

CONTROL EQUIPMENT

The equipment in the control room makes remote control operation possible. It consists of the instrument panel, which is connected to the engine by a wire harness, and the remote control handle, which is connected by control cables to the engine control lever and marine gear.

Instrument Panel

Equipment and Functions

The instrument panel is located at the helm. The following instruments enable you to start or stop the engine and to monitor its condition during operation.

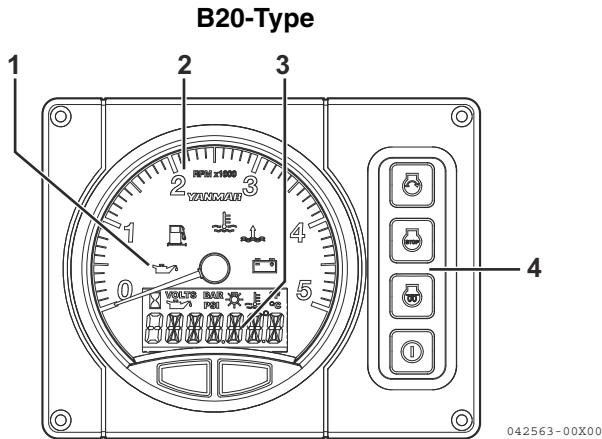


Figure 10

- 1 – Alarm lamps

2 – Tachometer
- 3 – LCD

4 – Switches (push-buttons)

Control panel switches

All switches are push-buttons.

Start switch



Pushing this switch operates the starter and starts the engine.

Glow switch



Pushing this switch for the specified time heats the glow plug in the combustion chamber. It becomes red-hot, facilitating fuel ignition. This assists starting in cold weather.

Stop switch



Pushing this switch stops the engine.

Power switch



Pushing this switch turns on or off the power.

Meters

Instrument	Function
Tachometer	Shows engine rotation speed.
Hourmeter	Shows number of operating hours. Can be used as a guide for periodic maintenance checks. The hourmeter is located at the bottom of the tachometer.
Panel Lights	When the power switch is pushed, the gauges will illuminate for easier viewing.

Note: The LCD on the instrument panel show hourmeter, display brightness and battery voltage.

Indicators and Alarms (Optional)

When a sensor detects a problem during operation, the indicator on the instrument panel will light and an alarm will sound. Indicators are located on the instrument panel and the alarms are located on the back of the panel. Under normal operating conditions, the indicators are off.

Battery Low Charge Indicator



When the alternator output is too low, the indicator will light. When charging begins, the indicator will turn off.

Coolant High Temperature Indicator and Alarm



When coolant temperature reaches the maximum allowable temperature (95°C [203°F] or higher), the indicator will light and the alarm will sound. Continuing operation at temperatures exceeding the maximum limit will result in damage and seizure. Check the load and troubleshoot the cooling system.

Engine Oil Low Pressure Indicator and Alarm



When the engine oil pressure falls below normal, the oil pressure sensor will send a signal to the indicator, causing it to light and the alarm to sound. Stop operation to avoid damage to the engine. Check the oil level and troubleshoot the lubrication system.

Water in Sail Drive Seal Indicator and Alarm



When water is detected between the seals of the sail drive, the indicator will light and the alarm will sound.

PRODUCT OVERVIEW

LCD control (hourmeter, display brightness, battery voltage)

You can switch (scroll) between displays by pressing the buttons on the bottom.

- **Switching screens by pressing the right button (Pressing the left button switches the screens in the opposite direction.)**

Press the power switch.

- After 4 seconds, the LCD shows the hourmeter.

Pressing the right button on the bottom of the LCD shows the temperature display.

This feature is not available on this engine.

Pressing the right button again shows the LCD brightness settings.
To set the brightness of the backlight:

- 1** Press the left button continuously and the digits of the LCD start flashing.
- 2** In this condition, press the right button to decrease the brightness and the left button to increase the brightness. (The brightness changes in 6 steps of 20 %.)
- 3** To set the desired brightness, do not touch the buttons for 3 seconds.

Note: Continuously pressing means holding the button for approx. 2 seconds.

Next, press the right button to show the pressure display.

This feature is not available on this engine.

Press again to show the battery voltage.
Pressing the button once more returns the display to the initial hourmeter.

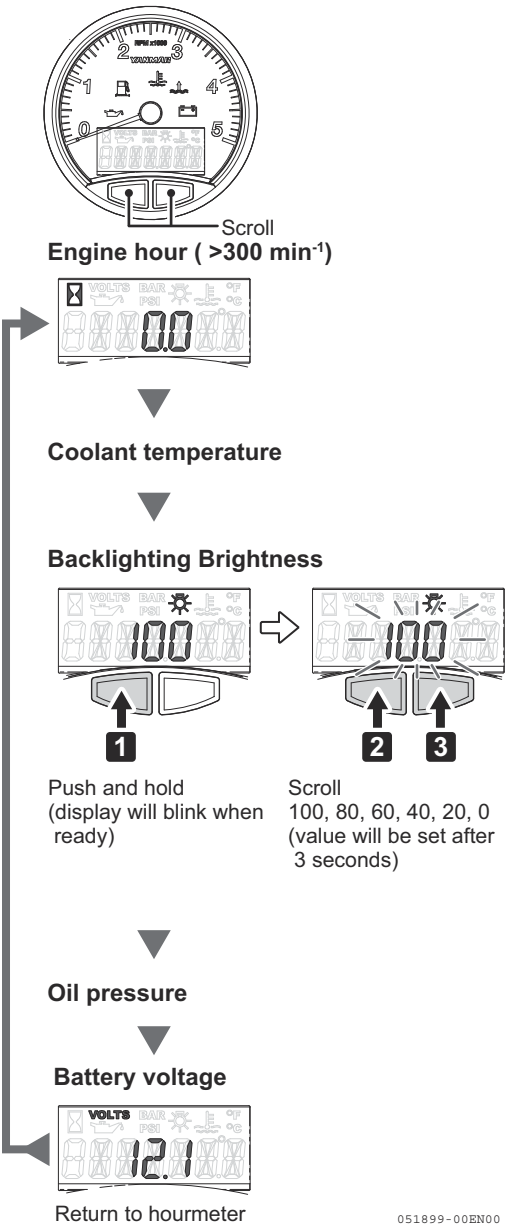


Figure 11

Setup Screen Access and Control (Setting the engine speed pulse value for B20/C30 type panel)

Use the buttons on the bottom of the LCD display to set the instrument panel. Press the left button to switch between displays.

- 1 Press and hold both buttons until “SET UP” appears.
- 2 Press the left button and go to the screen “UNIT”.
- 3 Press the left button and go to the next screen “ENGINE”.
- 4 Confirm that the display says “ENGINE”. Press the right button and “P****” appears.

Note: The pre-set value of speed pulse is indicated on the box of each panel.

- 5 Next, press the left button and select the speed pulse value for each engine model.

Engine model	Speed pulse value
YM with HITACHI alternator	10.29
YM with VALEO alternator	12.41

- 6 After confirming the value is changed correctly, press the right button to return to the “ENGINE” screen.
- 7 Press the left button again to go from the “ENGINE” screen to the “EXIT” screen.
- 8 After confirming the display, press the right button to re-start the panel and return to the hourmeter display.

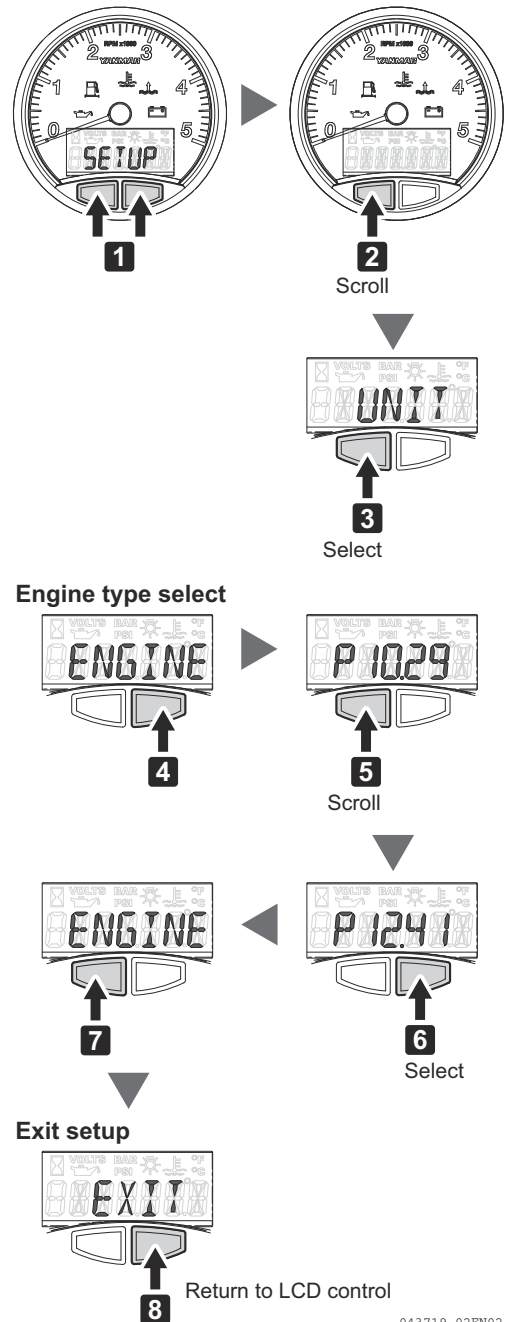


Figure 12

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PRODUCT OVERVIEW

Alarms

Checking the Warning Devices

Before and after engine start, make sure that the instruments and warning devices operate correctly.

If the engine runs out of coolant or lubricating oil and the instruments and warning devices fail, they can not give you warning to prevent accidents. This can also lead to incorrect operation and cause further malfunctions of the engine.

Before Engine Start

1. Turn on the battery switch.
 2. Push the power switch on.
- All alarm lamps light up for 4 seconds.
 - After 4 seconds, the charge lamp and the lubricating oil pressure alarm lamp light up, and the hourmeter is displayed.
 - The alarm buzzer sounds until the engine starts.

After Engine Start

After engine start, make sure that the warning devices operate correctly and according to “After start” in the below table.

- All alarm lamps turn off. The above check tells you whether the electric circuit for the warning lamps and alarm buzzer operate correctly. If they do not operate correctly, inspection and repair are required. Consult your dealer or distributor for repairs.

Correct operation of the warning devices				
Instrument panel (power switch)	Power ON			
	Immediately	After 2 seconds	After 4 seconds	
	Before start			After start
Starter switch	OFF			ON
Alarm buzzer	ON			OFF
Charge lamp	ON	ON	ON	OFF
Coolant temperature lamp	ON	ON	OFF	OFF
Engine lubricating oil pressure lamp	ON	ON	ON	OFF
LCD display	Yanmar	Full display	Hourmeter	

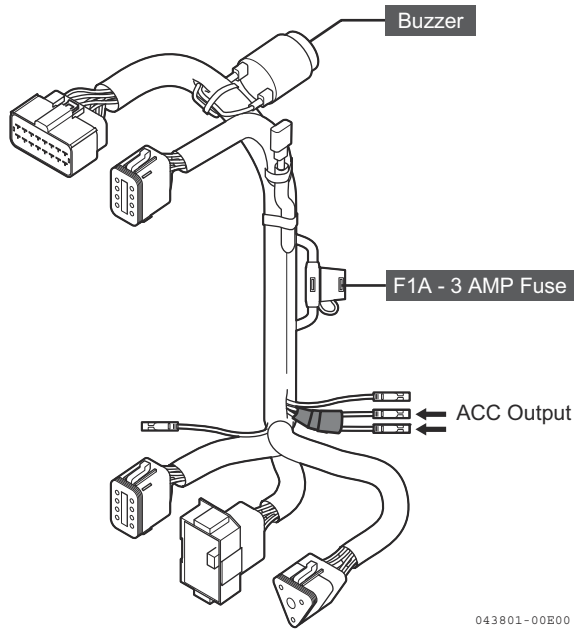
NOTICE

When the warning devices are activated and normal operation is impossible, stop the engine and do not use it until the problem has been solved.

Accessory power output

The harness attached to the panel has a terminal where the signal that is synchronized to the panel power supply can be taken off. **(Figure 13)** (Refer to the Wiring Diagrams on page 94.)

The maximum current of this output terminal is 3 A. Do not use a current higher than 3 A. For the content of the output terminal, refer to the Wiring Diagrams on page 94.



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Figure 13