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) Work mode

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

① **Heavy duty work mode**

The boom priority solenoid is activated to make the boom operation speed faster.

② **General work mode**

When key switch is turned ON, this mode is selected automatically and swing operation speed is faster than heavy duty work mode.

③ **Breaker operation mode**

It sets the pump flow to the optimal operation of breaker by activating the max flow cut-off solenoid.

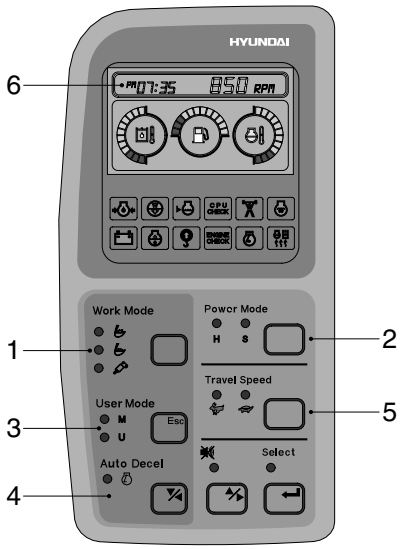
(2) Power mode

Power mode designed for various work loads maintains high performance and reduces fuel consumption.

- H mode : High power
- S mode : Standard power

(3) User mode

- M : Maximum power
- U : You can change the engine and pump power and memorize it for your preference



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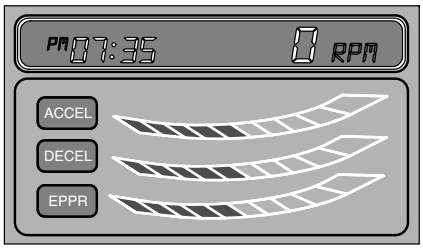
1 Work mode
2 Power mode
3 User mode
4 Auto decel mode
5 Travel mode
6 LCD

How to modulate the memory set

① Each memory mode has a initial set which are mid-range of max engine speed, auto decel rpm, and EPPR valve input current.



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② High idle rpm, auto decel rpm, EPPR pressure can be modulated and memorized separately in the U-mode.

※ **Refer to the page 3-8 for set of user mode.**

· LCD segment vs parameter setting

Segment (▮)	ACCEL (rpm)	DECEL (rpm)	EPPR (mA)
1	1250	800	135
2	1300	Low idle (850)	200
3	1350	900	250
4	1400	950	300
5	1450	Decel rpm (1000)	350
6	1500	1050	400
7	1550	1100	450
8	1600	1150	500
9	1650	1200	550
10	1700	1250	600

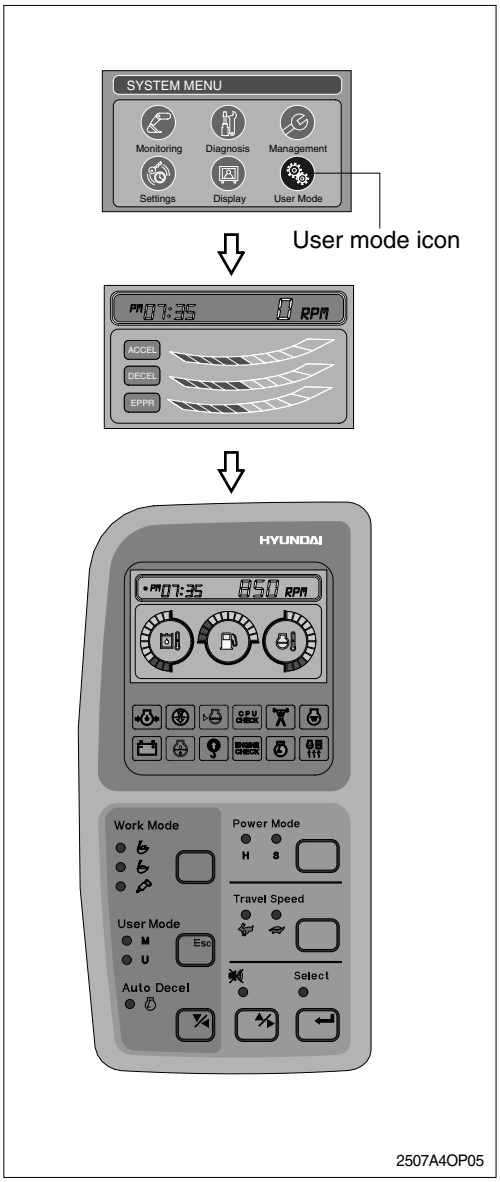
(4) Auto decel mode

Engine quick deceleration.

(5) Travel mode

: Low speed traveling.

: High speed traveling.



(6) Monitoring system

Information of machine performance as monitored by the CPU controller can be displayed on the **LCD**. Refer to the page 3-5.

(7) Self diagnostic system

① **CPU controller**

The CPU controller diagnoses problems in the CAPO system caused by electric parts' malfunction and by open or short circuit, which are displayed on the **LCD** as error codes(2 digit).

② **Engine controller(ECU)**

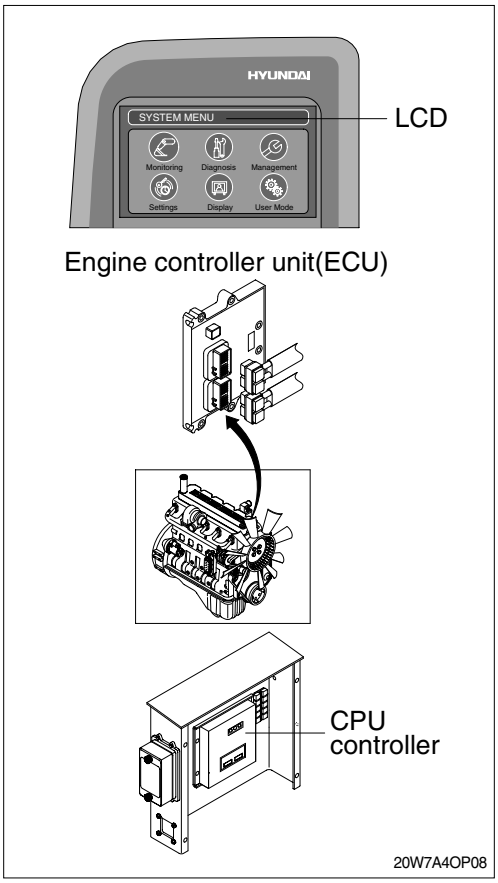
If the engine or relevant system has problem ECU diagnoses and displays on the **LCD** as fault codes(3 digit or more).

※ **Consult hyundai or hyundai dealer for details.**

※ **Refer to the page 3-5 for LCD display.**

(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 a battery charging warning lamp and an engine oil pressure warning lamp keep turned ON until engine starting.

② After lamp check「**1.00**」, the version of cluster program, is displayed on **LCD** 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, auto 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.

(2) After engine start

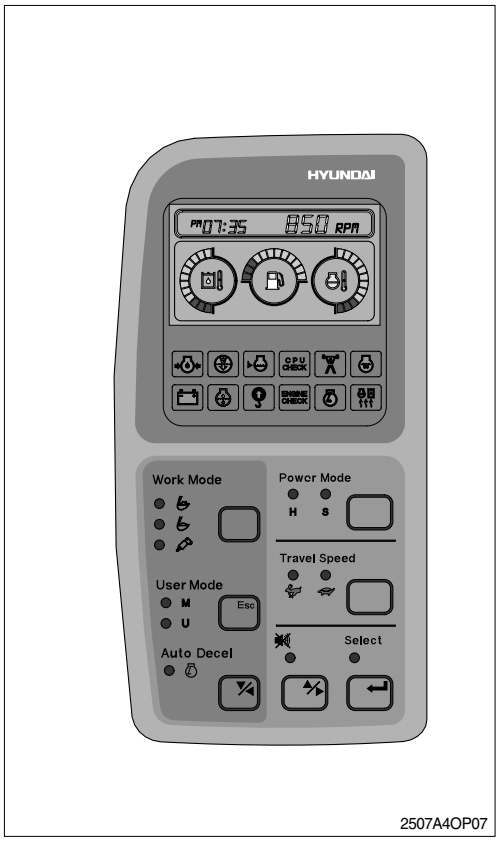
① When the engine is started, three lamps are ON as below.

Mode		Status
Work mode		ON
Power mode	S	ON
Travel mode	Low( )	ON
Auto decel mode		ON

- In this condition, tachometer indicates low idle, 850±100rpm.
- If coolant temperature is below 30℃, after 10 seconds the engine speed increases to 1000 ±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 the page 3-5 for details.**



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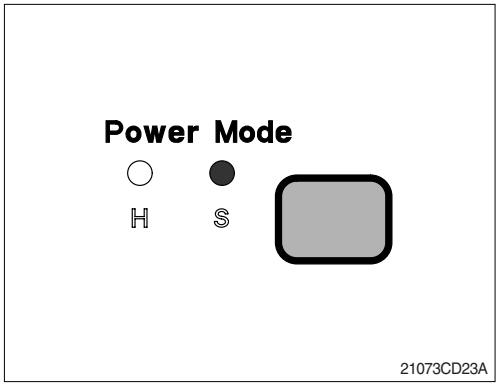
3) SELECTION OF POWER MODE

(1) S mode

When the accel dial is set at 10 and auto decel mode is cancelled and S mode is selected.

Engine rpm	Effect
1500 ± 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.**



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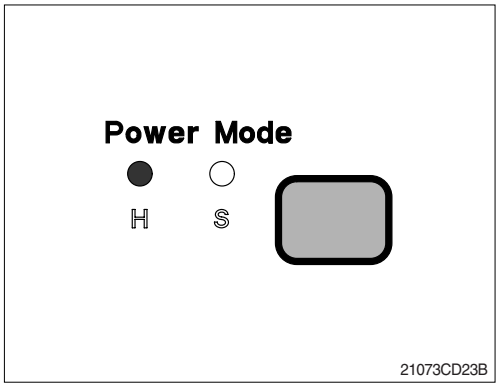
(2) H mode

When the accel dial is set at 10 and auto decel mode is cancelled and H mode is selected.

Engine rpm	Effect
1600 ± 50	Approximately 110% of power and speed available than **S** mode.

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



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(3) M mode

When the accel dial is set at 10 and auto decel mode is cancelled and M mode is selected.

Engine rpm	Effect
1700 ± 50	Approximately 130% of power and speed available than **S** mode.

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