

# 3. CONTROL DEVICES

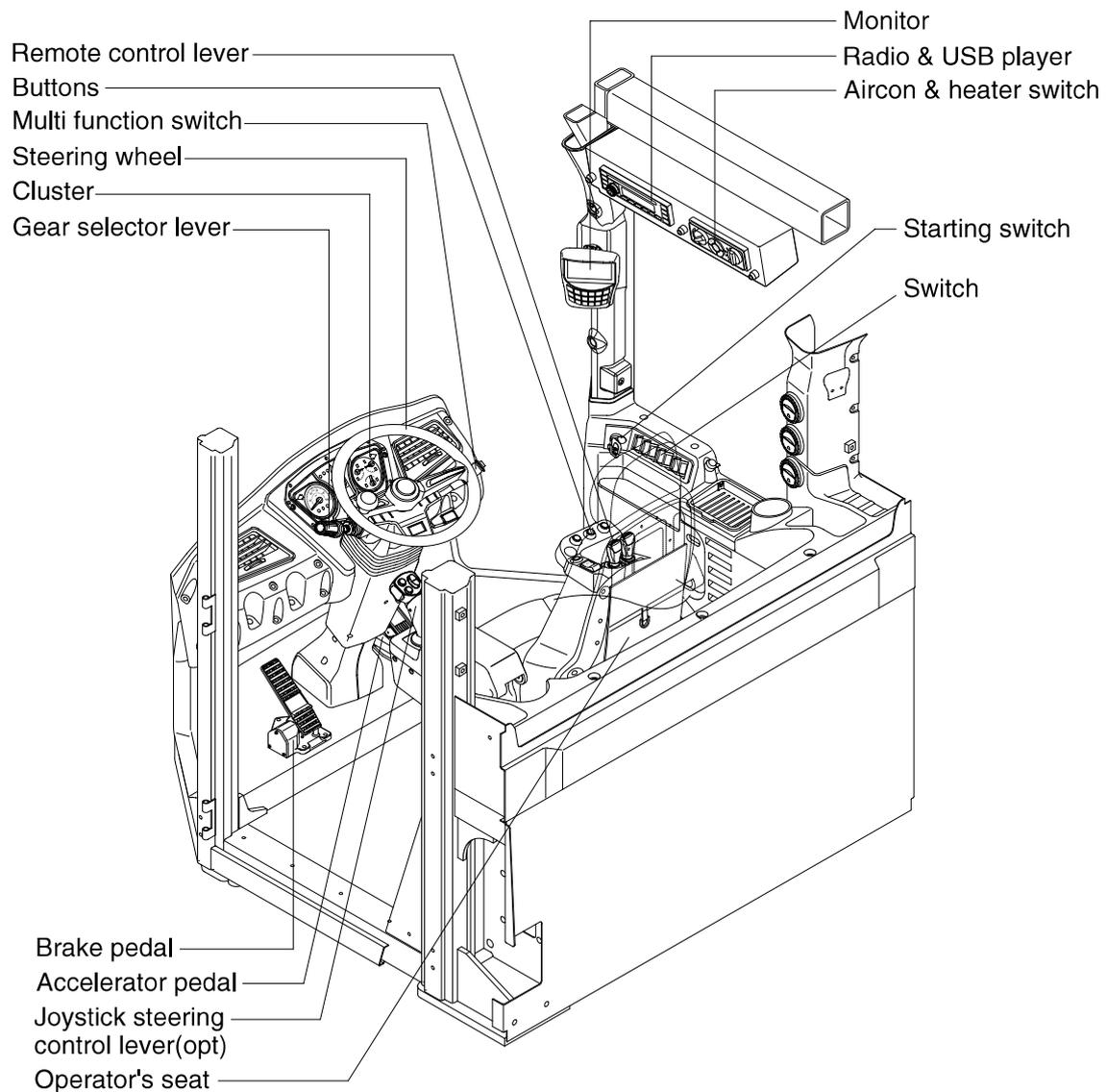
## 1. CAB DEVICES

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

### 2) ELECTRONIC MONITOR SYSTEM

(1) The centralized electronic monitor system allows the status and conditions of the machine to be monitored at a glance.

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



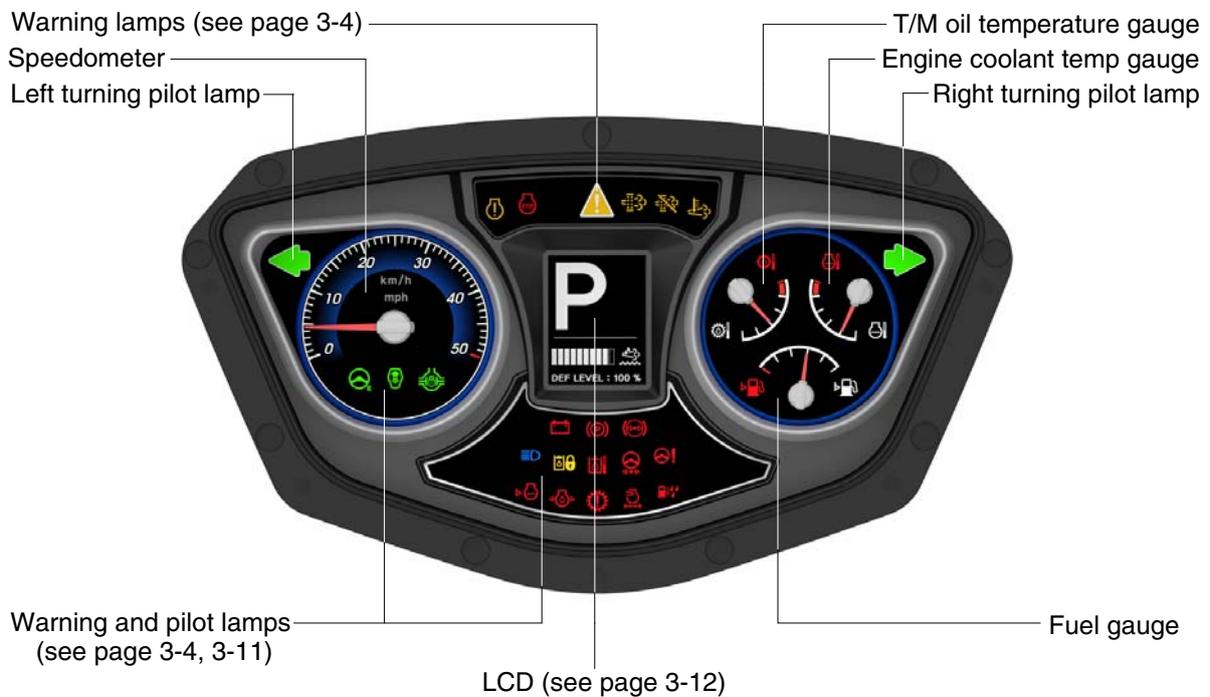
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## 2. CLUSTER

### 1) STRUCTURE

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

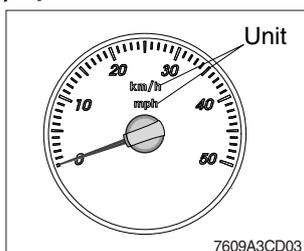
- Gauges : Indicate operating status of the machine.
  - Warning lamps : Indicate abnormality of the machine.
  - Pilot lamps : Indicate operating status of the machine.
  - LCD : Indicates selected the driving speed and direction.
- ※ The cluster installed on this machine does not entirely guarantee the condition of the machine. Daily inspection should be performed according to chapter 6, MAINTENANCE.
- ※ When the cluster provides a warning immediately check the problem, and perform the required action.



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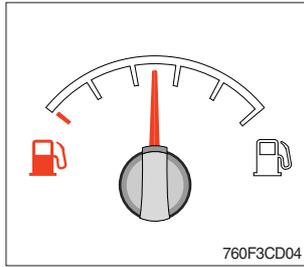
### 2) GAUGE

#### (1) Speedometer



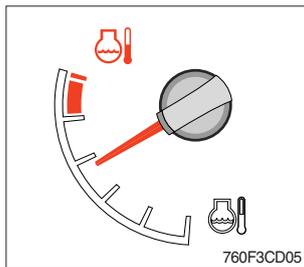
- ① The speedometer displays the speed of machine in mph and km/h.
- ※ The unit (km/h or mph) can be set by the display set up menu of the monitor and selected unit is displayed. Refer to page 3-33.

## (2) Fuel gauge



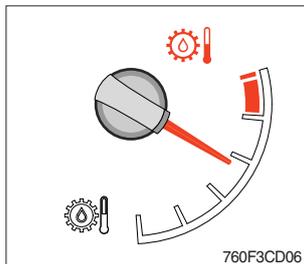
- ① This gauge indicates the amount of fuel in the fuel tank.
  - ② Fill the fuel when the indicator moves red range or  lamp blinks in red, refuel as soon as possible to avoid running out of fuel.
- ※ If the gauge indicates red range even though the machine is on the normal condition, check the electric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

## (3) Engine coolant temperature gauge



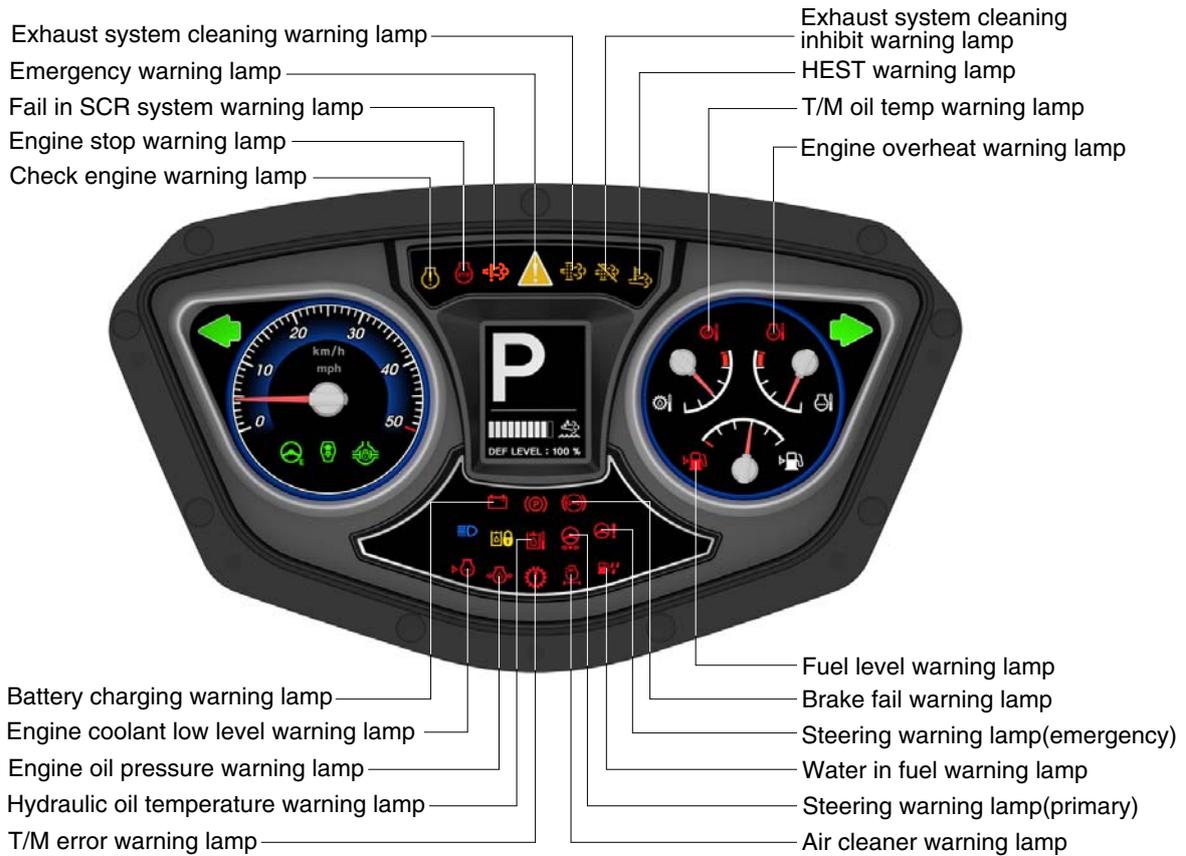
- ① This gauge indicates the temperature of coolant.
    - White range : 40~105°C (104~221°F)
    - Red range : Above 105°C (221°F)
  - ② If the indicator is in the red range or  lamp blinks in red, turn OFF the engine and check the radiator and engine.
- ※ If the gauge indicates red range even though the machine is on the normal condition, check the electric device as that can be caused by the poor connection of electricity or sensor.

## (4) Transmission oil temperature gauge



- ① This gauge indicates the temperature of transmission oil.
    - White range : 40~107°C (104~225°F)
    - Red range : Above 107°C (225°F)
  - ② If the indicator is in the red range or  lamp blinks in red, it means the transmission is overheated. Be careful that the indicator does not move into the red range.
- ※ If the gauge indicates red range even though the machine is on the normal condition, check the electric device as that can be caused by the poor connection of electricity or sensor.

### 3) WARNING LAMPS



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#### (1) Emergency warning lamp



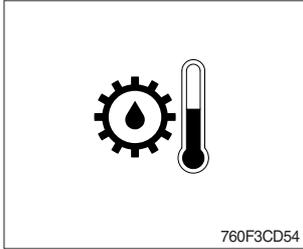
- ① This lamp blinks when each of the below warnings is happened.
  - Warning lamps light ON
  - MCU input voltage abnormal
  - Monitor communication data error
  - Engine ECM and TCU communication data error
- ② When this warning lamp blinks, machine must be checked and service immediately.

#### (2) Engine overheat warning lamp



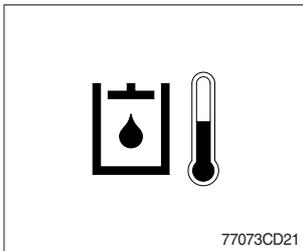
- ① This lamp is turned ON when the temperature of coolant is over the normal temperature (105°C, 221°F).
- ② Check the cooling system when the lamp is ON.

### (3) Transmission oil temperature warning lamp



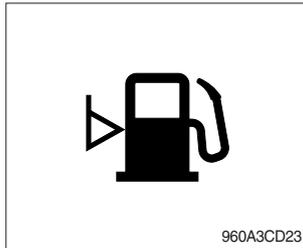
- ① This lamp is turned ON when the temperature of transmission oil is over the normal temperature (107°C, 225°F).
- ② When this lamp lights up during operation, stop the engine and check the machine.

### (4) Hydraulic oil temperature warning lamp



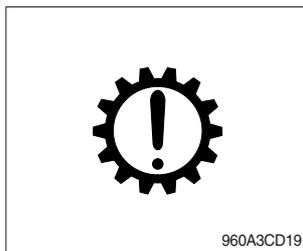
- ① This warning lamp operates and the buzzer sounds when the temperature of hydraulic oil is over 106°C (223°F).
  - ② Check the hydraulic oil level when the lamp is turned ON and the buzzer sounds.
  - ③ Check for debris between oil cooler and radiator.
- ※ If you want to stop buzzer sound, just touch the  icon.

### (5) Fuel level warning lamp



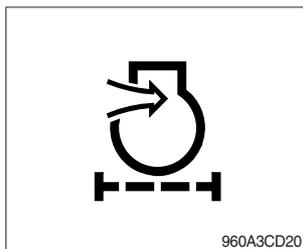
- ① This warning lamp lights ON when the fuel level is low. Refuel the machine as soon as possible.

### (6) Transmission error warning lamp



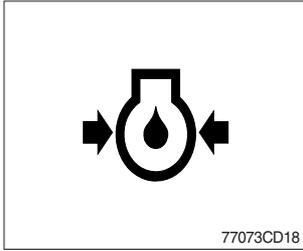
- ① This lamp lights ON and the LCD display show the error codes when an error occurs in the transmission.
  - ② Immediately pull the machine to a convenient stop. Stop the engine. Investigate the cause.
- ※ Consult a HYUNDAI dealer to investigate the cause.  
※ Do not operate until the cause has been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

### (7) Air cleaner warning lamp



- ① This lamp lights ON and the buzzer sounds when the filter of air cleaner is clogged.
  - ② When the air cleaner warning lamp is ON and the buzzer sounds, check and clean the primary element.
- ※ If you want to stop buzzer sound, just touch the  icon.  
※ The primary element should be replaced if the warning lamp is ON after installation of a clean primary element.  
※ Replace the primary element after 4 times cleanings.

### (8) Engine oil pressure warning lamp



- ① This lamp is comes ON and the buzzer sounds after starting the engine because of the low engine oil pressure.
  - ② If the lamp comes ON and the buzzer sounds during engine operation, shut OFF engine immediately. Check engine oil level.
- ※ If you want to stop buzzer sound, just touch the  icon.

### (9) Steering warning lamp



#### ① Primary

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

- ※ If you want to stop buzzer sound, just touch the  icon.
- ※ Do not operate the machine until the cause has been corrected.

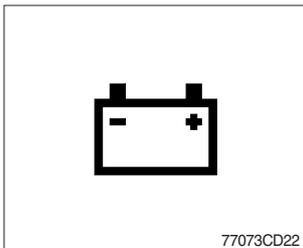


#### ② Emergency

This lamp indicates the emergency steering system is active.

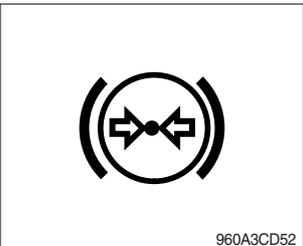
- ※ Immediately pull the machine to a convenient stop and stop the engine.
- ※ The emergency steering system can be manually tested. Refer to page 3-45.

### (10) Battery charging warning lamp



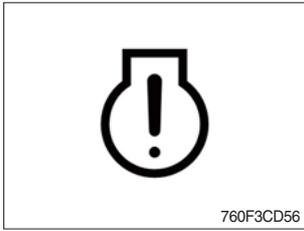
- ① This lamp is ON and the buzzer sounds when key ON, it is turned OFF after starting the engine.
  - ② Check the battery charging circuit when this lamp comes ON and the buzzer sounds, during engine operation.
- ※ If you want to stop buzzer sound, just touch the  icon.

### (11) Brake fail warning lamp



- ① The lamp lights ON and the buzzer sounds when the oil pressure of service brake drops below the normal range.
  - ② When the lamp is ON and the buzzer sounds, stop the engine and check for its cause.
- ※ If you want to stop buzzer sound, just touch the  icon.
- ※ Do not operate until any problems are corrected.

### (12) Check engine warning lamp



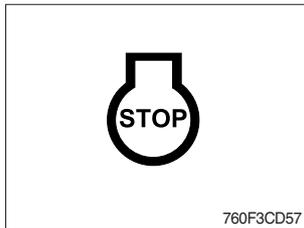
① This lamp lights ON and the buzzer sounds when the communication between MCU and engine ECM on the engine is abnormal, or if the cluster received specific fault code from engine ECM.

② Check the communication line between them.

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

※ If you want to stop buzzer sound, just touch the  icon.

### (13) Stop engine warning lamp



① This lamp lights ON when 30 minutes elapsed with empty condition of the DEF/AdBlue® tank, stop the engine immediately and check the DEF/AdBlue® tank.

② Fill the DEF/AdBlue® immediately in the DEF/AdBlue® tank.

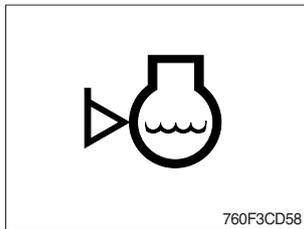
※ Refer to page 3-10.

③ This lamp lights ON when the stationary SCR system cleaning is not performed.

※ Refer to page 3-8.

※ Please contact your Hyundai service center or local dealer.

### (14) Engine coolant low level warning lamp



① This warning lamp lights ON when the level of coolant is low.

② Fill the coolant immediately when the lamp is ON.

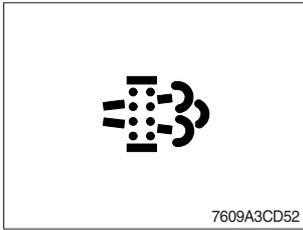
### (15) Water in fuel warning lamp



① This warning lamp lights ON when the water separator is full of water or malfunctioning.

※ When this lamp lights ON, stop the machine and spill water out of the separator.

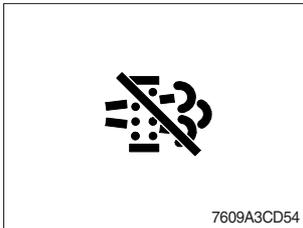
**(16) DPF (diesel particulate filter) warning lamp**



- ① This warning lamp lights ON or blinks when the regeneration is needed as table below.
- ※ **Consequences of delaying regeneration**
  - Poor performance caused by increasing exhaust gas pressure.
  - Higher fuel consumption
  - Shorter filter lifetime

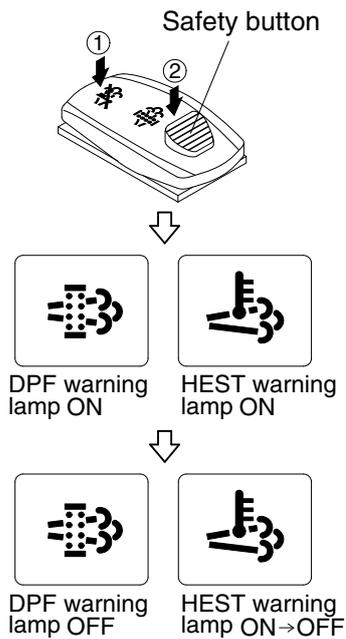
| Condition   | Warning lamp   |   |  | Remedy  |
|-------------|--|---|--|---|
|             | DPF<br> | Check engine<br> | Stop engine<br> |   |
| Normal      | Off  | Off   | Off  | · Automatic regeneration  |
| Soot low    | On   | Off   | Off  | · Increase engine load/speed and allow engine to run until regeneration is completed (DPF lamp : OFF)<br>· Initiate a manual regeneration as following page |
| Soot midium | On   | Off   | Off  |   |
| Soot high   | On   | On  | Off  | · Engine power may be reduced automatically (soot medium)<br>· Initiate a manual regeneration<br>· Engine power and speed will be reduced automatically     |
| Stop        | Off  | On  | On   | · Stop the engine immediatary.<br>· Please contact your Hyundai service center or local dealer.   |

**(17) DPF regeneration inhibit warning lamp**



- ① This warning lamp indicates, when illuminated, the DPF regeneration switch is pushed inhibit position, therefore automatic and manual regeneration can not occur.
- ※ **Refer to the page 3-46 for the DPF switch.**

※ Manual regeneration method of DPF



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

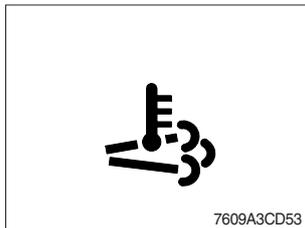
- ① Stop and park the machine.
- ② Pull the safety button and push the switch to position ② to initiate the manual regeneration of DPF.

※ Refer to the page 3-46 for the switch operation.

※ The engine speed may increase to 950~1050 rpm and DPF regeneration begins and it will take approximately 20~30 minutes.

- ③ HEST warning lamp will light ON and DPF warning lamp blink during the regeneration function is operating.
- ④ The DPF and/or HEST warning lamp will light OFF when the regeneration function is completed.

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

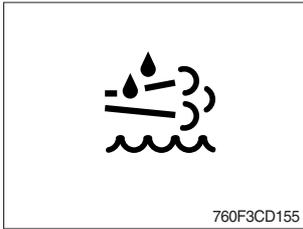


- ① This warning lamp indicates, when illuminated, that exhaust temperatures are high due to regeneration of the DPF.
- ② The lamp will also illuminate during a manual regeneration.
- ③ When this lamp is illuminated, be sure the exhaust pipe outlet is not directed at any surface or material that can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

⚠ When this lamp is illuminated, the exhaust gas temperature could reach 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 regeneration.

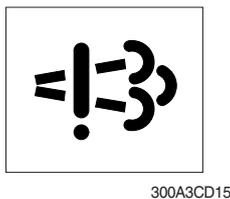
**(19) DEF/AdBlue® level warning lamp**



- ① This warning lamp indicates when ON or blinking, that the DEF/AdBlue® level is low as table below.
- ※ **It is recommended that the DEF/AdBlue® tank be filled completely full of the DEF/AdBlue® in order to correct any fault conditions.**

| Warning lamp      |              |             | Description  |
|-------------------|--------------|-------------|--|
| DEF/AdBlue® level | Check engine | Stop engine |  |
|                   |              |             |  |
| On                | Off          | Off         | · The DEF/AdBlue® level has fallen below the initial warning level (10%).  |
| Blink             | Off          | Off         | · The DEF/AdBlue® level has fallen below the critical warning level (5%).  |
| Blink             | On           | Off         | · The DEF/AdBlue® level has fallen below the initial derate level (2.5%).<br>· The engine power will be limited automatically.   |
| Blink             | On           | On          | · This is happened when 30 minutes elapsed with empty conditions (0%) of the DEF/AdBlue® tank.<br>· The engine will enter the final derate level which may include low idle lock or engine shutdown with restart limitations.<br>· In order to remove the final derate, the DEF/AdBlue® tank must be filled to above 10 percent gauge reading. |

**(20) Fail in SCR system warning lamp**



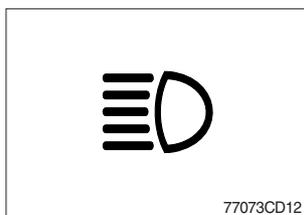
- ① This warning lamp indicates there are faults related to SCR system.
- ② The lamp lights ON when each of the below warnings is happened.
  - a. Low DEF/AdBlue® level
  - b. Poor quality of DEF/AdBlue®
  - c. Tempering or malfunction in the aftertreatment system
- ③ Once the lamp lights ON, the engine will derate shortly.
- ※ **Please contact your Hyundai service center or local dealer.**

#### 4) PILOT LAMPS



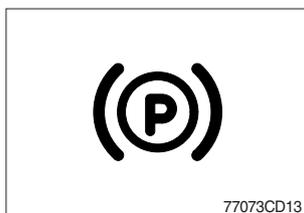
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##### (1) High beam pilot lamp



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

##### (2) Parking brake pilot lamp



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

##### (3) FNR select pilot lamp (option)



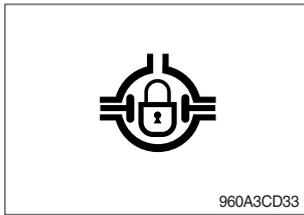
- ① The lamp comes ON when FNR select button on the optional FNR remote control lever is pressed.
- ※ Refer to page 3-47.

##### (4) Joystick steering pilot lamp (option)



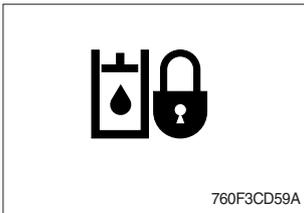
- ① This lamp lights ON when joystick steering is activated. It is then possible to steer the machine and select gears from the armrest to the left of the operator's seat.
- ※ Refer to page 3-51.

(5) Differential lock pilot lamp (option)



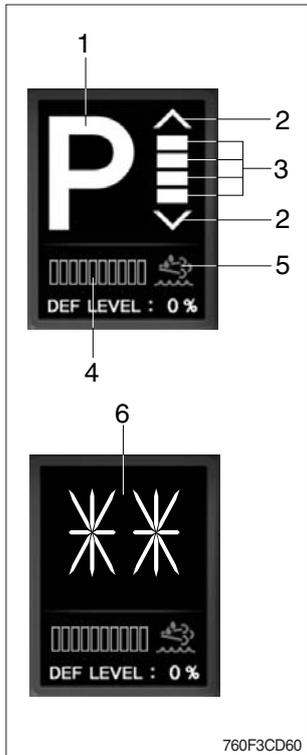
- ① This lamp lights ON when the differential lock function is operating.  
 ※ Refer to page 3-45.

(6) Pilot cut off pilot lamp



- ① This lamp lights ON when the pilot cut off switch is pressed.  
 ※ Refer to page 3-45.

5) LCD



(1) The LCD can be used with the gear selector.

It indicates speed, driving direction, DEF/AdBlue® level and transmission warning.

| No | Symbol        | Meaning                                    | Remark  |
|----|---------------|--|---|
| 1  | △ · ▽ · N     | Actual gear display                        | Forward, reverse, neutral   |
|    | 1, 2, 3, 4, 5 |  | Actual gear   |
|    | P             |  | Parking brake mode active   |
| 2  | ^, v          | Forward, reverse                           | FWD 1       REV 1<br>FWD 5       REV 5  |
| 3  | ≡             | Gear range display                         |   |
| 4  |               | DEF/AdBlue® level                          | Display the amount of liquid in the DEF/AdBlue® tank  |
| 5  |               | DEF/AdBlue® level warning lamp             | Fill the DEF/AdBlue® when the lamp ON or blinks in red.<br>- ON : DEF/AdBlue® level 5~10%<br>- Blink : DEF/AdBlue® level below 5%<br>※ If the lamp ON or blinks in red even though the machine is on the normal condition, check the electric device as that can be caused by the poor connection of electricity or sensor. |
| 6  | LF, LR        | Limp home gear                             | -   |
|    | **            | Oil temperature too low, no gear available | Warm up engine / transmission   |
|    | WS            | Warning sump temperature                   | Alternate between WS and actual gear / direction while driving, in neutral only displayed WS if no fault is detected<br>※ Cool down transmission  |
|    | WT            | Warning torque converter temperature       | Alternate between WS and actual gear / direction while driving, in neutral only displayed WS if no fault is detected<br>※ Cool down transmission  |

### 3. MONITOR (7 inch touch screen)

- The monitor is adjustable.
  - Vertical : 30°
  - Horizontal : 15°



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#### 1) MAIN DISPLAY

- ※ You can select or set the menu by the switches or touch screen.
- ※ Please refer to switch, page 3-39 for selection and change of menu and input value.
- ※ Display type can be changed by operator. See page 3-34 for details.



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- |   |               |    |                               |    |            |
|---|---------------|----|-------------------------------|----|------------|
| 1 | Clock         | 6  | Machine monitoring            | 11 | Engine rpm |
| 2 | Buzzer        | 7  | Fuel rate                     | 12 | Quick menu |
| 3 | Wiper speed   | 8  | Engine mode/Operation history | 13 | 10 lamps   |
| 4 | Camera screen | 9  | Transmission mode             |    |            |
| 5 | Menu          | 10 | ECO gauge                     |    |            |

## (1) Menu bar



※ In main display, you can move to right side menu by touching each icon.

### ① Clock setting

Set the time (hour, minute and AM or PM)

### ② Wiper speed

Set the wiper speed (slow, normal, fast and very fast)

### ③ Menu

Move to main menu.

### ④ Buzzer stop

If you want to stop buzzer sound, just touch the



icon.

### ① Clock setting



### ② Wiper speed



### ③ Menu



### ④ Buzzer stop



## (2) Change display information



※ In main display, you can check the data and setup what you want by touching each window area or icon.

### ① Machine monitoring

To display the item in main display, select two items of them.

#### ※ Priority in the machine monitoring display

The priority of the weighing system is the highest.

If the weighing system is selected, the other items are not available.

To display the other items, the weighing system should not be selected.

※ **Weighing system** : see page 3-22.

### ① Machine monitoring



## ② Fuel rate

- Set average fuel rate or a days fuel used on main display screen.
- Refer to page 3-29.

## ② Fuel rate



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## ③ Engine mode and operation history

- Set the engine mode (A).
- Refer to page 3-19.
- Set Hour meter / ODO meter (B).
- Refer to page 3-28.

## ③ Engine mode



A

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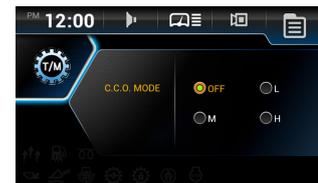
B

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## ④ Transmission mode

- Set the clutch cut off (A), shift (B) and torque converter lock up mode (C).
- Refer to page 3-20.

## ④ Transmission mode



A

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B

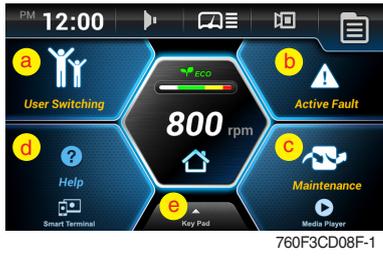
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C

760F3CD08M-1

⑤ Quick menu



※ Move the quick menu screen by touching  .

① User switching

- When multiple users share a machine, it allows users to switch user settings of machine.
- User can apply or save the setting of monitor easily.

② Active fault

- Display the fault code of MCU/ECU/TCU/EHCU.
- Refer to page 3-28.

③ Maintenance

- Elapsed time, change or replace cycle can be changed.
- Refer to page 3-31.

④ Help

- Read the monitor manual as a PDF file on the monitor.

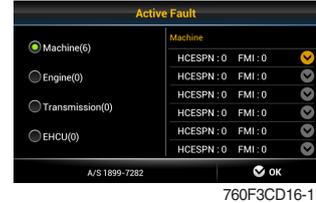
※ Smart terminal

- The menu features a smartphone and operates the miracast.

① User switching



② Active fault



③ Maintenance



④ Help



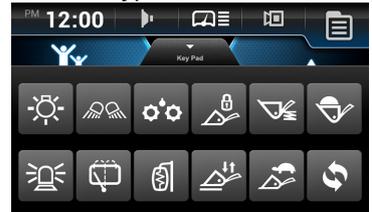
⑤ Virtual keypad

To display the virtual keypad, drag the button (  ) to top of the screen.

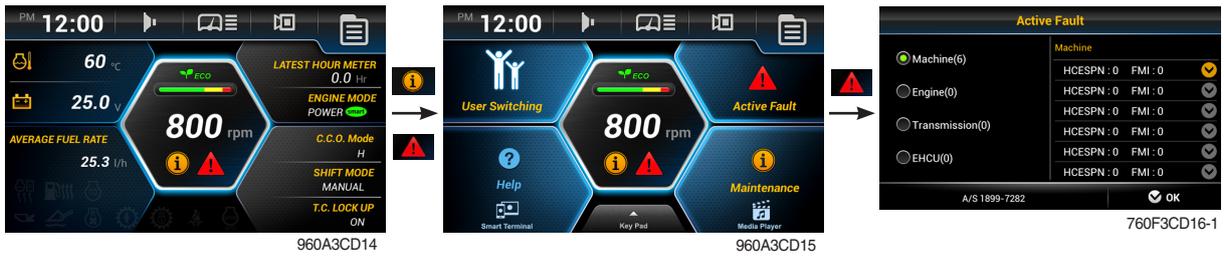
※ Refer to the page 3-39 for details.



Virtual keypad



### (3) Fault and maintenance warning

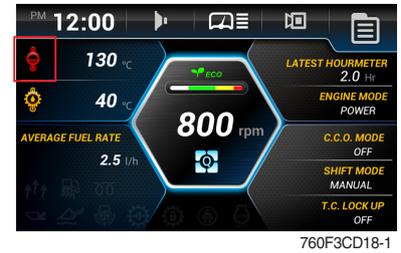


- ① If you touch the warning sign (red icon), move to the quick menu.
- ② You can check the fault message and move the maintenance screen by touching relevant area.

### (4) Machine monitoring warning

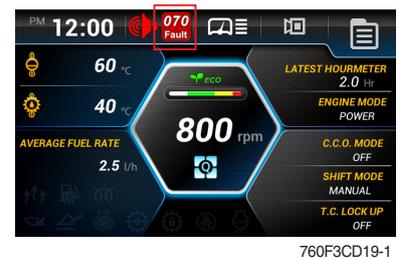
- ① Warning sign (red icon) will be shown when the temperature of hydraulic oil, cooling water, transmission oil or battery voltage is not normal state.
- ② Case of warning sign

| Icon | Description                                   |
|------|---|
|      | Above 106°C of hydraulic oil temperature      |
|      | Above 105°C of cooling water temperature      |
|      | Above 107°C of transmission oil temperature   |
|      | Below 24.5 voltage of battery (for 3 minutes) |



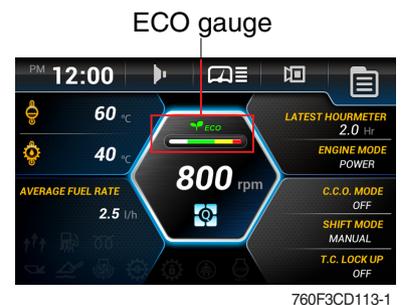
### (5) Communication error

- ① MCU could not communicate with monitor over 10 seconds, error message will be show on the screen.



### (6) Eco gauge

- ① This gauge indicates the fuel consumption rate and machine load status. So that operators can be careful with fuel economy.
- ② The fuel consumption rate or machine load is high, the segment is increased.
- ③ The color of Eco gauge indicates operation status.
  - White : Idle operation
  - Green : Economy operation
  - Yellow : Non-economy operation at a medium level.
  - Red : Non-economy operation at a high level.



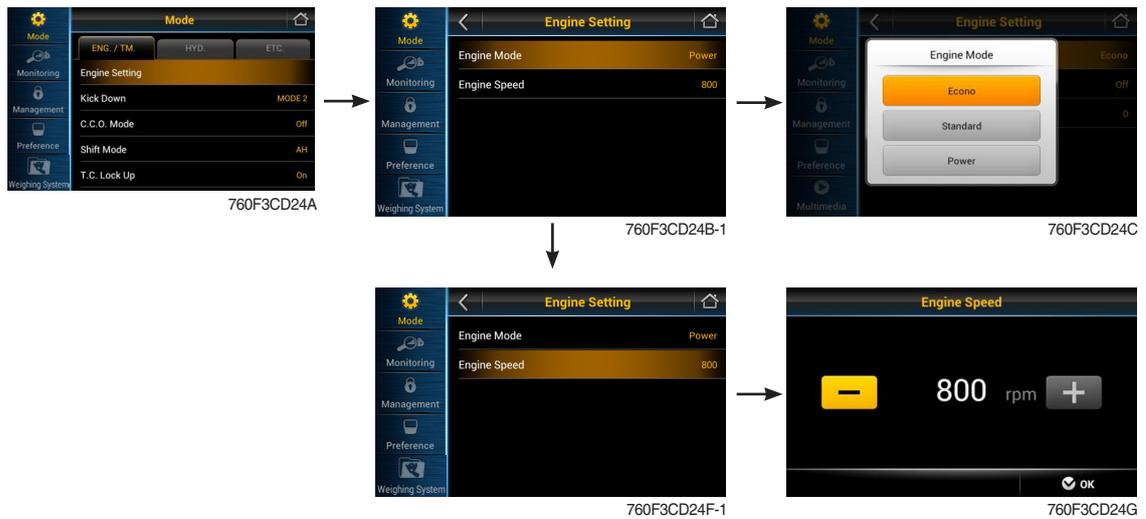
## 2) MAIN AND SUB MENU

### (1) Structure

| No | Main menu   | Sub menu  | Description  |
|----|---|---|--|
| 1  | <p>Mode</p>  <p>760F3CD25A</p>         | <p>Engine setting<br/>Kick down<br/>C.C.O mode<br/>Shift mode<br/>T.C. lock up<br/>Work load<br/>Boom/bucket detent mode<br/>Bucket priority<br/>Auxiliary attach max flow level<br/>Soft end stop<br/>Speedometer frequency setting<br/>Cooling fan reverse mode<br/>Wiper level setting<br/>Calibration</p> <p>Engine auto shutdown</p> | <p>Engine mode, Engine speed<br/>Mode 1 (down/up), Mode 2 (down only)<br/>Clutch cut off mode (Off, L, M, H)<br/>Transmission shift mode (manual, AL, AN, AH)<br/>Torque converter lock up ON/OFF<br/>Weighing system, Weighing display, Error detection<br/>Boom/bucket detent ON/OFF, Save position<br/>Bucket priority ON/OFF<br/>Oil flow level setting<br/>Boom up/down, Bucket in/dump ON/OFF<br/>Speedometer setting<br/>Off, Manual, Automatic<br/>Slow, Normal, Fast, Very fast<br/>Boom/bucket angle, Boom pressure, Brake pedal sensor, AEB<br/>Once, Always, Disable, ESL system setting</p> |
| 2  | <p>Monitoring</p>  <p>760F3CD25B</p>  | <p>Machine monitoring<br/>Operation history<br/>Fault history<br/>Fuel consumption history</p> <p>Machine information</p>   | <p>Hyd, Coolant and T/M oil temp, Battery voltage<br/>Hour meter, ODO meter<br/>Active/Logged fault (MCU, ECU, TCU, EHCU)<br/>General record, Hourly record, Daily record, Mode record<br/>TCU, ECU, MCU, RMCU, EHCU, Monitor, Cluster</p>   |
| 3  | <p>Management</p>  <p>760F3CD25C</p> | <p>Machine security<br/>Maintenance<br/>Service menu</p> <p>Change A/S phone number<br/>Software update</p>   | <p>ESL system setting, Change password, Smart key<br/>Elapsed time, Cycle, Maintenance history<br/>Sensor monitoring, Speed limit setting, Weighing system compensation, EHCU I/O information<br/>Check and change of contact information<br/>Update file in USB memory</p>  |
| 4  | <p>Preference</p>  <p>760F3CD25D</p> | <p>Brightness setting<br/>Clock setting<br/>Unit setting</p> <p>Display style/Language<br/>Sound output setting<br/>Camera setting</p>  | <p>Manual, Automatic<br/>Clock setting<br/>Temp (°F/°C), Speed (km/h,mph), Weight (ton, lb),<br/>Pressure (bar, Mpa, kgf/m², psi)<br/>Type A, Type B, 13 multiple language<br/>Internal speaker, External speaker (Aux)<br/>Active camera, Display order, Reverse mode, AAVM (option)</p>  |

## (2) Mode

### ① Engine setting mode (machine serial No.: ~#0179)



- **Engine mode**

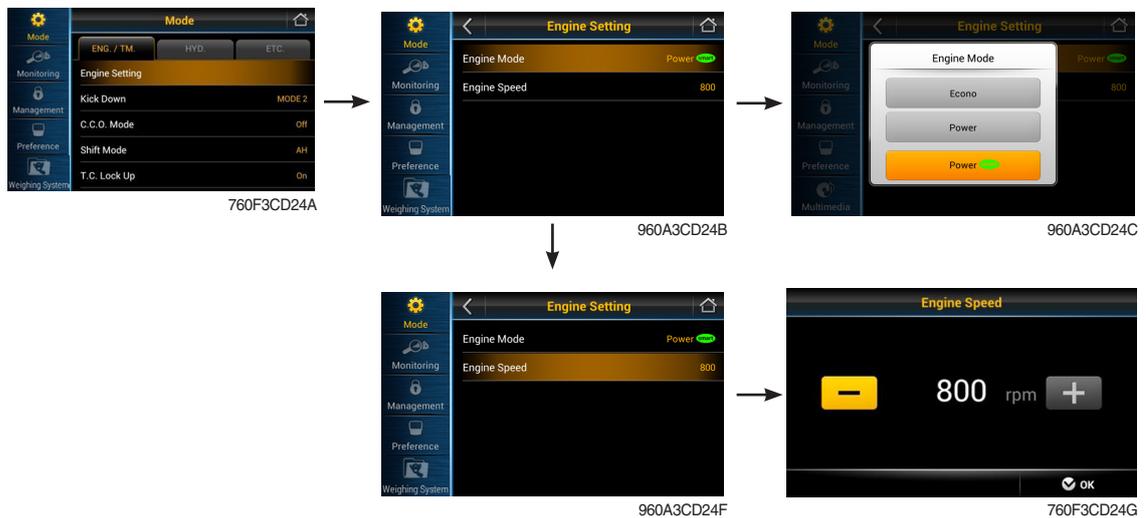
The operator can adjust the machine's performance.

- Econo : Maximum fuel efficiency for general loading.
- Standard : General digging and loading operation.
- Power : Maximum power output for hard digging operation or hill climb.

- **Engine speed**

Setting engine low idle rpm.

### Engine setting mode (machine serial No.: #0180~)



- **Engine mode**

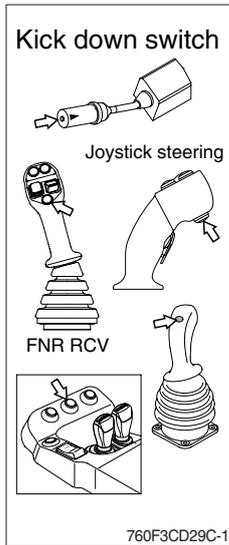
The operator can adjust the machine's performance.

- Econo : Maximum fuel efficiency for general loading.
- Power : Maximum power output for hard digging operation or hill climb.
- Smart power : Fuel efficient operation with same performance as power mode.

- **Engine speed**

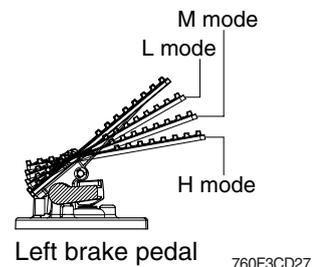
Setting engine low idle rpm.

## ② Kick down mode



- **Manual mode** (shift mode : manual)  
It is effective 2nd speed to 1st speed only and recover to 2nd speed quickly when push the switch one more time.
  - **Automatic mode** (shift mode : AL, AN, AH)
    - **Mode 1** (down/up)  
It shifts down quickly from current gear to one step lower speed by pushing the switch and recover to current speed quickly when push the switch one more time.
    - **Mode 2** (down only)  
It shifts down from current gear to one step lower speed when push the switch every time.  
The kick down function is released in only 1st speed.
- ※ **The normal autoshift function continues after the kick down switch is released.**

## ③ Clutch cut off (C.C.O) mode



- Four modes are available for operator's preference and job condition.
  - OFF : The clutch cut off function is disable.
  - L (Low) : The clutch is disengaged early for short-distance and rapid loading.
  - M (Medium) : The clutch is disengaged normally for general digging and loading operation.
  - H (High) : The clutch cut off function is automatically adjusted depending on slope angle or machine load, And inching fuction becomes possible by using the brake pedal.
- The clutch cut off functions of the left brake pedal depend on the position of the left brake pedal and the setting of the clutch cut off mode.

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

#### ④ Shift mode



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

#### ⑤ Torque converter (T.C.) lock up mode (5-speed transmission)



- If you select ON, the lock-up clutch on the torque converter will automatically activate according to load.
- **Lock-up clutch function (option)**  
To prevent power loss in the torque converter, the pump rotor and turbine rotor on the torque converter lock together through a direct lock-up clutch.

## ⑥ Work load mode



760F3CD33A

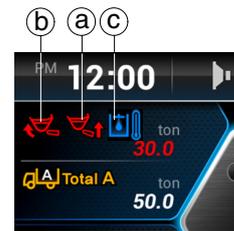


9603CD33



760F3CD33B-1

- Weighing system : Set the workload measurements.
- Weighing display : Set the display on main display screen.
- Initialization : Workload initialization.
- Error detection : Set error detection ON/OFF.
  - OFF : Errors are not displayed.
  - ON : ①, ② and ③ are displayed on main display screen.
    - ① The boom lift was performed too fast.
    - ② The bucket was not in the fully tilted back position while bucket was in the weigh range.
    - ③ The hydraulic temperature is low (below 40 °C).
- Boom pressure calibration : See the page 3-26 for details.
- Weighing system compensation (#0084~)
  - Calibration workload depending on work tool.
  - ※ **Only for the service person. Do not adjust arbitrary.**
- ※ Refer to page 3-42 for details.



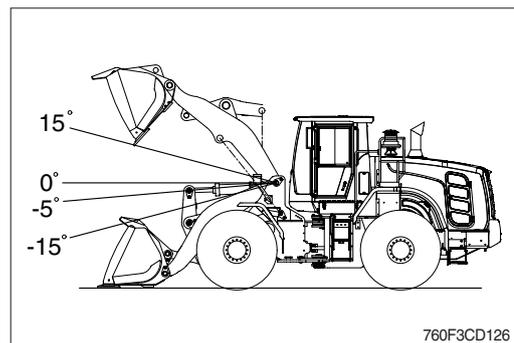
760F3CD33CK



9603CD75G

### ※ Weighing system

- The weight indication in bucket is calculated by measuring boom position and boom pressure.
- ① The weight is '0.0 ton' when the boom is placed at below -15°.
- ② The weight is indicated when the boom is placed at the range (-5°→15°).
- ③ The weight is calculated when the boom is placed at above -5° and boom is lowered below -15° after dumping operation.

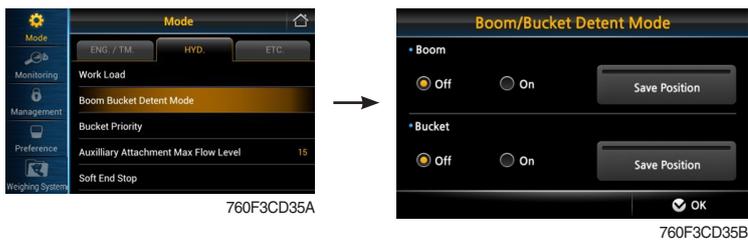


760F3CD126

In order to recheck weight, go to the ② after changing boom position (below -15°).

- Dump operation : It is checked by bucket cylinder's stroke change (below 250 mm).
- ※ The temperature for the hydraulic oil must be raised to at least 40 °C (104 °F) before operation.

## ⑦ Boom/bucket detent mode



- OFF : Detent functions are not operated.
- ON : Boom or bucket detent functions are operated.
- Save position : Refer to page 4-22.

## ⑧ Bucket priority mode (option)



- Bucket priority function is to be more convenient for operator to load materials. Bucket-in (roll back) operation takes priority over the boom-up (raise) operation in case of using both operations at the same time and therefore boom (raise) operation is stopped and only bucket (roll back) is operated.
- Set the bucket priority function ON/OFF.

## ⑨ Auxiliary attachment max flow level mode (option)



- If the machine is equipped with auxiliary attachment, auxiliary attachment flow can be easily adjusted and controlled.
- Set the oil flow level from 0 to 15 level by using +/- button.

## ⑩ Soft end stop mode (option)



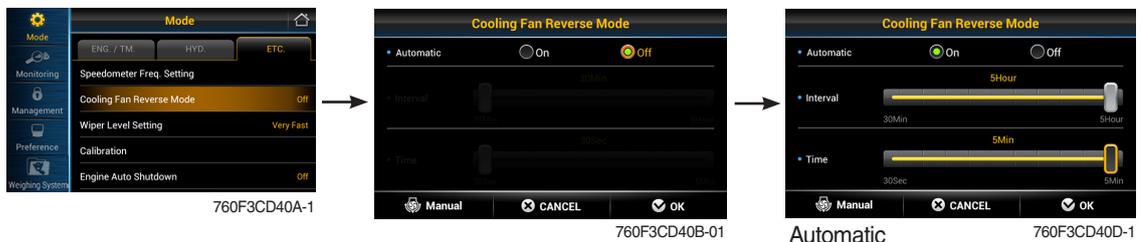
- This function gives shock free operation by reducing the speed of attachment near the end stroke.
- Set the soft end stop function ON/OFF.

## ⑪ Speedometer frequency setting mode

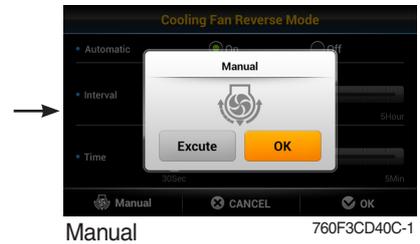


- Press speedometer setting bar (or ) for 3 seconds.
- ※ **Only for the service person. Do not adjust arbitrary.**
- ※ **Using button**
- To change the pulse value, press  or .
- To change the position, press .

## ⑫ Cooling fan reverse mode



- **Manual** : Rotate the fan with reverse direction while pressing the button "Excute".
- **Automatic** : Rotate the fan with reverse direction by preset cycle.
  - Interval : 30 min ~ 5 hrs
  - Time : 30 sec ~ 5 min
- ※ **Default : Interval (60 min), time (120 sec)**



## ⑬ Wiper level setting mode



- Setting wiper speed (slow, normal, fast and very fast).

## 14 Calibration



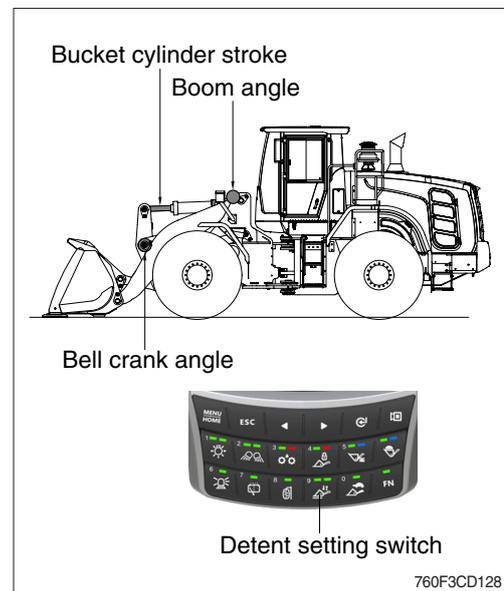
- Press NEXT button after following the instruction at each step.
- If correction is right, NEXT button will be activated, then go to next stage.
- After following each step correctly, the message "Calibration is done" will be shown. Press complete button, then process be ended.

### ※ Using switch

- Using  instead of NEXT, complete button.

### · Boom / Bucket angle calibration

- MCU get sensing signal from boom angle and bell crank angle and calculate bucket cylinder stroke and boom link position angle from ground real time basis.
- Boom angle position and bucket cylinder stroke is set by detent setting switch on monitor.
- Individual setting position is done by lever (detent, release operation).
- Angle sensor calibration is basically carried out before delivery of the machine. When angle sensor is replaced or actual value is different compared to setting value, this function can be done.

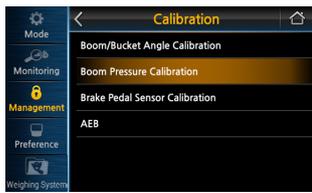


- The calibration must be carried out as follows :

- ① Lower the boom at maximum low position and press NEXT button or  (bucket must be max tilting position).
- ② Raise boom at maximum high position and press NEXT button (or ).
- ③ Position boom at  $-5^{\circ}$  and press NEXT button (or ).
- ④ Retract bucket cylinder length (to minimum position) at  $-5^{\circ}$  boom position and press NEXT button (or ).
- ⑤ Extend bucket cylinder length (to maximum position) at  $-5^{\circ}$  boom position and press NEXT button (or ).
- ⑥ In case above steps are carried normally, "Calibration is done" message is shown. Then angle sensor calibration is finished.

- ※ **Boom down / boom up / bucket position setting : Refer to page 4-22.**

· Boom pressure calibration



760F3CD70A



Display A

760F3CD70B-1

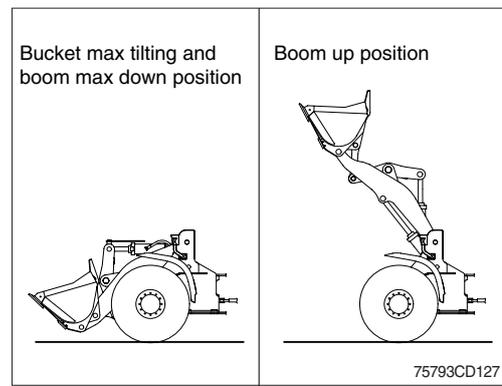
- Press START button after following the instruction.
- After a few minutes, "Calibration fail" or "Calibration success" message will be shown. Press complete button then process be ended.

※ Using button

- Using  instead of NEXT, complete button.

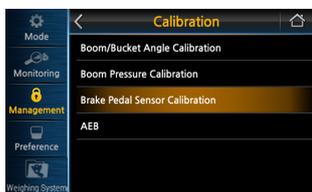
· Boom pressure calibration

- It is used when bucket weight is changed or measured weight is inaccurate.
- The calibration must be carried out as follows :
  - ① Increase hydraulic temperature (about 40~60°C).
  - ② Select "Boom-pressure".
  - ③ Roll-in the bucket at maximum range and lower the boom at minimum height.
  - ④ Press START button.
  - ⑤ Raise boom to maximum position. Boom up must be finished before stepping advance in "display A".
  - ⑥ If it show "Calibration success" message in a moment, press complete button (or ).

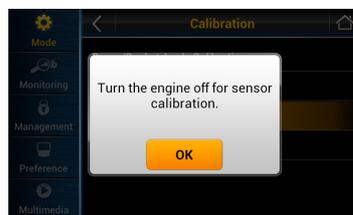


- ※ Raise hydraulic temperature enough when checking work load / boom pressure sensor calibration (recommendation : about 40 ~ 60°C).
- ※ Check if pressure sensor or angle sensor is in normal condition for accurate work load algorism or pressure sensor calibration [pressure sensors at boom cylinder head area and rod area, boom angle sensor (CD-80), bell crank angle sensor (CD-81)].
- ※ Sensor error message during pressure sensor calibration : sensor need to be checked.

· Brake pedal sensor calibration



760F3CD71A

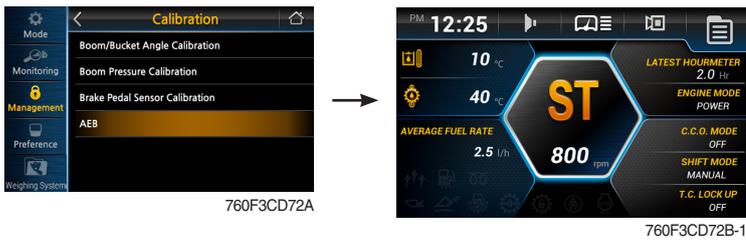


760F3CD71B-1

- Turn the engine OFF and turn the starting switch ON position.
- Press OK button, then calibration will be started.
- When display "IP  " on main display, press slowly the brake pedal completely.
- Release the brake pedal when display "IP  " on main display.
- For cancel, press MENU/HOME switch.

- ※ When the brake pedal or sensor is replaced, **brake pedal sensor calibration must be performed.**

· AEB



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

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

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

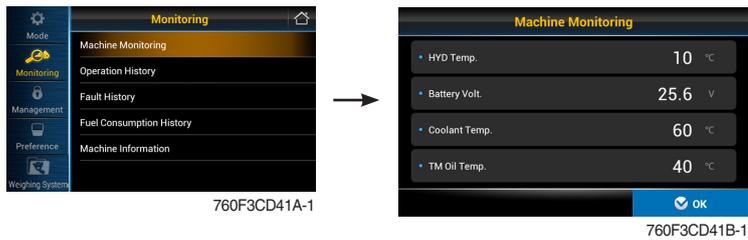
⑮ Engine auto shutdown mode



- The engine auto shutdown function can be activated or cancelled.
- Engine runs for the setting time (2~40 minutes) and then shuts down.

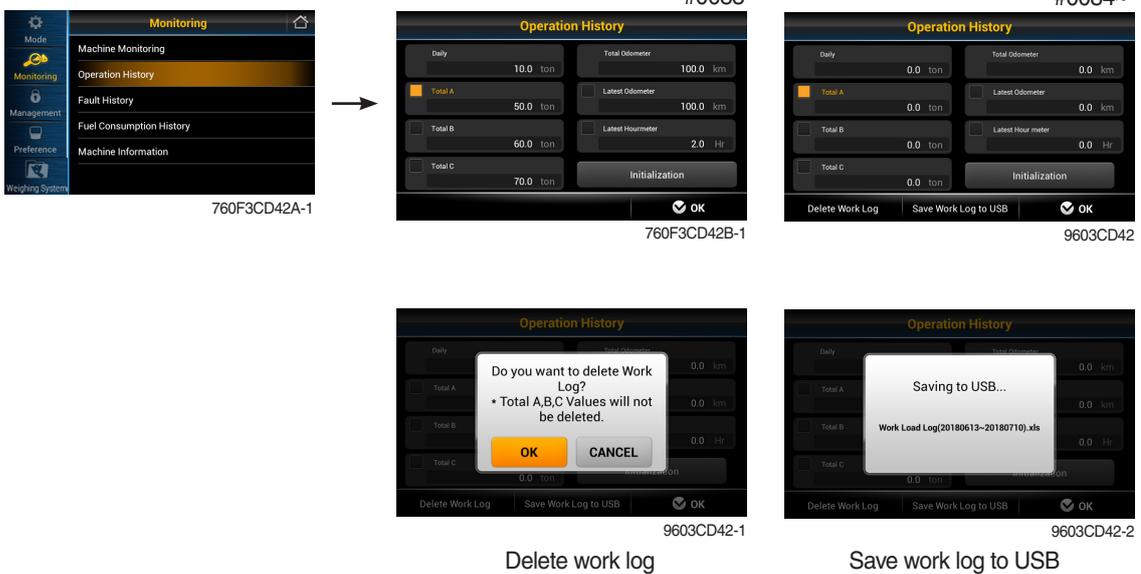
### (3) Monitoring

#### ① Machine monitoring



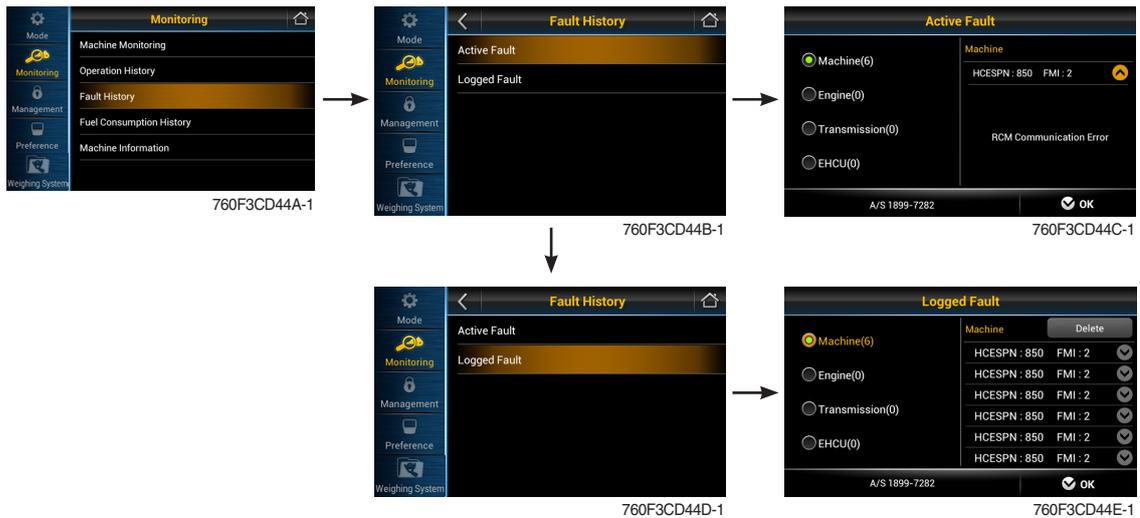
- Monitor the status of the machine.

#### ② Operation history



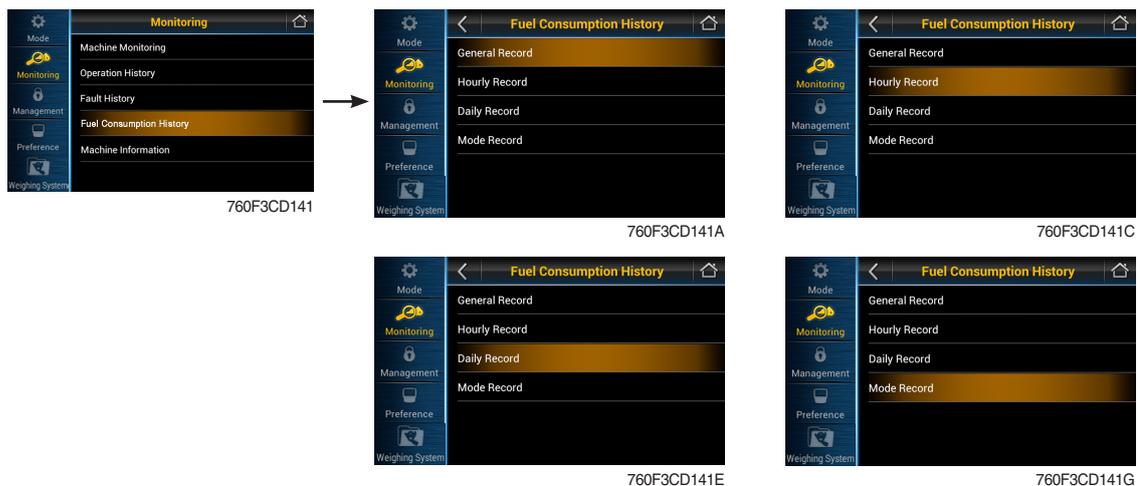
- **Hour meter / ODO meter**
- **Total**
  - Total distance (this item cannot be initialized).
  - Total working hour can check on service meter. See page 3-59.
- **Latest**
  - Working hour/distance after reset.
  - If you select **Initialization**, working hour/distance start zero.
- To display the item in main display, select the item in main display. See the page 3-13.
- **Delete work log / Save work log to USB (#0084~)**
  - Delete work load log and save work load log to USB.
  - USB memory recognize only FAT32 format.

### ③ Fault history



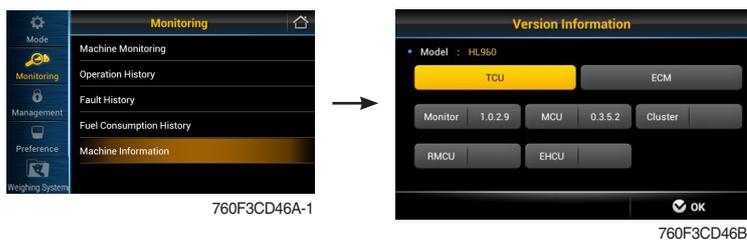
- Display the fault code of MCU/ECU/TCU/EHCU and delete logged fault.
- ※ Refer to service manual for HCESPN/FMI of engine and transmission.
- ※ Not define will be indicated in case of that there's no fault.
- ※ EHCU : Electro Hydraulic Control Unit.

### ④ Fuel consumption history



- Display the fuel consumption history.
  - General record (average fuel rate and a days fuel used)
  - Hourly record
  - Daily record
  - Mode record

### ⑤ Machine information



- Software versions of MCU, ECU, TCU, EHCU, Cluster and monitor can be checked.

## (4) Management

### ① Machine security



#### · ESL system setting

- ESL : Engine Starting Limit
- ESL mode is designed to be a theft deterrent or will prevent the unauthorized operation of the machine.
- If the ESL mode was selected ON, the password will be required when the start switch is turned ON.
- **Disable** : Not used ESL function
- **ON, Always** : The password is required whenever the operator start engine.
- **ON, After specific time** : The password is required when the operator start engine first. But the operator can restart the engine within the specific time without inputting the password. The specific time can be set maximum 2 days.



#### · Specific time

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

#### ※ Default password : 00000

#### · Change password

- Input 5 to 10 digits.

#### · Smart key (opt)

- Manage usage : Set the using or not of smart key.  
If you using smart key, ESL function always be activated.
- Manage tag : Register or delete user tag and display registered user tag.  
When delete user tag, all user tag will be deleted.

#### ※ Using smart key

##### - Verification success

Green smart key icon is displayed on the main display screen.

##### Verification failure

- Red smart key icon and password input screen is displayed.



Verification success



Verification failure

· **Engine Starting Condition**

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

② **Maintenance**



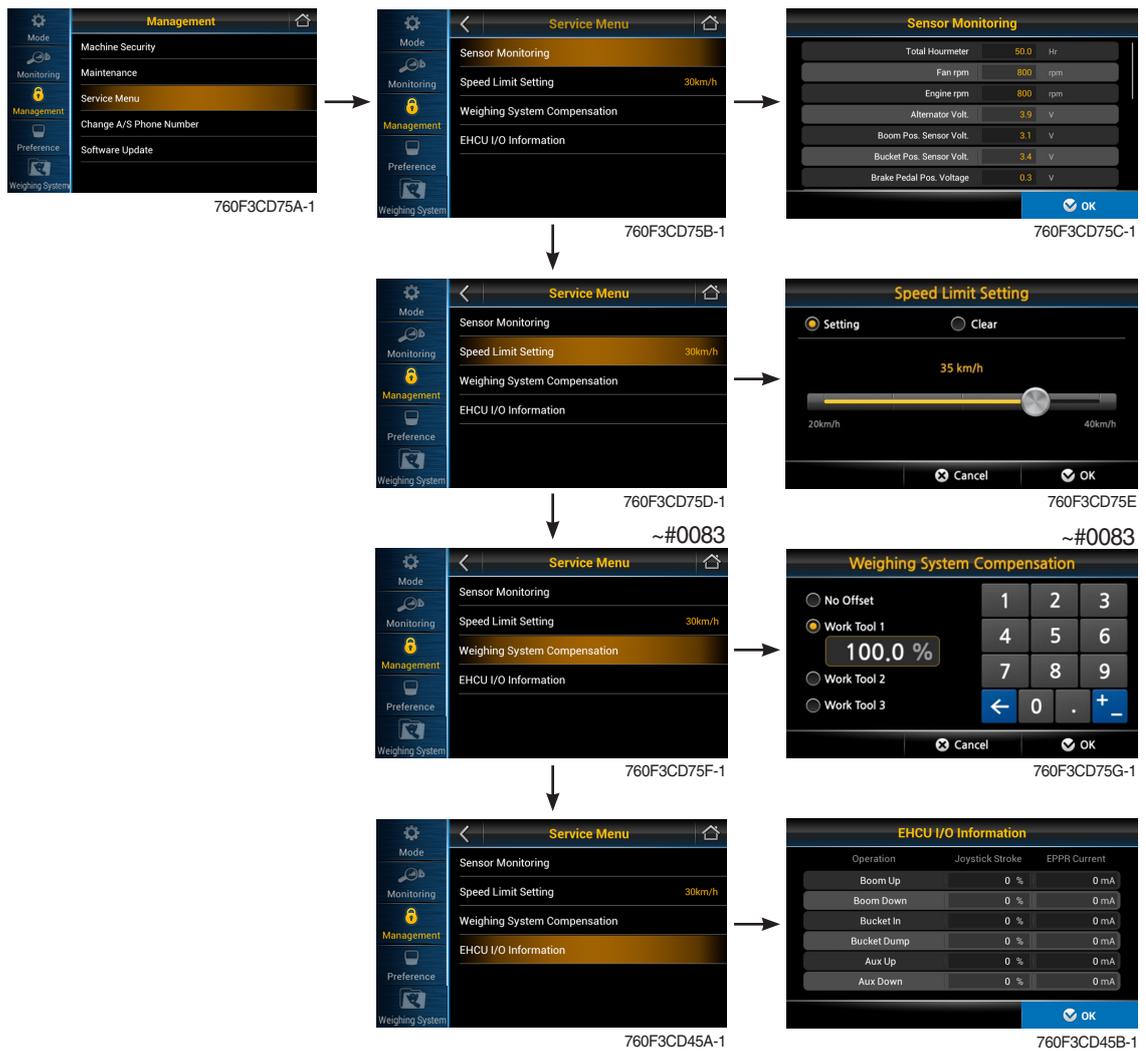
- **Replacement** : The elapsed time will be reset to zero (0).
- **Change cycle** : The change or replace cycle can be changed in the unit of 50 hours.
- **Show the maintenance history below 10.**  
When history have more than 10, delete the old item.
- **Change or replace interval**

| No | Item                             | Interval                                   |
|----|----------------------------------|--|
| 1  | Engine oil                       | 500  |
| 2  | Hydraulic oil                    | ★ <sup>1</sup> 2000<br>★ <sup>2</sup> 5000 |
| 3  | Pilot line filter element        | 1000                                       |
| 4  | Hydraulic oil return filter      | 1000                                       |
| 5  | Engine oil filter                | 500  |
| 6  | Fuel filter element              | 500  |
| 7  | Fuel pre-filter                  | 500  |
| 8  | Hydraulic tank air breather      | 1000                                       |
| 9  | Radiator coolant                 | ★ <sup>1</sup> 2000<br>★ <sup>2</sup> 6000 |
| 10 | Transmission oil and filter      | 1000                                       |
| 11 | Axle oil (front and rear)        | 1500                                       |
| 12 | Aircon & heater outer filter     | 1000                                       |
| 13 | DEF/AdBlue® supply module filter | 4500                                       |
| 14 | DEF/AdBlue® Tank filter          | 4000                                       |

★<sup>1</sup> : Conventional

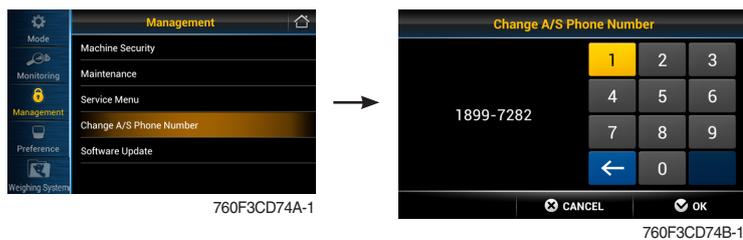
★<sup>2</sup> : HD Hyundai Construction Equipment genuine long life

### ③ Service menu



- **Sensor monitoring** : Display information of each sensors.
- **Speed limit setting** : 20~40 km/h (5 km/h intervals)
- **Weighing system compensation (~#0083)**
  - Calibration workload depending on work tool.
  - ※ **Only for the service person. Do not adjust arbitrary.**
- **EHCU I/O information**
  - Real time monitoring (joystick stroke, EPPR current).

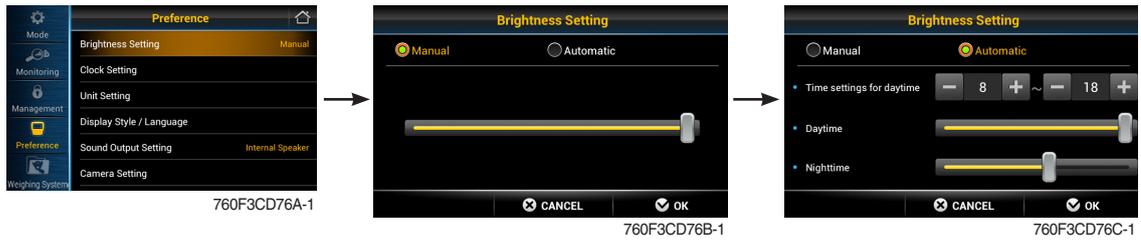
### ④ Change A/S phone number and software update



- **Change A/S phone number** : Check and change of contact information for customer service.
- **Software update** : Update file in USB memory.

## (5) Preference

### ① Brightness setting



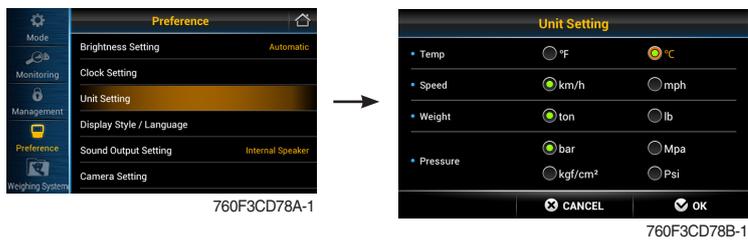
- **Manual**
  - Manual setting for LCD brightness.
- **Automatic**
  - Automatic control of LCD brightness as set level of day/night.
- **Setting day time**
  - Set the time for daylight.
  - If you set the time for daylight, the rest time will be night.
- ※ **Using button**
  - Changing brightness by ◀ or ▶ , input data by ↻.

### ② Clock setting



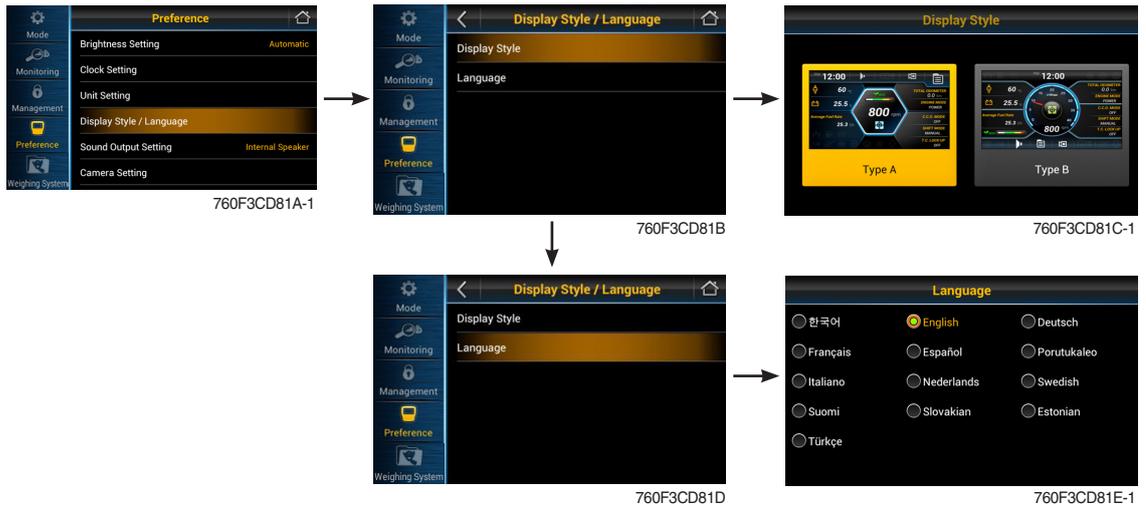
- Set the time (hour, minute and AM or PM)

### ③ Unit setting



- Temperature : °C ↔ °F
- Speed : km/h ↔ mph
- Weight : ton ↔ lb
- Pressure : bar ↔ Mpa ↔ kgf/m<sup>2</sup> ↔ psi
- ※ **Using button**
  - Move to other item by ↻.

#### ④ Display style/ Language



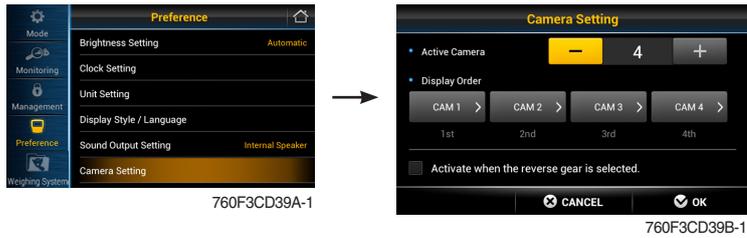
- Set the display type A or B.
- User can select preferable language and all display are changed the selected language.
- 13 multiple language available.

#### ⑤ Sound output setting



- Internal
  - Use speaker of monitor.
- External
  - Use cab speaker. User should put radio mode into Aux mode.

## ⑥ Camera setting



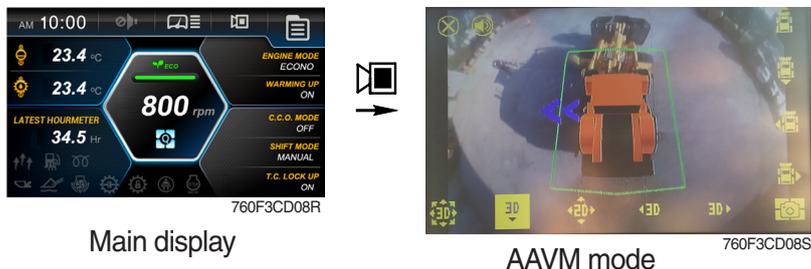
- **Active camera**
  - Four cameras can be installed on the machine.
- **Display order**
  - Set the channel sequence of each camera.
- **Active when the reverse gear is selected**
  - If transmission engages the reverse gear (R1~R3), the camera mode is displayed automatically in main display.
- If the camera was not equipped, this menu is not useful.
- In main display, if the is touched (or switch is pushed), the first ordered display camera will be viewed.

## ⑦ AAVM (All Around View Monitoring, option)

- The AAVM switches of the cluster consist of Camera, ESC and Buzzer stop.



- **Camera switch**
  - It will enter into the AAVM mode from the main display if the AAVM is installed.
  - While in the AAVM mode, select the ESC switch to return to the main display.



- **Buzzer stop switch**
  - In AAVM mode, it detects surrounding pedestrians or objects and the warning buzzer sounds.
  - User can turn OFF the warning sound by pressing buzzer stop switch.



290F3CD246

- When the worker or pedestrian go to the blue line (radius 5 m), an external danger area of equipping on the main display, the warning buzzer sounds and it displays the blue rectangular box for the recognition of the worker and pedestrian.

At this time, the operator should stop work immediately, and stop the buzzer by pressing the buzzer stop switch. And then, please work after you check whether the danger factors are solved.

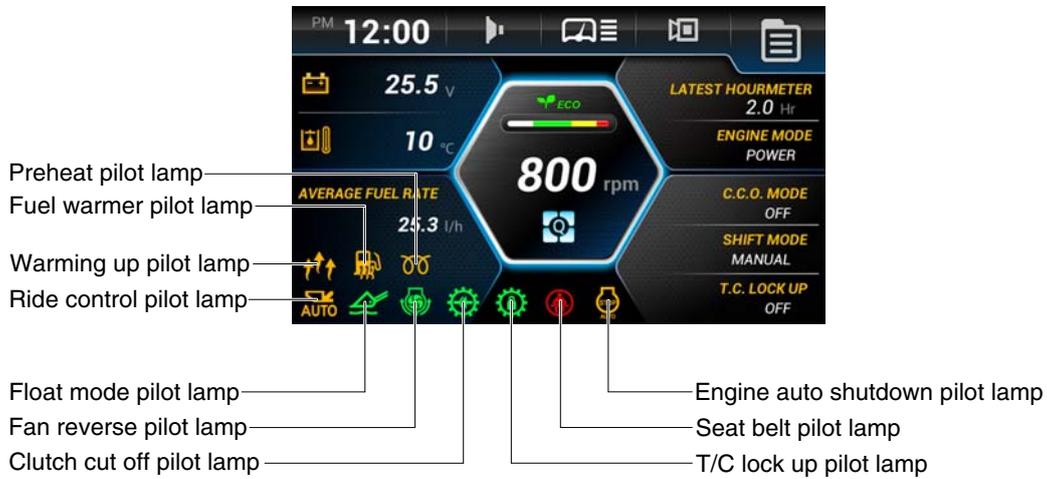


290F3CD247

- When the worker or pedestrian go inside of red line (radius 3 m), an internal danger area of equipping on the main display, the warning buzzer sounds and it displays the red rectangular box for the recognition of the worker and pedestrian.

At this time, the operator should stop work immediately, and stop the buzzer by pressing the buzzer stop switch. And then, please work after you check whether the danger factors are solved.

### 3) PILOT LAMPS



760F3CD90-1

#### (1) Warming up pilot lamp



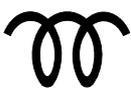
- ① This lamp lights ON when the coolant temperature is below 30°C (86°F).
- ② The automatic warming up is cancelled when the engine coolant temperature is above 30°C, or when 10 minutes have passed since starting the engine.

#### (2) Seat belt pilot lamp



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

#### (3) Preheat pilot lamp



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

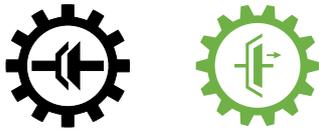
※ Refer to page 4-5.

#### (4) Engine auto shutdown pilot lamp



- ① This lamp lights ON when the engine auto shutdown function is activated.
- ※ Refer to page 3-27.

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



- ① This lamp lights ON when clutch cut off mode is set L, M, H.
- ※ Refer to page 3-20.

#### (6) Float mode pilot lamp



- ① This lamp lights ON when the boom float is activated.
- ※ Refer to page 4-9.

#### (7) Ride control pilot lamp (option)



- ① **Auto ride control**  
This lamp lights ON when the automatic ride control function is activated (**ON**, **Conditional speed** setting).
- ※ Refer to page 3-41.



- ② **Manual ride control**  
This lamp lights ON when the manual ride control function is activated (**ON**, **Always** setting).
- ※ Refer to page 3-41.

(8) Fan reverse pilot lamp



① This lamp lights ON when the cooling fan reverse mode is activated

※ Refer to page 3-24.

(9) Torque converter lock up pilot lamp (option)



① This lamp lights ON when the torque converter lock up function is operating.

※ Refer to page 3-21.

(10) Fuel warmer pilot lamp



① This lamp is turned ON when the coolant temperature is below 10°C (50°F) or the hydraulic oil temperature 20°C (68°F).

② The automatic fuel warming is cancelled when the engine coolant temperature is above 60°C and the hydraulic oil temperature is above 45°C since the start switch was ON position.

### 3) SWITCHES



760F3CD95-1

※ If you push left or right switch ( ◀ ▶ ) on main display, show the select box on current time. Move to next item in order by using left / right button.

(① Time → ② Buzzer → ③ Wiper → ④ Camera → ⑤ Menu → ⑥ Machine monitoring → ⑦ Fuel rate → ⑧ Engine mode/Operation history → ⑨ Transmission mode → ⑩ Quick menu)

※ Move to selected setting screen by using enter switch ( ⏏ ).

※ When keypad is not pressed for 3 seconds, convert screen to main display.

※ If you push left and right switch ( ◀ ▶ ) at the same time, move language settings.

#### (1) Menu / Home switch



① Main display to main menu, main menu to main display.

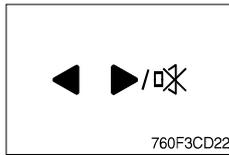
#### (2) ESC switch



① For other menu, this is used for cancellation (move to previous menu).

② AEB cancel or finish button in AEB.

### (3) Left / Right move switch



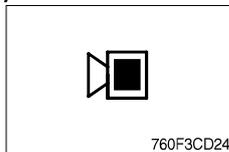
- ① Move in menu (left, up / right, down).
- ② Decrease / Increase input value.
- ③ Stop buzzer sound when sound is on.

### (4) Enter switch



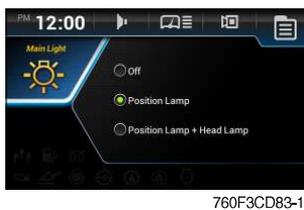
- ① Select menu (enter).

### (5) Camera switch



- ① Enter rear camera mode in main display.

### (6) Main light switch



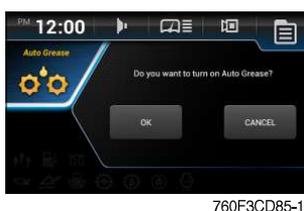
- ① This switch use to operates the clearance lamp and head light.
  - **Position lamp** : Clearance lamp and cluster illumination lamp come ON. The green pilot lamp is turned ON.
  - **Head lamp + Position lamp** : Clearance lamp, cluster illumination lamp and head light come ON. The green pilot lamp is turned ON.

### (7) Work lamp switch



- ① This switch use to operates the front and rear work lamps.
  - **Front** : Front work lamp located on the cab comes ON. The green pilot lamp is turned ON.
  - **Front + Rear** : Front work lamp located on the cab and rear work lamp located on the cowl come ON. The green pilot lamp is turned ON.

### (8) Central grease lubrication switch (option)



- ① This switch is used to operate the central grease lubrication system.
  - ② The central grease lubrication system is operated for set period. The green pilot lamp is turned ON.
- ※ **When malfunction occur in grease lubrication system, the red pilot lamp is turned ON.**
- ※ **Refer to page 8-1.**

### (9) Quick coupler switch (option)



#### ① Locking attachment

- The quick coupler pins move in the engaged position and buzzer sounds. Refer to the page 8-9.
- The green pilot lamp is turned ON.

#### ※ Check for engagement as followings.

- Put down pressure on the attachment.
- Back up the machine and make sure that there is no movement between the quick coupler and attachment.

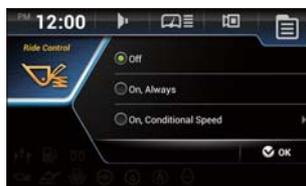
#### ② Unlocking attachment

- The quick coupler pins move in the disengaged position and buzzer sounds. Refer to the page 8-9.
- The red pilot lamp is turned ON.

⚠ Always check that the attachment is properly secured to the attachment quick coupler by pressing the front part of the attachment against the ground.

⚠ Never use an attachment before you have checked its mounting.

### (10) Ride control switch (option)



#### ① ON, Conditional speed

- Select **ON, conditional speed** in order to turn on the automatic ride control. The automatic ride control automatically turns on when the travel speed exceeds a preset speed. (forward / backward 1~15 km/h)
- The blue pilot lamp is turned ON.

#### ② ON, Always

- Select **ON, Always** in order to turn on the system for ride control regardless speed. The ride control will smooth the ride of the machine during travel.
- The green pilot lamp is turned ON.

#### ③ OFF

Select **OFF** in order to turn off the system for the ride control.

## (11) Work mode switch



9603CD115



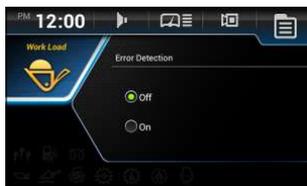
760F3CD115B-1



760F3CD115C-1



760F3CD115E-1



760F3CD115D-1

### ① Weighing system

#### - Manual

Accumulate the weight in memory A, B, C manually.

The green pilot lamp is turned ON.

※ Refer to the page 3-48 for workload button.

#### - Automatic

Accumulate the weight in memory A, B, C automatically.

The blue pilot lamp is turned ON.

※ Refer to the page 3-22 for weighing system.

※ Refer to the page 3-26 for boom pressure calibration.

### ② Weighing display

Selected item is shown in main display.

|  |  |
|--|--|
|  | Work weight (today)  |
|  | Work weight (previous day)   |
|  | Total weight accumulated in memory A, B, C individually regardless of date |
|  | Current weight   |

※ Initialization daily, total A, B, C

Initialize accumulated value at memory daily, A, B and C.

### ③ Error detection

Set error detection ON/OFF.

※ Refer to the page 3-22 for details.

## (12) Rear wiper and washer switch



760F3CD89-1

① This switch use to operates the rear wiper and washer.

When pressing the switch, the mode is changed sequence base.  
(OFF → intermittent → Low → OFF )

· **Intermittent** : The rear wiper operates intermittently.

· **Low** : The rear wiper is operated lower speed.

· **Washer** : The washer liquid is sprayed while long pressing the button.

② The green pilot lamp is turned ON.

### (13) Beacon lamp switch (option)



760F3CD88

- ① This switch turns ON the rotary light on the cab.
- ② The green pilot lamp is turned ON.

### (14) Mirror defrost switch (option)



760F3CD65

- ① **ON**
  - In condition of ON, it operates for 15 minutes. After 15 minutes, the defrost function stops automatically.
  - The green pilot lamp is turned ON.
- ② **OFF**
  - Stops defrost function.

### (15) Detent setting switch



760F3CD66

- ① **Boom and bucket**
    - Set the boom and bucket detent function ON/OFF.
  - ② **Save position**
    - Set the boom kickout and bucket leveler.
    - Refer to page 4-22.
- ※ The green pilot lamps are turned ON.

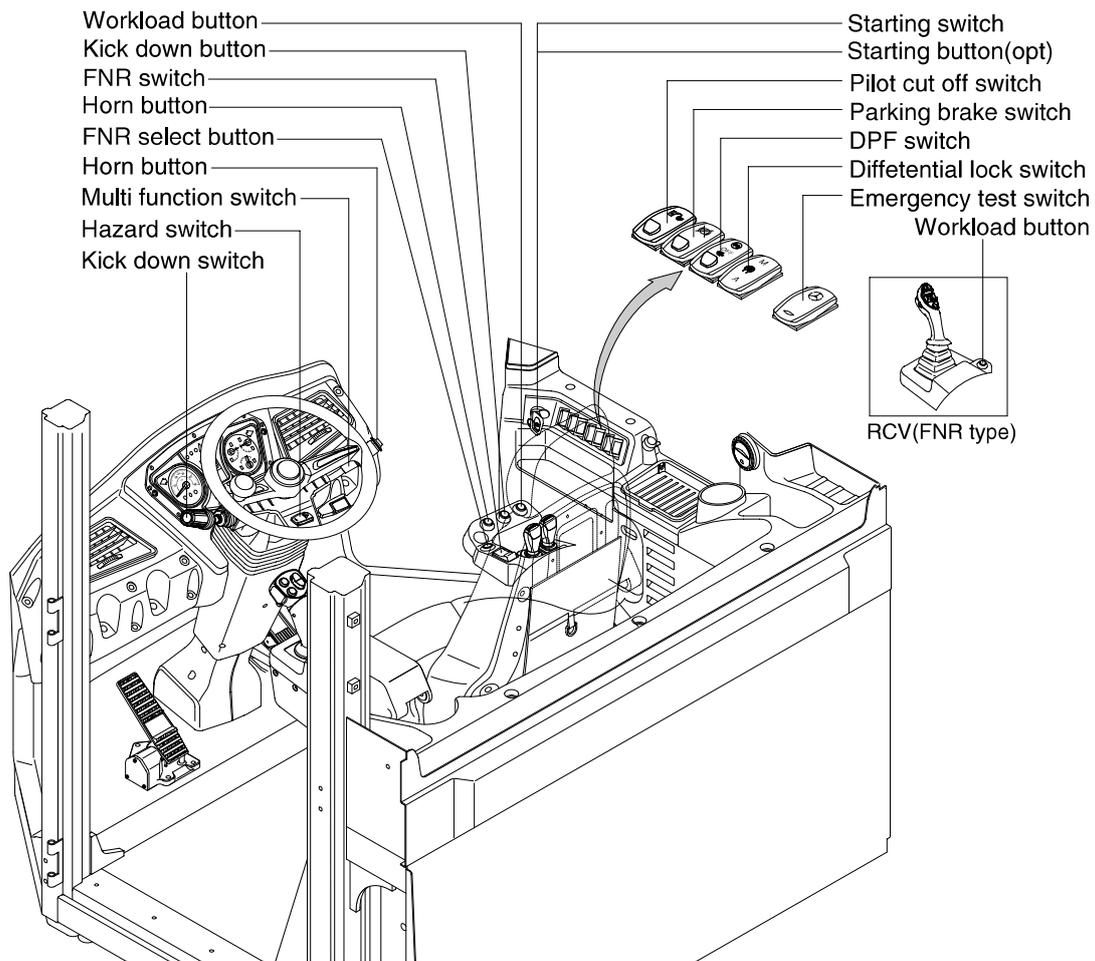
### (16) Fine modulation switch



760F3CD67

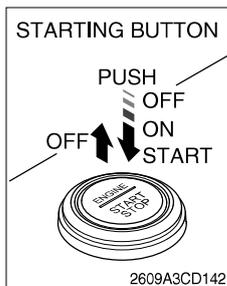
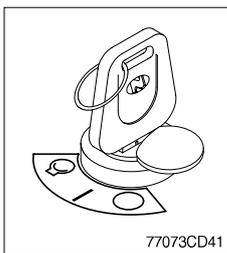
- ① **ON**
  - Remote control lever provide the operator with precise control of the work equipment (bucket and boom cylinders can be controlled precisely).
  - The green pilot lamp is turned ON.
- ② **OFF**
  - Turn off the function.

## 4. SWITCHES



9753CD29

### 1) STARTING SWITCH & STARTING BUTTON (OPT)



Starting button with smart key tag (opt)

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

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

Release key immediately after starting.

- ※ If you turn ON the starting switch in cold weather, the fuel warmer is automatically operated to heat the fuel by sensing the coolant temperature. Start the engine in 1~2 minutes after turning ON the starting switch. More time may take according to ambient temperature.
- ※ Key must be in the ON position with engine running maintain electrical and hydraulic function and prevent serious machine damage.

## 2) PILOT CUT OFF SWITCH



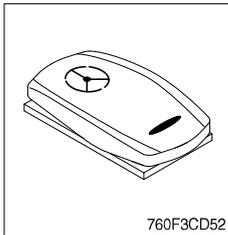
- (1) When the switch is pressed to OFF position, the hydraulic pilot line will be cut off, so the work equipment will not operate.
- (2) Press the ON position in order to unlock the hydraulic pilot line.  
※ **This switch can be set to ON or OFF position only when the safety button is pulled to the unlock position.**

## 3) PARKING BRAKE SWITCH



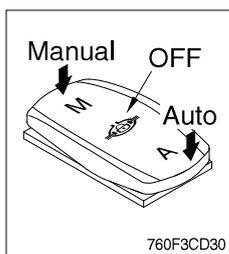
- (1) When the switch is pressed to ON position, the parking brake will start to operate and the cluster warning lamp will come ON.
- (2) Press the release position in order to disengage the parking brake.  
※ **When operating the gear selector lever, be sure to release the parking brake. If the machine is operated with the parking brake engaged, the brake will overheat and may cause the brake system to go out of order.**  
※ **This switch can be set to ON or Release position only when the safety button is pulled to the unlock position.**

## 4) EMERGENCY TEST SWITCH (option)



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

## 5) DIFFERENTIAL LOCK SWITCH (option)



- (1) This switch is used to apply differential lock. The differential lock gives equal power to both front wheels and is used in conditions when traction is poor.
- (2) **Manual mode**  
Press the **M** of the switch for the manual mode of the differential lock function. You press the switch, the differential lock will engage immediately and differential lock pilot lamp lights ON (buzzer sounds). Manual mode is temporarily engaged as long as the operator pushes the switch. When the switch is released, differential lock function is disengaged and the switch returns to OFF position.
- (3) **Auto mode**  
Press the **A** of the switch for auto mode of the differential lock function. If you press the switch, the axle differential lock will automatically engage when the differential function is used.  
※ **While the axle differential lock function is operating, the differential lock pilot lamp lights ON.**  
※ **Refer to page 3-12 and 3-52 (diff lock foot switch)**

## 6) DPF (diesel particulate filter) SWITCH



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

### (2) Inhibit position (①)

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

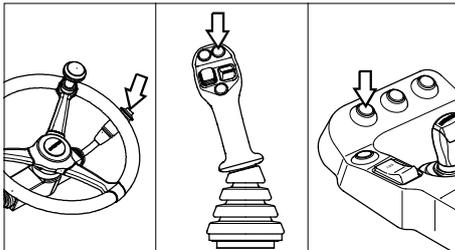
### (3) Auto position (③)

This position will initiate a automatic regeneration of the DPF.

### (4) Manual regeneration position (②)

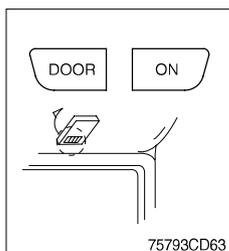
- ① This position will only initiate a manual regeneration of the DPF when the machine is in non-mission condition, engine must run at low idle speed and DPF soot levels are high enough to allow regeneration.
- ② HEST lamp will be illuminated during the entire regeneration.
- ※ Refer to the page 3-9 for details.
- ※ This switch can be move to the manual regeneration position (②) only when the safety button is pulled to backward.
- ※ Also, this switch return to the OFF position when released the manual regeneration position (②).

## 7) HORN BUTTON



(1) If you press the button, the horn will sound.

## 8) CAB LAMP SWITCH



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

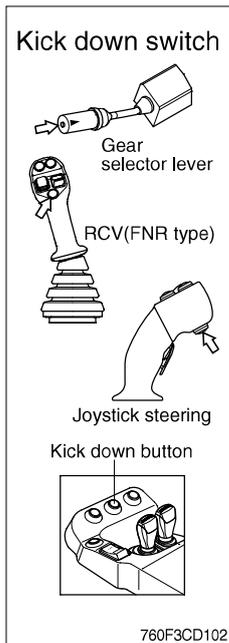
### ① DOOR

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

### ② ON

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

## 9) KICK DOWN SWITCH



### (1) Manual mode

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

### (2) Automatic mode

#### ① Mode 1 (down/up)

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

#### ② Mode 2 (down)

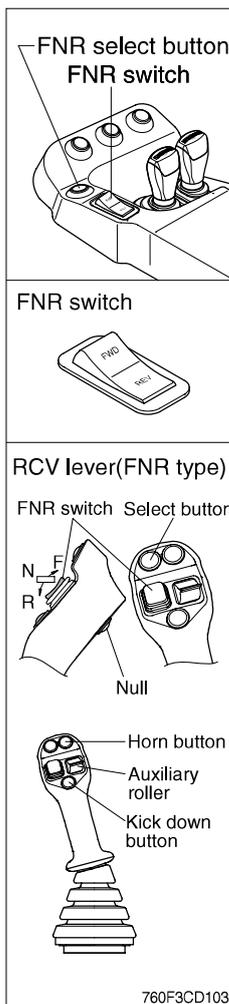
It shifts down from current gear to one step lower speed when push the switch every time.

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

※ Refer to page 3-20 for the kick down mode.

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

## 10) FNR SELECT BUTTON AND SWITCH



(1) These button and switch are used for forward and backward drive.

※ Gear range can be selected by gear selector lever.

### (2) FNR select button

① If the select button is pressed, the indication lamp on the cluster will be ON and this FNR switch will start to operate.

※ When the engine is running, the machine is on standstill (0 speed), parking brake is released, gear selector lever is in the neutral position, you can use this function after pressing the select button.

### (3) FNR switch

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

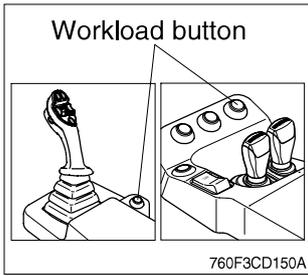
① If the upper side (F, FWD) of this switch is pushed, the machine moves forward.

② If the down side (R, REV) of this switch is pushed, the machine moves backward.

③ This function is automatically released when the engine is stopped, parking brake is ON or gear selector lever is out of neutral.

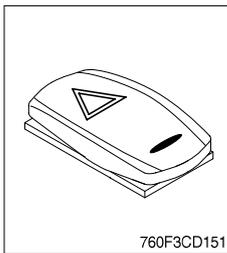
(4) **Auxiliary roller** : If the machine is equipped with auxiliary hydraulics, this roller is used for the attachments.

## 11) WORKLOAD BUTTON



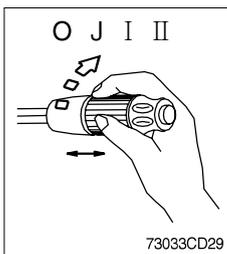
- (1) This button is used to calculate the weight manually.  
If the button is not pushed, the weight of the weighing system is not calculated.
  - (2) This button is pushed for one second more, calculated weight will be accumulated.
- ※ Refer to the page 3-22, weighing system.

## 12) HAZARD SWITCH



- (1) Use for parking or loading the machine.
  - (2) Both turn signal lights will flash simultaneously.
- ※ If the switch is left ON for a long time, the battery may be discharged.

## 13) MULTI FUNCTION SWITCH

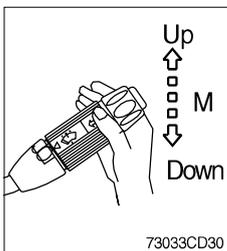


### (1) Front wiper and washer switch

- 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.

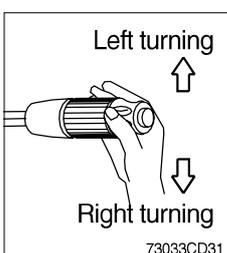
※ Check the quantity of washer liquid in the tank. If the level of the washer liquid is LOW, add the washer liquid (in cold, winter days) or water. The capacity of the tank is 1 liter.

※ If the wiper does not operate with the switch in ON (J, I, II) position, turn the switch OFF (O) immediately and check the cause. If the switch remains ON, motor failure can result.



### (2) Dimmer switch

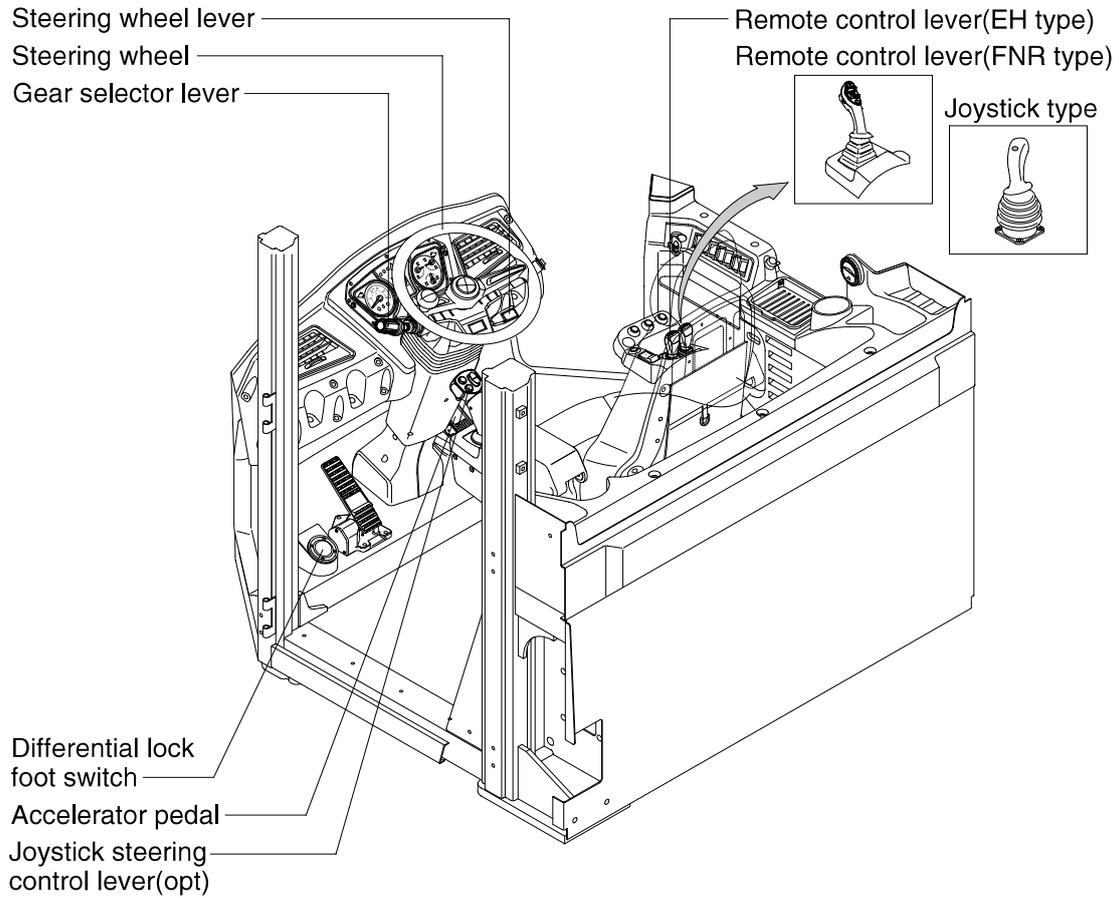
- ① This switch is used to turn the head lights direction.
- ② Switch positions
  - Up : To flash for passing
  - Middle : Head lights low beam ON
  - Down : Head lights high beam ON
- ③ If you release the switch when it's in up position, the switch will return to middle.



### (3) Turning switch

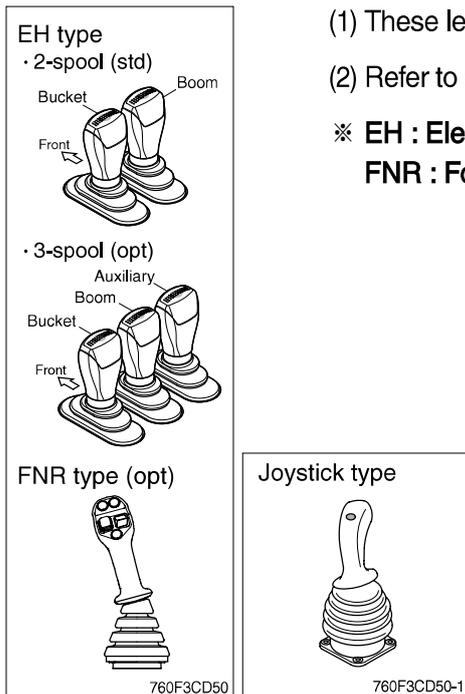
- ① This switch is used to warn or signal the turning direction of the machine to other vehicles or equipment.
- ② Push the lever up for turning left, pull the lever down for turning right.

## 5. CONTROL DEVICE



760F3CD28-1

### 1) REMOTE CONTROL LEVER

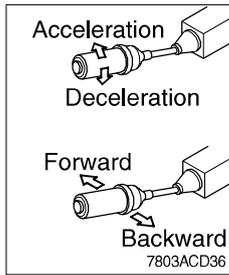


(1) These levers are used to control the boom and the bucket.

(2) Refer to operation of working device in chapter 4 at page 4-9.

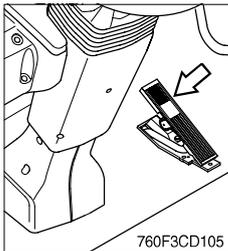
※ EH : Electro-hydraulic  
FNR : Forward - Neutral - Reverse

## 2) GEAR SELECTOR LEVER



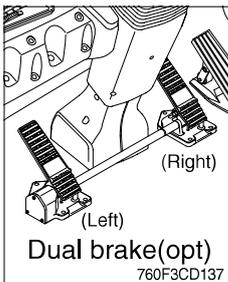
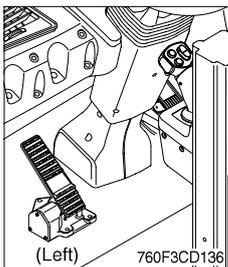
- (1) This lever is used for gear selection, forward 4 stages and reverse 3 stages.
- (2) If you push the gear selector lever, the machine moves forward, but if you pull the gear selector lever, the machine moves backward.
- (3) If you turn the gear selector lever forward, the machine increases the speed,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

## 3) ACCELERATOR PEDAL



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

## 4) BRAKE PEDAL



- (1) **Left brake pedal** (service brake + clutch cut off function)
    - ① If the pedal is pushed down, this will generate braking force and bring the machine to a stop.
    - ② If the power train operation is to be cut off, set the clutch cut off mode to ON (L, M, H) and press the pedal.

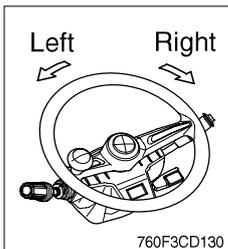
**▲ Even if the brake is applied while clutch cut off mode is OFF, power train will not cut off.**

**※ Do not operate the machine with foot the brake pedal unnecessarily, or bring premature wear of brake disc.**

  - ③ Clutch cut off function : Refer to page 3-20.
- (2) **Right brake pedal** (service brake function only)

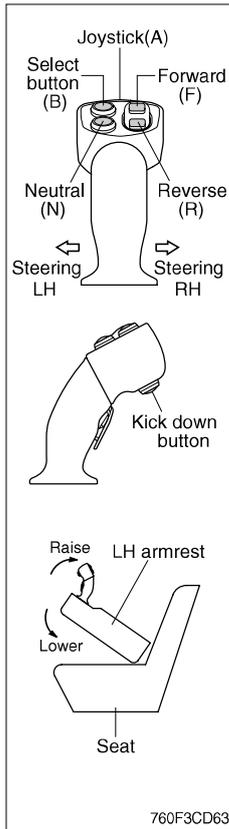
This pedal functions as service brake only.

## 5) STEERING WHEEL



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

## 6) JOYSTICK STEERING CONTROL LEVER (option)



- (1) The system has the following functions concentrated to a collapsible arm rest : steering, forward/reverse drive and kickdown function.
- (2) This means that during normal loading work, the operator does not need to touch the steering wheel.

- (3) The joystick steering pilot lamp on the cluster will be ON when the lever steering is activated.

**▲ When operating on a public road, the steering wheel should always be used and the joystick steering be disconnected. Also when operating at high speeds (above 20 km/h) on a work site, always use the steering wheel.**

### (4) Joystick (A)

- ① Joystick steering can be enabled after following conditions have been satisfied.
    - Engine is running.      - Operator is seated on the seat.
    - LH armrest is placed to the lowered position.
    - Gear selector lever is in neutral.
    - RCV is deactivated.      - Joystick (A) is placed in normal position.
    - Parking brake is disengaged, but the machine speed is zero.
  - ② After above conditions are met, press the select button (B). Then joystick steering pilot lamp  on the cluster will be ON and joystick steering can be activated.
  - ③ Steering will remain enabled until machine speed is zero and one of the following conditions is met.
    - LH armrest is raised.      - Parking brake is engaged.
    - Gear selector lever is in forward or backward position.
    - Operator is not seated on the seat.      - Press the select button (B).
- ※ The steering wheel works as usual, even if the joystick steering is activated.

### (5) Forward/reverse selection button

F : Forward drive

N : Neutral

R : Reverse drive

- ① To be able to operate the forward/reverse drive, the system must first be activated using select button (B).

※ **The ordinary gear selector control should be in neutral.**

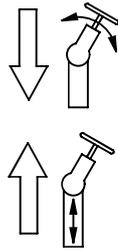
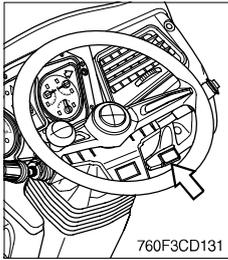
- ② When this function is engaged, it is possible to operate the forward-reverse drive. If the ordinary gear selector control is activated at the same time as the joystick steering is activated, the ordinary gear selector control overrides any selection made by the joystick steering.

To reactivate the joystick steering, the ordinary gear selector control must first be moved to neutral and the system again be activated.

- ③ The FNR select pilot lamp  on the cluster will be ON when the forward/reverse selection is activated.

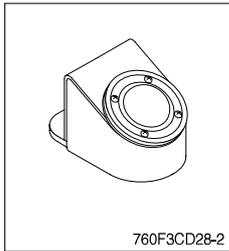
(6) Kick-down button : Refer to page 3-47.

## 7) STEERING WHEEL LEVER



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

## 8) DIFFERENTIAL LOCK FOOT SWITCH (OPTION)



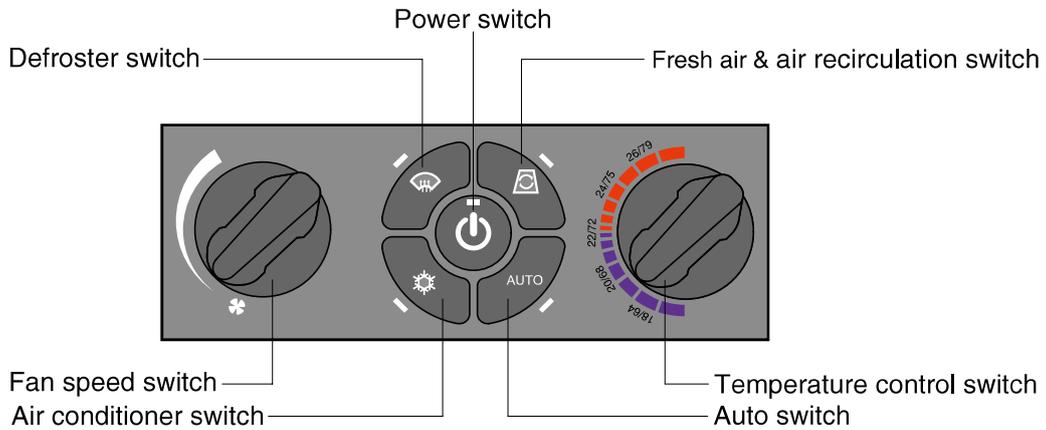
- (1) Press the foot switch for the differential lock function.

You press the foot switch, the differential lock will engage immediately and differential lock pilot lamp lights ON (buzzer sounds).
- (2) Differential lock function is temporarily engaged as long as the operator press the foot switch. When the foot switch is released, differential lock function is disengaged.

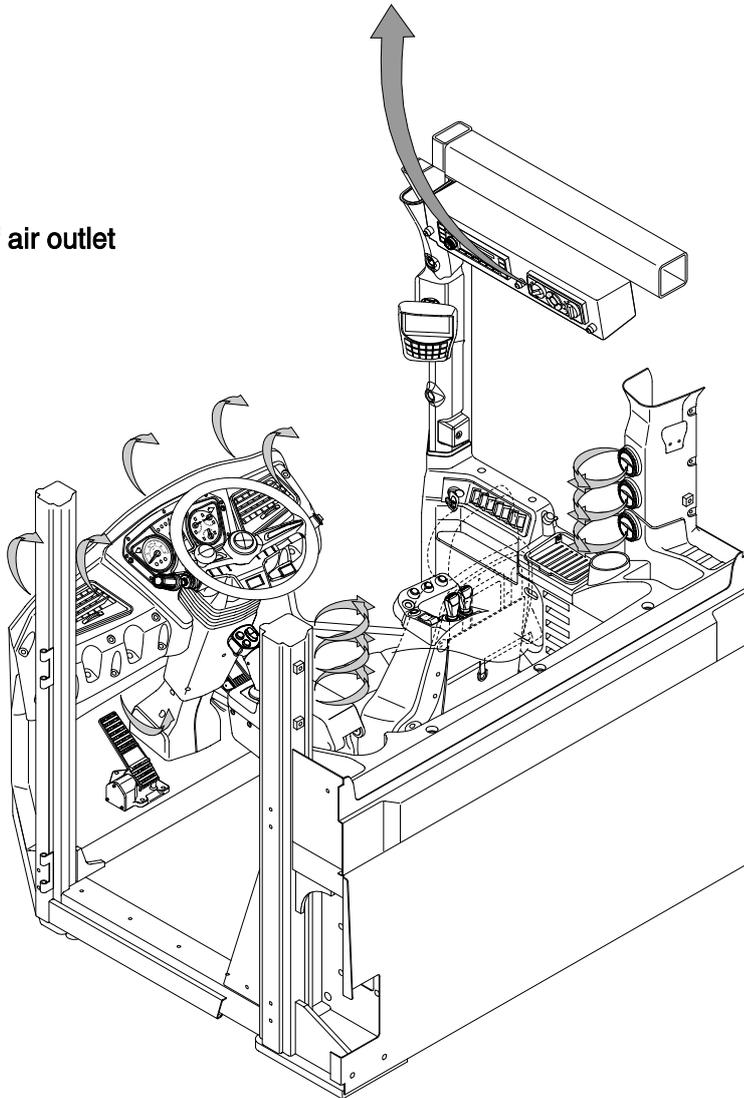
## 6. AIR CONDITIONER AND HEATER

### ■ FULL AUTO AIR CONDITIONER AND HEATER

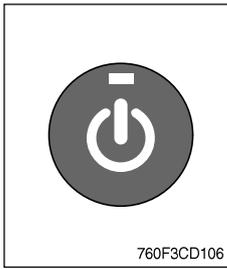
Full auto air conditioner and heater system automatically keeps the optimum condition in accordance with operator's temperature configuration sensing ambient and cabin inside temperature.



### · Location of air outlet



### 1) POWER SWITCH



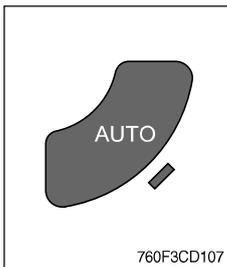
- (1) This switch makes the system ON or OFF.  
Just before the power OFF, set values are stored.

#### (2) Default setting values

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

※ The green pilot lamp is turned ON.

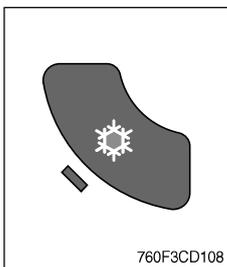
### 2) AUTO SWITCH



- (1) This switch sets the air conditioner and heater system to automatic temperature control.  
Auto air conditioner and heater system automatically keeps the optimum condition in accordance with operator's temperature configuration sensing ambient and cabin inside temperature.

※ The green pilot lamp is turned ON.

### 3) AIR CONDITIONER SWITCH (compressor switch)



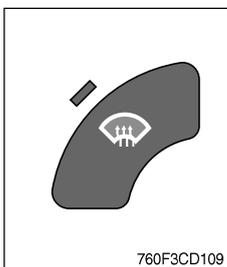
- (1) This switch turns the compressor for the air conditioning.  
(2) In accordance with the temperature sensed by duct (evaporator) sensor, compressor turns ON or OFF automatically.

※ **Air conditioner operates to remove vapor and drains water through a drain hose. Water can be sprayed into the cab in case that the drain cock at the ending point of drain hose has a problem.**

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

※ The green pilot lamp is turned ON.

### 4) DEFROSTER SWITCH



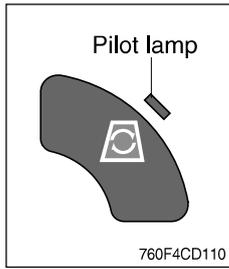
- (1) Defroster and ventilation nozzles at window open and directed toward the windows.

#### (2) Default setting values

| Function | Air conditioner | In/outlet | Blower             |
|----------|-----------------|-----------|--------------------|
| Value    | ON              | Outlet    | Max for 15 minutes |

※ The green pilot lamp is turned ON.

## 5) FRESH AIR/AIR RECIRCULATION SWITCH



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

### ① Fresh air (pilot lamp OFF)

Inhaling air from the outside.

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

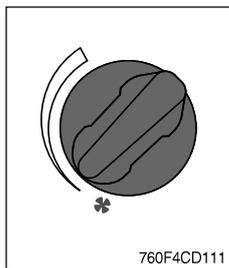
### ② Air recirculation (pilot lamp ON)

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

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

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

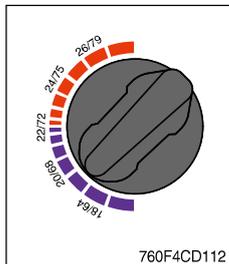
## 6) FAN SPEED KNOB



(1) This knob controls fan speed manually.

There are 9 steps to control fan speed.

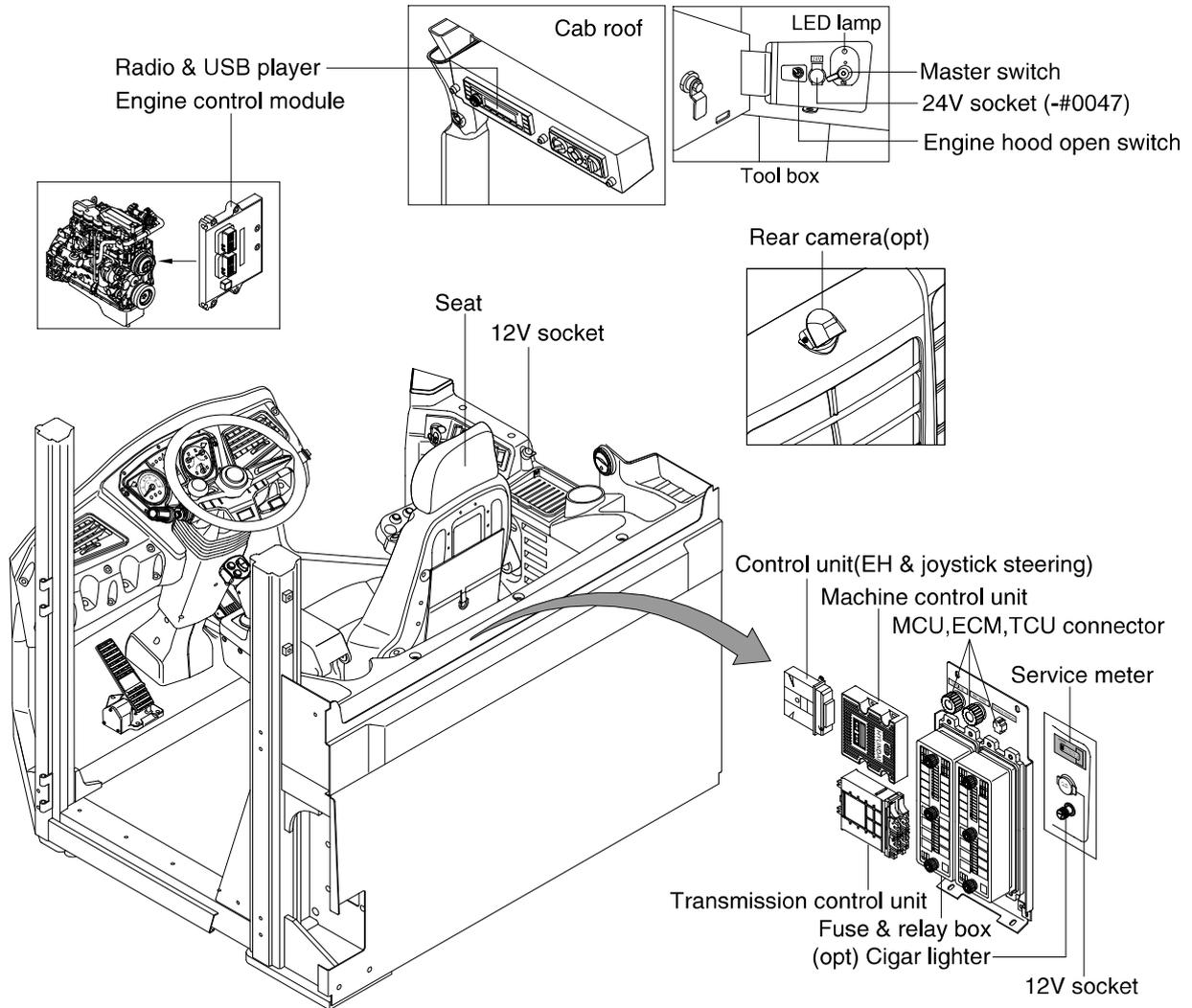
## 7) TEMPERATURE CONTROL KNOB



(1) This knob controls the position of the water valve when the air conditioner switch is ON or OFF.

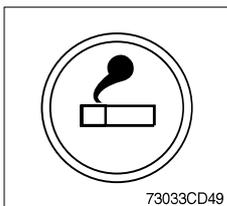
(2) When the AUTO switch is ON, the temperature control knob determines the desired cab temperature. The temperature range is 18°C (64°F) in the full cold position and 26°C (79°F) in the full hot position.

## 7. OTHERS



760F3CD38

### 1) CIGAR LIGHTER



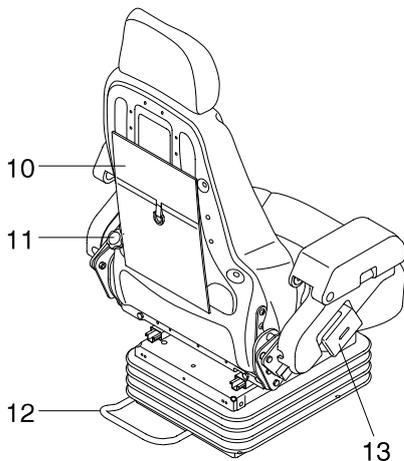
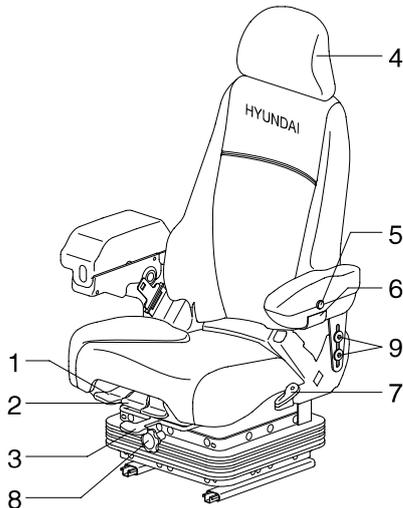
- (1) This can be used when the engine starting switch is ON.
- (2) The lighter can be used when it springs out in a short while after being pressed down.

※ **Service socket**

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

## 2) SEAT

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



760F3CD132

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

**▲ Fail to wear a seat belt during the machine operation may result in serious injury or death in the event of an accident or machine overturn.**

### (1) Cushion thigh extension

- ① Extends seat cushion fore and aft.
- ② Pull up & hold to adjust cushion +/- 30 mm.
- ③ Release to stop cushion.

### (2) Cushion thigh tilt

- ① Tilts Seat cushion up and down.
- ② Pull up on knob & hold cushion to adjust + 4 degrees.
- ③ Pull up on knob & push down on cushion to adjust - 4 degrees.
- ④ Release knob to stop cushion.

### (3) Slide release lever

- ① Moves the seat top fore/aft.
- ② Pull, hold & slide forward or rearward maximum 100 mm (10 mm increments).
- ③ Release to stop slide.

### (4) Headrest

- ① Adjusts height & tilt for head.
- ② Hold & pull up for higher adjustment.
- ③ Hold & push down for lower adjustment.
- ④ Hold and rotate down 10 degrees (1st position).
- ⑤ Hold and rotate down 20 degrees (2nd position).
- ⑥ Hold and rotate down 30 degrees (3rd position).
- ⑦ Hold and rotate down to return head rest to 0 degree position.

### (5) Heater switch (option)

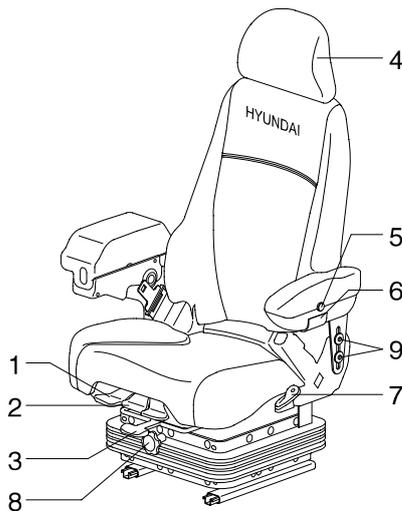
- ① Turns ON/OFF cushion heaters.
- ② Push switch upward to turn on.
- ③ Push switch downward to turn off.

### (6) Armrest tilt knob

- ① Tilts armrests.
- ② Roll towards operator to tilt down maximum 15 degrees.
- ③ Roll away from operator to tilt up maximum 15 degrees.

### (7) Recliner knob

- ① Angles back rest cushion.
- ② Pull up & hold to adjust angle of back rest.
- ③ Release to stop recline of back rest.
- ④ Maximum recline : 20 degrees.



### (8) Ride firmness/height adjust knob

- ① Adjusts suspension ride.
- ② Turn clockwise for a firmer/higher ride.
- ③ Turn counter-clockwise for a softer/lower ride.

### (9) Armrest height

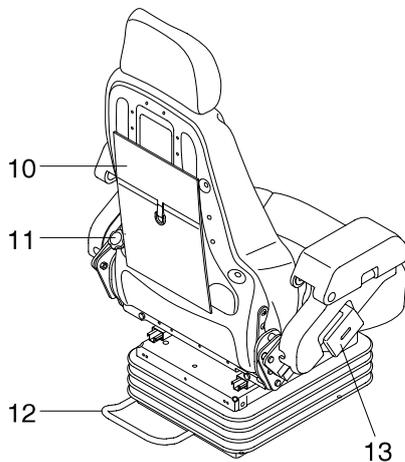
- ① Adjusts height of armrests.
- ② Loosen bolts & move armrests up or down.
- ③ Hold & tighten after adjustment.
- ④ Maximum travel : 27.5 mm.

### (10) Document pouch

- ① Holds various manuals.
- ② Pull on hook & loop fastened flap to open.
- ③ Push on hook & loop fastened flap to close.

### (11) Lumbar knob

- ① Adjusts curvature of lumbar.
- ② Rotate towards operator for more curve.
- ③ Rotate away from operator for less curve.



### (12) Service slide release lever

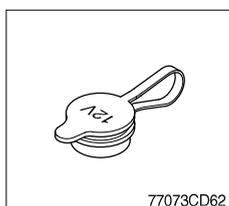
- ① Moves the seat top & suspension fore/aft (for use of service & maintenance in back of cab only).
- ② Pull, hold & slide forward.
- ③ Release to stop slide.
- ④ Maximum travel : 100 mm forward.

### (13) ECA slide knob

- ① Adjusts height & length of armrest.
- ② Pull, hold & slide forward or rearward.
- ③ Release knob to stop arm rest.
- ④ Fore adjustment : + 76 mm.
- ⑤ Aft adjustment : - 64 mm.
- ⑥ 12.7 mm increments (on 25 degree fixed tilt).

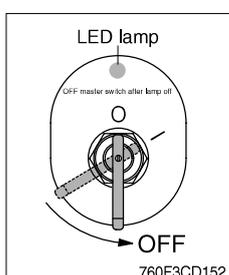
760F3CD132

### 3) 12V SOCKET (option)



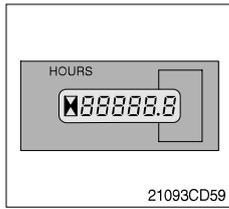
- (1) Utilize the power of 12 V as your need and do not exceed power of 12 V, 30 W.

### 4) MASTER SWITCH



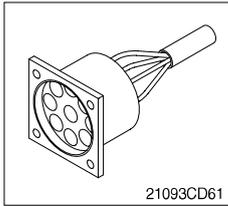
- (1) This switch is used to shut off the entire electrical system.
  - (2) I : The battery remains connected to the electrical system.  
O : The battery is disconnected to the electrical system.
- ※ OFF master switch after LED lamp off.  
 ※ Never turn the master switch to O (OFF) with the engine running.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

## 5) SERVICE METER



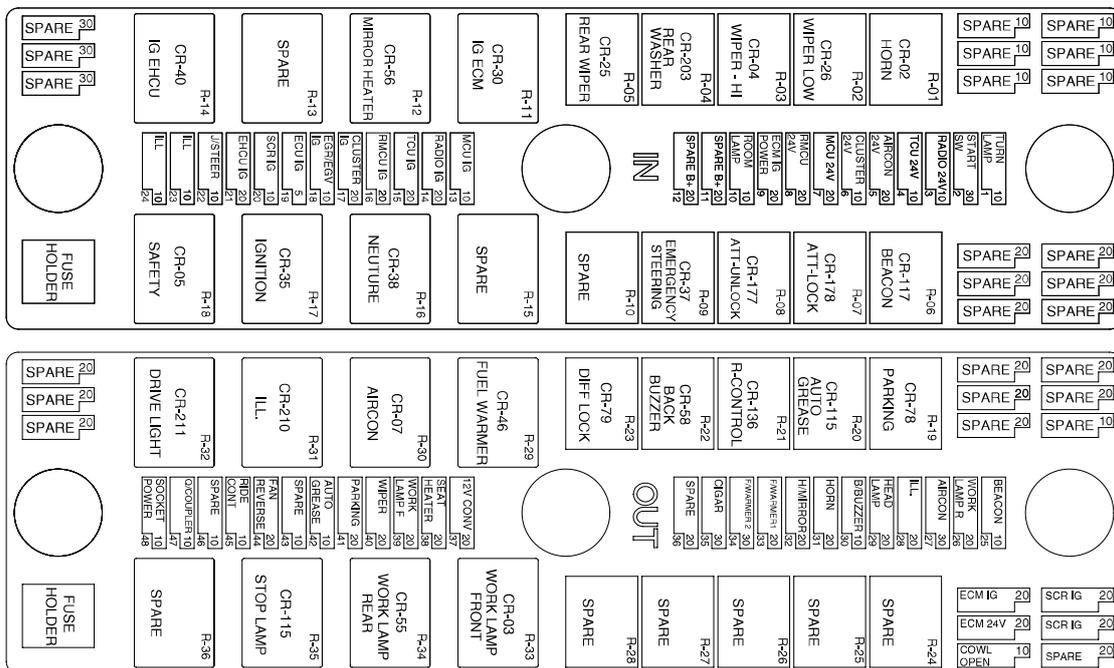
- (1) This meter shows the total operation hours of the machine.
- (2) Always ensure the operating condition of the meter during the machine operation. Inspect and service the machine based on hours as indicated in chapter 6, maintenance.

## 6) MCU/ECM/TCU CONNECTOR



- (1) MCU communicates the machine data with Laptop computer through RS232 service socket.
- (2) ECM communicates the engine data with cummins INSITE adapter through J1939 service socket.
  - ① ECM fault code check
  - ② ECM program change
  - ③ Engine data monitoring & test
- (3) TCU communicates the transmission data with adapter cable.

## 7) FUSE & RELAY BOX

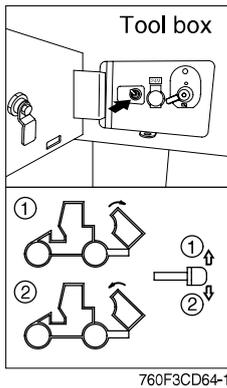


- (1) The fuses protect the electrical parts and wiring from burning out.
- (2) The fuse box cover indicates the capacity of each fuse and circuit it protects.

※ Replace a fuse with another of the same capacity.

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

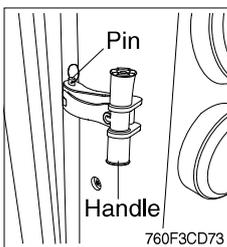
## 8) ENGINE HOOD OPEN TOGGLE SWITCH



- (1) Move the toggle switch up to position ① in order to open the hood.
- (2) Move the toggle switch down to position ② in order to close the hood.
- (3) Hold the switch until the hood is fully opened or closed. Release the switch. The switch will return to the middle position.

※ Refer to the page 4-28.

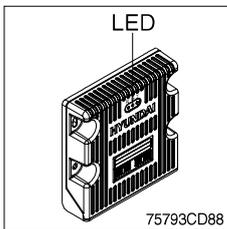
## 9) TILT HANDLE (FOR RIGHT SIDE WINDOW)



- (1) Pull handle backward and push the handle outward in order to open the window to the partial open position. Remove pin from the handle. Push the window to the fully open position.

※ Open the window periodically in order to ensure proper operation. Lubricate or repair the window as necessary.

## 10) MACHINE CONTROL UNIT (MCU)

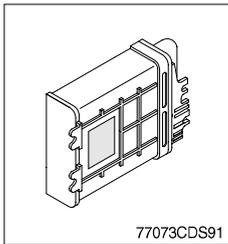


- (1) It consists of electronic parts and controls all lamps and buzzers on cluster in accordance with signals transmitted from the switches, the ECM, TCU, the engine and the hydraulic pressure sensors.
- (2) Three LED lamps on the MCU display as below.

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

G : green, R : red, Y : yellow

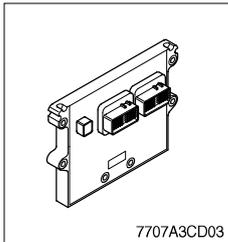
### 11) TRANSMISSION CONTROL UNIT (TCU)



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

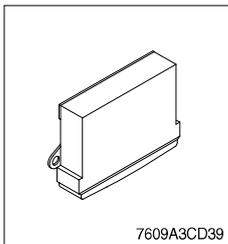
- Gear selector lever position
- Driving speed
- Load level

### 12) ENGINE CONTROL MODULE (ECM)



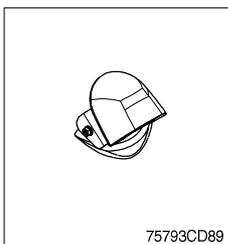
(1) The engine control module (ECM) is the control center of the engine system.

### 13) CONTROL UNIT (electro hydraulic & joystick steering, EHCU)



(1) The control unit is the control center of the EH control lever and joystick steering system.

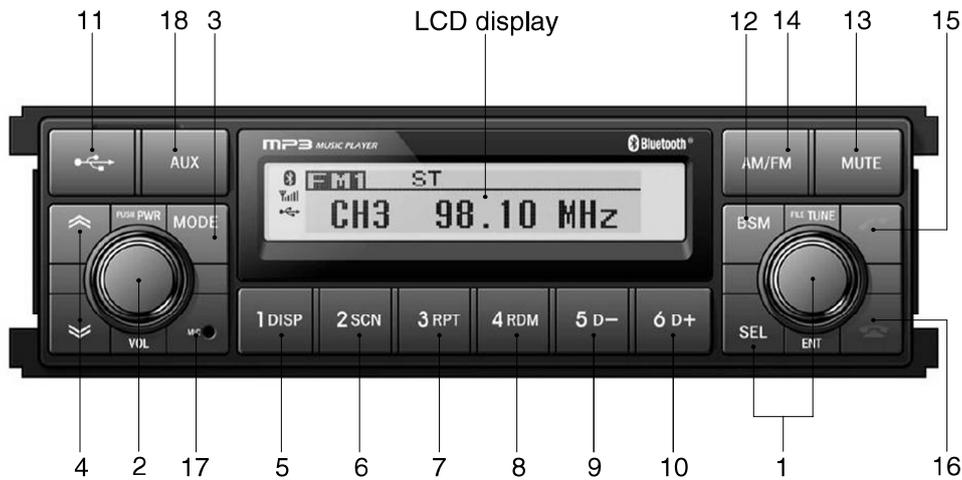
### 14) REAR CAMERA (option)



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

※ Refer to page 3-35.

## 15) RADIO AND USB PLAYER (WITH BLUETOOTH) : A TYPE



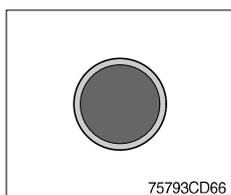
75793CD62-2

### ■FRONT PANEL PRESENTATION

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

## ■GENERAL

### (1) Power and volume button



#### ① Power ON/OFF button

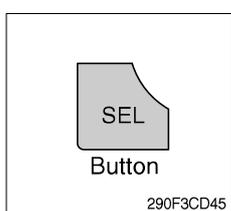
Press power button to turn the unit ON or OFF shortly.

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

#### ② Volume up / down control

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

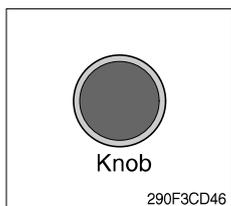
### (2) Sound function selection button/knob (audio selection)



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.

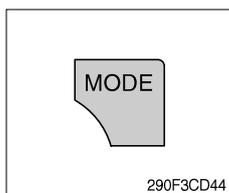
To select the loudness feature, press SEL button until LOUD ON or LOUD OFF is displayed, then turn selection knob left or right to activate or deactivate loudness.

#### ⑥ Equalizer (EQ)

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

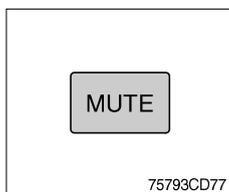
To select the desired curve, first select the EQ mode by pressing SEL button until the "EQ OFF" indication appears on the display panel. Within 5 seconds of choosing the EQ mode, turn selection knob to select an equalizer curve as desired.

### (3) Mode button



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

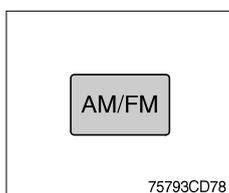
### (4) Audio mute button



- 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

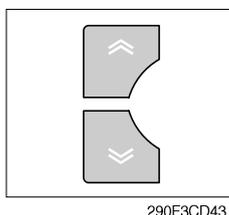


- ① Each time this button is pressed, the radio button is changed. Each time this button is pressed, LCD displays each band as follows :

FM1 → FM2 → FM3 → AM → LW → FM1

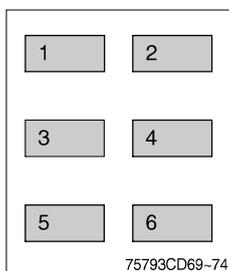
※ LW band is only available for Europe.

### (2) Up / down tuning



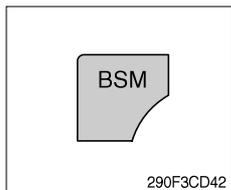
- ① To automatically select a radio station, momentarily press the up tune seek button  or down tune seek button  for less than 3 seconds to search for the closest radio station. To manually select a radio station, press the up tuning & down tuning button for longer than 3 seconds. The radio frequency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

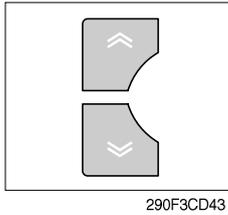
##### (2) AUX function

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



#### 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

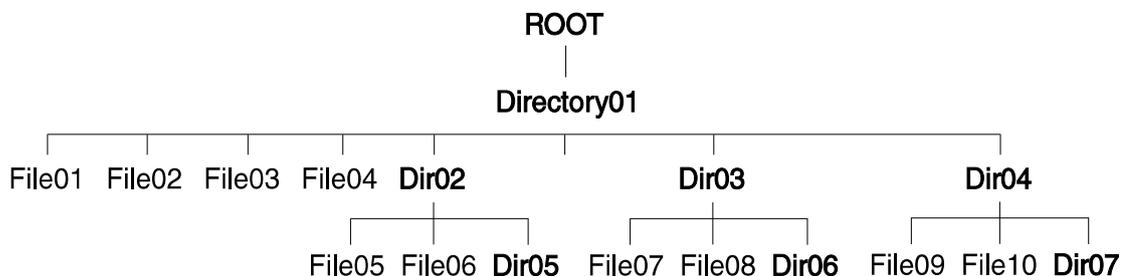
·Method 2 : ROOT → Dir01 → Dir02 → Dir05 → Dir03 → Dir06 → Dir04 → Dir07 → ROOT

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.

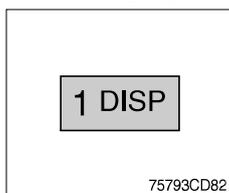
For instance, the file search changes in Dir01 as follows.

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.

Directory name / file name (normal mode)



Album name / performer / title

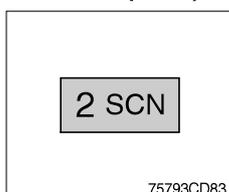


File number / elapsed time



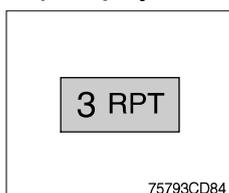
Directory name / file name (normal mode)

### (6) File scan (SCN)



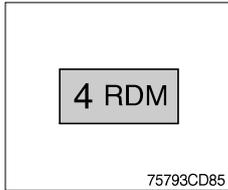
- ① During USB play, press SCN button to play the first 10 seconds of each file on the whole file on the USB (SCN mark will appear on the LCD display). When a desired file is reached, press the SCN button again to cancel the function. The unit will then play the selected file.
- ※ In case of playing 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)

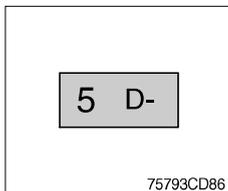


- ① During USB play, press RDM button to play the files on the USB in a random shuffled order (RDM will appear on the LCD display). The file select function will also select file in the random order instead of the normal process.

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

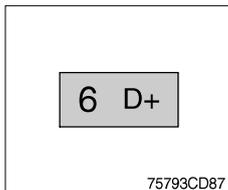
- ※ In case of MP3 file, when the random button is pressed and held longer than 2 seconds, the RDM mark will blink on the LCD display and play all files in directory randomly until the directory random mode is cancelled by pressing the random button again or by activating the scan or repeat functions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

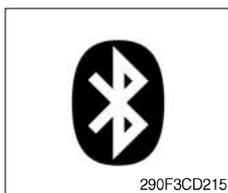
The bluetooth radio supports bluetooth wireless technology. Bluetooth technology provides a wireless link between a bluetooth mobile phone or bluetooth music player and the hyundai bluetooth radio.

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.

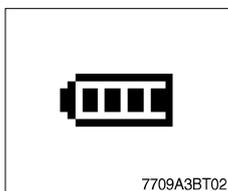
Check your mobile phone owner's manual for details.

- ※ 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.

a) Press SEND button during the conversation ; **PRIVATE** appears on the display.

b) 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.

a. Press MODE button until **BT AUDIO** is displayed.

b. 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.

c. To pauses the bluetooth audio playback, press SEL button for 2 seconds. Press the knob again for 2 seconds to resume playback.

d. 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.

## RADIO AND USB PLAYER (WITH BLUETOOTH) : B TYPE



9403CD100

### FRONT PANEL PRESENTATION

- |   |   |
|---|---|
| <p>1  ..... Power ON/OFF,<br/>Volume UP/DOWN button</p> <p>2  ..... Manual UP/DOWN Tuning,<br/>File search, SEL button</p> <p>3  ..... Mode button,<br/>Audio mute button</p> <p>4  ..... Call &amp; Pair button</p> <p>5  ..... Call end button</p> <p>6  ..... Station preset 1<br/>DIS ..... Display button</p> <p>7  ..... Station preset 2</p> <p>8  ..... Station preset 3<br/>RPT ..... Repeat play button</p> <p>9  ..... Station preset 4<br/>RDM ..... Random play button</p> | <p>10  ..... Station preset 5<br/>DIR- ..... Directory down button</p> <p>11  ..... Station preset 6<br/>DIR+ ..... Directory up button</p> <p>12  ..... Scan play button (SCAN)<br/>Best station memory (BSM) button</p> <p>13  ..... 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)



9403CD101

### FRONT PANEL PRESENTATION

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

## ■GENERAL

### (1) Power and volume button



#### ① Power ON / OFF button

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

#### ② Volume UP/DOWN control knob

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

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

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

#### ③ Initial volume level set up

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

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

#### ④ Clock ON/OFF control

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

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

#### ⑤ Clock adjustment

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

## (2) Menu Selection



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

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

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

### ② Bass control

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

### ③ Treble control

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

### ④ Balance control

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

### ⑤ Fader control

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

### ⑥ EQ control

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

EQ OFF → CLASSIC → POP → ROCK → JAZZ

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

### ⑦ Loud control

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

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

### ⑧ Beep control

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

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

### (3) Mute control

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

### (4) Mode selection

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

## ■RADIO

### (1) Mode button



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

### (2) Manual tuning button



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

### (3) Auto tuning button



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



### (4) Station preset button



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

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

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



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

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

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

## ■ USB PLAYER

### (1) USB playback



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

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

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

### (2) Track Up / Down button



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



### (3) MP3 directory / File searching



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

### (4) Directory Up / Down button



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

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

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



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

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



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

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



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

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



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

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

#### \* USB Information and Notice

- a. Playback FILE SYSTEM and condition allowance.
    - FAT, FAT12, FAT16 and FAT32 in the file system.
    - V1.1, V2.2 and V2.3 in the TAG (ID3) version.
  - b. Display up to 32 characters in the LCD display.
  - c. No support any of MULTI-CAED Reader.
  - d. No high speed playback but only playing with normal full speed.
- ※ DRM files in the USB may cause malfunction to playback in the radio unit.
- ※ The temperature below -10 Celsius, the audio unit with USB hook up would be affected to play well.

## ■AUX OPERATION

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

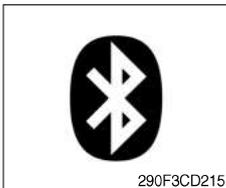
To get the best results when connecting the portable media to the audio system, follow these steps :

- Use a 3.5 mm stereo plug cable to connect the media player headphone socket at each end as follows.
  - Adjust the portable media player to approximately 3/4 volume and start playback.
  - Press the MODE button (3) on the audio unit to change into AUX mode.
  - The volume and tone can now be adjusted on the audio unit to the desired level.
- ※ **The audio quality of your media player and the audio tracks on it may not be of the same sound quality as the audio system is CD Player.**
- ※ **If the sound of the media player is too low compared with the radio or CD, increase the volume of the player.**
- ※ **If the sound of the media player is too loud and/or distorted, decrease the volume of the player.**
- ※ **When in AUX mode, only the Volume, Bass, Treble, EQ and Mode functions of the audio unit can be used.**

## ■BLUETOOTH (if equipped)

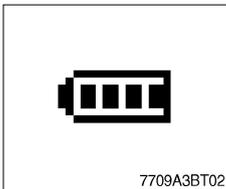
### 1) Using a bluetooth wireless connection

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



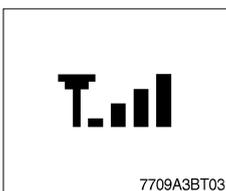
#### ① Bluetooth icon

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



#### ② Battery icon

It indicates the battery status of the connected bluetooth device.



#### ③ Single strength icon

It indicates the signal strength of the connected bluetooth device.

## 2) Pairing in hands free modes



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

## 3) Cellular phone pairing mode

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

#### 4) Bluetooth connection and disconnection

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



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

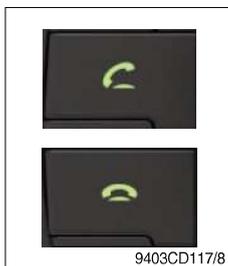


- (3) To disconnect bluetooth link  
Press CALL button (3) briefly, it blinks bluetooth icon on the display while bluetooth is being connected. If the connection is completed, it appears bluetooth icon on the display.

- ※ When your cellular phone battery is at low charge, the bluetooth connection may occasionally be lost. To maintain good connectivity ensure that your phone battery is adequately charged.
- ※ In case of failure of bluetooth pairing :
  - Delete item in paired list on your phone.
  - Reset both phone by power off/on and the audio unit by ACC off/on.
- ※ Connecting priority of handsfree profile is higher than headset profile.
- ※ The headset mode does not support caller ID, reject call and call Transfer.

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

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



- (2) To accept call  
Press CALL button (4), it appears ANSWER CALL and follows TALKING on the display.
- (3) To end call  
To end call, press CALL END button (5), it appears REJECT on the display.
- ※ If reject call is activated in your phone, then your cellular phone does not support reject call function.

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

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



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

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

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

## 7) Last call number dialing



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

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

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

## 8) To make a call by cellular phone

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

(1) The audio unit activated automatically when you make a call by cellular phone.

(2) When you make a call processing by cellular phone, it shows CALLING on the display.

(3) When you receive a call, the phone number \*\*\*\*\* appears on the display.

## 9) Using the audio unit as bluetooth music

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

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

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

It appears BT MP3 on the display.

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

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

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

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

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

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

## ■ RESET AND PRECAUTIONS

### 1) Reset function

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

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

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

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

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

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

### 2) Precautions

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

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

(1) Operation voltage : 9~32 volts DC, negative

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

(3) Tuning range

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

#### ● AREA Selection :

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

(4) USB version : USB 1.1

(5) Bluetooth version : V2.1

(6) Bluetooth supported profile :

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