", then press this dial. Turn the VOLUME dial to set desired Bluetooth microphone initial volume level, then press this dial.
  - The default setting is 3, the volume range is 1~5.
- ⑥ To adjust the Bluetooth hands-free initial volume, turn the VOLUME dial to select the "H/F VOL", then press this dial. Turn the VOLUME dial to set desired Bluetooth hands-free initial volume level, then press this dial.
  - The default setting is 15, the volume range is 6~32.
- ⑦ To download the phone book, turn the VOLUME dial to select the "phone book", then press this dial. Turn the VOLUME dial to select the "ENABLE", then press this dial.
  - The phone book can download up to 1,000 phone numbers.

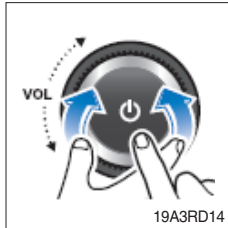
## ■ BLUETOOTH

### (1) Pairing/Connecting your device




- ① Firstly, set up the Bluetooth device to be connected from the Bluetooth settings menu to enable other devices to search for the Bluetooth device.

Press MENU button to enter the Menu settings mode.





- ② Turn VOLUME dial to select the "BLUETOOTH" as below, then press this dial.

- ③ Turn the VOLUME dial to select the "PAIR", then press this dial.

- When you first register, appear the "BT Pairing" on the display window, then search the Bluetooth devices for connection.
- If a Bluetooth device is not connected, press and hold the  button to enter the pairing mode directly.

- ④ Search and select device "Device Name" in your Bluetooth device, then confirm.

- The Bluetooth registration standby proceeds for 1 minute. If the registration is failed during 1minute, restart over from the beginning.
- After a while, the Bluetooth device is automatically registered. When pairing is successful, the "Connected" and "Device name" will be displayed 3 seconds.
- When your Bluetooth device is connected,  appear on the display.  
If the Bluetooth device is disconnected,  disappear.

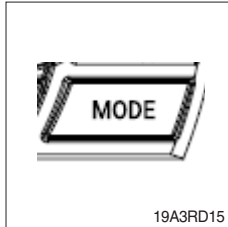
- ⑤ Repeat items 1~4 to register to add another Bluetooth device.


- Up to 5 devices can be paired to this unit.
- The last device connected to this unit is set to automatically connect to the highest priority.

## (2) Playing the Bluetooth music

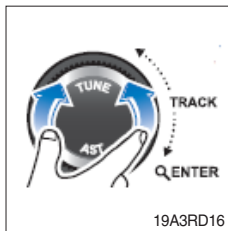
To play Bluetooth music

- ※ A2DP (Advanced Audio Distribution Profile) : This function only operates with Bluetooth devices that support A2DP version 1.2 or above.
- ※ Should be set to Stereo Headset in Bluetooth device type menu of your device

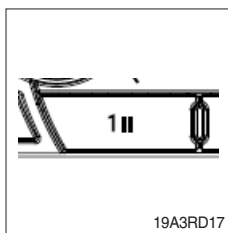


- ① Press the MODE button repeatedly to select the BT Audio mode. Appears  on display window and start playback.
  - If a Bluetooth device is not connected, you can not select.
  - If music is not yet playing from your mobile device after switching to Bluetooth Music (streaming audio) mode or after pressing Play on the mobile device itself, try to start music playback by pressing the Play button again.
  - The output music playback from Bluetooth devices with this unit.
  - There will be music playback automatically play upon entering since once played. It stops automatically when you exit from the music.
  - You can also phone or Bluetooth device other than the home screen mode, Bluetooth music play mode when entering and exiting, the device does not play automatically.

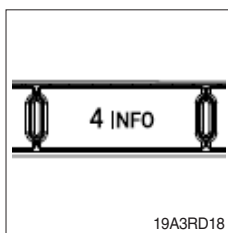
## (3) Controlling the playback



- ① While playing, turn the TUNE/TRACK dial to moves to the previous or next track.
  - Clockwise : move to the next file.
  - Counter-clockwise : move to beginning of the current file or previous file.



- ② While playing, press the [1 II] button to pause the track with "PAUSE" indicator.
  - Press this button again to play the current track.





- ③ Press the [4 INFO] button to check the information of current connected device.
  - About the music files are not displayed.
  - During Bluetooth music playback, do not operate the music changes too quickly. Allow enough time for the machine-to-machine communication.

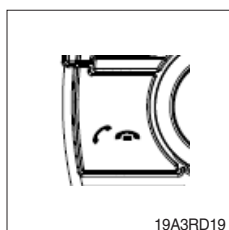
#### (4) Answering a call


- ※ When a call comes in, the audio source is muted, and display the call information with ring tone.
- ※ If the phonebook is not downloaded, only incoming phone number is displayed without the caller information.

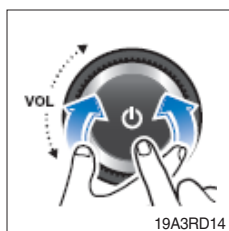



- ① To answer a call, press the  button or to reject a call press and hold the  button.
  - When a call comes in, the audio source is muted.
  - When a call is ended, this unit returns to the previous state media playback.

#### (5) Making a call from recent number

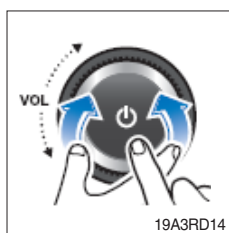


- ① To call the recent connected number, press the  button to display recent call number.
  - The recent calls list is displayed. Turn the VOLUME dial to select a recent call number, then press this dial to make a call.
  - The recent calls list displays up to 10.



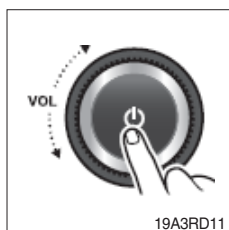
- ② To call the last connected number directly, press and hold the  button.



#### (6) During a call ...




- ① To adjust the a call volume, turn the VOLUME dial.
  - The call volume works with Bluetooth devices, and operates separately from the volume of this unit.

- ② To deactivate the microphone, press the POWER button.

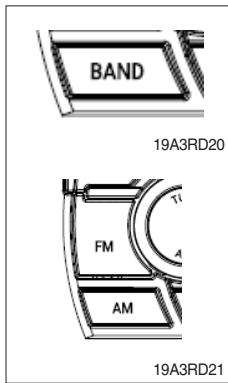


- ③ To switch from hands-free mode to the phone handset mode, press and hold the  button.  
To returns the phone conversation to hands-free mode, press and hold the  button.

- ④ To end a call, press the  button.
  - End a call, then return to the playing state.

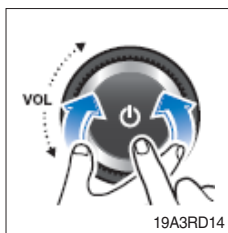
## ■ RADIO

### (1) Tuning in a radio station



① Press the BAND or FM/AM button repeatedly to enter the radio band in order of FM1, FM2, FMA, AM1, AM2 or AMA.

- You can select the FM1, FM2, FMA or AM1, AM2, AMA radio band. While the Auto Store stations(AST) are stored, you can select the AMA or FMA band by additional.
- The previously chosen broadcasting station will be received.

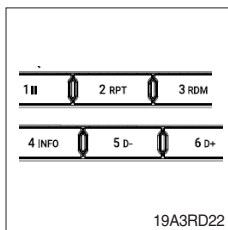


② Turn the TUNE/TRACK dial to select the station.

- Briefly turn this dial, plays previous/next frequency.
- Turn and hold this dial, automatically search for station with superior reception.
- Press this dial, starting from the current station, stations with superior reception are scanned for 5 seconds and the previous station is restored. During the seeking or scanning, if press or turn the dial left/right again, the selected station will begin playing.
- During the FM reception, the Stereo [ST] indicator is on.

### (2) Saving radio stations manually

※ You can save up to 6 preset channels each for FM1, FM2, AM1, AM and AM2 band. If change the stations while driving, use preset button to prevent accidents.



① Press the BAND or FM/AM button repeatedly to select the band.

② After selecting the frequency, press and hold the PRESET [1II]~[6 D+] button.

③ The frequency is saved to the selected preset button.

- A total of 24 frequencies with 6 preset frequencies each for FM1/ FM2/AM1/AM2 modes can be saved.

### (3) Saving radio stations automatically

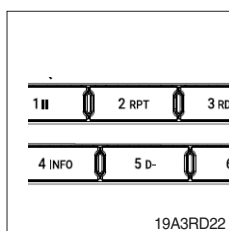
※ You can save up to 6 preset channels automatically each for FMA and AMA band.



- ① Press the BAND or FM/AM button repeatedly to enter the radio band.
  - The previously chosen broadcasting station will be received.
- ② Press and hold the AST button to automatically save receivable frequencies to Preset button.
  - Up to 6 stations can be stored in each of the FMA and AMA band.

### (4) Listening to a preset station

- ① Press the BAND or FM/AM button repeatedly to enter the radio band in order of FM1, FM2, FMA, AM1, AM2 or AMA.
  - You can select the FM1, FM2, FMA or AM1, AM2, AMA radio band. While the Auto Store stations(AST) are stored, you can select the AMA or FMA band by additional.
  - The previously chosen broadcasting station will be received.
- ② Press the PRESET [1 II]~[6 D+] button.
  - From the 6 presets, select the frequency you want to listen to.



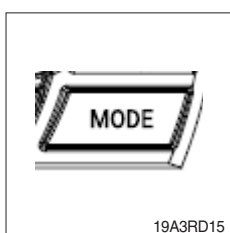
## ■ USB PLAYER

### (1) Playing an USB device



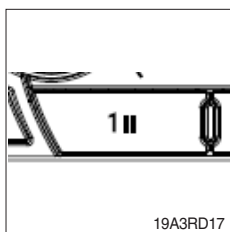
① Open the cover, plug the USB device(included MP3/WMA media file) to the USB port.

- Once a USB is connected, USB will automatically start playing from the first file within the USB.
- If a previously played USB is reconnected, then the file after the most recently played file is played.
- If a different USB is connected or the file information within the USB was changed, then the USB will start playing from the first song within the USB.



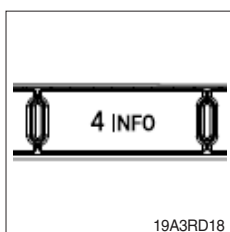
② When an USB device to be played is already connected, press the MODE button to play USB device.

- The previously selected file is played.



③ While playing, press the [1 II] button to pause the file.

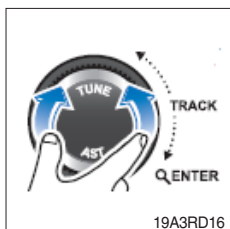
### (2) Changing the song information



① Press the [4 INFO] button repeatedly to display information about the file being played.

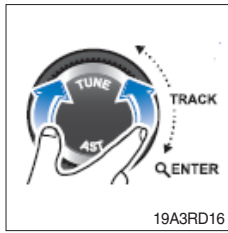
- The information displayed includes the file name, playing time, ID3 Tag or folder name information saved with the song.
- If there is no information on the playing file, the unit will display "NO INFO", and then file name.

### (3) Controlling the playback



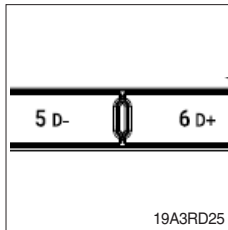
① While playing, turn the ►► I TRACK I ◀◀ dial left/right to moves to the previous or next track.

- Clockwise : move to the next file.
- Counter-clockwise : move to the previous file.



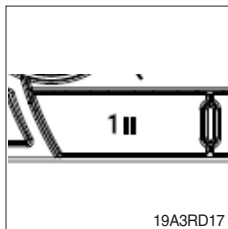
② While the ►► I TRACK I ◀◀ dial is being turned and held, the file will rewind or fast forward at high speed. Once released, the file will begin playing at normal speed.

- Clockwise : fast forward.
- Counter-clockwise : fast rewind
- The search function works but search speed is not constant. While fast forwarding or rewinding, the playback sound is not output.



③ Press the [5 D-] or [6 D+] button to moves to the previous or next folder.

- [5 D-] press : move to previous folder.
- [6 D+] press : move to next folder.
- While folder moving, the folder name will be displayed briefly.



④ While playing, press the [1 II] button to pause the track.

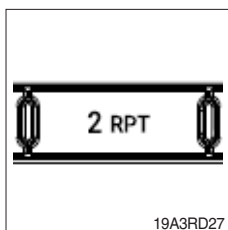
- Press the button again to play the current track.






④ To find the song you want to play directly, press the Q (Search) button.

- Turn the ►► I TRACK I ◀◀ dial to select the desired file name, then press this dial.

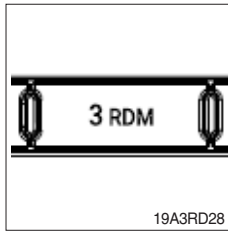
#### (4) Change the playback mode






① Press the [2 RPT] button to select the Repeat playback mode.

-  On : The current file plays repeatedly.
-   On : The current folder plays repeatedly.
- Off : Cancels repeat playback.





- ② Press the [3 RDM] button to select the Random playback mode.
-   On : All files of current folder play in random order.
  -  On : All files of USB device play in random order.
  - Off : Cancels random playback.

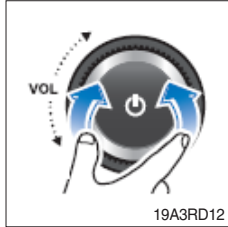
#### (5) Handling precautions for USB device

- ① The device will only recognize USB devices formatted in FAT 16/32. When formatting the external USB device, the device may not properly recognize a Byte/Sector selection other than 512 Bytes or 2,048 Bytes.
- ② The amount of time required to recognize the external USB device may differ depending on the type, size, or file formats stored on the USB. Such differences in the required time are not indications of malfunction. Please wait the period of time required to recognize the device.
- ③ This unit can recognize maximum 9,999 files and 256 folders into the USB device.
- ④ The device may not recognize the USB device if separately purchased USB hubs and extension cables are being used.
- ⑤ The device may not support normal operation when using formats such as HDD Type, CF, or SD Memory.
- ⑥ The device will not support files locked by DRM (Digital Rights Management).

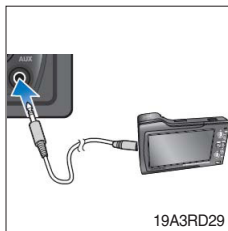
## ■ AUX PLAYER

### (1) Listening to auxiliary audio equipment

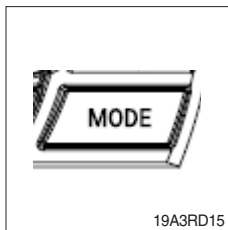
※ By connecting an optional portable audio device to the AUX input jack (stereo 3.5 pi) on the unit and then simply selecting the source, you can listen on your car speakers.



- ① Turn the VOLUME dial left to decrease the volume level.
  - The AUX volume can also be controlled separately through the connected device.



- ② Turn the external audio equipment off. Open the cover, connect the audio output of the external audio equipment to AUX input terminal on the unit.
- ③ Turn the external audio equipment on. Start playback of the external audio equipment at a moderate volume.



- ④ Press the MODE button repeatedly to select the AUX function.
- ⑤ Set your usual listening volume by turn the VOLUME dial left/right on the unit.
  - Once the connector is disconnected, the previous mode will be restored.
  - AUX mode can be used only when an external audio player has been connected.