4. MODE SELECTION SYSTEM

1) STRUCTURE OF CAPO SYSTEM

CAPO, Computer Aided Power Optimization system, is the name of mode selection system developed by Hyundai.

(1) Power mode

3 power modes can be selected for the optimal power of the machine operation.

① **H mode**

This mode is used for heavy-duty work.

② **S mode**

When key switch is turned ON, this mode is selected automatically. This mode is used for standard work.

③ **L mode**

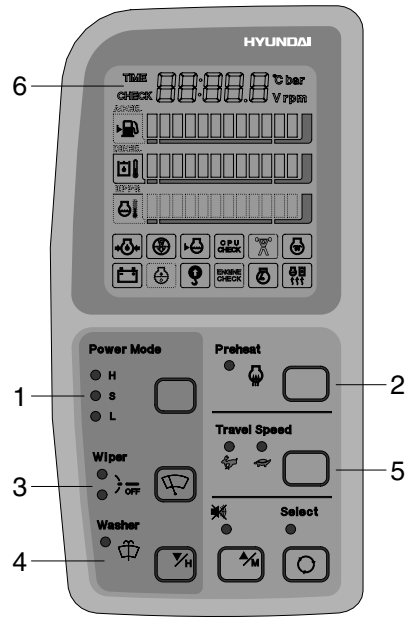
This mode is used for light-duty work.

(2) Preheat switch

This switch is used for starting the engine in cold weather. If pressed, grid heater is activated to get easier engine starting.

(3) Wiper switch

- Press the switch once to operate wiper.
- Press the switch once more to intermittently operate wiper low speed.
- Press the switch a third time to turn off wiper.



7074OP03A

1 Power mode
2 Preheat switch
3 Wiper switch
4 Washer switch
5 Travel speed switch
6 Monitoring display

(4) Washer switch

The washer liquid is sprayed and the wiper is operated only while pressing the switch.

(5) Travel speed switch

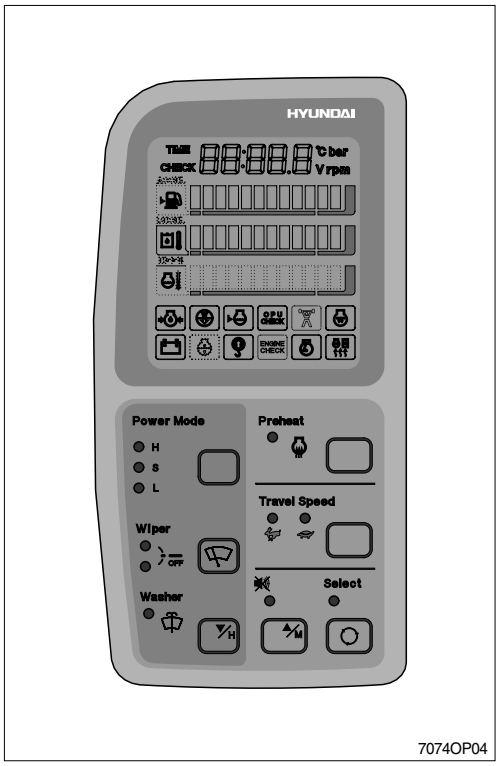
: Low speed traveling.

: High speed traveling.

(6) Monitoring system

Information of machine performance as monitored by the machine control unit(MCU) can be displayed on the **monitoring display**.

※ **Refer to 4-11 page for details.**



(7) Self diagnostic system

The MCU diagnoses problems in the CAPO system caused by electric parts' malfunction and by open or short circuit, which are displayed on the **monitoring display** as error codes.
(Refer to the service manual for error code).

(8) Anti-restart system

The system protects the starter from inadvertent restarting after the engine is already operational.

2) HOW TO OPERATE MODE SELECTION SYSTEM

(1) When start key is turned ON

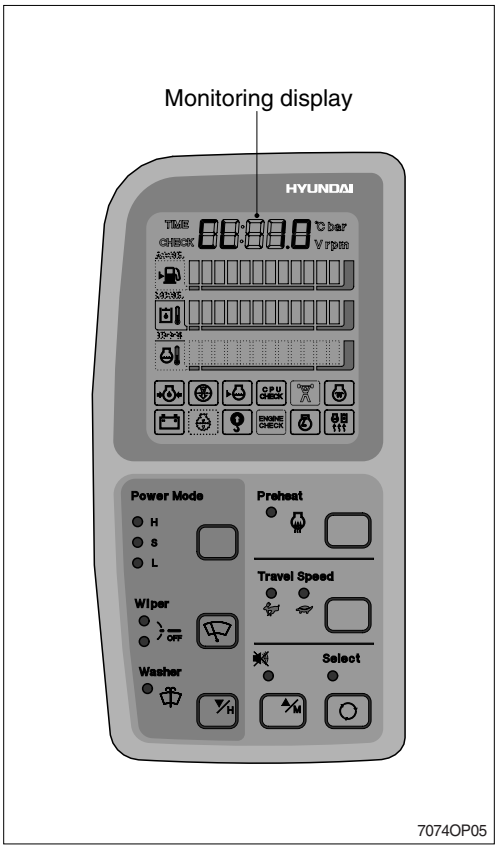
① When start key is turned ON, all illumination lamps are ON and all lamps are OFF automatically after 5 seconds. But the battery charging warning lamp and the engine oil pressure warning lamp keep turned ON until engine starting.

② After lamp check 「**CL : 1.0**」, the version of cluster program, is displayed on 「**Monitoring display**」 for 2 seconds.

③ After the version of program is displayed, the cluster returns to default. Exactly engine rpm, battery charging warning lamp and engine oil pressure warning lamp are turned ON and S mode, one touch decel, low travel speed(Turtle mark) are displayed.

④ In default condition self-diagnostic function including trouble detecting of electric system can be carried out.

※ **Refer to 4-11 page for details.**



7074OP05

(2) After engine start

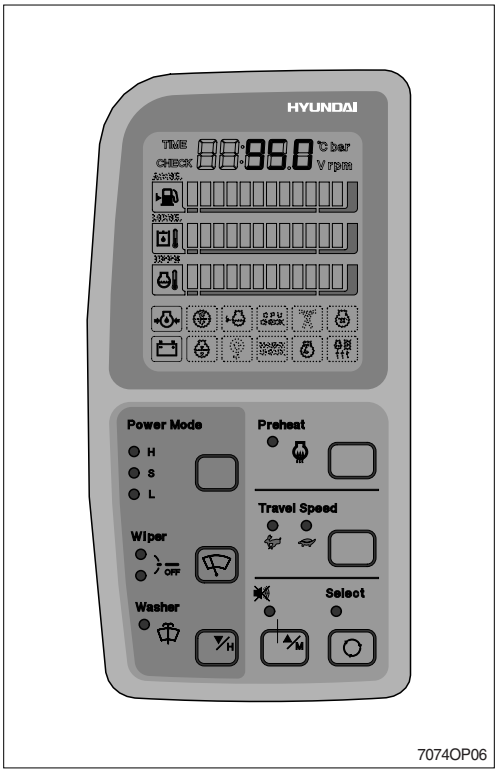
① When the engine is started, three lamps are ON as below.

Mode		Status
Power mode	S	ON
Travel speed	Low( )	ON
One touch decel		ON

- In this condition, tachometer indicates low idle, 950±100rpm.
- If coolant temperature is below 30℃, after 10 seconds the engine speed increases to 1200±100rpm automatically to warm up the machine.
- After 2-3 minutes, you can select any mode depending on job requirement.

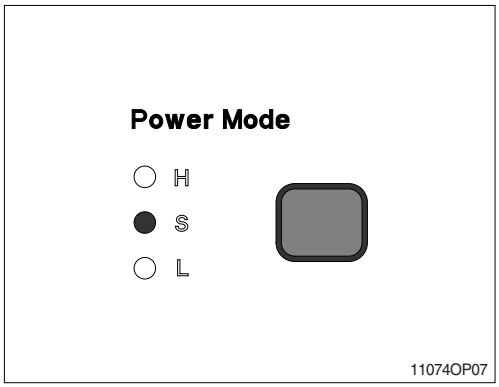
② Self-diagnostic function can be carried out the same as start key is ON.

※ **Refer to 4-11 page for details.**



7074OP06

3) SELECTION OF POWER MODE

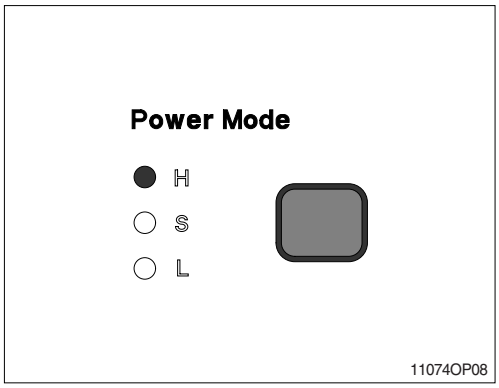


(1) S mode

When the accel dial is at setting 10 and one touch decel mode is concelled and S mode is selected.

Engine rpm	Effect
2050 ± 50	Same power as **non** mode type machine.

※ **When the accel dial is located below 9 the engine speed decreases about 50~100rpm per dial set.**

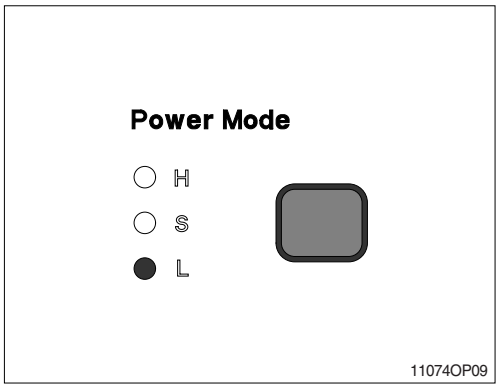


(2) H mode

When the accel dial is at setting 10 and one touch decel mode is cancelled and H mode is selected.

Engine rpm	Effect
2200 ± 50	Approximately 110% of power and speed available than **non** mode type machine or **S** mode.

※ **When the accel dial is located below 9 the engine speed decreases about 50~100rpm per dial set.**



(3) L mode

When the accel dial is at setting 10 and one touch decel mode is cancelled and L mode is selected.

Engine rpm	Effect
1900 ± 50	Approximately 85% of power and speed available than **non** mode type machine or **S** mode.

※ **When the accel dial is located below 9 the engine speed decreases about 50~100rpm per dial set.**

4) MONITORING DISPLAY

Information of machine performance as monitored by the CPU controller can be displayed on the cluster when the operator selects a display mode by touching **SELECT** switch alone or with **BUZZER STOP** switch on the cluster as below.

Display group	How to select display mode		Name	Display on the cluster
	Group selection	Display mode selection		
Group 0 (Default)	Way 1 Key switch **ON** or **START** Way 2 Touch **WASHER** switch while pressing **BUZZER STOP** at group 1~4.	Initial	Engine rpm	950 rpm
		Touch **SELECT** 1 time	Time	TIME 12:30
		Touch **SELECT** 2 times	CPU model & version	08:C 1.0
Group 1 (Volt, temp, EPPR press, version)	Touch **SELECT** switch **once** while pressing **BUZZER STOP.** In this group **SELECT** LED **ON**	Default	Battery voltage(V)	b:24.8v
		Touch **SELECT** 1 time	Potentiometer voltage(V)	Po: 2.5v
		Touch **SELECT** 2 times	Accel dial voltage(V)	dL: 3.8v
		Touch **SELECT** 3 times	Hydraulic oil temperature(℃)	Hd: 105℃
		Touch **SELECT** 4 times	Coolant temperature(℃)	Ct: 107℃
Group 2 (Error code)	Touch **SELECT** switch **twice** while pressing **BUZZER STOP.** In this group **BUZZER STOP** LED blinks	Default	Current error	CHECK Er: 03
		Touch **SELECT** 1 time	Recorded error (Only key switch ON)	TIME Er: 03
		Press down(▼) & **SELECT** at the same time	Recorded error deletion (Only key switch ON)	TIME Er: 00
Group 3 (Switch input)	Touch **SELECT** switch **3 times** while pressing **BUZZER STOP.** In this group **SELECT** LED blinks at 0.5sec interval	Default	One touch decel switch	od:on or oFF
		Touch **SELECT** 1 time	Preheat switch	PH:on or oFF
		Touch **SELECT** 2 times	Overload pressure switch	o l:on or oFF
Group 4 (Output)	Touch **SELECT** switch **4 times** while pressing **BUZZER STOP.** In this group **SELECT** LED blinks at 1sec interval	Default	Hourmeter	Ho:on or oFF
		Touch **SELECT** 1 time	Neutral relay (Anti-restart relay)	nr:on or oFF
		Touch **SELECT** 2 times	Travel speed solenoid	SS:on or oFF
		Touch **SELECT** 3 times	Preheat relay	PR:on or oFF

※ By touching **SELECT** switch once while pressing **BUZZER STOP**, display group shifts.
Example : Group 0 → 1 → 2 → 3 → 4 → 0