

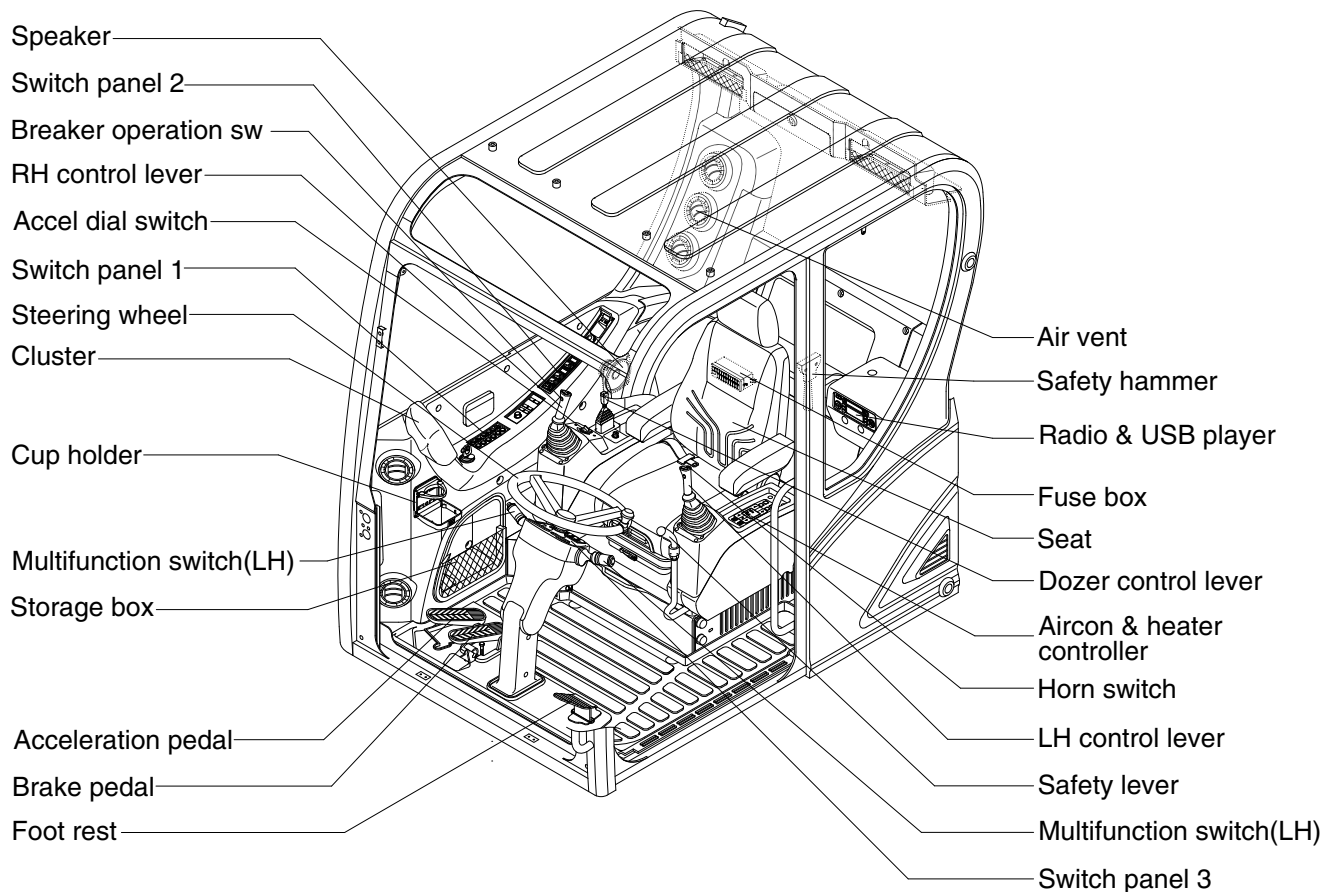
CONTROL DEVICES

1. CAB DEVICES

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

2) ELECTRONIC MONITOR SYSTEM

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



55W9A3CD01

2. CLUSTER ((machine serial No.: ~#0578)

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.**



55W9A3CD07

- ※ **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.

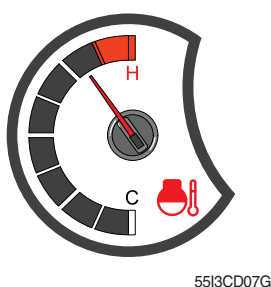




- | | | |
|-----------------------------|--------------------|--------------|
| 1 Engine coolant temp gauge | 3 Fuel level gauge | 5 Accel dial |
| 2 Hydraulic oil temp gauge | 4 Engine rpm | |

※ Operation screen type can be set by the screen type menu of the display.

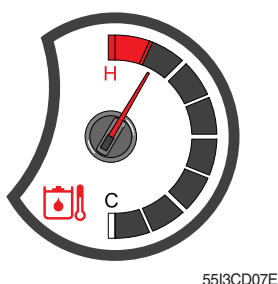
Refer to page 3-21 for details.



(2) Engine coolant temperature gauge



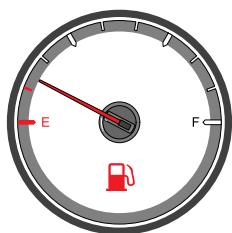
- ① This gauge indicates the temperature of coolant.
 - Black range : 40-115°C (104-239°F)
 - Red range : Above 115°C (239°F)
 - ② If the indicator is in the red range or  lamp lights ON in red, turn OFF the engine and check the engine cooling system.
- ※ If the gauge indicates the red range or  lamp lights ON in red even though the machine is on the normal condition, check the electric device as that can be caused by the poor connection of electricity or sensor.

(3) Hydraulic oil temperature gauge





- 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 on the normal condition, check the electric device as that can be caused by the poor connection of electricity or sensor.

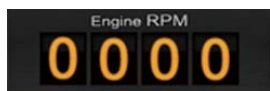
(4) Fuel level gauge



55I3CD07F

- ① This gauge indicates the amount of fuel in the fuel tank.
- ② Fill the fuel when 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 on the normal condition, check the electric device as that can be caused by the poor connection of electricity or sensor.

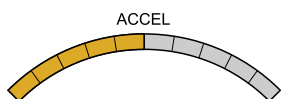
(5) Engine rpm display



559A3CD35

- ① This displays the engine speed.

(6) Accel dial display



55I3CD07C

- ① This displays acceleration dial level from 0 to 10 step.

3) COMMUNICATION ERROR AND LOW VOLTAGE WARNING POP-UP

(1) Communication error pop-up



559A3CD71

- 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.

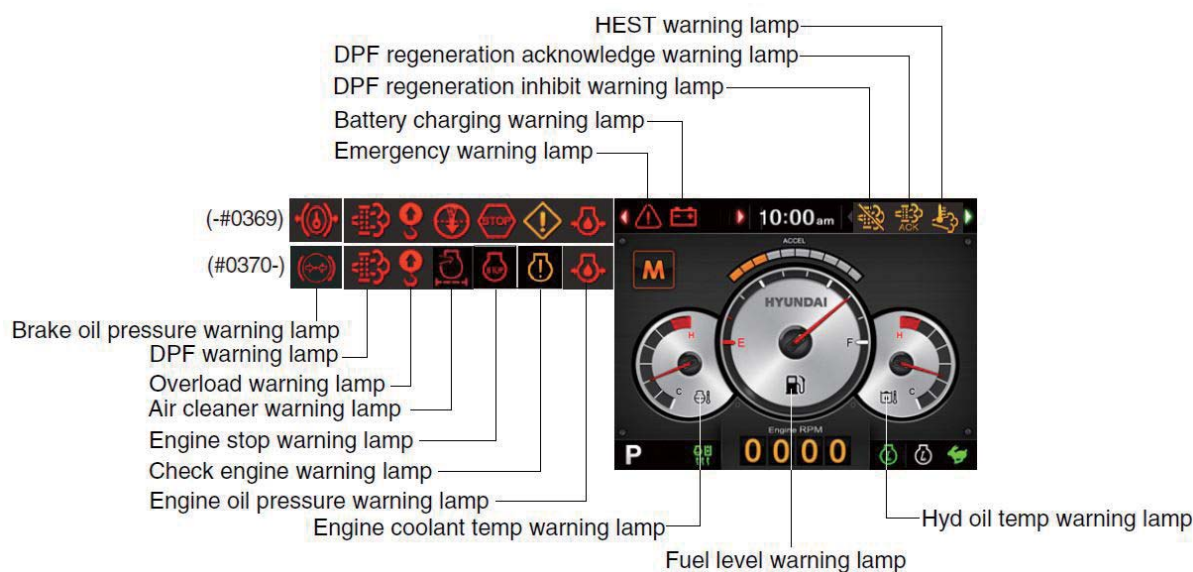
(2) Low voltage warning pop-up



559A3CD72

- 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.

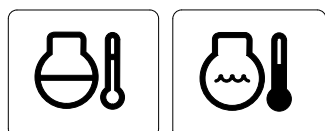
4) WARNING LAMPS






559A3CD08EA

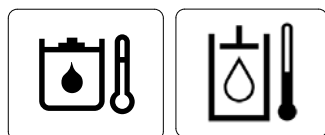
- ※ Each warning lamp on the left-top of the LCD pops up on the center of LCD and the buzzer sounds when the each warning is happened. The pop-up warning lamp moves to the original position and lights ON when the buzzer stop switch is pushed or the pop-up is touched. And the buzzer stops. Refer to page 3-12 for the switch.
- ※ When the warning lamps light ON more than 4, you can check all lamps with next page button(◀ , ▶) near the warning lamps.




(1) Engine coolant temperature warning lamp



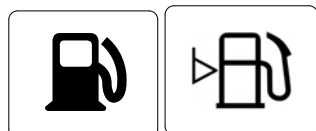
- ① The  lamp pops up on the center of LCD and the buzzer sounds when the engine coolant temperature is over 115°C.
- ② The pop-up  lamp moves to the original position and lights ON when the buzzer stop switch is pushed or pop-up is touched. Also, the buzzer stops and  lamp keeps ON.
- ③ Check the cooling system when the lamp keeps ON.

(2) Hydraulic oil temperature warning lamp



- ① The  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



- ① This warning lamp lights ON and the buzzer sounds when the level of fuel is below 10%.
- ② Fill the fuel immediately when the lamp is ON.

(4) Emergency warning lamp



21093CD30

① This lamp pops up and the buzzer sounds when each of the below warnings are happened.

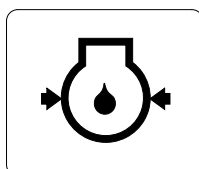
- Engine coolant overheating (over 115°C)
- Hydraulic oil overheating (over 105°C)
- MCU input voltage abnormal
- Accel dial circuit abnormal or open

※ 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 stops.

This is same as following warning lamps.

② When this warning lamp lights ON, machine must be checked and serviced immediately.

(5) Engine oil pressure warning lamp

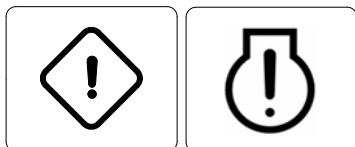


21093CD32

① This lamp lights ON when the engine oil pressure is low.

② If the lamp lights ON, shut OFF the engine immediately. Check oil level.

(6) Check engine warning lamp



① This lamp lights ON when the communication between MCU and engine ECM on the engine is abnormal, or if the cluster received any fault code from engine ECM.

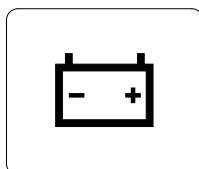
② Check the communication line between them.

If the communication line is OK, then check the fault codes on the cluster.

③ Also, this lamp pops up when the level of DPF soot is high.

※ Refer to the page 3-7 for the DPF warning lamp.

(7) Battery charging warning lamp

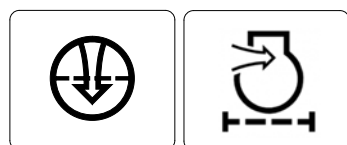


21093CD34

① This lamp lights ON when the battery charging voltage is low.

② Check the battery charging circuit when this lamp is ON.

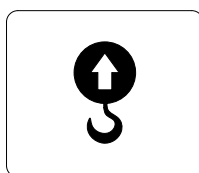
(8) Air cleaner warning lamp



① This lamp lights ON when the filter of air cleaner is clogged.

② Check the filter and clean or replace it.

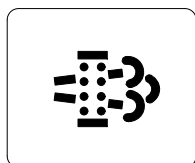
(9) Overload warning lamp (opt)



21093CD36






- ① When the machine is overload, the overload warning lamp lights ON during the overload switch is ON. (if equipped)
- ② Reduce the machine load.
Initiate a manual regeneration

(10) DPF (diesel particulate filter) warning lamp

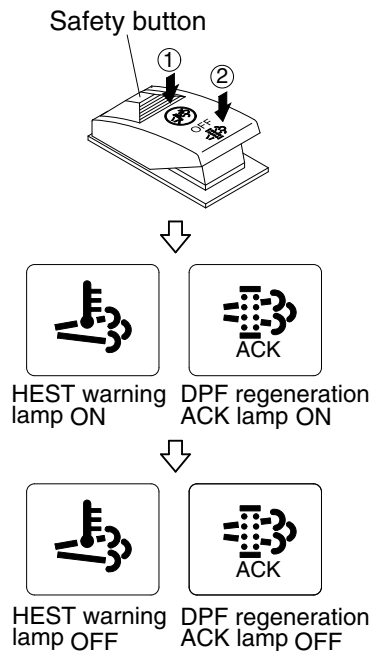


2609A3CD19

- ① This warning lamp lights ON or OFF when the regeneration is needed.
 - ② This warning lamp lights ON while DPF regeneration inhibit switch is in "Regeneration inhibited" state, when stationary regeneration is permitted.
 - ③ This warning lamp lights ON during reset regeneration standby or in back up mode.
 - ④ This warning lamp lights flash during reset regeneration standby DPF regeneration inhibit switch is in "Regeneration inhibited" state.
- ※ Consequences of delaying regeneration
- Poor performance caused by increasing exhaust gas pressure.
 - Higher fuel consumption
 - Shorter filter lifetime

| Condition | Warning lamp | | | Remedy |
|-------------|--|--|---|--|
| | DPF  | Check engine  or  (pop up) | Stop engine  or  (pop up) | |
| Normal | Off | Off | Off | · Automatic regeneration |
| Soot low | On | Off | Off | · Push DPF switch to OFF position if DPF switch is in inhibit position. · Engine power may be reduced automatically (soot medium) |
| Soot midium | Blink | Off | Off | |
| Soot high | On | On | Off | · Engine power and speed will be reduced automatically · Initiate a manual regeneration |
| Stop | On | Off | On | · Stop the engine immediatary. · Please contact your Hyundai service center or local dealer. |

※ Manual regeneration method of DPF



559A3CD143

※ Manual regeneration applies if the machine is in a fireproof area and there is no plan to turn off the machine during the regeneration.

- ① Stop and park the machine.
- ② The accel dial to the lowest position and operate the engine in idling.
- ③ Pull the safety button and push the switch to position ② to initiate the manual regeneration of DPF.

※ Refer to the page 3-28 for the switch operation.

※ The engine speed may increase gradually to high idle rpm and DPF regeneration begins and it will take approximately 25~30 minutes.

- ④ When the manual regeneration starts, the DPF warning lamp turns OFF and the regeneration acknowledge lamp and HEST warning lamp will light ON during the regeneration function is operating.
- ⑤ The regeneration acknowledge lamp and HEST warning lamp will light OFF when the regeneration function is completed.

(11) HEST (High exhaust system temperature) warning lamp



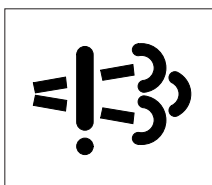
2609A3CD21

- 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 will be common for the lamp to illuminate on and off during normal equipment operation as the engine completes regeneration.

(12) Emission system fail warning lamp

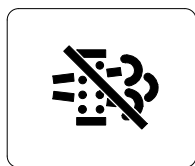


300A3CD15

- ① This warning lamp indicates there are faults related to the emission system.
- ② The lamp lights ON when each of the below warnings is happened.
 - a. The EGR valve malfunctions.
 - b. Electrical malfunction of the EGR control sensors. (disconnection, short)
 - c. Tampering with the EGR control sensors.
- ③ This warning lamp can be shown together with DPF warning lamp or engine fail lamp or engine stop warning lamp when diagnosis DPF systems.

※ Please contact your Hyundai service center or local dealer.

(13) DPF regeneration inhibit warning lamp

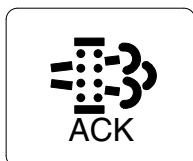


2609A3CD20

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

※ **Refer to the page 3-28 for the DPF switch.**

(14) DPF regeneration acknowledge warning lamp



559A3CD10

- ① This warning lamp lights ON stationary regeneration is in process.
- ② This warning lamp lights ON, when stationary regeneration is in process after DPF regeneration request switch is pressed and hold for more than 3 seconds.
- ③ This warning lamp lights flash when stationary regeneration standby or regeneration interlock switch is in "regeneration permitted (interlock enabled) status.
- ④ This warning lamp lights flash while stationary regeneration standby or back mode, when DPF regeneration inhibit switch in "Regeneration permitted" status and regeneration interlock switch is in regeneration permitted status.

(15) Stop engine warning lamp

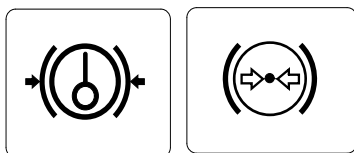


- ① If the lamp lights ON, stop the engine immediately and check the engine.

- ② Check the fault codes on the monitor.

※ **Please contact your Hyundai service center or local dealer.**

(16) Brake oil pressure warning lamp

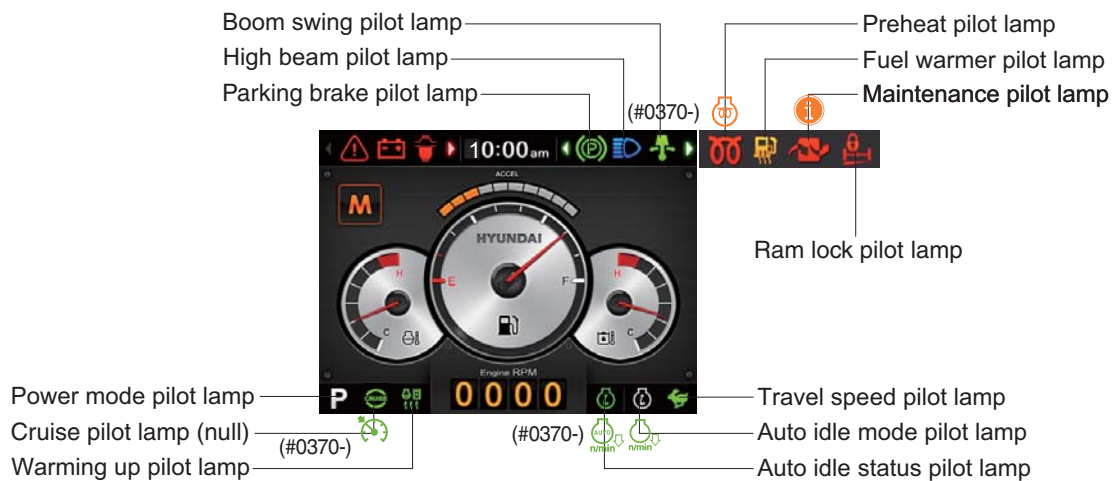


- ① The lamp lights ON when the oil pressure of service brake drops below the normal range.

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

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









5) PILOT LAMPS



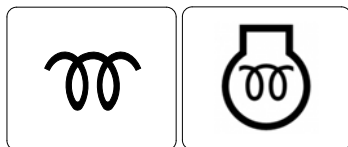
55W9A3CD02

※ When the pilot lamps light ON more than 3, you can check all lamps with next page button (◀, ▶).

(1) Mode pilot lamps

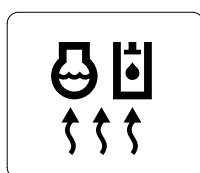
| No | Mode | Pilot lamp | Selected mode |
|----|----------------|--|---|
| 1 | Power mode |   | Heavy duty power work mode Standard power mode |
| 2 | Travel mode |   | Low speed traveling High speed traveling |
| 3 | Auto idle mode |     | Auto idle status Auto idle mode |

(2) Preheat pilot lamp



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

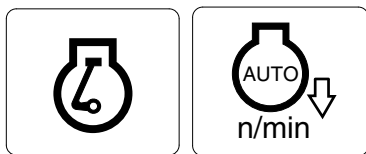
(3) Warming up pilot lamp



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

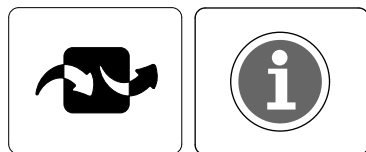
21093CD40

(4) Auto idle status/ mode pilot lamp



- ① The auto idle pilot lamp will be ON when the idle mode is selected.
- ② The auto idle status pilot lamp will be ON when all levers and pedals are at neutral position, and the auto idle mode is selected.

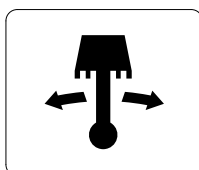
(5) Maintenance pilot lamp



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

※ Refer to the page 3-19.

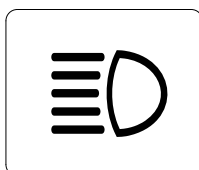
(6) Boom swing pilot lamp



559A3CD31

- ① This lamp is ON when the boom swing pedal is operated.

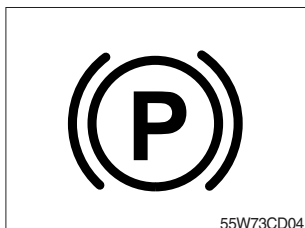
(7) High beam pilot lamp



55WI3CD50

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

(8) Parking brake pilot lamp

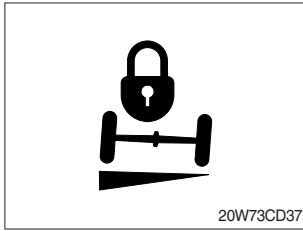


55W73CD04

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

※ Check the lamp is OFF before driving.

(9) Ram lock pilot lamp



- ① This pilot lamp lights ON when ram lock switch is rear position.
- ② Also, the pilot lamp lights ON when the parking switch is ON or service brake is applied.

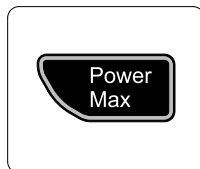
6) SWITCHES



559A3CD47

※ When the switches are selected, the pilot lamps are displayed on the LCD. Refer to the page 3-10 for details.

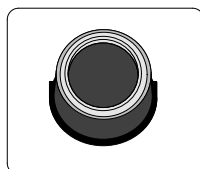
(1) Power mode switch



559A3CD25

- ① This switch is to select the machine power mode and selected power mode pilot lamp is displayed on the pilot lamp position.
 - P : Heavy duty power work.
 - S : Standard power work.
- ② The pilot lamp changes S → P → S in order.

(2) Select switch



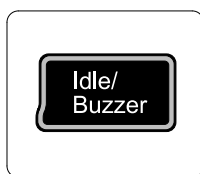
55I3CD50C

- ① This switch is used to select or change the menu and input value.
- ② Knob push
 - Long (over 2 sec) : Return to the operation screen
 - Medium (0.5~2 sec) : Return to the previous screen
 - 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/ buzzer stop switch



559A3CD50D

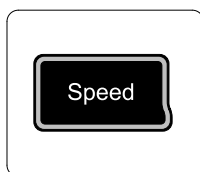
① This switch is used to activate or cancel the auto idle function.

※ **Refer to the page 3-11 for details.**

② The buzzer sounds when the machine has a problem.



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

(4) Travel speed control switch

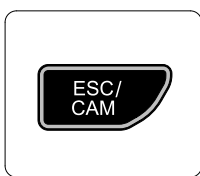


55133CD50B

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

-  : Low speed
-  : High speed

(5) Escape/ Camera switch



559A3CD50E

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

② In the operation screen, pushing this switch will display the view of the camera on the machine (if equipped).

Please refer to page 3-23 for the camera.

③ If the camera is not installed, this switch is used only ESC function.

7) MAIN MENU

· Operation screen



559A3CD32A



559A3CD32B



559A3CD32C



Main menu screen



559A3CD32D



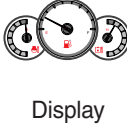

Sub menu screen



559A3CD32E

※ Please refer to select switch, page 3-12 for selection and change of menu and input value.

(1) Structure

| No | Main menu | Sub menu | Description |
|----|--|--|--|
| 1 |  Monitoring 55I3CD51A | Active fault - Machine Active fault - Engine Logged fault - Machine Logged fault - Engine Monitoring (Analog) Monitoring (Digital) - Input Monitoring (Digital) - Output | MCU ECU MCU ECU Machine information Switch status Output status |
| 2 |  Management 55I3CD51B | ESL mode setting Change password Option attach Maintenance information Machine Information A/S phone number Service menu | ESL mode setting Password change Setting option attachment Replacement, Change interval oils and filters Cluster, MCU, Engine, Machine A/S phone number, A/S phone number change Delete logged faults, Software download, Operating hour, power shift |
| 3 |  Display 55I3CD51C | Clock Screen type Brightness setting Unit setting Language Calibration | Clock A type, B type, C type Manual, Auto Temperature, Pressure 12 language Calibrating the touch screen |
| 4 |  Utilities 55I3CD51D | Camera setting Mode Video | Number of active, Display order, Camera No. Operation mode select Play music and video file |

(2) Monitoring

① Active fault - Machine



559A3CD50



559A3CD50A

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

② Active fault - Engine



559A3CD50B



559A3CD50C

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

③ Logged fault - Machine/ Engine



559A3CD51



559A3CD50A

- The logged faults of the MCU or engine ECU can be checked by this menu.
- Only for the service person.

④ Monitoring (Analog)



559A3CD52



559A3CD52A

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

⑤ Monitoring (Digital) - Input



- The switch status can be confirmed by this menu.
- The activated switches are blue light ON.

⑥ Monitoring (Digital) - Output



- The output status can be confirmed by this menu.
- The output pilot lamps are blue light ON.

(3) Management

① ESL mode setting



ESL mode setting

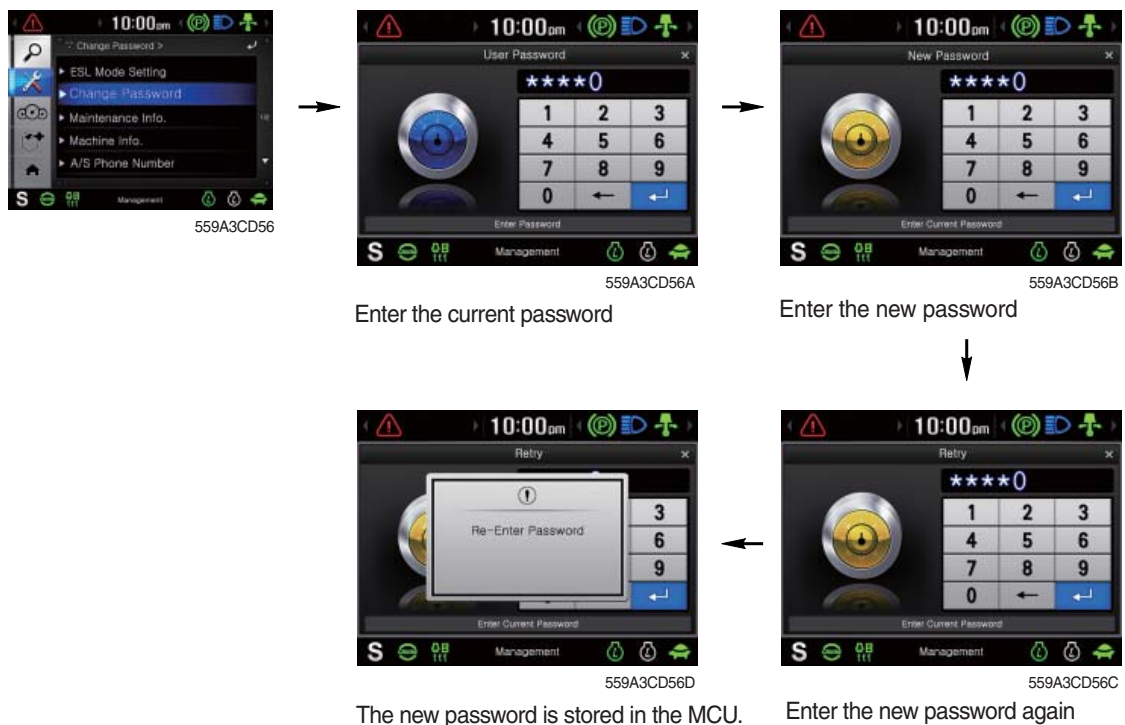
- ESL : Engine Starting Limit
- ESL mode is designed to be a theft deterrent or will prevent the unauthorized operation of the machine.
- If the ESL mode was selected Enable, the password will be required when the start switch is turned ON.
- **Disable** : Not used ESL function
- **Enable (always)** : The password is required whenever the operator starts engine.
- **Enable (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 maximum 2 days.

※ Default password : 00000

※ Password length : 5~10 digit

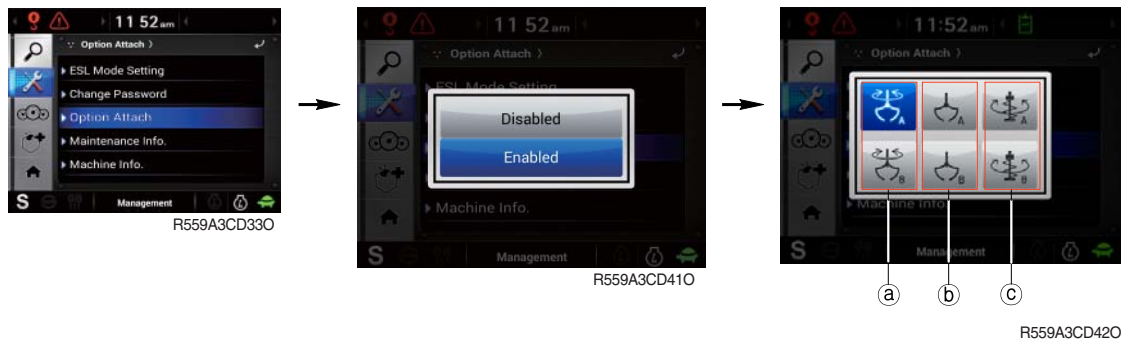
② Change password

- The password is 5~10 digits.



③ Option attach

a. Option attach selection



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

- ① Rotary Grapple (4 way)
- ② Grapple (2 way)
- ③ Auger (2 way)

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

b. Proportional flux control setting

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

a) Rotary setting



R559A3CD430



R559A3CD510



R559A3CD520



R559A3CD530



R559A3CD540

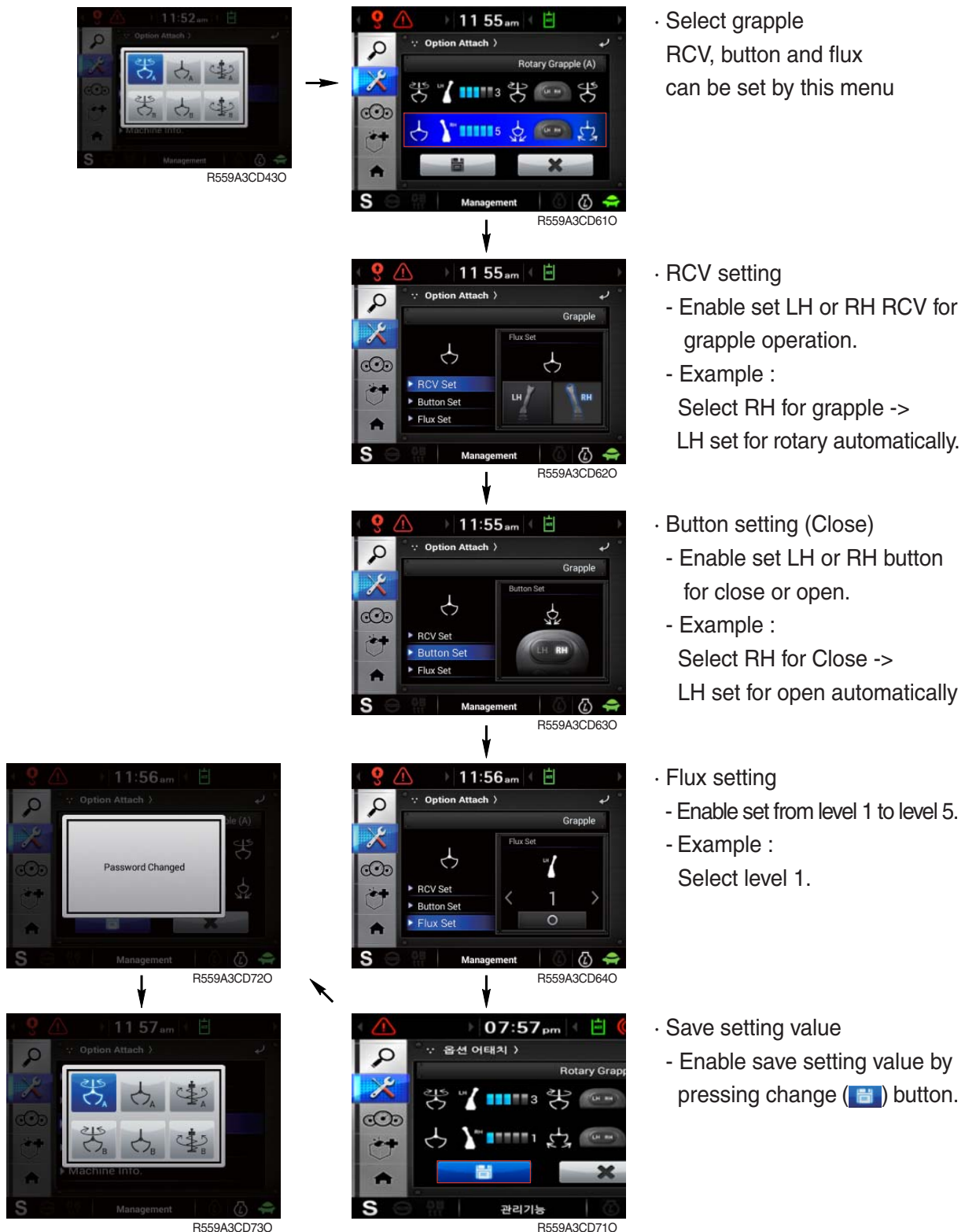
- Select Rotary
RCV, button and flux
can be set by this menu

- RCV setting
 - Enable set LH or RH RCV
for rotary operation.
 - Example :
Select LH for rotary ->
RH set for grapple automatically.

- Button setting (CW rotation)
 - Enable set LH or RH button
for CW or CCW rotation.
 - Example :
Select LH for CW rotation ->
RH set for CCW rotation
automatically

- Flux setting
 - Enable set from level 1 to level 5.
 - Example :
Select level 3.


b) Grapple setting



- Select grapple
RCV, button and flux can be set by this menu
- RCV setting
 - Enable set LH or RH RCV for grapple operation.
 - Example :
Select RH for grapple -> LH set for rotary automatically.
- Button setting (Close)
 - Enable set LH or RH button for close or open.
 - Example :
Select RH for Close -> LH set for open automatically
- Flux setting
 - Enable set from level 1 to level 5.
 - Example :
Select level 1.
- Save setting value
 - Enable save setting value 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 when option attach function is used.

Previous setting value can be checked by following procedure.

- a) - Menu > Management > option attach

a) Rotary setting

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

b) Grapple setting

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

③ Maintenance information



- Elapse : Maintenance elapsed time.
- Interval : The change or replace interval can be changed in the unit of 50 hours.
- History-Hour : Maintenance replacement history.
- Replacement : The elapsed time will be reset to zero (0).
- **Change or relpace interval**

| No | Item | Interval |
|----|-----------------------------|----------|
| 1 | Engine oil | 500 |
| 2 | Final gear oil | 1000 |
| 3 | Swing gear oil | 1000 |
| 4 | Hydraulic oil | 5000 |
| 5 | Pilot line filter | 1000 |
| 6 | Hydraulic oil return filter | 1000 |
| 7 | Engine oil filter | 500 |
| 8 | Fuel filter | 500 |
| 9 | Pre-filter | 500 |
| 10 | Hydraulic tank breather | 250 |
| 11 | Air cleaner | 500 |
| 12 | Radiator coolant | 2000 |
| 13 | Swing gear pinion grease | 1000 |

④ Machine Information



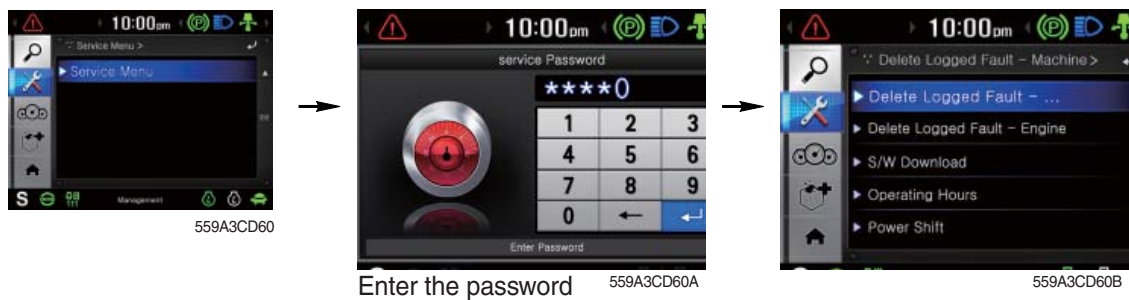
- This can confirm the identification of the cluster, MCU, engine and machine.

⑤ A/S phone number



- The A/S phone number can be checked and changed.

⑥ Service menu



- Delete logged fault : Logged faults of MCU or engine ECU can be deleted.
- S/W download : Update and display software about operating system, application, image and font.
- Operating hours : Operating hours since the machine line out can be checked.
- Power shift : Set power shift mode (standard/option)

(4) Display

① Clock



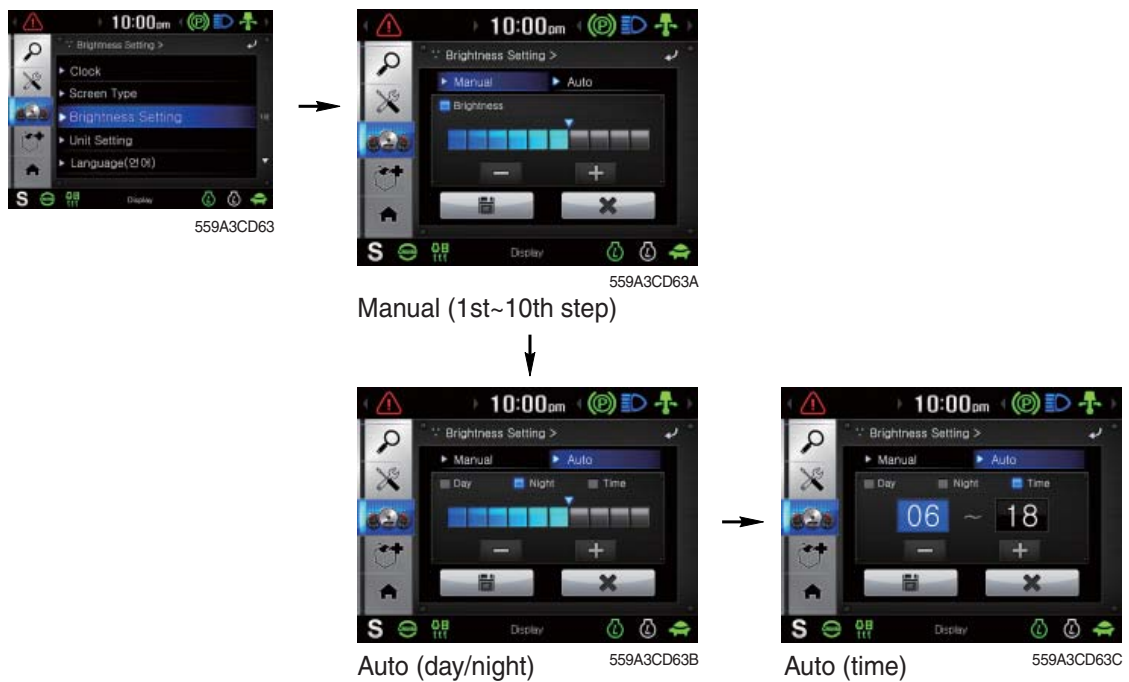
- The first line's three spots "****-**-**" represent Year/Month/Day each.
- The second line shows the current time. (AM, PM/0:00~12:59)

② Screen type



- The screen type (A,B,C) of the LCD can be selected by this menu.

③ Brightness setting calibration



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

④ Unit setting



- Temperature : °C ↔ °F
- Pressure : bar ↔ MPa ↔ kgf/cm² ↔ psi

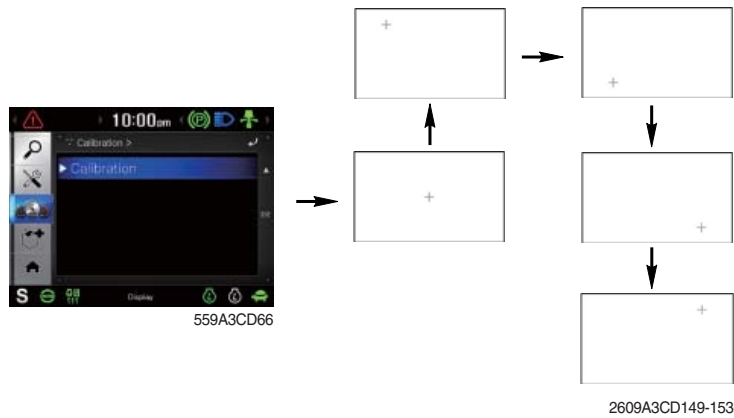
⑤ Language



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

⑥ Calibration

- When touch awareness goes wrong, this function use.
 Fall in the next step if touches the middle point of cross with fingernail.
 If touches total five points as follows, the setting is completed.



(5) Utilities

① Camera setting

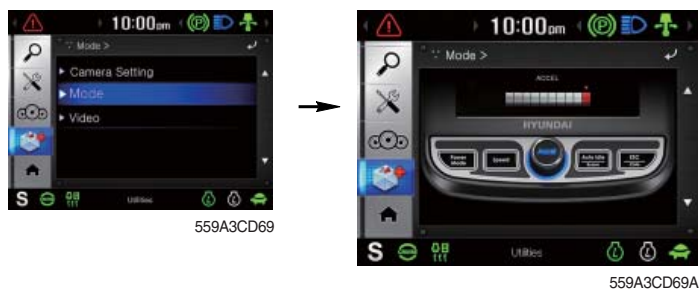
- Three cameras can be installed on the machine and the display order can be set by this menu.
- If the camera was not equipped, this menu is not useful.



- In the operation screen, if the ESC/CAM switch is pushed, rear view camera display or stop.
- 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, you can change camera channel using touch the screen.
- Push the select switch or touch the screen, the displayed screen will be enlargement.



② Mode



- When this cluster's buttons are not work, you can control using touch screen instead of these buttons.
- You can only control in this mode screen.

③ Video

- Play MP4 or codec file of external hard disk through USB port.
- The USB port is located under the cluster.



- Over 1100 engine rpm, the screen turns into the operation screen with MP4 or codec file playing for the safety.

| No. | Function | Control | No. | Function | Control |
|-----|------------------|----------------------------|-----|-----------------------------|-------------------------|
| 1 | Previous track | Power mode switch or touch | 7 | Sound volume | Speed switch or touch |
| 2 | Next track | Speed switch or touch | 8 | Stop | ESC/CAM button or touch |
| 3 | Play | Touch | 9 | File name | - |
| 4 | Pause | Touch | 10 | Current time/ Total time | - |
| 5 | Contents display | Touch | 11 | Current playing time | - |
| 6 | Mute | Touch | - | - | - |

CLUSTER (machine serial No.: #0579~)

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.**



HX60A3CD100B

- ※ **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 3-27 for details.

2) GAUGE

(1) Operation screen

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



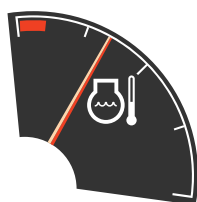
HX60A3CD101A

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

※ Operation screen type can be set by the screen type menu of the display.

Refer to page 3-44 for details.


(2) Engine coolant temperature gauge




290F3CD53

① This gauge indicates the temperature of coolant.

- Black range : 40-115°C (104-239°F)
- Red range : Above 115°C (239°F)

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 in red even though the machine is on the normal condition, check the electric device as that can be caused by the poor connection of electricity or sensor.


(3) 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 on the normal condition, check the electric device as that can be caused by the poor connection of electricity or sensor.

(4) Fuel level gauge



HX60A3CD55A

- ① This gauge indicates the amount of fuel in the fuel tank.
- ② Fill the fuel when 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 on the normal condition, check the electric device as that can be caused by the poor connection of electricity or sensor.

(5) Engine rpm display



Engine rpm

HX60A3CD105K

- ① This displays the engine speed.

(6) Accel dial display



290F3CD59

- ① This displays acceleration dial level 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.

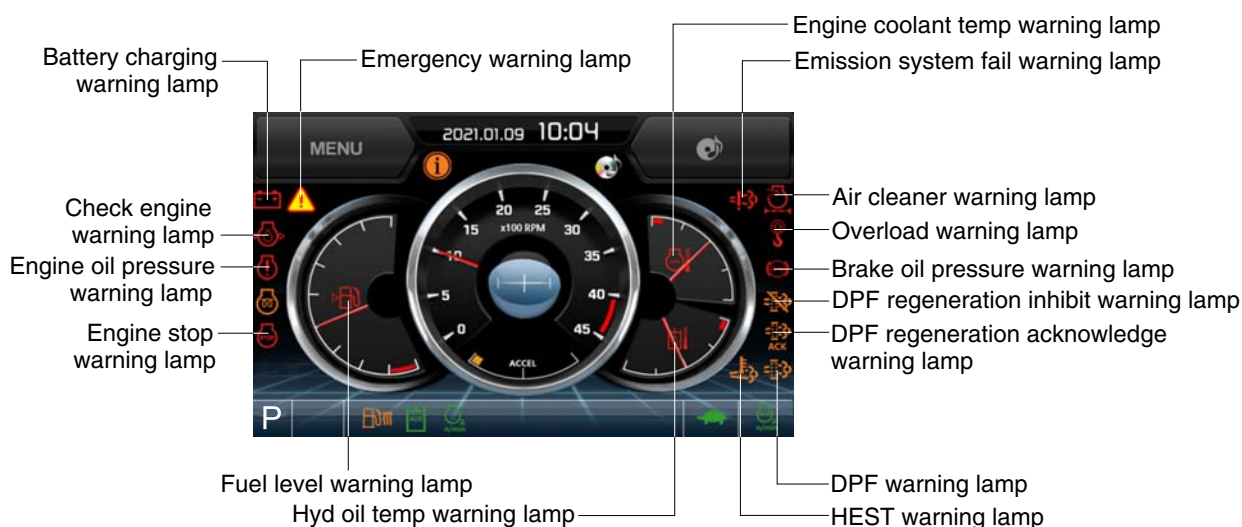
(2) Low voltage warning pop-up



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






HX60A3CD109C

- ※ 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 ON when the buzzer stop switch is pushed or the pop-up is touched. And the buzzer stops. Refer to page 3-36 for the switch.
- ※ When the warning lamps light ON more than 4, you can check all lamps with next page button (◀, ▶) near the warning lamps.

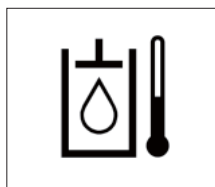
(1) Engine coolant temperature warning lamp






290F3CD61

- ① The  lamp pops up on the center of LCD and the buzzer sounds when the engine coolant temperature is over 115°C or more.
- 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 cooling system when the lamp keeps ON.

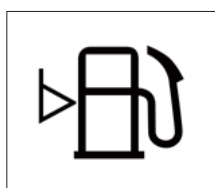
(2) Hydraulic oil temperature warning lamp



290F3CD62

- ① The  lamp pops up on the center of LCD and the buzzer sounds when the hydraulic oil temperature is over 105°C or more.
- 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 ON and the buzzer sounds when the level of fuel is below 10%.
- ② Fill the fuel immediately when the lamp is ON.

(4) Emergency warning lamp



290F3CD64

① This lamp pops up and the buzzer sounds when each of the below warnings are happened.

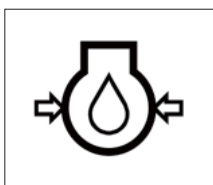
- Engine coolant overheating (over 115°C)
- Hydraulic oil overheating (over 105°C)
- MCU input voltage abnormal
- Accel dial circuit abnormal or open

※ 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 stops.

This is same as following warning lamps.

② When this warning lamp lights ON, machine must be checked and serviced immediately.

(5) Engine oil pressure warning lamp



290F3CD65

① This lamp lights ON when the engine oil pressure is low.

② If the lamp lights ON, shut off the engine immediately. Check oil level.

(6) Check engine warning lamp



290F3CD66

① This lamp lights ON when the communication between MCU and engine ECM on the engine is abnormal, or if the cluster received any fault code from engine ECM.

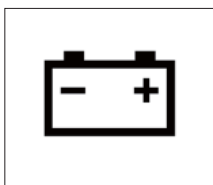
② Check the communication line between them.

If the communication line is OK, then check the fault codes on the cluster.

③ Also, this lamp pops up when the level of DPF soot is high.

※ Refer to the page 3-29 for the DPF warning lamp.

(7) Battery charging warning lamp

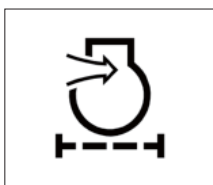


290F3CD67

① This lamp lights ON when the battery charging voltage is low.

② Check the battery charging circuit when this lamp is ON.

(8) Air cleaner warning lamp

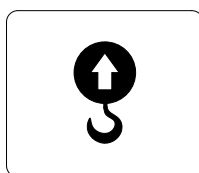


290F3CD68

① This lamp lights ON when the filter of air cleaner is clogged.

② Check the filter and clean or replace it.

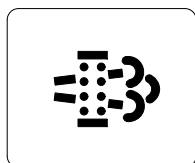
(9) Overload warning lamp (option)



21093CD36




- ① When the machine is overload, the overload warning lamp lights ON during the overload switch is ON. (if equipped)
- ② Reduce the machine load.
Initiate a manual regeneration

(10) DPF (diesel particulate filter) warning lamp

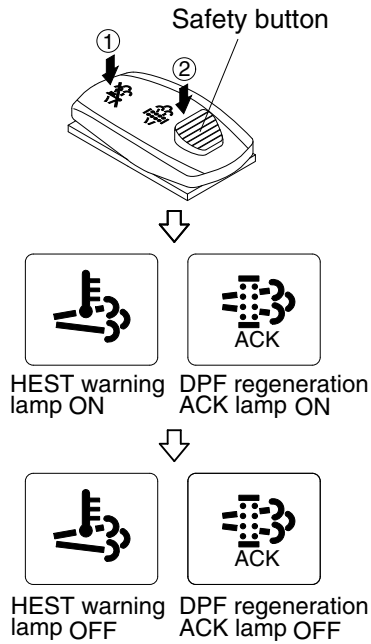


2609A3CD19

- ① This warning lamp lights ON or OFF when the regeneration is needed.
 - ② This warning lamp lights ON while DPF regeneration inhibit switch is in "Regeneration inhibited" state, when stationary regeneration is permitted.
 - ③ This warning lamp lights ON during reset regeneration standby or in back up mode.
 - ④ This warning lamp lights flash during reset regeneration standby DPF regeneration inhibit switch is in "Regeneration inhibited" state.
- ※ Consequences of delaying regeneration
- Poor performance caused by increasing exhaust gas pressure.
 - Higher fuel consumption
 - Shorter filter lifetime

| Condition | Warning lamp | | | Remedy |
|-------------|--|---|--|--|
| | DPF  | Check engine  (pop up) | Stop engine  (pop up) | |
| Normal | Off | Off | Off | • Automatic regeneration |
| Soot low | On | Off | Off | • Push DPF switch to OFF position if DPF switch is in inhibit position. (see 3-60 page) • Engine power may be reduced automatically (soot medium) |
| Soot midium | Blink | Off | Off | |
| Soot high | On | On | Off | • Engine power and speed will be reduced automatically • Initiate a manual regeneration |
| Stop | On | Off | On | • Stop the engine immediatary. • Please contact your Hyundai service center or local dealer. |

※ Manual regeneration method of DPF



HX603CD143

※ Manual regeneration applies if the machine is in a fireproof area and there is no plan to turn off the machine during the regeneration.

- ① Stop and park the machine.
- ② The accel dial to the lowerest position and operate the engine in idling.
- ③ Pull the safety button and push the switch to position ② to initiate the manual regeneration of DPF.

※ Refer to the page 3-57 for the switch operation.

※ The engine speed may increase gradually to high idle rpm and DPF regeneration begins and it will take approximately 25~30 minutes.

- ④ When the manual regeneration starts, the DPF warning lamp turns OFF and the regeneration acknowledge lamp and HEST warning lamp will light ON during the regeneration function is operating.
- ⑤ The regeneration acknowledge lamp and HEST warning lamp will light OFF when the regeneration function is completed.

(11) HEST (High exhaust system temperature) warning lamp



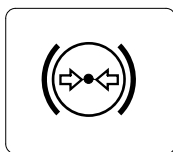
2609A3CD21

- 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 will be common for the lamp to illuminate on and off during normal equipment operation as the engine completes regeneration.

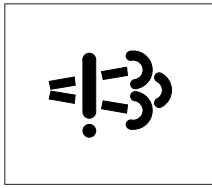
(12) Brake oil pressure warning lamp



- ① The lamp lights ON when the oil pressure of service brake drops below the normal range.
- ② When the lamp is ON, stop the engine and check for its cause.

※ Do not operate until any problems are corrected.

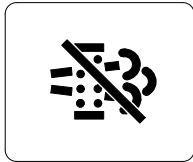
(13) Emission system fail warning lamp



300A3CD15

- ① This warning lamp indicates there are faults related to the emission system.
 - ② The lamp lights ON when each of the below warnings is happened.
 - a. The EGR valve malfunctions.
 - b. Electrical malfunction of the EGR control sensors.
(disconnection, short)
 - c. Tampering with the EGR control sensors.
 - ③ **This warning lamp can be shown together with DPF warning lamp or engine fail lamp or engine stop warning lamp when diagnosis DPF systems.**
- ※ **Please contact your Hyundai service center or local dealer.**

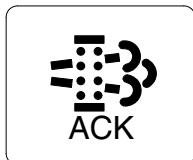
(14) DPF regeneration inhibit warning lamp



2609A3CD20

- ① This warning lamp indicates, when illuminated, the DPF switch is pushed inhibit position, therefore automatic and manual regeneration can not occur.
- ※ **Refer to the page 3-57 for the DPF switch.**

(15) DPF regeneration acknowledge warning lamp



559A3CD10

- ① This warning lamp lights ON stationary regeneration is in process.
- ② This warning lamp lights ON, when stationary regeneration is in process after DPF regeneration request switch is pressed and hold for more than 3 seconds.
- ③ This warning lamp lights flash when stationary regeneration standby or regeneration interlock switch is in "regeneration permitted (interlock enabled) status.
- ④ This warning lamp lights flash while stationary regeneration standby or back mode, when DPF regeneration inhibit switch in "Regeneration permitted" status and regeneration interlock switch is in regeneration permitted status.

(16) Engine stop warning lamp



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

5) PILOT LAMPS



HW60A3CD112C

※ The left and the right movement buttons (◀ and ▶) are activated when nine indicator or more light, and touching the button shifts to the previous/next page. The buttons are not activated when eight indicators or less light.

(1) Mode pilot lamp

| Sequence | 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 |

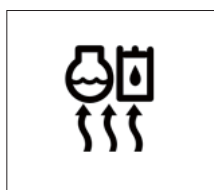
(2) Engine preheat pilot lamp



290F3CD79

- ① Turning the start switch ON automatically starts preheating.
 - ② Start the engine after this indicator turns off.
- See Page 4-4.

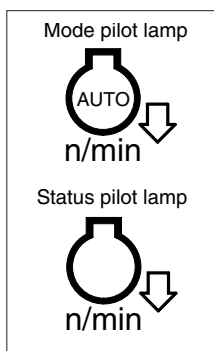
(3) Warming up pilot lamp



290F3CD80

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

(4) Auto idle status/ mode pilot lamp



85A3CD106

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

(5) Maintenance pilot lamp

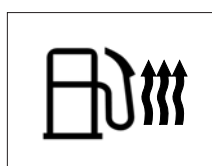


HX60A3CD116

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

※ Refer to the page 3-41.

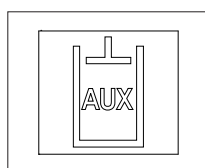
(6) Fuel warmer pilot lamp



HX60A3CD111

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

(7) Optional flow control pilot lamp

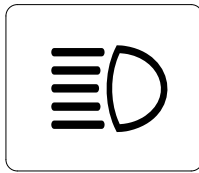


HW60A3CD48A

- ① The indicator lights when activating (performing) the optional flow control function.

※ Refer to the Page 3-41.

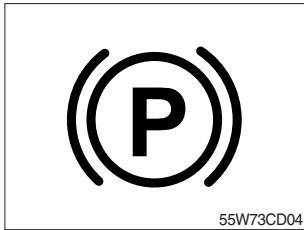
(8) High beam pilot lamp



55W13CD50

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

(9) Parking brake pilot lamp



55W73CD04

- ① When the parking brake is actuated, the lamp lights ON.
- ※ **Check the lamp is OFF before driving.**

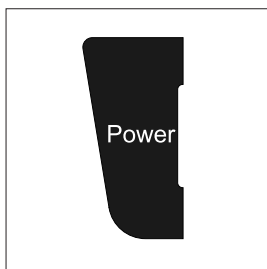
6) SWITCHES



HX60A3CD117D

※ Selecting the switch displays the indicator on LCD. See Page 3-32 for further information.

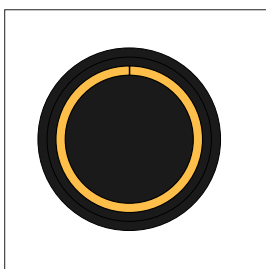
(1) Power mode switch



HX60A3CD118

- ① This switch selects the system power mode, and the selected power mode indicator is displayed on the indicator position.
 - P : High-load work
 - S : Standard load work
- ② The indicators shifts in the sequence of S → P → S.

(2) Select switch



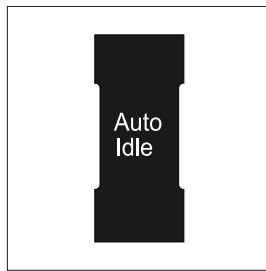
HX60A3CD119

- ① The switch is used for selecting or changing the menus and input values.
- ② Knob pressing
 - Pressing short (0.5 sec. or less) : Menu selecting
- ③ Knob turning

This knob is used for changing menus and input values :

 - Right turning : Increasing downward direction and input value
 - Left turning : Decreasing upward direction and input value

(3) Auto idle switch



HX60A3CD120

- ① This switch is used for operating or canceling the auto idle function.

※ See Page 3-33 for further information.

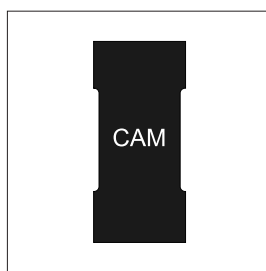
(4) Buzzer stop switch



HX60A3CD121

- ① The buzzer sounds when the system fails.
In such a case, press the switch to stop the buzzer. The alarm indication is kept lit until trouble is resolved.

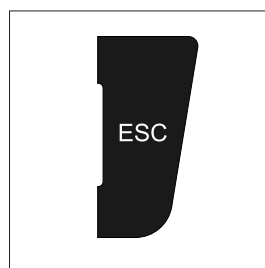
(5) Camera switch



HX60A3CD122

- ① Pressing this switch on the operation screen of the main menu displays the area illuminated by the camera mounted on the system (if the camera is mounted).
See Page 3-51 for information of the camera.

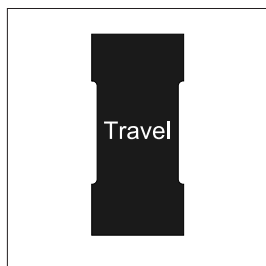
(6) Escape switch



HX60A3CD123

- ① This switch is used for return to the previous or the next menu.

(7) Travel speed switch



HX60A3CD104

- ① This switch is used for changing driving speed.

🏍️ : High speed

🚗 : Low speed

※ Do not operated the driving speed switch during driving.

System stability may adversely be affected.

⚠️ Rapid change of system stability may cause injury or death of driver.

7) MAIN MENU

Main menu screen



HX60A3CD124A



Sub menu screen







HX60A3CD125A

※ See “Selection Switch” on page 3-35 for further information on selection and change of the menus and input values.

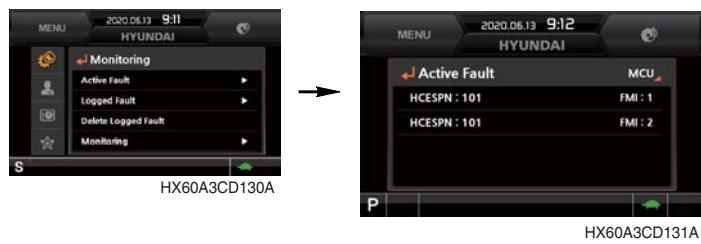
※ Touching the main menu switch, or pressing the selection switch prompts the sub-menu screen.

(1) Structure

| No. | Main menu | Sub-menu | Description |
|-----|---|---|---|
| 1 |  Monitoring | Active fault Logged fault Delete logged fault Monitoring | List of active fault of system/engine List of logged fault of system/engine Deleting specifics of logged fault (system/engine) Monitoring (conditions of system, switch, and output) |
| 2 |  Management | Maintenance info. Aux flow setting ELS mode setting Machine information Contact Cluster update Service menu | Checking and initialization of service Interval of oil and filters Optional attachment setting ELS mode setting/user password changing Information of cluster, MCU, engine system Display and change of contact information for after-sales services System and application updating Power shift, Operation hours, Main gauge type, Display RPM, DPF filter exchange, AVCU setting, Adding language |
| 3 |  Display | Clock adjust Brightness setting Unit setting Language selection | Current time setting Manual, auto Temperature, Distance, Pressure, Flow, Volumn 24 languages |
| 4 |  Utilities | Entertainment Camera setting Clinometer setting Emergency mode | Video/music file playing Setup of number of active cameras, display sequences, and camera numbers Initializing slope sensor Back-up switch for failed cluster switch |

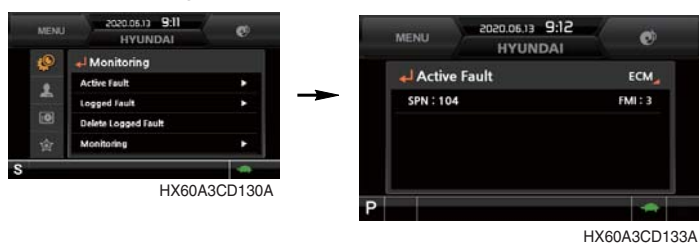
(2) Monitoring

① Active fault - system



- You may use this menu to check active fault of MCU.

② Active fault - engine



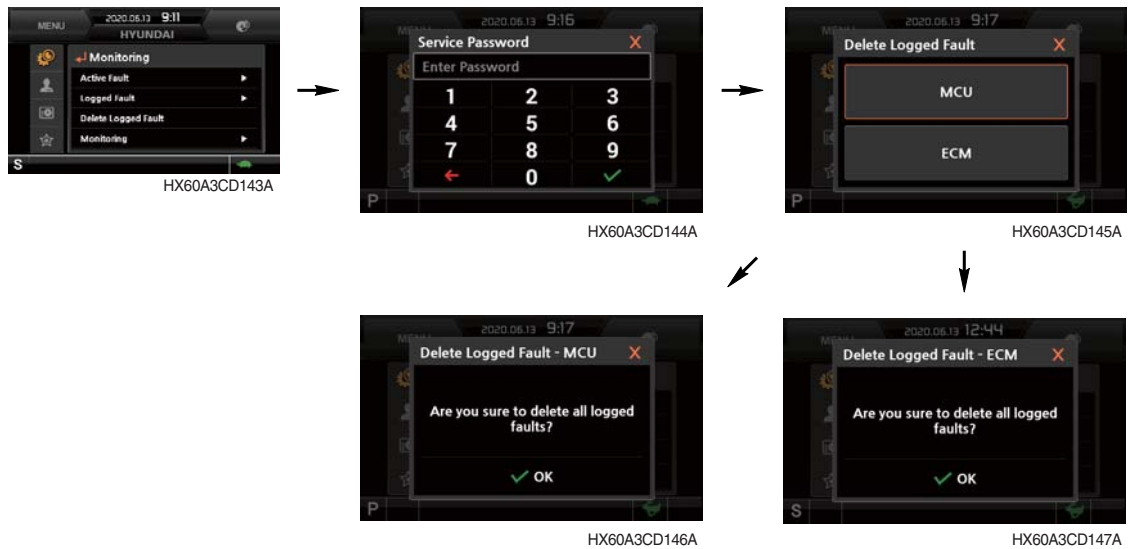
- You may use this menu to check active fault of engine ECM.

③ Logged fault - system/engine



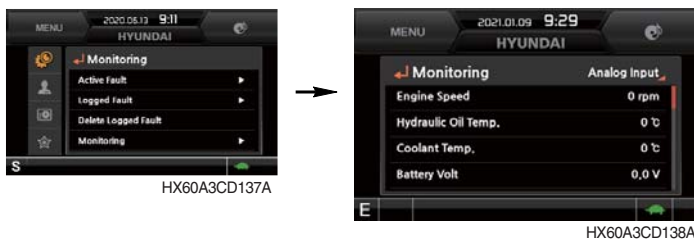
- You may use this menu to check fault logged on system MCU or engine ECM.
- The menu is accessible by maintenance engineer only.

④ Delete logged fault



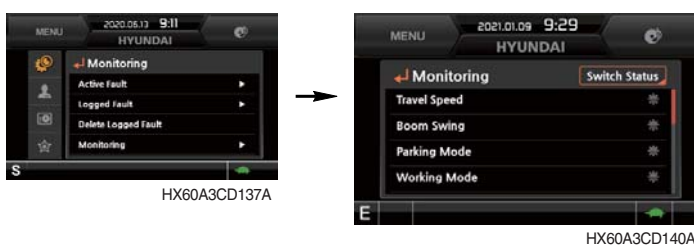
- Delete logged fault: You are allowed to delete fault logged on system MCU or engine ECM. (Deletion can be deleted only while the engine is kept stopped.)

⑤ Monitoring (system conditions)



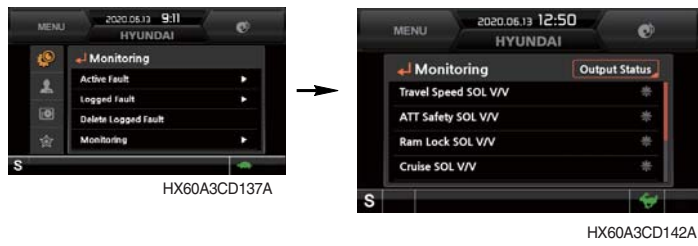
- You may use this menu to check the system conditions such as engine rotation rate, oil temperature, voltage and pressure.

⑥ Monitoring (switch conditions)



- You may use this menu to check digital switch information of the system.
- The operation switch lights blue.

⑦ Monitoring (output conditions)



- You may use this menu to check digital output information of the system.
- Output lights blue.

(3) Management

① Maintenance info.



- Elapsed: Time elapsed since inspection and maintenance is displayed.
- Change interval: You are allowed of changing exchange cycle in 50 hours.
- History-Hourmeter: History of inspection, maintenance and exchange is displayed.
- Replacement: Elapsed time is reset to zero.
- **Change or replace interval**

| No | Item | Interval |
|----|-----------------------------|----------|
| 1 | Engine oil | 500 |
| 2 | Final gear oil | 1000 |
| 3 | Swing gear oil | 1000 |
| 4 | Hydraulic oil | 5000 |
| 5 | Pilot line filter | 1000 |
| 6 | Hydraulic oil return filter | 1000 |
| 7 | Engine oil filter | 500 |
| 8 | Fuel filter | 500 |
| 9 | Pre-filter | 500 |
| 10 | Hydraulic tank breather | 1000 |
| 11 | Air cleaner | 1000 |
| 12 | Radiator coolant | 2000 |
| 13 | Swing gear pinion grease | 1000 |

② Aux flow setting

a. Optional attachment setup



- Setup up to three optional attachments.

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

※ Each option attachment operating in one of two user modes (Type A and B)

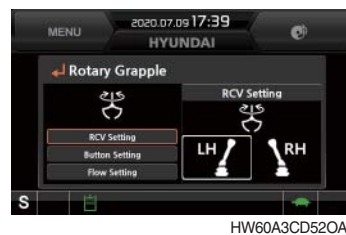
b. Proportional flow control setting

You may use this menu to set the values of individual option attachments.

a) Rotary setup



- Rotary selecting
RCV, button, and flow setup.



- RCV setup
 - It is possible to set operating RCV for rotary operation to LH or RH .
 - Selecting rotary RCV to LH automatically sets grapple RCV to RH.



- Button setup (rotating clockwise)
 - Selecting clockwise rotating direction to LH automatically sets counterclockwise rotating direction to RH.

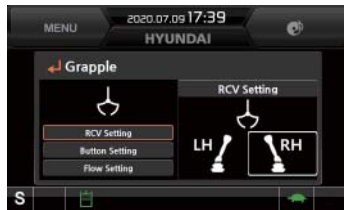


- Flow setup
 - You may set flow between Level 1 and 5.

b) Grapple setting



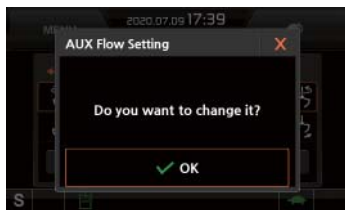
- Grapple selection
RCV, button and flow setup



- RCV setup
 - It is possible to set RCV for grapple operation to LH or RH.
 - Selecting grapple RCV to RH automatically sets rotary RCV to LH.



- Button setup (Close)
 - Setting Close to RH automatically sets Open to LH.



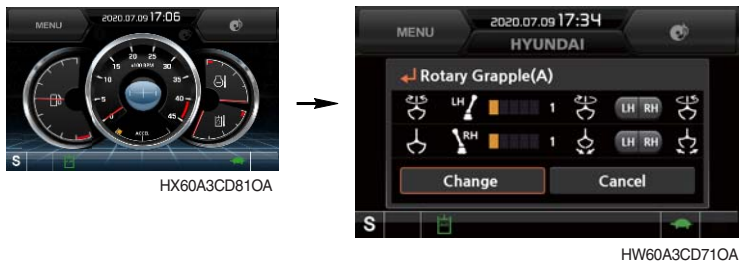
- Flow setup
 - Setting between Level 1 and 5.



- Never forget to select Change button **once** flow setting is complete.

- ※ Saved setting is stored in each icon, and value finally stored becomes active.
- ※ You may use any stored values by pressing Icon button.
- ※ It is possible to perform two user's settings per attachment (A and B), and to store up to six values.
(Two for 4-way, four for 2-way)

c) Checking settings



※ Operating optional attachment function activates the symbol  on the bottom of the main screen.

※ You are allowed of checking settings as follows in the course of Menu - Administrator Functions - Optional Attachment.

(a) Rotary setup

- Rotary RCV setup : LH
- Rotary flow level : 3
- CW direction control : LH
- CCW direction control : RH

(b) Grapple setup

- Grapple RCV setup : RH
- Grapple flow level : 3
- Open control : LH
- Close contro l: RH

③ ESL mode setting



- The ESL mode setting is designed to prevent theft and unauthorized operation of the system.
- When selecting the ESL mode setting to continuous operation, password should be entered when turning the Start button ON.
- Disabled : The ESL mode setting function does not operate.

Continuous operation : Password should be entered whenever operator starts the engine.

Enable(interval): Password should be entered when operator starts the engine first. It is not required to enter the password until restart within specified time.

You may set the specified time up to two days.

※ Default password : 00000

※ Length of password : 5-10 digits

④ Changing password

- The length of the password is between 5 and 10 digits.



HX60A3CD151A



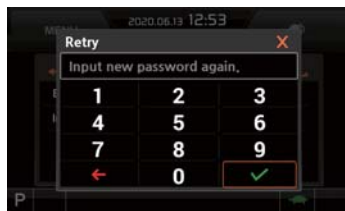
HX60A3CD149A

Entering current password



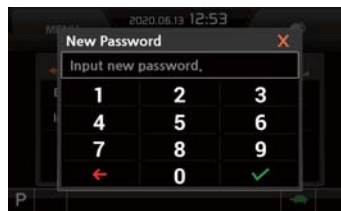
HX60A3CD153A

Selecting Change Password



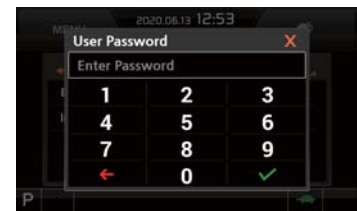
HX60A3CD156A

Storing new password in MCU



HX60A3CD155A

Entering new password again



HX60A3CD149A

Entering new password

⑤ Machine information



HX60A3CD160A



HX60A3CD161A



HX60A3CD162A

- On this screen, you may check information of the instrument panel, the system controller (MCU), the engine and the system.

⑥ Contact



HX60A3CD163A



HX60A3CD164A



HX60A3CD165A

- You may check or change the contact information for after-sales services.

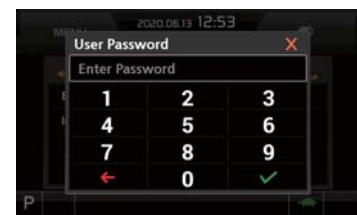
⑦ Cluster update



HX60A3CD169A



HX60A3CD170A



HX60A3CD149A

Selecting Cluster Update

Entering user's password

- It is possible to update the cluster and CAN.
- ※ Do not turn power off while updating.

a. Application update



HX60A3CD172A



HX60A3CD173A



HX60A3CD174A

Selecting application items

Selecting files to update

Selecting OK



HX60A3CD176



HX60A3CD175A

Completed

In progress

b. System update



HX60A3CD177A

Selecting system items



HX60A3CD173A

Selecting files to update



HX60A3CD174A

Selecting OK



HX60A3CD176

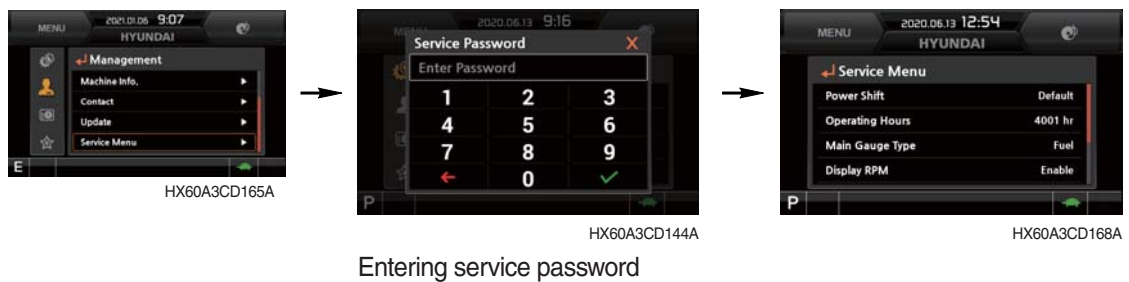
Completed



HX60A3CD175A

In progress

⑧ Service menu



- Power shift : Set the power shift mode (default/option).
- Operating hours : You may check operating hours of the system in individual modes after acceptance of the system.
- Main gauge type : It is possible to display engine rotation rate or fuel level on the main gage of the main screen.
- Display RPM : It is possible to set display of numeric value of engine rotation rate on the main gauge of the main screen.
- DPF filter exchange : You may initialize parameters relevant to DPF of engine ECU after cleaning the DPF filter.
- AVCU setting : You may select Standard, 2-Way or 4-Way dependent upon the system options.
- Adding language : It is possible to update language displayed on the cluster when it is required to correct language.

※ The service menu is accessible by maintenance engineer only. Do not attempt unauthorized adjustment.

(4) Display

① Clock adjust



HX60A3CD191A



HX60A3CD192A

- "****_**_**" on the first line indicates year/month/day.
- The second line indicates current time (00:00 - 12:59 am/pm)

② Brightness setting



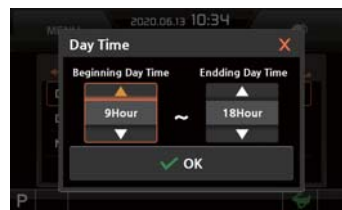
HX60A3CD193A



Manual (Level 1 to 10) HX60A3CD194A



HX60A3CD195A



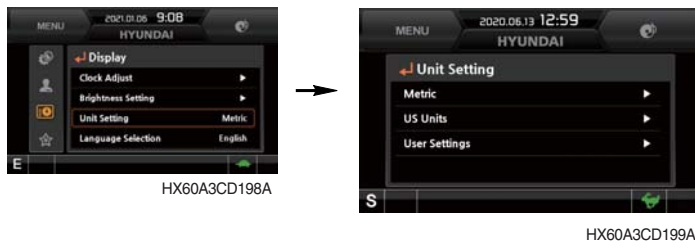
Auto (day/night) HX60A3CD197A



Auto (daytime) HX60A3CD196A

- Selecting "Auto" allows setting brightness different in day and night. It is also allowed to set hours in daytime. (Setting beginning day time and ending day time)

③ Unit setting



- Metric: Units are changed to metric units.
- U.S. units: Units are changed to U.S. units.
- User setting : Units are changed to user setting.

| Item | Metric system | U.S. unit | User's setup |
|-------------|---------------|-----------|-------------------------------------|
| Temperature | °C | °F | °C, °F |
| Distance | km | mile | km, mile |
| Pressure | bar | Mpa | bar, Mpa, kgf/cm ² , psi |
| Flow | lpm | gpm | lpm, gpm |
| Volume | l | gal | l, gal |

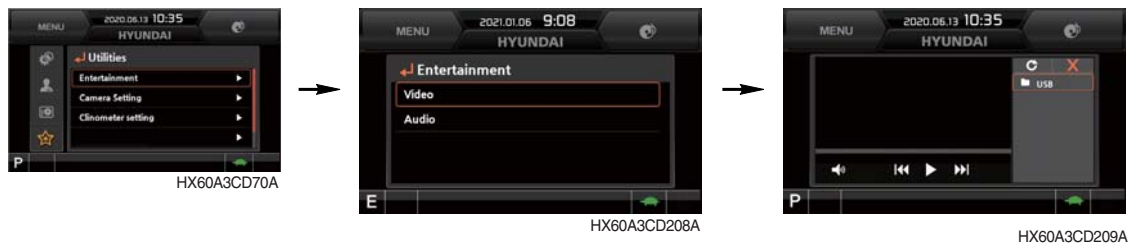
④ Language selection



- You may select your language (from 24 languages), and all the information is displayed in the selected language.

(5) Utilities

① Entertainment



- You may play MP4 or CODEC files of detachable hard disk through USB port.
- USB port is on the left of the instrument panel.
- When engine rotation rate exceeds 1100 rpm or higher, the screen is switched to the operation screen even while MP4 or CODEC file is played for safety. When engine rotation rate drops to 1100 rpm or lower, animation clip is played again.

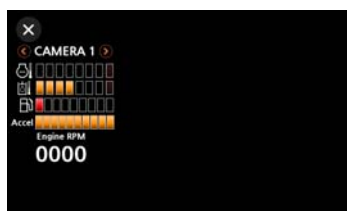
⚠ Do not play animation clip while operating the system to prevent risks of accident.

② Camera setting



- You may install three cameras on the system, and set display sequence on this menu.
- If no camera is installed, this menu is disabled.
- When rotating Select switch clockwise, the screen of the next camera is displayed. When rotating the switch counterclockwise, the screen of the previous camera is displayed. You may also change the camera channel by touching the screen.
- You may display or hide the mini instrument panel by pressing Select switch or touching the screen.

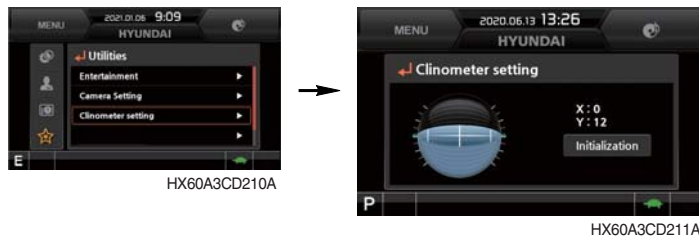
(Mini instrument panel displayed → hidden → displayed)



HX60A3CD204

- Pressing ESC switch or touching X icon on the screen terminates the camera mode.

③ Clinometer setting



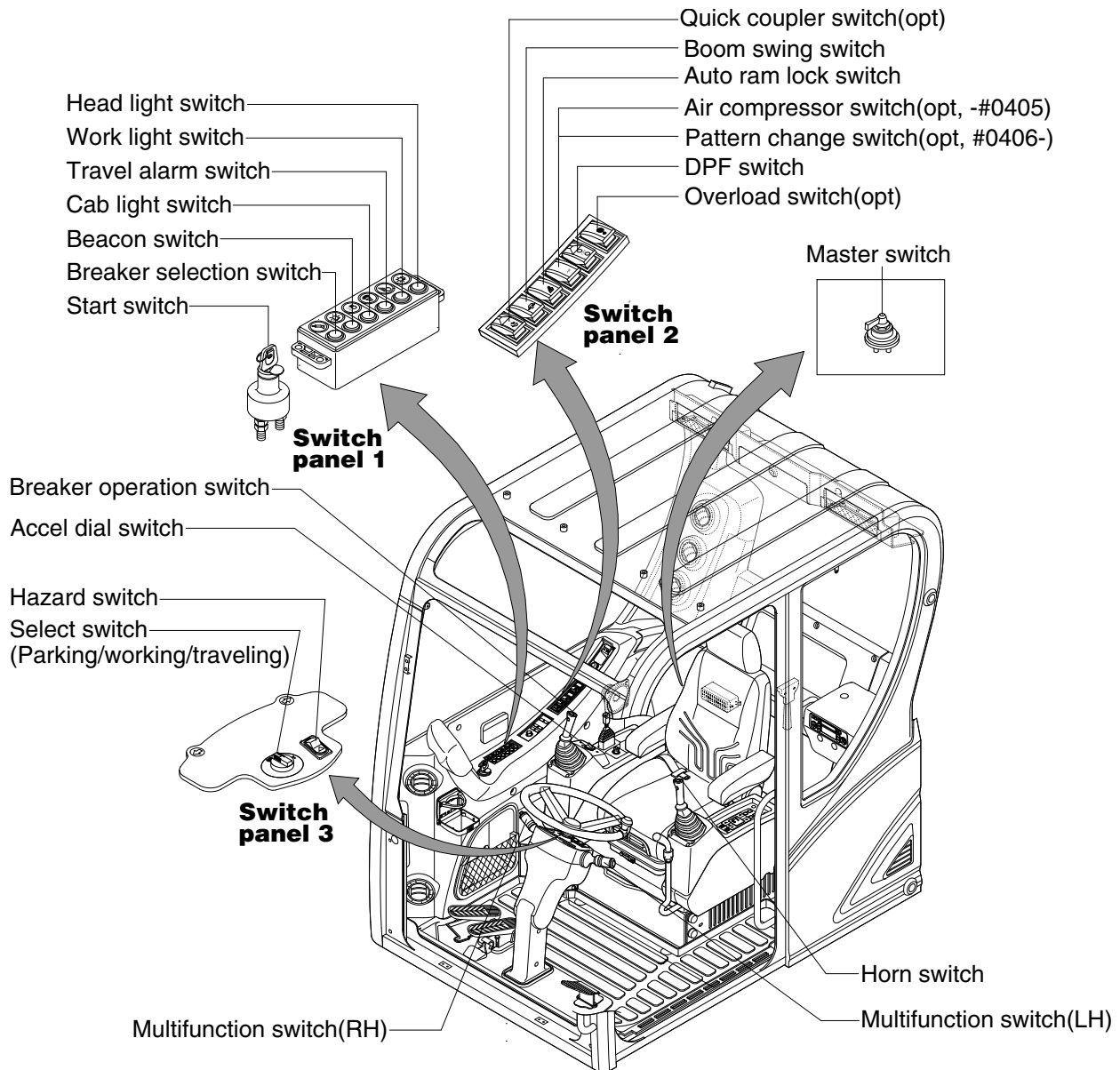
- Pressing “Default” when the system is kept on flat surface resets X and Y values to zero.
- You may check gradient of the system on the operating screen of the instrument panel.

④ Emergency mode



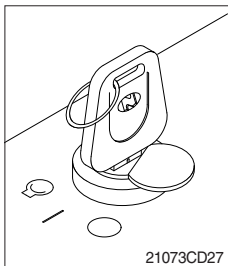
- When the switch or the acceleration dial of the monitor fails, the switch is displayed on LCD, and you are allowed to perform operation by touching the screen.
- Such operation is allowed only on this mode screen.

3. SWITCHES



55W9A3CD20

1) STARTING SWITCH



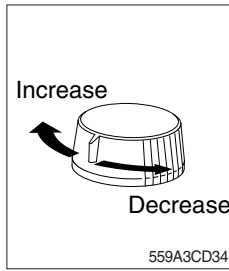
(1) There are three positions, OFF, ON and START.

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

Release key immediately after starting.

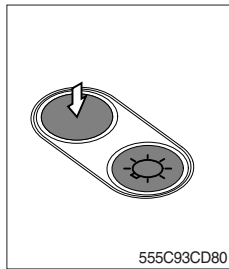
※ **Key must be in the ON position with engine running to maintain electrical and hydraulic function and prevent serious machine damage.**

2) ACCEL DIAL



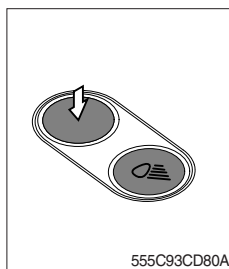
- (1) There are 10 dial setting.
- (2) Setting 1 is low idle and setting 10 is high idle.
 - By rotating the accel dial to right : Engine speed increased.
 - By rotating the accel dial to left : Engine speed decreased.

3) HEAD LIGHT SWITCH



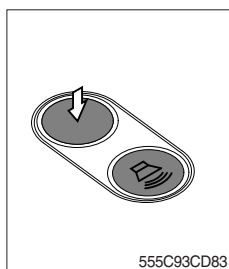
- (1) This switch is used to operate the head light.
 - Press the switch once, the head light comes ON and the pilot lamp ON.
 - Press the switch once more, the head light and pilot lamp turn off.

4) WORK LIGHT



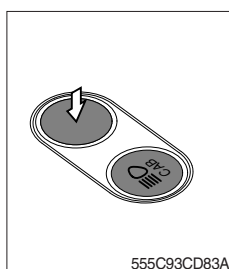
- (1) This switch is used to operate the work light.
 - Press the switch once, the work light comes ON and the pilot lamp ON.
 - Press the switch once more, the work light and pilot lamp turn off.

5) TRAVEL ALARM SWITCH



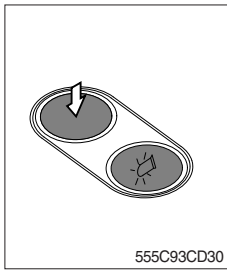
- (1) This switch is used to alarm surroundings when the machine travels to forward and backward.
- (2) On pressing this switch, the alarm operates only when the machine is traveling.

6) CAB LIGHT SWITCH



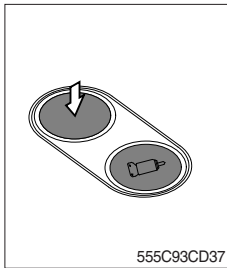
- (1) This switch turns on the cab light on the cab.

7) BEACON SWITCH (option)



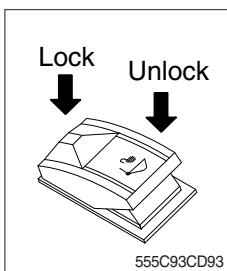
- (1) This switch turns ON the rotary light on the cab.
- (2) The below indicator lamp is turned ON when operating this switch.

8) BREAKER SELECTION SWITCH (option)



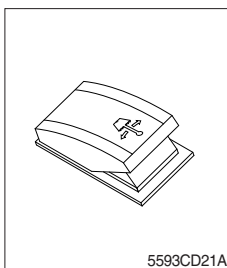
- (1) This switch is used to operate breaker.
- ※ The breaker operates only when this switch is pressed.

9) QUICK COUPLER SWITCH (option)



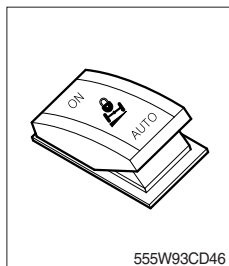
- (1) This switch is used to engage or disengage the moving hook on quick coupler.
- ※ Refer to the page 8-6 for details.

10) BOOM SWING SWITCH



- (1) This switch is used to swing the boom to the right or left direction.
- (2) The indicator lamp turned ON when selected this switch.
- ※ Refer to the page 4-7 for the operation.

11) AUTO RAM LOCK SWITCH



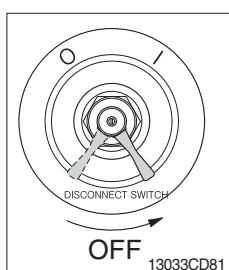
(1) This switch activate front axle oscillation cylinder to locking position for increase of stability.

- ON : Set front axle to locking position for excavation work or travels even ground. Also, the ram lock pilot lamp comes ON at the travel pilot lamp.
- AUTO : Set front axle to locking or unlocking as table.

※ Refer to page 3-31 for select switch.

| Select switch (parking/working/ traveling) | Ram lock | Conditions |
|--|-----------|--|
| Parking (P) | Locking | · Always |
| Traveling (T) | Unlocking | · Always |
| Working (W) | Locking | · FNR lever in neutral position · Service brake pedal is depressed. |
| | Unlocking | · FNR lever in forward/reverse position and service brake pedal is not depressed. · 2 way pedal is equipped and service brake pedal is not depressed. |

12) MASTER SWITCH

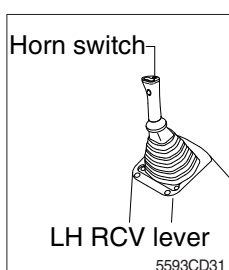


(1) This switch is used to shut off the entire electrical system.

- (2) I : The battery remains connected to the electrical system.
O : The battery is disconnected to the electrical system.

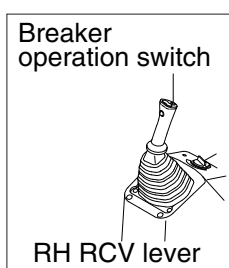
※ **Never turn the master switch to O (OFF) with the engine running.**
It could result in engine and electrical system damage.

13) HORN SWITCH



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

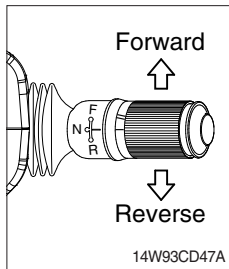
14) BREAKER OPERATION SWITCH



- (1) On pressing this switch, the breaker operates only when the breaker selection switch on the switch panel is selected.

15) RH MULTI FUNCTION SWITCH

(1) FNR lever



① This lever changes travel direction of machine.

- **F** : Machine moves forward
- **N** : Neutral position
- **R** : Machine moves backward

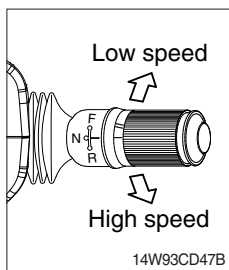
▲ Travel direction will be reversed if lower structure is positioned with dozer in front.

② The warning buzzer sounds when the lever is in the reverse position.

▲ If this lever is not in the neutral position, engine does not started.

▲ Be sure to stop the machine when changing the direction forward or backward while traveling.

(2) Travel speed switch

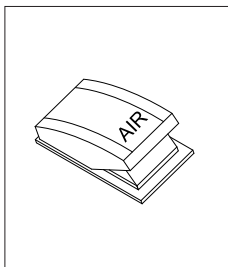


① This switch is for selecting travelling speed between high and low.

- Low speed (turtle mark) : 11.3 km/hr (7.0 mph), turtle mark
- High speed (rabbit mark) : 30 km/hr (19.0 mph), rabbit mark

▲ In case of changing the travel speed, be sure to stop the machine completely.

16) AIR COMPRESSOR SWITCH (option, -#0405)



(1) This switch is used to activate the air compressor.

(2) The indicator lamp turned ON when selected this switch.

17) PATTERN CHANGE SWITCH (option, #0406-)



① The pattern change can be operated easily using this switch.

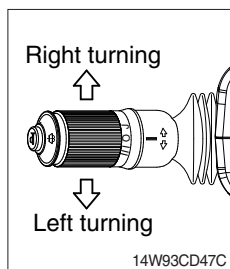
- Position ISO : ISO type pattern
- Position A : A type pattern

※ Before starting the machine, check switch position.

※ Refer to the page 4-26 for the details.

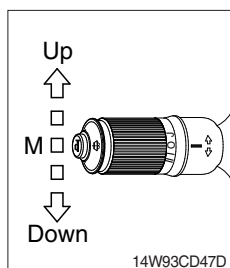
18) LH MULTI FUNCTION SWITCH

(1) Direction indication lamp switch



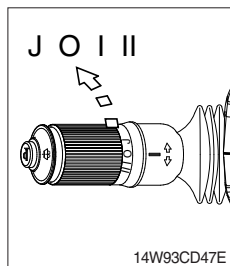
- ① This switch is used to warn or signal the turning direction of the machine to other machines or equipment.
- ② Push the lever to forward for turning right (↗), pull the lever to backward for turning left (↖).
- ③ The turning pilot lamp comes ON at the travel pilot lamp on the steering column.

(2) Dimmer switch



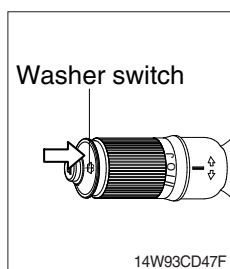
- ① This switch is used to turn the head lights direction.
- ② Switch positions.
 - Up (↗) : To flash for passing
 - Middle (□) : Head lights low beam ON
 - Down (↘) : Head lights high beam ON
- ③ If you release the switch when it's in up position, the switch will return to middle.

(3) WIPER SWITCH



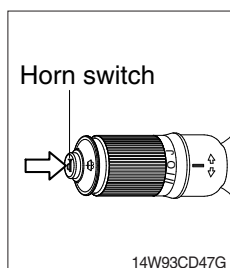
- ① When the switch is in J position, the wiper moves intermittently.
- ② When placed in I or II position, the wiper moves continuously.

(4) WASHER SWITCH



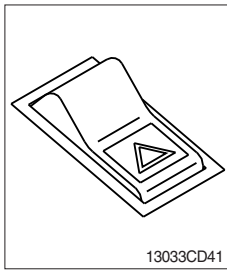
- ① If you push the grip of the lever, washer liquid will be sprayed and the wiper will be activated 2-3 times.
- ※ Check the quantity of washer liquid in the tank. If the level of the washer liquid is LOW, add the washer liquid (in cold, winter days) or water. The capacity of tank is 1.5 liter.

(5) HORN SWITCH



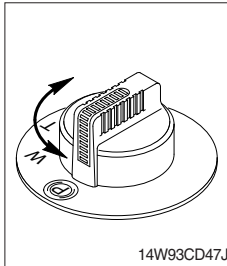
- ① This switch is at the end of left side multifunction switch. On pressing, the horn sounds.

19) HAZARD SWITCH



- (1) Use for parking, or loading machine.
 - (2) LH and RH turn signal lamps come ON at the same time by this switch.
- ※ If the switch is left ON for a long time, the battery may be discharged.

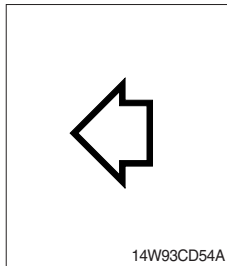
20) SELECT SWITCH (parking / working / traveling)



- (1) This switch is used to select the operation mode as below.
 - Parking ((P)) : The parking brake is applied.
 - Working (W) : The machine needs to be working.
 - Traveling (T) : The machine needs to be traveling.

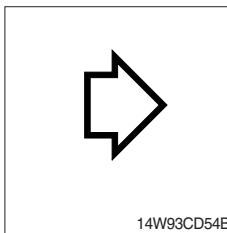
21) TURNING PILOT LAMP

(1) Left turning pilot lamp



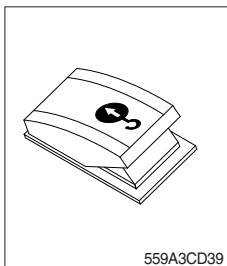
- (1) This lamp flashes with sound when the LH multifunction switch is move to backward position.

(2) Right turning pilot lamp



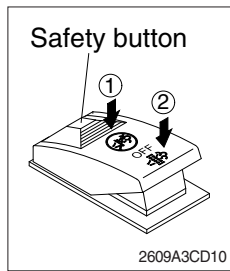
- ① This lamp flashes with sound when the LH multifunction switch is
- ② move to forward position.

22) OVERLOAD SWITCH (option)



- (1) When this switch pressed ON position, buzzer makes sound and overload warning lamp comes ON in case that the machine is overload.
- (2) When it pressed OFF position, buzzer stops and warning lamp goes out.

23) DPF (diesel particulate filter) SWITCH



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

(2) Inhibit position (①)

- ① The inhibit position disallows any automatic or manual regeneration of the DPF.
- ② This may be used by operator to prevent regeneration when the machine is operating in a hazardous environment concerned about high temperature.
- ③ It is strongly recommended that this position is only activated when high temperatures may cause a hazardous condition.

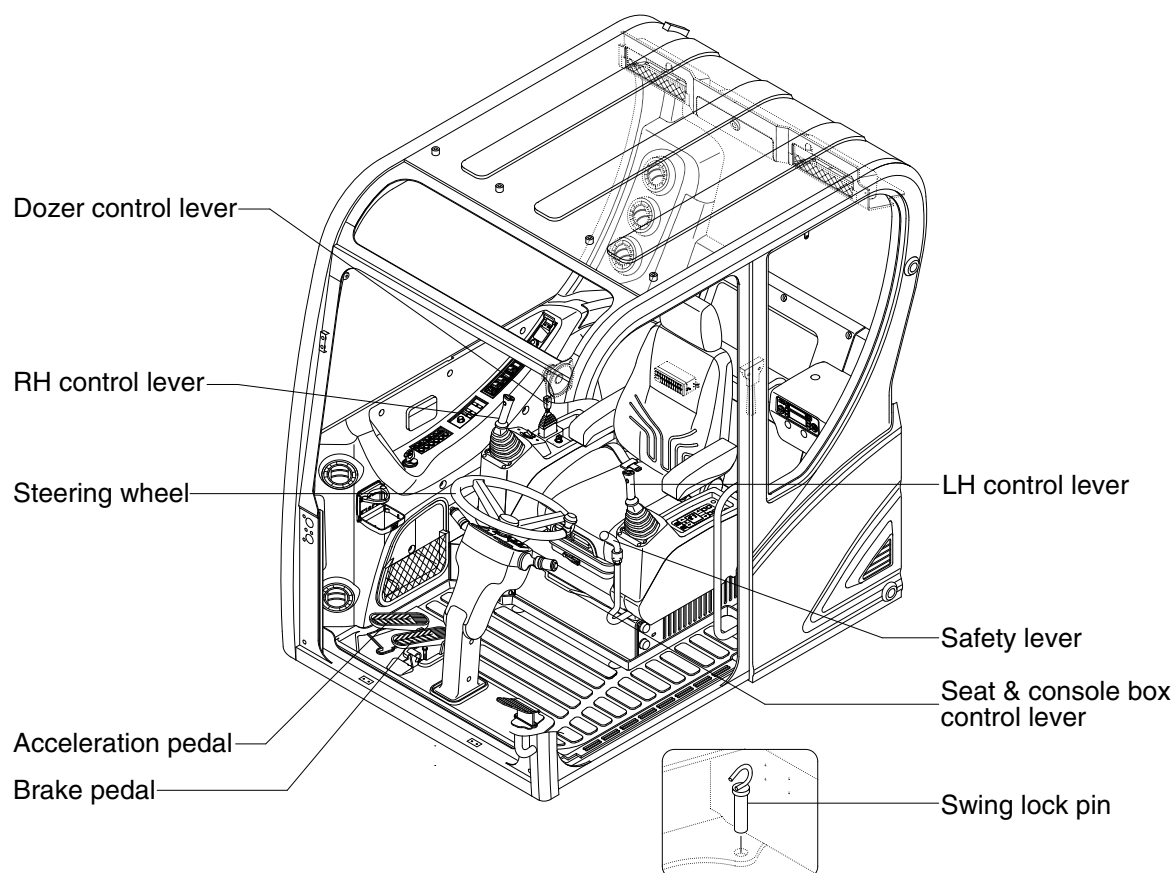
(3) OFF position

This position will initiate a automatic regeneration of the DPF.

(4) Manual regeneration position (②)

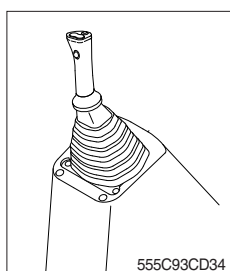
- ① This position will only initiate a manual regeneration of the DPF when the machine is in non-mission condition, engine must run at low idle speed and DPF soot levels are high enough to allow regeneration.
- ② HEST lamp will be illuminated during the entire regeneration.
- ※ Refer to the page 3-8 for details.
- ※ This switch can be move to the manual regeneration position (②) only when the safety button is pulled to backward.
- ※ Also, this switch return to the OFF position when released the manual regeneration position (②).

4. LEVERS AND PEDALS



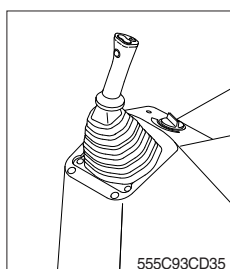
55W9A3CD04

1) LH CONTROL LEVER



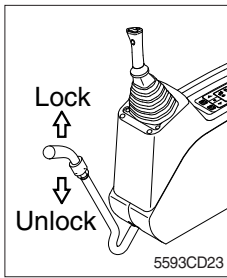
- (1) This joystick is used to control the swing and the arm.
- (2) Refer to **operation of working device** in chapter 4 for details.

2) RH CONTROL LEVER



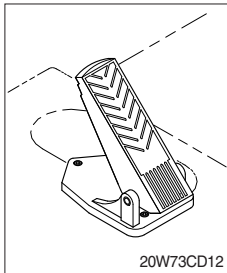
- (1) This joystick is used to control the boom and the bucket.
- (2) Refer to **operation of working device** in chapter 4 for details.

3) SAFETY LEVER



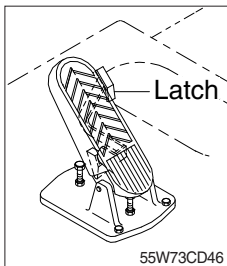
- (1) All control levers and pedals are disabled from operation by locating the lever to lock position as shown.
 - ※ **Be sure to raise the lever to LOCK position and tilt LH console box when leaving from operator's seat.**
- (2) By pushing lever to UNLOCK position, machine is operational.
 - ※ **Do not use the safety lever for handle when getting on or off the machine.**

4) ACCELATION PEDAL



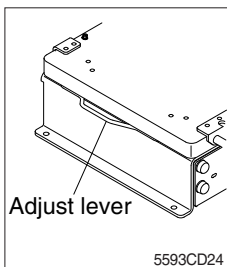
- (1) When this pedal is stepped, the machine starts traveling.
 - ▲ **Before starting the machine with stepping on the pedal, check if the underframe is certainly in the traveling direction.**

5) BRAKE PEDAL



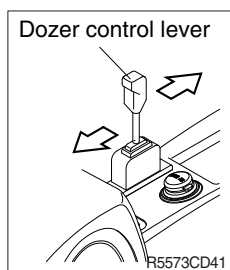
- (1) Pedal and latch provide two kinds of service brake function.
- (2) To operate service brake, push pedal with latch by foot.
 - ▲ **Push pedal and latch at once to avoid unexpected locking of pedal in traveling condition.**
 - ▲ **During travel, do not push pedal only in full stroke. It is dangerous due to the locking of service brake.**
- (3) If you want to choose working brake, just push pedal in full stroke without latch then the latch locks pedal and service brake is working continuously until you push the latch to release the pedal.
- (4) Push latch to release working brake.

6) SEAT AND CONSOLE BOX ADJUST LEVER



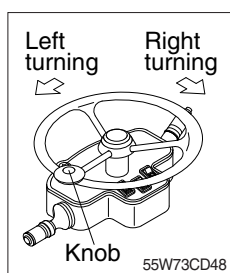
- (1) This lever is used to move the seat and console box to fit the contours of the operator's body.
- (2) Pull the lever to adjust forward or backward over 90 mm (3.5").

7) DOZER CONTROL LEVER



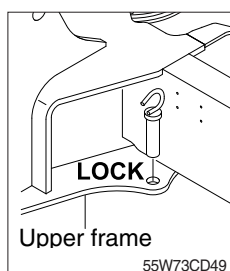
- (1) This lever is used to operate the dozer blade.
- (2) If the lever is pushed forward, the dozer blade will be going down.
If the lever is pulled back, the dozer blade will be going up.

8) STEERING WHEEL



- (1) If the steering wheel is turned to left, the machine will move to the left and turn it to the right, the machine will move to the right.
- (2) As the handle is equipped with a knob, it is convenient to operate with one hand or quickly.

9) SWING LOCK PIN

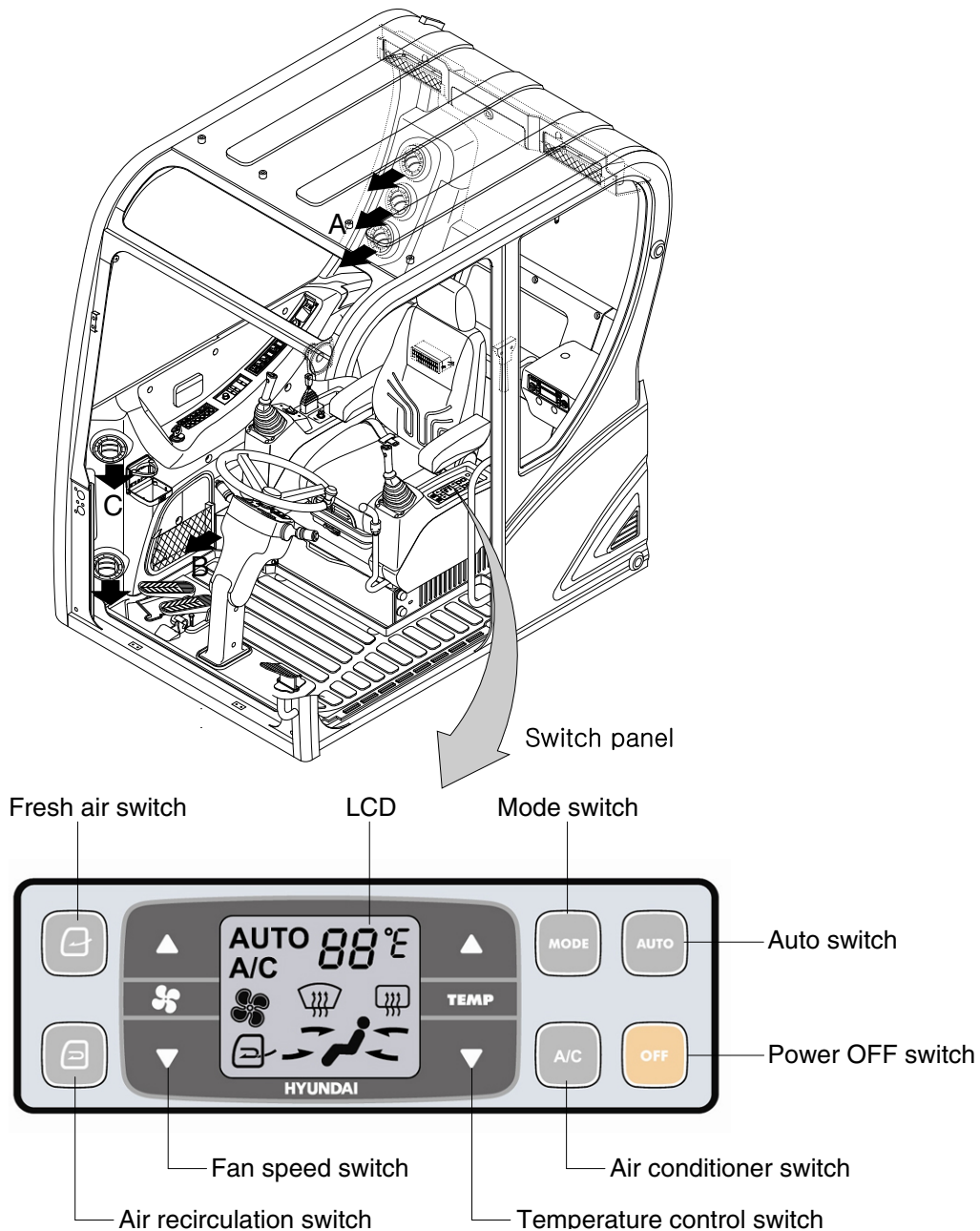


- (1) This is the system to lock the swing by connecting the upper swing part and the lower frame mechanically.
 - (2) The swing is locked when the lever is down and released when the lever is up.
- ※ **Before operating the machine, be sure to release the swing lock device.**

5. FULL AUTO AIR CONDITIONER AND HEATER

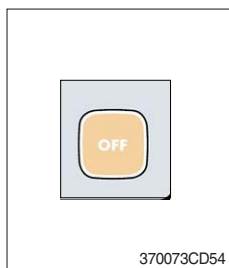
Full auto air conditioner and heater system automatically keeps the optimum condition in accordance with operator's temperature configuration sensing ambient and cabin inside temperature.

- Location of air flow ducts



55W93CD05

1) POWER OFF SWITCH

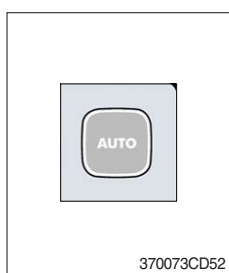


- (1) This switch makes the system and the LED OFF.
Just before the power OFF, set values are stored.

(2) Default setting values

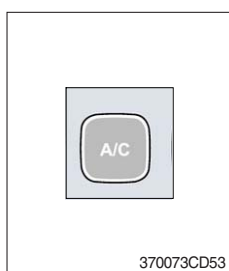
| Function | Air conditioner | In/outlet | LCD | Temperature | Mode |
|----------|-----------------|-----------|-----|-----------------|-----------------|
| Value | OFF | Inlet | OFF | Previous sw OFF | Previous sw OFF |

2) AUTO SWITCH



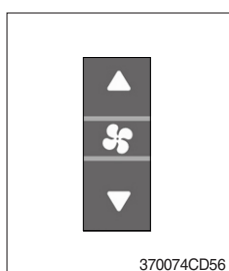
- (1) Turn the starting switch to ON position, LCD lights ON.
Auto air conditioner and heater system automatically keeps the optimum condition in accordance with operator's temperature configuration sensing ambient and cabin inside temperature.
- (2) This switch can restart system after system OFF.

3) AIR CONDITIONER SWITCH (compressor switch)



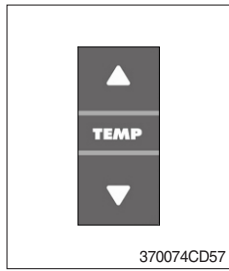
- (1) This switch turns the compressor and the LCD ON.
- (2) In accordance with the temperature sensed by duct (evaporator) sensor, compressor turns ON or OFF automatically.
- ※ **Air conditioner operates to remove vapor and drains water through a drain hose. Water can be sprayed into the cab in case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

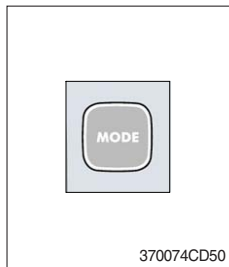


- (1) Setting temperature indication (17~32°C, scale : 1°C)
- (2) Max cool and max warm beeps 5 times.
- (3) The max cool or the max warm position operates as following table.

| 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

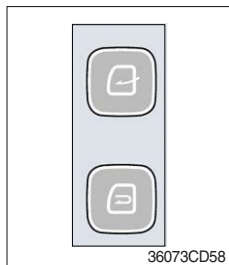


- (1) Operating this switch, it beeps and displays symbol of each mode in order. (Vent → Vent/Foot → Foot → Foot/Def → Vent)

| 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.

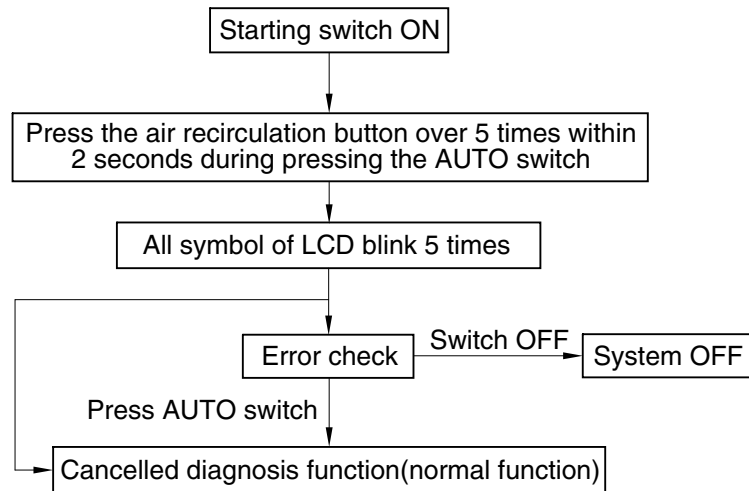
7) FRESH AIR/AIR RECIRCULATION SWITCH



- (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

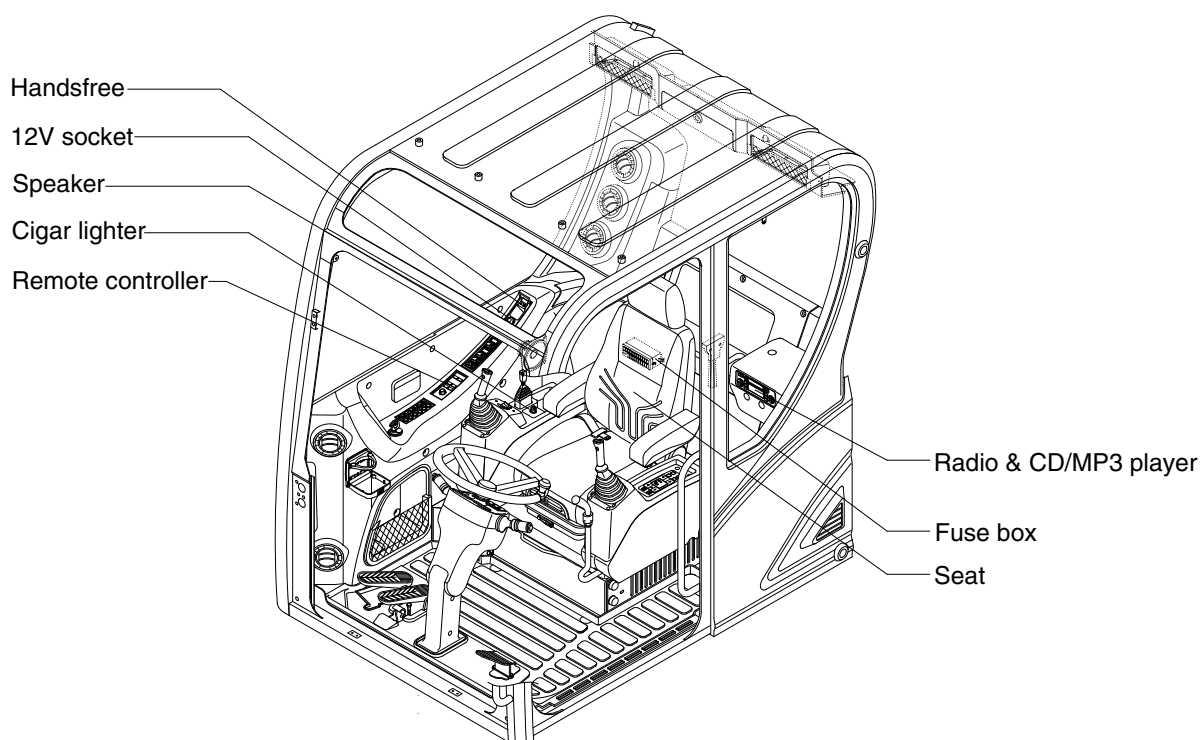
- The corresponding error code flickers on the setup temperature display panel, the other symbol will turn OFF.
- Error code flickers every 0.5 second.
- If error code is more than two, each code flickers 2 times in sequence.
- Error code

| 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

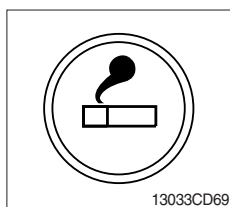
| Error description | Fail safe function |
|-------------------------------|---|
| Cabin inside sensor (11) | 25°C alternate value control |
| Ambient sensor (12) | 20°C alternate value control |
| Coolant temp sensor (13) | More than 10 minutes after engine start up, the alternate value is ON |
| Duct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



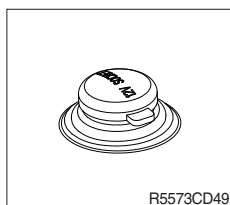
55W93CD06

1) CIGAR LIGHTER



- (1) This can be used when the engine starting switch is ON.
- (2) The lighter can be used when it springs out in a short while after being pressed down.
- ※ **Service socket**
Use cigar lighter socket when you need emergency power.
Do not use the lighter exceeding 12V, 120W.

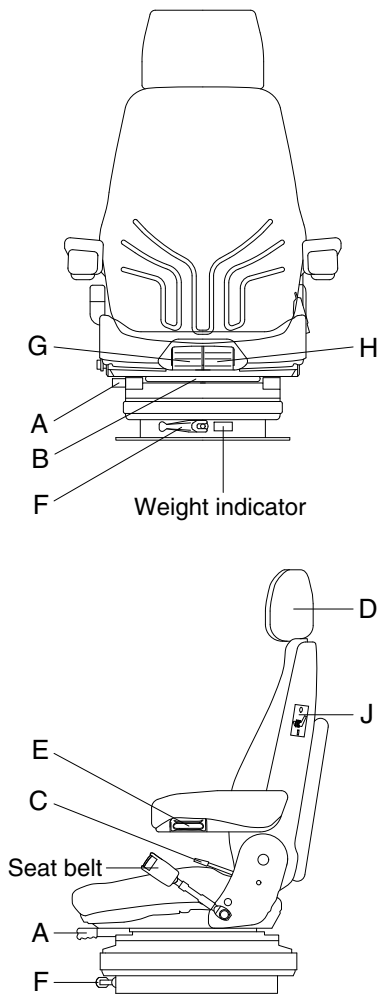
2) 12V SOCKET (option)



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

3) SEAT

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



140Z93CD55

(1) Forward/Backward adjustment (A)

- ① Pull lever A to adjust seat forward or backward.
- ② The seat can be moved forward and backward over 130 mm (5.1") in 13 steps.

▲ Do not lift the locking lever with you leg or calf.

(2) Upward/Downward adjustment (B)

- ① Pull lever B to adjust seat upward or downward over 60 mm (2.4").
- ② Forward or backward side adjustment only can be made, tilting to one side, by moving lever B respectively.

(3) Reclining adjustment (C)

Pull lever C to adjust seat back rest.

(4) Armrest adjustment (E)

This can be adjusted by pushing the button E to right and left.

(5) Headrest adjustment (D)

This is adjustable vertically and forward or rearward to fit operator's requirements.

(6) Weight adjustment (F)

Adjust the lever with the seat empty to the operator's weight.

(7) Seat depth adjustment (G)

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

(8) Seat pan angle adjustment (H)

- 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.

(9) Seat heater (J)

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

0 = Seat heater OFF

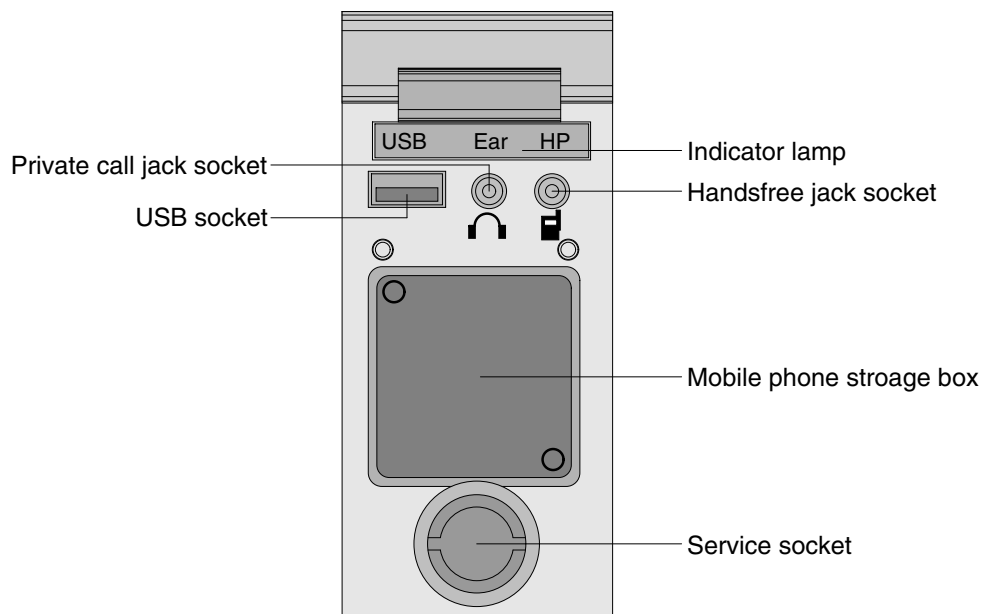
I = Seat heater ON

▲ Always check the condition of the seat belt and mounting hardware before operating the machine.

▲ Replace the seat belt at least once every three years, regardless of appearance.

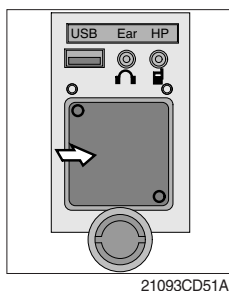
4) HANDSFREE

Allow you to dial a call or to have a conversation without holding your handset. Use the remote controller when making and answering a calls or ring off.



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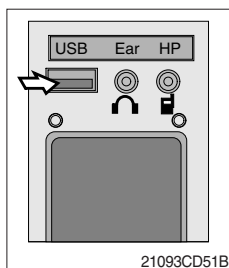
(1) Mobile phone storage box



21093CD51A

- ① Mobile phone can be stored when call by handsfree.

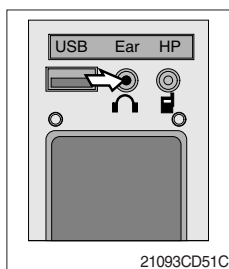
(2) USB socket



21093CD51B

- ① This socket is used to charging the mobile phone.

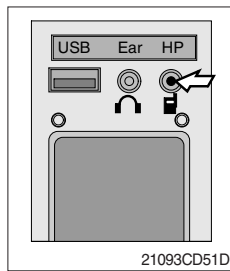
(3) Private call jack socket



21093CD51C

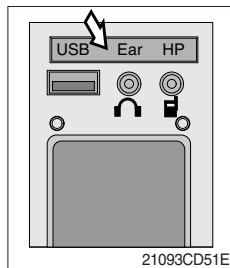
- ① This can be used protect you privacy calling by using ear phone.
- ② The mobile phone must be connected handsfree jack socket.

(4) Handsfree jack socket



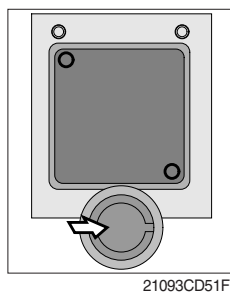
- ① Connect the jack cable when call by handsfree.
- ② Use the special adapter when jack cable is not interchangeable.
- ③ Check the jack type of mobile phone before use.

(5) Indicator lamp



- ① This lamp is turned ON when the handsfree mode selected.

(6) Service socket



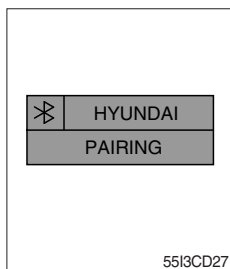
- ① Utilize the power of 12 V as your need and do not exceed power of 12 V, 30 W.

(7) Wireless handsfree

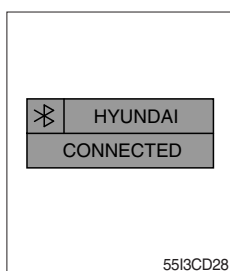


- ① Select the handsfree mode by pressing bluetooth button on the mobile phone.

Press the **CALL** button for more than 6 seconds for pairing (connection process of the mobile phone and handsfree), you can hear beep sounds three times.

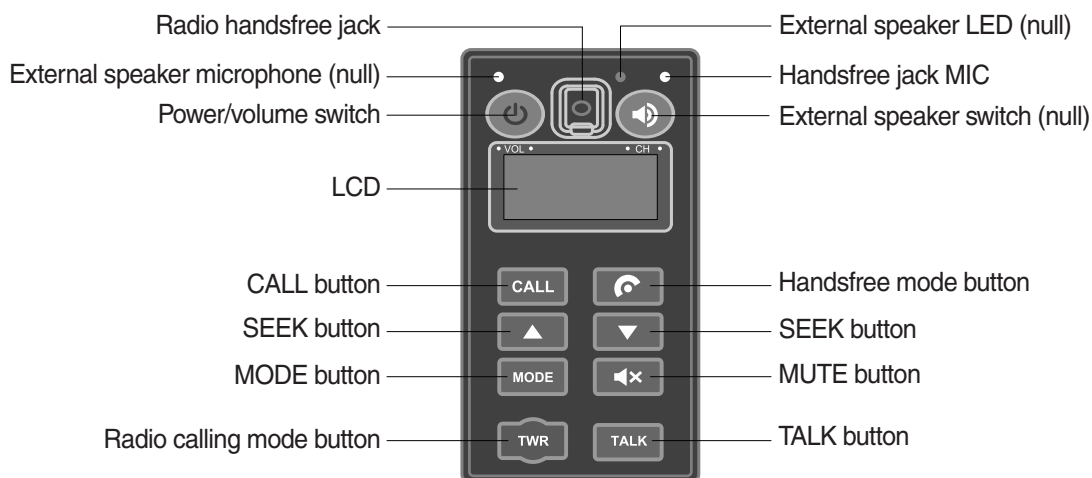


- ② The mobile phone finds bluetooth named "HYUNDAI".
Select "HYUNDAI" and set "connect with Bluetooth on the mobile phone".
· Default password : 0000



- ③ The Bluetooth pairing is made, the LCD screen shows "CONNECTED".
- ④ Once the Bluetooth pairing is made, they will be automatically connected after 20 seconds when start key ON.
- ⑤ When you want to deactivate the pairing, press and hold the **CALL** button for more than 3 seconds then you can hear beep sounds twice and the function will be deactivated.

5) REMOTE CONTROLLER (MACHINE SERIAL NO.: -#0667)



55I3CD31

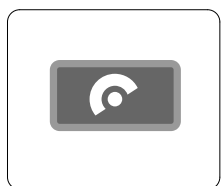
(1) Power and volume switch



55I3CD31A

- ① This switch is used to turn the audio or handsfree ON or OFF.
 - ② This switch is turned to right, the handsfree volume is increased over 7 steps.
 - ③ If it is turned to left, volume will be decreased.
- ※ This switch adjust the audio volume when selected audio mode.

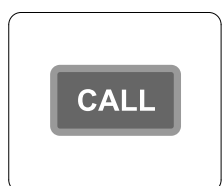
(2) Mode change button



55I3CD31B

- ① This button is to select the handsfree mode or audio mode.
 - Lamp ON : Handsfree mode ("TEL MUTE" displayed ON audio LCD)
 - Lamp OFF : Audio mode

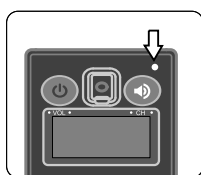
(3) Call button



55I3CD31C

- ① This button is used answer a call, last number radial, ring off.
 - ② For calling, press the button 0.5~1.5 seconds until the beep sounds.
- ※ This can be used when the starting switch is ON.

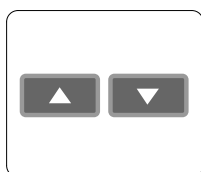
(4) Handsfree MIC



55I3CD31D

- ① This MIC transfers user voice to receiver of the call when making a call by handsfree.

(5) Seek button



55I3CD31E

- ① If this button pressed, the radio automatically stops at the next frequency of broadcasting for your listening.
- ② This button enable to select the song of the MP3 from USB.
 - ▲ : Turn a station of higher frequency and the next song of the MP3.
 - ▼ : Turn a station of lower frequency and the previous song of the MP3.

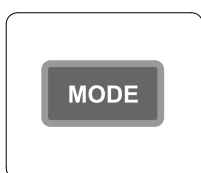
(6) Mute button



55I3CD31F

- ① Short press this button to mute or cancel the mute (silence) while broadcasting.

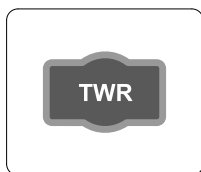
(7) Mode button



55I3CD31G

- ① Press the mode button to select the desired mode.
 - ② Radio → MP3 → AUX
- ※ The LCD displayed each mode.

(8) Radio calling mode button



55I3CD31H

- ① Press this button, activated or deactivated the radio handsfree function.
- ② As long as you do not press this button, you can hear the other party.
- ③ The LED is turned ON when this button is activated.
The LED turned OFF when the audio mode or the mobile phone handsfree calling mode is activated.

※ Radio handsfree

You can make a call to external worker without holding the radio by hand. (The radio is not installed to the machine).

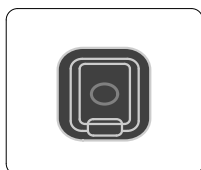
(9) Talk button



55I3CD31J

- ① The call is connected while pressing this button (when TALK button is activated).
- ※ Unlike mobile phones, when you want to talk through the radio, you need to press the button (Push-to-talk method).
While one is talking through the radio, the other party can only listen to him/her.

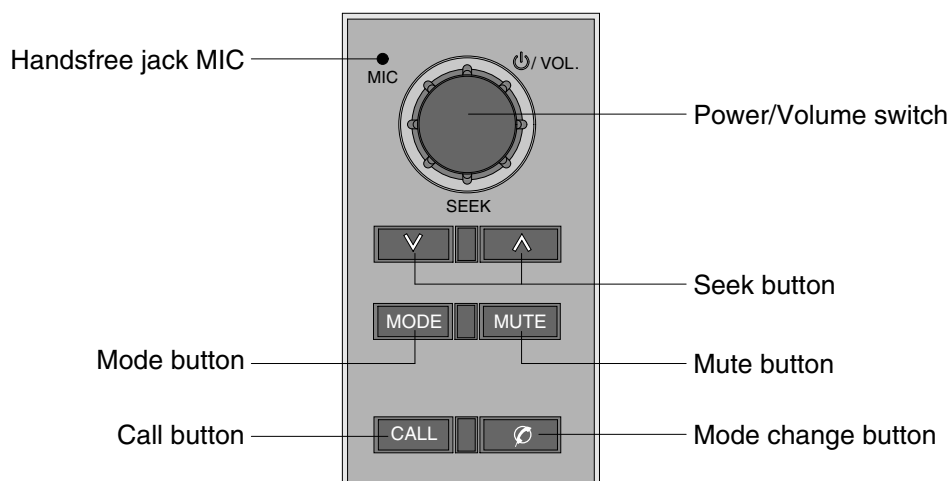
(10) Handsfree jack



55I3CD31K

- ① Connect the jack cable when call by radio handsfree.

REMOTE CONTROLLER (MACHINE SERIAL NO.: #0668-)



21093CD52

(1) Power and volume switch



21093CD52A

- ① This switch is used to turn the audio or handsfree ON or OFF.
 - ② This switch is turned to right, the handsfree volume is increased over 7 steps.
 - ③ If it is turned to left, volume will be decreased.
- ※ This switch adjust the audio volume when selected audio mode.

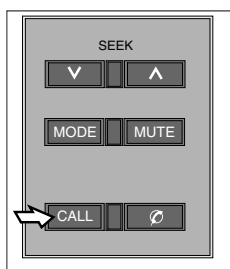
(2) Mode change button



21093CD52B

- ① This button is to select the handsfree mode or audio mode.
 - Lamp ON : Handsfree mode ("TEL MUTE" displayed ON audio LCD)
 - Lamp OFF : Audio mode

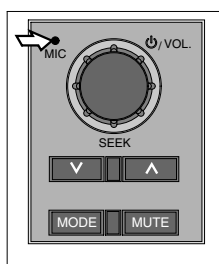
(3) Call button



21093CD52C

- ① This button is used answer a call, last number redial, ring off.
 - ② For calling, press the button over 0.5sec within 3 seconds until the beep sounds.
- ※ This can be used when the starting switch is ON.

(4) Handsfree MIC





21093CD52D

- ① This MIC transfers user voice to receiver of the call when making a call by handsfree.

(5) Seek button



21093CD52E

- ① If this button pressed, the radio automatically stops at the next frequency of broadcasting for your listening.
- ② Press  to turn a station of a higher frequency or  to a lower frequency.

(6) Mute button



21093CD52G

- ① Short press this button to mute or cancel the mute (silence) while broadcasting.

(7) Mode button



21093CD52F

- ① Press the mode button to select the desired mode.
- ② FM1 → FM2 → AM → CD → MP3 → FM1
- ※ The LCD displayed each mode.

6) FUSE BOX

| | | | |
|------------------------------|-----|----------------------|-----|
| WORK LAMP | 30A | START KEY, ROOM LAMP | 30A |
| HORN, CIGAR LIGHTER | 30A | CLUSTER, MCU | 20A |
| FUEL FILLER P/P, BEACON LAMP | 20A | AIRCON/ HEATER | 20A |
| WIPER MOTOR | 10A | CONTROLLER | 30A |
| SOLENOID | 20A | TURN LAMP | 10A |
| ALT, START | 20A | CASSETTE, SW PANEL | 10A |
| TRAVEL, SAFETY SOL | 20A | CLUSTER MCU | 10A |
| PRE-HEAT, FUEL FEEDING | 20A | AIRCON & HEATER | 20A |
| ILLUMINATION | 10A | AIRCON FAN | 40A |
| ILLUMINATION | 10A | HEAD LAMP | 20A |
| FUSE HOLDER | | SPARE | 10A |
| | | SPARE | 40A |

55W9A3CD29

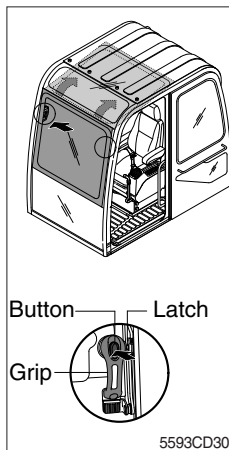
(1) The fuses protect the electrical parts and wiring from burning out.

(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.**

7) UPPER WINDSHIELD



(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.

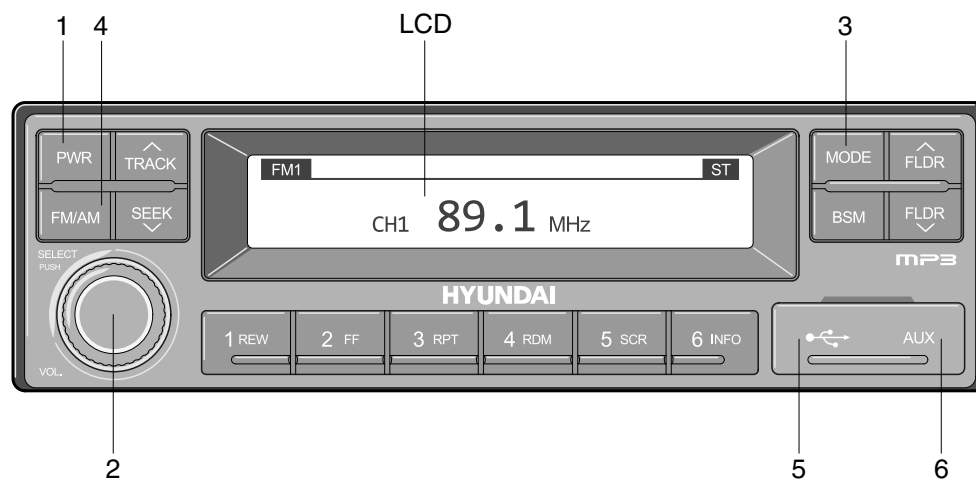
▲ **When working, without having locked the windshield by the auto lock (by pushing the windshield to the rear until it's completely fixed), please be careful as it can cause personal injury if the windshield is not fixed or falls off.**

(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.

8) RADIO AND USB PLAYER (MACHINE SERIAL NO.: ~#0254)

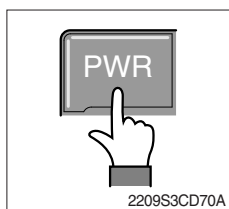
■ BASIC FUNCTIONS



2209S3CD70

- | | |
|-------------------------------|----------------------------------|
| 1 Power (PWR) button | 4 Radio (FM/AM) selection button |
| 2 Volume/Sound setting button | 5 USB slot |
| 3 Mode selection button | 6 AUX terminal |

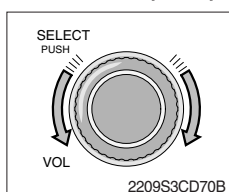
(1) Power (PWR) button



- ① Press the PWR button to turn on the audio. While the audio is operating, press the button to turn the power off.

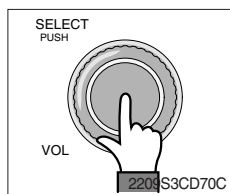
(2) Volume/Sound setting button

· Volume (VOL) button



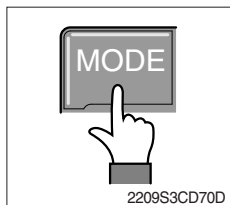
- ① Turn the VOL button clockwise to increase the volume and counter-clockwise to decrease the volume.

· Sound setting



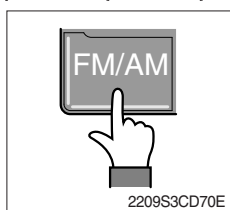
- ① Press the SELECT button to conduct sound setting.
Each press of the button will change the sound setting in the following order.
BASS → MIDDLE → TREBLE → BALANCE → EQ → BEEP
- ② After selecting the desired setting, turn the SELECT button clockwise/counter-clockwise to adjust the sound setting value.
- ③ **BASS adjustment**
Turn the SELECT button clockwise to increase the bass and counter-clockwise to decrease the bass. BASS can be adjusted from max +10/min -10. If there are no adjustments for 3 seconds, the changes will be saved and the previous mode will be restored.
- ④ **MIDDLE adjustment**
Turn the SELECT button clockwise to increase the middle and counter-clockwise to decrease the middle. MIDDLE can be adjusted from max +10/min -10. If there are no adjustments for 3 seconds, the changes will be saved and the previous mode will be restored.
- ⑤ **TREBLE adjustment**
Turn the SELECT button clockwise to increase the treble and counter-clockwise to decrease the treble. TREBLE can be adjusted from max +10/min -10. If there are no adjustments for 3 seconds, the changes will be saved and the previous mode will be restored.
- ⑥ **Left/Right BALANCE adjustment**
Turn the SELECT button clockwise to increase the right-side speaker volume and counter-clockwise to increase the left-side speaker volume. BALANCE can be adjusted from 10L/10R. If there are no adjustments for 3 seconds, the changes will be saved and the previous mode will be restored.
- ⑦ **EQ (EQUALIZER) adjustment**
Turn the SELECT button clockwise/counter-clockwise to select the desired EQ. EQ settings are as shown below.
Cls (classic) → Pop → Rock → Jazz → off
If there are no adjustments for 3 seconds, the changes will be saved and the previous mode will be restored.
※ **Upon selecting EQ, the BASS, MIDDLE and TREBLE values will be turned off.**
The BASS, MIDDLE, TREBLE values can be set only when EQ Off is selected.
- ⑧ **BEEP sound adjustment**
Turn the SELECT button clockwise/counter-clockwise to the beep sound ON/OFF. If there are no adjustments for 3 seconds, the changes will be saved and the previous mode will be restored.

(3) MODE selection button



- ① Press the MODE button to change to RADIO/USB/AUX/iPod modes. However, the mode can be selected only when the respective media is connected.
 - ② If iPod is connected to the audio, the mode will change in the following order.
RADIO → iPod → USB (handfree)
 - ③ If USB, AUX is connected to the audio, the mode will change in the following order.
RADIO → USB(front) → USB(handfree) → AUX
- ※ **USB and AUX mode will operate only when corresponding devices are connected.**
 - ※ **When connecting iPod, AUX and front USB cannot be connected.**
 - ※ **The iPod is connected to the USB in the machine handfree.**

(4) Radio (FM/AM) selection button



- ① Each press of the FM/AM button will change the radio mode in the following order.
FM1 → FM2 → FM3 → AM
- ② Preset memory of up to FM : 18 stations, AM : 6 stations

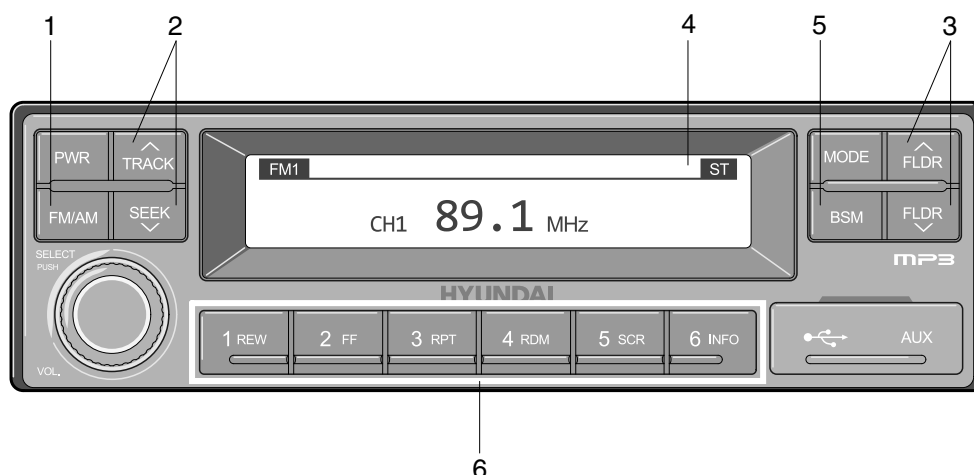
(5) USB slot

Connects USB to play USB music files.

(6) AUX terminal

Connects AUX cable to play AUX music files.

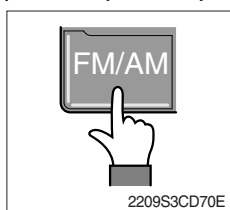
■ RADIO



2209S3CD71

- | | |
|---|--|
| 1 Radio (FM/AM) selection button | 4 LCD display |
| 2 TRACK/SEEK button | 5 BSM (Best Station Memory) button |
| 3 Broadcast manual search (FLDR) button | 6 Saving broadcast frequencies to PRESET numbers |

(1) Radio (FM/AM) selection button



- ① Each press of the FM/AM button will change the radio mode in the following order.
FM1 → FM2 → FM3 → AM

- ② In addition, pressing the FM/AM button when the starting switch is in ON state will turn the power on and activate the radio.

③ Setting regional Radio Frequency

► North America Frequency

Press the FM/AM and Preset 1 button simultaneously to set frequency in accordance to the North America Frequency settings. "nA" will become displayed on the LCD for one second.

FM : 87.7 ~ 107.9 MHz (200 KHz)

AM : 530 ~ 1710 KHz (10 KHz)

► Local/Middle East/Asia Frequency

Press the FM/AM and Preset 2 button simultaneously to set frequency in accordance to the Local/Middle East/Asia Frequency settings. "InT" will become displayed on the LCD for one second.

FM: 87.5 ~ 108 MHz (100 KHz)

AM: 531 ~ 1602 KHz (9 KHz)

► Europe Frequency

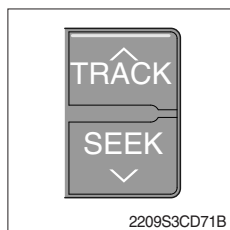
Press the FM/AM and Preset 3 button simultaneously to set frequency in accordance to the North America Frequency settings. "Eu" will become displayed on the LCD for one second.

FM: 87.5 ~ 108 MHz (50 KHz)

MW: 531 ~ 1602 KHz (9 KHz)

LW: 153 ~ 279 KHz (1 KHz)

(2) TRACK/SEEK button



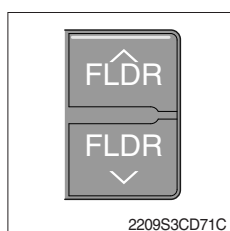
- ① As buttons used to automatically search broadcasts, pressing the button will automatically search and stop at a frequency with superior reception.

TRACK \wedge : Searches frequencies higher than current frequency

SEEK \vee : Searches frequencies lower than current frequency

- ※ When frequencies cannot be properly found due to weak broadcast reception, try using manual FLDR button. (Refer to manual FLDR button explanation below)

(3) Broadcast manual search (FLDR) button



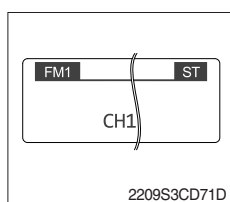
- ① As button used to search frequencies manually, a press of the SEEK step (refer to note below) will change the frequency. Pressing and holding the button will continue changing the frequency. Releasing the button will stop the search at the current frequency.

FLDR \wedge : Searches frequencies higher than current frequency

FLDR \vee : Searches frequencies lower than current frequency

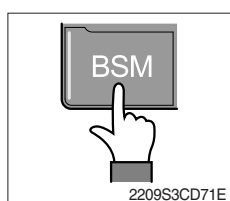
- ※ SEEK STEP : FM-100KHz, AM-9KHz

(4) LCD display



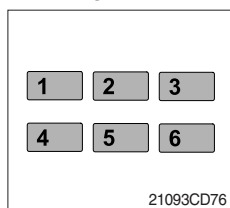
- ① The currently received broadcast frequency info and status are displayed.

(5) BSM (Best Station Memory) button



- ① Press and hold the BSM button to listen to the presets saved in FM BAND FM1, FM2, and FM3 or AM BAND AM for 5 seconds each. When you find a station you wish to listen to, press the BSM button again to receive the selected broadcast.
- ② Shortly press the BSM button to automatically save frequencies with superior reception in presets (1REW~6INFO). The BSM feature will save AM frequencies in AM mode and FM frequencies in FM mode.

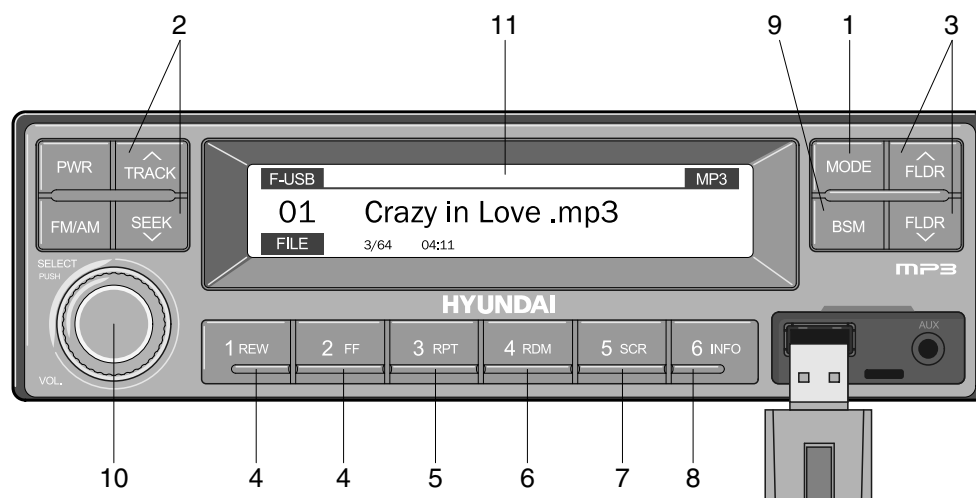
(6) Saving broadcast frequencies to PRESET numbers



Up to 18 FM broadcasts and 6 AM broadcasts can be saved.

- ① Use the auto/manual search buttons to find the desired frequency.
 - ② Select the preset button (1REW~ 6INFO) to which you wish to save the selected frequency. Press and hold the preset button.
 - ③ The frequency will be saved to the preset button to a sound of a beep. The saved frequency number will be displayed on the LCD DISPLAY. (However, the beep will not sound if the beep function has been turned off in sound setting.)
 - ④ After saving is complete, pressing the preset button will play the corresponding broadcast frequency.
- ※ No beep sound signifies that the preset has not been saved. In this case, try again from the first step. (However, the beep will not sound if the beep function has been turned off in sound setting.)

■ USB CONNECTION

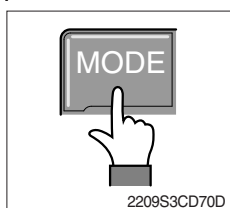


2209S3CD72

- | | |
|-----------------------------|---|
| 1 USB selection button | 7 Scroll (SCR) button |
| 2 TRACK UP/SEEK DOWN button | 8 View music info (INFO) button |
| 3 FLDR UP/DOWN button | 9 Scan button (BSM) |
| 4 FF/REW button | 10 Finding and playing file (SELECT) button |
| 5 RPT/FOLDER RPT button | 11 LCD display |
| 6 RDM/FOLDER RDM button | |

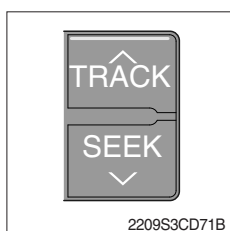
- Operates only when a USB is connected. Connecting a USB to the audio will automatically convert to USB mode.
- Connecting the USB when the starting switch is in ON state will turn the power on and automatically play the songs within the USB.

(1) USB selection button



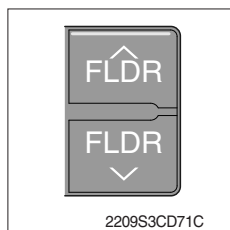
- ① While playing a different mode, press the MODE button to convert to USB mode. Connecting a USB to the audio will automatically convert to USB mode even if another mode is playing and automatically play the songs within the USB.
- ② If the USB is connected to both the front USB and handfree, then MODE is converted in the following order.
RADIO → USB(front) → USB(handfree)

(2) TRACK UP/SEEK DOWN button



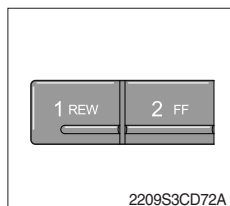
- ① While playing USB, press the TRACK ^ button to play the beginning of the next song.
Press the SEEK v button to return to the beginning of the current song. Press the button again to play the beginning of the previous song.

(3) FLDR UP/DOWN button



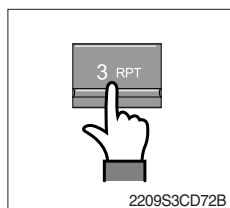
- ① If there are more than 2 folders in the USB, pressing the FLDR UP/DOWN button will move to the previous or next folder.
- ② If there are no folders in the USB, then pressing the button will move up/down within the folder in 10 file increments.

(4) FF/REW button



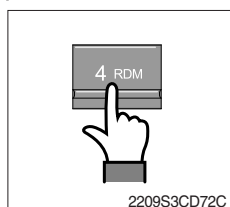
- ① While a USB is operating, press and hold the FF button to fast-forward the song. When fast-forward is complete, the next song will properly play from the beginning even if you continue holding the button. Press and hold the REW button to rewind the song. When rewind is complete, the current song will properly play from the beginning even if you continue holding the button. Shortly pressing the buttons will not operate the FF/REW.

(5) RPT/FOLDER RPT button



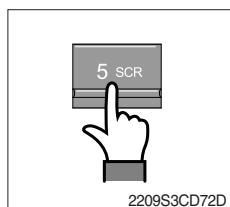
- ① While music is playing, shortly press the RPT button to repeat the currently playing song.
- ② (RPT function) Press and hold the RTP button to sequentially repeat all songs within the current folder. (FOLDER RPT, however, music files in the USB must be saved in folder format.)

(6) RDM/FOLDER RDM button



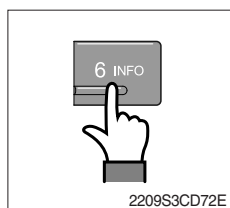
- ① While music is playing, shortly press the RDM button to randomly play the songs in the current folder. (RDM)
- ② While music is playing, press and hold the RDM button to randomly play the songs in the current folder. (FOLDER RDM, however, music files in the USB must be saved in folder format.)

(7) Scroll (SCR) button



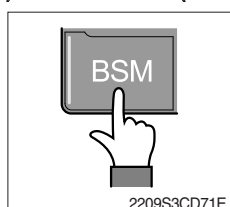
- ① Press the SCR button to turn ON/OFF the scroll function which scrolls the file name of the currently playing song on the LCD from right to left.

(8) View music info (INFO) button



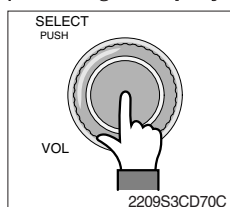
- ① Each time the INFO button is pressed, the info on the currently playing song will be displayed in the following order.
FILE NAME → TITLE → ARTIST → ALBUM → DIR

(9) Scan button (BSM)



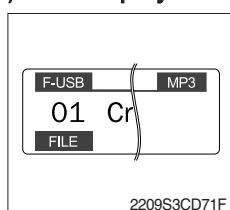
- ① While music is playing, shortly press the BSM button to scan each song within the USB for 10 seconds in sequential order. (SCN)
- ② Press and hold the BSM button to scan each song within the current folder for 10 seconds in sequential order. (FOLDER SCN, however, music files in the USB must be saved in folder format.)

(10) Finding and playing file (SELECT) button



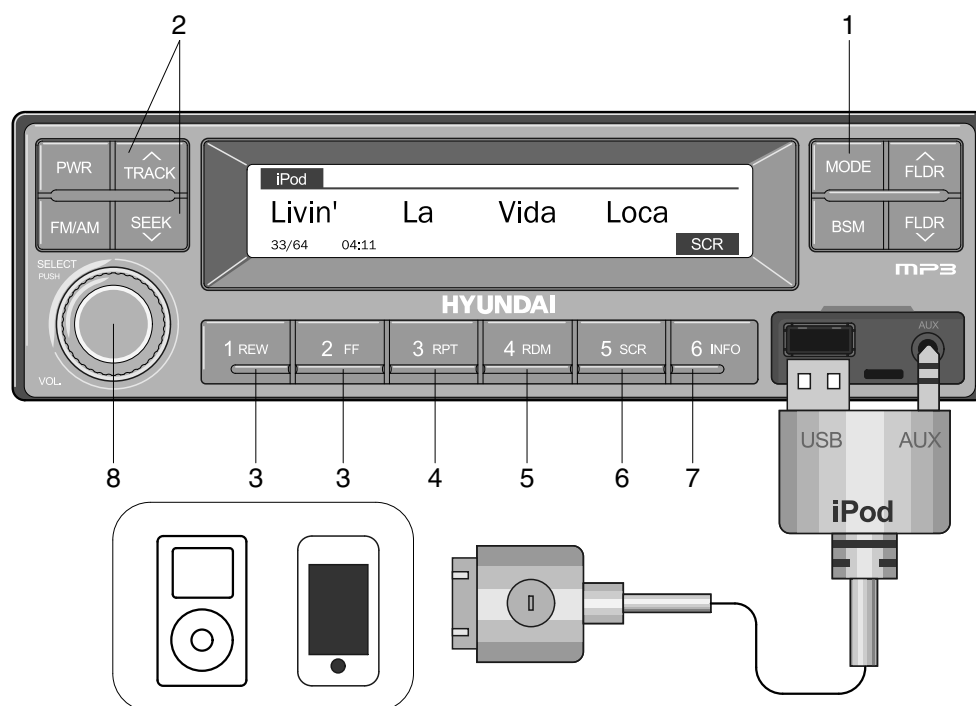
- ① While USB is playing, press and hold the SELECT button for over 3 seconds to enter FILE BROWSER mode and search for desired files.
- ② After entering FILE BROWSER mode, turn the SELECT button left/right to find the desired folder. After finding the folder, press the SELECT button to select the folder. Turn the SELECT button left/right to find the desired song and press the SELECT button to play.
- ③ If there are no adjustments for 3 seconds after pressing the SELECT button, the function will be turned off and the USB play screen will be displayed.

(11) LCD display



- ① Displays the info of the currently playing song.
 - F-USB : Displays USB is connected to the Audio Front
 - R-USB : Displays USB is connected to the handfree
 - RPT : Displays that repeat function is turned on
 - 📁 RPT : Displays that folder repeat function is turned on
 - RDM : Displays that random play is turned on
 - 📁 RDM : Displays that folder random play is turned on
 - SCR : Displays that SCROLL is turned on

■ IPOD CONNECTION

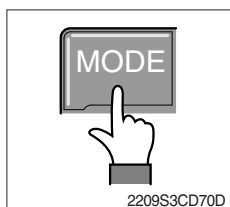


2209S3CD73

- | | |
|-----------------------------|--|
| 1 iPod selection button | 5 Random play (RDM) button |
| 2 TRACK UP/SEEK DOWN button | 6 Scroll (SCR) button |
| 3 FF/REW button | 7 View music info (INFO) button |
| 4 Repeat (RPT) button | 8 Finding and playing file (SELECT) button |

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

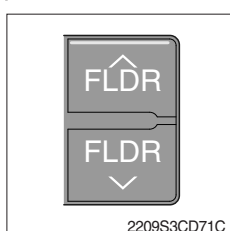
(1) iPod selection button



2209S3CD70D

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

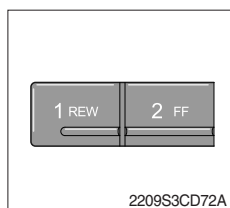
(2) TRACK UP/SEEK DOWN button



2209S3CD71C

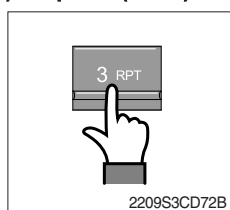
- ① While playing music, press the TRACK ^ button to play the beginning of the next song. Press the SEEK v button to return to the beginning of the current song. Press the button again to play the beginning of the previous song.

(3) FF/REW button



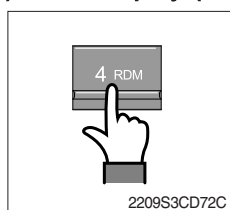
- ① While an iPod is operating, press and hold the FF button to fast-forward the song.
- ② When fast-forward is complete, the next song will properly play from the beginning even if you continue holding the button. Press and hold the REW button to rewind the song.
- ③ When rewind is complete, the current song will properly play from the beginning even if you continue holding the button.
- ④ Shortly pressing the buttons will not operate the FF/REW.

(4) Repeat (RPT) button



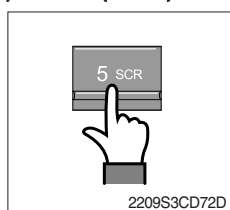
- ① While music is playing, press the RPT button to repeat the currently playing song.

(5) Random play (RDM) button



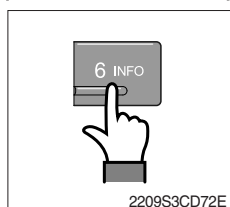
- ① While music is playing, press the RDM button to randomly play the songs.

(6) Scroll (SCR) button



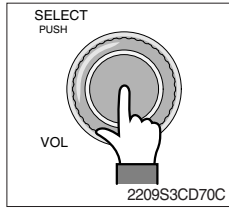
- ① Displays the file name of the currently playing song on the LCD. Here, the SCR button turns the file name SCROLL ON/OFF.

(7) View music info (INFO) button



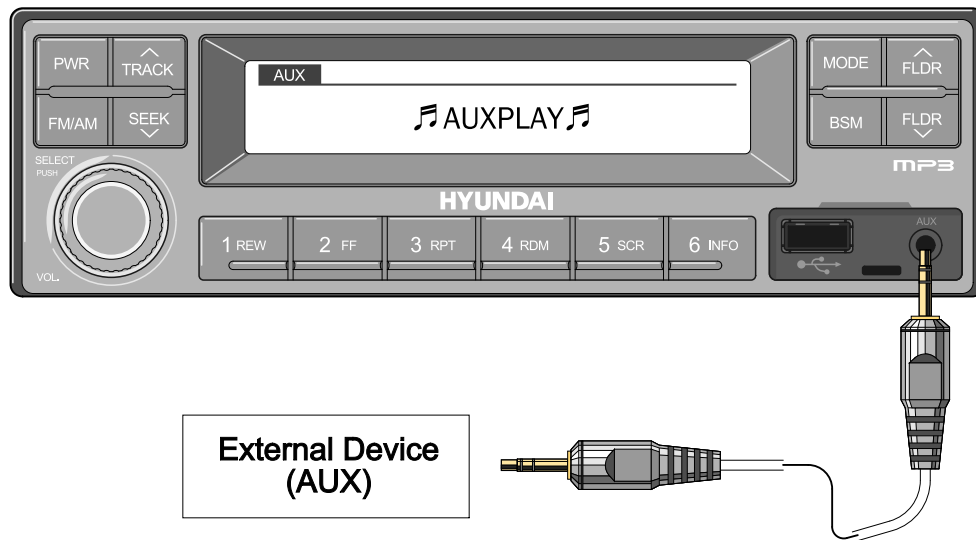
- ① Each time the INFO button is pressed, the info on the currently playing song will be displayed in order of ARTIST → ALBUM → TITLE.

(8) Finding and playing file (SELECT) button



- ① While iPod is playing, press and hold the SELECT button for over 3 seconds to enter CATEGORY mode and search for desired files.
- ② After entering CATEGORY mode, turn the SELECT button left/right to find the desired category.
- ③ Category will be displayed in the following order.
PLAYLISTS → ARTISTS → ALBUMS → GENRES → SONGS → COMPOSERS → AUDIOBOOKS → PODCASTS
- ④ After finding the category, press the SELECT button to select the category. Turn the SELECT button left/right to find the desired song and press the SELECT button to play.
- ⑤ If there are no adjustments for 3 seconds after pressing the SELECT button, the function will be turned off and the iPod play screen will be displayed.

■ AUX connection



2209S3CD74

- Operates only when an external device is connected to AUX. Connecting an AUX device to the audio using the AUX cable will automatically convert to AUX mode.
- When an external device is connected, only the PWR, FM/AM, MODE, and VOL buttons can be operated.
- Settings can be made only through the external device connected to AUX.
- The AUX cable is supplied separately.

(1) Connecting an external device using the AUX cable

- ① While playing a different mode, press the MODE button to convert to AUX mode.
- ② If an external device is connected to the Audio through the AUX terminal, AUX mode will automatically be converted and play music from AUX. Connecting the AUX when the starting switch is in ON state will turn the power on and automatically play the songs within the AUX.

RADIO AND USB PLAYER (MACHINE SERIAL NO.: #0255~)



9403CD101

FRONT PANEL PRESENTATION

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

■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.

Clock ON/OFF control

- ④ 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.

Clock adjustment

- ⑤ 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.

Balance control

- ④ 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).

Fader control

- ⑤ 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).

EQ control

- ⑥ 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 :
- Select the desired station.
 - 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

- 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.
- Display up to 32 characters in the LCD display.
- No support any of MULTI-CAED Reader.
- 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.**

■ RESET AND PRECAUTIONS

(1) Reset function

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

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

② Take out the fuse for the audio system in the vehicle once and then plug it back in.

※ 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 operating correctly.

(2) Precautions

When the inside of the cab is very cold and the player is used shortly 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