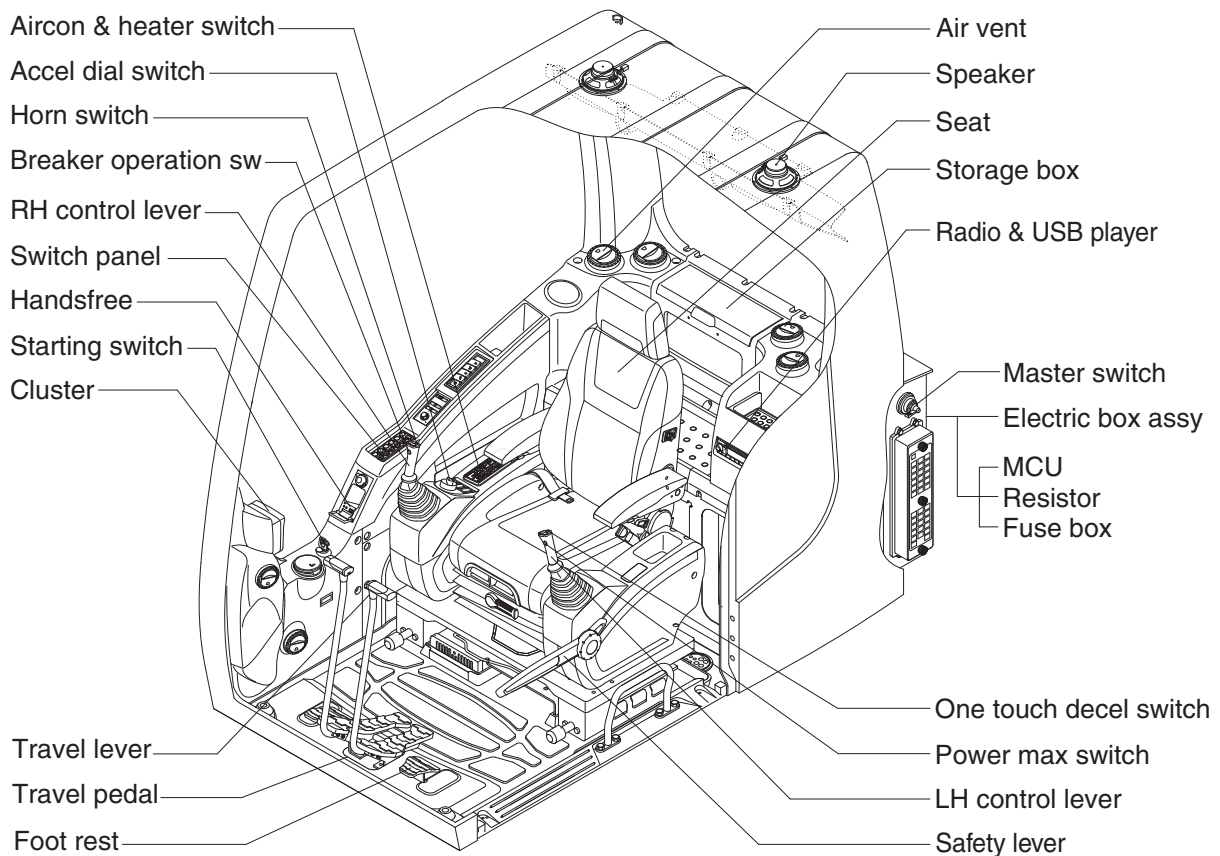## 1. CAB DEVICES

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.

Aircon & heater switch
Accel dial switch
Horn switch
Breaker operation sw
RH control lever
Switch panel
Handsfree
Starting switch
Cluster

Air vent
Speaker
Seat
Storage box
Radio & USB player

Master switch
Electric box assy
MCU
Resistor
Fuse box

Travel lever
Travel pedal
Foot rest

One touch decel switch
Power max switch
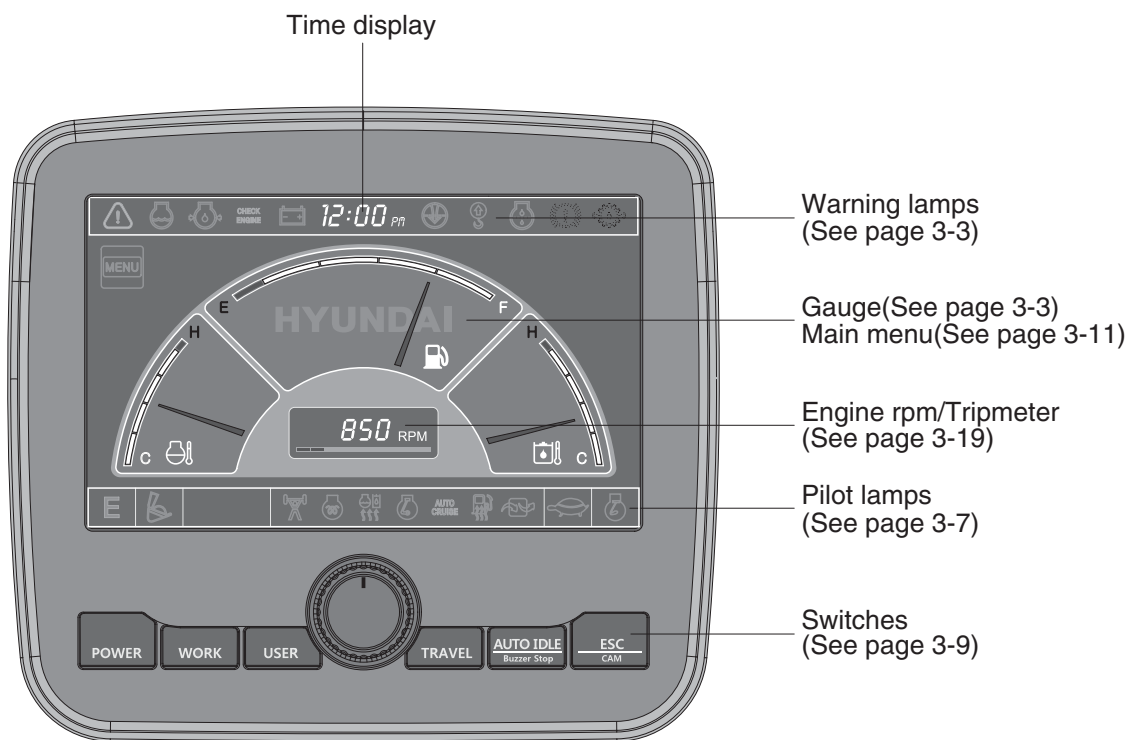LH control lever
Safety lever

29093CD01

2. CLUSTER

1) STRUCTURE

The cluster consists of LCD and switches as shown below. The LCD is to warn the operator in case of abnormal machine operation or conditions for the appropriate operation and inspection. Also, The LCD is to set and display for modes, monitoring and utilities with the switches.

The switches 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.**

Time display

Warning lamps
(See page 3-3)

Gauge(See page 3-3)
Main menu(See page 3-11)

Engine rpm/Tripmeter
(See page 3-19)

Pilot lamps
(See page 3-7)

Switches
(See page 3-9)

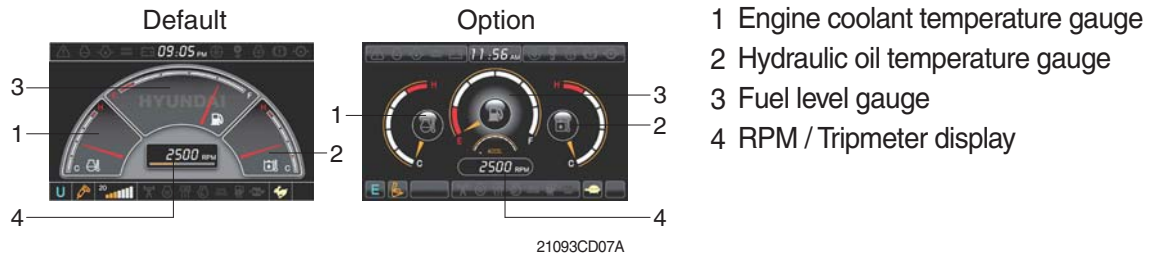21093CD07

※ **The warning lamp pops up and/or blinks and the buzzer sounds when the machine has a problem.**

The warning lamp blinks until the problem is cleared. Refer to page 3-4 for details.

2) GAUGE

(1) Operation screen

Default   Option

21093CD07A

1 Engine coolant temperature gauge
2 Hydraulic oil temperature gauge
3 Fuel level gauge
4 RPM / Tripmeter display

※ 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

21093CD07G
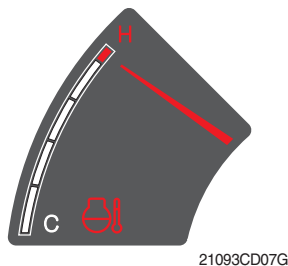
① This gauge indicates the temperature of coolant.
· White range : 40-107°C (104-225°F)
· Red range : Above 107°C (225°F)
② If the indicator is in the red range or ⛺ lamp blinks in red, turn OFF the engine and check the engine cooling system.
※ If the gauge indicates the red range or ⛺ lamp blinks in 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

21093CD07E
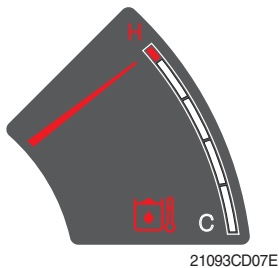
① This gauge indicates the temperature of hydraulic oil.
· White range : 40-105°C(104-221°F)
· Red range : Above 105°C(221°F)
② If the indicator is in the red range or ⛺ lamp blinks is red, reduce the load on the system. If the gauge stays in the red range, stop the machine and check the cause of the problem.
※ If the gauge indicates the red range or ⛺ lamp blinks 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.
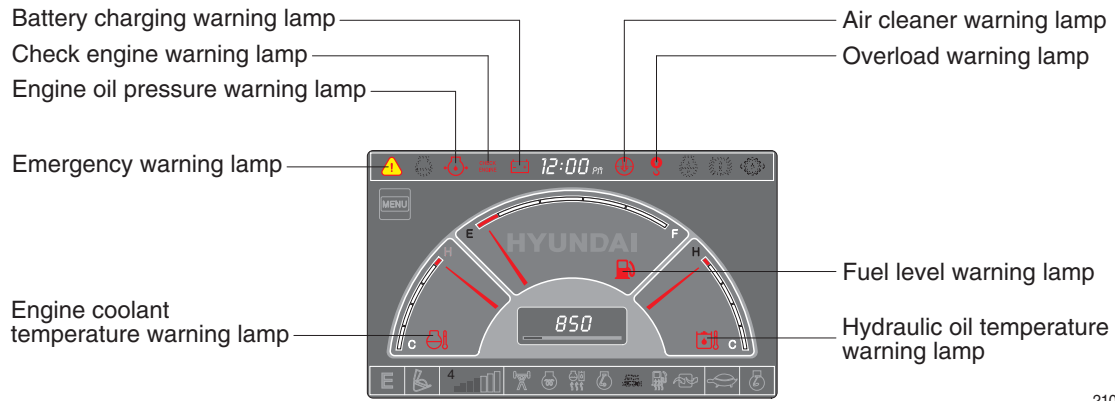
(4) Fuel level gauge

21093CD07F
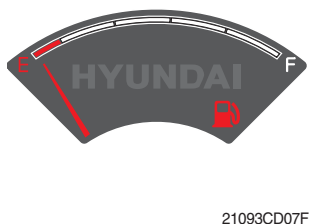
① This gauge indicates the amount of fuel in the fuel tank.
② Fill the fuel when the red range, or ⛽ lamp blinks in red.
※ If the gauge indicates the red range or ⛽ lamp blinks in red even though the machine is on the normal condition, check the electric device as that can be caused by the poor connection of electricity or sensor.

(5) RPM / Tripmeter display

21093CD02D

① This displays the engine rpm or the tripmeter.
※ Refer to page 3-19 for details.

3) WARNING LAMPS

Battery charging warning lamp
Check engine warning lamp
Engine oil pressure warning lamp

Emergency warning lamp

Engine coolant
temperature warning lamp

Air cleaner warning lamp
Overload warning lamp

Fuel level warning lamp

Hydraulic oil temperature
warning lamp

21093CD08D

※ **Each warning lamp on the 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
blinks when the select switch is pushed. And the buzzer stops.
Refer to page 3-10 for the select switch.**

(1) Engine coolant temperature
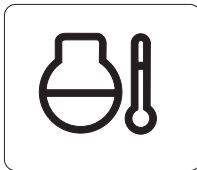
21093CD08A

① Engine coolant temperature warning is indicated two steps.
　- 103˚C over : The 🌡 lamp blinks.
　- 107˚C over : The ⚠ lamp pops up on the center of LCD and
　　　　　　　the buzzer sounds.
② The pop-up ⚠ lamp moves to the original position and blinks
　when the select switch is pushed. Also, the buzzer stops and 🌡
　lamp keeps blink.
③ Check the cooling system when the lamp keeps ON.

(2) Hydraulic oil temperature
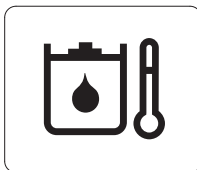
21093CD08C

① Hydraulic oil temperature warning is indicated two steps.
　- 100˚C over : The 🌡 lamp blinks and the buzzer sounds.
　- 105˚C over : The ⚠ lamp pops up on the center of LCD and
　　　　　　　the buzzer sounds.
② The pop-up ⚠ lamp moves to the original position and blinks
　when the select switch is pushed. Also, the buzzer stops and 🌡
　lamp keeps blink.
③ Check the hydraulic oil level and hydraulic oil cooling system.

(3) Fuel level

21093CD08B

① This warning lamp blinks and the buzzer sounds when the level
　of fuel is below 69 l (18.2 U.S. gal).
② Fill the fuel immediately when the lamp blinks.

3-4

(4) Emergency warning lamp

21093CD30

① This lamp pops up and the buzzer sounds when each of the below warnings is happened.
- Engine coolant overheating (over 107˚C)
- Hydraulic oil overheating (over 105˚C)
- Pump EPPR circuit abnormal or open
- Attachment flow EPPR circuit abnormal or open
- MCU input voltage abnormal
- Accel dial circuit abnormal or open
- Cluster communication data error
- Engine ECM communication data error

※ **The pop-up warning lamp moves to the original position and blinks when the select switch is pushed. Also the buzzer stops. This is same as following warning lamps.**

② When this warning lamp blinks, machine must be checked and serviced immediately.
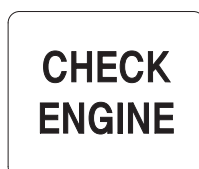
(5) Engine oil pressure warning lamp
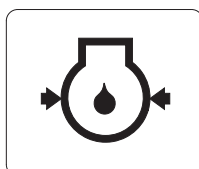
21093CD32

① This lamp blinks when the engine oil pressure is low.
② If the lamp blinks, shut OFF the engine immediately. Check oil level.

## (6) Check engine warning lamp

CHECK
ENGINE

21093CD33

① This lamp blinks 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.

29093CD03

③ This lamp blinks when "Engine check water in fuel" is displayed in the message box then check water separator.
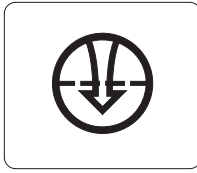
(7) Battery charging warning lamp
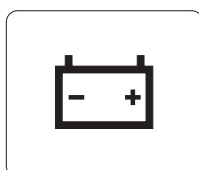
21093CD34

① This lamp blinks when the battery charging voltage is low.
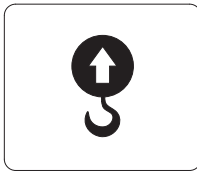② Check the battery charging circuit when this lamp blinks.

(8) Air cleaner warning lamp

21093CD35

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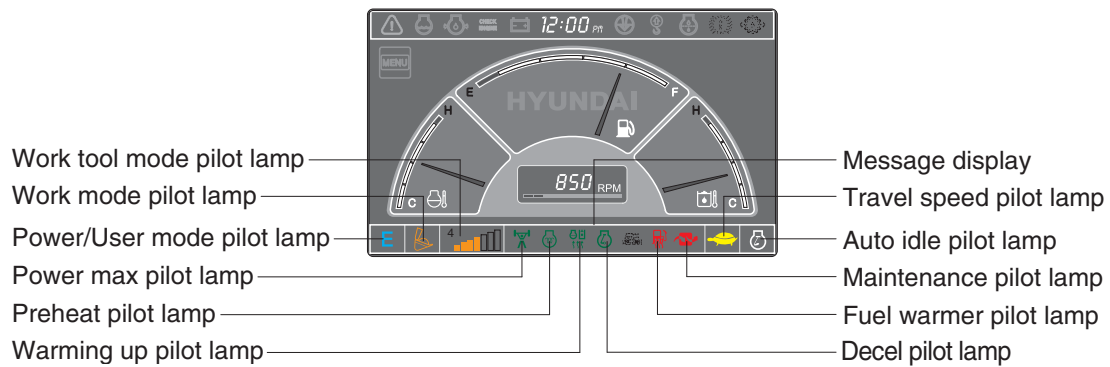② Check the filter and clean or replace it.

(9) Overload warning lamp (opt)

21093CD36

① When the machine is overload, the overload warning lamp blinks during the overload switch is ON. (if equipped)
② Reduce the machine load.

4) PILOT LAMPS

Work tool mode pilot lamp
Work mode pilot lamp
Power/User mode pilot lamp
Power max pilot lamp
Preheat pilot lamp
Warming up pilot lamp

Message display
Travel speed pilot lamp
Auto idle pilot lamp
Maintenance pilot lamp
Fuel warmer pilot lamp
Decel pilot lamp

21093CD09

(1) Mode pilot lamps

No	Mode	Pilot lamp	Selected mode
1	Power mode	P	Heavy duty power work mode
		S	Standard power mode
		E	Economy power mode
2	User mode	U	User preferable power mode
3	Work mode		General operation mode
			Breaker operation mode
			Crusher operation mode
4	Travel mode		Low speed traveling
			High speed traveling
5	Auto idle mode		Auto idle
6	Work tool mode	4	Oil flow level of breaker or crusher mode
7	Message display	M	"Setting is completed" display after selection

(2) Power max pilot lamp

21093CD38

① The lamp will be ON when pushing power max switch on the LH RCV lever.
② The power max function is operated maximum 8 seconds.
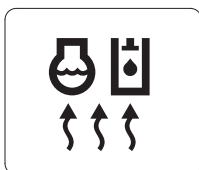※ **Refer to the page 3-26 for power max function.**

(3) Preheat pilot lamp

21093CD39

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

(4) Warming up pilot lamp

21093CD40

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.

(5) Decel pilot lamp

21093CD41

① Operating one touch decel switch on the RCV lever makes the lamp ON.
② Also, the lamp will be ON and engine speed will be lowered automatically to save fuel consumption when all levers and pedals are at neutral position, and the auto idle function is selected.
※ **One touch decel is not available when the auto idle pilot lamp is turned ON.**
※ **Refer to the page 3-26.**

(6) Fuel warmer pilot lamp
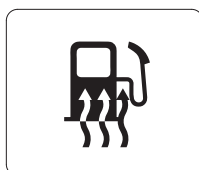
21093CD43

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, or the hydraulic oil temperature is above 45°C since the start switch was ON position.
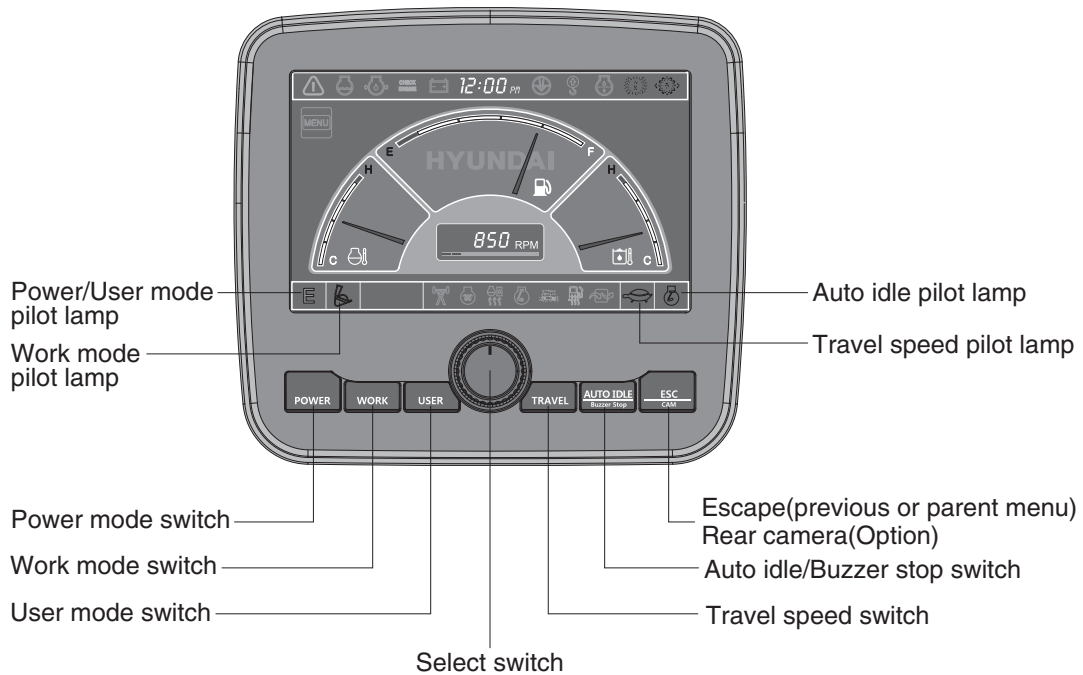
(7) Maintenance pilot lamp
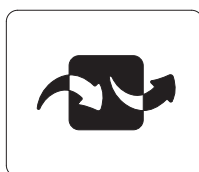
21093CD44

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.

5) SWITCHES

Power/User mode pilot lamp
Work mode pilot lamp
Power mode switch
Work mode switch
User mode switch
Select switch

Auto idle pilot lamp
Travel speed pilot lamp
Escape(previous or parent menu)
Rear camera(Option)
Auto idle/Buzzer stop switch
Travel speed switch

21093CD45

※ **When the switches are selected, the pilot lamps are displayed on the LCD. Refer to the page 3-7 for details.**
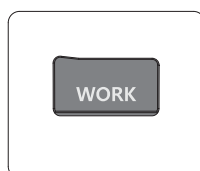
(1) Power mode switch
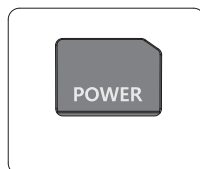
21093CD45A

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.
· E : Economy power work.
② The pilot lamp changes E → S → P → E in order.
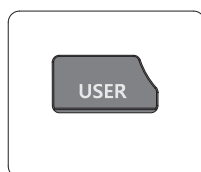
(2) Work mode switch

21093CD45C

① This switch is to select the machine work mode, which shifts from general operation mode to optional attachment operation mode.
· 🖐 : General operation mode
· ✎ : Breaker operation mode (if equipped)
· 🗜 : Crusher operation mode (if equipped)
· Not installed : Breaker or crusher is not installed.
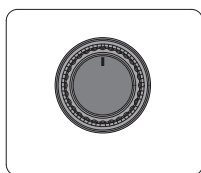※ **Refer to the page 4-6 for details.**

(3) User mode switch

21093CD45D

① This switch is used to memorize the current machine operating status in the MCU and activate the memorized user mode.
　· Memory : Push more than 2 seconds.
　· Action 　 : Push within 2 seconds.
　· Cancel 　 : Push this switch once more within 2 seconds.
② Refer to the page 3-12 for another set of user mode.

(4) Select switch

21093CD45E

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

(5) Auto idle/ buzzer stop switch

21093CD45F

① This switch is used to activate or cancel the auto idle function.
　· Pilot lamp ON 　: Auto idle function is activated.
　· Pilot lamp OFF : Auto idle function is cancelled.
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.

(6) Travel speed control switch
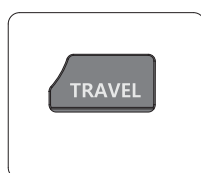
21093CD45G

① This switch is used to select the travel speed alternatively.
　· 🐓 : High speed
　· 🐢 : Low speed

(7) Escape/Camera switch
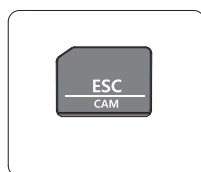
21093CD45H

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 3-22 for the camera.
③ If the camera is not installed, this switch is used only ESC function.

6) MAIN MENU

21093CD64

21093CD64A

Press

21093CD64B

※ **Please refer to select switch, page 3-10 for selection and change of menu and input value.**

(1) Structure

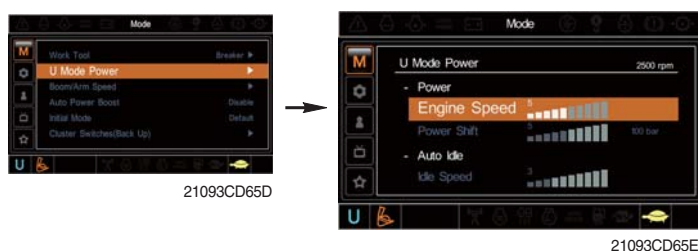| No	Main menu	Sub menu	Description
1	**M** Mode 21093CD64D	Work tool U mode power Boom/Arm speed Auto power boost Initial mode Cluster switch (back up)	Breaker, Crusher, Not installed User mode only Boom speed, Arm speed Enable, Disable Default, U mode Switch function
2	Monitoring 21093CD64E	Active fault Logged fault Delete logged fault Monitoring (analog) Monitoring (digital) Operating hours	MCU, Engine ECM MCU, Engine ECM All logged fault delete, Initialization canceled Machine information Switch status, Output status Operating hours for each mode
3	Management 21093CD64F	Maintenance information Machine security Machine Information A/S phone number Service menu	Replacement, Change interval oils and filters ESL mode setting, Password change Cluster, MCU, Engine, Machine A/S phone number, A/S phone number change Power shift, Hourmeter start, Replacement history, Update
4	Display 21093CD64G	Display item Clock Brightness Unit Language Screen type	Engine speed, Tripmeter A, Tripmeter B, Tripmeter C Clock Manual, Auto Temperature, Pressure, Flow, Date format Korean, English, Chinese A type, B type
5	Utilities 21093CD64H	Tripmeter DMB Entertainment Camera setting Message box	3 kinds (A, B, C) DMB select, DAB select, Channel scan, Exit Play MP4, codec. Basic direction, Display switching, Full screen Record for fault, attachment etc.

(2) Mode setup

① Work tool

21093CD65

21093CD65A

A

21093CD65B

B
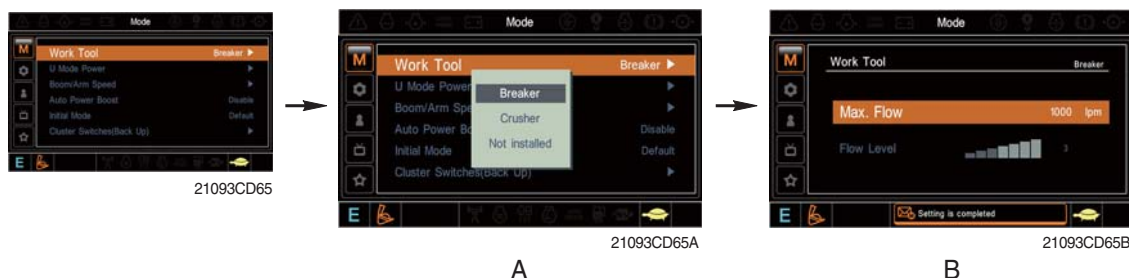
· A : Select one installed optional attachment.
· B : Max flow - Set the maximum flow for the attachment.
    Flow level - Reduce the operating flow from maximum flow.
        Breaker - Max 7 steps, Reduced 10 lpm each step.
        Crusher - Max 4 steps, Reduced 20 lpm each step.
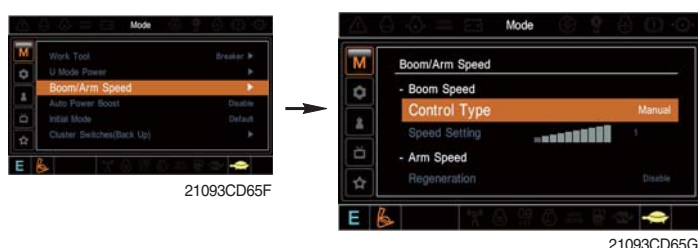※ **The flow level is displayed with the work mode pilot lamp.**

② U mode power

21093CD65D

21093CD65E

Step (▌)	Engine speed (rpm)	Idle speed (rpm)	Power shift (bar)
1	1400	700	0
2	1450	750	2
3	1500	800 (low idle)	4
4	1550	850	7
5	1600	900	12
6	1650	950	15
7	1700	1000	20
8	1750	1050 (decel rpm)	24
9	1800	1100	28
10	1850	1150	33

· Engine high idle rpm, auto idle rpm and pump torque (power shift) can be modulated and memorized separately in U-mode.
· U-mode can be activated by user mode switch.

③ Boom/Arm speed

21093CD65F

21093CD65G

· **Boom speed**
  - Control type
    Manual - Boom up speed is fixed as set steps.
    Auto - Boom up speed is automatically adjusted as working conditions by the MCU.
  - Speed setting - Boom up speed is increased as much as activated steps.

· **Arm speed**
  - Regeneration - Arm regeneration function can be activated or cancelled.
    Enable - Arm in speed is up.
    Disable - Fine operation.

④ **Auto power boost**

21093CD65L

21093CD65M
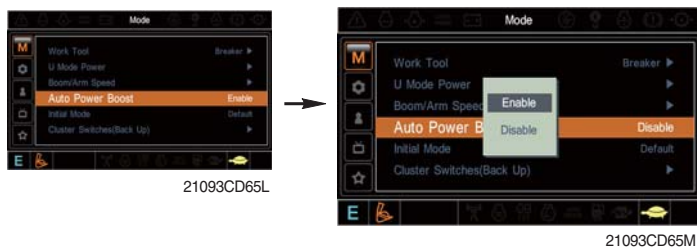
· The power boost function can be activated or cancelled.
· Enable - The digging power is automatically increased as working conditions by the MCU.
       It is operated max 8 seconds.
· Disable - Not operated.

⑤ **Initial mode**

21093CD65P

21093CD65Q
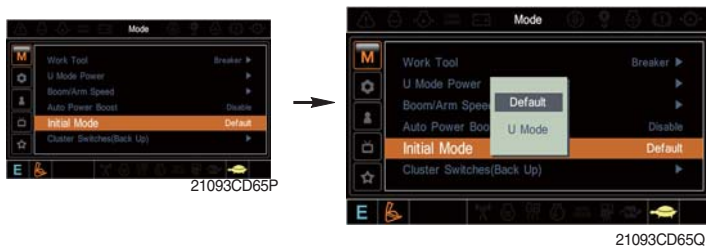
· Default - The initial power mode is set E mode when the engine is started.
· U mode - The initial power mode is set U mode when the engine is started.

⑥ **Cluster switch** (back up)

21093CD65S

21093CD65T
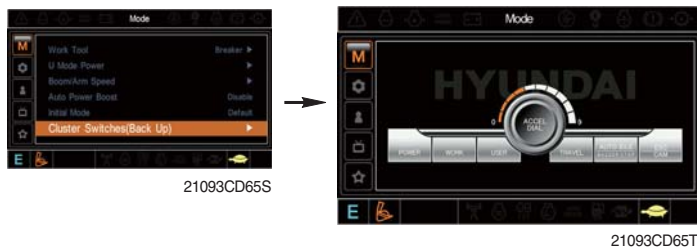
- The cluster switch can be selected and changed by this menu when the switches are abnormal on the cluster.
- In order to exit "Cluster switch" mode, please put the cursor on the ESC/CAM switch by turning the select switch and push the select switch.
- In "Cluster switch", other switches except "Select switch" do not work.

(3) Monitoring

① Active fault

21093CD66

21093CD66A

21093CD66B
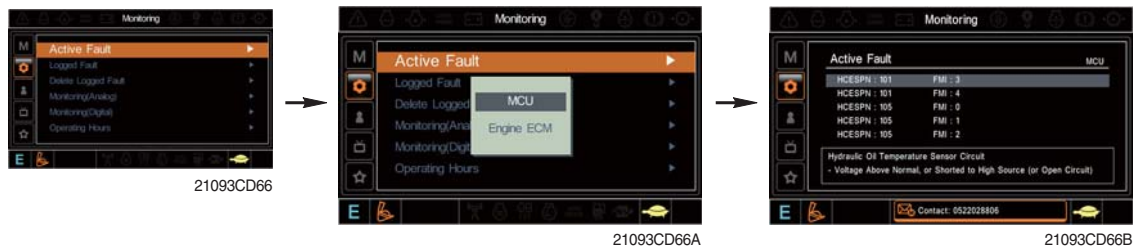
· The active faults of the MCU or engine ECM can be checked by this menu.

② Logged fault

21093CD66C

21093CD66D

21093CD66E

· The logged faults of the MCU or engine ECM can be checked by this menu.

③ Delete logged fault

21093CD66F

21093CD66G

21093CD66H

· The logged faults of the MCU or engine ECM can be deleted by this menu.

④ Monitoring(Analog)

21093CD66J

21093CD66K

21093CD66L
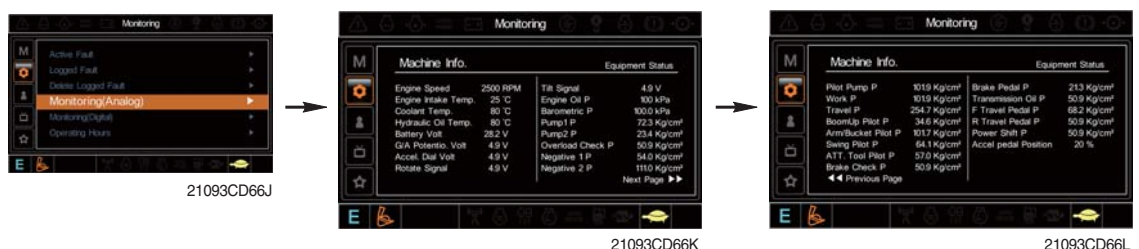
· The machine status such as the engine rpm, oil temperature, voltage and pressure etc. can be checked by this menu.

⑤ **Monitoring** (digital)

21093CD66M

21093CD66N

21093CD66P
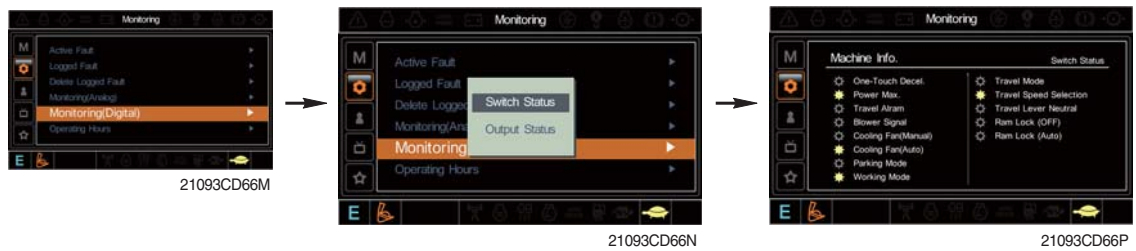
· The switch status or output status can be confirmed by this menu.
· The activated switch or output pilot lamps ☀ are light ON.

⑥ **Operating hours**

21093CD66Q

21093CD66R
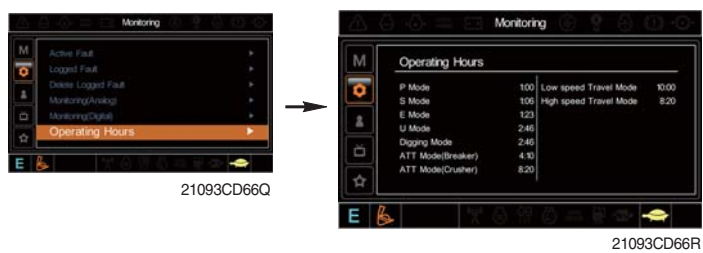
· The operating hour of each mode can be confirmed by this menu.

(4) Management

① Maintenance information

21093CD67

21093CD67A

21093CD67Q

21093CD67R

21093CD67S

21093CD67T

· Alarm(☼ ☀ ✹) : Gray   ☼ - Normal

                   Yellow ☀ - First warning

                   Red   ✹ - Second warning

· Replacement   : The elapsed time will be reset to zero (0).

· Change interval : The change or replace interval can be changed in the unit of 50 hours.

· OK   : Return to the item list screen.

· **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	Drain filter	1000
7	Hydraulic oil return filter	1000
8	Engine oil filter	500
9	Fuel filter	500
10	Pre-filter	500
11	Hydraulic tank breather	250
12	Air cleaner (inner)	500
13	Radiator coolant	2000
14	Swing gear pinion grease	1000

② **Machine security**

21093CD67C

21093CD67D

21093CD67E

· **ESL mode**
  - ESL : Engine Starting Limit
  - ESL mode is desingned 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 start engine.

    Enable (interval) : The password is required when the operator start engine first. But the operator restarts the engine within the interval time, the password is not required.
    The interval time can be set maximum 4 hours.

21093CD67EE

21093CD67H
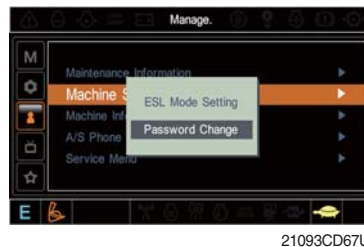
21093CD67U

Enter the current password 21093CD67V

· **Password change**
  - The password is 5~10 digits.

Enter the new password 21093CD67VV
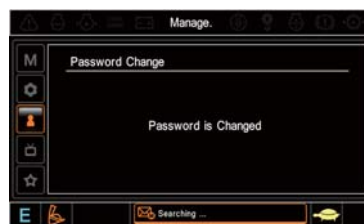
21093CD67X
The new password is stored in the MCU.

21093CD67XX
Enter the new password again

3-17

③ Machine Information

21093CD67F

21093CD67G
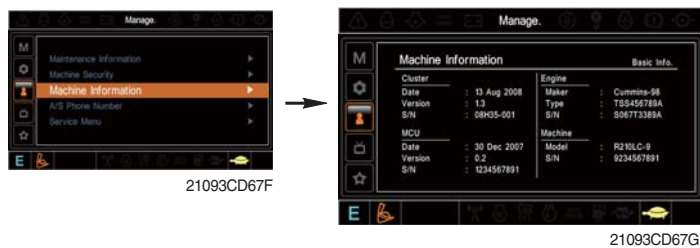
· This can confirm the identification of the cluster, MCU, engine and machine.

④ A/S phone number

21093CD67J

21093CD67K

21093CD67L

21093CD67Z

21093CD67Y

⑤ Service menu

21093CD67M

Enter the password   21093CD67N

21093CD67P

21093CD67ZZ
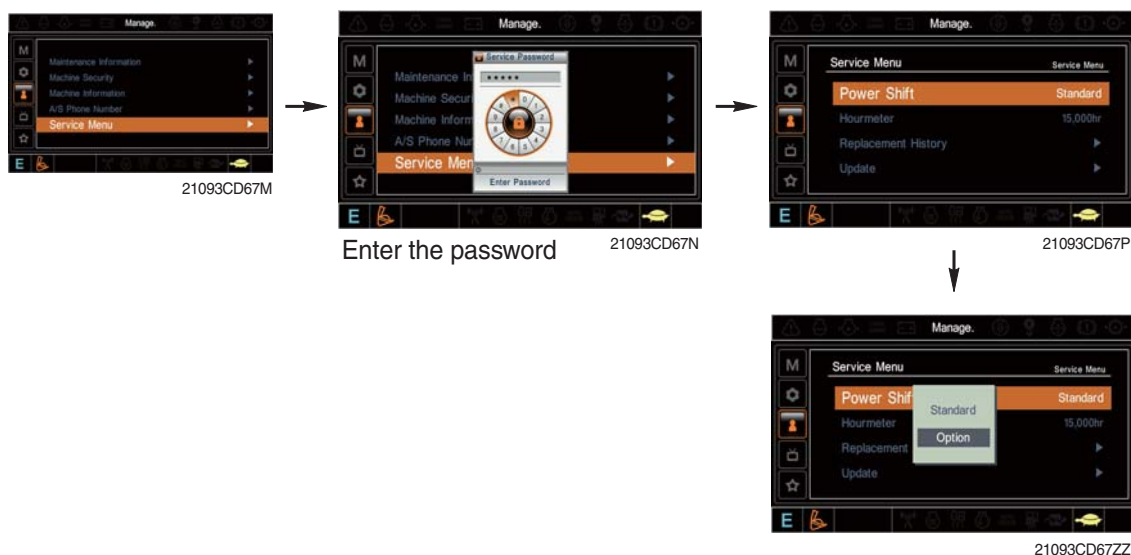
· Power shift (standard/option) : Power shift pressure can be set by option menu.
· Hourmeter start : Operating hours since the machine line out can be checked by this menu.
· Replacement history : Replacement history of the MCU and cluster can be checked by this menu.
· Update : Firm ware can be upgraded by this menu. (the USB port is located under the cluster)

(5) Display

① Display item

21093CD68

21093CD68A

21093CD68W

21093CD68B

21093CD68E
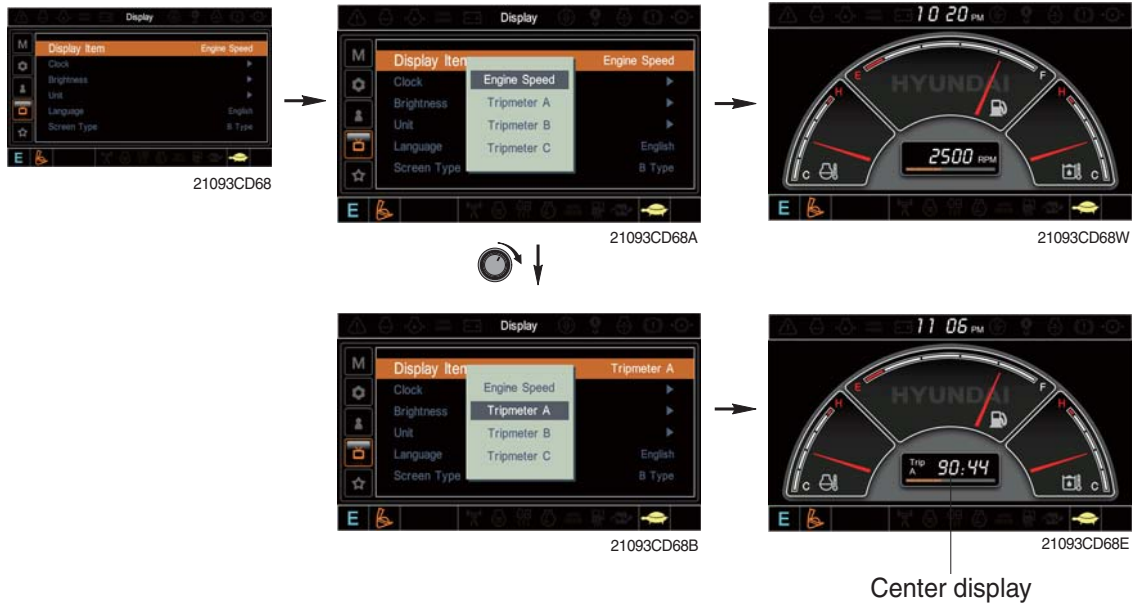
Center display

- · The center display type of the LCD can be selected by this menu.
- · The engine speed or each of the tripmeter (A,B,C) is displayed on the center display.

② Clock

21093CD68C

21093CD68D
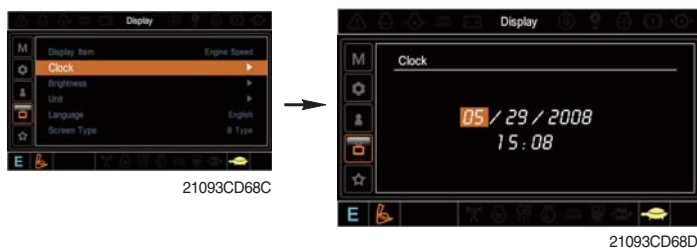
- · The first line's three spots "**/**/****" represent Month/Day/Year each.
- · The second line shows the current time. (0:00~23:59)

③ **Brightness**

21093CD68F

Manual (1st~10th step) 21093CD68G

21093CD68H

Auto (day/night) 21093CD68J

21093CD68K
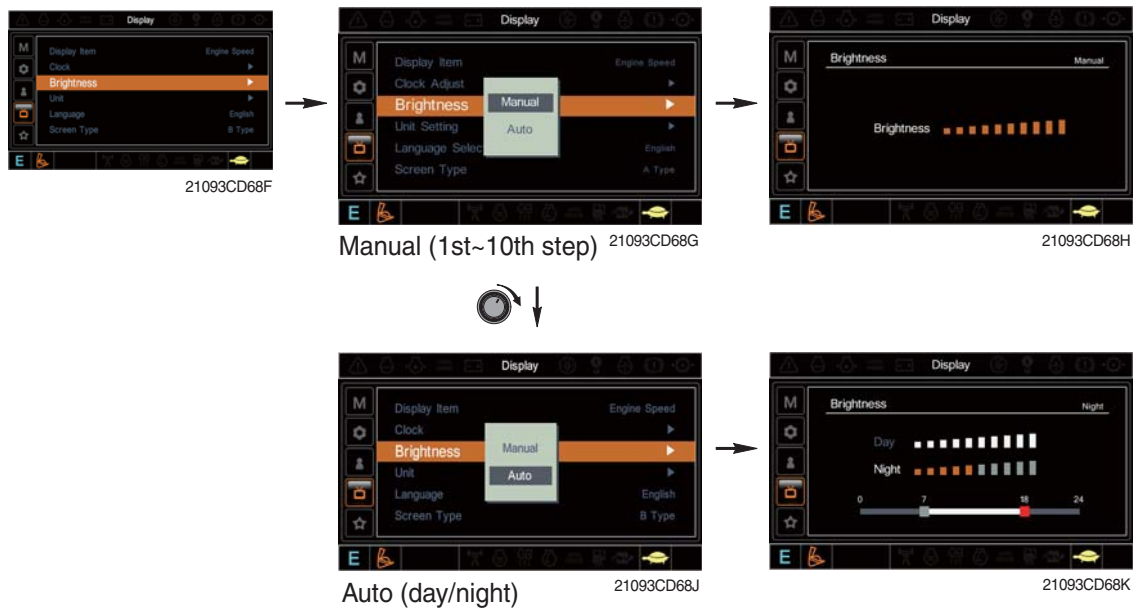
※ **If "Auto" is chosen, brightness for day and night can be differently set up. Also by using the bar in lower side, users can define which time interval belongs to day and night. (in bar figure, gray area represents night time while white shows day time)**

④ **Unit**

21093CD68L

21093CD68M

21093CD68N

· Temperature : ˚C ↔ ˚F
· Pressure   : bar ↔ MPa ↔ kgf/cm^2
· Flow   : lpm ↔ gpm
· Date format : yy/mm/dd ↔ mm/dd/yy ↔ dd-Mar-yy

⑤ **Language**

21093CD68R

21093CD68S

21093CD68T
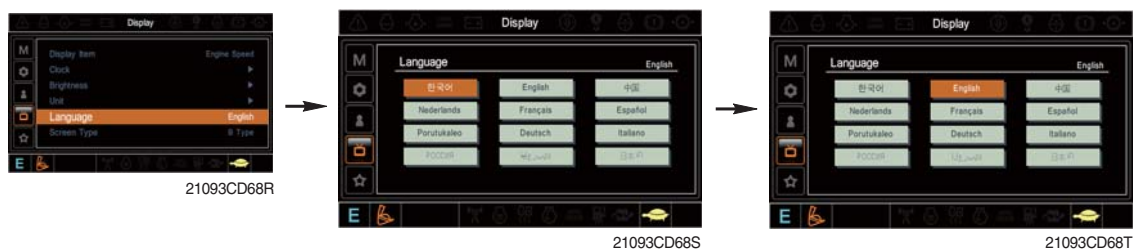
· User can select preferable language and all displays are changed the selected language.

⑥ **Screen type**

21093CD68U

A Type   21093CD68V

Standard   21093CD68W

B Type   21093CD68X

Option   21093CD68Y

(6) Utilities

① **Tripmeter**

21093CD69

21093CD69A

21093CD69B
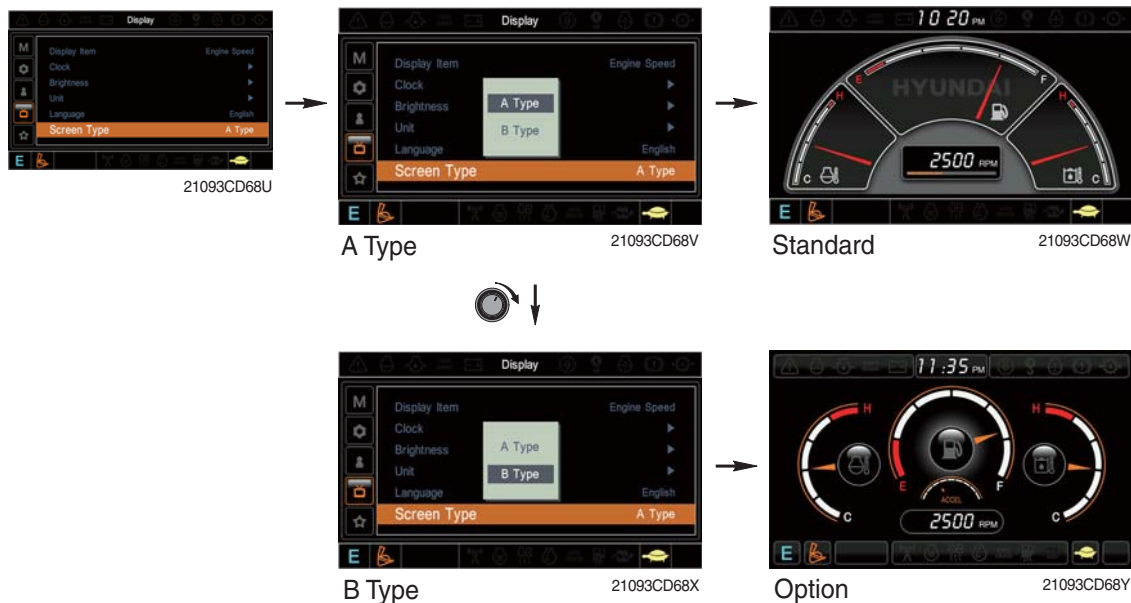
· Maximum 3 kinds of tripmeters can be used at the same time.
· Each tripmeter can be turned on by choosing "Start" while it also can be turned off by choosing "Stop".
· If the tripmeter icon is activated in the operation screen, it can be controlled directly there.

② **DMB**

21093CD69C

21093CD69D

21093CD69E

· DMB select : TV channel can be selected by this menu.
· DAB select : Audio channel can be selected by this menu.
· Channel scan : This menu can be used other region for TV/Audio.
· Exit : Exit DMB menu

③ Entertainment

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

21093CD69F

21093CD69G

④ Camera setting
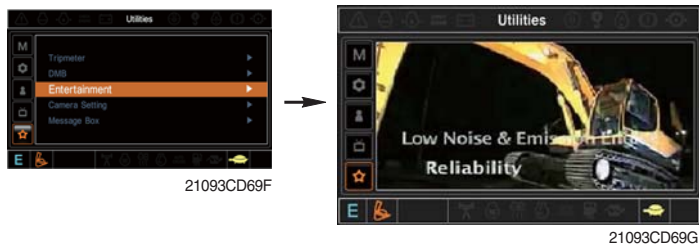

21093CD69J

21093CD69K

21093CD69L
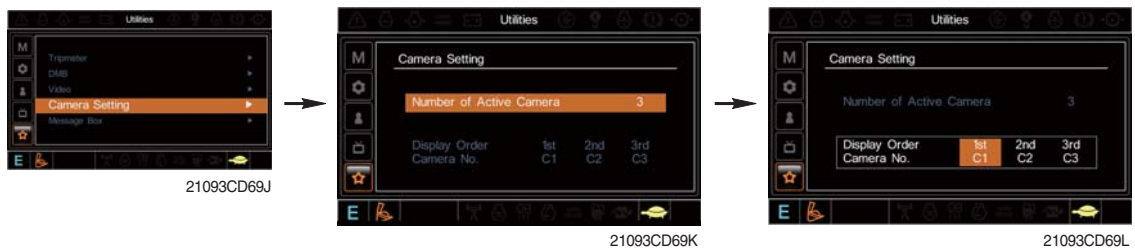
· Three cameras can be installed on the machine.
· The display order can be set by this menu.

21093CD69M

21093CD69N

· If the camera was not equipped, this menu is not useful.
· In the operation screen, if the ESC/CAM switch is pushed, the first ordered display camera will be viewed.
· Turnning the select switch in clockwise direction, the next ordered will be shown and in counter-clockwise direction, the previously ordered will be shown.
· Push the select switch, the displayed screen will be enlargement.

⑤ Message box

· **The history of the machine operating status can be checked by this menu.**

21093CD69Q

21093CD69R

3. SWITCHES

Cab light switch
Travel alarm switch
Washer switch
Wiper switch
Main light switch

Quick clamp switch
Beacon switch
Overload switch

Switch panel

Membrane switch

Air compressor switch
Accel dial switch
Horn switch
Breaker operation switch
Start switch

Heated seat switch

Master switch

One touch decel switch
Emergency engine stop switch
Power max switch

29093CD02

1) STARTING SWITCH

21073CD27

(1) There are three positions, OFF, ON and START.
· ○ (OFF)   : None of electrical circuits activate.
· | (ON)   : All the systems of machine operate.
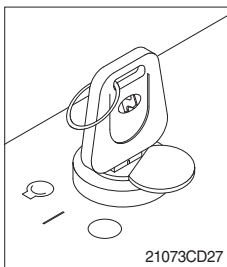· ○ (START) : Use when starting the engine.
                     Release key immediately after starting.

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

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

2) MASTER SWITCH

OFF

13033CD81
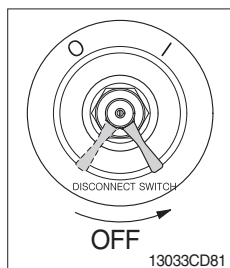
(1) This switch is used to shut off the entire electrical system.

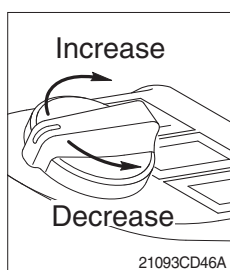(2) Ⅰ : The battery remains connected to the electrical system.

O : The battery is disconnected to the electrical system.

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

3) ACCEL DIAL SWITCH

Increase

Decrease

21093CD46A

(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 increases
· By rotating the accel dial to left   : Engine speed decreases

4) MAIN LIGHT SWITCH

Pilot lamp(2nd)

Pilot lamp(1st)

21093CD46B
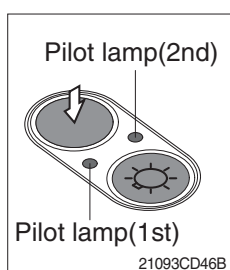
(1) This switch used to operate the head light and work light.
· Press the switch once, the head light comes ON and the 1st pilot lamp ON.
· Press the switch once more, the work light comes ON and the 2nd pilot lamp ON.
· Press the switch again, return to a first step position.
· Press the switch more than one second to turn off lights.

5) WIPER SWITCH

Pilot lamp(2nd)

Pilot lamp(1st)

21093CD46C
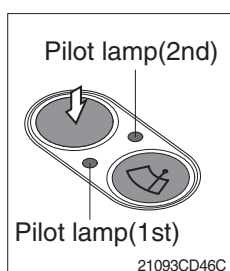
(1) This switch used to operate wiper.
· Press the switch once the wiper operates intermittently and the 1st pilot lamp comes ON.
· Press the switch once more, the wiper operates low speed and the 2nd pilot lamp comes ON.
· Press the switch again return to a first step position.
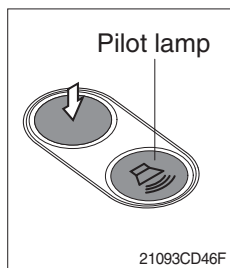· Press the switch more than one second to turn off wiper.

6) WASHER SWITCH

Pilot lamp

21093CD46D
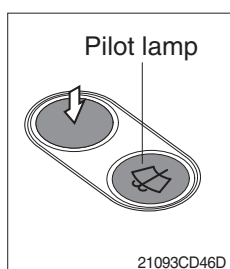
(1) The washer liquid is sprayed and the wiper is operated only while pressing this switch.

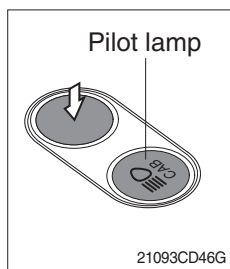(2) The pilot lamp is turned ON when operating this switch.

7) TRAVEL ALARM SWITCH

Pilot lamp

21093CD46F

(1) This switch is to activate travel alarm function surrounding when the machine travels to forward and backward.

(2) On pressing this switch, the alarm operates only when the machine is traveling.

8) CAB LIGHT SWITCH (option)

Pilot lamp

21093CD46G

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

9) OVERLOAD SWITCH (option)

OFF   ON

21093CD46H
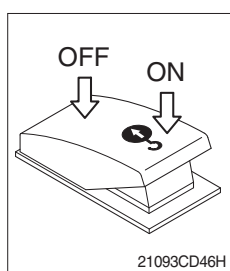
(1) When this switch turned ON, buzzer makes sound and overload warning lamp comes ON in case that the machine is overload.

(2) When it turned OFF, buzzer stops and warning lamp goes out.

10) QUICK CLAMP SWITCH (option)

Safety button

Lock   Unlock

21093CD46J
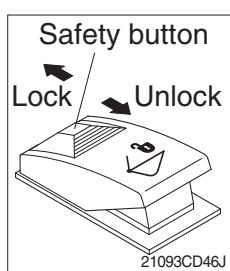
(1) This switch is used to engage or disengage the moving hook on quick clamp.

※ **Refer to the page 8-6 for details.**

11) BEACON SWITCH (option)

21093CD46L

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

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

12) HEATED SEAT SWITCH (option)

21093CD46M

(1) This switch is used to heat the seat.
   · Heater ON   : 10±3.5˚C
   · Heater OFF : 20±3˚C
(2) On pressing the switch, the indicator lamp is turned ON.

13) HORN SWITCH

Horn switch

RH RCV-lever
21093CD46N

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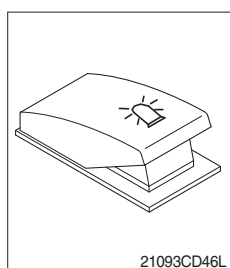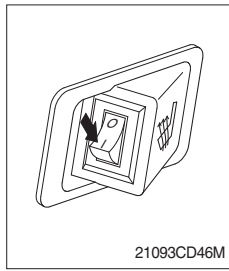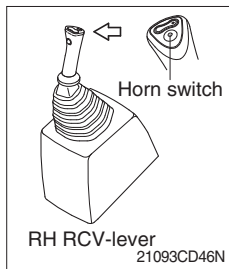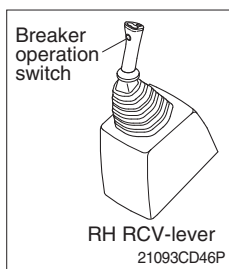   On pressing, the horn sounds.

14) BREAKER OPERATION SWITCH

Breaker operation switch

RH RCV-lever
21093CD46P

(1) On pressing this switch, the breaker operates only when the breaker operation mode is selected.

15) ONE TOUCH DECEL SWITCH

One touch decel switch

LH RCV-lever
21093CD46Q
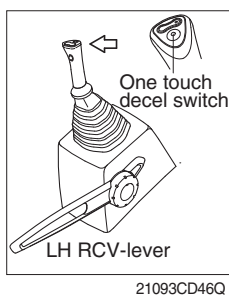
(1) This switch is used to actuate the deceleration function quickly.

(2) The engine speed is increased to previous setting value by pressing the switch again.

(3) One touch decel function is available only when the auto idle pilot lamp is turned OFF.

16) POWER MAX SWITCH

Power max switch

LH RCV-lever
21093CD46R
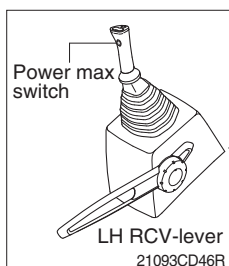
(1) This switch activate power max function.
   When this switch is kept pressed, hydraulic power of work equipment will be increased to approx 110 percent during 8 seconds.

(2) After 8 seconds, function is cancelled automatically even the switch keeps pressed.
※ **Do not use for craning purposes.**

17) AIR COMPRESSOR SWITCH (option)

OFF   ON

AIR
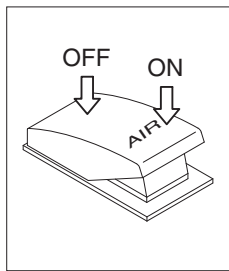
17W93CD46N

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

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

18) EMERGENCY ENGINE STOP SWITCH

Emergency
stop
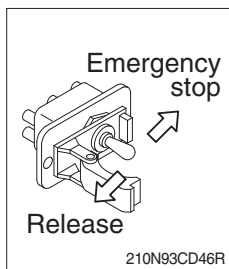
Release

210N93CD46R

(1) This switch is used to emergency stop the engine.

※ **Be sure to keep the emergency switch on the release position when restart the engine.**

4. LEVERS AND PEDALS

RH control lever

Travel lever

RH adjusting lever

Travel pedal

Seat & console box adjust lever

LH control lever

Safety lever

LH adjusting lever
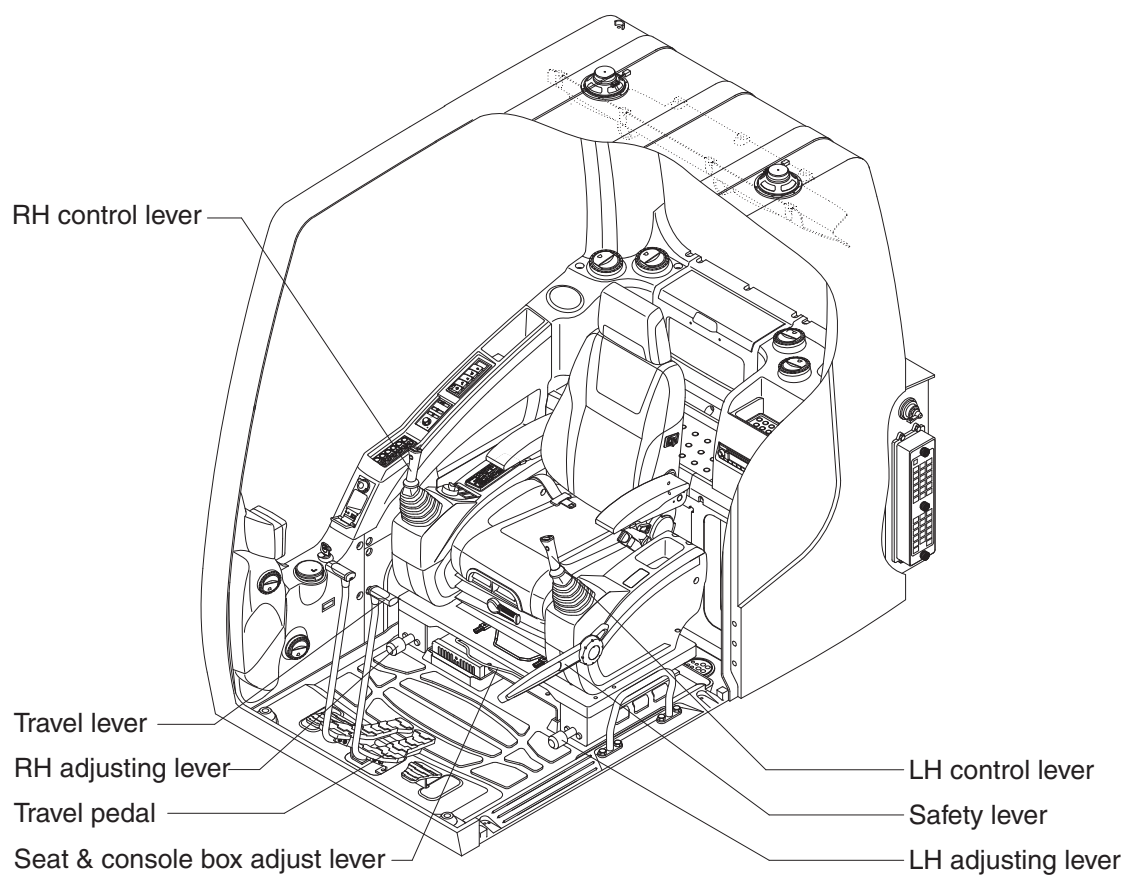
21093CD48

1) LH CONTROL LEVER

21093CD48A
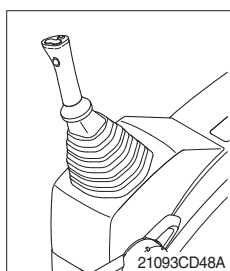
(1) This joystick is used to control the swing and the arm.

(2) Refer to operation of working device in chapter 4 for details.

2) RH CONTROL LEVER

21093CD48B
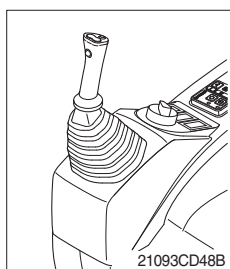
(1) This joystick is used to control the boom and the bucket.

(2) Refer to operation of working device in chapter 4 for details.

3) SAFETY LEVER

Unlock
Lock
21093CD48C
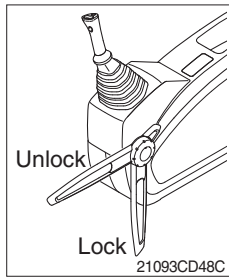
(1) All control levers and pedals are disabled from operation by locating the lever to lock position as shown.

※ **Be sure to lower the lever to LOCK position when leaving from operator's seat.**

(2) By pull lever to UNLOCK position, the machine is operational.

※ **Do not use the safety lever for handle when getting on or off the machine.**

4) TRAVEL LEVER

21093CD48D
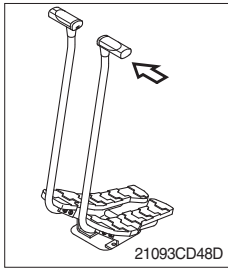
(1) This lever is mounted on travel pedal and used for traveling by hand. The operation principle is same as the travel pedal.

(2) Refer to traveling of the machine in chapter 4 for details.

5) TRAVEL PEDAL

21093CD48E
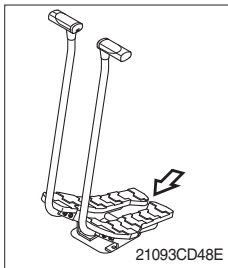
(1) This pedal is used to move the machine forward or backward.

(2) If left side pedal is pressed, left track will move.
If right side pedal is pressed, right track will move.

(3) Refer to traveling of machine in chapter 4 for details.

6) SEAT AND CONSOLE BOX ADJUST LEVER

Adjust lever
21093CD48F
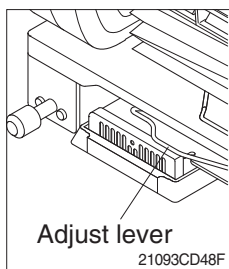
(1) This lever is used to move the seat and console box to fit the contours of the operator's body.

(2) Pull the lever to adjust forward or backward over 170mm(6.7").

7) ADJUSTING LEVER

Upward
Downward
21093CD48G
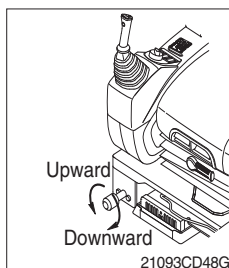
(1) This lever is used to move the LH and RH control lever to fit the contours of the operator's body.

(2) The control lever can be moved upward and downward over 30 mm (1.2").

5. AIR CONDITIONER AND HEATER

■ **FULL AUTO AIR CONDITIONER AND HEATER** (standard)

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.

※ **Refer to the page 3-33 for semi auto air conditioner and heater.**

· **Location of air flow ducts**

Switch panel

Fresh air switch   LCD   Mode switch

Auto switch

Power OFF switch

Fan speed switch   Air conditioner switch

Air recirculation switch   Temperature control switch
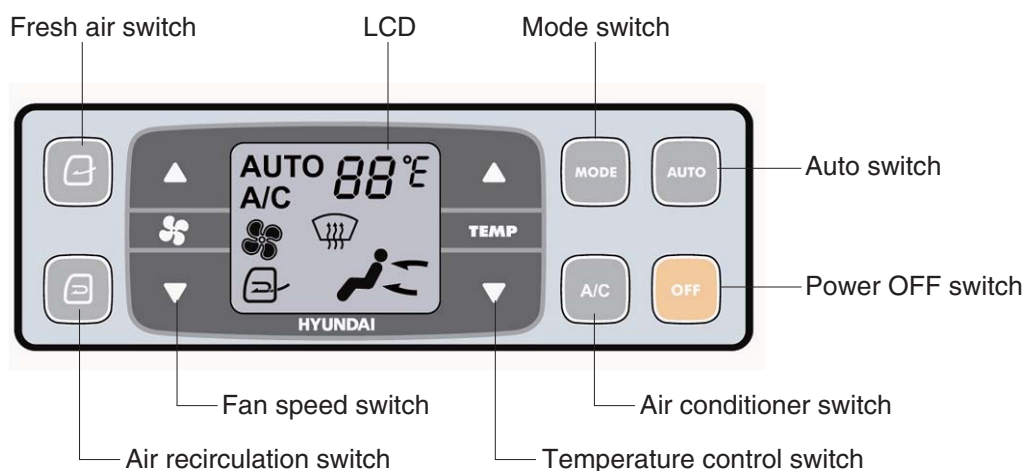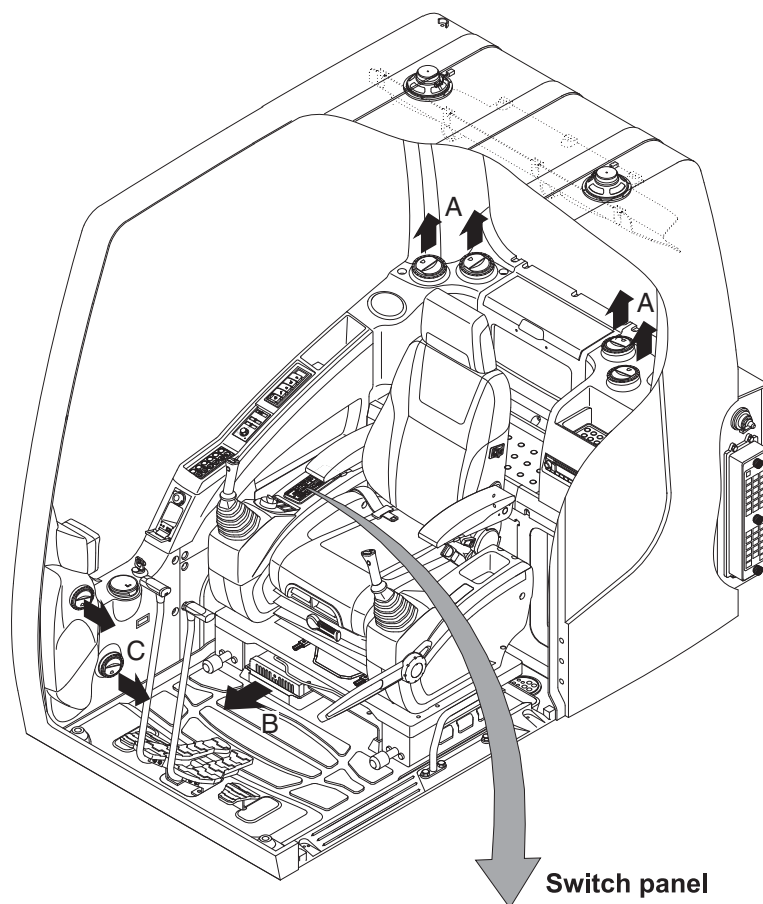
21093CD49

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

370073CD54

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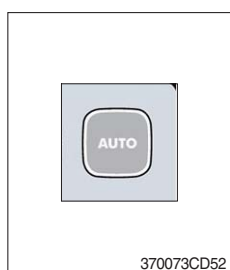
(1) Turn the starting switch to ON position, LCD lights ON.
Auto air conditioner and heater system automatically keeps the optimum condition in accordance with operator's temperature configuration sensing ambient and cabin inside temperature.

(2) This switch can restart system after system OFF.

370073CD52

3) AIR CONDITIONER SWITCH (compressor switch)
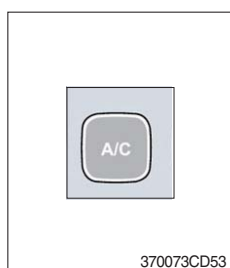
(1) This switch turns the compressor and the LCD ON.

(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.**
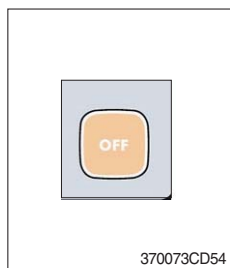**In this case, exchange the drain cock.**

370073CD53
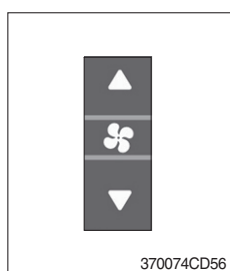
4) FAN SPEED SWITCH

(1) Fan speed is controlled automatically by setted 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.

370074CD56

5) TEMPERATURE CONTROL SWITCH

370074CD57
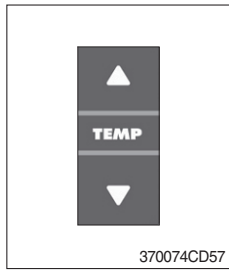
(1) Setting temperature indication

① Type A : 17~32˚C, scale : 1˚C

② Type B : Lo, 18~31˚C, Hi, scale : 1˚C

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

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

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

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

① Default status (˚C)

② Push Up/Down temperature control switch simultaneously more than 5 second displayed temperature unit change (˚C → ˚F)

6) MODE SWITCH

370074CD50
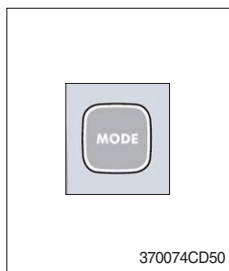
(1) Operating this switch, it beeps and displays symbol of each mode in order.

· A type : Vent → Vent/Foot → Foot → Foot/Def → Vent

Mode switch		Vent	Vent/Foot	Foot	Foot/Def
Outlet	A	●	●		
	B		●	●	●
	C				●

· B type : Vent → Vent/Foot → Def/Foot → Def/Vent → Def/Vent/Foot

Mode switch		Vent	Vent/Foot	Def/Foot	Def/Vent	Def/Vent/Foot
Outlet	A	●	●		●	●
	B		●	●		●
	C			●	●	●

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

7) FRESH AIR/AIR RECIRCULATION SWITCH

36073CD58
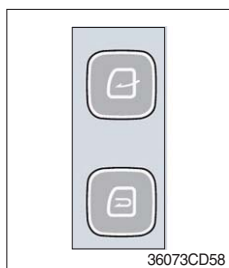
(1) It is possible to change the air-inlet method.

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

```
                    ┌─────────────────────┐
                    │  Starting switch ON │
                    └──────────┬──────────┘
                               ▼
       ┌─────────────────────────────────────────────────┐
       │  Press the air recirculation button over 5 times │
       │  within 2 seconds during pressing the AUTO switch │
       └──────────────────────┬──────────────────────────┘
                              ▼
              ┌───────────────────────────────┐
              │  All symbol of LCD blink 5 times │
              └───────────────┬───────────────┘
                              ▼
    ┌───────────────────┐           Switch OFF    ┌─────────────┐
    │   │  Error check  │─────────────────────────│  System OFF │
    │   └───────┬───────┘                         └─────────────┘
    │  Press AUTO switch│
    │                   ▼
    │  ┌─────────────────────────────────────────────┐
    └─▶│  Cancelled diagnosis function(normal function) │
       └─────────────────────────────────────────────┘
```
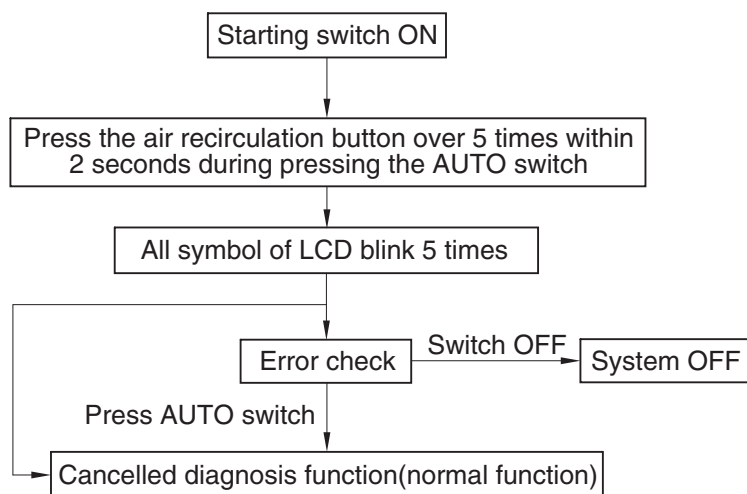
3607A3CD69

(2) Error check

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

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

(3) Fail safe function

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

■ SEMI AUTO AIR CONDITIONER AND HEATER (option)
Semi auto air conditioner and heater are equipped for pleasant operation against outside temperature and defrost on window glass.

※ Refer to the page 3-29 for full auto air conditioner and heater.

· Location of air flow ducts

Switch panel

Inlet change over switch
Outlet change over switch
Temperature control switch
Fan speed switch
Power switch
Air conditioner switch
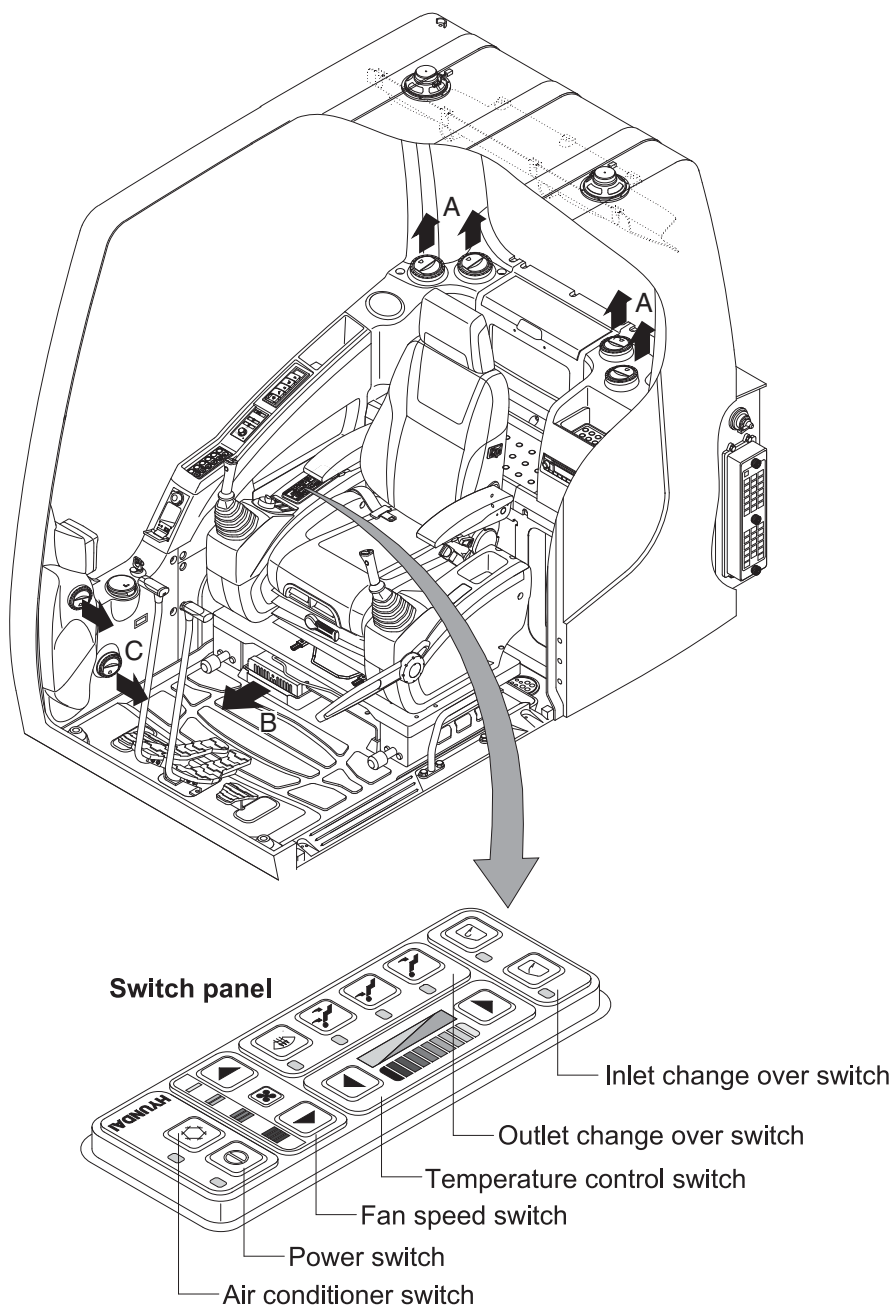
21093CD53

1) POWER SWITCH

(1) This switch makes the system and the LED simultaneously ON or OFF.

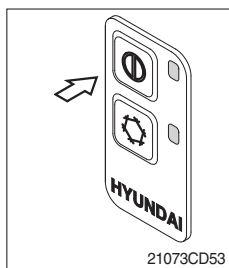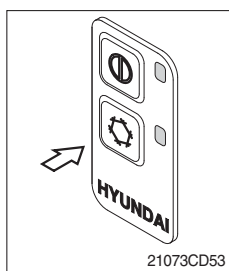(2) **Default setting values**

Function	Air conditioner	Fan speed	Temperature	Outlet	Inlet
Value	OFF	1	Max cool	Face	Recirculation

2) AIR CONDITIONER SWITCH (compressor switch)

(1) Operating this switch turns the compressor and the LED simultaneously ON or OFF.

(2) In accordance with the evaporator temperature, compressor turns on or off automatically without changing LED state.

※ **Air conditioner operates to remove vapor and drains water through a drain hose. Water can be sprayed into the cab in case that the vacuum valve of drain hose has a problem.
In this case, exchange the vacuum valve.**

3) FAN SPEED SWITCH
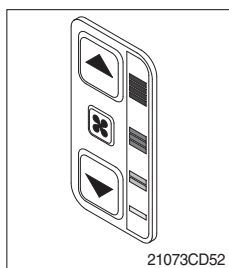
(1) It is possible to control the fan to four steps.

(2) The first step or the fourth step gives 5 times beeps.

4) TEMPERATURE CONTROL SWITCH
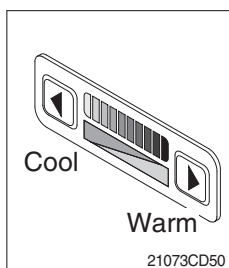
(1) There are 9 steps to control temperature from max cool to max warm controlled up and down by 1 step.

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

(3) For the max warm or the max cool it's better to be configured as following table.

Temperature	Air conditioner	Fan speed	Outlet	Inlet
Max cool	ON	4	Face	Recirculation
Max warm	OFF	3	Foot	Fresh

5) OUTLET CHANGE OVER SWITCH

21073CD51

(1) There are four steps of air flow.

Switch position		Mode			
		(seat)	(seat/face)	(seat/face up)	(defrost)
Outlet	A		●	●	
	B	●		●	●
	C				●

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

(3) In case of heating range (5~Max warm), air conditioner won't turns ON.

6) INLET CHANGE OVER SWITCH

Fresh

Recirculation

21073CD49
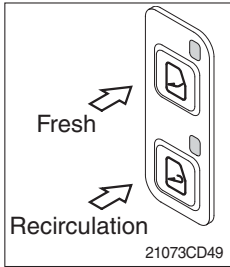
(1) It is possible to change the air-inlet method.
① Fresh
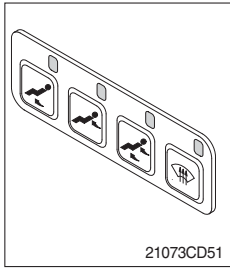   Inhaling air from the outside to pressurize cab inside.
   ※ Check out the fresh air filter periodically to keep a good efficiency.
② Recirculation
   It recycles the heated or cooled air to increase the energy efficiency.
   ※ Change air occasionally when using recirculation for a long time.
   ※ Check out the recirculation filter periodically to keep a good efficiency.

(2) Recirculation function operates when the system is OFF but it can be changed whenever needed.

Cigar lighter

Remote controller

Handsfree

Service meter

Seat

Radio & CD/MP3 player

RS232 & J1939
service socket

EMERGENCY

CN-16&16B
CN-16A

MCU

Emergency engine
connector

CN-16&16A
CN-16B

Fuse & relay box
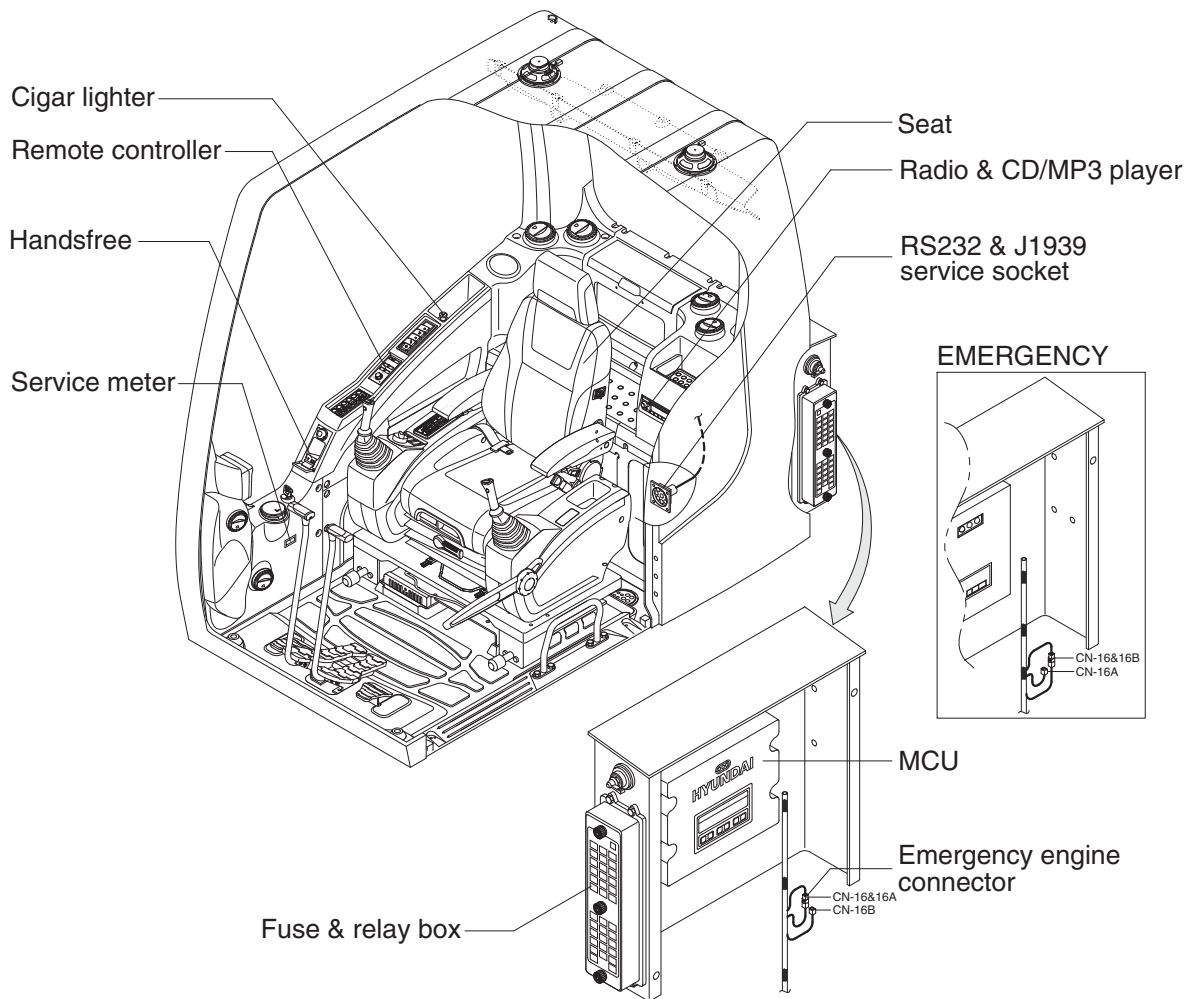
21093CD50

1) CIGAR LIGHTER

13033CD69
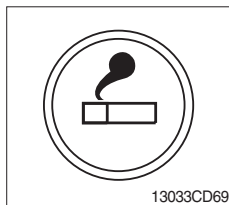
(1) This can be used when the engine starting switch is ON.

(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 24V, 100W.

2) 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.

Private call jack socket

USB socket

USB   Ear   HP

Indicator lamp

Handsfree jack socket

Mobile phone stroage box

Service socket
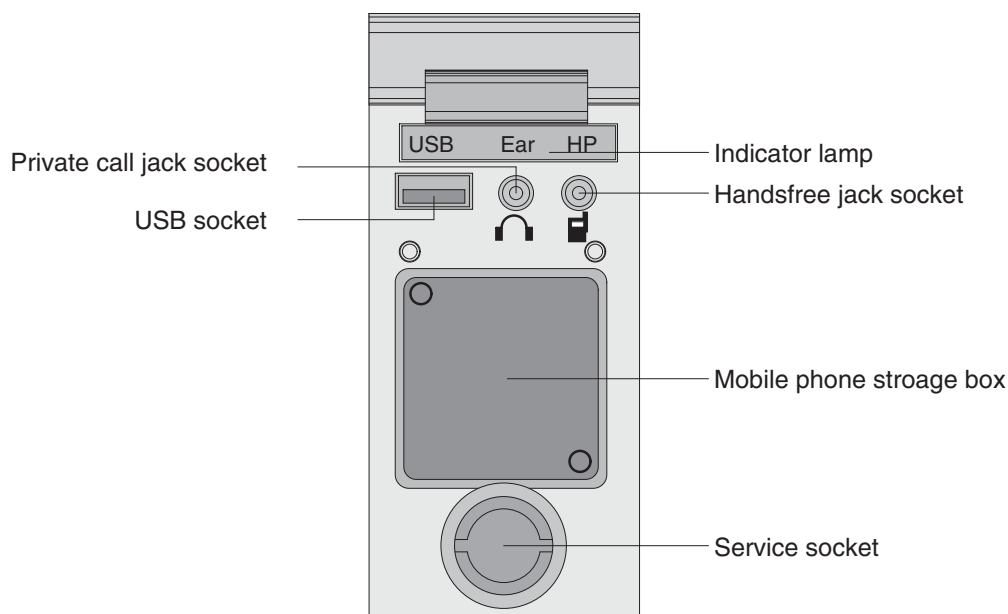
21093CD51

(1) Mobile phone storage box
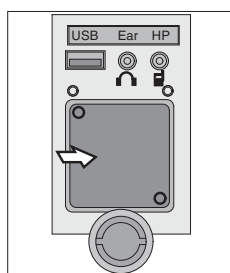
21093CD51A

① Mobile phone can be stored when call by handsfree.

(2) USB socket
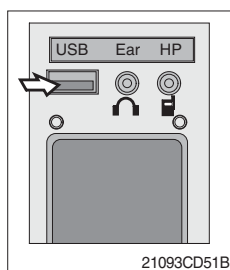
21093CD51B

① This socket is used to charging the mobile phone.

(3) Private call jack socket
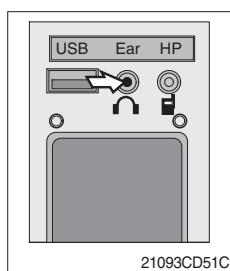
21093CD51C

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
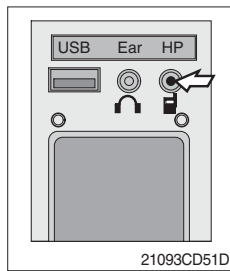
① Connect the jack cable when call by handsfree.

② Use the special adapter when jack cable is not interchangeable.

③ Check the jack type of mobile phone before use.

21093CD51D

(5) Indicator lamp
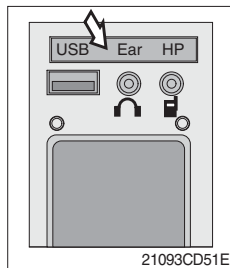
① This lamp is turned ON when the handsfree mode selected.

21093CD51E

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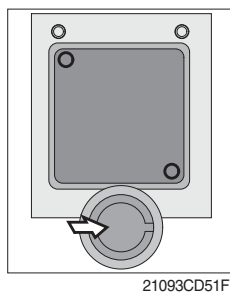
① Utilize the power of 12 V as your need and do not exceed power of 12 V, 30 W.

21093CD51F

3) REMOTE CONTROLLER

Handsfree jack MIC

Power/Volume switch

Seek button

Mode button

Mute button

Call button

Mode change button
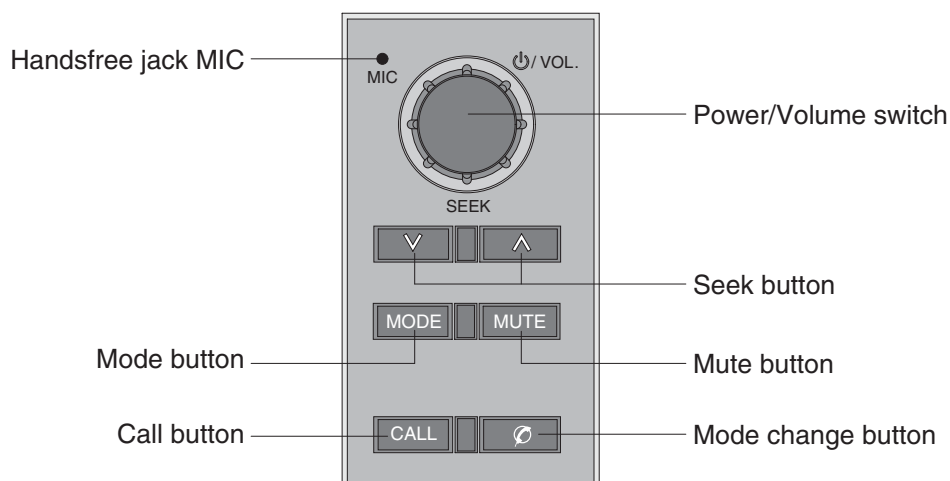
21093CD52

(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
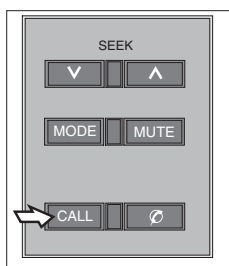
21093CD52C

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
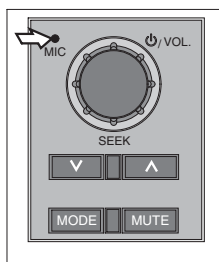
21093CD52D

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

(5) Seek button
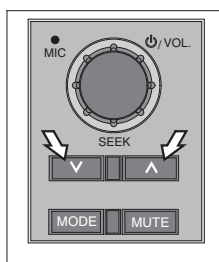
21093CD52E

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
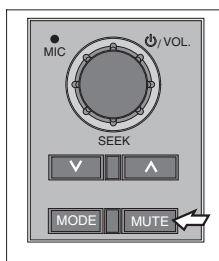
21093CD52G

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

(7) Mode button
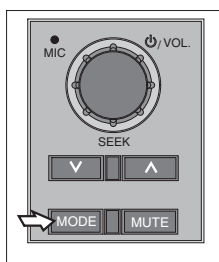
21093CD52F

① Press the mode button to select the desired mode.

② FM1 → FM2 → AM → CD → MP3 → FM1

※ **The LCD displayed each mode.**

4) RADIO AND CD/MP3 PLAYER : MACHINE SERIAL NO.: -#0687
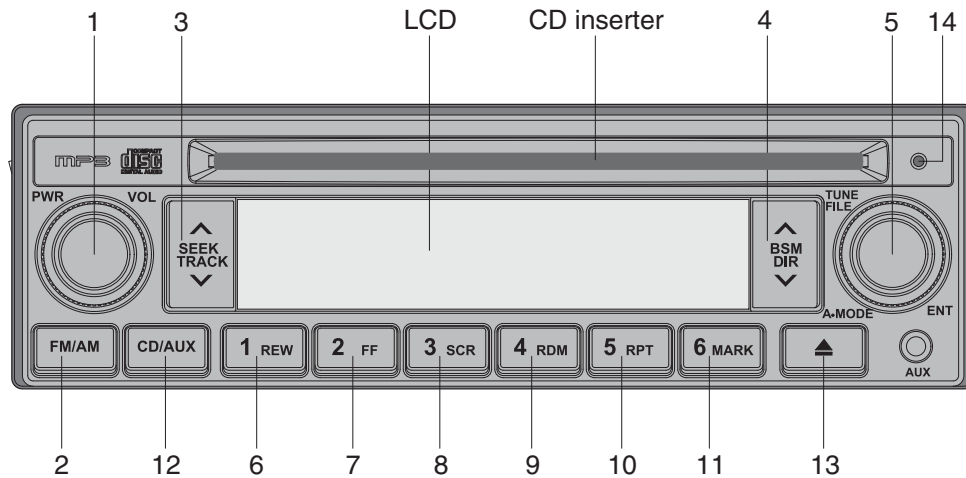
21093CD70

■ FRONT PANEL PRESENTATION

1 ········ Power and volume switch

PWR ··········· Press to power on/off
VOL ············ Turn right/left to adjust the volume

2 FM/AM ········ AM/FM button (radio)

3 SEEK TRACK ·········· Seek mode (radio)
Auto search up/down
·········· Track mode(CD)
Short press : Next/previous track
Long press : Fast forward or rewind
Memory file search up/down (MP3)

4 BSM DIR ·········· BSM mode (radio)
6 best station automatic memory
·········· DIR mode (MP3)
Select the desired folder (MP3)
Long press : Fast forward or rewind

5 ········· Manual frequency search (radio)
Turn right/left to adjust the frequency
FILE ··········· Search for desired file (CD/MP3)
Turn right/left to adjust the track no
A · MODE ··· Select bass/middle/treble (radio)
ENT ··········· Select the desired track (CD/MP3)

6 1 ········ Preset memory button 1
REW ·········· Fast rewind (CD)

7 2 ········ Preset memory button 2
FF ·············· Fast forward (CD)

8 3 ········ Preset memory button 3
SCR ··········· Scroll button (CD-MP3)

9 4 ········ Preset memory button 4
RDM ·········· CD random playback on/off

10 5 ········ Preset memory button 5
RPT ··········· CD repeat track on/off

11 6 ········ Preset memory button 6
MARK ········ Long press : MP3 file memory/deletion
Short press : Memory file playback

12 CD/AUX ········ CD playback button
Press to CD insert

13 ⏏ ········ Disc eject (CD)

14 ····················· CD indicator lamp

3-41

■ RADIO

(1) Power and volume switch

① **Power ON/OFF**

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

② **Volume**

This switch turned to right or left, the sound is increased or decreased.

(2) FM/AM button
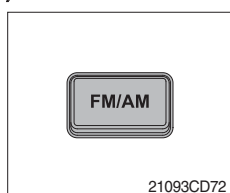
① You can broadcasting on AM or FM band by pressing this band selection button.

② The bands are changed in the following order.
FM1 → FM2 → AM → FM1

(3) Seek button

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.

(4) BSM (best station memory) button
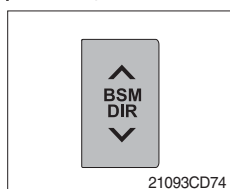
① You can automatically memory 6 strongest FM stations on the FM BSM band or 6 strongest AM stations on the AM BSM band.

· Press BSM to active best station memory.
· The set gives a beep and then mutes.
· When it has finished, you heard a beep followed by the station memoried on preset 1.
· Sometimes it may not be possible to find 6 stations.

(5) Manual tuning/audio mode button
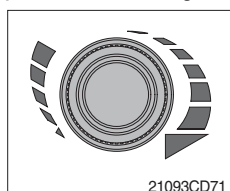
① It is possible to change manual tuning while broadcasting.
· Turned to right or left, the frequency is increased or decreased.
② **Audio mode** (Bass/Middle/Treble)
· Press this button to select desired audio mode.
· Adjust the settings with the volume button right/left.
  - BASS : Press the button once
  - MIDDLE : Press the button twice
  - TREBLE : Press the button three times
③ If it is pressed four times, BALANCE will be selected.
· Turned to clockwise, the LH speaker volume is decreased and counterclockwise, the RH speaker volume is decreased.

(6) Preset memory button

| 1 | 2 | 3 |
| 4 | 5 | 6 |

21093CD76
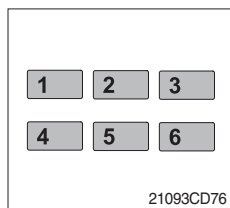
① **Manually storing stations in a preset**

Six stations per band can be stored and recalled using the preset keys (1 to 6).

· Tune in to the desired station.
· Press the desired preset key (1 to 6) for more than 0.8 seconds to store the current tuned station.

② **Recalling a preset**

Press the desired preset key (1 to 6) to recall the stored station.

(7) Frequency band setting

FM/AM + 4 RDM

21093CD77
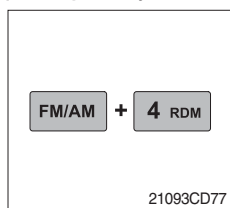
① America : Press `FM/AM` and `4 RDM` button at the same time. "nA" will be displayed on the LCD for one second.

AM : Frequency changes in 10kHz between 530 to 1710kHz.
FM : Frequency changes in 0.2MHz between 87.7 to 107.9MHz.

FM/AM + 6 MARK

21093CD78
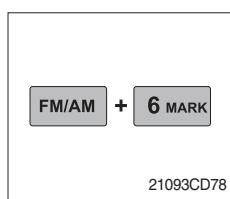
① EUROPE : Press `FM/AM` and `6 MARK` button at the same time. "Eu" will be displayed on the LCD for one second.

LW : Frequency changes in 9kHz between 153 to 279kHz.
MW : Frequency changes in 9kHz between 531 to 1620kHz.
FM : Frequency changes in 0.05MHz between 87.5 to 108.0MHz.

FM/AM + 5 RPT

21093CD79
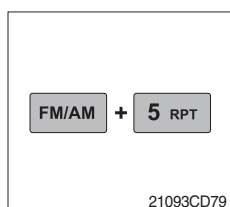
① General : Press `FM/AM` and `5 RPT` button at the same time. "inT" will be displayed on the LCD for one second.

AM : Frequency changes in 9kHz between 531 to 1602kHz.
FM : Frequency changes in 0.1MHz between 87.5 to 108.0MHz.

■ CD/MP3 PLAYER

(1) CD playback button

CD/AUX

21093CD80
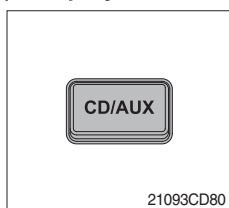
① It is possible to change CD playback during broadcasting.

② If there was no CD on audio, "NO DISC" displays on LCD during 5 seconds.

(2) Track button

SEEK TRACK

21093CD73
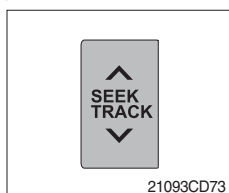
① **CD player**
· Short press : Select the next/previous track
· Long press : Select the fast forward or rewind

② **MP3 player**
· Memory file search up/down

(3) DiR mode button (MP3)

BSM DIR

21093CD74
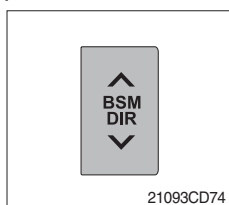
① You can find the desired mp3 folder up/down.

② If you find desired folder, press the file search button to playback the first file in the folder.

※ **If a file is not selected until 5 seconds after search folder, the function will be terminated.**

(4) File search button

21093CD71
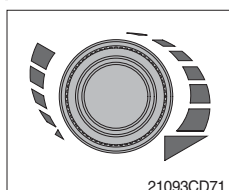
① It is possible to search the desired CD track or mp3 file.
· Turned to clockwise, the CD track or mp3 file number is increased.
If it is turned to counterclockwise, CD track or mp3 file number is decreased.

※ **If a file or track is not selected until 5 seconds, function will be terminated.**

(5) Fast rewind/Fast forward button (CD)

1 REW   2 FF

21093CD82
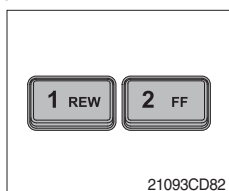
① Continually press these button to quickly move rewind or forward through the disc.

※ **The CD player sound level is lower while press this button.**

② Normal playback resumes when you release the button.

(6) Random track button (CD)

4 RDM

21093CD83
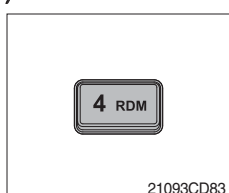
① Press this button to activate random track playback.

※ **The LCD displays "RDM".**

② It is canceled press one more this button.

(7) Repeat track button (CD)

5 RPT

21093CD84
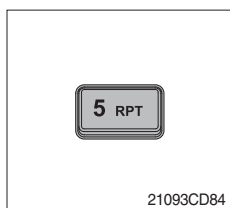
① Press this button to activate repeat current track playback.

※ **The LCD displays "RPT".**

② It is canceled press one more this button.

(8) Mark button (MP3)

6 MARK

21093CD85

① **Memory**

· Press over 0.8 second, the current file memorized with a beep (max 100 tune memory).

※ **The LCD displays "M" and "Marked number" for 3 seconds.**

② **Memory file playback**

· Press within 0.8 second, the marked file playback.

③ **Deletion**

· Press over 0.8 second, the marked file will be deleted with a beep.

(9) CD EJECT BUTTON

▲

21093CD86
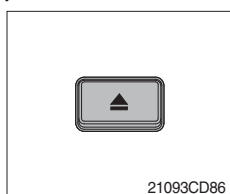
① Press this button to eject the disc.

※ **If there is no disc in the audio, the LCD displays "NO disc" for 5 seconds.**

(10) SCR BUTTON (MP3)

3 SCR

21093CD87
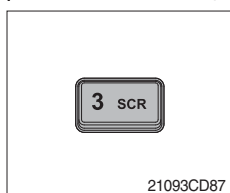
① This button to confirm the long file name on LCD.

RADIO AND USB / MP3 PLAYER : MACHINE SERIAL NO.: #0688-#2202

14   LCD display   1 13

RADIO/USB *MUSIC PLAYER*

FM1 9810

3 4   2   5   6   7   8   9   10 11 12

75793CD62

■ FRONT PANEL PRESENTATION

1   `SEL` ········ Sound function selection button (audio selection)

2   ● ········ Power and volume button

3   `MODE` ········ Mode button (select RADIO / USB / AUX)

4   `⌃⌄` ······· UP / DOWN tuning button

5   `1` ······· Preset memory button 1
   DISP ·········· ID3 v2 display

6   `2` ······· Preset memory button 2
   SCN ··········· File scan

7   `3` ······· Preset memory button 3
   RPT ··········· Repeat play selector

8   `4` ······· Preset memory button 4
   RDM ··········· Random play selector

9   `5` ······· Preset memory button 5
   D- ··············· Directory down

10   `6` ······· Preset memory button 6
   D+ ·············· Directory up

11   `⟵⟶` ········ Aux function

12   `BSM` ········ Preset scan (PS) Best station memory (BSM)

13   `MUTE` ········ Audio mute button

14   `AM/FM` ········ AM / FM button (radio)

■ GENERAL

(1) Power and volume button

① **Power ON/OFF button**

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

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

② **Volume up / down control**

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

(2) Sound function selection button (audio selection)

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

BASS → TREBLE → BAL → BEEP → LOUD → VOLUME

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

② **Bass control**

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

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

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

③ **Treble control**

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

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

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

④ Balance control

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

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

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

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

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

⑤ Beep control

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

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

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

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

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

⑥ Loud control

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

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

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

(3) Mode button

MODE

75793CD67
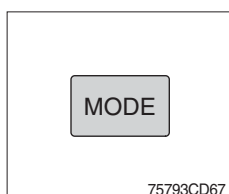
① Press mode button to select RADIO / USB / AUX.

(4) Audio mute button

MUTE

75793CD77

① Press mute button momentarily to mute volume and MUTE mark will blink on the LCD display.

Press the button again to return to the mode in use before the mute mode was activated.

■ RADIO

(1) AM / FM / LW band selector

AM/FM

75793CD78

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

FM1 → FM2 → FM3 → AM → LW

※ LW band is only available for Europe.

(2) Up / down tuning

75793CD68

① To automatically select a radio station, momentarily press the up tune seek button ⌃ or down tune seek button ⌄ for less than 3 seconds to search for the closest radio station.
To manually select a radio station, press the up tuning & down tuning button for longer than 3 seconds.
The radio frequency will move up or down step by step each time you press button.

(3) Station pre-set button

1	2
3	4
5	6

75793CD69~74

① Pressing these buttons shortly will recall your favorite pre-set radio stations.
To store your favorite stations into any of the 6 pre-set memories in each band (AM/FM/LW), use the following procedure :
a. Turn the radio ON and select the desired band.
b. Select the first station to be pre-set using the manual up/ down or automatic seek tuning control button.
c. Press the chosen pre-set button to store your selected station into and continue to hold it in. The beep sound will be momentarily heard and the pre-set number will apear on the LCD display indicating that the station is now set into that pre-set memory position and can be recalled at any time, by pressing that pre-set button.

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

75793CD76

① **Pre-set scan (PS)**

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

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

② **Best station memory (BSM)**

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

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

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

■ USB PLAYER

(1) USB function

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

· **Use of USB socket**

① Connect a USB device, which saves mp3 files, to USB socket in the cabin.

② If a USB device has not been connected, MP3 files are automatically played when you insert it into the USB port.

③ If a USB device has connected, MP3 files are played when you press mode for USB.

· **Use of USB / AUX cable** (option)

75793CD81

① Connect the USB/AUX cable to the player in order to play MP3 files in a USB device.

② If a USB device has not been connected, MP3 files are automatically played when you insert it into the cable.

③ If a USB device has connected, MP3 files are played when you press mode for USB.

(2) File selection & cue / review button
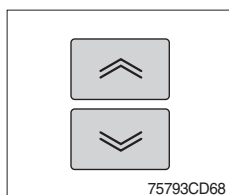
75793CD68

① File selection function

This button is used to select file up / down. Each time the forward file select ⌃ is pressed, file number is increased.
Each time the backward file select ⌄ is pressed, file number is decreased.

② Cue / review functions

High-speed audible search of file on a USB can be made by this button (the cue and review functions).
Press and hold the cue button ⌃ to advance rapidly in the forward direction or the review button ⌄ to advance rapidly in the backward direction.

(3) MP3 directory / file searching

① The power button is used to select a particular directory and file.
Press and hold for more than 3 seconds while playing MP3 file.
Turn right / left the power button to search the directory. Press the button when you find the wanted directory.
For example, the directory search generally changes in two methods depending on the order of writing as follows.

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

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

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

File01 → File02 → File03 → File04
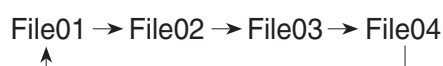
※ MP3 direction / file configuration

```
                        ROOT
                          |
                     Directory01
   ┌──────┬──────┬──────┬──────┬──────────────┬──────────────┐
 File01  File02  File03  File04  Dir02          Dir03          Dir04
                              ┌──────┬──────┐ ┌──────┬──────┐ ┌──────┬──────┐
                            File05 File06 Dir05 File07 File08 Dir06 File09 File10 Dir07
```

(4) ID3 v2 display

1 DISP

75793CD82

① Disp button is used to change the display information.

While playing an MP3 file, you can change the file information shown on the LCD display.

Each time you press DISP (display), the display changes to show the following.

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

Directory name / file name (normal mode)

↓

Album name / performer / title

↓

File number / elapsed time

(5) File scan (SCN)

2 SCN

75793CD83

① During USB play, press SCN button to play the first 10 seconds of each file on the whole file on the USB (SCN mark will appear on the LCD display).

When a desired file is reached, press the SCN button again to cancel the function.

The unit will then play the selected file.

※ In case of playing MP3 file, when the SCN (scan) button is pressed and held for longer than 2 seconds, the SCN mark will blink on the LCD display and all files in the selected directory will be introduced until the file scan mode is cancelled by pressing the SCN button again or by activating the random or repeat functions.

(6) Repeat play selector (RPT)
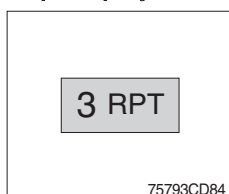
3 RPT

75793CD84

① During USB play, press RPT button to play the selected file repeatedly (RPT will appear on the LCD display).

Play of the file will continue to repeat until this button is pressed again and the RPT disappears from the LCD display.

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

(7) Random play selector (RDM)
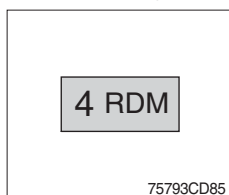
```
4 RDM
        75793CD85
```

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

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

(8) Directory down
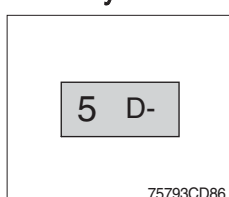
```
5   D-
        75793CD86
```

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

(9) Directory up
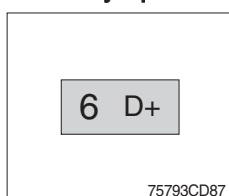
```
6   D+
        75793CD87
```

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

※ If the MP3 file does not have a directory, the unit play MP3 at 10-file intervals.

※ If any MP3 file does not exist in USB, this button can not operate.

■ AUX PLAYER

(1) Aux function

· Use of USB socket

```
  ○       ▭
 AUX     USB
        HB1003CD63
```
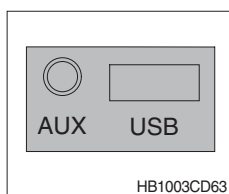
① If you want to listen to music of a external audio device, connect a external audio device into the USB port.

② Press mode button to change a current mode for AUX. If audio file of audio device is playing, you can listen to music through speaker.

· Use of USB/AUX cable (option)
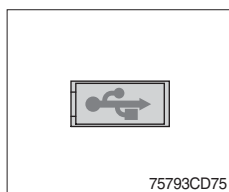
```
    ⟨⟨⟨
        75793CD75
```

① If you want to listen to music of a external audio device, connect a external audio device through USB/AUX cable.

② Press mode button to change a current mode for AUX. If audio file of audio device is playing, you can listen to music through speaker.

RADIO AND USB PLAYER : MACHINE SERIAL NO.: #2203-#2479

11   18   3   LCD display   12 14   13   15

4   2   17   5   6   7   8   9   10   1   16

75793CD62-2

■ FRONT PANEL PRESENTATION

1   SEL   ········ Audio selection button

    ⬤   ········ Audio selection knob

2   ⬤   ········ Power and volume button

3   MODE   ········ Mode button
            (select RADIO / USB / AUX)

4   ⬒   ········ UP / DOWN tuning button

5   1   ········ Preset memory button 1
    DISP   ·········· ID3 v2 display

6   2   ········ Preset memory button 2
    SCN ············ File scan

7   3   ········ Preset memory button 3
    RPT ············ Repeat play selector

8   4   ········ Preset memory button 4
    RDM ············ Random play selector

9   5   ········ Preset memory button 5
    D- ················ Directory down

10   6   ········ Preset memory button 6
    D+ ·············· Directory up

11   ⬚   ········ Aux function

12   BSM   ········ Preset scan (PS)
            Best station memory (BSM)

13   MUTE   ········ Audio mute button

14   AM/FM   ········ AM / FM button (radio)

15   📞   ········ Send

16   ☎   ········ End

17   MIC◯   ········ MIC (microphone)

18   AUX   ········ Aux connector

3-45-9

■ GENERAL

(1) Power and volume button

① **Power ON/OFF button**

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

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

② **Volume up / down control**

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

(2) Sound function selection button (audio selection)

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

BASS → TREBLE → BAL → LOUD → EQ

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

② **Bass control**

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

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

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

③ **Treble control**

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

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

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

④ **Balance control**

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

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

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

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

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

⑤ **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 SEL button until LOUD ON or LOUD OFF is displayed, then turn power button (type A) or selection knob (type B) left or right to activate or deactivate loudness.

⑥ **Equalizer (EQ)**

You can select an equalizer curve designed for 4 music types (POP, ROCK, CLASSIC, JAZZ).

To select the desired curve, first select the EQ mode by pressing SEL button until the "EQ OFF" indication appears on the display panel. Within 5 seconds of choosing the EQ mode, turn power and volume button (type A) or selection knob (type B) to select an equalizer curve as desired.

(3) Mode button

MODE

75793CD67
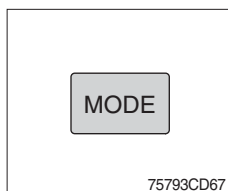
① Press mode button to select RADIO / USB / AUX / BT audio.

(4) Audio mute button

MUTE

75793CD77

① Press mute button momentarily to mute volume and MUTE mark will blink on the LCD display.

Press the button again to return to the mode in use before the mute mode was activated.

■ RADIO

(1) AM / FM / LW band selector

AM/FM

75793CD78

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

FM1 → FM2 → FM3 → AM → LW

※ LW band is only available for Europe.

(2) Up / down tuning

75793CD68

① To automatically select a radio station, momentarily press the up tune seek button ⌄ or down tune seek button ⌄ for less than 3 seconds to search for the closest radio station.
To manually select a radio station, press the up tuning & down tuning button for longer than 3 seconds.
The radio frequency will move up or down step by step each time you press button.

(3) Station pre-set button

1	2
3	4
5	6

75793CD69~74

① Pressing these buttons shortly will recall your favorite pre-set radio stations.
To store your favorite stations into any of the 6 pre-set memories in each band (AM/FM/LW), use the following procedure :
a. Turn the radio ON and select the desired band.
b. Select the first station to be pre-set using the manual up/ down or automatic seek tuning control button.
c. Press the chosen pre-set button to store your selected station into and continue to hold it in. The beep sound will be momentarily heard and the pre-set number will apear on the LCD display indicating that the station is now set into that pre-set memory position and can be recalled at any time, by pressing that pre-set button.

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

BSM

75793CD76

① Pre-set scan (PS)

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

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

② Best station memory (BSM)

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

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

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

■ USB PLAYER

75793CD81-1

(1) USB function

① Connect a USB device if you want to listen to MP3 file in a USB device.

② It will automatically play MP3 file in the USB device and the LCD display will show "READING USB".

※ If there are no files on USB device, playback will revert back to the previous mode after displaying "NO FILE".

(2) AUX function

① If you want to listen to music of a external audio device, connect a external audio device through AUX cable.

② Change AUX mode by pressing MODE button.

If audio file of Audio device is playing, you can listen to music through speaker.

(3) File selection & cue / review button
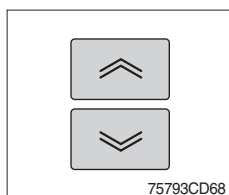
75793CD68

① File selection function

This button is used to select file up / down.

Each time the forward file select ∧ is pressed, file number is increased.

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

② Cue / review functions

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

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

(4) MP3 directory / file searching

① The D-, D+ button is used to select a particular directory and file.

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

Turn right / left the power button (type A) or selection knob (type B) to search the directory. Press the button when you find the wanted directory.

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

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

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

If you want to search the file in the located directory, turn right / left the power button (type A) or selection knob (type B) consecutively. Press the button when you find the wanted file. The unit will then play the selected file.

For instance, the file search changes in Dir01 as follows.

File01 → File02 → File03 → File04
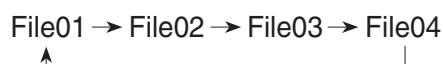
※ MP3 directory / file configuration

ROOT
|
Directory01

| File01 File02 File03 File04 **Dir02** | **Dir03** | **Dir04** |

File05 File06 **Dir05**   File07 File08 **Dir06**   File09 File10 **Dir07**

(5) ID3 v2 display

```
1 DISP
        75793CD82
```

① Disp button is used to change the display information.

While playing an MP3 file, you can change the file information shown on the LCD display.

Each time you press DISP (display), the display changes to show the following.

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

```
Directory name / file name (normal mode)
                    ↓
    Album name / performer / title
                    ↓
     File number / elapsed time
```

(6) File scan (SCN)

```
2 SCN
        75793CD83
```

① During USB play, press SCN button to play the first 10 seconds of each file on the whole file on the USB (SCN mark will appear on the LCD display).

When a desired file is reached, press the SCN button again to cancel the function.

The unit will then play the selected file.

※ In case of playing MP3 file, when the SCN (scan) button is pressed and held for longer than 2 seconds, the SCN mark will blink on the LCD display and all files in the selected directory will be introduced until the file scan mode is cancelled by pressing the SCN button again or by activating the random or repeat functions.

(7) Repeat play selector (RPT)
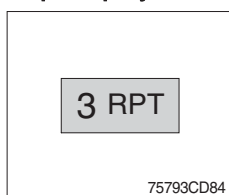
```
3 RPT
        75793CD84
```

① During USB play, press RPT button to play the selected file repeatedly (RPT will appear on the LCD display).

Play of the file will continue to repeat until this button is pressed again and the RPT disappears from the LCD display.

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

(8) Random play selector (RDM)
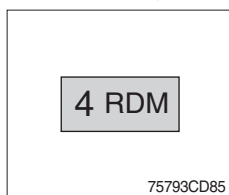
4 RDM

75793CD85

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

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

(9) Directory down
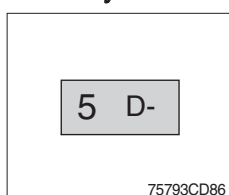
5 D-

75793CD86

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

(10) Directory up
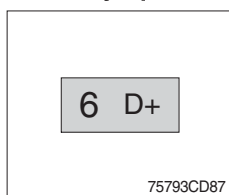
6 D+

75793CD87

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

※ If the MP3 file does not have a directory, the unit play MP3 at 10-file intervals.

※ If any MP3 file does not exist in USB, this button can not operate.

RADIO AND USB PLAYER (WITH BLUETOOTH) : MACHINE SERIAL NO.: #2480-

1   LCD   2

3 MODE MUTE   SCAN BSM 12

4 ☎   SEEK 13

5 ☎   TRACK 14

17 6 7 8 9 10 11 15 16

9403CD100

■ FRONT PANEL PRESENTATION

1 ········ Power ON/OFF,
         Volume UP/DOWN button

2 ········ Manual UP/DOWN Tuning,
         File search, SEL button

3 ········ Mode button,
          Audio mute button

4 ······· Call & Pair button

5 ······· Call end button

6 ······· Station preset 1
   DIS ··········· Display button

7 ······· Station preset 2

8 ······· Station preset 3
   RPT ··········· Repeat play button

9 ······· Station preset 4
   RDM ·········· Random play button

10 ······· Station preset 5
    DIR- ··········· Directory down button

11 ······· Station preset 6
    DIR+ ·········· Directory up button

12 ······· Scan play button (SCAN)
          Best station memory (BSM) button

13 ········ Auto tune up, Seek up button

14 ········ Auto tune down, Track down button

15 ········ USB connector

16 ········ AUX IN Jack

17 ········ MIC hole

RADIO AND USB PLAYER (WITHOUT BLUETOOTH) : MACHINE SERIAL NO.: #2480-

9403CD101

■ FRONT PANEL PRESENTATION

1 ········ Power ON/OFF,
    Volume UP/DOWN button

2 ········ Manual UP/DOWN Tuning,
    File search, SEL button

3 ········ Mode button,
    Audio mute button

4 ······· Radio seek up button

5 ······· Radio seek down button

6 ······· Station preset 1
DIS ··········· Display button

7 ······· Station preset 2

8 ······· Station preset 3
RPT ··········· Repeat play button

9 ······· Station preset 4
RDM ··········· Random play button

10 ······· Station preset 5
DIR- ··········· Directory down button

11 ······· Station preset 6
DIR+ ··········· Directory up button

12 ········ Scan play button (SCAN)
    Best station memory (BSM) button

13 ········ Track up button

14 ········ Track down button

15 ········ USB connector

16 ········ AUX IN Jack

■ GENERAL

(1) Power and volume button

9403CD102

① Power ON / OFF button

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

② Volume UP/DOWN control knob

Turn VOL knob (1) right to increase the volume level.
Turn VOL knob (1) left to decrease the volume.
After 5 seconds the display will return to the previous display mode.

③ Initial volume level set up

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

④ Clock ON/OFF control

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

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

⑤ Clock adjustment

With CLOCK ON selected, press VOL knob again after CLOCK ON display, the hour will blink, turn VOL knob right or left to adjust hour.
Simply press VOL again, the minute will blink, turn VOL knob to adjust minute. Then press VOL again to confirm the clock once finished.

(2) Menu Selection

9403CD103

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

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

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

② **Bass control**

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

③ **Treble control**

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

④ **Balance control**

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

⑤ **Fader control**

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

⑥ **EQ control**

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

EQ OFF ➔ CLASSIC ➔ POP ➔ ROCK ➔ JAZZ

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

⑦ Loud control

When listening to music at low volume levels, this feature will boost the bass and treble response. This action will compensate for the reduction in bass and treble performance experienced at low volume.

To select the loudness feature, press button (2) until LOUD is displayed, then turn knob (2) right or left to activate or deactivate loudness.

⑧ Beep control

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

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

(3) Mute control

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

(4) Mode selection

① Repeat press MODE button (3) to switch between FM1, FM2, AM, USB, AUX, BT MUSIC.

※ **If there is no USB, AUX, Bluetooth Phone connected, it would not display USB, AUX, BT when you press button (3).**

■ RADIO

(1) Mode button

9403CD104

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

(2) Manual tuning button

9403CD105

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

9403CD106

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

9403CD107

(4) Station preset button

9403CD108

① In radio mode, pressing buttons (6) to (11) will recall the radio stations that are memorized. To store desired stations into any of the 6 preset memories, in either the AM or FM bands, use the following procedure :

   a. Select the desired station.
   b. Press and hold one of the preset buttons for more than 2 seconds to store the current station into preset memory. Six stations can be memorized on each of FM1, FM2, and AM.

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

9403CD109

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

9403CD110

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

9403CD106

9403CD107

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

9403CD111

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

9403CD112

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

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

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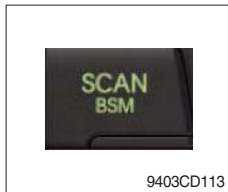
- SCAN playback : Simply press SCAN (12) button to play the first 10 seconds of each track.
- SCAN folder : Press and hold SCAN button for longer than 2 seconds to scan play the tracks in current folder.
- SCAN off : Simply press it again to cancel SCAN feature.

(6) Track Repeat Play (RPT) button

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

(7) Track Random Play (RDM) button

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

(8) ID3 v2 (DISP)

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

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

∗ USB Information and Notice
    a. Playback FILE SYSTEM and condition allowance.
      - FAT, FAT12, FAT16 and FAT32 in the file system.
      - V1.1, V2.2 and V2.3 in the TAG (ID3) version.
    b. Display up to 32 characters in the LCD display.
    c. No support any of MULTI-CAED Reader.
    d. No high speed playback but only playing with normal full speed.

    ※ DRM files in the USB may cause malfunction to playback in the radio unit.
    ※ The temperature below -10 Celsius, the audio unit with USB hook up would be affected to play well.

■ AUX OPERATION

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

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

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

※ **The audio quality of your media player and the audio tracks on it may not be of the same sound quality as the audio system is CD Player.**

※ **If the sound of the media player is too low compared with the radio or CD, increase the volume of the player.**

※ **If the sound of the media player is too loud and/or distorted, decrease the volume of the player.**

※ **When in AUX mode, only the Volume, Bass, Treble, EQ and Mode functions of the audio unit can be used.**

■ BLUETOOTH (if equipped)

1) Using a bluetooth wireless connection

(1) Your audio unit supports bluetooth wireless technology. You can set up a wireless link with bluetooth cellular phone.

(2) Keep PAIRING the cellular phone with audio unit in a few minutes as the phone are being switched on well enough.

※ Since this audio unit is on standby to connect with your cellular phone via bluetooth wireless technology, using this audio unit without running the engine can result battery drainage.

※ This audio unit phone call reception is on standby when ignition switch is set to ACC OFF or ON.

※ The line-of-sight distance between this audio unit and your cellular phone must be 10 meters or less for sending and receiving voice and data via bluetooth wireless technology. However the transmission distance may become shorter than the estimated distance depending on the environment in use.

※ Digital Noise & Echo suppression system provides the best sound clarity with little or no distortion (Echo & side tone will happen depending on cellular phone or service network).

※ To ensure the quality of calling, you should select a proper bluetooth VR level. This audio unit has already set with the best bluetooth VR level.

290F3CD215
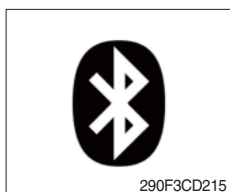
① Bluetooth icon
It will blink while establishing the bluetooth pairing.
It will light after a bluetooth device connected.

7709A3BT02
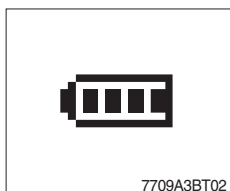
② Battery icon
It indicates the battery status of the connected bluetooth device.

7709A3BT03

③ Single strength icon
It indicates the signal strength of the connected bluetooth device.

2) Pairing in hands free modes

9403CD117

(1) Press and hold CALL button (4) for 2 seconds until you hear beep sound, then appears PAIR STR on the display.

(2) For the next procedure, go to cellular phone pairing mode.

(3) If it is in pairing status with audio unit and cellular phone, PAIRING will show on the display.

(4) If you want to exit pairing mode, press CALL END button (5) briefly while pairing, then it will show PAIR CLR on the display.

(5) Bluetooth Icon and PAIR OK appear on the display when pairing is successful.

3) Cellular phone pairing mode

(1) Browse your cellular phone menu and find the connectivity or bluetooth connection section.

(2) Select search for a new handsfree device function and allow the phone to find the mobile.

(3) HYUNDAI should appear on your cellular phone screen.

(4) Press connect menu among the handsfree option on your cellular phone.

(5) The cellular phone should prompt for a pin code. Insert the pin code 1234.

(6) The cellular phone should confirm that it has established a new paired connection.

(7) Close the menu. The pairing is now completed. It appears PAIR FAIL on the display for 3 seconds.

※ Each cellular phone type has distinct phone menu so you may need to refer to your manufactures instruction for the correct procedure on how to connect a new bluetooth device.

※ Please retry to the pairing instruction if HYUNDAI does not appear on the cellular phone screen.

※ Please select authorized, if there is authorized menu in the menu of bluetooth connection in your cellular phone.

※ Once the bluetooth pairing is completed between your cellular pone and this audio unit, the both units will be automatically recognized on its paring and when you turn on the key in your car even though this audio unit is turned off.

※ This audio unit can store up to 6 phones pairings. If the memory is full, the first stored paired phone will be deleted.

※ The connecting priority will be given to the last connected cellular phone.

※ If you want to change the connecting priority, try to connect this audio unit from the cellular phone.

4) Bluetooth connection and disconnection

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

9403CD118

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

9403CD117

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

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

※ In case of failure of bluetooth pairing :
- Delete item in paired list on your phone.
- Reset both phone by power off/on and the audio unit by ACC off/on.

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

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

5) Using the audio unit as a handsfree device

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

9403CD117/8
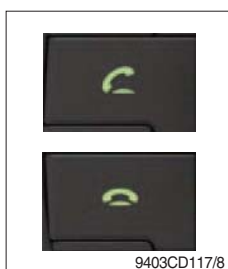
(2) To accept call
Press CALL button (4), it appears ANSWER CALL and follows TALKING on the display.

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

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

6) Audio transfer between the audio unit and phone

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

9403CD117

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

※ **This function will be a cause of disconnection of bluetooth link in some nokia phones, but you do not worry just press button (4) during private conversation, then switch back to the audio unit automatically.**

※ **The quality of calling between cellular phone and audio unit is better than calling between one audio unit and another one.**

7) Last call number dialing

9403CD117

(1) Press CALL button (4) briefly, it appears CALL TO, then simply press CALL button once again, it would make the last call with phone number display on LCD.
If Reject call is activated in your phone, then your cellular phone does not support Reject Call function.

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

8) To make a call by cellular phone

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

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

9) Using the audio unit as bluetooth music

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

(1) To play music, search the menu on your cellular phone as below :

i.e : Menu → File manager → Music → Option → Play via bluetooth.

It appears BT MP3 on the display.

(2) During BT MP3 playing, you could select the previous or next track by pressing SEEK up or TRACK down button on audio unit or operate via your cellular phone.

(3) To stop music, press button (5) briefly and it will automatically switch into the previous mode.

(4) To resume music playing, press the play button on your cellular phone.

※ This function maybe different depends on cellular phone. Please follow the cellular phone menu. Some kinds of phone need to pair once more for bluetooth MP3 connection.

※ This function will be caused to disconnect A2DP, AVRCP depends on cellular phone.

※ Information about songs (e.g.: the elapsed playing time, song title, song index, etc.) cannot be displayed on this audio unit.

■ RESET AND PRECAUTIONS

1) Reset function

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

(1) press and hold [SEEK ▽] [5 DIR-] simultaneously for about 5 seconds. (without Bluetooth)

Press and hold [☎] [5 DIR-] simultaneously for about 5 seconds. (with Bluetooth)

(2) Take out the fuse for the audio system in the vehicle once and then plug again.

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

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

2) Precautions

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

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

(1) Operation voltage : 9~32 volts DC, negative
(2) Output power : 40 watts maximum (20 watts x 2 channels)
(3) Tuning range

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

● AREA Selection :

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

(4) USB version : USB 1.1
(5) Bluetooth version : V2.1
(6) Bluetooth supported profile :

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

5) 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.

Handle   Upward
Downward
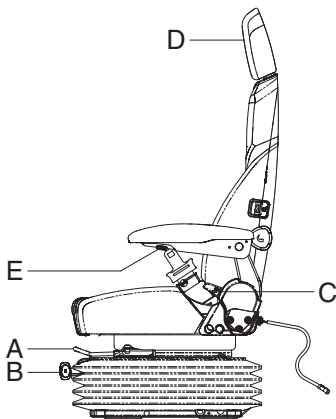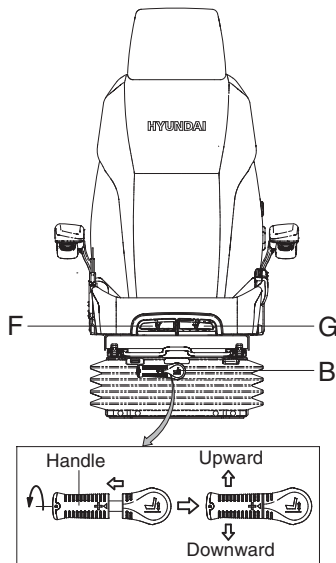
21093CD55

(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 140 mm (5.5") in 13 steps.

(2) Height/weight adjustment (B)
① Turn the handle to adjust seat upward or downward
· Turn to clockwise, the seat is moved to upward and the weight is increased.
If it is turned to counterclockwise, the seat is moved to downward and the weight is decreased.
② Method of changing direction (up/down)
· First, pull the handle to outside.
· Second, rotate 180° and release the handle.

(3) Reclining adjustment (C)
Pull lever C to adjust seat back rest.

(4) Arm rest adjustment (E)
This can be adjusted by pushing the button E to right and left.

(5) Head rest adjustment (D)
This is adjustable vertically to fit operator's requirements over 60 mm (2.4").
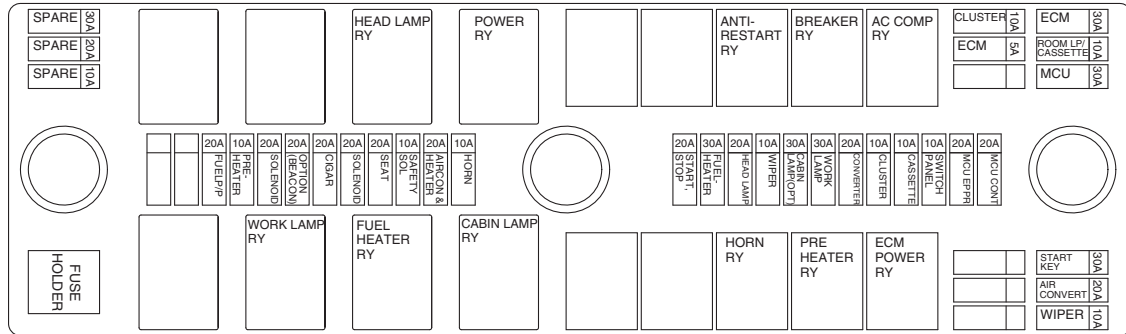
(6) Seat cushion tilt adjustment (F)
Pull lever F to adjust seat cushion tilting angle.

(7) Seat cushion length adjustment (G)
⚠ Pull lever G to adjust seat cushion forward or backward.

⚠ 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.

6) FUSE & RELAY BOX

SPARE 30A
SPARE 20A
SPARE 10A

HEAD LAMP RY POWER RY ANTI-RESTART RY BREAKER RY AC COMP RY

CLUSTER 10A ECM 30A
ECM 5A ROOM LP/CASSETTE 10A
MCU 30A

FUSE HOLDER

20A FUEL P/P
10A PRE HEATER
20A SOLENOID
20A OPTION (BEACON)
20A CIGAR
20A SOLENOID
20A SEAT
10A SAFETY SOL
20A AIRCON & HEATER
10A HORN

20A START, STOP
30A FUEL HEATER
20A HEAD LAMP
10A WIPER
30A CABIN LAMP(OPT)
30A WORK LAMP
20A CONVERTER
10A CLUSTER
10A CASSETTE
10A SWITCH PANEL
20A MCU EPPR
20A MCU CONT

WORK LAMP RY FUEL HEATER RY CABIN LAMP RY HORN RY PRE HEATER RY ECM POWER RY

START KEY 30A
AIR CONVERT 20A
WIPER 10A

21093CD56

(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) MCU

LED

HYUNDAI

21093CD57
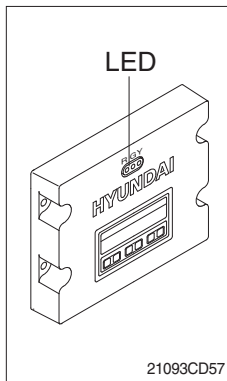
(1) To match the pump absorption torque with the engine torque, MCU varies EPPR valve output pressure, which control pump discharge amount whenever feedbacked engine speed drops under the reference rpm of each mode set.

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

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

G : green,　　　R : red,　　　Y : yellow

8) EMERGENCY ENGINE SPEED CONTROL CONNECTOR

CN-16&16A
CN-16B

CN-16A
NORMAL

CN-16B
CN-16
EMERGENCY

21093CD58
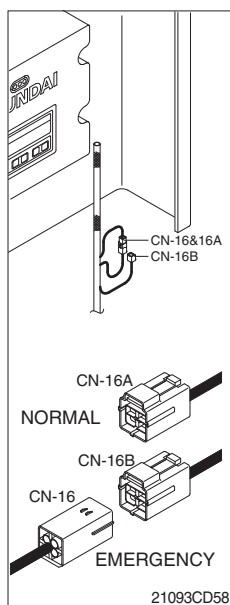
(1) When the CAN communication between the ECM and the MCU is abnormal due to malfunction of the MCU, change CN-16 connection from CN-16A to CN-16B and then control the engine speed by rotating accel dial switch.

※ **Never connect connector CN-16 with CN-16B when MCU is in normal operation.**

9) SERVICE METER

HOURS

21093CD59
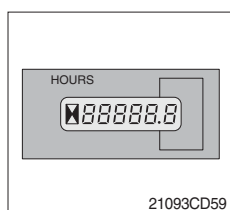
(1) This meter shows the total operation hours of the machine.

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

10) RS232 & J1939 SERVICE SOCKET

21093CD61
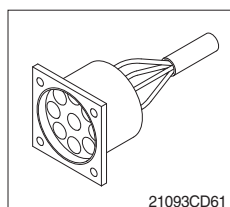
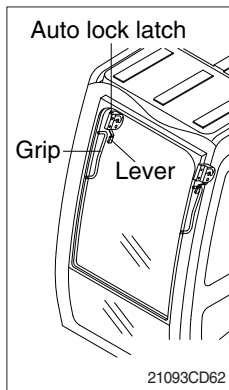(1) MCU communicates the machine data with Laptop computer through RS232 service socket.

(2) ECM communicates the engine data with cummins INSITE adapter through J1939 service socket.

① ECM fault code check

② ECM program change

③ Engine data monitoring & test

11) UPPER WINDSHIELD

Auto lock latch

Grip — **Lever**

21093CD62

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

① Pull both levers with hold both grips that are located at the top of the windshield frame and push the windshield upward.

② Hold both grips and back into the lock position until auto lock latch is engaged, then release the lever locked position.

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

Auto lock latch

21093CD63
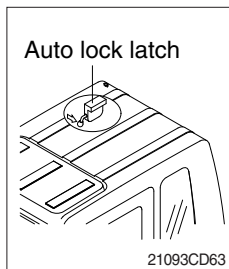
(2) Perform the following procedure in order to close the upper windshield.

① Pull the lever of the auto lock latch in order to release the auto lock latch.

② Reverse above step ① and ② in order to close the upper windshield.