

REMOTE PANEL

Original instructions



VE1500A-Ti

OWNER'S
MANUAL

No.003-12086-1



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APPLICATIONS OF THIS REMOTE CONTROL PANEL

USAGE

TOHATSU portable fire pump “VE1500A-Ti” and the remote control panel are intended only for firefighting activities in collaboration with general public fire extinguishing equipment.

Using these products for the other applications is regarded as being used for improper purposes.

The manufacturer of the fire pump and the control panel bears no responsibility for any damages that may result from modification of the fire pump without prior permission from the manufacturer, improper use of the fire pump and control panel, or use of the fire pump in applications other than firefighting activity.

Note that using the fire pump and the control panel for applications other than firefighting can result in personal injury or damage to the equipment.

Using the fire pump and the control panel within the range of intended uses implies that the user should follow the instructions provided by the manufacturer relevant to operation, servicing and maintenance.

Intended people

All persons who operate, service or maintain the fire pump or the remote control panel must read and understand the following items:

- Owner’s manual
- Safety-related instructions on the pump and the other parts such as a battery.

The portable fire pump and the control panel should be operated by only persons who received training as operators of fire engines along with each country’s (region’s) regulations.

The range of personal responsibility and supervision must be strictly defined by the user.

If a person does not have adequate professional knowledge which is required for his/her assignment, he/she must undergo relevant training or receive appropriate instructions from an individual who is actually knowledgeable in operation of the fire pump and the control panel.

A person who does not have enough knowledge is not permitted to operate the fire pump and the control panel.

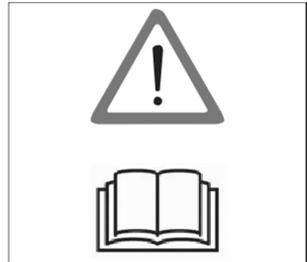
⚠ CAUTION

- **Keep the manual in a safe place for further reference.**
- **Operators of the fire pump and the remote control panel must always refer to all the relevant manuals in order to avoid errors, personal injury and equipment damage when operating the portable fire pump, and to maintain faultless operation.**
- **Place owner's manual so that operators can refer to it where they operate the fire pump and the control panel.**

General safety information

Before operating the TOHATSU remote control panel and the fire pump, thoroughly read the manual and understand the proper operation procedures including "NOTE".

The notices bring very important information to ensure safe, trouble free operation.



Storage of control panel

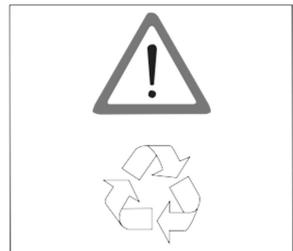
Keep the control panel away from high humidity.

Disposal of packing box

Dispose the packing box by following the environmental law.

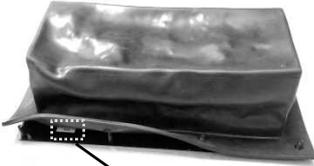
Environmental protection measures

When disposing of parts including remote control panel, follow the correct disposal procedure.



Before using this fire pump, write down the serial number. It will be useful in the case of asking about servicing, repairs and genuine parts.

Serial Number

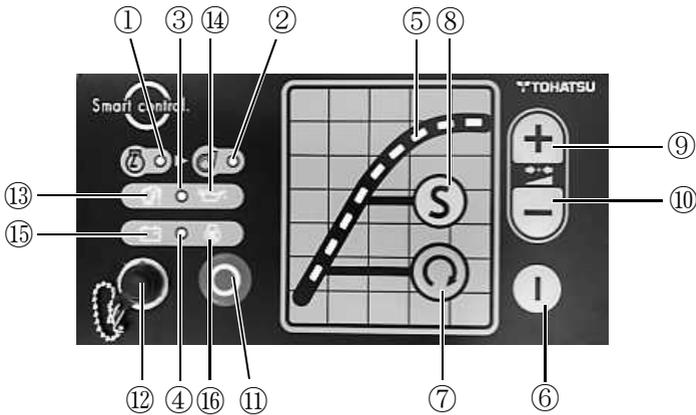


The identification of remote control panel is marked on the back of the control panel.

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1. OPERATION DEVICE

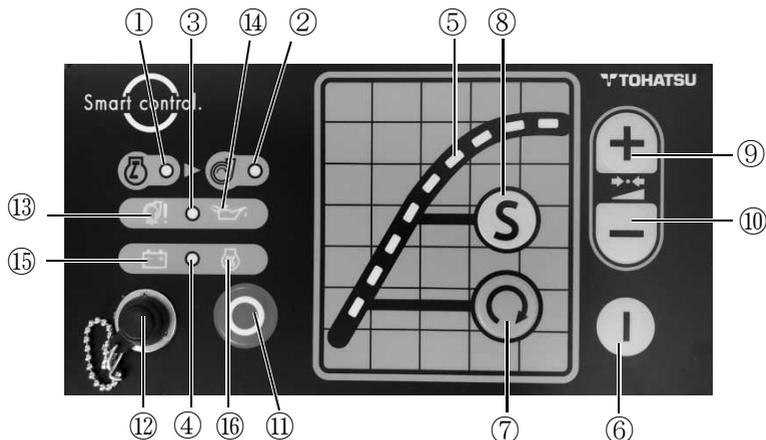


- ① Engine running status lamp
- ② Discharge water status lamp
- ③ Warning lamp: Suction water, Engine oil, MAT/MAP
- ④ Warning lamp: Battery, Overheat, TPS/WTS
- ⑤ Throttle opening indicator
- ⑥ Main switch
- ⑦ Start switch / Low pressure throttle position switch
- ⑧ Throttle position switch
- ⑨ Pressure increasing switch
- ⑩ Pressure decreasing switch
- ⑪ Stop switch
- ⑫ Outlet for floodlight (Searchlight)
- ⑬ Priming failure lamp
- ⑭ Engine oil level warning lamp
- ⑮ Battery voltage low warning lamp
- ⑯ Overheat warning lamp

2. DESCRIPTION OF DEVICES

Remote Control Panel

The remote control panel should be connected to the pump (VE1500A-Ti) control panel.



Lamp

①	Engine running status	Turn on : Engine running.
②	Discharge water status	Turn on : Ready to discharge water or discharging.
③	Warning for suction failure, engine oil shortage or MAT/MAP sensor disconnection	Turn on : <ul style="list-style-type: none"> • Unable to suck up water.(Water suction is not completed within 30 seconds in automatic water suction mode.) • Engine oil shortage. (About 1/3(0.5L) or less of the oil tank capacity.) Blinking : <ul style="list-style-type: none"> • MAT or MAP is defective or circuit is disconnected.
④	Warning for battery charge shortage, engine overheat or TPS/WTS disconnection	Turn on : <ul style="list-style-type: none"> • Battery charge shortage. • Pre warning for overheat or overheat. Blinking : <ul style="list-style-type: none"> • TPS or WTS is defective or circuit is disconnected.
⑤	Throttle opening indicator	Shows throttle opening level. (9 steps)

2. DESCRIPTION OF DEVICES

Switch

⑥	Main switch	Power and control panel lamps turn on.
⑦	Start switch, Low pressure throttle position switch	Start the engine with starter.
		Turn the throttle to low pressure position while the engine is running.
⑧	Throttle position switch	Turn the throttle to engine start position and suck up priming water position.
⑨	Increasing pressure switch	Tuning the throttle to increase the pressure.
⑩	Decreasing pressure switch	Tuning the throttle to decrease the pressure.
⑪	Stop switch	Stop the engine. / Power off.

Other

⑫	Outlet	Floodlight. (Only one panel outlet can be used for floodlight in connected control panels. Do not connect two or more floodlights at one time.)
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Pictogram

Warnings will also display by lighting on pictograms.

⑬		Unable to complete sucking up water in 30 seconds. Turn on: Sucking up water is not completed within 30 seconds. • Remove the cause of water suction failure. Then restart the engine.
⑭		Engine oil shortage Turn on: Amount of oil in the oil tank is about 1/3 or less. • Refill 2-stroke engine oil.
⑮		Battery charge shortage Turn on: Battery charge is not enough. • Charge the battery.
⑯		Overheat Turn on: Overheat prevention device operates. • Eliminate the cause of cooling water shortage. Then after, start the engine again.

2. DESCRIPTION OF DEVICES

Lamp check (Alert action check)

When the warning lamps are off, there is no trouble on each function. If the warning lamp(s) is on or blinking, the pump does not work properly.

NOTE

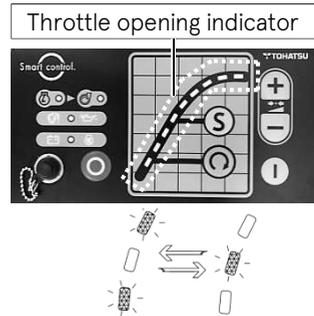
- Turning on the power, the warning lamps and buzzer will be activated for approximately one second. (The lamp check is automatically performed and the installed computer starts monitoring.)

Warning lamp & buzzer

Electronic throttle failure

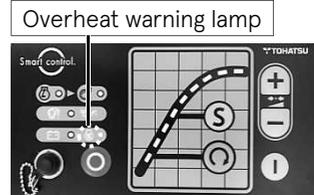
If the electronic throttle failure occurred,
(Defective throttle limit switch or potentiometer)

- Throttle opening indicator: Blink alternately between odd and even numbered.
- Throttle position is controlled to low pressure position (Engine revolution goes down.), and then the throttle does not work.



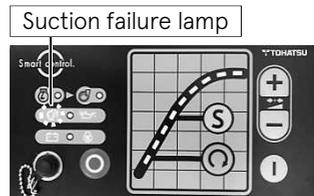
Overheat

- In the case of engine temperature reaches the setting temperature of approximately 80°C, warning buzzer intermittently sounds and the warning lamp turns on.
- In the case of the engine temperature exceeds 90°C, warning buzzer sounds, warning lamp turns on and the engine stops automatically.
- In the case of engine temperature exceeds 120°C or higher, warning buzzer sounds and the warning lamp turns on. Even in this situation the starter motor can work but the engine does not run.



Suction failure

When the water suction cannot be completed within 30 seconds, the warning lamp of suction failure turns on and the engine will stop.



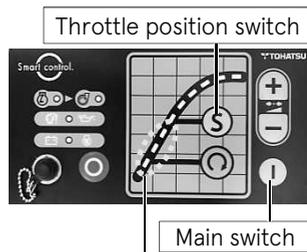
3. USE OF REMOTE CONTROL PANEL

Operation procedure using remote control panel

Connect the remote control panel to the operation panel of pump (VE1500A-Ti).

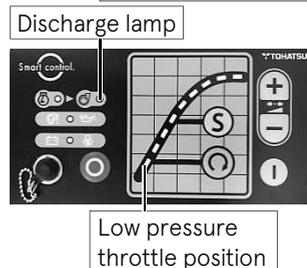
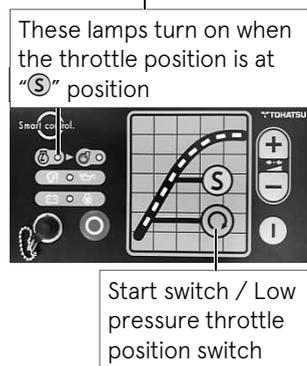
1) Turning on the power

- Turn on the power pressing the main switch.
Lamp check will be done for an instant.
(Each lamp lights for about a second.)



2) Starting the engine and sucking up priming water

- Press the throttle position switch "S" to turn the throttle position to "S" position. (Then the throttle opening indicator lamps between low pressure and throttle position switch "S" turn on.)
- Start the engine pressing the start switch (/Low pressure switch). The starter motor runs while pressing the switch "Ⓢ: Start switch, / Low pressure throttle position switch".
- Release the start switch immediately after the engine starts. The engine running lamp turns on the light
- After the engine starts, the vacuum pump starts running automatically and runs until sucking up priming water completed. When sucking up the water completed, the vacuum pump stops, the throttle turns to low pressure throttle position automatically and discharge lamp turns on.



NOTE

- When the starter motor runs for a long time continuously, the power of the battery will be exhausted quickly. The maximum time for starting motor operation should be 3 seconds or less at one time. If the engine does not start, wait for 5 seconds before operating the starter motor again.

3. USE OF REMOTE CONTROL PANEL

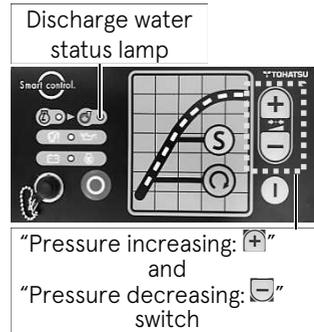
NOTE

- If the throttle position is at lower position (at about Idle position) than “S” position, the vacuum pump will not start automatically.
- If the starter motor does not operate although the throttle is at the “S” position, check if the battery terminals are tightly connected and the battery is fully charged.
- If the engine does not start in five time starting operations, eliminate the cause of failure, then start the engine.
- VE1500A-Ti pump control panel does not have the engine running status lamp and the discharge water status lamp.

3) Discharge water

Open the discharge valve(s). Checking pressure gauges, adjust the discharge pressure by pressing “+” or “-” switch.

While discharging water, wherever the throttle position is, by pressing the suction water position switch “S” or low pressure position switch “L”, the throttle position will turn to “S” or “L” position.



CAUTION

- **When opening the discharge valve, turn the throttle to the low pressure position.**

NOTE

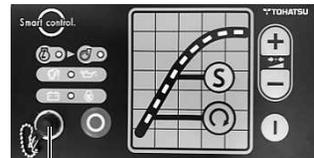
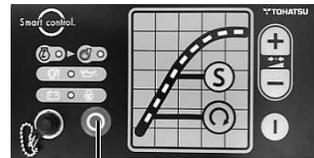
- In the case of the remote control panel is connected to the pump control panel, the throttle dial of the pump does not work.

4) Stop the engine

Decrease the discharge pressure by pressing the switch “L” or “-” until the throttle turn to low pressure position.

Close the discharge valve(s).

Press the stop switch to stop the engine. At the same time, lamps on the panel turn off. (Power turns off)



Floodlight

When using a floodlight (for VE1500A-Ti), insert the plug of the floodlight into the outlet.

3. USE OF REMOTE CONTROL PANEL

Warning system

Alert	Warning indicator								Description of faults or notice	Remedy	
											
Alert check	Suction water Engine oil MAT/MAP One time flash	Battery Overheat TPS/WTS One time flash	Oil warning lamp One time flash	Overheat warning lamp One time flash	Battery charge warning lamp One time flash	Suction failure warning lamp One time flash	Throttle opening indicator One time flash	Speed control One time alarm	Warning sound One time alarm	Engine operation Normal system test when main switch is on. (*2)	A
Oil level	ON		ON					ON	ON	Oil level is below approx. 1/3	A
Overheat		ON		ON					ON	Engine has stopped due to insufficient cooling water, etc.	B
Prior Overheat		ON		ON					ON Intermittent sound	Warning of engine stoppage due to insufficient coolant, etc. is sent in advance.	C
Battery Voltage		ON			ON					Insufficient battery charge(*4)	D
Suction failure	ON					ON			ON	Unable sucking water complete within 30 sec.	E
Throttle control abnormal							blinking			Failure of sensor of limit switch. Setting failure. (*3)	G
Engine over speed※								About 6100rpm		Engine speed exceeds maximum- allowable RPM.	F
MAT/MAP Alert(*1)	Blinking								ON Intermittent sound	MAT or MAP failure or open circuit	G
TPS/WTS Alert(*1)		Blinking							ON Intermittent sound	TPS or WTS failure or open circuit	G

3. USE OF REMOTE CONTROL PANEL

※ The functions are in the pump.

*1. Manifold Air Temperature sensor (MAT), Manifold Absolute Pressure sensor (MAP), Throttle Position Sensor (TPS), and Water Temperature Sensor (WTS).

*2. Pressing the main switch one time.

*3. The throttle turns to low pressure position and the throttle does not work.

*4. If the battery voltage is too low such as about 7(V) or less, the alarm may not work.

Remedy

A: Refill the engine oil.

B: Remove the cause of insufficient cooling water and restart the engine. *

C: Remove the cause of insufficient cooling water.*

* Refer to VE1500A-Ti owner's manual / TROUBLESHOOTING.

D: Charge the battery.

E: Remove the cause of unable suction water.

F: Turn the throttle to low speed (pressure) position.

G: Stop the engine and contact our customer service.

4. STARTING THE ENGINE

Operating VE1500A-Ti is possible with both of the pump control panel and the remote control panel.

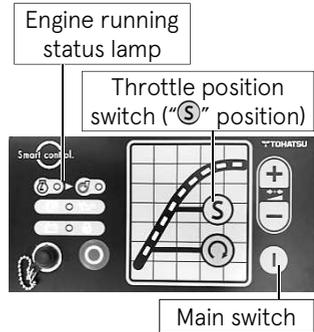
Connect the remote control panel to the operation panel of pump (VE1500A-Ti).

- * VE1500A-Ti pump control panel does not have the engine running status lamp and discharge water status lamp.

Starting the engine

1. Press the main switch.

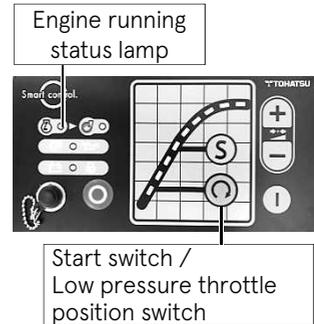
Lamp check will be done for an instant.
(Each lamp lights for about a second.)



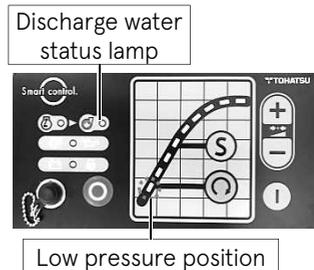
2. Press the throttle position switch "S" to turn the throttle position to "S". (Then the throttle opening indicator lamp between low pressure and "S" position turn on.)

3. Press the start switch / Low pressure throttle position switch "C" until the engine starts. The starter motor runs while pressing the switch. (The maximum starter running time should be 3 seconds at one time.)

Release the start switch "C" immediately after the engine starts. The engine running status lamp turns on.



After the engine starts, the vacuum pump starts running automatically and runs until sucking up priming water completed. When sucking up the water completed, the vacuum pump stops and the throttle turns to low pressure position automatically, and discharge water status lamp turns on.



4. STARTING THE ENGINE

NOTE

- The throttle position turns to the low pressure position after completed of sucking water at automatic suction water mode just after the power on.
- When the engine starts, the engine running lamp turns on.
- When the starter motor runs for a long time continuously, the power of the battery will be exhausted quickly. The maximum time for starting motor operation is 3 seconds at one time. If the engine does not start up, wait for 5 seconds before operating the starter motor again.
- If the starter motor does not work, check that the battery terminals are tightly connected and the battery is fully charged.
- If the engine does not start in five time starting operations, eliminate the cause of the failure, then start the engine.
- Starting the engine at the throttle position of “S” or higher, the engine speed will be controlled to be maximum 3000 rpm due to avoid over-speed of vacuum pump.

<In the case of just only starting the engine with remote control panel>

After turning on the power, press "Start switch / Low pressure switch "C", then only the engine will start, vacuum pump will not start. (If the throttle position is under "S" position, starting the engine may not be easy in cold condition.)

CAUTION

- **If running the engine with no water, the engine will overheat. Suck up water as soon as possible to avoid overheating. Maximum running time with no water is follows*,**

- **Idling: Within 2 minutes**
- **Throttle dial at "S" mark position: Within 30 seconds**

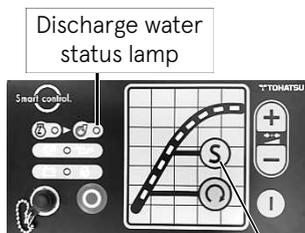
* As a reference (depending on ambient temperature).

<Sucking up priming water after engine starts>

After starting the engine, press the throttle position switch "S". And then the vacuum pump runs until sucking up the water completed. Discharge water status lamp will turns on after sucking up water completed.

NOTE

- Maximum vacuum pump operation time at one time is 30 seconds.



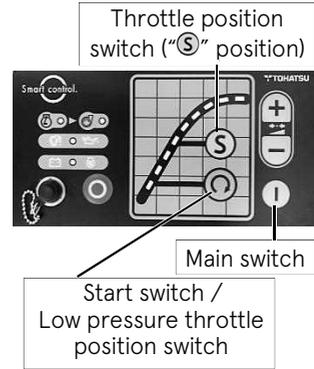
Throttle position switch ("S" position)

5. PRIME AND DISCHARGE

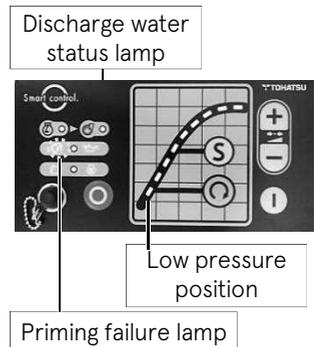
Sucking up priming water (Automatic)

Refer to "CONTENT 4. STARTING THE ENGINE".

1. Press the main switch to turn on the power.
2. Press the throttle position switch "S".
Then the throttle position turns to the suck up water position "S".
3. Press the start switch "C" to run the engine.
After starting the engine, the vacuum pump runs to suck up water.



4. After sucking up water completed, the vacuum pump stops and the throttle turns to low pressure position automatically, and then discharge lamp turns on the light.
The throttle position turns to the low pressure position after completed of sucking water at automatic suction water mode just after the power on.



CAUTION

- If the pump could not suck up water completed in 30 seconds in the auto priming mode, the warning lamp lights and the warning buzzer sounds. Eliminate the cause referring "Owner's manual of VE1500A-Ti/TROUBLESHOOTING".

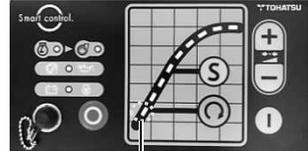
5. PRIME AND DISCHARGE

Discharging water



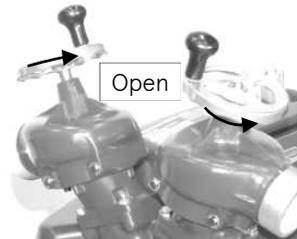
- Check that the nozzle is ready to discharge water before opening the discharge valve(s). And inform the operator(s) on the nozzle side that the discharge valve(s) is going to open and confirm that it is OK.

1. Confirm the throttle opening indicator shows the lowest throttle opening level.

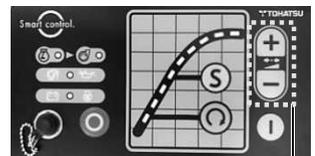


Lowest throttle opening level

2. Open the discharge valve(s).



3. Adjust the pressure of pump by pressing “+”:Increasing, or “-”:Decreasing” pressure switch.



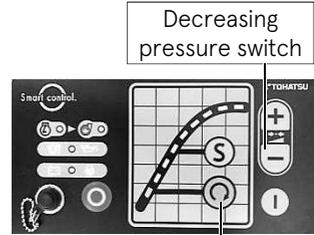
Increasing/Decreasing pressure switch

NOTE

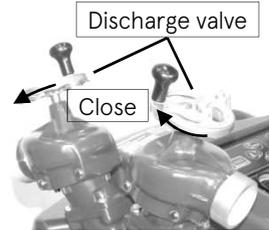
- While the engine is running, pressing the start switch/Low pressure throttle position switch “⊙”, the throttle position goes down to the low pressure position.
- While the engine is running, pressing the throttle position switch “S”, the throttle position turns to the position for sucking up priming water.

6. STOPPING THE ENGINE

1. Return the throttle to the low pressure position pressing “” or “: Decreasing pressure switch”.



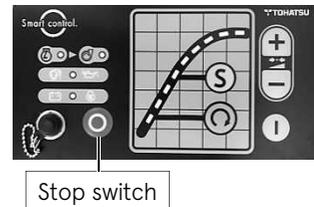
2. Close the discharge valves.



3. Press the stop switch “” to stop the engine. Then the lamps turn off (Power off).

NOTE

- It takes 1 ~ 3 seconds until the engine stops owing to the after burn control. This is a shut off behavior by an anti-after burn control, not a failure.



REMOTE PANEL

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OWNER'S
MANUAL

No.003-12086-1

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