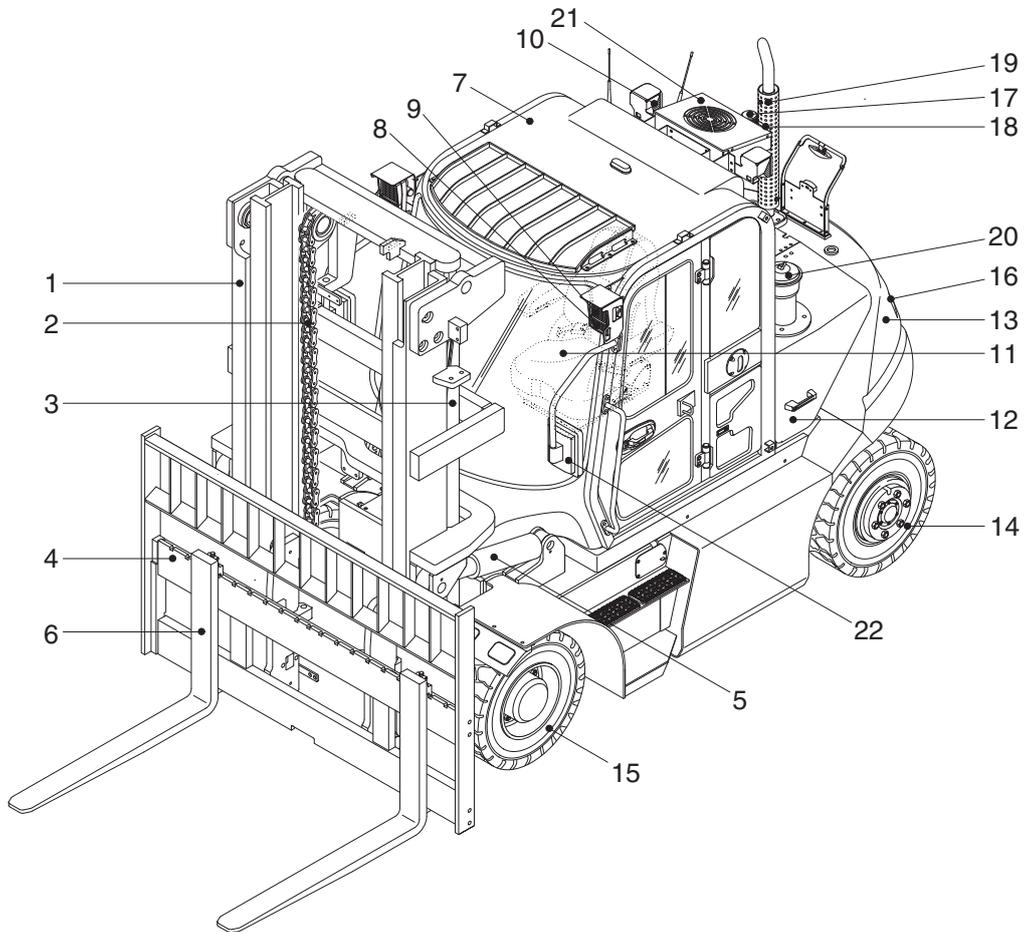


3. KNOW YOUR TRUCK

1. GENERAL LOCATIONS

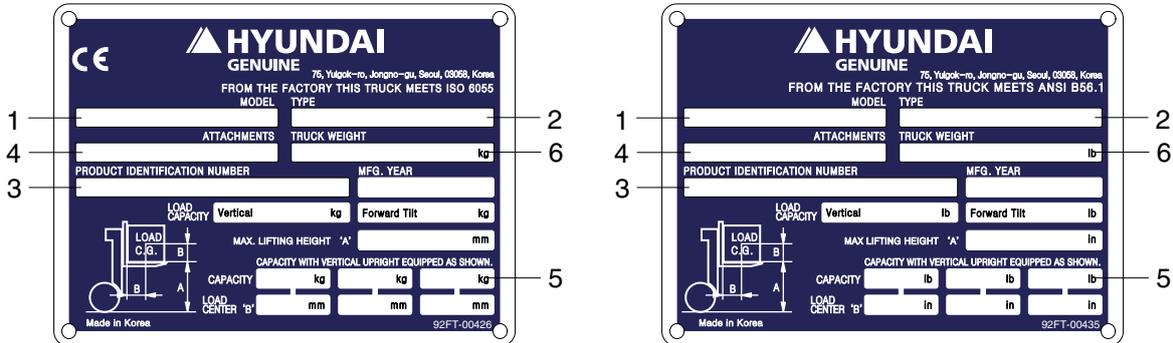


50D9OM54

- | | | |
|-----------------------|--------------------------|--------------------------|
| 1 Mast | 9 Head lamp | 17 Beacon lamp (opt) |
| 2 Lift chain | 10 Rear work lamp (opt) | 18 Camera (opt) |
| 3 Lift cylinder | 11 Operator's seat | 19 Silencer |
| 4 Carriage & backrest | 12 Bonnet | 20 Pre-cleaner |
| 5 Tilt cylinder | 13 Counterweight | 21 Air conditioner (opt) |
| 6 Forks | 14 Rear wheel | 22 Rear view mirror |
| 7 Cabin | 15 Front wheel | |
| 8 Turn signal lamp | 16 Rear combination lamp | |

2. DATA/SAFETY PLATE AND DECAL

1) TRUCK DATA AND CAPACITY PLATE



(1) Truck model number or registered name

(2) Truck type

The type is indicated a type of the truck such as diesel, LPG or battery.

(3) Truck serial number

An identification number assigned to this particular truck and should be used when requesting information or ordering service parts for this truck from your authorized HYUNDAI dealer. The serial number is also stamped on the frame.

(4) Attachment description (If any installed)

The user must see that the truck is marked to identify the attachment (s), including the weight of the truck/attachment combination and truck capacity with the attachment.

(5) Capacity rating, load center, and lifting height data

Shows the maximum load capacity of this truck with relation to load centers and fork heights (See diagram on plate). Personal injury and damage to the truck can occur if these capacities are exceeded.

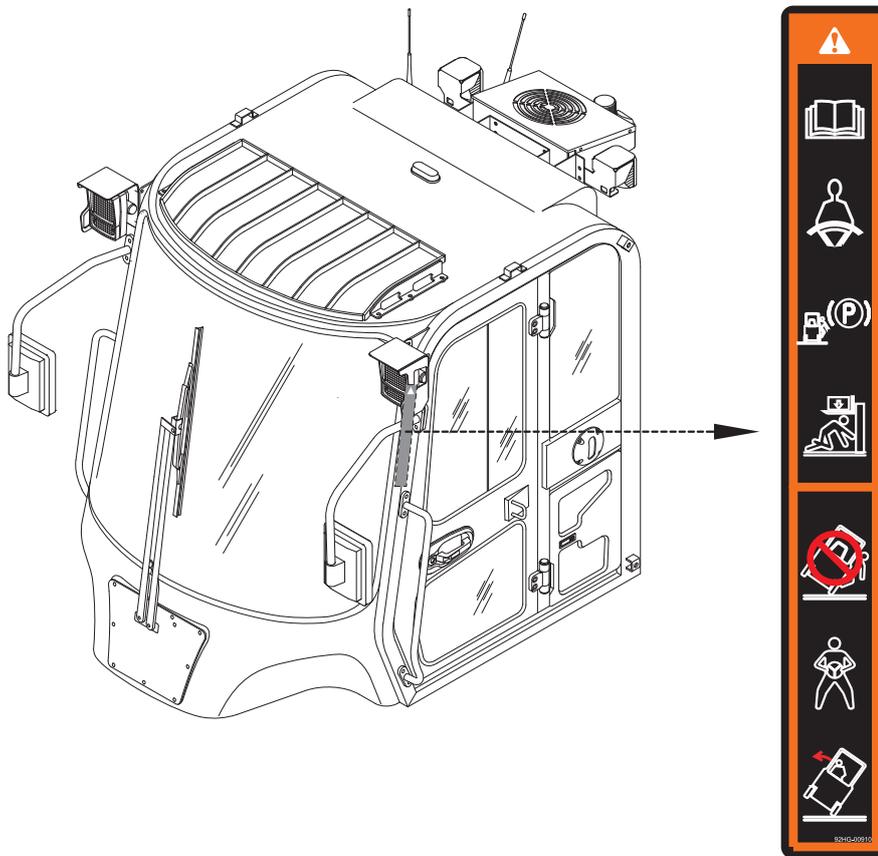
Do not exceed the maximum capacity specified.

(6) Truck weight

The approximate weight of the truck without a load on the forks. This weight plus the weight of the load must be considered when operating on elevators, elevated floors, etc. to be sure they are safe.

▲ Before modifications that affect the stability of safety systems are made written approval from HYUNDAI. Contact your authorized HYUNDAI dealer for a new nameplate showing the revised capacity.

2) OPERATOR SAFETY WARNING DECAL



50D90M59

▲ Safety and warning decals are placed in conspicuous locations on the truck to remind you of essential procedures or to prevent you from making an error that could damage the truck or possibly cause personal injury. You should know, understand, and follow these instructions. Safety and warning decals. Should be replaced immediately if missing or defaced (Damaged or illegible). Refer to the page 0-6 for the location of all decals.

▲ Operator/Tip-over warning decal

This decal is located on cabin's upper-left side frame. Its purpose is to remind the operator that staying in the seat provides the best chance of avoiding injury in the event of a truck-tipping or driving off a dock mishap.

Lift trucks can be tipped over if operated improperly. Experience with lift truck accidents has shown that the driver cannot react quickly enough to jump clear of the truck and cabin as the truck tips. To protect operators from severe injury or death in the event of a tip over, it is best to be held securely in the seat. So, please, always buckle up when driving your lift truck.

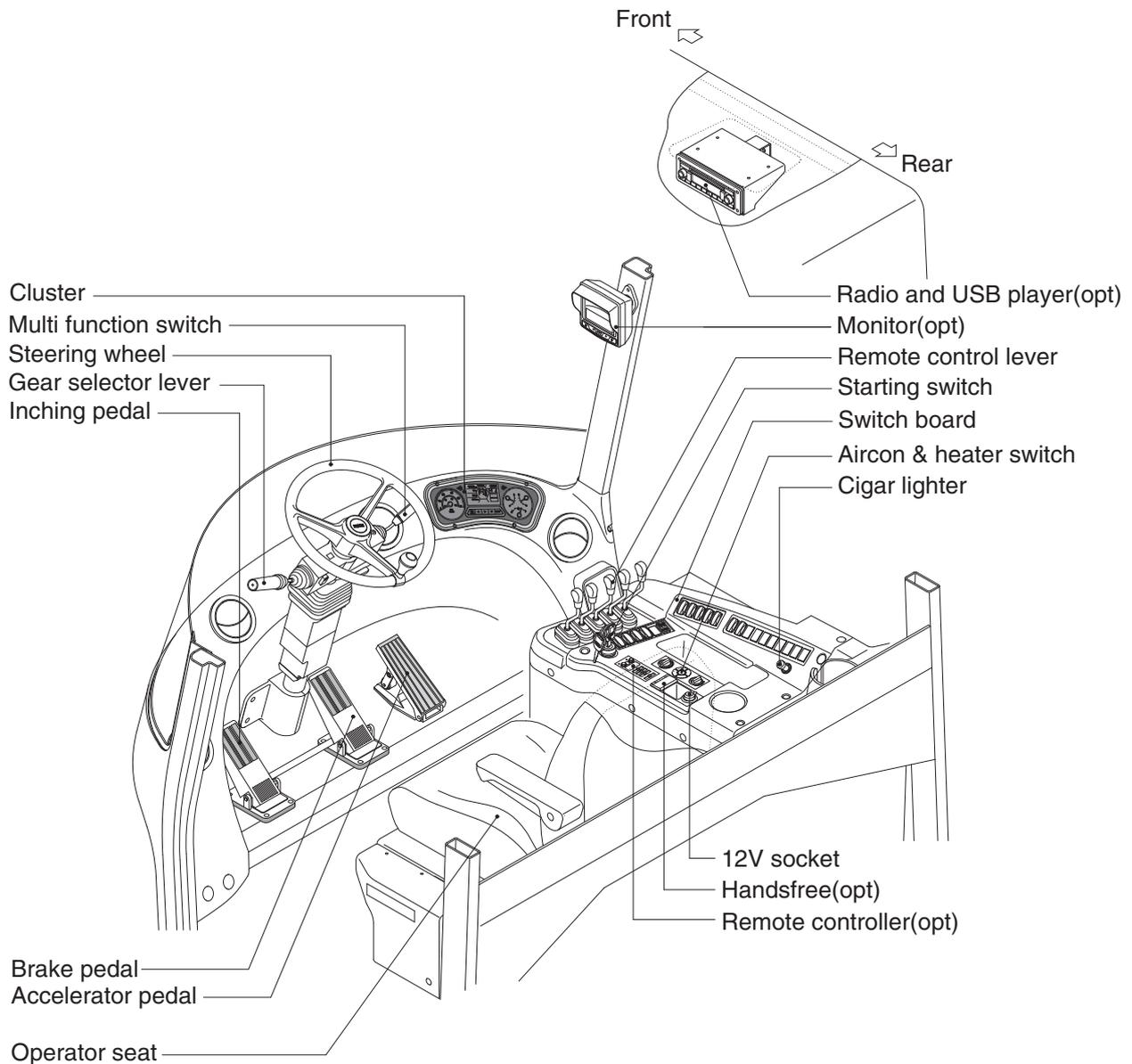
3. CAB DEVICES

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 truck to be monitored at a glance.

(2) It is equipped with a safety warning system for early detection of truck malfunction.



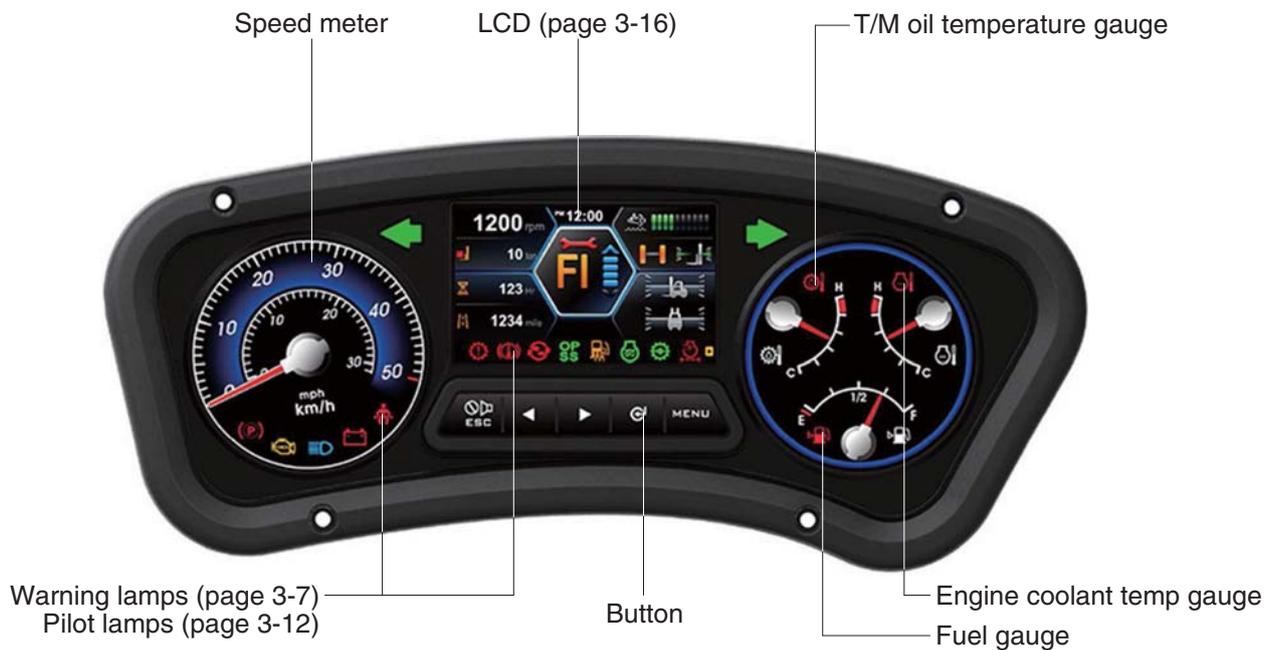
50D9CD01

4. CLUSTER

1) STRUCTURE

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

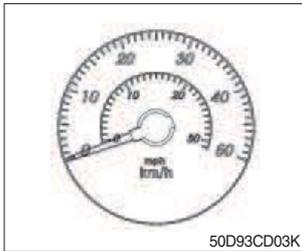
- Gauges : Indicate operating status of the truck.
 - Warning lamps : Indicate abnormality of the truck.
 - Pilot lamps : Indicate operating status of the truck.
 - LCD : Display the truck model, error code and engine speed etc.
 - Buttons : Select the truck model, error code and engine speed etc and stop the buzzer sound.
- ※ The cluster installed on this truck does not entirely guarantee the condition of the truck. Daily inspection should be performed according to chapter 7. **PLANNED MAINTENANCE AND LUBRICATION.**
- ※ When the cluster provides a warning immediately check the problem, and perform the required action.



50D9CD02

2) GAUGE

(1) Speed meter



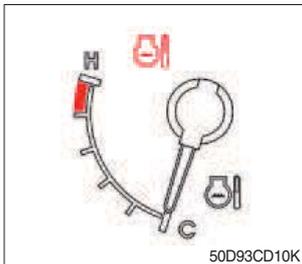
- ① The speed meter displays the speed of truck in mph and km/h.
 - 0~50 km/h
 - 0~31 mph

(2) Fuel gauge



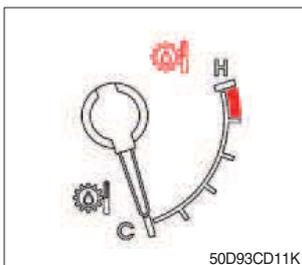
- ① This gauge indicates the amount of fuel in the fuel tank.
 - ② Fill the fuel when the indicator moves E point, refuel as soon as possible to avoid running out of fuel.
- ※ If the gauge indicates below E point even though the truck is on the normal condition, check the electric device as that can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

(3) Engine coolant temperature gauge



- ① This indicates the temperature of coolant.
 - White range : 40~104°C
 - Red range : Above 104°C (219°F)
 - ② Keep idling engine at low speed until the indicator is in the operating range.
 - ③ If the indicator is in the red range, turn OFF the engine and check the radiator and engine.
- ※ If the gauge indicates red range even though the truck is on the normal condition, check the electric device as that can be caused by the poor connection of electricity or sensor.

(4) Transmission oil temperature gauge



- ① This range indicates the temperature of transmission oil.
 - White range : 40~107°C
 - Red range : Above 107°C (225°F)
- ② Keep idling engine at low speed until the indicator is in the operating range.
- ③ If the indicator is in the red range, it means the transmission is overheated. Be careful that the indicator does not move into the red range.

3) WARNING LAMPS



50D9CD02-1

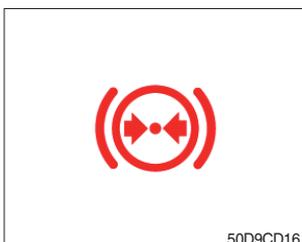
※ When the warning and pilot lamps occur over eight, you can display next lamps by push the button (▶).

(1) Engine check lamp



- ① This lamp lights ON during a nonfatal engine system error. The engine can still be run, but the fault should be corrected as soon as possible.

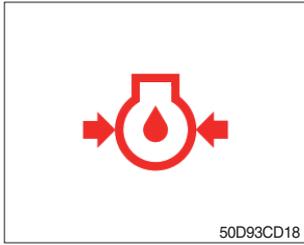
(2) Brake fail warning lamp



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

※ Do not operate until the problems are corrected.

(3) Engine oil pressure warning lamp



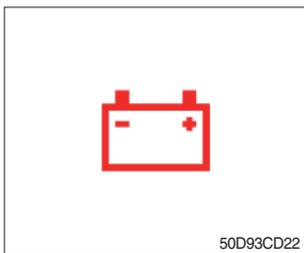
- ① This lamp comes ON for a while after starting the engine because of the low oil pressure.
- ② If the lamp comes ON during engine operation, shut OFF engine immediately. Check oil level.

(4) Air cleaner warning lamp



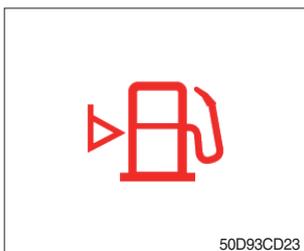
- ① This lamp operates by the vacuum caused inside when the filter of air cleaner is clogged.
- ② Check the filter and clean or replace it when the lamp is ON.

(5) Battery charging warning lamp



- ① This lamp is ON after key switch is turned ON, it is turned OFF after starting the engine.
- ② Check the battery charging circuit when this lamp comes ON during engine operation.

(6) Fuel low level warning lamp



- ① Fill the fuel immediately when the lamp is turned ON.

(7) Water in fuel warning lamp



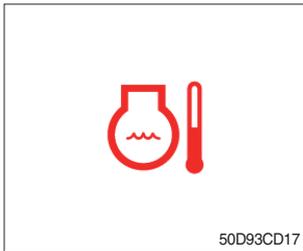
- ① This lamp lights up when the prefilter is filled with water or malfunctioning.
- ※ **When this lamp lights up, stop the truck and spill water out of the prefilter.**

(8) Seat belt warning lamp



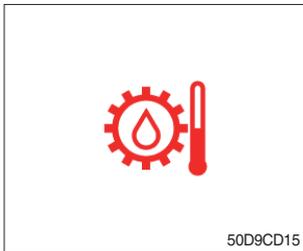
- ① This lamp lights ON for the first five seconds after starting the engine.

(9) Engine coolant temperature warning lamp



- ① This lamp is turned ON when the temperature of cooling water is over the normal temperature(104°C, 219°F).
- ② Check the cooling system when the lamp is ON.

(10) Transmission oil temperature warning lamp



- ① This lamp informs the operator that transmission oil is above the specified temperature (107°C, 225°F).
 - Lamp ON : Abnormal
 - Lamp OFF : Normal
- ※ **When this lamp lights up during operation, stop the engine and check the truck.**

(11) Transmission error warning lamp



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

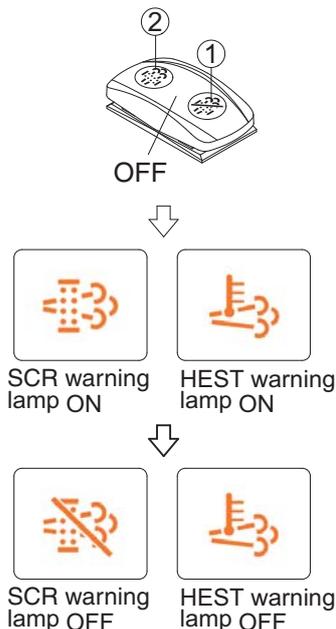
(12) SCR (Selective Catalytic Reduction) CLEANING WARNING LAMP



① This lamp lights ON when the SCR cleaning is needed and lamp flashes when manual SCR cleaning is activated as table below.

Condition	Warning lamp				Remark
	SCR cleaning lamp	DEF Low Lamp	Engine Check Lamp	Engine Stop Lamp	
SCR needs to be cleaned	On	-	-	-	1. Change to a more challenging duty cycle. 2. Perform manual SCR cleaning.
SCR needs to be cleaned immediately	On	-	On	-	Manual SCR cleaning is required.
Stationary SCR cleaning status	Flash	-	-	-	-
DEF level initial warning	-	On	-	-	DEF level 10% Engine error code 3497
DEF level critical warning	-	Flash	-	-	DEF level 5% Engine error code 3498
DEF level initial warning	-	Flash	On	-	DEF level 2.5% Engine error code 1673, 25% derate
DEF level secondary derate warning	-	Flash	On	-	DEF level 0% Engine error code 3547,3714 50% derate, 30 min.
DEF level final derate warning	-	Flash	On	On	Engine error code 3712 Contact Hyundai service center or dealer.

※ Manual SCR cleaning method



50D93CD143

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

① Stop and park the machine.

② Push the switch to position ② to initiate the manual SCR cleaning.

※ Refer to the page 3-29 for the switch operation.

※ The engine speed may increase during SCR cleaning and it will take approximately 20~60 minutes depending on condition.

③ The SCR cleaning lamp flash and HEST warning lamp will light on during the manual SCR cleaning function is operating.

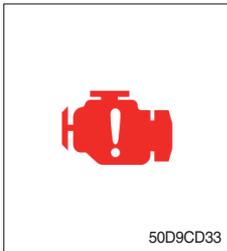
④ The SCR cleaning and/or HEST warning lamp will light OFF when the SCR cleaning function is completed.

(13) DEF (Diesel Exhaust Fluid) low warning lamp



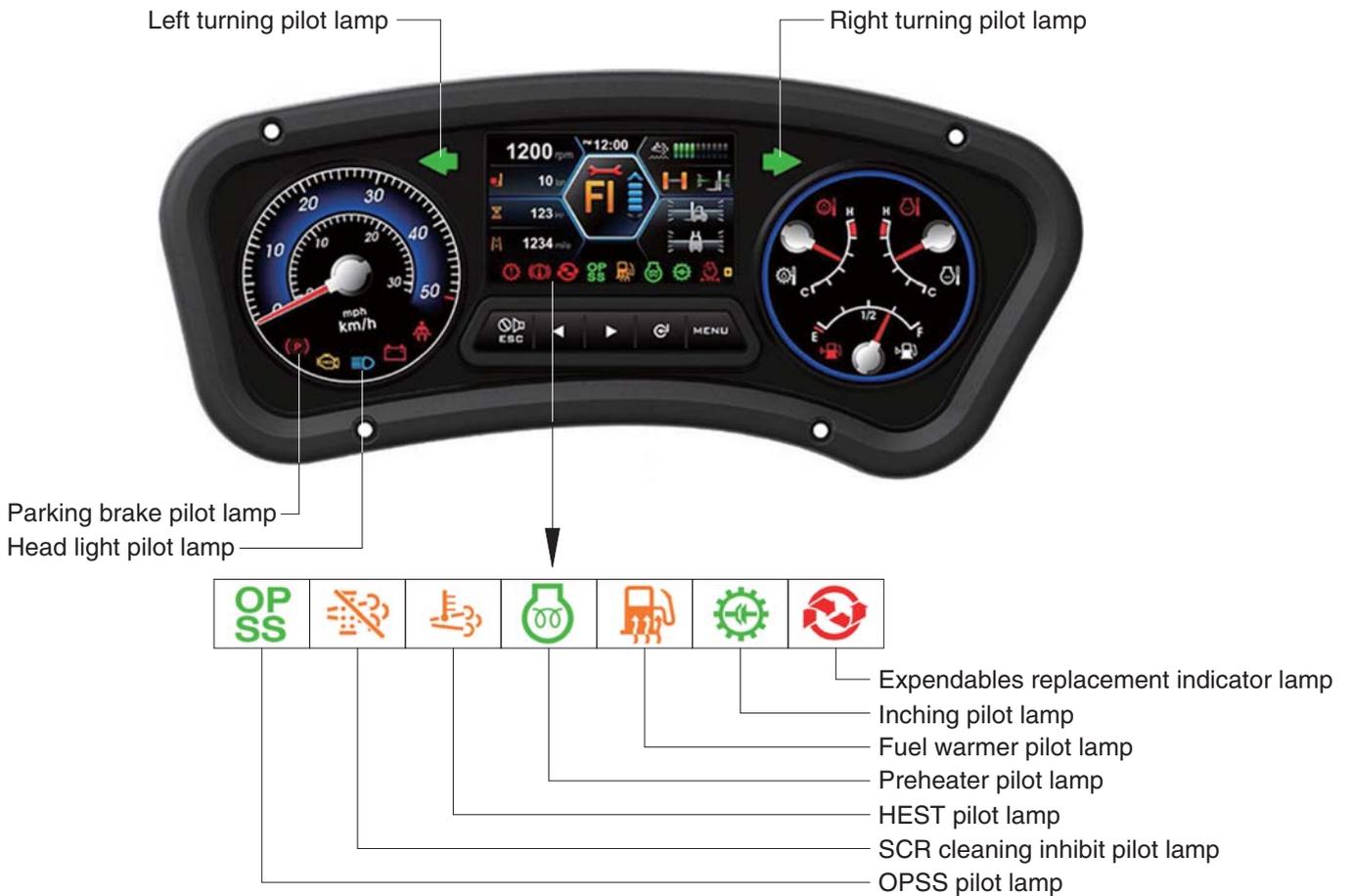
- ① This warning lamp indicates, when illuminated or flashing, that the diesel exhaust fluid level is low.
- ※ **Add the diesel exhaust fluid into DEF tank.**
- ※ **Refer to the page 3-10 for detail.**

(14) Engine stop warning lamp



- ① When this warning lamp lights ON, stop the engine immediately and check the DEF level and related parts of the engine.
- ※ **Please contact your Hyundai service center or local dealer.**

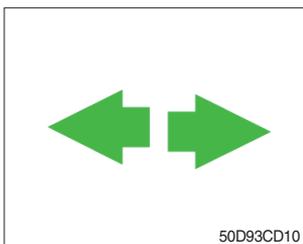
4) PILOT LAMPS



50D9CD02-2

※ When the warning and pilot lamps occur over eight, you can display next lamps by push the button (▶).

(1) Direction pilot lamp



① This lamp flashes when the signal indicator lever is moved.

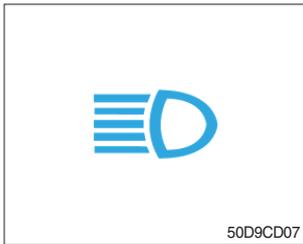
(2) Parking brake pilot lamp



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

※ Check the lamp is OFF before driving.

(3) Head light pilot lamp



- ① This lamp comes ON when the main light switch is operated to 2nd step.

(4) Preheater pilot lamp



- ① This lamp lights ON when start switch is turned clockwise to the ON position. Light will turn off after approximately 15~45 seconds, depending on engine coolant temperature, indicating that preheating is completed.
- ② When the lamp goes out the operator should start cranking the engine.

※ Refer to page 5-12.

(5) Inching pilot lamp



- ① When the inching switch is pressed, the lamp lights ON.

(6) Fuel warmer pilot lamp



- ① This lamp lights ON when the fuel warmer switch is pressed.

(7) OPSS pilot lamp



- ① This signal lamp lights ON when the operator leaves the seat.
- ② Powered travel movement of the truck shall be possible only if the operator is in the normal operating position. Transmission will automatically shift to neutral upon the exiting of the operator.
- ③ The forward/reverse lever must be cycled through neutral with the operator in the normal operating position to regain powered direction control.

(8) SCR cleaning inhibit pilot lamp



- ① This pilot lamp lights ON when the SCR cleaning switch is pushed inhibit position, therefore automatic and manual SCR cleaning can not occur. It should be inhibited, before causing fire due to the exhaust gas in high temperature.

※ Refer to the page 3-37 for the SCR cleaning switch.

(9) HEST (High exhaust system temperature) pilot lamp

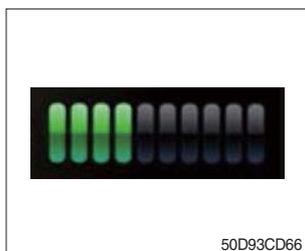


- ① This warning lamp indicates, when illuminated, that exhaust temperatures are high due to SCR cleaning.
- ② The lamp will also illuminate during a manual SCR cleaning.
- ③ When this lamp is illuminated, be sure the exhaust pipe outlet is not directed at any surface or material that can melt, burn,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

▲ When this lamp is illuminated, the exhaust gas temperature could reach 800°C [1500°F], which is hot enough to ignite or melt common materials, and to burn people.

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

(10) DEF (Diesel Exhaust Fluid) level pilot lamp



- ① This gauge indicates the level of DEF (10 steps).
- ② Fill the DEF when the level is low.

(11) Expendables replacement indicator lamp



- ① This lamp lights ON if expendables which must be replaced exist.
- ② The lamp will light up only 3 minutes since KEY ON, and then light off.
- ③ Please check the expendables management list in the maintenance menu.

4) CLUSTER BUTTON

Each button has the following function.



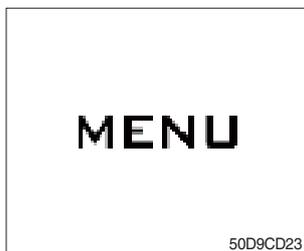
50D9CD121

(1) Buzzer stop/ESC button



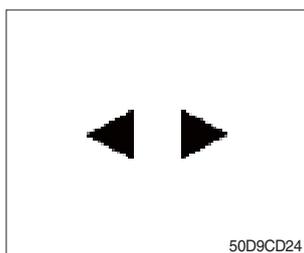
- ① This button is used to stop the buzzer sound.
- ② If another alarm condition occurs after this button has been pressed, the alarm buzzer will re-sound.

(2) Menu button



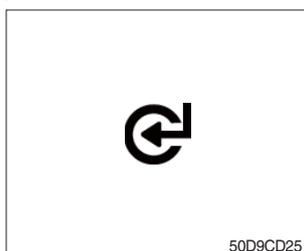
- ① Move in menu (left, up / right, down).

(3) Move button



- ① Move in menu (left, up / right, down).
- ② Decrease / Increase input value.
- ③ When the warning and pilot lamps occur over six, you can display next lamps by push the button (▶).

(4) Enter button

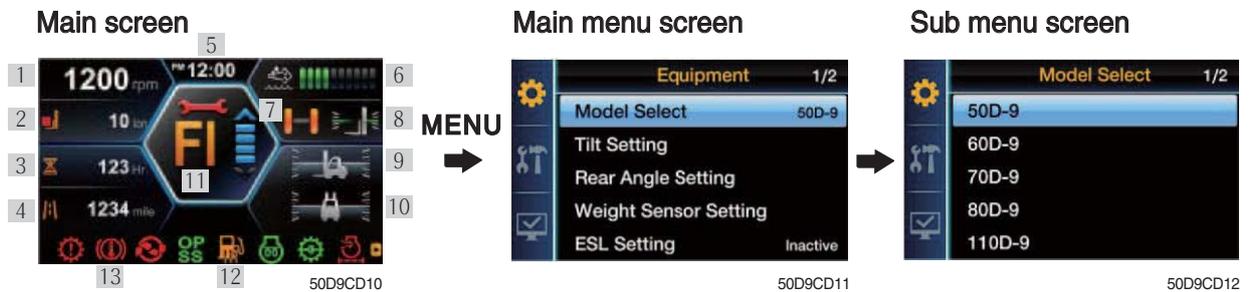


- ① This button is used to select menu.

5) LCD

(1) Main screen

- ※ You can select or set the menu by the button of the cluster.
- ※ Please refer to the page 3-15 for the selection and change of the menu and input value.



Communication error



- ※ Main screen when occurred communication error between the cluster and TCU/ MCU / ECU

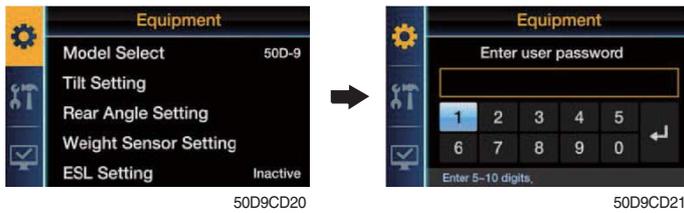
- | | |
|--------------------------|--|
| 1 Engine rpm | 8 Mast angle (opt) |
| 2 Load indicator (opt) | 9 Vehicle angle X (opt) |
| 3 Hour meter | 10 Vehicle angle Y (opt) |
| 4 Odometer | 11 T/M info (error code, gear, warning) |
| 5 Current time | 12 Temperature (outdoor temp., setting temp) |
| 6 DEF level gauge | 13 Warning and pilot lamps |
| 7 Rear wheel angle (opt) | |

(2) Main menu

No.	Main menu	Sub menu	Description
1	 Equipment <small>50D9CD14K</small>	Model select Tilt setting Rear angle setting Weight sensor setting ESL setting Vehicle max speed limit AEB setting (R) MCU/cluster information	Model select Tilt setting (mast and vehicle angle) Rear angle setting Cross-section, load weight adjust, weight display setting, load indicator buzzer ESL setting Vehicle max speed limit (10~30 km) AEB setting (R)MCU/cluster information
2	 Maintenance <small>50D9CD15K</small>	Current failure history Maintenance management Signal statue User password change RMCU comm	Display failure status (engine, transmission) Replacement, Change interval oils and filters Display information of sensors User password change (5~10 digit) Orbcomm, GPS antenna
3	 Display setting <small>50D9CD16K</small>	LCD adjustment Time setting Unit setting Language setting AS phone number ESL password change Maintenance management	LCD brightness setting Time setting Unit setting (temp, speed, weight, pressure) Language setting (13 languages) Check and change AS phone number ESL password change (5~10 digit) Maintenance information (cycle, elapsed time, change count, alarm info)

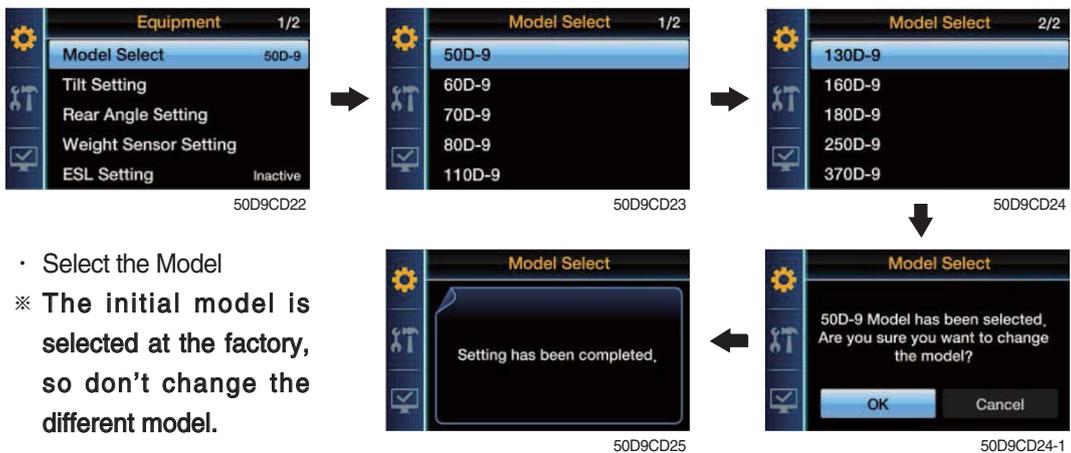
(3) Equipment

① Choose the equipment



- To enter the menu, you must input user password.
- Default password is '00000'
- You should set password by five to ten digit.

② Model select



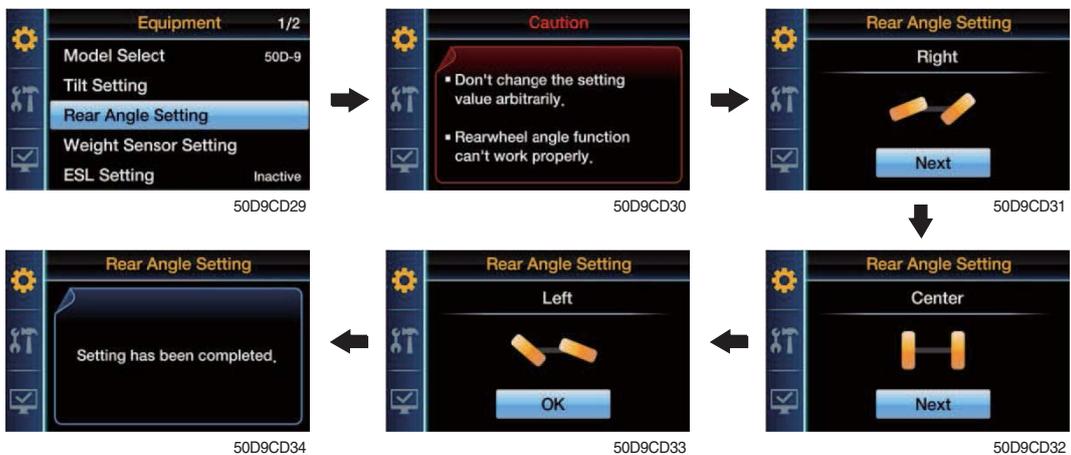
- Select the Model
- ※ **The initial model is selected at the factory, so don't change the different model.**

③ Tilt setting



- Set the offset about mast angle sensors and vehicle angle sensors.

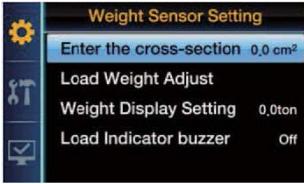
④ Rear angle setting



- The user revises a forklift truck steering angle.
- Display set to approve a condition.
 - Right set rear wheel calibration.
 - Center set rear wheel calibration.
 - Left set rear wheel calibration.

⑤ Weight sensor setting

a. Cross-section



50D9CD35 → 50D9CD36 → 50D9CD37 → 50D9CD38

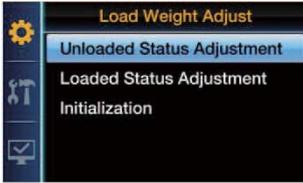
- Enter the designated cross-section (cm²).

Mast spec	50/60/70/80D-9
V mast	113.49
TS mast	141.76
TF mast	132.73

b. Load weight adjust

- Unloaded status adjustment

In the unloaded from the ground waiting 5 seconds after lift 30 cm, and tare ON.

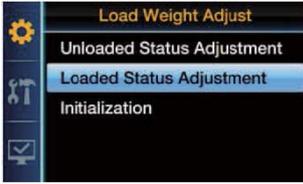





50D9CD39 → 50D9CD40 → 50D9CD41 → 50D9CD42

- Loaded status adjustment

Loaded enter the weight.
 -> In the loaded from the ground waiting 5 seconds after lift 30 cm.
 -> Weight correction ON.

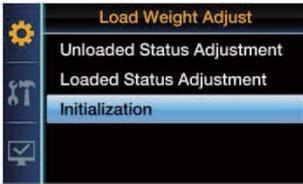






50D9CD39 → 50D9CD44 → 50D9CD45 → 50D9CD46 → 50D9CD47

- Initialization

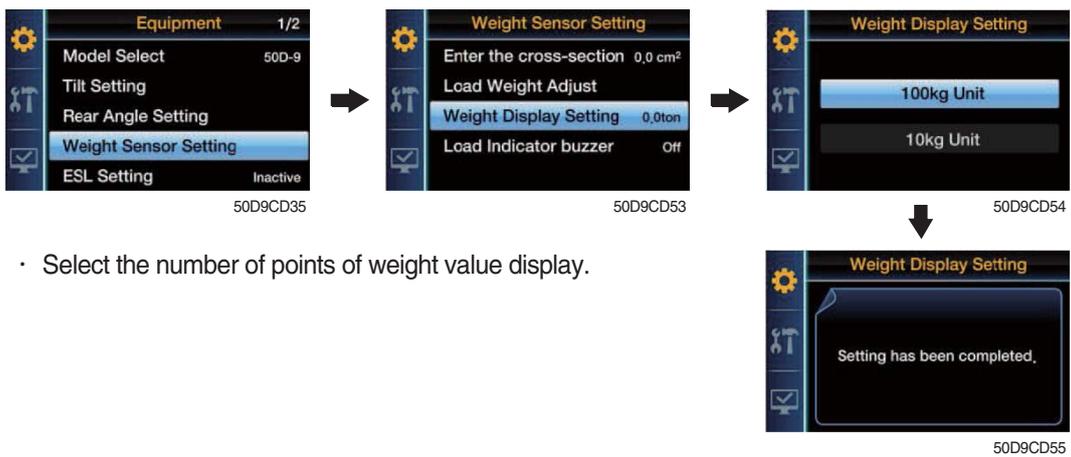
It is initialized loaded status and unloaded status.



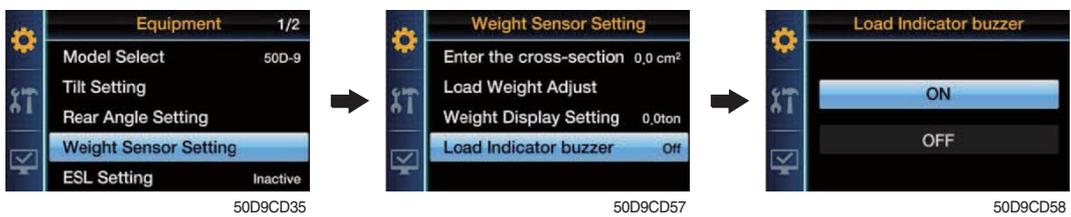
50D9CD39 → 50D9CD49 → 50D9CD50 → 50D9CD51

c. Weight display setting



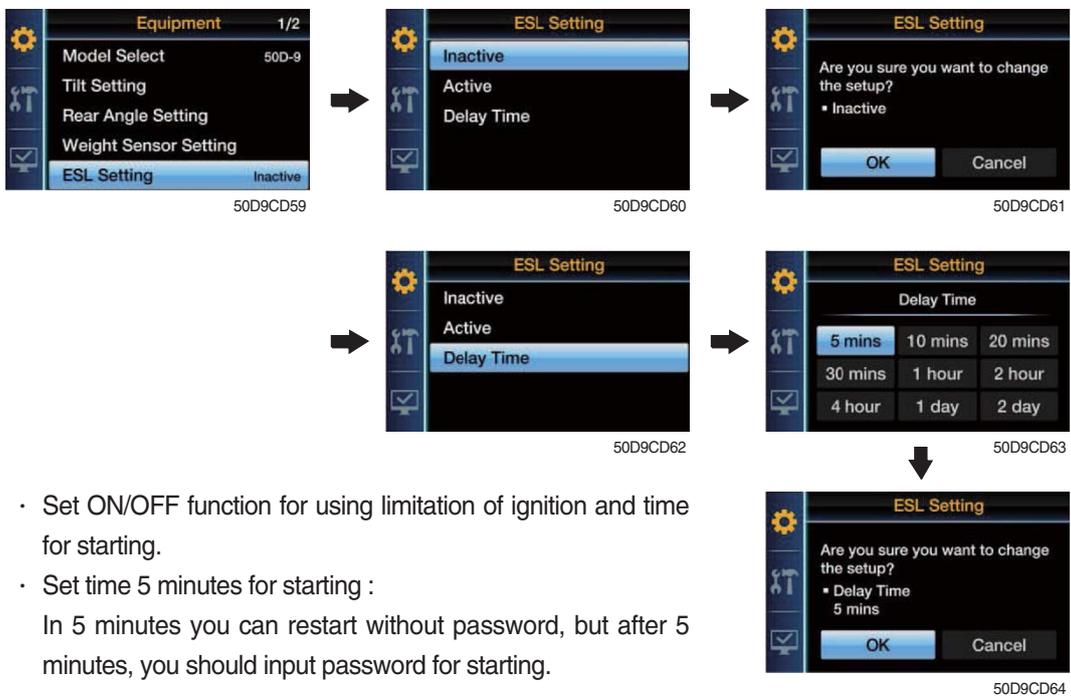
- Select the number of points of weight value display.

d. Load indicator buzzer



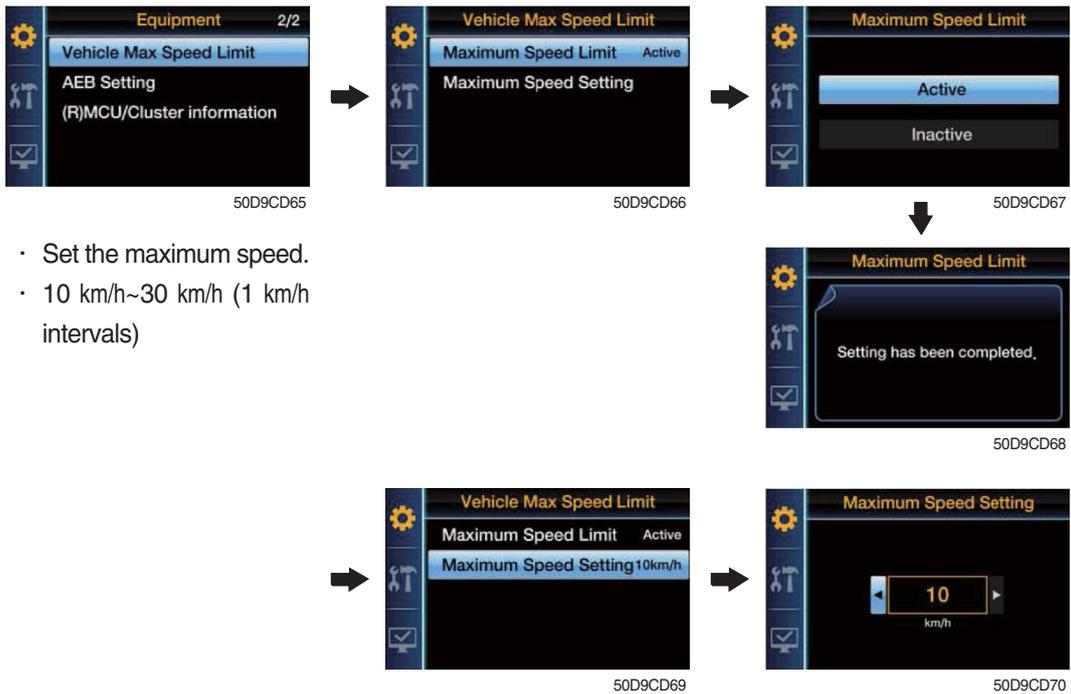
- Choose using buzzer when over weight.

⑥ ESL setting



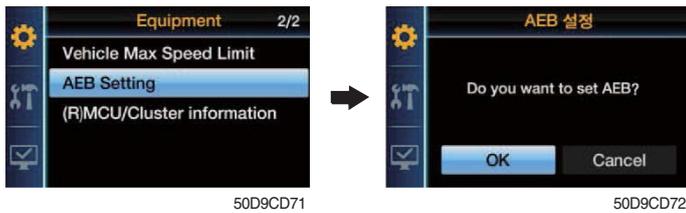
- Set ON/OFF function for using limitation of ignition and time for starting.
- Set time 5 minutes for starting :
In 5 minutes you can restart without password, but after 5 minutes, you should input password for starting.

⑦ Vehicle max speed limit



- Set the maximum speed.
- 10 km/h~30 km/h (1 km/h intervals)

⑧ AEB setting



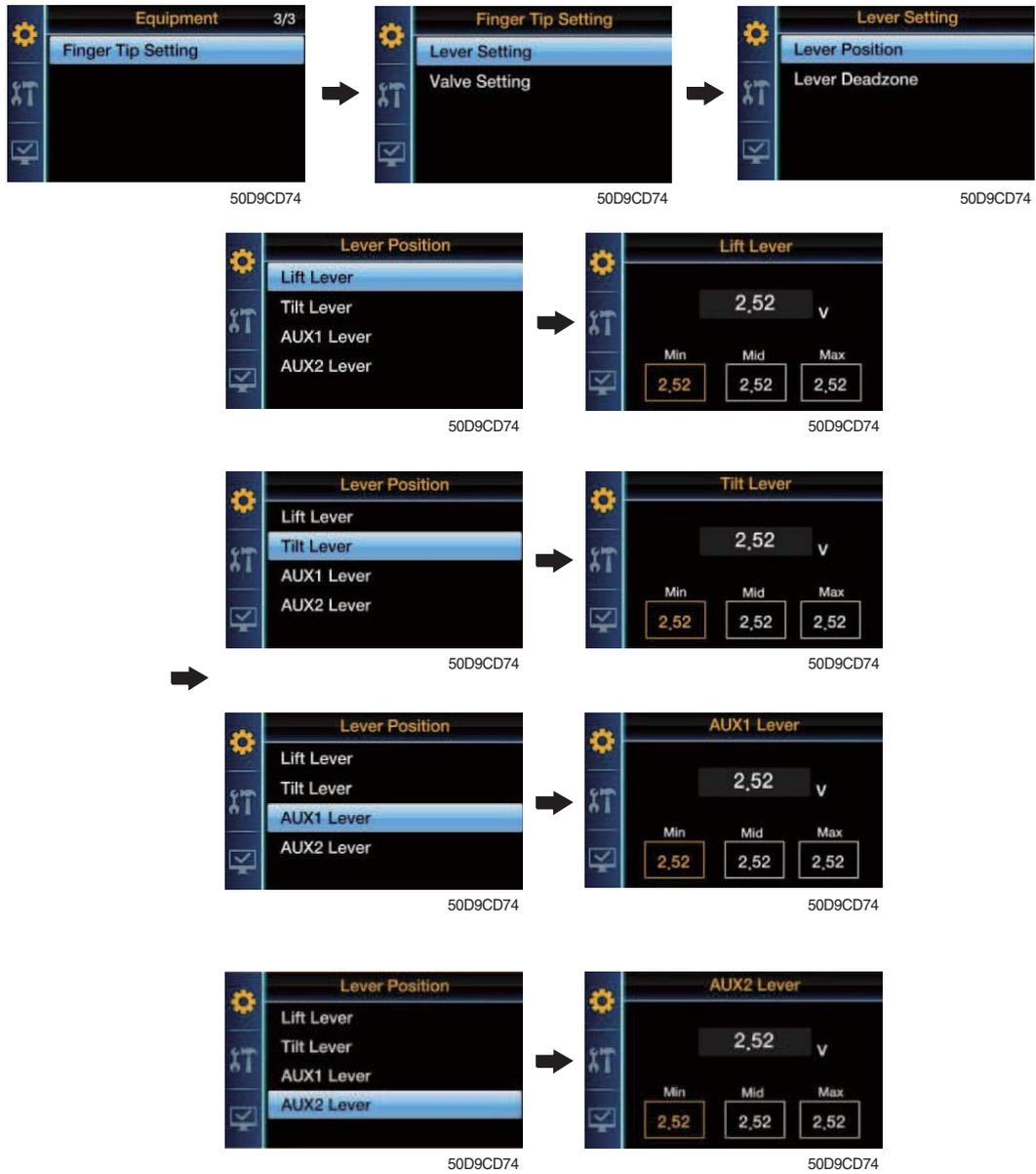
- Press OK button, then calibration will be started, for cancel, press Menu/ECS/Enter button.
- When it is finished (OK sign at gear box), Press Menu/ECS/Enter button.
- Start the engine : AEB start
- KEY ON : Brake pedal sensor calibration

⑨ (R) MCU / Cluster information



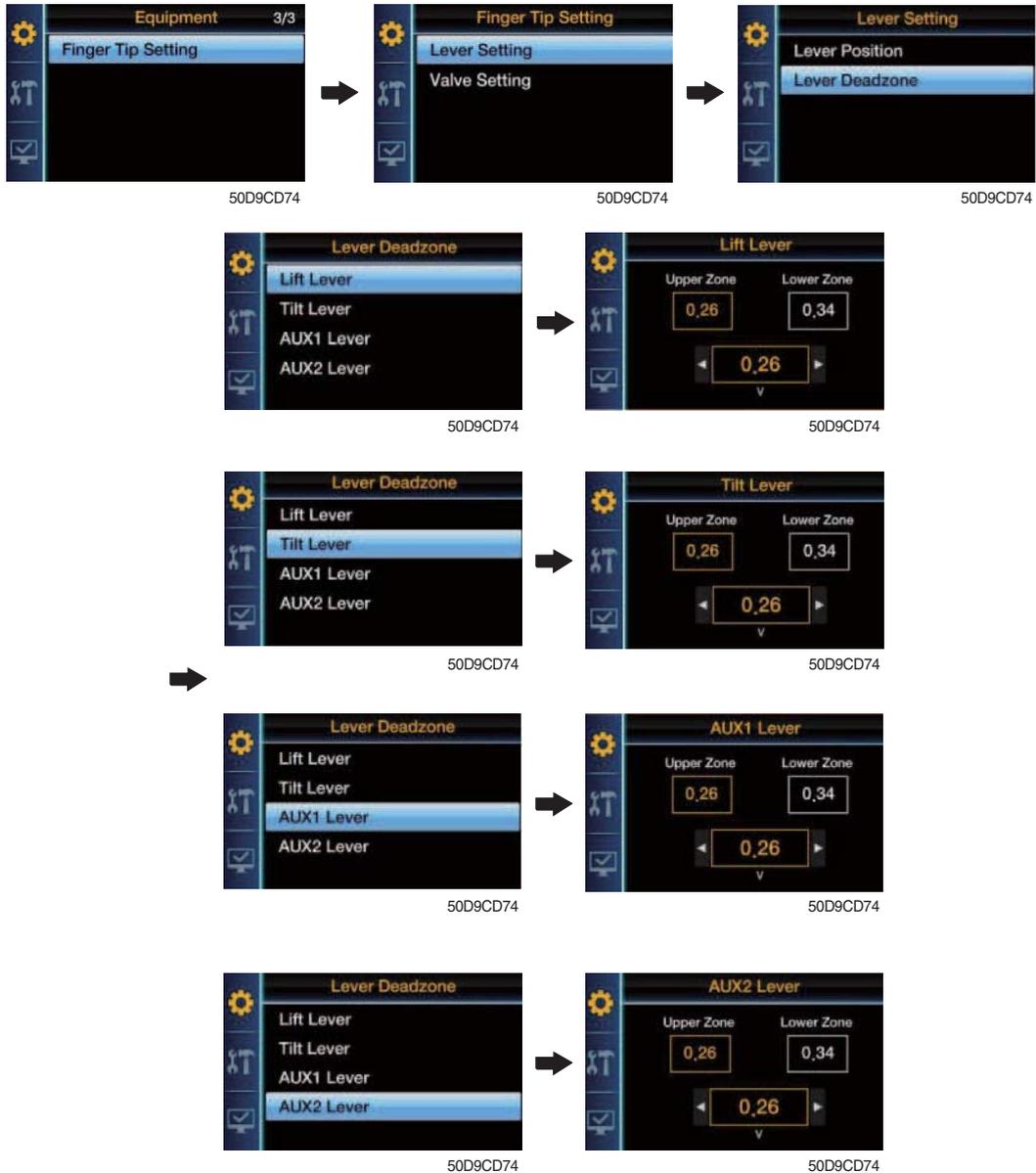
- Software version check for MCU/Cluster/RMCU.

⑩ Finger tip setting
 a. Lever position setting



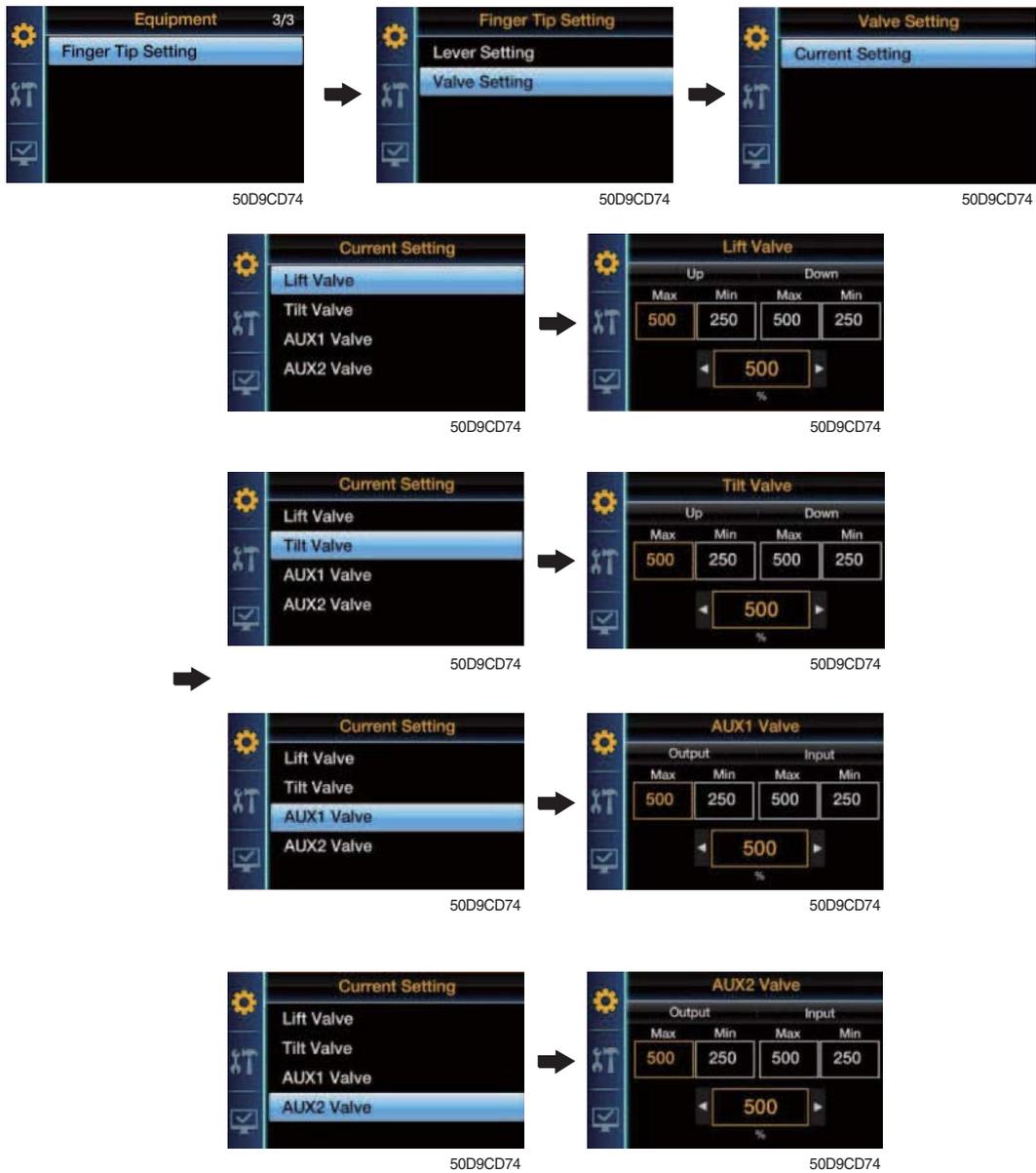
- Ability to set up the maximum Pull, Push (Min,Max) value and neutral value (Mid) of lever.
- Finger Tip lever set up about 0.5V~2.5V~4.5V. You must be to move with actual Lever. (Unit V)
 ex) Min 0.48, Mid 2.52, Max 4.52

b. Lever deadzone setting



- Ability to prevent the Value output due to a tiny error of the neutral Lever state (2.5V)
 ex) If you set up the Upper : 0.26, Lower : 0.24, Lever operating range will be
 Upper zone : 2.76V (2.5+0.26) ~ 4.5V (Lever Max value)
 Lower zone : 2.26V (2.5-0.24) ~ 0.5V (Lever Min value)

c. Valve setting



- **Current Setting** : Current setting for input each Valve Coil, it is to set up each maximum value of movements according of the current value (Unit % (Over 110D-9 only), mA (Under 80D-9 Only))
 ex) If the Max value increase, the maximum speed will also increase.
 If the Min value increase, the minimum speed will also increase.

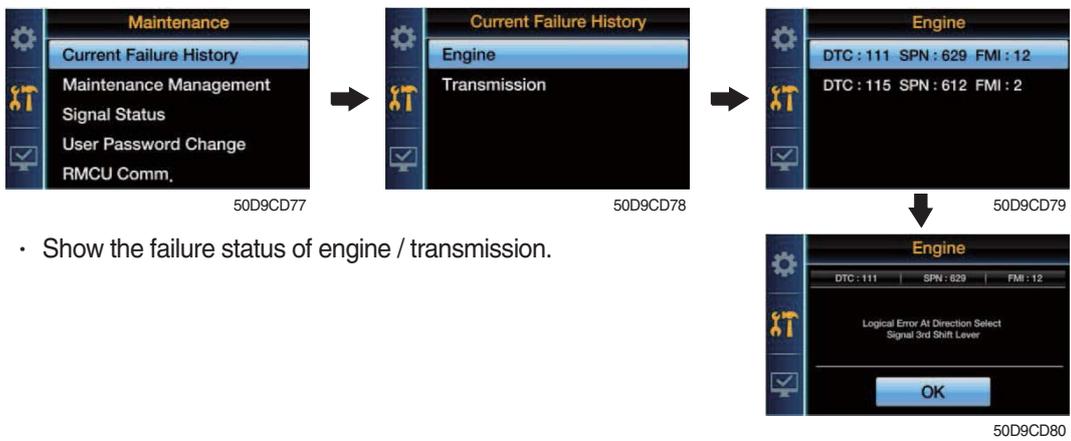
(4) Maintenance

① Choose the maintenance



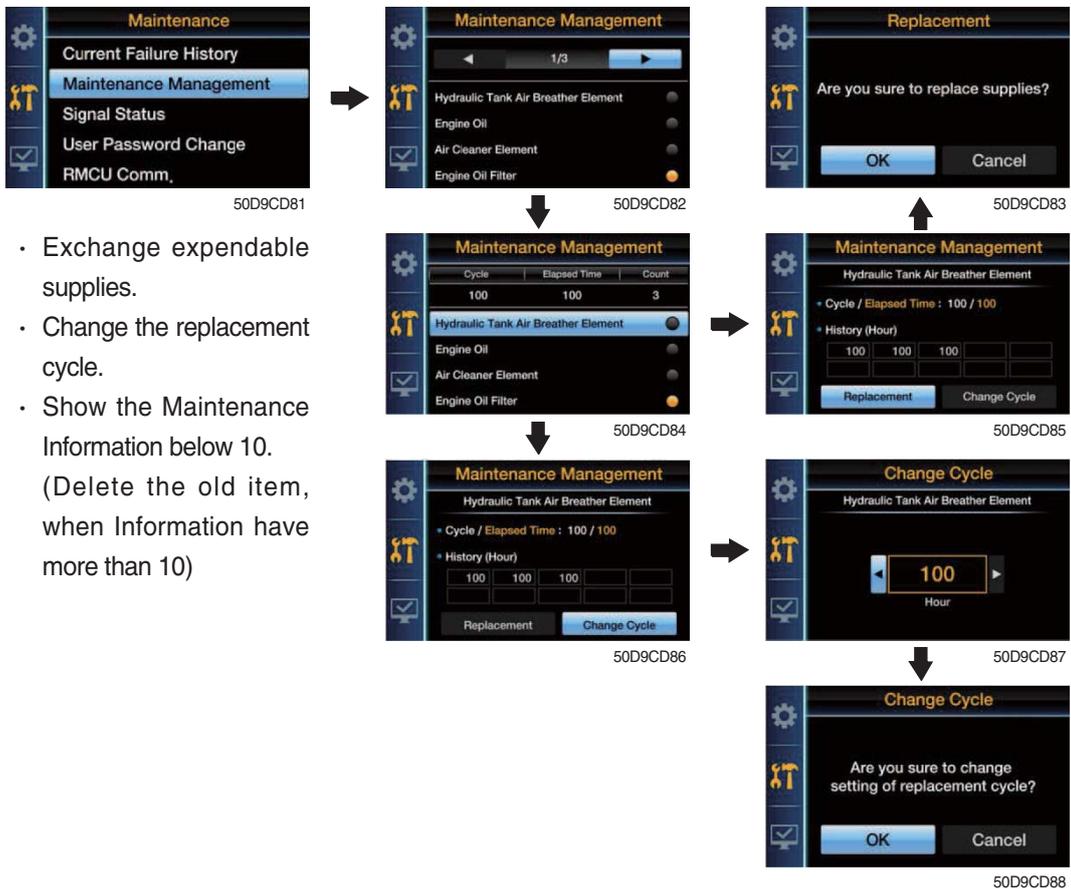
- To enter the Menu, you must input user password.
- Default password is '00000'
- You should set password by five to ten digit.

② Current failure history



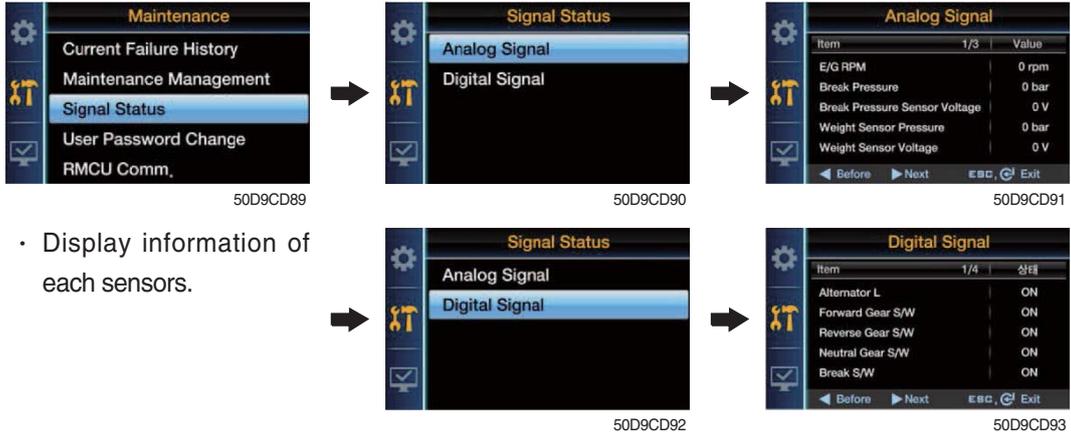
- Show the failure status of engine / transmission.

③ Maintenance management

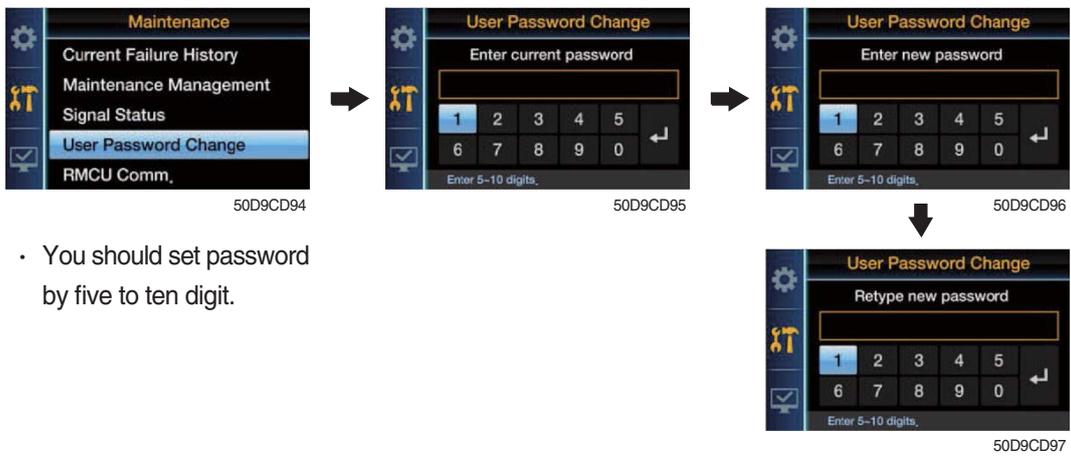


- Exchange expendable supplies.
- Change the replacement cycle.
- Show the Maintenance Information below 10.
(Delete the old item, when Information have more than 10)

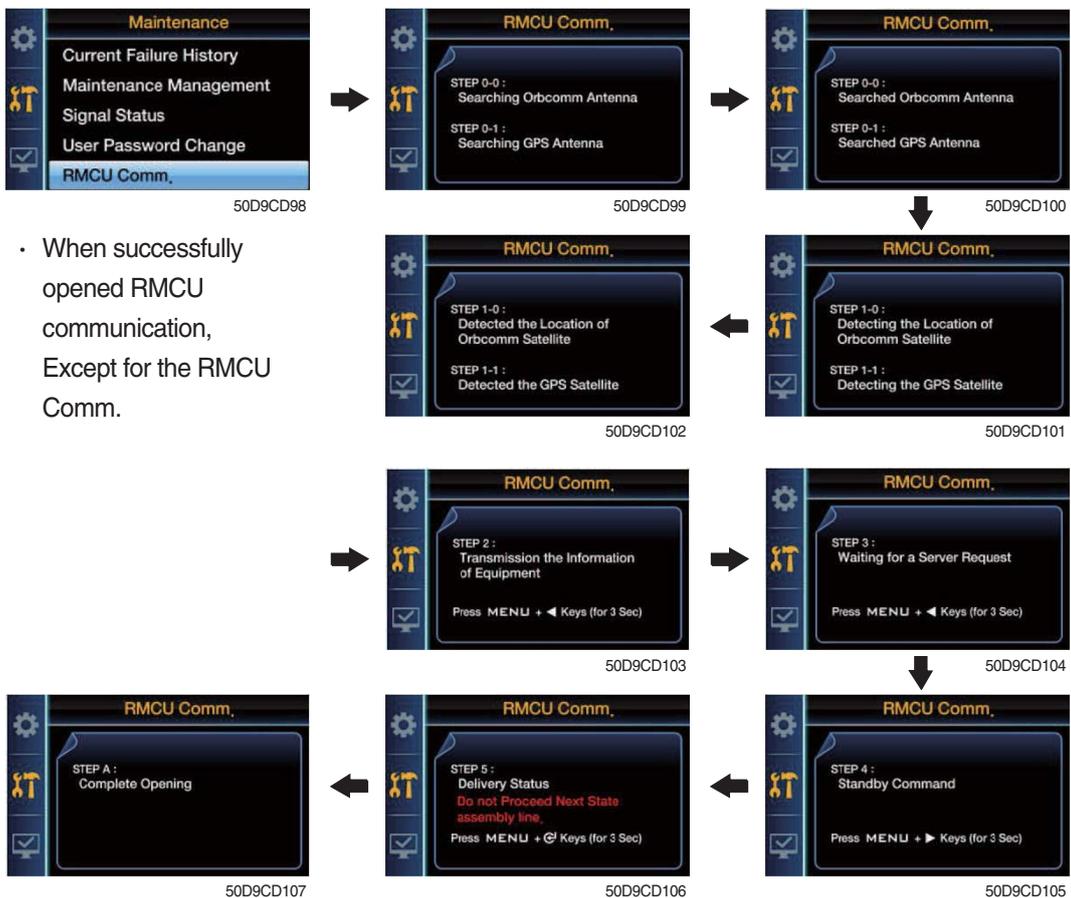
④ Signal status



⑤ User password change

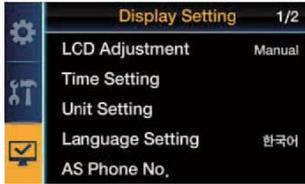


⑥ RMCU Comm



(5) Display setting

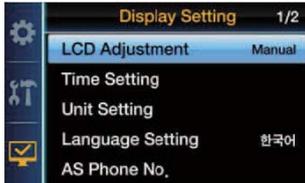
① Choose the display setting



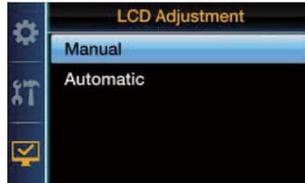
50D9CD108

- No password is required.

② LCD adjustment



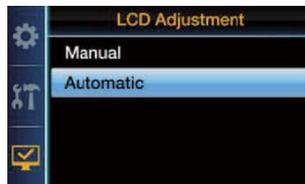
50D9CD109



50D9CD110



50D9CD111



50D9CD112



50D9CD113

- Manual : Manual setting for LCD brightness.
- Automatic : Automatic control of LCD brightness as set level of Day/Night.
- Setting day time : Set the time for daylight.
(If you set the time for daylight, the rest time will be night.)

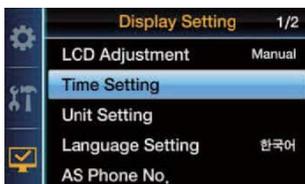


50D9CD114



50D9CD115

③ Time setting



50D9CD116



50D9CD117

- Set the time (Year, Month, Day, Hour, Minute, AM/PM).

④ Unit setting



- Change units of temperature / speed / wight / pressure.

⑤ Language setting



- Set the language used by your device.
(13 Multiple language)

⑥ A/S phone number



- Check and change of contact information for customer service.

⑦ ESL password change



- You should set password by five to ten digit.

⑧ Maintenance management



- Show the maintenance information (replacement cycle, elapsed time, change count, alarm information).

5. TRANSMISSION MESSAGE DISPLAY

1) FUNCTION

The display can be used with the gear selector (DW-3). It indicates speed and driving direction. When driving in the automatic mode, a bar indicator gives additionally also information about the selected driving range; The automatic range is symbolized by arrows above and below the bar indicator. In case of possible errors in the system, a wrench appears on the display, combined with indication of the error number. Also sporadically occurring errors can be indicated.

Transmission message display



50D93ACD33

※ If it happens error codes, consult with Hyundai service center to repair the fault.

(2) Display during operation

Symbol	Meaning	Remarks
F, N, R 1, 2, 3	Actual gear and direction Central side shows actual gear Right side shows actual direction	
NN (Central and right side)	Not neutral, waiting for neutral after power up or a severe fault	To engage a gear, first move shift selector to neutral position and again to F to R position
1 bar	Manual mode 1st gear	
2 bar	Manual mode 2nd gear	
3 bar	Manual mode 3rd gear	
3 bars and 2 arrows	Automatic mode	a, b, c, d, f
※ ※	Transmission neutral	Cold start phase
Bars flashing	Downshift mode active	
Spanner flashing	At least on fault active	Select neutral to get fault code displayed
WT	Warning torque converter temperature	Changes between actual gear/direction while driving, in neutral only displayed if no fault is detected (spanner)
WS	Warning sump temperature	Changes between actual gear/direction while driving, in neutral only displayed if no fault is detected (spanner)
WE	Warning high engine speed	Changes between actual gear/direction while driving, in neutral only displayed if no fault is detected (spanner)
PN	Direction F or R selected while parking brake engaged	Transmission in neutral until parking brake is released. ※ Machine starts to move after release of parking brake.
F or R flashing	Direction F or R selected while turbine speed is too high	※ Gear will engage when turbine speed drops

(3) Definition of the error codes

① Introduction

The error codes consists of two hexadecimal numbers.

The first number shows the type of signal, the second number shows signal and the type of the error.

② Description of error codes

First No.	Meaning of number
1 hex	Digital input signals
2 hex	Analog input signals
3 hex	Speed signals
4 hex	Speed signals
7 hex	Analog current output signals
8 hex	Analog current output signals
9 hex	Digital output signals
A hex	Digital output signals
B hex	Clutch errors
D hex	Power supply
E hex	High speed signals
F hex	General errors

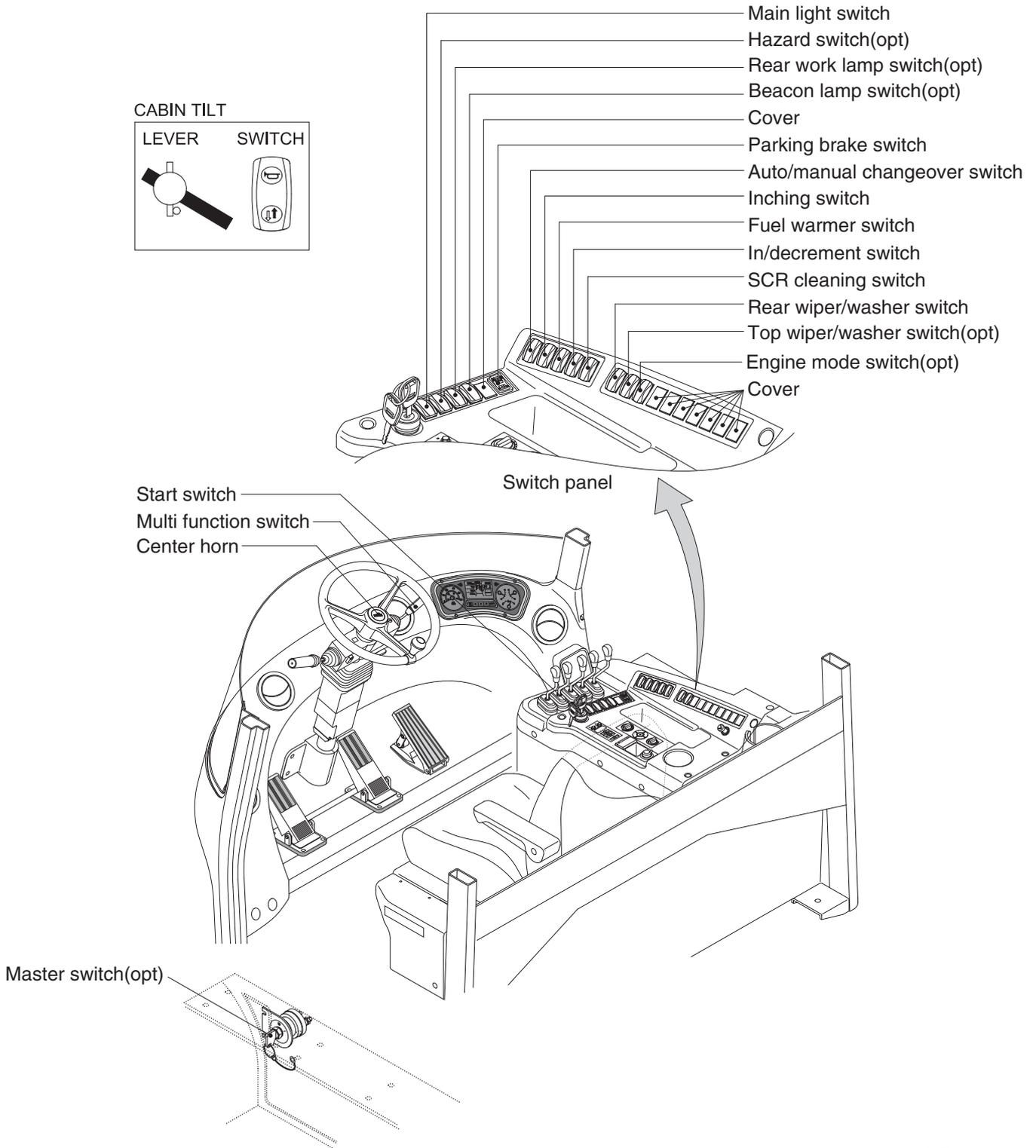
③ List of error codes

Number	Meaning of error code
11 hex	Logical error at gear range signal
12 hex	Logical error at direction select signal
21 hex	Short circuit to battery voltage at clutch cutoff input
22 hex	Short circuit to ground or open circuit at clutch cutoff input
25 hex	Short circuit to battery voltage or open circuit at temperature sensor input
26 hex	Short circuit to ground at temperature sensor input
31 hex	Short circuit to battery voltage at engine speed input
32 hex	Short circuit to ground or open circuit at engine speed input
33 hex	Logical error at engine speed input
34 hex	Short circuit to battery voltage at turbine speed input
35 hex	Short circuit to ground or open circuit at turbine speed input
36 hex	Logical error at turbine speed input
37 hex	Short circuit to battery voltage at internal speed input
38 hex	Short circuit to ground or open circuit at internal speed input
39 hex	Logical error at internal speed input

Number	Meaning of error code
3A hex	Short circuit to battery voltage or open circuit at output speed input
3B hex	Short circuit to ground or open circuit at output speed input
3C hex	Logical error at output speed input
71 hex	Short circuit to battery voltage at clutch KC
72 hex	Short circuit to ground at clutch KC
73 hex	Open circuit at clutch KC
74 hex	Short circuit to battery voltage at clutch KD
75 hex	Short circuit to ground at clutch KD
76 hex	Open circuit at clutch KD
77 hex	Short circuit to battery voltage at clutch KE
78 hex	Short circuit to ground at clutch KE
79 hex	Open circuit at clutch KE
84 hex	Short circuit to battery voltage at clutch KV
85 hex	Short circuit to ground at clutch KV
86 hex	Open circuit at clutch KV
87 hex	Short circuit to battery voltage at clutch KR
88 hex	Short circuit to ground at clutch KR
89 hex	Open circuit at clutch KR
91 hex	Short circuit to ground at relay reverse warning alarm
92 hex	Short circuit to battery voltage at relay reverse warning alarm
93 hex	Open circuit at relay reverse warning alarm
94 hex	Short circuit to ground at relay starter interlock
95 hex	Short circuit to battery voltage at relay starter interlock
96 hex	Open circuit at relay starter interlock
97 hex	Short circuit to ground at park brake solenoid
98 hex	Short circuit to battery voltage at park brake solenoid
99 hex	Open circuit at park brake solenoid
B1 hex	Slippage at clutch KC
B2 hex	Slippage at clutch KD
B3 hex	Slippage at clutch KE
B5 hex	Slippage at clutch KV
B6 hex	Slippage at clutch KR

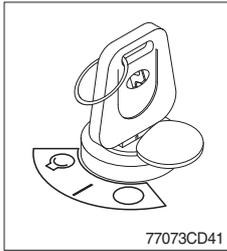
Number	Meaning of error code
D1 hex	Short circuit to battery voltage at power supply for sensors
D2 hex	Short circuit to ground at power supply for sensors
D3 hex	Low voltage at battery
D4 hex	High voltage at battery
D5 hex	Error at valve power supply 1
D6 hex	Error at valve power supply 2
E5 hex	Communication failure on devicenet
F1 hex	General EEPROM fault
F2 hex	Configuration lost
F3 hex	Application error

6. SWITCHES



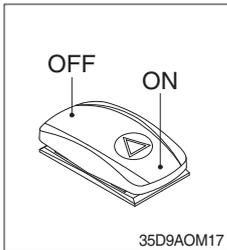
50D9CD05

1) START SWITCH



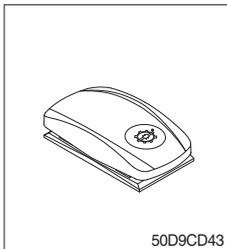
- (1) There are three positions, OFF, ON and START.
- ○ (OFF) : None of electrical circuits activate.
 - | (ON) : All the systems of truck operate.
 - Ⓚ (START) : Use when starting the engine.
Release key immediately after starting.

2) HAZARD SWITCH (OPTION)



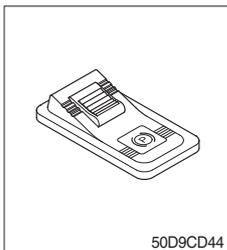
- (1) Use for parking, or loading truck.
- ※ If the switch is left ON for a long time, the battery may be discharged.

3) INCHING SWITCH



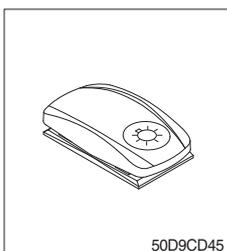
- (1) If this switch is pressed, inching operation is applied to inching pedal.
- (2) Also, inching lamp on the cluster is illuminated.

4) PARKING BRAKE SWITCH



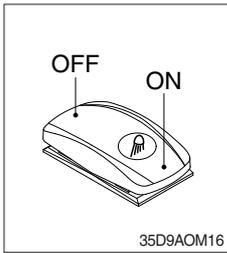
- (1) This switch is used to parking brake lock or release.
- (2) If this switch is pressed, the parking brake is applied and the warning lamp on the cluster will comes ON.
- ※ When operating the gear selector lever, be sure to release the parking brake. If the truck is operated with the parking brake engaged, the brake will overheat and may cause the brake system to go out of order.

5) MAIN LIGHT SWITCH



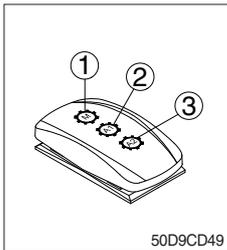
- (1) This switch is used to operate the head light by one steps.
- ① First step : Tail lamp comes ON.
 - ② Second step : Head lamp comes ON.

6) REAR WORK LAMP SWITCH (OPTION)



- (1) This switch is used to operate the work lamps.
Press this switch to turn on work lamps.

7) AUTO/MANUAL CHANGEOVER SWITCH



(1) Manual mode (①)

Press the top of the switch for the manual mode of the autoshift function. The operator selects the desired speed and the desired direction in the manual mode with the gear selector lever.

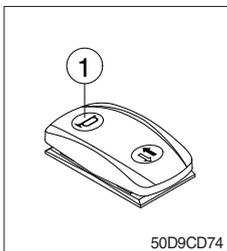
(2) Automatic 1st mode (②)

Place the switch in the middle position for the autoshift function changing from 1st to 3rd gear shift mode.

(3) Automatic 2nd mode (③)

Press the bottom of the switch fully for the autoshift function changing from 2nd to 3rd gear shift mode.

8) CABIN TILT SWITCH



(1) Horn (🔊)

By pressing position ①, the horn sounds and by releasing, the horn stops.

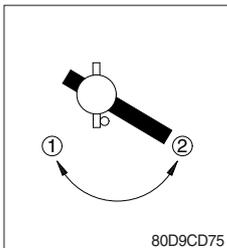
▲ Sound the horn to warn near by personnel, before tilting the cabin.

(2) Tilting of the cabin (⬆️, ⬇️)

Press the cabin tilt switch in order to tilt the cabin to right side or return to original location.

※ Refer to page 7-15 for the tilting method of the cabin.

9) HAND PUMP LEVER

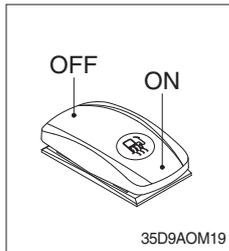


(1) This lever is used when tilting the cabin.

(2) Turn the hand pump lever to counterclockwise direction (①), the cabin shall be tilted to right side by the cabin tilt switch.

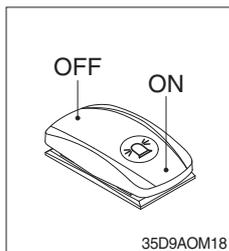
(3) Turn the hand pump lever to clockwise direction (②), the cabin shall be returned to original location by the cabin tilt switch.

10) FUEL WARMER SWITCH



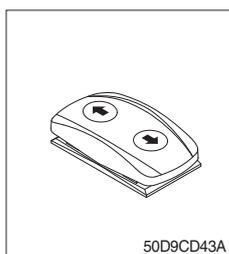
(1) This switch is used to heat the fuel of pre-heater.

11) BEACON SWITCH (OPTION)



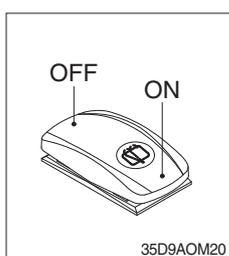
(1) This switch turn ON the strobe light.

12) INC/DECREMENT SWITCH



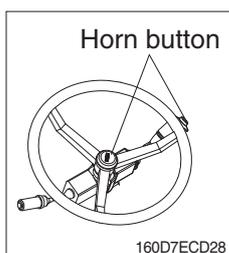
- (1) When engine running, the low rpm of engine increase or decrease by 25 rpm by operating this switch.
- (2) Engine low rpm returns to normal value when engine restarted.

13) TOP WIPER AND WASHER SWITCH (OPTION)



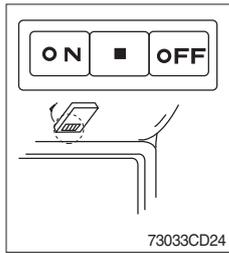
- (1) This switch is used to operate the wiper and washer on the top of the cab.
- (2) The washer liquid is sprayed and the wiper is operated only while pressing this switch.

14) HORN BUTTON



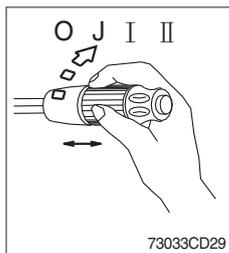
(1) If you press the button on the top of the multifunction switch and the center of the steering wheel, the horn will sound.

15) CAB LAMP SWITCH



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

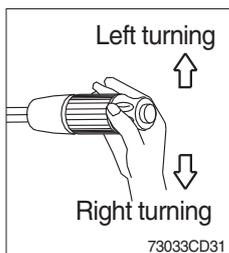
16) MULTI FUNCTION SWITCH



(1) Front wiper and washer switch

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

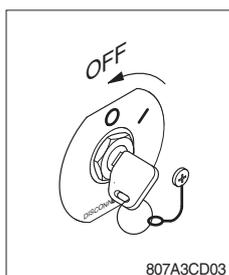
※ **Check the quantity of washer liquid in the tank. If the level of the washer liquid is LOW, add the washer liquid (In cold, winter days) or water. The capacity of the tank is 1 liter.**



(2) Turning switch

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

17) MASTER SWITCH (OPTION)



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

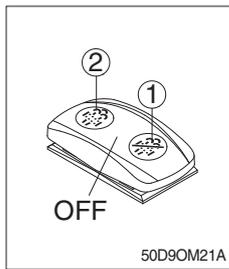
When the machine is not operated for a long time, turn OFF the master switch for the safety purpose.

(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.**

18) SCR (Selective Catalytic Reduction) CLEANING SWITCH



(1) This switch is used to select the cleaning function of the SCR.

(2) Inhibit position (①)

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

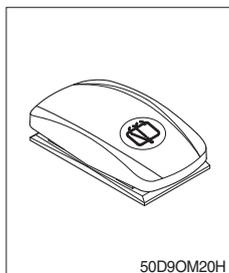
(3) OFF position

This position will initiate a automatic SCR cleaning when needed.

(4) Manual SCR cleaning position (②)

- ① This position will only initiate a manual SCR cleaning and the SCR cleaning lamp is illuminated.
- ② HEST lamp will be illuminated during the entire SCR cleaning.
- ※ Refer to the page 3-24 for details.
- ※ This switch can be move to the manual SCR cleaning position (②) only when the safety button is pulled to backward.
- ※ Also, this switch return to the OFF position when released the manual SCR cleaning position (②).

19) REAR WIPER/WASHER SWITCH



(1) This switch is used to operate the wiper and washer on the rear of the cab.

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

20) ENGINE MODE SWITCH



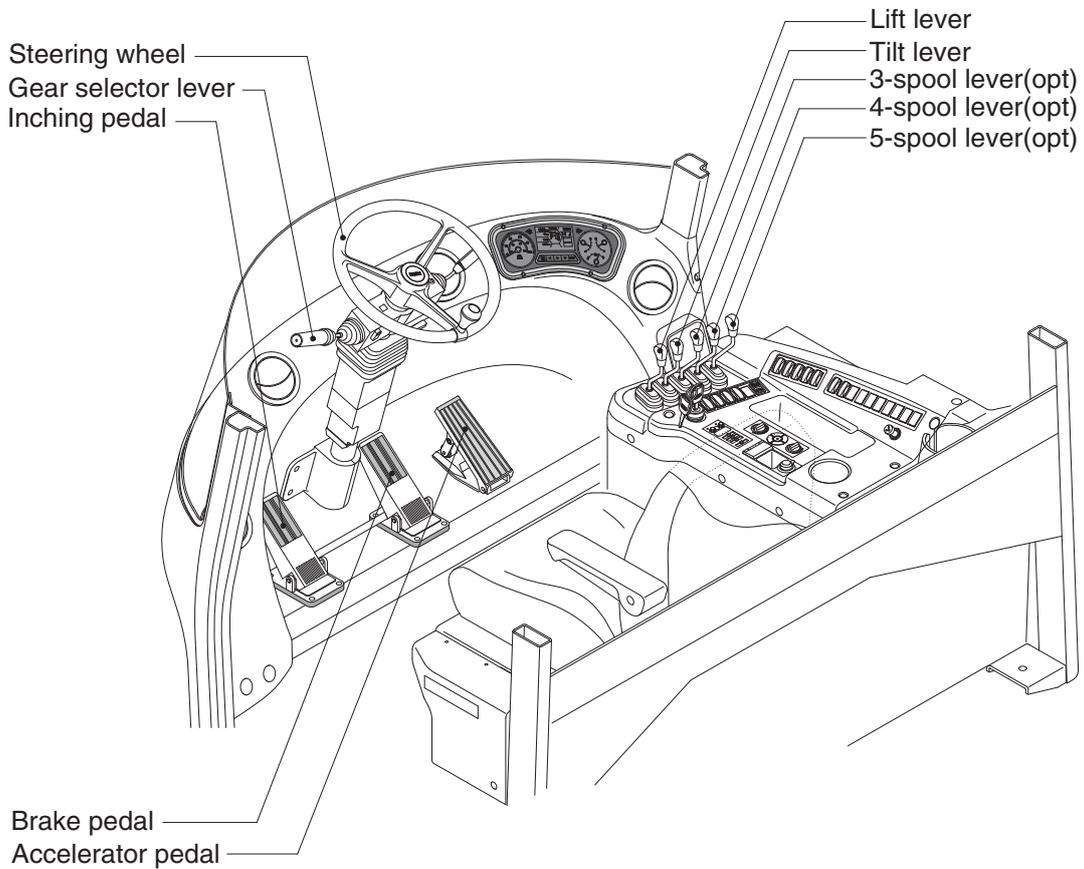
(1) This switch offers two selectable operating mode.

The operator can adjust the truck's performance with this selection switch.

(2) Function

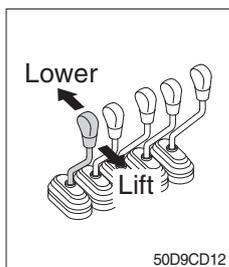
- ① STD MODE : This mode provides maximum fuel efficiency for general loading.
- ② PWR MODE : This mode provides maximum power output for heavy loading or hill climb.

7. CONTROL DEVICE



50D9CD08

1) LIFT LEVER



(1) LIFT

PULL the lever BACK to LIFT the forks.

(2) LOWER

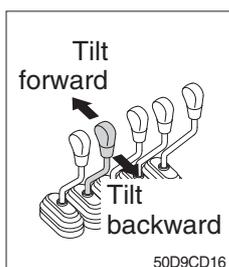
PUSH the lever FORWARD to LOWER the load.

(3) HOLDING

When the lever is released, the lifting or lowering action stops.

- ※ Lifting speed is controlled by accelerator pedal.
- Lowering speed is controlled by lever only.

2) TILT LEVER



(1) TILT FORWARD

PUSH the lever FORWARD to tilt mast FORWARD.

(2) TILT BACKWARD

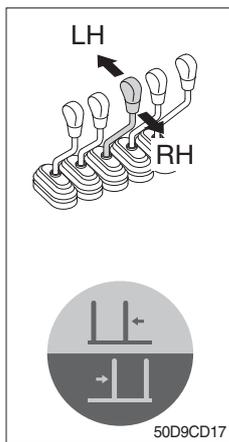
PULL the lever BACK to tilt mast BACKWARD.

(3) HOLDING

When the lever is released, tilting action stops.

- ※ Forward and backward tilting speeds are controlled by tilt lever and accelerator pedal.

3) LEVER FOR SIDE SHIFT



(1) LH MOVEMENT

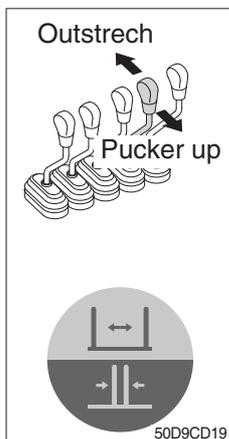
Push the lever forward to move the left hand for the side shift.

(2) RH MOVEMENT

Pull the lever backward to move the right hand for the side shift.

4) LEVER FOR SIDE SHIFT WITH FORK POSITIONER

(1) FORK POSITIONER (SYNCHRONIZER TYPE)



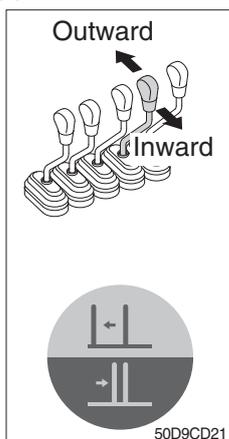
① OUTSTRECH THE FORKS

Push the lever forward to outstreach simultaneously outward of the both forks.

② PUCKER UP THE FORKS

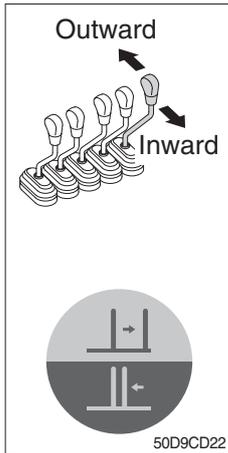
Pull the lever backward to pucker up simultaneously inward of the both forks.

(2) FORK POSITIONER (INDEPENDENT TYPE)



① LH FORK MOVEMENT

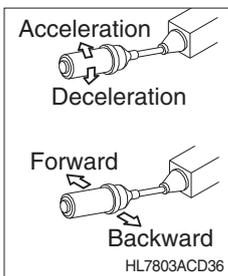
- Push the lever forward to move outward for the LH fork.
- Pull the lever backward to move inward for the LH fork.



② RH FORK MOVEMENT

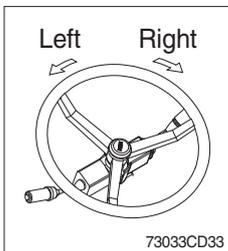
- Push the lever forward to move outward for the RH fork.
- Pull the lever backward to move inward for the RH fork.

5) GEAR SELECTOR LEVER



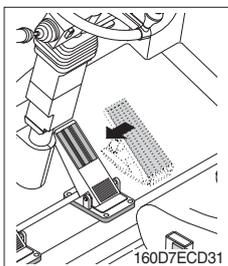
- (1) This lever is used for gear selection, forward 3 stages and reverse 3 stages.
- (2) If you push the gear selector lever, the truck moves forward, but pulling the gear selector lever, the truck moves backward.
- (3) If you turn the gear selector lever forward, the truck increases the speed, but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

6) STEERING WHEEL



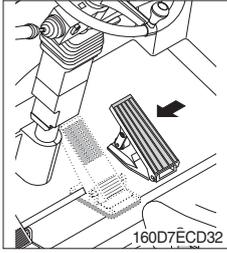
- (1) A steering cylinder in the center of the steering axle will operate the steering function.
- (2) Turning the steering wheel left, the truck moves to the left side and turning it right, the truck moves to the right side.

7) BRAKE PEDAL



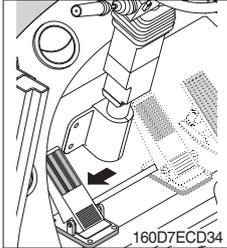
- (1) If the pedal is pushed, braking force is generated and bring the truck to a stop.
- ※ Do not operate the truck with stepping on the brake pedal unnecessarily, or bring premature wear of brake disc.

8) ACCELERATOR PEDAL



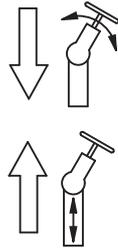
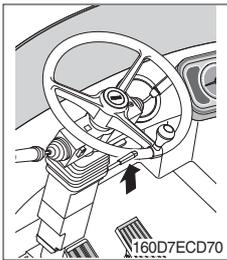
- (1) This pedal controls the engine speed. The engine speed will increase in proportion to the degree of force applied to this pedal.
- (2) Unless this pedal is pressed, the truck will run at low idling.

9) INCHING PEDAL



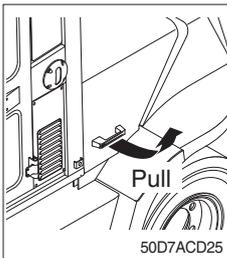
- (1) Inching pedal is used for fine control of forward and reverse movement when lifting up or putting down loads.
- ※ Do not put your foot on the inching pedal or brake pedal unless using it.

10) STEERING WHEEL LEVER



- (1) By pulling down the lever, the wheel is adjustable to tilt.
- (2) By pulling up the lever, the wheel is adjustable to telescope.
- (3) Adjustable steering wheel
Accommodates various operator's conditions.
 - Tilting angle : 40°
 - Telescopic stroke : 80 mm

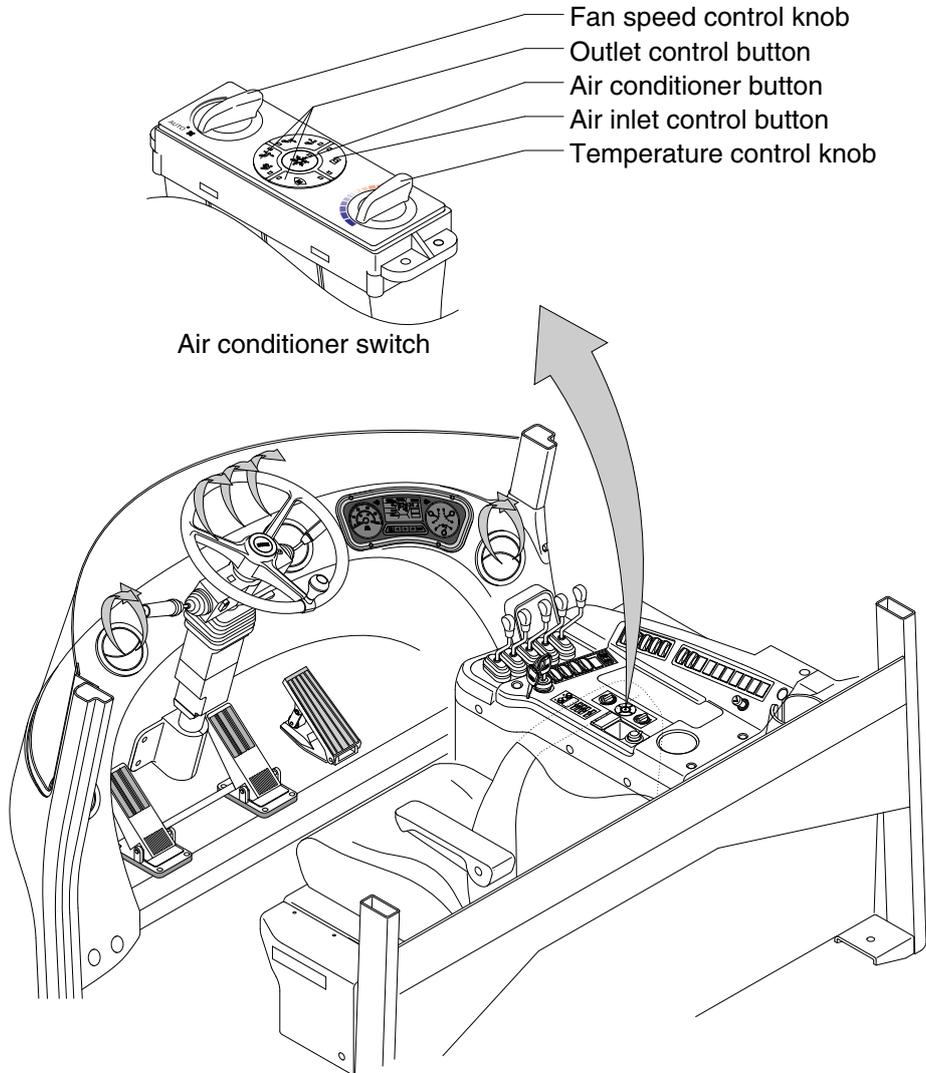
11) ENGINE HOOD



- (1) Pull the handle attached on the bolt side of engine hood to open it.

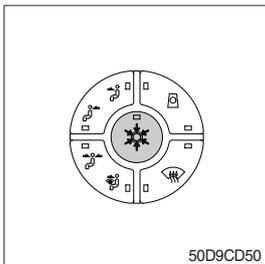
8. AIR CONDITIONER AND HEATER

Full auto air conditioner and heater are equipped for pleasant operation against outside temperature and defrost on window glass.



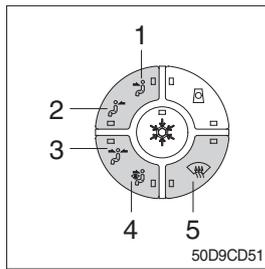
50D9CD90

1) AIR CONDITIONER BUTTON



- (1) When you push this button, air conditioner system is operated.
 - (2) Determines whether to perform a cooling function of air conditioner.
 - ① Pilot lamp ON : Air conditioner operation
 - ② Pilot lamp OFF : Fan only
- ※ The AUTO pilot lamp ON when this button is pushed.

2) OUTLET CONTROL BUTTON

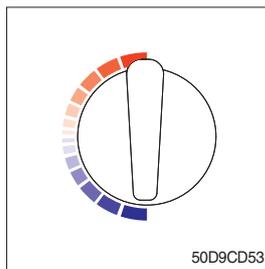


There are five kinds of air flow.

- ① Face
- ② Rear
- ③ Face and rear
- ④ Face and defrost
- ⑤ Defrost

※ The pilot lamp is turned ON when the button is pushed.

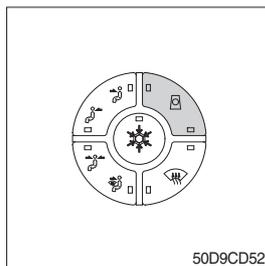
3) TEMPERATURE CONTROL KNOB



This knob regulates the temperature of air.

- ① Right side (red zone) : Cool down air temperature
- ② Left side (blue zone) : Heat up air temperature

4) AIR INLET CONTROL BUTTON



This button regulates the inlet air.

- ① Pilot lamp ON : Fresh air intake.
- ② Pilot lamp OFF : The air circulates in the cab.

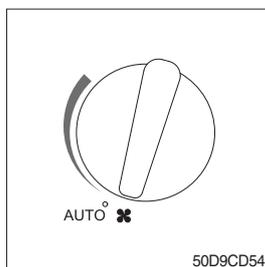
※ The pilot lamp is turned ON when the button is pushed.

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

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

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

5) FAN SPEED CONTROL KNOB



① Fan speed is controlled automatically by set temperature.

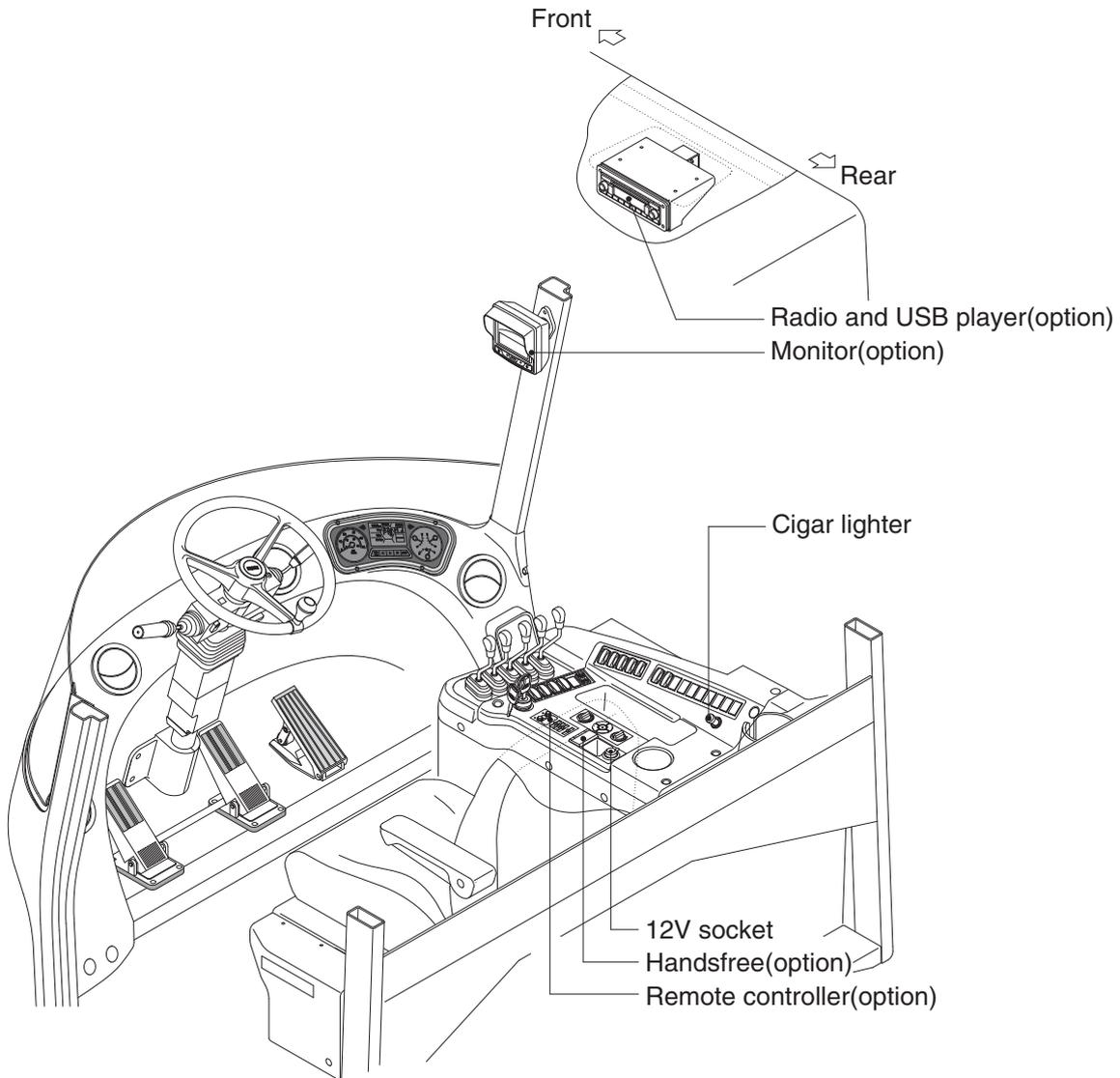
※ The AUTO pilot lamp ON when the air conditioner button is pushed.

② This knob controls fan speed manually.

※ The AUTO pilot lamp OFF when this knob is operated.

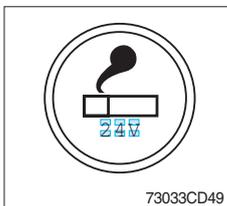
③ This knob makes the system ON.

9. OTHERS



50D9CD09

1) CIGAR LIGHTER

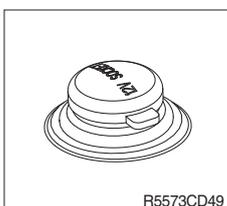


- (1) This can be used when the engine starting switch is ON.
- (2) The lighter can be used when it springs out in a short while after being pressed down.

※ Service socket

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

2) 12V SOCKET



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

3) RADIO AND USB PLAYER (+BLUETOOTH, OPTION)

(MACHINE SERIAL NO. 50D-9 : -#0116, 60D-9, 70D-9 : -#1469, 80D-9 : -#0986)



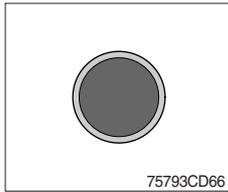
75793CD62-2

FRONT PANEL PRESENTATION

- | | | | | | |
|---|--|--|----|--|---|
| 1 | | Audio selection button | 10 | | Preset memory button 6
D+ Directory up |
| | | Audio selection knob | 11 | | Aux function |
| 2 | | Power and volume button | 12 | | Preset scan (PS)
Best station memory (BSM) |
| 3 | | Mode button
(select RADIO / USB / AUX) | 13 | | Audio mute button |
| 4 | | UP / DOWN tuning button | 14 | | AM / FM button (radio) |
| 5 | | Preset memory button 1
DISP ID3 v2 display | 15 | | Send |
| 6 | | Preset memory button 2
SCN File scan | 16 | | End |
| 7 | | Preset memory button 3
RPT Repeat play selector | 17 | | MIC (microphone) |
| 8 | | Preset memory button 4
RDM Random play selector | 18 | | Aux connector |
| 9 | | Preset memory button 5
D- Directory down | | | |

■ GENERAL

(1) Power and volume button



① Power ON/OFF button

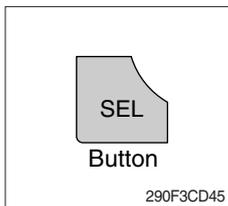
Press power button to turn the unit ON or OFF shortly.

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

② Volume up / down control

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

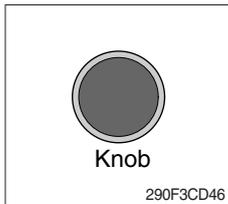
(2) Sound function selection button/knob (audio selection)



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 → BASS

※ 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 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 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 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.

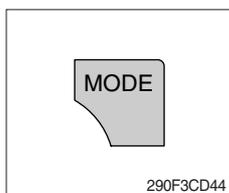
To select the loudness feature, press SEL button until LOUD ON or LOUD OFF is displayed, then turn selection knob left or right to activate or deactivate loudness.

⑥ Equalizer (EQ)

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

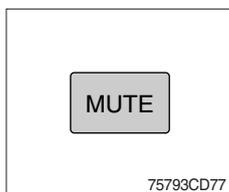
To select the desired curve, first select the EQ mode by pressing SEL button until the "EQ OFF" indication appears on the display panel. Within 5 seconds of choosing the EQ mode, turn selection knob to select an equalizer curve as desired.

(3) Mode button



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

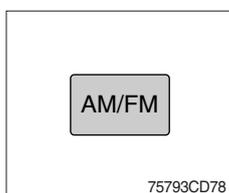
(4) Audio mute button



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

■ RADIO

(1) AM / FM / LW band selector

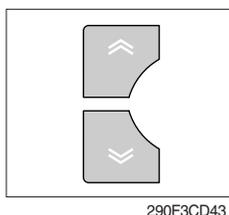


- ① Each time this button is pressed, the radio button is changed. Each time this button is pressed, LCD displays each band as follows :

FM1 → FM2 → FM3 → AM → LW → FM1

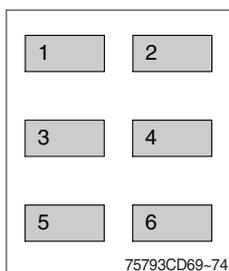
※ LW band is only available for Europe.

(2) Up / down tuning



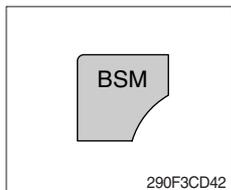
- ① To automatically select a radio station, momentarily press the up tune seek button  or down tune seek button  for less than 3 seconds to search for the closest radio station. To manually select a radio station, press the up tuning & down tuning button for longer than 3 seconds. The radio frequency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

(3) Station pre-set button



- ① Pressing these buttons shortly will recall your favorite pre-set radio stations. To store your favorite stations into any of the 6 pre-set memories in each band (AM/FM/LW), use the following procedure :
 - 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 appear on the LCD display indicating that the station is now set into that pre-set memory position and can be recalled at any time, by pressing that pre-set button.

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



① Pre-set scan (PS)

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

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

② Best station memory (BSM)

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

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

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

■ USB PLAYER



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".

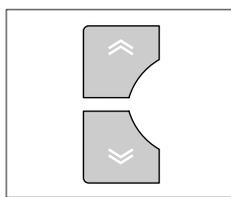
(2) AUX function

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



290F3CD43

① File selection function

This button is used to select file up / down.

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

Each time the backward file select \blacktriangleleft 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 \blacktriangleright to advance rapidly in the forward direction or the review button \blacktriangleleft 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 selection knob 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 → ROOT

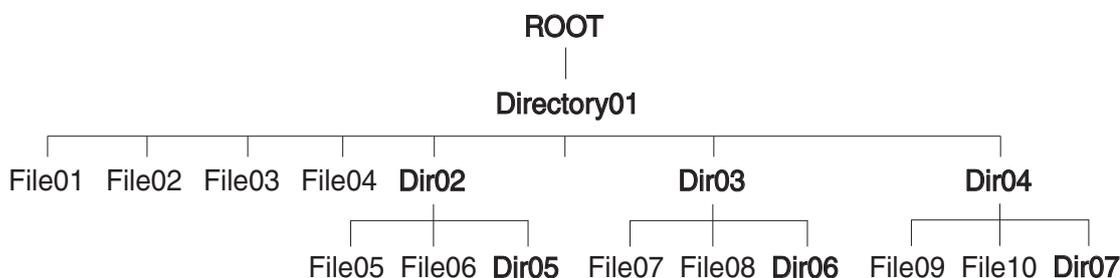
· Method 2 : ROOT → Dir01 → Dir02 → Dir05 → Dir03 → Dir06 → Dir04 → Dir07 → ROOT

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

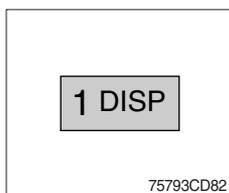
For instance, the file search changes in Dir01 as follows.

File01 → File02 → File03 → File04 → File01

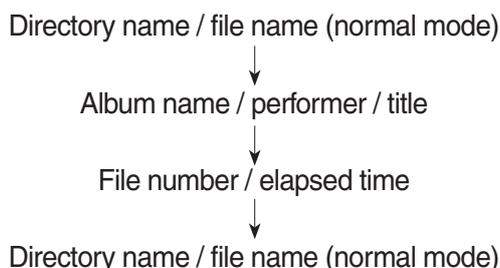
※ MP3 directory / file configuration



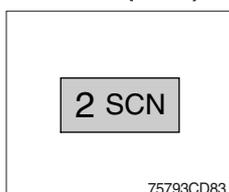
(5) ID3 v2 display



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

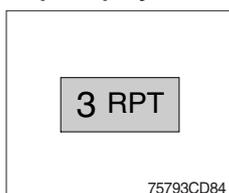


(6) File scan (SCN)



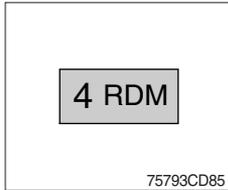
- ① During USB play, press SCN button to play the first 10 seconds of each file on the whole file on the USB (SCN mark will appear on the LCD display). When a desired file is reached, press the SCN button again to cancel the function. The unit will then play the selected file.
- ※ In case of playing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

(7) Repeat play selector (RPT)



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

(8) Random play selector (RDM)

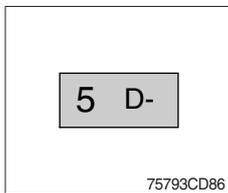


- ① During USB play, press RDM button to play the files on the USB in a random shuffled order (RDM will appear on the LCD display). The file select function will also select file in the random order instead of the normal process.

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

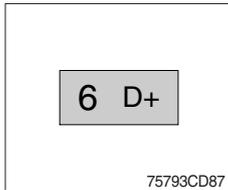
- ※ In case of MP3 file, when the random button is pressed and held longer than 2 seconds, the RDM mark will blink on the LCD display and play all files in directory randomly until the directory random mode is cancelled by pressing the random button again or by activating the scan or repeat functions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

(9) Directory down



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

(10) Directory up



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

■BLUETOOTH

(1) Introduce

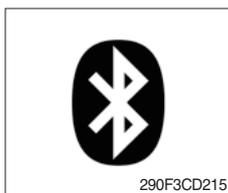
The bluetooth radio supports bluetooth wireless technology. Bluetooth technology provides a wireless link between a bluetooth mobile phone or bluetooth music player and the hyundai bluetooth radio.

The bluetooth radio features a hands-free system so that you may talk on the telephone without taking your eyes off the road or your hands off the wheel. A microphone built into the front of the radio receives your voice and the calling party can be heard through the speakers.

Additionally, a bluetooth music player can be wirelessly connected to be the bluetooth radio and playback music tracks in high quality sound through the speakers. Many bluetooth mobile phones include a music player and can provide both hands-free calling and music playback.

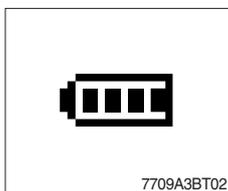
Check your mobile phone owner's manual for details.

- ※ When the starting switch is in the ON position, the bluetooth radio is on standby to connect with your mobile phone even if the radio is switched off. The machine battery may therefore become drained if the ignition switch remains in the ON position for an extended period of time.
- ※ Bluetooth technology uses low power radio transmission to connect to your bluetooth mobile phone or bluetooth music player. As radio signal strength reduces over distance, the quality of sound performance during phone calls and music playback may become poor if the distance between the radio and device widens. It is recommended that the mobile phone or music player is kept inside the cab for best results.
- ※ As a bluetooth wireless connection can extend to 10 meters, your bluetooth device may automatically connect to the bluetooth radio even if the device is not in the machine.
- ※ The bluetooth radio uses the latest digital noise & echo suppression system to provide the best sound clarity with little or no distortion, but in some conditions there may be some echo and noise experienced. It is recommended to keep the car windows closed during hands-free calls for best results.



① Bluetooth indicator

The bluetooth logo is displayed when a bluetooth device is connected, and not displayed, when no bluetooth device is connected. If the bluetooth mobile phone is connected but the connection is not of satisfactory quality, the bluetooth logo is not displayed.



② Battery strength indicator

This is an indication of your mobile phone battery condition. If your mobile phone is unable to transmit battery condition level, the indicator is not displayed.



③ Single level indicator

This is an indication of the mobile phone network signal strength in your current location. If your mobile phone is not able to transmit signal level, the indicator is not displayed.

(2) Bluetooth function

① Pairing a bluetooth mobile phone or music player

A bluetooth connection must first be established between your bluetooth mobile phone or bluetooth music player and the bluetooth radio. The first step to connecting the bluetooth radio and bluetooth device is to introduce or "Pair" the bluetooth radio and bluetooth device together.

It is recommended that you have the instruction manual for your bluetooth mobile phone or music player with you during the pairing process described below to understand how to set your device to pair with the bluetooth radio.

- ※ It is recommended that all other bluetooth devices other than mobile phones are switched off during the registration or pairing process.

a. Connection method

- a) Press SEND button for 2 seconds in any mode, **PAIRING** appears on the bluetooth radio display.
 - b) Browse your mobile phone or music player menu to find the **SETTINGS** or **CONNECTIVITY** section to find the bluetooth connection section.
 - c) Find the command that may be called search for bluetooth device or discovery mode so that your bluetooth device can locate all the bluetooth devices within range that may be connected.
 - d) After the search is complete, **HFI AUDIO** should appear on your mobile phone or music player screen.
 - e) Select **CONNECT** or **SELECT** on your mobile phone or music player.
 - f) The mobile phone or music player should now prompt you to enter a PIN code. Enter 0000 into your bluetooth device and select OK.
 - g) The mobile phone or music player should confirm that it has established a new paired connection with the bluetooth radio.
 - h) The connecting process is now complete.
 - i) If the connecting process is successful, the bluetooth logo appears on the radio display and paired phone name (e.g. Samsung or LG) and **CONNECTED** appear on the display for 2 seconds.
 - j) Your bluetooth device is now ready for use with the bluetooth radio.
 - k) If the pairing failed, **FAIL** appears on the bluetooth radio display.
- ※ (a) The bluetooth radio allows a maximum of 6 bluetooth devices to be paired.
 - (b) Bluetooth technology only allows one phone to be connected to your bluetooth radio at one time.
 - (c) If a bluetooth music player is to be connected together with a mobile phone, refer to the page 3-74, PLAYING MUSIC USING BLUETOOTH AUDIO.
 - (d) Bluetooth connection with a mobile phone is normally established using the Hands-Free Profile (HFP). However, in some cases, the connection may use Head Set Profile (HSP) and some functions may not be available.
 - (e) As each mobile phone or music player brand and model has a different menu structure and control names, you may need to refer to the user manual of your bluetooth device for the correct procedure to connect to another bluetooth device.
 - (f) Once the bluetooth pairing is complete, automatic connection between mobile phone and the bluetooth radio is possible whenever the starting switch is switched ON.

The mobile phone must be set to automatically connect to the bluetooth radio to allow this automatic connection.

- (g) The bluetooth radio will give connection priority to the last connected mobile phone.
- (h) It is recommended that all other bluetooth devices other than mobile phones are switched off during the registration or pairing process.

② **Disconnecting a bluetooth device**

If you need to disconnect your bluetooth mobile phone or music player with the bluetooth radio, follow the steps below.

- a. Press END button for 2 seconds in any mode.
- b. When the bluetooth connection is lost, bluetooth logo disappears and the previously connected device name (e.g. Samsung or LG) and **DISCONNECTED** appear on the display.

③ **Select a bluetooth device**

The bluetooth radio can pair up to 6 bluetooth devices. A previously paired mobile phone or music player can be selected for connection using the method described below. Refer to the table 2-1 for examples.

Preset No.	Bluetooth device name (for example)
1	Samsung
2	LG
3	Apple
4	Motorola
5	EMPTY
6	EMPTY

Table 2-1

- a. Press SEND button, to select **BLUETOOTH** mode.
- b. Press SEL button. **SELECT PHONE** will appear on the display.
- c. Turn selection knob, until **SELECT PHONE** is displayed.
- d. When **SELECT PHONE** appears on the display, press SEL button.
- e. Press the preset button to display the name of the bluetooth device name of the mobile phones or music players previously paired. You may also turn selection knob to display the paired devices.

· Each time you turn or selection knob, the LCD displays as follows :

SAMSUNG → LG → APPLE → MOTOROLA → BACK → SAMSUNG

- f. If the bluetooth mobile phone name is Samsung as in the example of table 2-1, then **Samsung** appears on the display. When preset button  is pressed or selection knob is turned 1 click to the right.
- g. Once the name of the bluetooth device you wish to connect is displayed, in this example **Samsung**, press SEL button to have the Samsung device connected.
- h. If the connection is successful, the bluetooth logo appears on the display and paired phone name **Samsung** and **CONNECTED** appears on the display for 2 seconds.

④ Deleting a previously paired bluetooth device

If you no longer need to use a paired bluetooth device with the bluetooth radio, it can be deleted. It is from the registration assignment for another mobile phone. Refer to the example of paired devices shown table 2-1.

- a. Press SEND button, to select **BLUETOOTH** mode.
- b. Press SEL button and **SELECT PHONE** appears on the display.
- c. Turn selection knob, until **DELETE PHONE** is displayed.
- d. When **DELETE PHONE** appears on the display, press SEL button.
- e. Press the preset button to display the name of the bluetooth device name of the mobile phones or music players previously paired. You may also turn selection knob to display the paired devices.
- f. Once the name of the bluetooth device you wish to delete is displayed, in this example **Samsung**, press SEL button to have the Samsung device deleted.
- g. The display will then show **DELETE NO** or if selection knob is turned, **DELETE OK** on the display.
- h. To confirm your wish to delete the selected device, when **DELETE OK** appears on the display press SEL button.
- i. If the bluetooth device being deleted (in this example) was connected, the display will show previous paired phone name "Samsung" and **DISCONNECTED**.
- j. In the example above, the number of paired devices is now reduced to 3, leaving 3 vacant memory locations for additional devices. Table 2-2 shows the example.

Preset No.	Bluetooth device name (for example)
1	LG
2	Apple
3	Motorola
4	EMPTY
5	EMPTY
6	EMPTY

Table 2-2

⑤ Basic telephone operation

a. Using the bluetooth radio for hands-free calls

- a) When an **INCOMING** call arrives at the bluetooth radio via your connected bluetooth mobile phone, **INCOMING CALL** appears on the display for 3 seconds then the calling telephone number is shown.
 - b) Press SEND button to answer the **INCOMING** call. **HANDSFREE** appears on the display.
 - c) To end the call, press END button and the call will end and **END CALL** is displayed.
 - d) If you wish to reject an **INCOMING** call, press END button.
 - e) To make an **OUTGOING** call use the keypad of the connected bluetooth mobile phone to enter a number and press the **OFF-HOOK** (SEND) button on your mobile phone.
 - f) **OUTGOING CALL** is displayed on the bluetooth radio and the call continues in hands-free mode.
 - g) The call can be ended by pressing END button the **ON-HOOK** (END) button of the connected mobile phone.
- ※ Some mobile phones may not reject an **INCOMING** call using the action of d) above. In this case, press the **ON-HOOK** button on the connected mobile phone to reject.

b. Last call number redials

Select **BLUETOOTH** mode by pressing SEND button. To making a call to the last dialed number, press SEND button again. **OUTGOING CALL** appears on the radio display for 1 second.

- ※ Some mobile phones may require an additional press of SEND button to start the last number redial call.

c. Switching to private (headset) mode during a call

During an INCOMING or OUTGOING call started in hands-free mode, it is possible to switch to the private call mode using the mobile phone handset to speak and to hear the calling party in private.

- Press SEND button during the conversation ; **PRIVATE** appears on the display.
- To switch back to hands-free mode using the bluetooth radio, press SEND button again during the private conversation ; **HANDSFREE** is shown on the display and hands-free call operation continues.

- ※ The above switching function may cause disconnection of the bluetooth link between the bluetooth radio and some mobile phones.

If SEND button is pressed during the private conversation, the bluetooth connection will return automatically.

(3) Function of bluetooth audio player

① Playing music using bluetooth audio

The bluetooth radio supports the bluetooth profile Audio Advanced Distribution Profile (A2DP). If your mobile phone or music player supports this profile then it is possible to listen to music tracks located on your bluetooth device through the bluetooth radio and speakers.

Additionally, the bluetooth radio supports the Audio Video Remote Control Profile (AVRCP).

If your bluetooth mobile phone or music player supports this profile then it is possible to advance to the next track or replay previous tracks on using the buttons on the front of the bluetooth radio your machine.

- Press MODE button until **BT AUDIO** is displayed.
- When **BT AUDIO** appears on the display, select the music player feature on your bluetooth device. And then bluetooth device play automatically to begin playback.
- To pauses the bluetooth audio playback, press SEL button for 2 seconds. Press the knob again for 2 seconds to resume playback.
- Press buttons (⏩, ⏪) advance to the next or previous music track.

- ※ (a) Check your bluetooth device owner's manual for details of how to play music tracks via an external bluetooth audio system such as the bluetooth radio.

(b) Some bluetooth mobile phones cannot play music at all or may play music tracks in low-quality audio through the bluetooth radio.

(c) Some mobile phones require additional pairing to allow bluetooth audio playback.

(d) Information about songs (ID3) (e.g. the elapsed playing time, song titles, song index, etc.) playing using bluetooth audio profile cannot be displayed on this bluetooth radio.

② Connecting a bluetooth music player and mobile phone simultaneously

It is possible to connect a bluetooth mobile phone and a separate bluetooth music player to the bluetooth radio at the same time. Phone calls can be sent and received using the hands-free feature while music is playing using the bluetooth audio feature.

(4) Bluetooth setting

① Setting the automatic call answer feature

If this function is selected, the bluetooth radio automatically answers all INCOMING calls.

This feature enhances safety as the driver does not need to take their hands from the steering wheel to accept an INCOMING call.

Note that this feature cannot be set at different settings for each of the paired mobile phones.

- a. Press SEND button to select BLUETOOTH mode.
- b. Turn selection knob until **SETTINGS** is displayed.
- c. Press SEL button until **AUTO ANSWERING** is displayed.
- d. Press SEL button and turn selection knob. The LCD then displays as follows :

ANSWER OFF → ANSWER 5 SEC → ANSWER 10 SEC → RETURN → ANSWER OFF

- ANSWER OFF = Automatic answer function is not active.
- ANSWER 5 SEC = Automatic answers all INCOMING calls after a 5 second delay.
- ANSWER 10 SEC = Automatic answers all INCOMING calls after a 10 second delay.
- RETURN = Return to previous menu.

- e. After making your selection, press SEL button to store the selection.
- f. **SETTINGS** is then displayed for adjustment if required.
- g. If you do not wish to adjust any further bluetooth settings, press END button to return to the last selected mode.

② Setting calling voice volume

This function is to set the level of the mobile phone's calling voice volume to be heard through the bluetooth radio and speakers.

- a. Follow steps a. to c. of above setting below ①.
- b. When **VOICE VOLUME** appears on the display, press SEL button to display the current level of the calling voice. Turn selection knob right or left to adjust the calling voice volume as desired. This is the level the calling voice volume will be set to each time the bluetooth radio is used after the stating switch is turned off and then on again.
- c. After making your selection, press SEL button to store the selection.
- d. **SETTINGS** is then displayed for adjustment if required.
- e. If you do not wish to adjust any further bluetooth settings, press END button to return to the last selected mode.

③ Setting the ring volume

This function is to set the level of the mobile phones ring tone volume to be heard through the bluetooth radio and speakers.

- a. After making your selection, press SEL button to store the selection.
- b. When **RING VOLUME** appears on the display, press the SEL button to display the current level of the ring tone. Turn selection knob right or left to adjust the ring tone volume as desired. This is the level the ringer volume will be set to each time the bluetooth radio is used after the starting switch is turned off and then on again.
- c. After making your selection, press SEL button to store the selection.
- d. The press END button to return to the last selected mode.

3) RADIO AND USB PLAYER (WITH BLUETOOTH, OPTION)
(MACHINE SERIAL NO. 50D-9 : #0117-, 70D-9 : #1470-, 80D-9 : #0987-)



9403CD100

FRONT PANEL PRESENTATION

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

RADIO AND USB PLAYER (WITHOUT BLUETOOTH, OPTION)
(MACHINE SERIAL NO. 50D-9 : #0117-, 70D-9 : #1470-, 80D-9 : #0987-)



9403CD101

FRONT PANEL PRESENTATION

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

■ GENERAL

(1) Power and volume button



① Power ON / OFF button

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

② Volume UP/DOWN control knob

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

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

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

③ Initial volume level set up

I-VOL is the volume level the unit will play at when it is 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 slight difference.

⑤ Clock adjustment

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

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

(2) Menu Selection



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

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

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

② Bass control

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

③ Treble control

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

④ Balance control

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

⑤ Fader control

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

⑥ EQ control

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

EQ OFF → CLASSIC → POP → ROCK → JAZZ

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

⑦ Loud control

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

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

⑧ Beep control

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

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

(3) Mute control

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

(4) Mode selection

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

■ RADIO

(1) Mode button



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

(2) Manual tuning button



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

(3) Auto tuning button



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



(4) Station preset button



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

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

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



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

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

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

■ USB PLAYER

(1) USB playback



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

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

- ※ If there are no mp3 or wma files in USB device, it will revert to the previous mode after displaying NO FILE.

(2) Track Up / Down button



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



(3) MP3 directory / File searching



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

(4) Directory Up / Down button



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

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

(5) Track Scan Play (SCAN) button



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

(6) Track Repeat Play (RPT) button



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

(7) Track Random Play (RDM) button



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

(8) ID3 v2 (DISP)



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

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

* USB Information and Notice

- Playback FILE SYSTEM and condition allowance.
 - FAT, FAT12, FAT16 and FAT32 in the file system.
 - V1.1, V2.2 and V2.3 in the TAG (ID3) version.
 - Display up to 32 characters in the LCD display.
 - No support any of MULTI-CARD Reader.
 - No high speed playback but only playing with normal full speed.
- ※ DRM files in the USB may cause malfunction to playback in the radio unit.
- ※ In temperatures below -10°C (14°F), the audio unit with USB hook up may be affected and not 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.

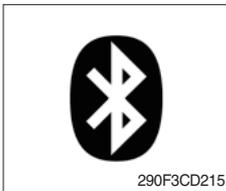
To get the best results when connecting the portable media to the audio system, follow these steps :

- 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)

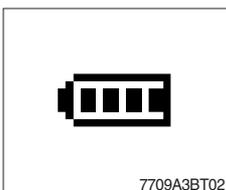
(1) Using a bluetooth wireless connection

- ① Your audio unit supports bluetooth wireless technology. You can set up a wireless link with bluetooth cellular phone.
 - ② Continue to pair the cellular phone with the audio unit. Within a few moments the two should be able to connect.
- ※ 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 in battery drainage.
 - ※ This audio units 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 where it is being used.
 - ※ 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 is already equipped with the best bluetooth VR level.



a. Bluetooth icon

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



b. Battery icon

It indicates the battery status of the connected bluetooth device.



c. Single strength icon

It indicates the signal strength of the connected bluetooth device.

(2) Pairing in hands free modes



- ① Press and hold CALL button (4) for 2 seconds until you hear beep sound, then PAIR STR will appear 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 the pairing instruction if HYUNDAI does not appear on the cellular phone screen.
 - ※ Please select authorized, if there is authorized menu in the menu of bluetooth connection in your cellular phone.
 - ※ Once the bluetooth pairing is completed between your cellular phone and this audio unit, both units will be automatically recognized on its paring like when you turn on the key in your car even though the 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 you want.

(4) Bluetooth connection and disconnection



① When established bluetooth connection is made 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 is connected.

② To disconnect bluetooth link
Press and hold CALL END button (5) for 2 seconds, it shows DIS CON and bluetooth Icon disappears on the display.

③ To connect bluetooth link
Press CALL button (4) briefly, it blinks bluetooth Icon on the display while bluetooth is being connected. If the connection is completed, bluetooth Icon displays on the display.

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

※ In case of failure of bluetooth pairing :

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

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

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

(5) Using the audio unit as a handsfree device



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

② To accept call
Press CALL button (4), ANSWER CALL followed by TALKING will show in the display.

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

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

(6) Audio transfer between the audio unit and phone

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



- ① Press CALL button (4) briefly during conversation, it appears CALL TRANS on the display. To switch back to the audio unit, press button (4) briefly during private conversation, then it appears CALL TRANS on the display again.
- ※ **This function will be a cause of disconnection of bluetooth link in some nokia phones, but do not worry, just press button (4) during private conversation, then switch back to the audio unit automatically.**
 - ※ **The quality of calling between cellular phone and audio unit is better than calling between one audio unit and another one.**

(7) Last call number dialing



- ① Press CALL button (4) briefly, it appears CALL TO on the display, then simply press CALL button once again, it would make the last call with phone number displayed 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 send button once more. With the first press of button it should show contact list in your phone, then if you press again you should be ready to 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 will be activated automatically when you make a call with 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 may be different depending on cellular phone. Please follow the cellular phone menu. Some types of phones 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

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

- ① press and hold   simultaneously for about 5 seconds. (without Bluetooth)
- ② Press and hold   simultaneously for about 5 seconds. (with Bluetooth)

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

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

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

(2) Precautions

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

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

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

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

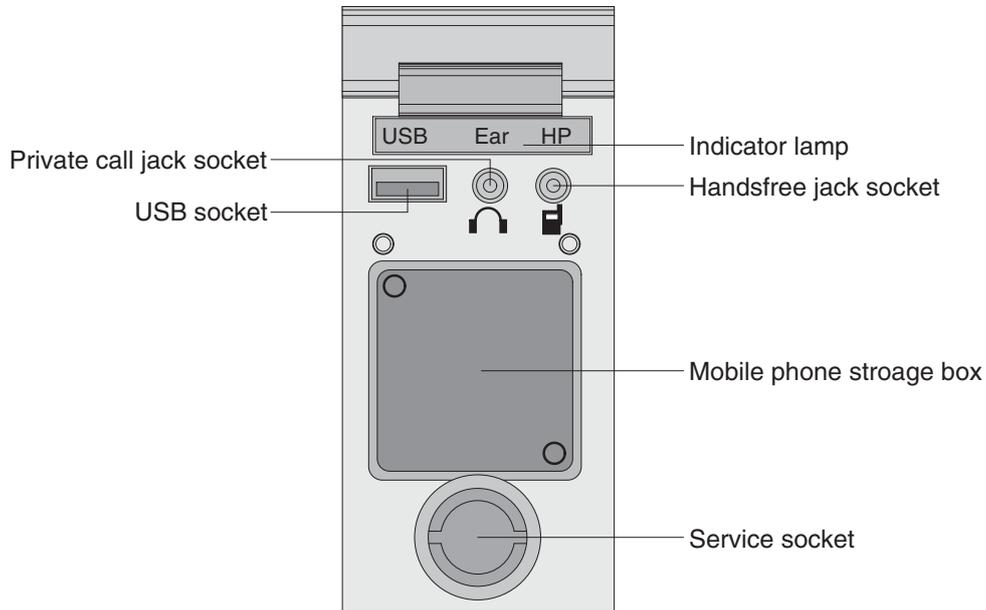
● AREA Selection :

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

- ④ USB version : USB 1.1
- ⑤ Bluetooth version : V2.1
- ⑥ Bluetooth supported profile :
 - A2DP : Advanced Audio Distribution Profile
 - AVRCP : Audio/Video Remote Control Profile
 - HFP : Hands-Free Profile

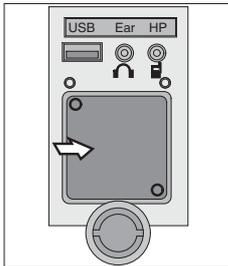
4) HANDSFREE (OPTION)

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.



21093CD51

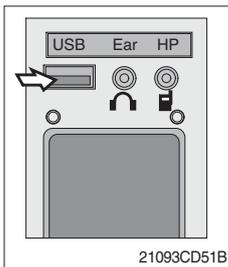
(1) Mobile phone storage box



21093CD51A

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

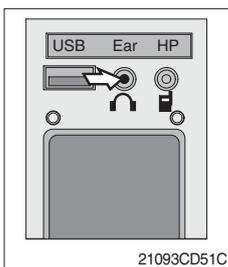
(2) USB socket



21093CD51B

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

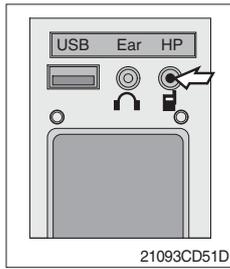
(3) Private call jack socket



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.

(5) Indicator lamp



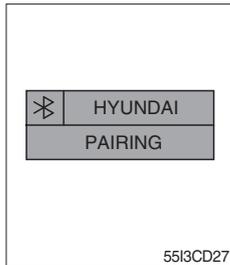
- ① This lamp is turned ON when the handsfree mode selected.

(7) Wireless handsfree

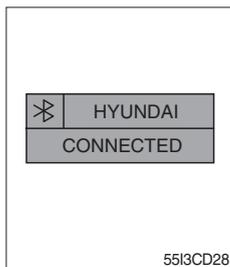


- ① Select the handsfree mode by pressing bluetooth button on the mobile phone.

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

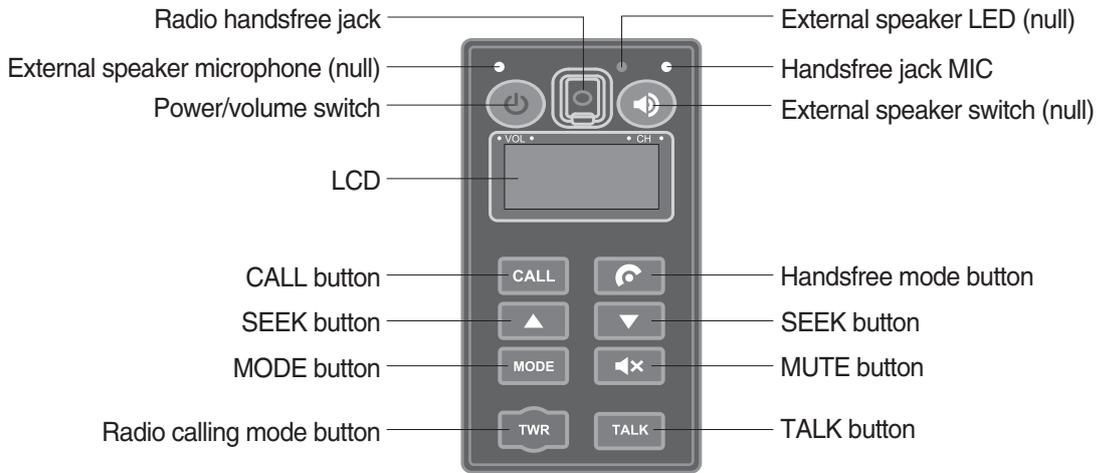


- ② The mobile phone finds bluetooth named "HYUNDAI".
Select "HYUNDAI" and set "connect with Bluetooth on the mobile phone".
· Default password : 0000



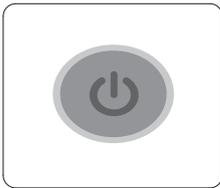
- ③ The Bluetooth pairing is made, the LCD screen shows "CONNECTED".
- ④ Once the Bluetooth pairing is made, they will be automatically connected after 20 seconds when start key ON.
- ⑤ When you want to deactivate the pairing, press and hold the **CALL** button for more than 3 seconds then you can hear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

5) REMOTE CONTROLLER (OPTION)



55I3CD31

(1) Power and volume switch



55I3CD31A

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

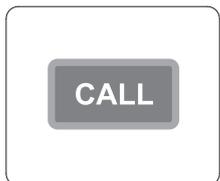
(2) Mode change button



55I3CD31B

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

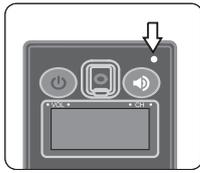
(3) Call button



55I3CD31C

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

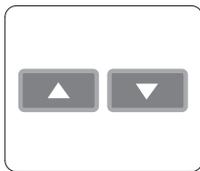
(4) Handsfree MIC



55I3CD31D

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

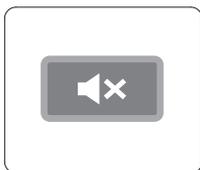
(5) Seek button



55I3CD31E

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

(6) Mute button



55I3CD31F

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

(7) Mode button



55I3CD31G

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

(8) Radio calling mode button



55I3CD31H

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

※ Radio handsfree

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

(9) Talk button



55I3CD31J

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

(10) Handsfree jack



55I3CD31K

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

6) MONITOR

· Adjusting the angle

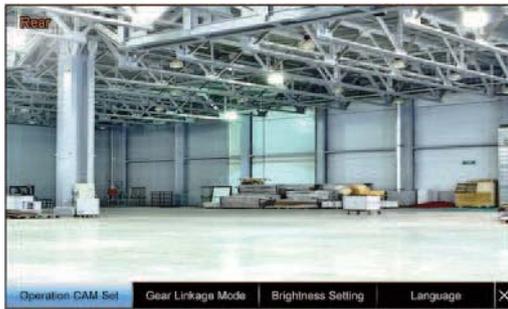
Upwards and downwards up to 7°, swivels left and right up to 15°.



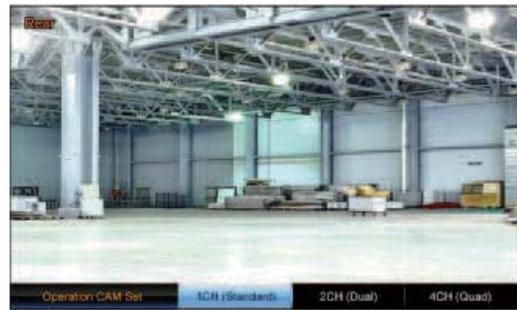
50D9CD211

No.	Symbol	Name	Description
1	◀	LEFT	- Move the Menu (left). Lower the value.
2	○	MENU / ENTER	- Enter the OSD menu - Choose the menu
3	▶	RIGHT	- Move the Menu (right). Upper the value.

(1) Operation CAM set



50D9CD200



50D9CD201

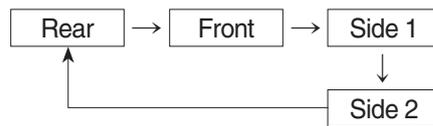
- Set the number of camera channels on screen.

① 1 CH (standard)



50D9CD202K

- Display one camera image on screen.
- Press left or right key to change the camera channel.

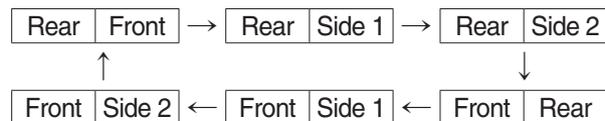


② 2 CH (dual)



50D9CD203K

- Display two camera images on screen.
- Press left or right key to change the camera channel.

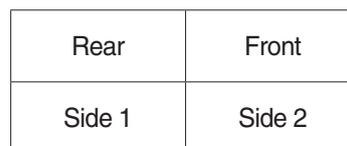


③ 4 CH (quad)

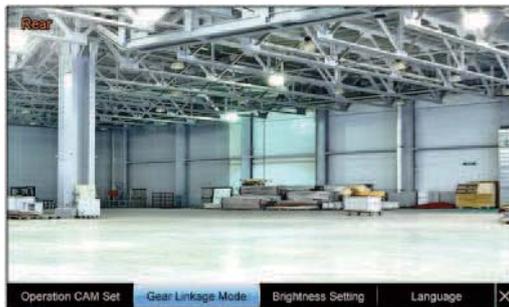


50D9CD204K

- Display four camera images on screen.



(2) Gear linkage mode



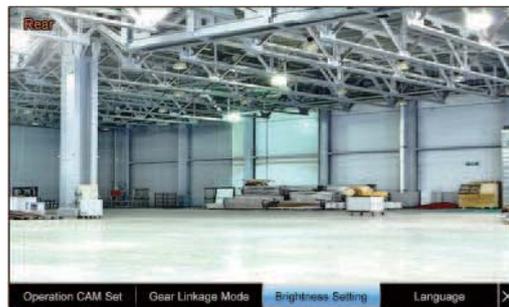
50D9CD205



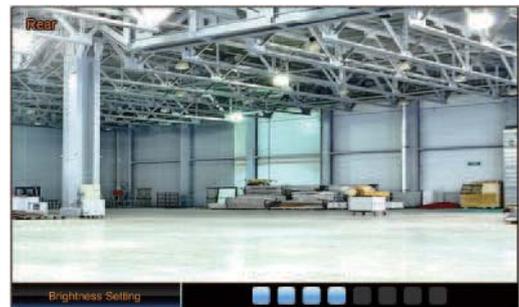
50D9CD206

- Depending on the gear state (forward/ backward), camera channel is switched automatically.

(3) Brightness setting



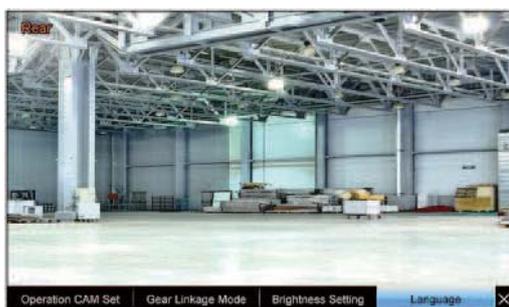
50D9CD207



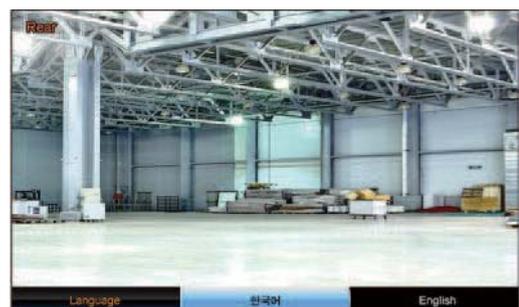
50D9CD208

- Adjust the display brightness.

(4) Language



50D9CD209



50D9CD210

- Set the language (13 multiple language).