KOBELCO

SERVICEMANS HANDBOOK

HYDRAULIC EXCAVATOR

MARK IV

SK4100460A-USA-1R 05/93

MidWestTech | Kobelco Mark IV Hydraulic Excavator Serviceman's Handbook | Publication SK4100460A-USA-1R

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D. Gauge Cluster Display– Functions & Displays

1. SYSTEM STATUS ICON



This icon will display when the controller for the Gauge Cluster Display and warning lamp monitoring system are not functioning properly. If this icon is displayed, contact an authorized KOBELCO service technician for service assistance.

2. SYSTEM STATUS ICON



This icon will display after keyswitch is turned "ON" and all machine systems and components are checked by CPU and found to be in good working order.

WARNING DISPLAYS

The Buzzer will sound the instant #5, #6, #7, #21 and #23 warning icons are displayed.

5. ENGINE OIL PRESSURE ICON



This icon will display and the Buzzer will sound should the Engine Oil Pressure drop below safe operating pressure. If this icon is on display and Buzzer is sounding, stop the engine immediately and check engine oil level. Fill engine to proper level with approved motor oil. **If engine has LOW OIL PRESSURE, the engine will automatically go to "LO" Idle RPM.**
This icon will Display only if alternator is charging.

6. ENGINE COOLANT TEMPERATURE ICON



This icon will display and the Buzzer will sound should the Engine Coolant Temperature rise above safe operating temperature. Should this icon display and Buzzer sound, reduce engine RPM to idle and stop operation until engine coolant temperature reaches safe operating temperature range.

7. ENGINE AIR CLEANER ICON



This icon will display and the Buzzer will sound should the Engine Air Cleaner Element(s) (FILTERS) become too dirty to allow proper air flow to the engine. Should this icon display and the Buzzer sound, stop engine immediately and clean or replace Engine Air Cleaner Element(s) as required.
This icon will Display only if alternator is charging.

NOTE

3,4,8,9,10,11,13,18,20 & 24 HAVE NO FUNCTIONS

9. OVERLOAD ALARM (EC SPEC) ICON



This icon will display and the Buzzer will sound should the Boom Cylinder Circuit pressure exceed the set, specified pressure. Should this icon display and Buzzer sound, immediately stop all operation, stop engine and contact an authorized KOBELCO Service Shop for service assistance.

12. ENGINE COOLANT LEVEL ICON- Pre-Start Check



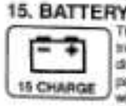
This icon will display should the Engine Coolant Level fall below safe operating level. Should this icon display before starting the engine, check and fill coolant level in the radiator and Coolant reservoir. Icon will not display if alternator is charging and a sudden loss of coolant is experienced.

14. HYDRAULIC OIL LEVEL ICON- Pre-Strart Check



This icon will display should the Hydraulic Oil Level in hydraulic oil reservoir fall below safe operating level. Should this icon display before starting engine, position machine in Hydraulic Oil Check position (refer to Operator Manual) and check sight gauge for oil level. Fill hydraulic reservoir to proper level using approved hydraulic oil. This icon will not display with engine running and a loss of hydraulic oil is experienced.

15. BATTERY CHARGING SYSTEM ICON



This icon will display and the Buzzer will sound should the electrical charging system not function properly. Should this icon display and Buzzer sound, have electrical charging system repaired immediately. Icon displays only when engine is running with normal oil pressure and a problem occurs in the charging system.

16. FUEL LEVEL ICON



This icon will display should the Fuel Level in Fuel Tank reaches 50 liters (13.2 Gal.) or less. Should this icon display refill fuel tank immediately using approved fuel oil.

17. I.T.C.S. CONTROLLER- CPU ICON



This icon will display when a problem exists in the I.T.C.S. (Intelligent Total Control System). Turn Key switch "OFF" and back to "ON" to try and reset CPU programming. Should this icon remain on display, stop operation stop engine call KOBELCO Service Technician for temporary CPU bypass procedures.

19. HYDRAULIC TANK AIR PRESSURE ICON



This icon will display when the internal pressure of the Hydraulic Oil Tank falls below 0.25 kg/cm² (3.6 psi). Should this icon displays, stop all operation and turn engine "OFF" immediately. Contact an authorized KOBELCO service technician for assistance. CONTINUING OPERATION OR ALLOWING ENGINE TO RUN WITH THIS ICON DISPLAYED COULD RESULT IN SERIOUS INTERNAL HYDRAULIC DAMAGE

21. HYDRAULIC OIL FILTER RESTRICTION ICON



This icon will display and buzzer will sound when hydraulic oil temperature and one or both of the Hydraulic Oil Return Filters are clogged. Should this icon display and buzzer sound, the hydraulic oil return filters should be changed immediately and the cause of clogging determined. Contact an authorized KOBELCO service technician for assistance in determining the cause of clogging. To reset buzzer, depress Buzzer Stop Switch twice.

22. ATTACHMENT BOOST PRESSURE



This icon will display when the Power Boost Switch is depressed or the Heavy Lift Switch is in the "ON" position. This icon is displayed only when this system is activated during operation.

23. REPLACE ENGINE OIL ICON



This icon will display and buzzer will sound at every 500 hours of machine operation to remind operator of scheduled engine oil change. The recommended oil change interval for CUMMINS engines is every 250 hours of operation.
To reset, press Buzzer Stop Switch twice.

25. STEPPING MOTOR (GOVERNOR) FAIL ICON



This icon will display should a problem in the electrical circuit that causes the stepping motor fail to index the engine throttle back to its starting point within 40 seconds after turning the Key Switch "OFF" and back to "ON". Contact an authorized KOBELCO service shop for service assistance.
Should this icon display, the following functions will not operate and the engine will have to be stopped using the Engine Emergency Stop Control:
1. Throttle Control via mechatronics system.
2. KPSS Mode Switch– All Modes
3. Auto Decel
4. Stopping engine with Key Switch
5. Optional Variable Loading Mode
Contact an authorized KOBELCO Service Technician for bypass and repair procedures.

26. STEPPING MOTOR (GOVERNOR) OFF ICON



This icon will display if the electrical current to the stepping motor has stopped. Electrical Current to the Stepping Motor will be stopped if the current to the stepping motor is less than 1 amp or more than 2 amps for 13 seconds or more. Also, the electrical current to the stepping motor will immediately stop should the current be 6 amps or more for 3 seconds. Should this icon display, stop the engine immediately to prevent damage to the CPU and call an authorized KOBELCO service shop for service assistance.

27. TIME DISPLAY ICON



The Time will display approximately 2 seconds after the "OK" icon is displayed. This icon is the normal display when key is on.

GAUGE, METER & INDICATOR LAMP FUNCTIONS

28. GREEN L.E.D. INDICATOR LAMPS

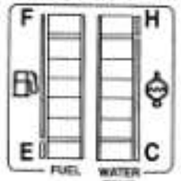
- **SWING FLASHER**– Flashes with Swing Flasher "ON" and swinging. If L.E.D. burns steady during swinging, check for a burned swing flasher bulb.
- **1st SPEED TRAVEL**– Burns steady when in 1st (Normal) Speed.
- **2nd SPEED TRAVEL**– Burns steady when in 2nd (Fast) Speed.
- **AUTO ACCEL/DECEL**– Burns steady with Auto Accel/Decel Mode "ON" and when engine is in Decel RPM's.

29. HOUR METER



Displays actual accumulative hours engine has been ran.

30. FUEL LEVEL & WATER TEMPERATURE GAUGES



FUEL LEVEL– Is indicated by the position of the indicator lights within the scale.

WATER TEMPERATURE– Engine coolant temperature is indicated by the position of the indicator lights within the scale. Gauge range is 62°C – 105°C (144°F - 221°F)

The following chart is aimed at familiarizing personell with the priority of the Gauge Cluster Display Icons. Pay close attention to these ocons as they can aid in avoiding unnecessary repairs and expense.
The icons in the chart below are listed in priority from the most serious to least serious.
EXAMPLE: If the Engine Oil Pressure is abnormal and Fuel Level is Low, The Engine Oil Pressure Icon will Display and Buzzer will sound. After the oil pressure is back to safe operating pressure, The Low Fuel Icon will Display.

PRIORITY	SERVICE FUNCTION ICON SEQUENCE	BUZZER
1	SYSTEM STATUS: 1 CHECK	NO
2	ENGINE OIL PRESSURE: 5 OIL PRESS; ENGINE COOLANT TEMPERATURE: 6 WATER TEMP; ENGINE AIR CLEANER RESTRICTION: 7 AIR CLEANER; HYDRAULIC OIL RETURN FILTER RESTRICTION: 21 H OIL FLTR; OVERLOAD ALARM (EUROPE SPEC)	YES FOR EACH ICON
3	STEPPING MOTOR FAIL: 25 S/M FAIL; STEPPING MOTOR OFF: 26 S/M OFF; HYDRAULIC TANK AIR PRESSURE: 19 H. AIRPRESS	NO
4	ENGINE COOLANT LEVEL: 12 COOLANT; HYDRAULIC OIL LEVEL: 14 H. OIL LEVEL; BATTERY CHARGING SYSTEM: 15 CHARGE; FUEL LEVEL: 16 FUEL LEVEL; I.T.C.S. CONTROLLER CPU: CPU 17 CONTROLLER	NO
5	ATTACHMENT BOOST PRESSURE: 22 HEAVY LIFT; REPLACE ENGINE OIL: 23 OIL SUPPLY	NO (For Attachment Boost Pressure); YES (For Replace Engine Oil)
6	SYSTEM STATUS DISPLAY: OK 2	NO
7	TIME DISPLAY: 12:34 AM	NO

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