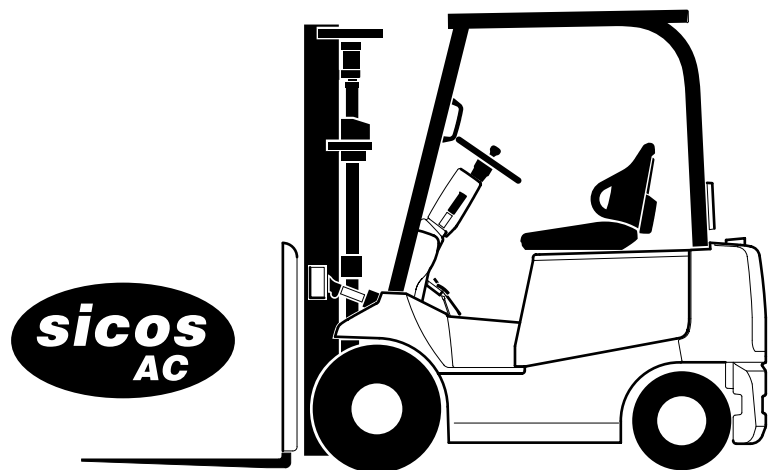


# TROUBLESHOOTING MANUAL

## *Transer*

FB10P,14P,15P,18P-75

FB20P,25P,28P,30P-75



**NICHIYU**  
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KYOTO, JAPAN

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# 1. Introduction

## 1-1. What's new in FB-75

**A** Equipped with Sicos-AC

- Improved inching
- Enhanced regeneration
- Settings for various modes, power mode, and low speed
- Auto power OFF
- Neutral safety
- Self-diagnosis function
- Contactless traveling, loading and regeneration

**B** Altered display and board  
(color display → flourscent display)

(Interchangeable installation with panel Ass'y)

- 10-step battery discharge indication
- Time length of hour meter indication key when it is ON (actual operation time is OPT)
- Canceled battery electrolyte level display
- Altered speed indication (actual speed → converted speed)
- Mono-blocked slow speed (turtle) S/W and mode S/W (sheet type switch)

**22** Inclined lift chain → parallel (P mast)

**23** Altered chain anchor figure (P mast)

**24** Altered side roller attaching structure (P mast)

**25** Altered chain attaching location (M mast)

**26** M mast using 2t type outer mast

- FB15P

**27** Enlarged mast's outer width

- FB20P

**15** Strengthened front wheel covers

**16** Strengthened steps

- FB30P

**19** Reduced gear sound because of lowered backlash

- FB20P

**20** Improved brake because of altered wheel cylinders

- FB20P

**7** Shortened turn signal's come back

**11** Altered display cover figure

**28** Altered control bulb spool figure

**14** Altered hydraulic lever link ratio

**4** Altered accelerator structure

- Made identical with potentiometer FBR-75

**17** Enlarged opening angle on battery cover

**5** Controlled travel/hydraulic vector

**6** Type-VE controller

- Mono-blocked heat sink and base, mono-blocked gate board, mono-blocked condenser (soldering) etc.

**10** Altered counter weight figure

**3** Controlled hydraulic motor sensorless (altered board and software)

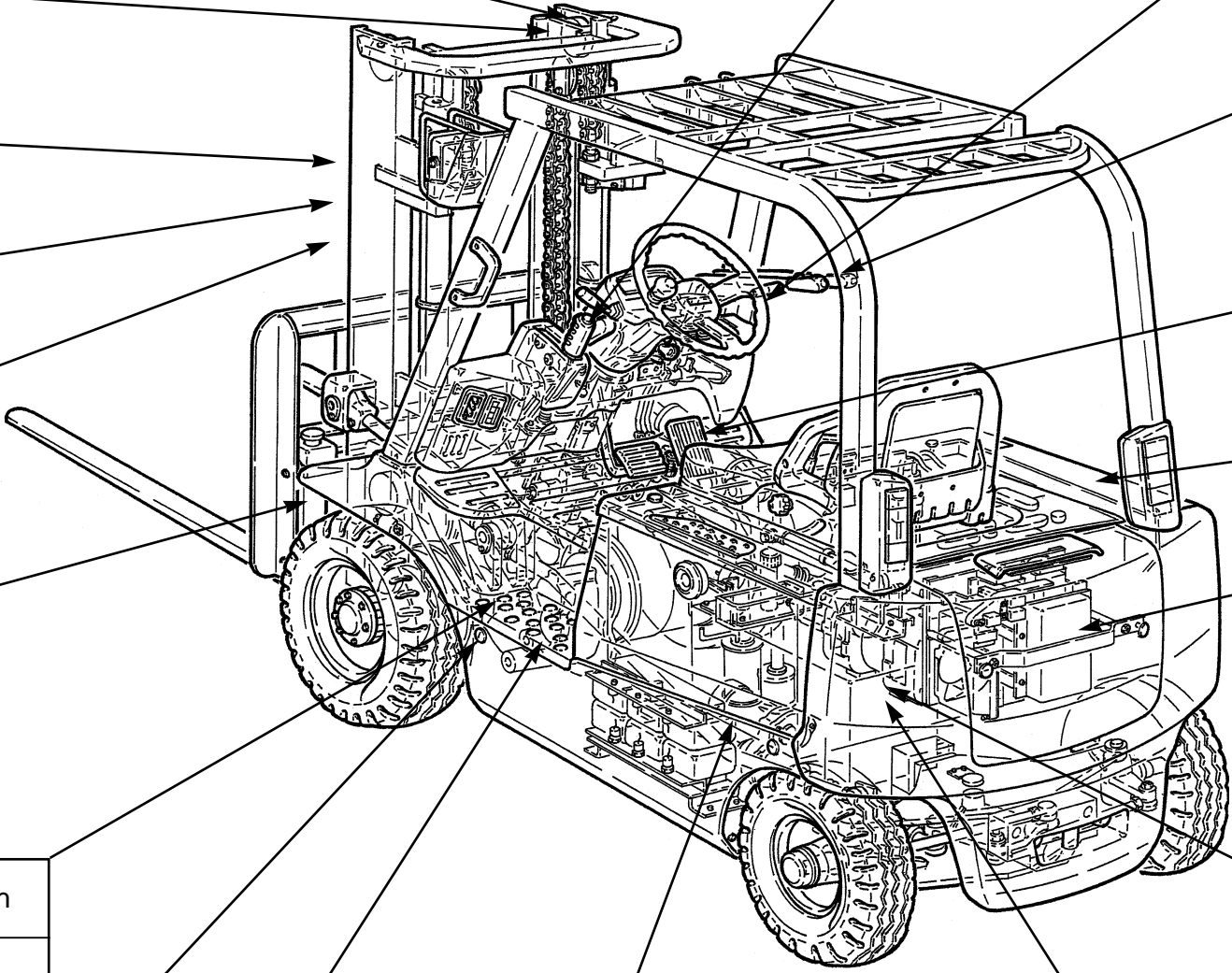
- Improved software, hydraulic response

**12** Altered oil tank structure

**8** Altered hydraulic motor's diameter

- FB15P

**18** Altered to anti-loose knob on the cover



## 1- 2. FB-75 new features

### 1-2-1. Battery discharge indicator

#### 1. 48V capacity indication

##### <5-step indication (FB-70)>

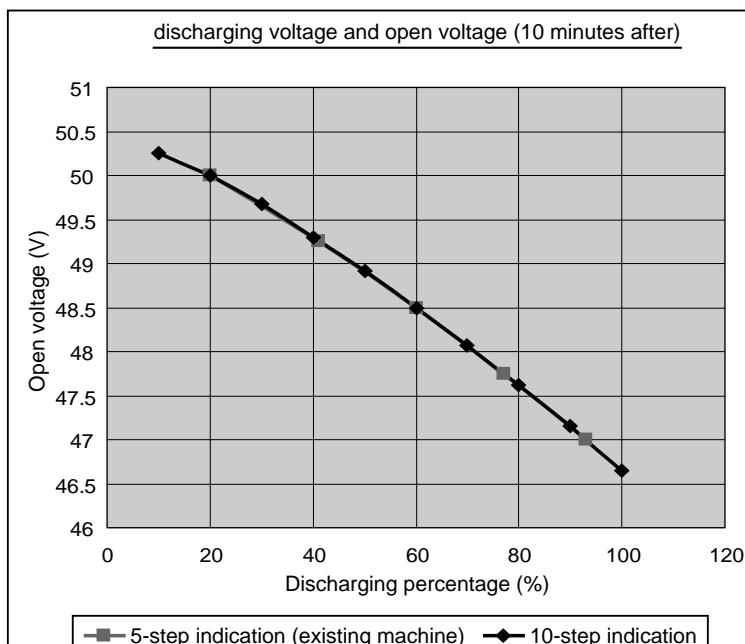
FB-70 is not completely in proportion to discharging capacity because it divides voltage by 0.75V.

discharging percentage (%)	terminal voltage (V)
20	50
41	49.25
60	48.5
77	47.75
93	47

##### <10-step indication (FB-75)>

It sets dividing voltage to be in proportion completely to the capacity.

discharging percentage (%)	terminal voltage (V)
10	50.25
20	50
30	49.67
40	49.3
50	48.91
60	48.5
70	48.07
80	47.62
90	47.15
100	46.65

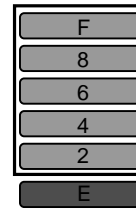


The graph below shows the relation between discharging percentage and capacity indication.

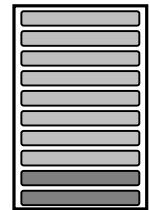
From this graph, 5-step indication goes off when the discharging percentage gets below 93%, and it seems one segment is on when the discharging percentage gets 93% through 100% in case of 10-step indication. In deed, however, a red segment is lit when the discharging percentage gets 93% in case of 5-step indication. In other words, a red segment is lit when the discharging percentage gets 93% in case of FB-70. On the other hand, a red segment is lit when the discharging percentage gets 80% in case of FB-75.

It is as good as over-discharging lift interrupt option; the lift speed reduced by half when the red segment is lit. It limits earlier than FB-70 setting.

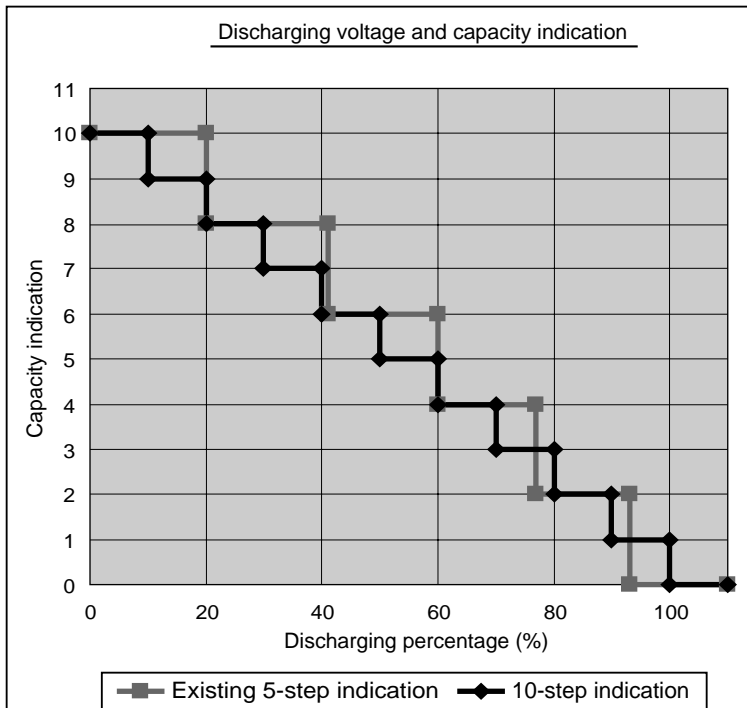
Also, the lift interruption functions when the last red segment is lit. In this case, the segment flashes as well as the frame of the segment. After the last segment goes off, only the frame flashes.



FB-70



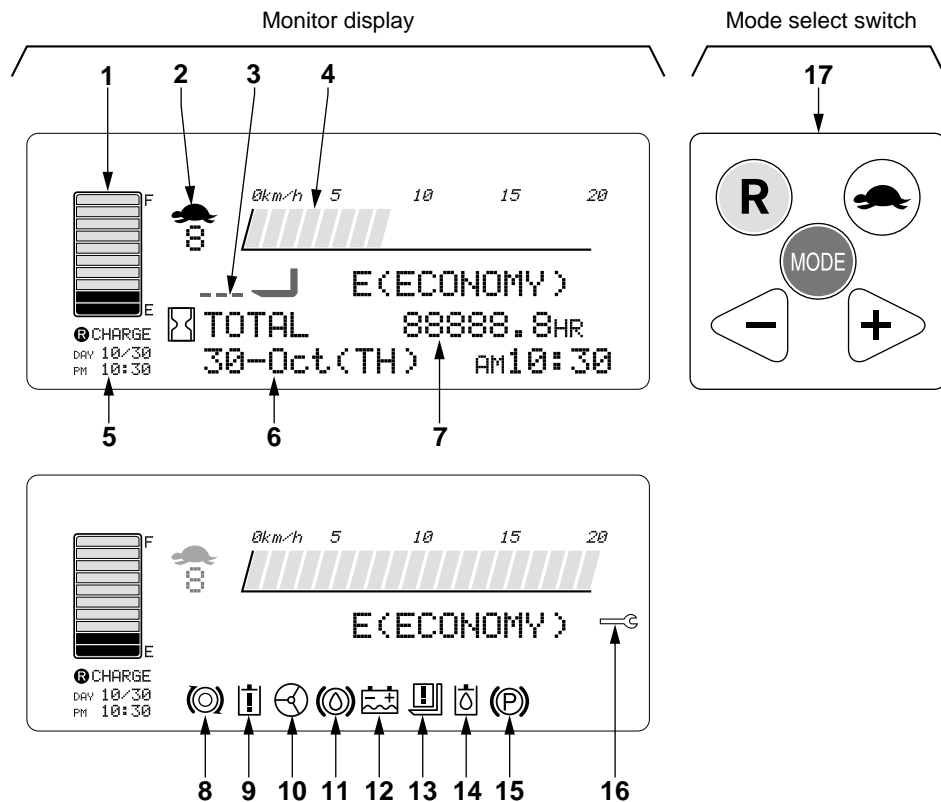
FB-75



# 2. Adjustment of SICOS-AC

## 2-1. Explanation of the monitor display

### 2-1-1. Indicator panel



1. Battery discharge indicator
2. Slow speed mode monitor (Turtle mark)
3. Fork horizontal indicator (Option)
4. Travel speed meter
5. Battery charge reservation indicator (Option with built-in charger)
6. Calendar and clock
7. Hour meter
8. Safety monitor for traction circuit
9. Safety monitor for hydraulic circuit
10. Safety monitor for power steering circuit
11. Safety monitor for brake fluid
12. Safety monitor for battery electrolyte level (Option with GS battery)
13. Safety monitor for overload (Option)
14. Safety monitor for hydraulic oil level (Option)
15. Safety monitor for parking brake
16. Service (spanner) mark
17. Mode select button

#### NOTE

Icons of 8 to 14, and 16 shown in the illustration are displayed for the explanation. It is not actual indication. They are displayed when abnormalities are occurred.

## 2-1-2. Indication of display

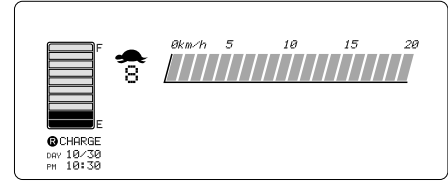
Turn on the key switch.

The self-diagnosis function checks the control system and display "MONITORING OK" when no problems are found. Icons of "Read operator's manual" and "Fasten seat belt" are flashed three times for warning to the operator.

The normal screen is displayed.

If any abnormalities are detected, the error message is displayed. If the long message is displayed or some messages are displayed, they are scrolled from right to left alternatively.

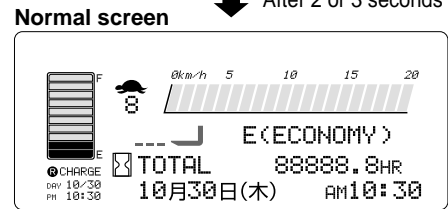
When the key switch is turned on.



↓ After 0.5 seconds



↓ After 2 or 3 seconds



Normal screen

### NOTE

If traveling or hydraulic operation is done while this (with-in 3 or 4 seconds), the normal screen is displayed after finishing the initial monitoring function.

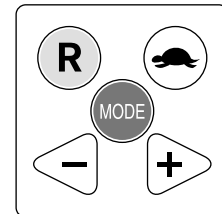
### CAUTION

Contact to your local Nichiyu dealer if the error message is displayed.

## Mode setting buttons

### NOTE

If travel/hydraulic operation is done while one-touch operation screen is being displayed, it returns to the normal screen.



### Setting screen by one touch operation

Push (R) button.



#### Reserve charge screen

- Set the starting time of battery charge.

(This screen is displayed if the optional built-in charger is equipped.)

• • • Refer to the section of the reserve charging on FB-75 OPERATOR'S MANUAL or WORKSHOP MANUAL.

Push (MODE) button.

(Release within 3 seconds.)



#### Mode select screen

- Slow speed mode setting
- Travel mode setting
- Hour meter / odometer selection
- Display mode setting
- Coast mode setting

• • • Refer to each setting section.

Push (MODE) button

for more than 3 seconds.



#### Date / time setting screen

For setting of date and time.

• • • Refer the page 15 for details.

Push one of (-) or (+) .



#### Hour meter screen

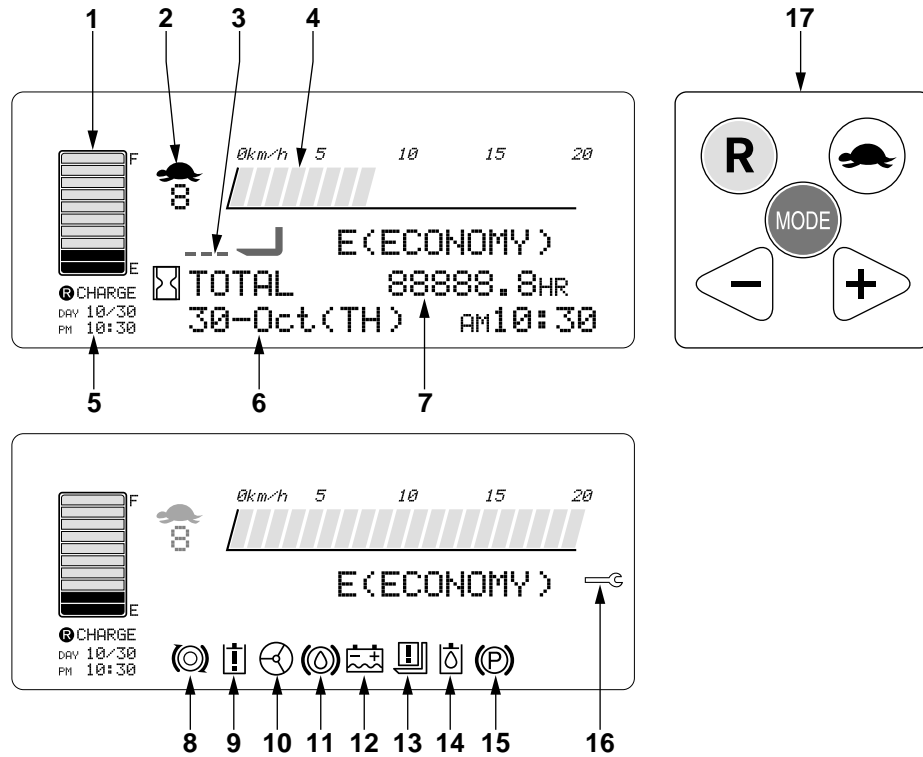
- Three hour meters of traction, hydraulic and the total hour are displayed.

• • • Refer the page 8 for details.



## 2-1-3. Function of display

This forklift truck has the self-diagnosis function.



221T026E

### NOTE

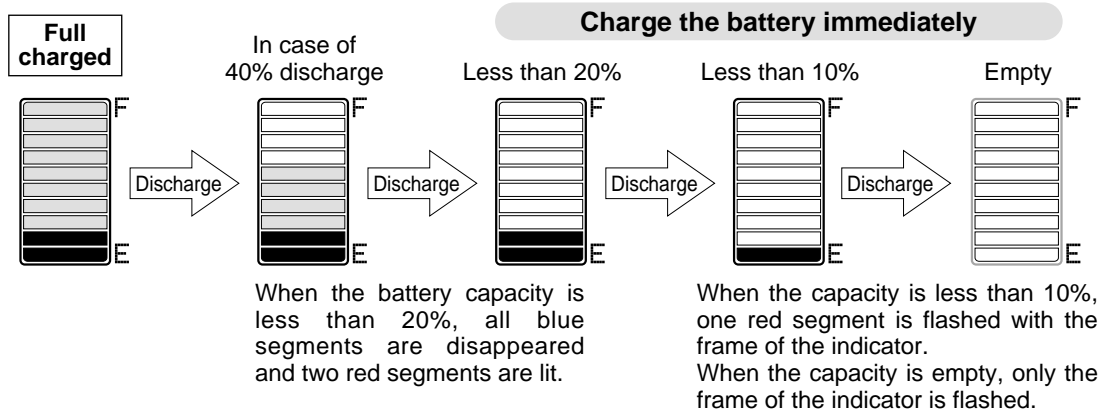
Icons of 8 to 14, and 16 shown in the illustration are displayed for the explanation. It is not actual indication. They are displayed when abnormalities are occurred.

## 1. Battery discharge indicator

The battery discharge indicator shows the discharged condition of the battery.

### CAUTION

**Do not over-discharge.**  
**The battery life can be shortened by over-discharging.**  
**Charge the battery as soon as possible when [E] segment is lit.**



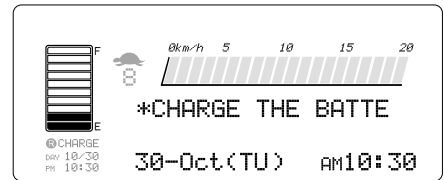
121T190E

● **Lift interrupt (Option)**

When all green segments are disappeared and two red segments are lit, the lift speed is reduced by half.

At the same time, " \* CHARGE THE BATTERY \* " message appears on the screen.

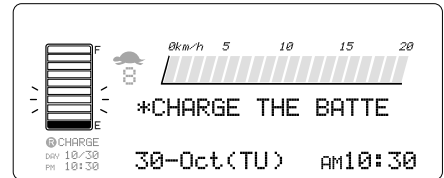
When the truck is continued to use, only one red segment is started to flash and the lift function is interrupted.



Two red segments are lit.



After 10 minutes

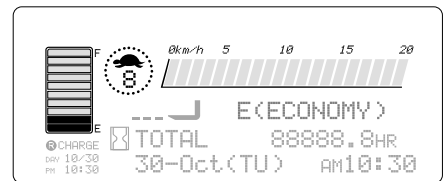


One red segment is started to flash.

121T191E

**2. Slow speed mode monitor (Turtle mark)**

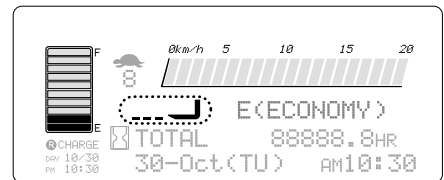
When the turtle button is pushed, the turtle mark is indicated on the screen with the preset speed.



121T192E

**3. Fork horizontal indicator (Option)**

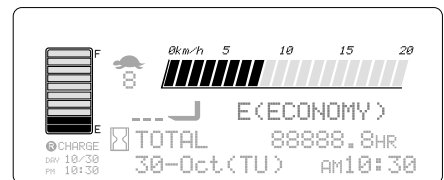
This mark is indicated when the fork is horizontal and possible to use the laser pointer.



121T193E

**4. Speed meter**

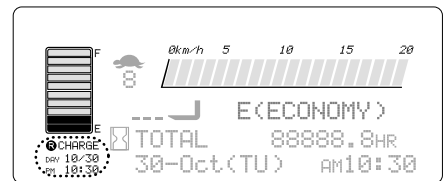
The traveling speed is displayed on the screen.



121T194E


**5. Reserve charge indication (Option)**

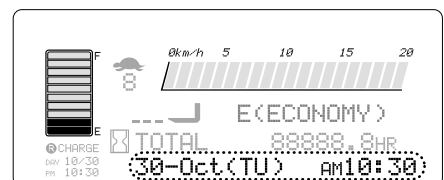
The reserved date and time to start charging the battery is displayed. Refer the section of "Battery and charger" on FB-75 OPERATOR'S MANUAL or WORKSHOP MANUAL for details.



121T195E

**6. Date and time (Calendar and clock)**

The current date and time are displayed. If the  button is pushed for more than 3 seconds, the display is changed to the setting screen. Refer the page 16 for details.



121T196E