

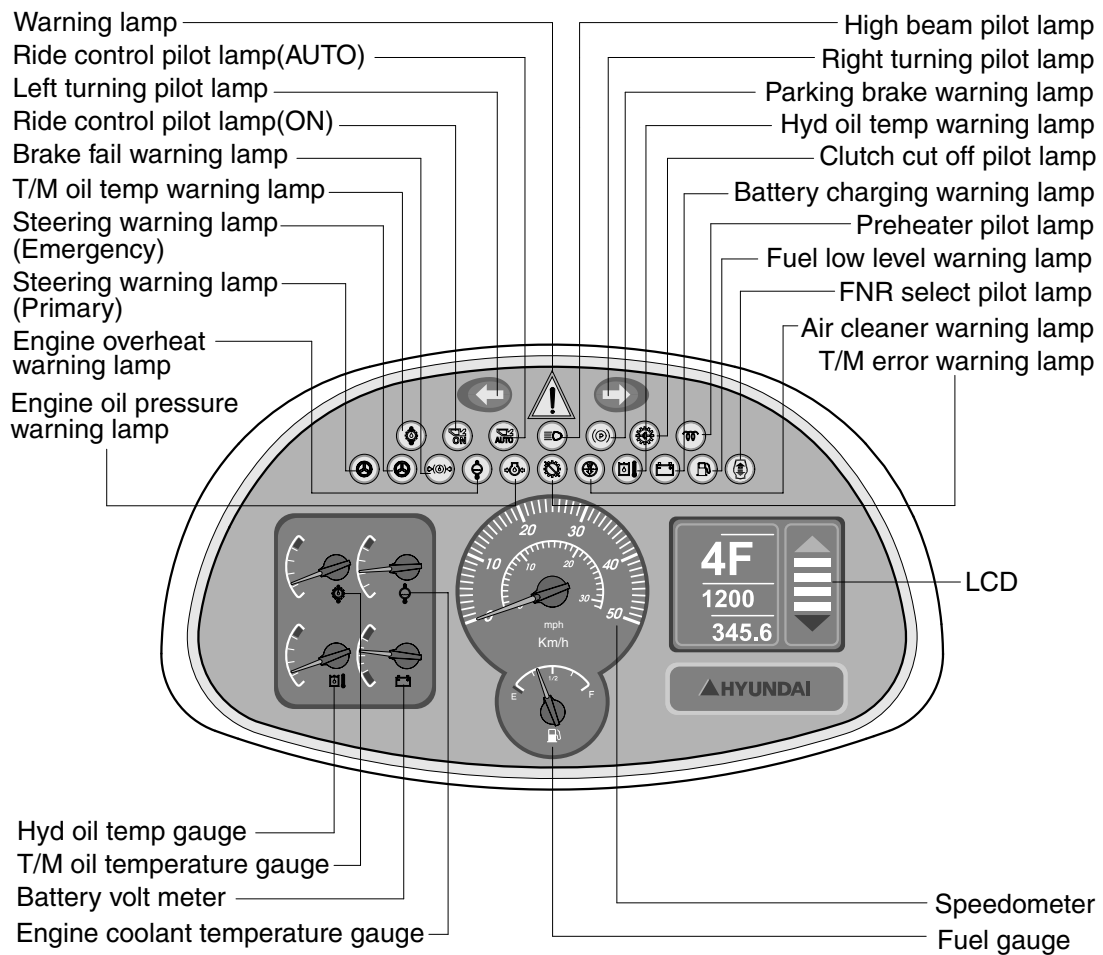
GROUP 3 MONITORING SYSTEM

1. CLUSTER

1) STRUCTURE

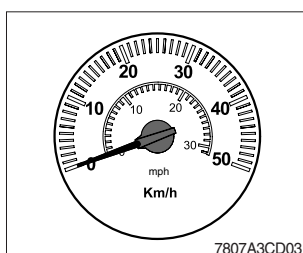
The gauges panel consists of gauges and monitors as shown below, to warn the operator in case of abnormal machine operation or conditions for the appropriate operation and inspection.

- Gauges : Indicate operating status of the machine.
- Warning lamp : Indicate abnormality of the machine.
- Pilot lamp : Indicate operating status of the machine.
- ※ **The monitor 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 monitor provides a warning immediately check the problem, and perform the required action.**



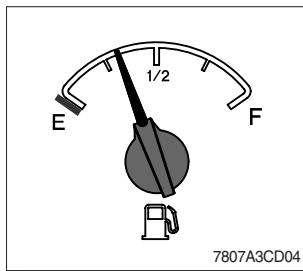
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1) SPEEDOMETER



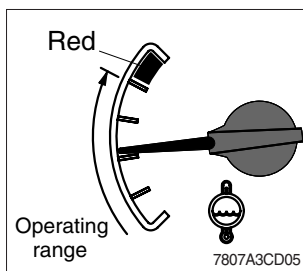
- (1) The speedometer displays the speed of machine in mph and km/h.

2) FUEL GAUGE



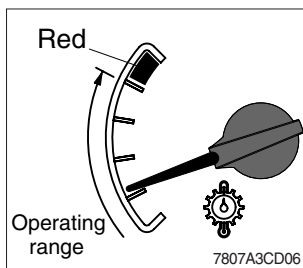
- (1) This gauge indicates the amount of fuel in the fuel tank.
 - (2) Fill the fuel when the indicator moves **E** point, refuel as soon as possible to avoid running out of fuel.
- ※ If the gauge indicates below **E** point even though the machine is on the normal condition, check the electric device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

3) ENGINE COOLANT TEMPERATURE GAUGE



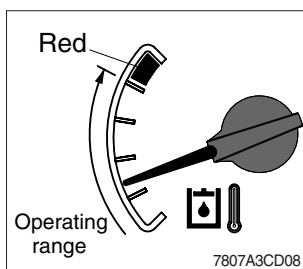
- (1) This indicates the temperature of coolant.
 - Red range : Above 104°C (219°F)
- (2) Keep idling engine at low speed until the indicator is in the operating range.
- (3) If the indicator is in the red range, turn OFF the engine, check the radiator and engine.

4) TRANSMISSION OIL TEMPERATURE GAUGE



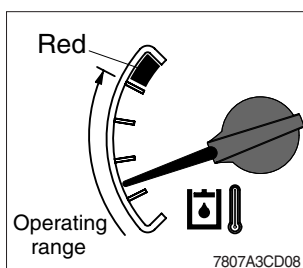
- (1) This range indicates the temperature of transmission oil.
 - Red range : Above 107°C (225°F)
- (2) Keep idling engine at low speed until the indicator is in the operating range.
- (3) If the indicator is in the red range, it means the transmission is overheated. Be careful that the indicator does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

5) BATTERY VOLT METER



- (1) This gauge indicates the voltage in the charging system when the engine is running.
- (2) If the indicator is below 24V (yellow range), it means that the electricity is being discharged. If the indicator is above 30V (red range), an unusually high voltage may damage the alternator. Check the charging system in both cases.

6) HYD OIL TEMPERATURE GAUGE



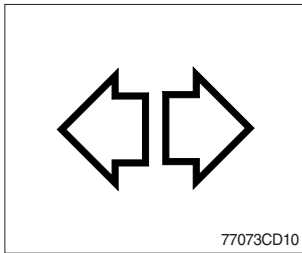
- (1) This range indicates the temperature of hydraulic oil.
 - Red range : Above 105°C (221°F)
- (2) Keep idling engine at low speed until the indicator is in the operating range.
- (3) If the indicator is in the red range, reduce the load on the system. If the gauge stays in the red range, stop the machine and check the cause of the problem.

7) WARNING LAMP



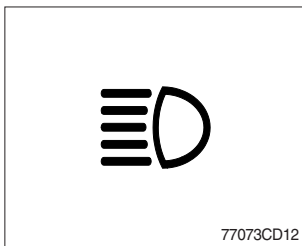
- (1) When all warning lamp or fault codes are being displayed, this warning lamp will flash.
- (2) When this warning lamp flashes, machine must be checked or serviced as soon as possible.

8) DIRECTION PILOT LAMP



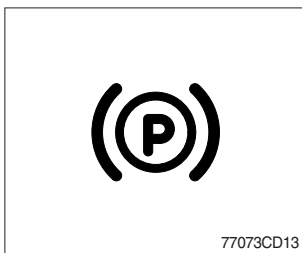
- (1) This lamp flashes when the signal indicator lever is moved.

9) HIGH BEAM PILOT LAMP



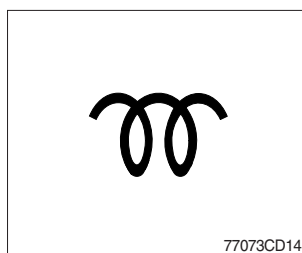
- (1) This lamp works when the illuminating direction is upward.
- (2) This lamp comes ON when the dimmer switch is operated, e.g., when passing another vehicle.

10) PARKING BRAKE WARNING LAMP



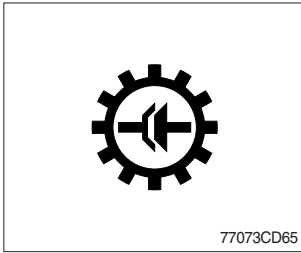
- (1) When the parking brake is actuated, the lamp lights ON.
※ Check the lamp is OFF before driving.

11) PREHEATER PILOT LAMP



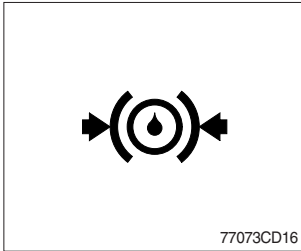
- (1) This lamp lights ON when start switch is turned clockwise to the ON position. Light will turn off after approximately 5~45 seconds, depending on engine temperature, indicating that preheating is completed.
- (2) When the lamp goes out the operator should start cranking the engine.

12) CLUTCH CUT OFF PILOT LAMP



(1) When the clutch cut off switch is pressed, the lamp lights ON.

13) BRAKE FAIL WARNING LAMP

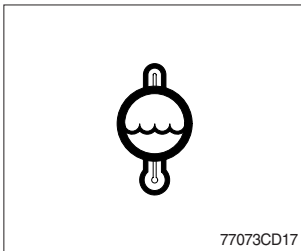


(1) The lamp lights ON when the oil pressure of service brake drops below the normal range.

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

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

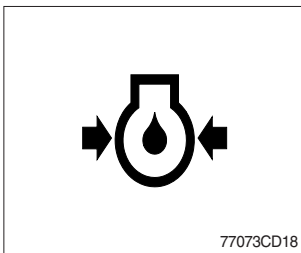
14) ENGINE OVERHEAT WARNING LAMP



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

(2) Check the cooling system when the lamp is ON.

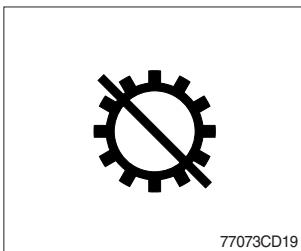
15) ENGINE OIL PRESSURE WARNING LAMP



(1) This lamp is comes ON after starting the engine because of the low engine oil pressure.

(2) If the lamp comes ON during engine operation, shut OFF engine immediately. Check engine oil level.

16) TRANSMISSION ERROR WARNING LAMP



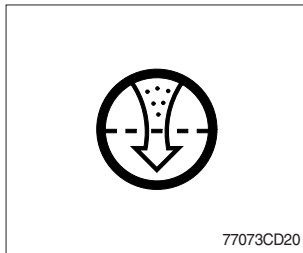
(1) This lamp lights ON and the LCD display show the error codes when an error occurs in the transmission.

(2) Immediately pull the machine to a convenient stop. Stop the engine. Investigate the cause.

※ **Consult a HYUNDAI dealer to investigate the cause.**

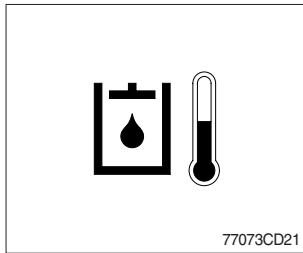
※ **Do not operate until the cause has been corrected.**

17) AIR CLEANER WARNING LAMP



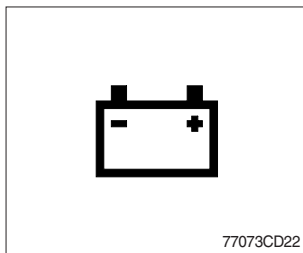
- (1) This lamp operates by the vacuum caused inside when the filter of air cleaner is clogged.
- (2) Check the filter and clean or replace it when the lamp is ON.

18) HYD OIL TEMPERATURE WARNING LAMP



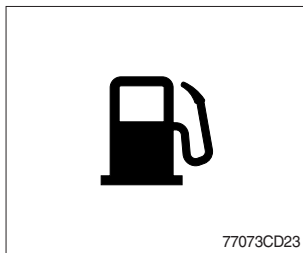
- (1) This warning lamp operates and the buzzer sounds when the temperature of hydraulic oil is over 105°C (221°F).
- (2) Check the hydraulic oil level when the lamp is turned ON.
- (3) Check for debris between oil cooler and radiator.

19) BATTERY CHARGING WARNING LAMP



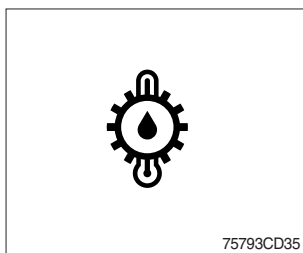
- (1) This lamp is ON when key ON, it is turned OFF after starting the engine.
- (2) Check the battery charging circuit when this lamp comes ON, during engine operation.

20) FUEL LOW LEVEL WARNING LAMP



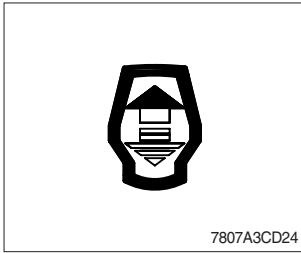
- (1) Fill the fuel immediately when the lamp is turned ON.

21) TRANSMISSION OIL TEMPERATURE WARNING LAMP



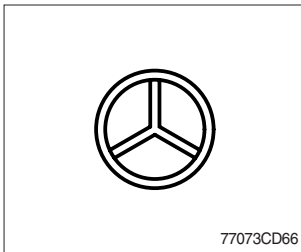
- (1) This lamp informs the operator that transmission oil is above the specified temperature.
- (2) When this lamp lights up during operation, stop the engine and check the machine.

22) FNR SELECT PILOT LAMP (option)



- (1) The lamp comes ON when FNR select button on the optional FNR remote control lever is pressed.

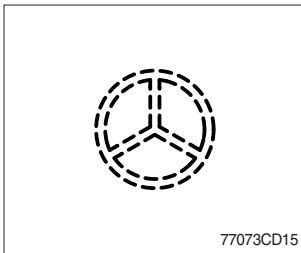
23) STEERING WARNING LAMP (option)



(1) Primary

This lamp indicates that the primary steering has failed. When the indicators come 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.

- ※ **Do not operate the machine until the cause has been corrected.**

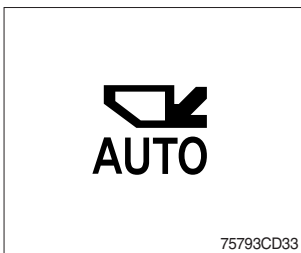


(2) Emergency

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 7-36.**

24) RIDE CONTROL PILOT LAMP (option)



(1) Auto ride control

This lamp lights ON when push in the bottom of the ride control switch (auto position).

- ※ **Refer to page 7-36.**

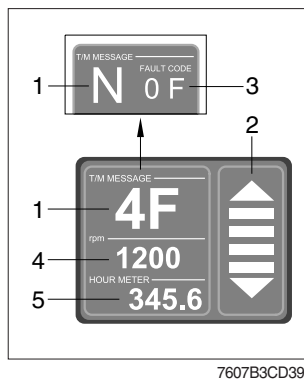


(2) Manual ride control

This lamp lights ON when push in the top of the ride control switch (manual position).

- ※ **Refer to page 7-36.**

25) LCD



(1) The LCD (2.8 inch) can be used with the gear selector.
It indicates speed and driving direction.

No	Symbol	Meaning	Remark
1	F, N, R	Actual gear	Forward, neutral, reverse
	1, 2, 3, 4		Actual gear
	P		Parking brake mode active
2	▲ ▼	Forward, reverse	Automatic mode
	■ ■ ■ ■	Gear range	Automatic mode
3	-	T/M fault code AEB mode	Fault code display AEB mode display
4	-	Engine rpm	Current engine rpm display
5	-	Hourmeter	Hourmeter display

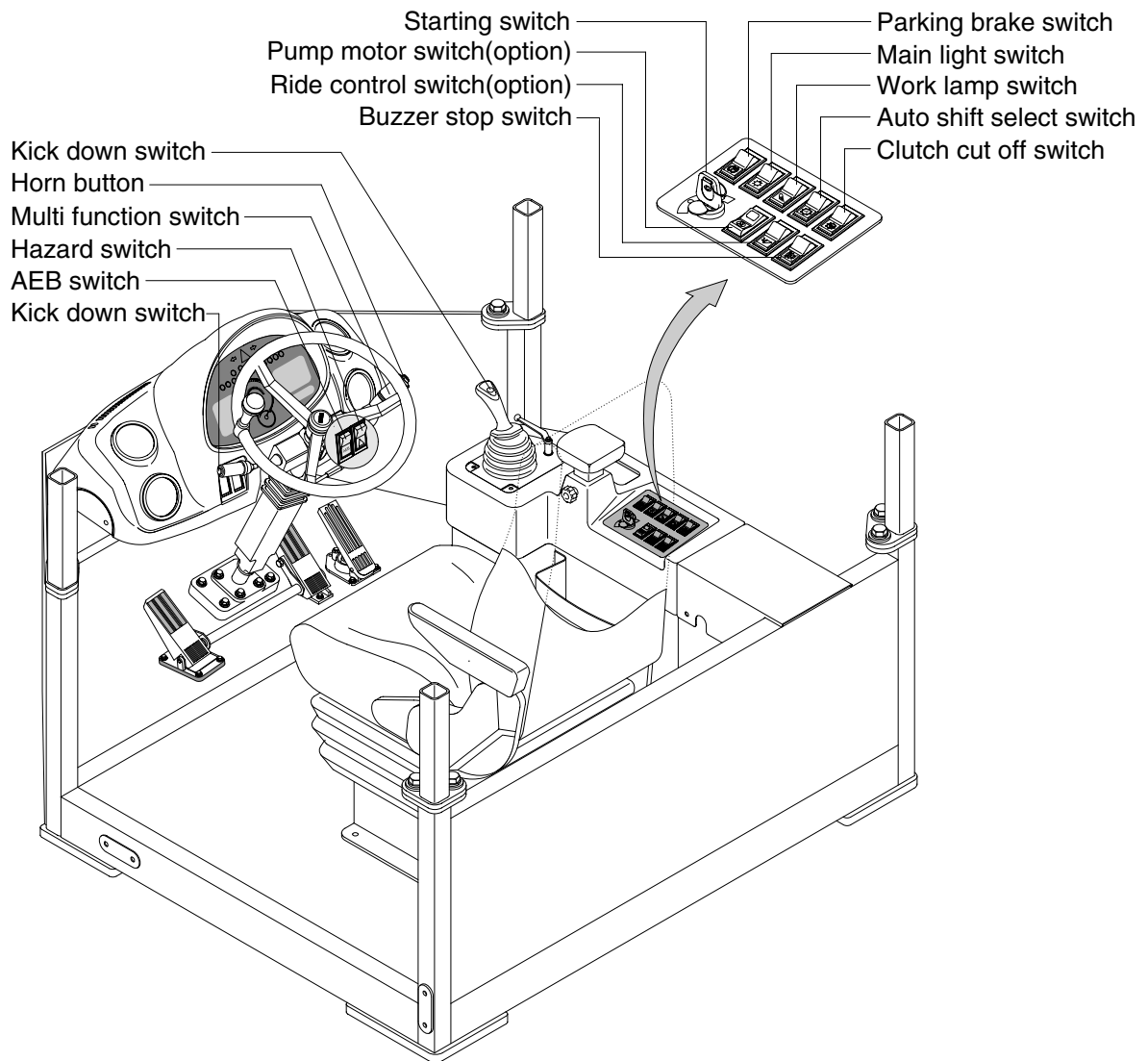
· Display during AEB mode

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 - Raise engine speed
▽E	Engine speed too high - Lower engine speed
△T	Transmission oil temperature too low - Heat up transmission
▽T	Transmission oil temperature too high - 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 (ignition off/on).

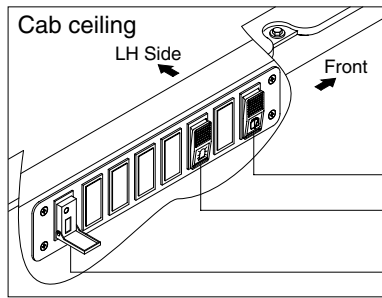
2. SWITCHES

· Canopy type

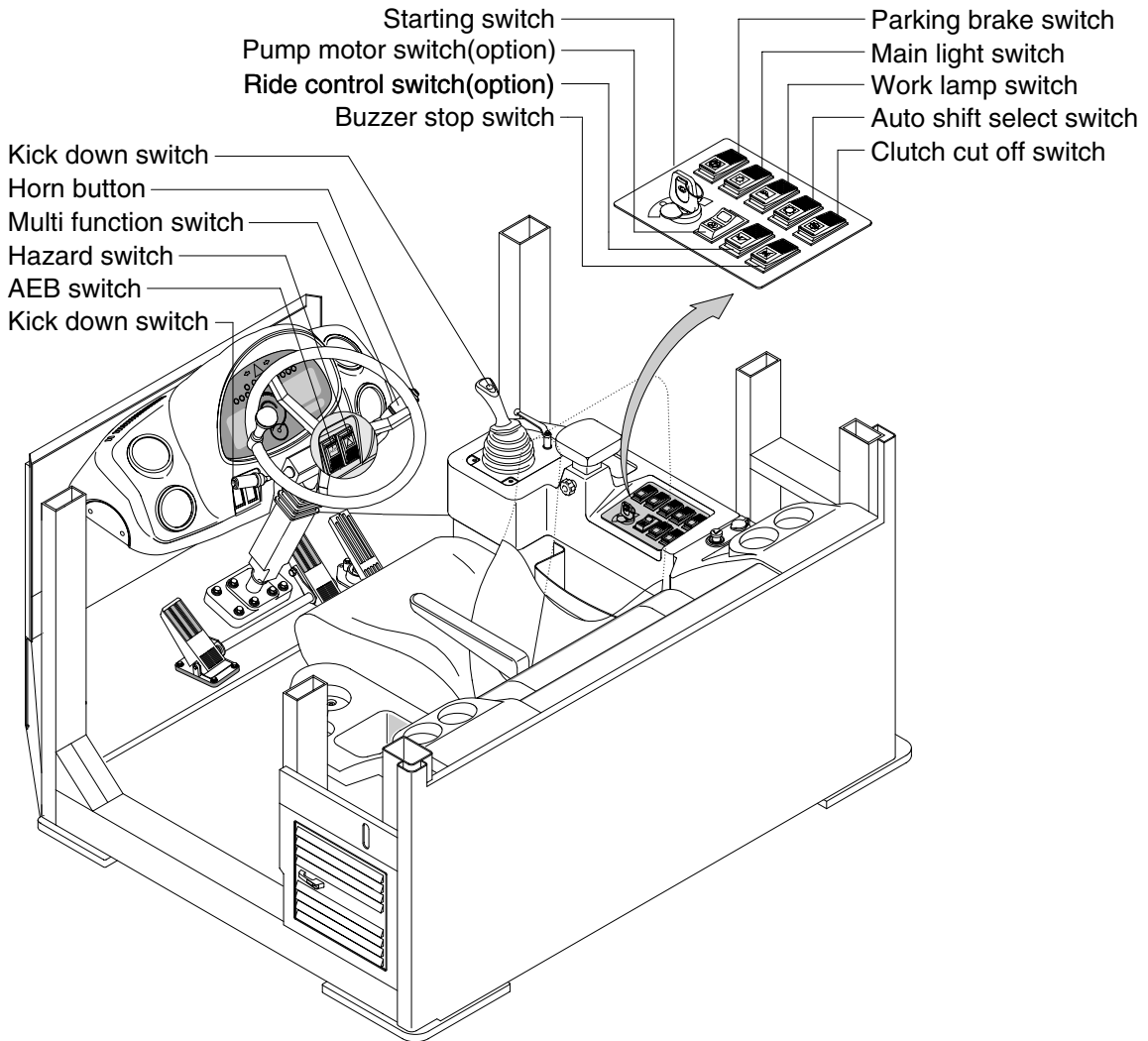


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· Cab type (option)

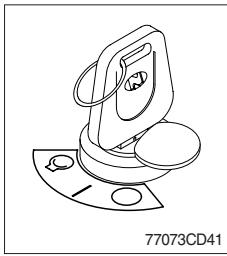


- Rear wiper/washer switch
- Beacon switch(option)
- USB socket



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1) STARTING SWITCH



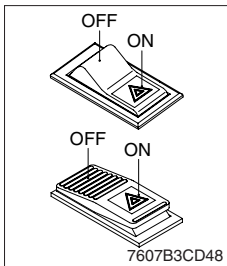
(1) There are three positions, OFF, ON and START.

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

Release key immediately after starting.

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

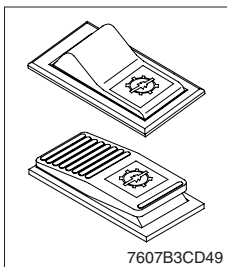
2) HAZARD SWITCH



(1) Use for parking, or roading machine.

※ **If the switch is left ON for a long time, the battery may be discharged.**

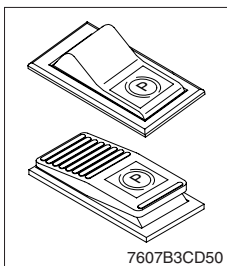
3) CLUTCH CUT OFF SWITCH



(1) This switch is pressed, it will **cut off** the clutch when brake operates.

※ **Be careful not to use this switch when driving on a slope.**

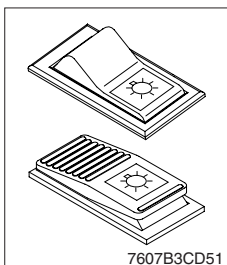
4) PARKING BRAKE SWITCH



(1) This switch is pressed, the parking brake will start to operate and the gauge panel warning lamp will comes ON.

※ **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.**

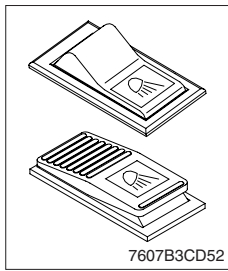
5) MAIN LIGHT SWITCH



(1) This switch use to operates the clearance lamp and head light by two step.

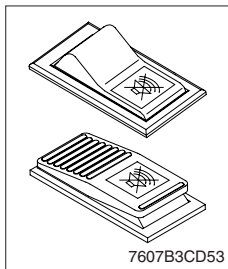
- First step : Clearance lamp and cluster illumination lamp comes ON. Also, the below indicator lamp comes ON.
- Second step : Head light comes ON.

6) WORK LAMP SWITCH



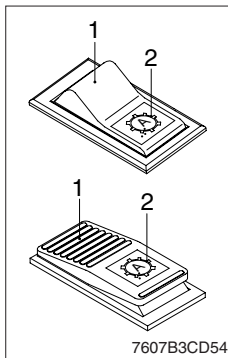
- (1) This switch turns ON the working lamps located on the canopy and rear cowl.

7) BUZZER STOP SWITCH



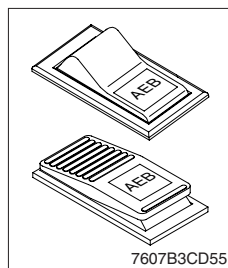
- (1) The red lamp on the cluster lights ON and the buzzer sounds when the machine has a problem.
In this case, if the switch is pressed, the buzzer will be stopped. Be sure to check machine for problems.
- (2) Wait until the lamp is turned OFF, if the red lamp lights ON after the buzzer stopped.
If not, stop engine and check the system which the lamp is ON.

8) AUTO SHIFT SELECT SWITCH



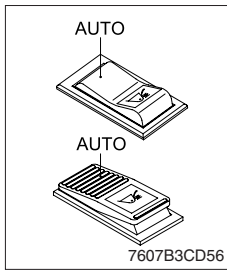
- (1) **Manual mode (1)**
Press the bottom of the switch for the manual mode of the autoshift function. The operator selects the desired speed and the desired direction in the manual mode with the gear selector lever.
- (2) **Automatic mode (2)**
Press the top of the switch for the autoshift function in the automatic mode. Press the top of the switch prior to shifting the transmission into forward or reverse in order to activate the autoshift function.

9) AEB SWITCH



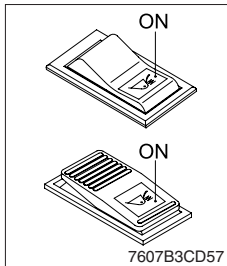
- (1) This switch use to start AEB setting.
- (2) AEB mode controls the disk clearance of the transmission automatically.
※ Refer to page 7-31.

10) RIDE CONTROL SWITCH (option)



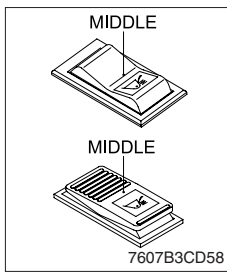
(1) AUTO position

Push in the top of the ride control switch in order to turn on the automatic ride control. The automatic ride control automatically turns on when the travel speed exceeds a preset speed of approximately 9.5 km/h. The automatic ride control automatically shuts off during low speed travel mode.



(2) ON position

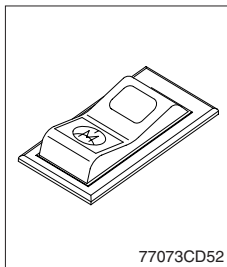
Push in the bottom of the ride control switch in order to turn on the system for ride control. The ride control will smooth the ride of the machine during travel.



(3) MIDDLE position

Push the ride control switch to the middle position in order to turn off the system for the ride control.

11) PUMP MOTOR SWITCH (option)



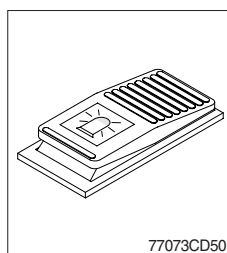
(1) The emergency steering system can be manually tested.

Push the pump motor switch in order to determine if the emergency steering and the emergency steering lamp are functional.

(2) When the switch is pushed, the emergency steering pump motor will run.

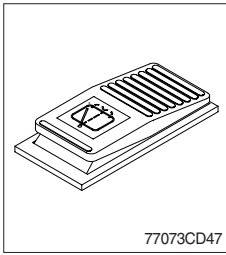
The emergency steering lamp will light. If the emergency steering lamp does not light, do not operate the machine.

12) BEACON SWITCH (cab type)



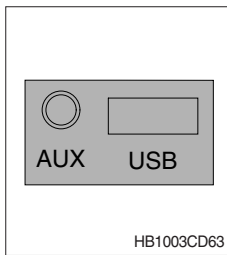
(1) This switch turns ON the rotary light on the cab.

13) REAR WIPER AND WASHER SWITCH (cab type)



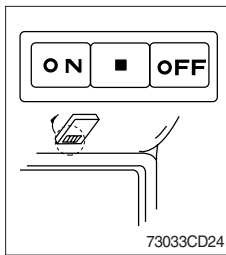
- (1) The switch use to operates the rear wiper and washer by two step.
- **First step** : The rear wiper operates.
 - **Second step** : The washer liquid is sprayed and the rear wiper is operated only while pressing. If release the switch, return to the first step position.

14) USB SOCKET (cab type)



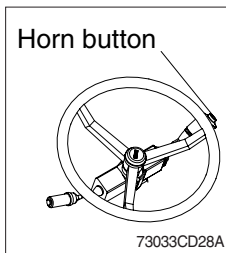
- (1) MP3 player can be connected to the USB port.
- (2) In addition, it is possible to use input port for ear phone or other instruments, implements etc.

15) CAB LAMP SWITCH (cab type)



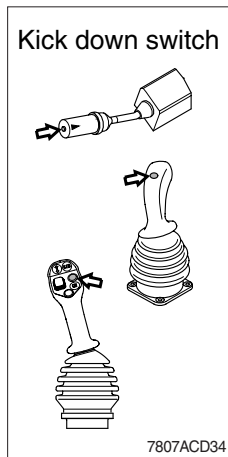
- (1) This switch turns ON the cab room lamp.

16) HORN BUTTON



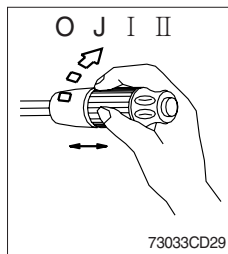
- (1) If you press the button on the top of the multifunction switch, the horn will sound.

17) KICK DOWN SWITCH



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

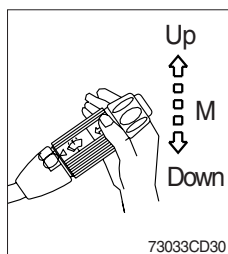
18) MULTI FUNCTION SWITCH



(1) Front wiper and washer switch

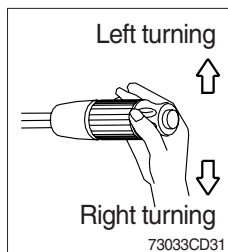
- ① When the switch is in J position, the wiper moves intermittently.
- ② When placed in I or II position, the wiper moves continuously.
- ③ If you press a button at the end of the lever, washer liquid will be sprayed and the wiper will be activated 2-3 times.

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



(2) 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.