HKS ELECTRONICS TECHNOLOGY

F-CON NAVIGATOR

FUEL & IGNITION TIMING COMPUTER

Instructions Manual

This manual assumes that you have and know how to use the tools and equipment necessary to safely perform service operations on your vehicle. This manual assumes that you are familiar with typical automotive systems and basic service and repair procedures. Do not attempt to carry out the operations displayed in this manual unless these assumptions are correct. Always have access to a factory repair manual. To avoid injury, follow the safety precautions contained in the factory repair manual.

HKS ®

Preface

We HKS CO., LTD will like to thank you for purchasing the HKS F-CON Navigator.

Please read this manual before installing the product for safe operations & optimal use.

Name of the product:	F-CON Navigator
Use of the product:	This product is the optional item for F-CON S, F-CON SZ, and F-CON V Pro (Ver.3 or newer) to confirm the input/output signals from them This product is allows you to edit and adjust the data in F-CON S and F-CON SZ.
Applicable Vehicle Model:	Vehicle with F-CON S, F-CON SZ, or F-CON V Pro installed.
Code Number:	42999-AK003
Note:	

F-CON Navigator shows the following values of sensors from F-CON S, F-CON SZ, and F-CON V Pro on its monitor.

   Engine RPM
   Airflow Input voltage (frequency)
   Cooled water temperature & intake air temperature
   Injector duty
   Ignition timing
   Values displayed on the monitor are varied due to the type of F-CON connected with F-CON Navigator.

The F-CON Navigator can edit the setting data.

Individual settings can be made due to each engine spec which includes upgrades like the type of intake or exhaust installed on the vehicle.

   The data on F-CON V Pro cannot be edited.

The F-CON Navigator emits a warning sound when your vehicle goes beyond the set value of the engine rpm and/or the airflow voltage.

The instructions manual is for safe use of this product and to prevent any trouble.
When you would like any lost parts or consumption parts, contact the store you bought the product.
The product name, part number, and engine type of your vehicle are needed to find correct parts you look for.
See the parts list for the part numbers.
No warranty for any damage caused by misuse by the customer and/or the third party.
No warranty for the product quality if installed on to any vehicle not applicable.
Make sure the serial numbers on the product and the warranty papers match.
The specifications of the product are subject to change without notice.
The installation manuals are subject to revision without notice.
The customer must keep the guarantee and installation manuals.
This product is designed for use in Japan only.
It must not be used in any other countries.

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SAFETY INSTRUCTIONS

The following indicate the level of danger involved in operation.

⚠ Danger	There is a possibility for an operator or user to get seriously injured or killed.

⚠ Warning	There is a possibility for an operator or user to get seriously injured or killed.

⚠ Caution	There is a slight possibility for an operator or user to get seriously injured or killed.

⚠ Warning

Installation must be done in a well-ventilated place to prevent explosion or fire.

Do not attach the product anywhere that interferes with driving or cannot support the product properly.

Remove the minus terminal from a battery before installing to prevent a short circuit, which would cause a fire.

Hold connectors while taking them off to prevent disconnection.

When something unusual, such as offensive smell and/or strange noise, is occurred under the use of the product, stop the use immediately, and contact the store you bought the product or the customer service for advice.

Continued use may cause electric shock, fire, or damage on any components.

Do not operate the F-CON Navigator while driving to prevent a car accident.

⚠ Cautions

The product must be installed by experts; special knowledge, technique, and/or tool are required.

Wrong use would cause damage to the vehicle.

Never modify, overhaul, and/or reconstruct any parts in the product.

It would cause damage, a fire, and/or an electric shock.

Always handle the product with care.

Any kind of liquid must be avoided.

It would cause serious damage to the vehicle.

Make sure the temperature inside the engine room is less than about 40 degree Celsius before installation.

Avoid high temperature or watery place for installation to prevent a short circuit.

Wiring must be done with care.

It's your responsibility to maintain your vehicle.

Please check the vehicle condition daily.

Put the stock parts aside for installation until you need them.

Use appropriate tools to tighten bolts and nuts.

Be careful for not disconnecting the wires from a vehicle when connecting the product.

PARTS LIST

The following are the parts included.   Please check them for damage.

1 F-CON Navigator	2 Bracket 1 base	3 Bracket 2 stand	4 Bracket 3 bolt
	1		1		1		1
5 Bracket 4 inner tooth washer	6 Bracket 5 washer	7 Bracket 6 nut	8 Bracket 7 double-side tape
	2		2		1		1
9 6angle wrench	10 Installation manuals	11 Guarantee	
	1		1		1	

example   part form

10   Installation manuals

1

part No.   Code No.   quantity

part name

Please keep the parts not used.
The following is the required tools for installation......Screw Driver   Socket Wrench

Name of components

F-CON Navigator

- 3.Mode button
- 2.Arrow button
- 4.Set button
- 1.Display
- 5.Harness

MODE   F-CON NAVIGATOR

SET   FUEL & IGNITION TIMING COMPUTER   HKS
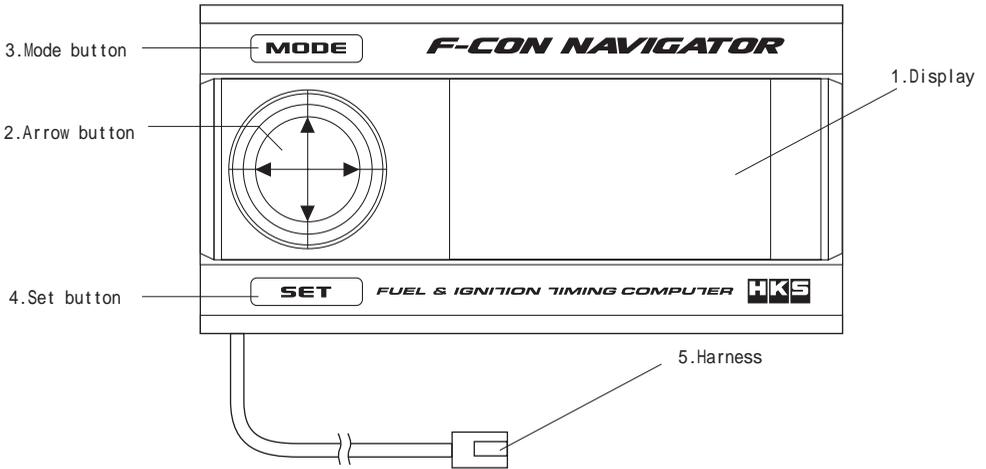
1. **Display**
   It shows the engine information, the editing data, and the menu for setting.
2. **Arrow button**
   Use the arrows to select an item from the menu or the data to use, and to increase or decrease the data value when editing.
3. **Mode button**
   Use this button to move to the upper menu or cancel the item chosen.
4. **Set button**
   Use this button to move to the lower menu or execute the action/item chosen.
5. **Harness**
   It connects to the option port of F-CON S, F-CON SZ, and F-CON V pro.

Holder Assembly Drawing

- stand P.3
- washer P.6
- nut P.7
- base P.2
- Double-side tape P.8
- bolt P.4
- inner tooth washer P.5
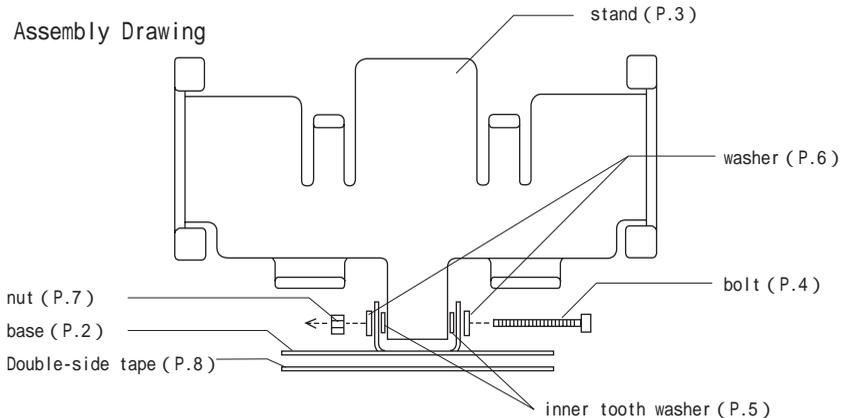
INSTALLATION

This product is designed specifically for certain vehicle applications.
Do not modify the harnesses or install them in any other way than specified. Doing so, may result in a fire.
This manual explains the basic procedures. There are different ways of installation due to the type of vehicle.

1. Removing from the battery terminal

1 Remove the negative (-) cable from the battery terminal.

2. Installing the main unit

1 Decide the where to position the F-CON Navigator unit.

advice

The length of the harness is 2 meters, so the distance between the main unit and harness must be within that range.
Position the unit where it will not interfere with the driver's view
The unit is very sensitive to heat. Please place the unit away from heat and sunlight.
2 Clean the surface of the place parts installed with mild detergent.
3 Set up the bracket P2 - P8.
4 Secure the bracket and the F-CON Navigator.
5 Connect the harness from F-CON Navigator with the coupler on F-CON S, F-CON SZ, or F-CON V pro.

F-CON S F-CON SZ

F-CON V Pro

connect coupler
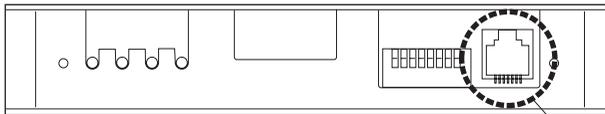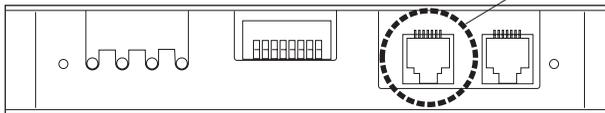
6 Set the DIP switch referring to the manual
  F-CON S or F-CON SZ: Set the DIP switch 8 to ON
  F-CON V pro: Set the DIP switch 6 to OFF.

3. Reconnect the battery terminal.

1 Connect the negative (-) cable back onto to the battery terminal

Check the following after installation

1. Before the engine start check if

check item	check
the harness connected correctly.	
the harness was not disturbed by other items.	
the main unit or harness attached firmly.	
the battery terminal connected correctly.	
bolts or nuts were tightened firmly.	

2. After the engine started check if

check item	check
the engine idles at the normal engine RPM.	
the engine accelerates smoothly when stepping on the gas.	

OPERATION

⚠ Caution

Do not operate F-CON Navigator during driving.
Editing data must be done by experts.
The special tools for setting, knowledge, and/or technique, are required.

advice

For F-CON SZ, save the data often. (See Sec. 5.5)
For F-CON S, record the current data for review before changing any data.

1. Initial Operation

1 When the ignition is on, the demo screen appears on the monitor, and the buzzer sounds.
2 The top menu appears.

advice

You can select how the top menu appears. (See Sec. 5.4)

```
┌──────────────────────────────────┐
│      F-CON NAVIGATOR             │
│          TopMenu                  │
│  ┌────────────────────────────┐   │
│  │████████Monitor████████████│   │
│  └────────────────────────────┘   │
│  ┌────────────────────────────┐   │
│  │          Edit              │   │
│  └────────────────────────────┘   │
│  ┌────────────────────────────┐   │
│  │         System             │   │
│  └────────────────────────────┘   │
└──────────────────────────────────┘
```
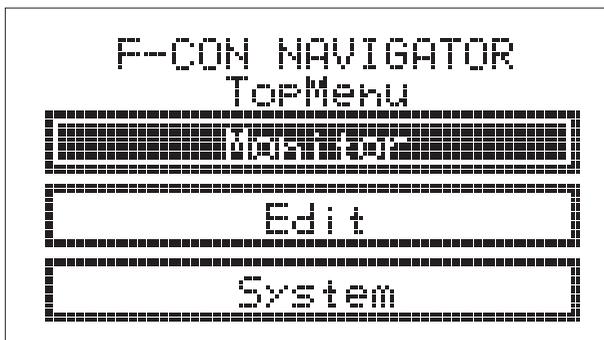
2. Menu

The MODE button is used to cancel the selected item on the menu, and to move to the upward menu.
The SET button is to execute the selected item on the menu, and to move to the downward menu.
The item selected is highlighted. The highlighted item is called a CURSOR.
There are some items on the menu cannot be selected or executed.
Those items cannot be overwritten by the F-CON Navigator.

MENU STRUCTURE

```
┌─────────────────────────┐      ┌─────────────────────────┐
│       Mode button       │      │        Top Menu         │
└─────────────────────────┘      └─────────────────────────┘
```

MONITOR	EDIT	SYSTEM

MONITOR
- Monitor Menu
- Monitor Setup Menu (Monitor Setup)
  - BAR Display Setup (Bar)
  - Big Display Setup (Big)
  - Small-L Display Setup (Small-L)
  - Small-R Display Setup (Small-R)

EDIT — Edit Menu(Edit)

- Fuel Data Edit Menu (Inj.)
  - Correction A Menu (Rev. A)
    - Rev. A1 Setup (Rev. A1)
    - Rev. A2 Setup (Rev. A2)
    - Rev. A3 Setup (Rev. A3)
    - Rev. A4 Setup (Rev. A4)
  - Correction B Menu (Rev. B)
    - Rev. B1 Setup (Rev. B1)
    - Rev. B2 Setup (Rev. B2)
    - Rev. B3 Setup (Rev. B3)
    - Rev. B4 Setup (Rev. B4)
  - Scramble Setup (Scramble)

- Ignition Data Edit Menu (Ign.)
  - Correction A Menu (Rev. A)
    - Rev. A1 Setup (Rev. A1)
    - Rev. A2 Setup (Rev. A2)
    - Rev. A3 Setup (Rev. A3)
    - Rev. A4 Setup (Rev. A4)
  - Correction B Menu (Rev. B)
    - Rev. B1 Setup (Rev. B1)
    - Rev. B2 Setup (Rev. B2)
    - Rev. B3 Setup (Rev. B3)
    - Rev. B4 Setup (Rev. B4)
  - Scramble Setup (Scramble)

- (AIC)

- Other Data Edit Menu (Etc.)
  - EIDS Map Setup (EIDS Map)
  - EIDS Parameter (EIDS Par.)
  - FCD Map Setup (FCD Map)

SYSTEM — System Setup Menu

- Warning Setup (Warning)
  - Boost Setup (Boost)
  - Airflow Setup (AirFlow)
  - Knocking Setup (Knock)
  - Inj. Output Setup (Inj.Out)
- Diagnosis Check/Delete (Diag.)
- Boot Mode Setup (BootMode)
- Backup (Backup)
  - Load (Load)
  - Save (Save)
- Adjustment (Adjust)
  - LCD Setup (LCD)
  - LED Setup (LED)
  - Buzzer setup (Buzzer)
  - Unit Setup (Unit)
- Other (About)

```
┌─────────────────────────┐
│       Set button        │
└─────────────────────────┘
```

3. MONITOR

3.1. Monitor Menu

3.1.1. Main menu

Monitor Menu consists of the following 4 items

    Bar   Big   Small-L   Small-R

These 4 items show the following as the default setting.

    Bar: Engine rpm

    Big: Airflow meter voltage

    Small-L: Water temperature

    Small-R: Power voltage

Press the MODE button to return to the top menu.

Press the SET button to go to the monitor setup menu.

| advice |

> The items will not display a correct value if the option sensors are not connected.
>
> If so, install the option sensors or select other items to monitor.

Bar

Big
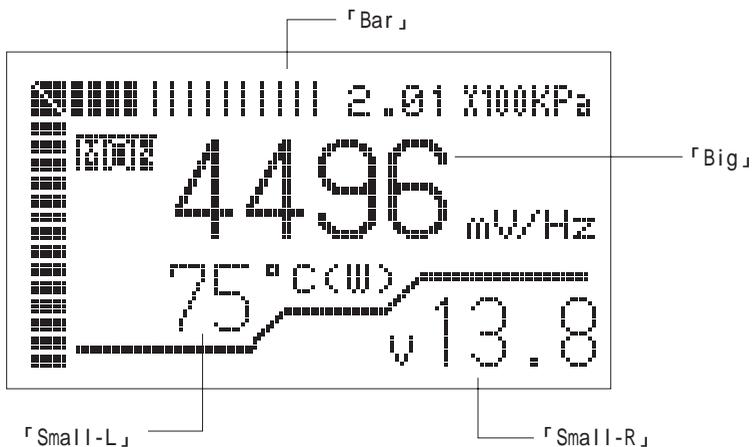
Small-L

Small-R

3.1.2 Peak Hold Display

Press the up or down arrow button (   ) to switch to peak hold display.

The peak hold display shows the maximum value of 'Bar', 'Big', and 'Small-L" and the minimum value of 'Small-R.'

These values are called the 'peak hold value.'

Press the right arrow button   to reset the peak hold value, and use the up and down buttons to go back to the main screen.

3.1.3 Warning Display
When the actual value is over the value entered at the warning setup (See Sec. 5.1),
the F-CON Navigator gives you warning.
The F-CON Navigator alarms you by and audible sound and <W.item> will be highlighted.
When the warning stops, <W.item> start blinking.

   Warning items
   " B" mark   Boost conditions
   " A" mark   Airflow conditions
   " K" mark   knoek conditions
   " I" mark   Injout conditions
To stop the blinking, reset the warning value in the diagnosis check/delete menu
(See Sec. 5.3).

3.1.4 Scramble Setup
In the main menu, press the left arrow button   to activate scramble correction.
When the scramble correction is activated, the SCR display appears as below.

advice

   However, the default setting of the scramble setup is not set to any value.
   The correction cannot be activated by pressing any button.

3.2 Monitor Setup Menu
The default setting of the items, Bar, Big, Small-L, and Small-R, on the monitor menu
can be changed.
Press arrow buttons   to select one, then press the SET button.
Press MODE button to return to the main menu.

```
┌──────────────────────────────────────┐
│          Monitor Setup                │
│              Menu                     │
│  ┌──────────────┐  ┌──────────────┐   │
│  │   <BAR>      │  │   <Big>      │   │
│  │   Boost      │  │  AirFlow     │   │
│  └──────────────┘  └──────────────┘   │
│  ┌──────────────┐  ┌──────────────┐   │
│  │  <Small-L>   │  │  <Small-R>   │   │
│  │  W.Temp.     │  │   Volt.      │   │
│  └──────────────┘  └──────────────┘   │
└──────────────────────────────────────┘
```
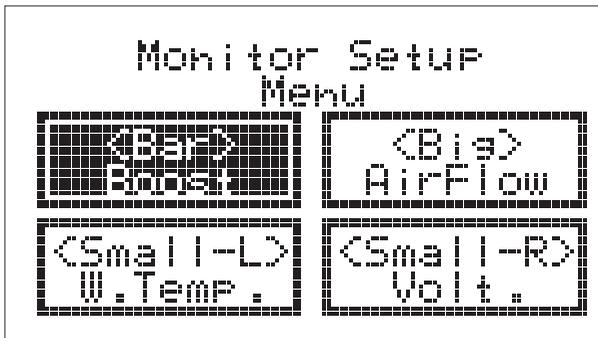
3.2.1.'BAR' Display Setup
   Select one of the following 6 items for 'BAR'
    Rev Airflow Speed Boost Knock Inj.out
   Press arrow buttons   to select one, then press the SET button.
   An asterisk (*) appears on both sides of the item selected.
   Press the MODE button to return to the main menu.

```
    Monitor Setup
       <Bar>
  ┌──────────┐ ┌──────────┐
  │   Rev.   │ │  Boost   │
  └──────────┘ └──────────┘
  ┌──────────┐ ┌──────────┐
  │ AirFlow  │ │  Knock   │
  └──────────┘ └──────────┘
  ┌──────────┐ ┌──────────┐
  │  Speed   │ │ Inj.Out  │
  └──────────┘ └──────────┘
```
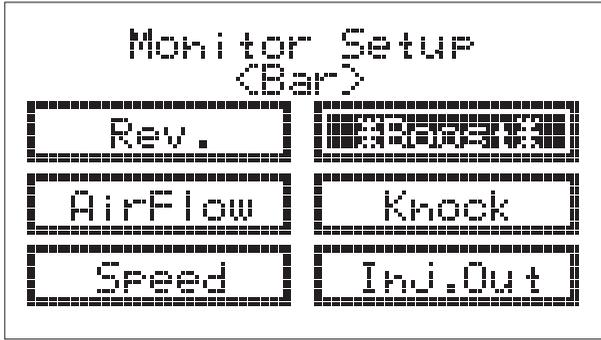
Rev. :   Engine rpm (r/m).
Boost :   Engine intake air pressure (× 100Kpa).
          * The unit measurement can be changed (see Sec. 5.6.5).

The boost value of the F-CON NAVIGATOR is absolute pressure value. This value is
determined by the vacuous condition. Generally the boost value of a boost meter or
boost controller is relative pressure value, which is determined by the atmospheric
pressure. Therefore, the boost value of F-CON NAVIGATOR is not the same value of the
boost meter or controller.

The standard atmospheric pressure value is 760mmHg, and the bottom line of the
conversion table shows its converted values. These values may differ slightly from the
actual value due to the difference in environment. However, to show the psi value, the
balue set at the standard atmospheric pressure (14.6960psi) is offset to 0. When
showing the psi value and if its value is less than the standard atmospheric pressure,
the value will be underlined.

The absolute pressure value (0 at the vacuum state.) shows as the pressure value.
Please refer to the unit conversion table.

Unit conversion Table:

Unit	× 100kPa	bar	kg/cm²	psi	mmHg
	1	1	1.01972	14.5037	750.062
	0.980665	0.980665	1	14.2233	735.559
	0.0689476	0.0689476	0.070307	1	51.7151
	0.00133322	0.00133322	0.00135951	0.0193367	1
standard atomosoheric pressure value	1.01325	1.01325	1.03323	14.6960	760

AirFlow   Input airflow value (mV/Hz).
          The F-CON Navigator will display the input signal values for F-CON S and
          F-CON SZ.
          (For Hot-wire type - the airflow meter voltage value is displayed.)
          (For Karman Vortex type - the airflow meter frequency value is displayed.)
          (For Pressure sensor type - the pressure sensor voltage value is displayed.
          When the F-CON V Pro is used with the F-CON Navigator, the input signal
          converts to the intake air volume (l/min) and displays on the screen.
Knock   Knocking (0-100)
          This value can be displayed only if the F-CON SZ or F-CON V Pro connects with
          "A/F Knock Amp."
          The value range is from 0 to 100. "0" at no knocking signal, and "100" at the
          highest level of the signal.
          The data in F-CON SZ or F-CON V Pro must be edited, but it cannot be changed
          with the F-CON Navigator.
          Please contact an HKS distributor.
Speed   Vehicle speed (Km/h).   * The unit measurement can be changed (see Sec. 5.6.5).
          * The speed value for some vehicles, such as the JZS161 Aristo, cannot be
          displayed.
Inj.Out   The injector output opening rate (%)

3.2.2 Big Display Setup

Select one of the following 6 items for 'BIG
     Boost   Airflow   A/F   Knock   Inj.Out   Ign.Out
Press arrow buttons   to select one, then press the SET button.
An asterisk (*) appears on both sides of the item selected.
Press the MODE button to return to the main menu.


```
        Monitor Setup
            <Big>
   ┌──────────┐ ┌──────────┐
   │  Boost   │ │ Airflow  │
   └──────────┘ └──────────┘
   ┌──────────┐ ┌──────────┐
   │   A/F    │ │  Knock   │
   └──────────┘ └──────────┘
   ┌──────────┐ ┌──────────┐
   │ Inj.Out  │ │ Inj.Out  │
   └──────────┘ └──────────┘
```
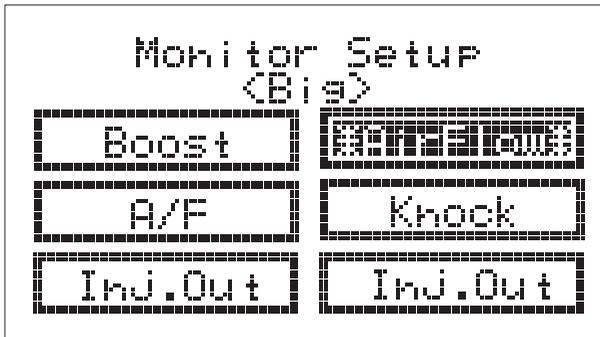
Boost ....The engine intake air pressure (× 100Kpa).
                 * The unit measurement can be changed (see Sec. 5.6.5).
                 This value can be displayed when the pressure sensor is installed.
                 The pressure sensor is sold separately.
                 The data in F-CON S, F-CON SZ or F-CON V Pro must be edited, but it
                 cannot be changed with F-CON Navigator only.
                 Please contact an HKS distributor.

The absolute pressure value (0 at the vacuum state.) shows as the pressure value.
Please refer to the unit conversion table at the end of this manual.

AirFlow: Input airflow value (mV/Hz).
           This input value can be displayed only if the F-CON Navigator is used with
           the F-CON S or F-CON SZ.
           (For Hot-wire type - the airflow meter voltage value is displayed.)
           (For Karman Vortex type - the airflow meter frequency value is displayed.)
           (For Pressure sensor type - the pressure sensor voltage value is displayed.)
           When the F-CON V Pro is used with the F-CON Navigator, the input signal
           converts to the intake air volume (l/min) and displays on the screen.
A/F :   Air/fuel ratio.
           This value can be displayed only when the "A/F Knock Amp" is used with the
           F-CON SZ or F-CON V Pro.
           The data in F-CON SZ or F-CON V Pro must be edited, but it cannot be changed
           with the F-CON Navigator only. Please contact an HKS distributor.
Knock :   Knocking (0-100)
           This value can be displayed only if the F-CON SZ or F-CON V Pro connects
           with"A/F Knock Amp."
           The value range is from 0 to 100. "0" at no knocking signal, and "100" at
           the highest level of the signal.
           The data in F-CON SZ or F-CON V Pro must be edited, but it cannot be changed
           with the F-CON Navigator only. Please contact an HKS distributor.
Inj.Out : Injector output opening rate (%).
Ign.Out : Ignition timing output (BTDC). *BTDC is the angle before top dead center.
           This value can be displayed only if the F-CON V Pro is used.

3.2.3 Small-L Display Setup
   Select one of the following 6 items for 'Small-L'
      W Temp   A. Temp   Volt.   Knock   Inj.R   Ign.R
   Press arrow buttons   to select one, then press the SET button.
   An asterisk (*) appears on both sides of the item selected.

   Press the MODE button to return to the main menu.

W.Temp. :   Water temperature ( ).
            The unit measurement can be changed. (see Sec. 5.6.5).
A.Temp. :   Intake air temperature ( ). * The unit measurement can be changed.
            (See Sec. 5.6.5)If the vehicle does not have a temp sensor, the temperature
            cannot be displayed.
Volt. :   Battery voltage (V).
Speed :   Vehicle speed (Km/h)).
            You can change the unit.   (See Sec. 5.6.5)
            The speed value for some vehicles, such as the JZS161 Aristo, cannot be
            displayed.
Inj.R. :   Value of fuel correction(%) controlled by F-CON S or F-CON SZ.
            Cannot be displayed with the F-CON V Pro.
Ign.R. :   Value of ignition correction (°)controlled by F-CON S or F-CON SZ.
            Cannot be displayed with the F-CON V Pro.

3.2.4. Small-R Display Setup

Select one of the following 6 items for 'Small-R'
    W.Temp   A.Temp   Volt.   Knock   Inj.R   Ign.R
Press arrow buttons   to select one, then press the SET button.
An asterisk (*) appears on both sides of the item selected.
Press the MODE button to return to the main menu.

```
              Monitor Setup
                <Small-R>
        ┌──────────┐  ┌──────────┐
        │ W.Temp.  │  │ A.Temp.  │
        └──────────┘  └──────────┘
        ┌──────────┐  ┌──────────┐
        │  Knock   │  │  Speed   │
        └──────────┘  └──────────┘
        ┌──────────┐  ┌──────────┐
        │  Inj.R.  │  │  Ign.R.  │
        └──────────┘  └──────────┘
```

W.Temp. :   Water temperature ( ).
            The unit measurement can be changed. (see Sec. 5.6.5).
A.Temp. :   Intake air temperature ( ).
            The unit measurement can be changed. (See Sec. 5.6.5)
            If the vehicle does not have a temp sensor, the temperature cannot be
             displayed.
Volt. :   Battery voltage (V).
Speed :   Vehicle speed (Km/h)).
            You can change the unit.   (See Sec. 5.6.5)
            The speed value for some vehicles, such as the JZS161 Aristo, cannot be
            displayed.
Inj.R. :   Value of fuel correction(%) controlled by F-CON S or F-CON SZ.
            Cannot be displayed with the F-CON V Pro.
Ign.R. :   Value of ignition correction (°)controlled by F-CON S or F-CON SZ.
            Cannot be displayed with the F-CON V Pro.

4. EDIT

Edit mode changes and checks the arrangement data inside F-CON.
This mode canbe used only by F-CON S and F-CON SZ.

4.1. Edit Menu

Edit Menu consists of the following 4 items
    Injector Data Edit Menu
    Ignition Data Edit Menu
    AIC Menu
    Other Data Edit Menu
Press arrow buttons   to select one, then press SET button.
   * The injector data edit & the ignition edit menu have the following 18
     correction maps
  Injection A1-A4   Injection B1-B4   Injection Scramble   Ignition A1-A4
  Ignition B1-B4   Ignition Scramble
Press the MODE button to move to the upward menu.

F-CON NAVIGATOR cannot change data of certain correction maps that are set by F-CONS
and F-CON SZ . These unchangeable maps will not be displayed on the edit menu.
The activated correction map, which is chosen from the correction A1-A4 and B1-B4 by a
dip switch, will be indicated with an asterisk.
In regards to fuel and timing correction in A1-A4 and B1-B4, the map title selected by
the dip switch will be indicated with an asterisk.
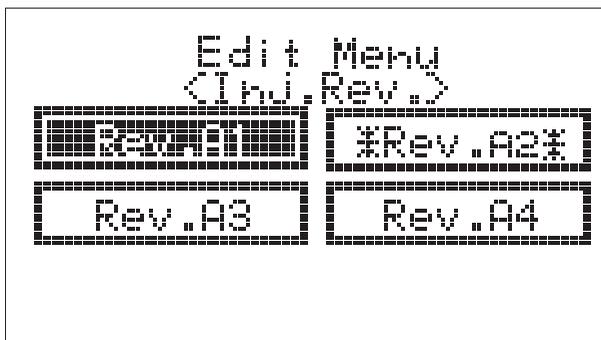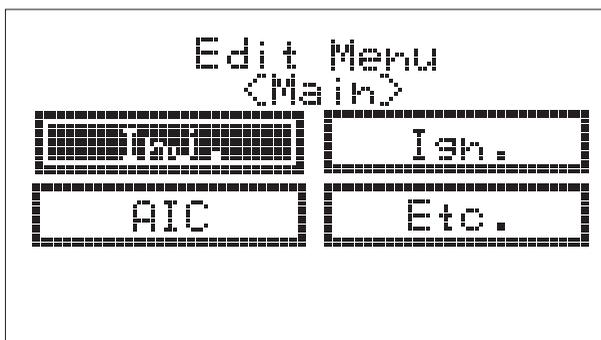
4.2. Injection Data Edit (Inj.)　Ignition Data Edit (Ign.)　AIC (AIC)

The map consists of 24 columns and 16 rows.
The horizontal axis is for the engine rpm, and the vertical axis is for the engine load.
For the correction A1 to A4 is for the F-CON S & F-CON SZ, the default setting of the vertical axis is set to the airflow voltage.
The correction B1 to B4, the scramble correction, and AIC menu cannot be used.
*If you would like to change these default setting, please contact the power writer shop.

advice

The DIP switch position of the F-CON S & F-CON SZ shows which correction map should be selected.
The correction map selected or displayed should be the same one activating on F-CON S & F-CON SZ Please refer to the manual of F-CON S & F-CON SZ about the DIP switch position and the correction maps.
Injection Correction (A / B / Scramble)
This menu is to correct the value of the injector duty cycle. The unit is percentage　.
Ignition Correction (A / B / Scramble)
　°　is the crank angle before top dead center (BTDC). Set " " to advance the timing, and " " to retard.
AIC
This menu is to output by the additional injectors opening valve rate.　The unit is　　.

4.2.1. Display

The name of the map is displayed at the bottom right of the display.
Only a small portion of the map, which is 4 x 4 cells, can be displayed at a time.
See the scroll bar at the right or bottom of the map to see which part of the map is displayed.
The horizontal axis is for the engine rpm　The value increases as it moves to the right.
The vertical axis is for the engine load or the airflow meter voltage.　The load/airflow increases as it moves downward.
The value from the sensor connected is displayed at the right of the display.
　　　　　Engine rpm
　　　　　Airflow voltage
　　　　　Intake air pressure
　　　　　Throttle position
　　　　　Air fuel ratio
　　　　　The value of the map selected or displayed.
The items selected for axis of the map are highlighted.
The value of the engine rpm and the engine load pointed by a cursor on the map are displayed at the bottom of the map.
　　　　　Engine rpm
　　　　　Engine load
　　　　　 If the vertical axis is for the airflow, the airflow meter voltage value
　　　　　 is displayed.
　　　　　 If the vertical axis is for the boost, the boost value is displayed.
　　　　　 If the vertical axis is for the throttle, the throttle position is
　　　　　 displayed.
When actual engine rpm and engine load are matched with the values on the map, F-CON Navigator places an underline on the map.
You can track down the data for setting with the position of the underline.
The bars are displayed until the map correction is finished.

4.2.2. Operation

Press arrows buttons to select a part of the map you want to see or edit the data.
Press arrows buttons to scroll outside of the displayed map.
Press the SET button to start editing the data.
Press the MODE button to move to the upper menu.

Editing the Data
The actual value and edited value are displayed at the bottom right of the display.
Press the up arrow to increase the data by 1.
Press the down arrow to decrease the data by 1.
Press the SET button to make the edited data effective.
Press the MODE button to cancel editing.

Engine rpm

Monitor Value

Name of Map

Selected Engine rpm   Selected Engine Load
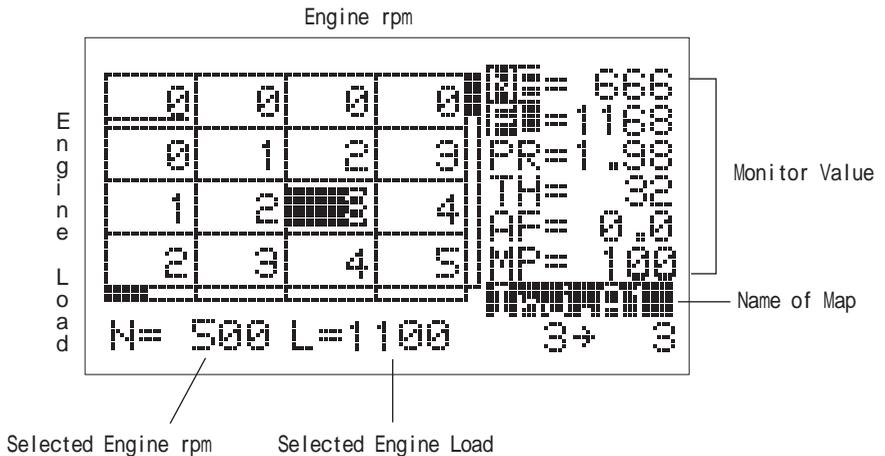
4.3.Other Data Edit Menu (Etc.) - EIDS / FOD Map Setting (EIDS/FOD)

The size of the map is 24 cells wide and 1 cell high.

EIDS Function

The Electronic Idle Stabilizer (EIDS) function is to buffer the dramatic airflow meter signal fluctuations, prevents the engine stalling or stumbling effect associated with the sudden imbalances in the air/fuel ratio of airflow meter-equipped vehicles that utilize discharge blow-off valves that vent to the atmosphere.

FCD Function

The Fuel Cut Defencer (FCD) function is to override the high boost fuel cut function of factory turbocharged vehicles. The FCD function will widen the area of high boost which allows the vehicle to attain a much higher boost setting. However, the ECU tends to process the airflow volume less than the actual volume, so less fuel output is read, and the ignition timing is advanced accordingly.

advice

Because the ECU processes the airflow volume less than the actual volume; therefore, fuel output will decrease and ignition timing will advance.
The F-CON S and F-CON SZ are set to adjust these conditions.

4.3.1.

When the conditions of EIDS parameters are met, the F-CON NAVIGATOR sets the airflow output value to the engine RPM set by the EIDS map. (See Sec. 4.4 for EIDS Parameter)
The data unit is "× 100mv "
If "100" is entered, the output value is 1,000 mV.

4.3.2

This menu is to enter the airflow voltage / frequency output maximum value.
The data unit is × 10mV.
If "400" is entered, the maximum value is 4,000 mV.

4.3.3. Display

Please refer to Sec. 4.2.1.
The horizontal axis is for the engine rpm. The value increases as the graph moves to the right.

4.3.4.Operation

Please refer to Sec. 4.2.2.

Engine rpm

Monitor Value

Name of Map

N= 600

Selected Engine rpm
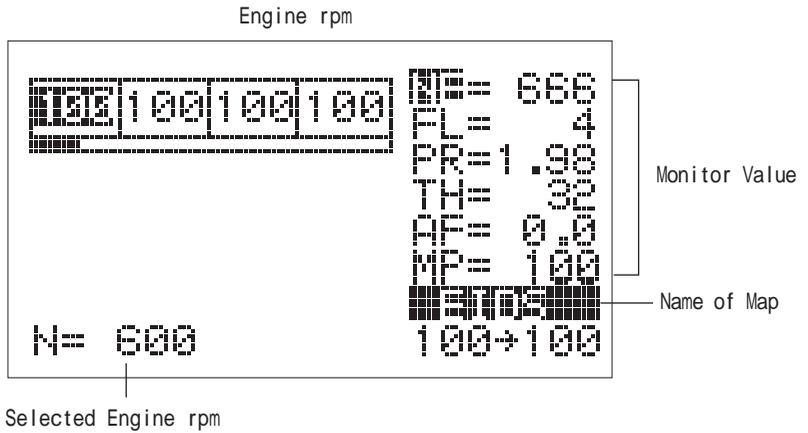
4.4. EIDS Parameter Setting

EIDS ON OFF :   Select "ON" to use the EIDS function.

TIME :   Set the length of the operating time of the EIDS function.
                This activates when the throttle becomes OFF.

OnThro. :   This is to see if the throttle valve is completely closed (OFF) or
                not (ON).

Thro.0 :   Normally, do not change the data here.
                This is to see the voltage when the throttle valve is completely off.
                When you select this item, the value of the throttle voltage is read
                and renewed automatically.
                Do not press the gas pedal when setting this item.

5. SYSTEM

5.1. System Setup Menu

This menu is for the operation setting or other miscellaneous setting of the F-CON Navigator.
Press arrows button   to select one, and press the SET button.
Press MODE button to move to the top menu.

```
              System Setup
                  Menu
      ┌─────────────────┐  ┌─────────────────┐
      │     Warning     │  │      Diag.       │
      └─────────────────┘  └─────────────────┘
      ┌─────────────────┐  ┌─────────────────┐
      │    BootMode     │  │     Backup       │
      └─────────────────┘  └─────────────────┘
      ┌─────────────────┐  ┌─────────────────┐
      │     Adjust      │  │      About       │
      └─────────────────┘  └─────────────────┘
```
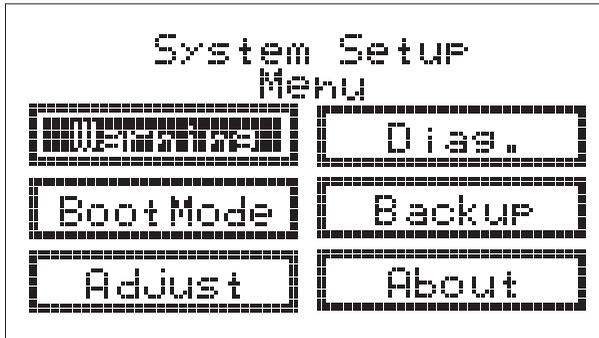
5.2 Warning Menu

F-CON Navigator gives the warning when the in/output signal value is over the setting value
of the boost, airflow voltage, knocking,
and/or injector output by the buzzer and the message on the monitor.
The warning menu is to activate this warning function.

5.2.1. Warning Menu

The monitor shows the value of the boost, knocking, airflow and injector output
presently entered.
Press arrows buttons (   ) to select one, and press the SET button.
Press the MODE button to return to the system setup menu

```
              System Setup
                <Warning>
      ┌─────────────────┐  ┌─────────────────┐
      │    <Boost>      │  │    <AirFlow>     │
      │   200kPa        │  │   5000mV/Hz      │
      └─────────────────┘  └─────────────────┘
      ┌─────────────────┐  ┌─────────────────┐
      │    <Knock>      │  │    <Inj.Out>     │
      │      80         │  │     90.0%        │
      └─────────────────┘  └─────────────────┘
```
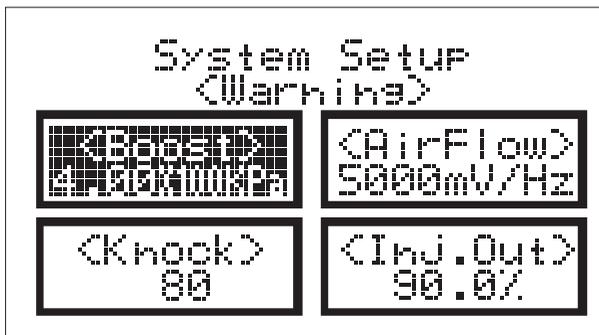
5.2.2 Warning Setting

The item selected from the warning menu is displayed on the monitor.

Press the up arrow button ( ) to increase the value by 1.

Press the down arrow button ( ) to decrease the value by 1.

Press the right arrow button ( ) to increase the value by 10.

Press the left arrow button ( ) to decrease the value by 10.

Press the SET button when the value reaches to the suitable number, and return to the system setup menu.

Press the MODE button to cancel, and return to the system setup menu.

Setting Range   Boost   Range:

      Airflow   Range:

      Knocking   Range:

     Fuel Output   Range:
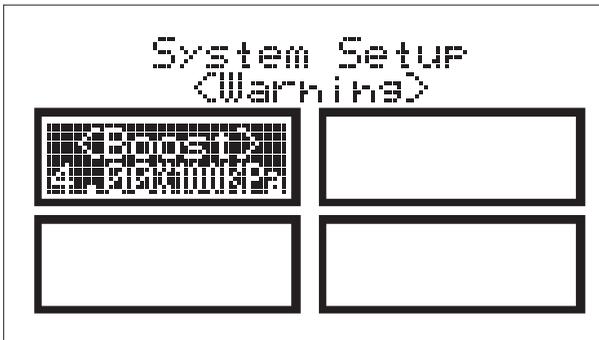
5.3 Diagnosis Edit Menu (Diag.)

The diagnosis edit menu is to check if any error occurred in F-CON S, F-CON SZ, F-CON V Pro, and to delete the warning flag.

Error sometimes caused by wrong wiring of sensors or harnesses of F-CON S, F-CON SZ, and F-CON V Pro or the use of damaged sensors or harnesses.

The F-CON Navigator tells which sensor or harness is causing the error on the monitor, and it comes off when the error is corrected.

Disconnect the minus terminal from the battery when checking the wiring and rewiring the sensors.

Press the SET button to reset the warning flag.

Press the MODE button to return to the system setup menu.
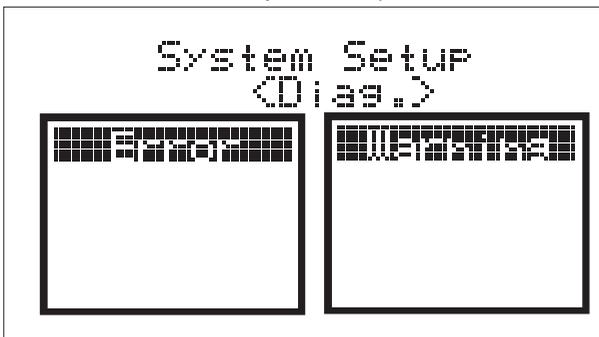
5.4. Boot Mode Menu

The boot mode menu is to select the mode to show the top menu after the ignition is on.
    Select one of the following modes
        Title   Title2   Monitor   Top Menu
Press arrows buttons (   ) to select , and press the SET button.
    The asterisk (*) appears on the item selected.
Press the MODE button to return to the system setup menu.

```
           System Setup
            <BootMode>
    ┌─────────────┐ ┌─────────────┐
    │   Monitor   │ │▓TopMenu▓▓▓▓▓│
    └─────────────┘ └─────────────┘
    ┌─────────────┐ ┌─────────────┐
    │   Title1    │ │   Title2    │
    └─────────────┘ └─────────────┘
```
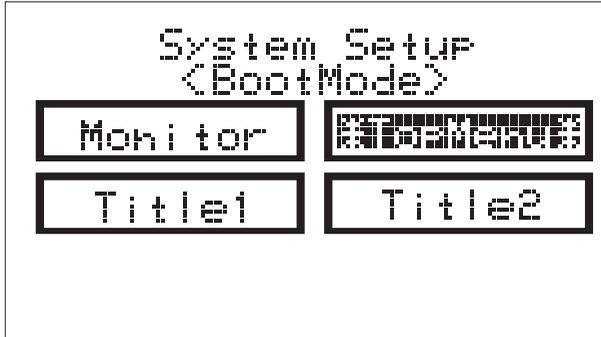
Title 1
    After the HKS logo appears, it stays until pressing any button.
    Then, the top menu appears after pressing any button.
Title 2
    After the HKS logo appears, the logo "F-CON Navigator" appears and stays until
    pressing any button.
    Then, the top menu appears after pressing any button.
Monitor
    After the HKS logo appears, the logo "F-CON Navigator" appears.
    Then, it moves to the monitor menu.
TopMenu
    After the HKS logo appears, the logo "F-CON Navigator" appears.
    Then, it moves to the top menu.

5.5. Backup Menu

The backup menu is to save and load the data from F-CON SZ.   This menu cannot use for
F-CONS or F-CON V Pro.
When the setting data is saved before editing them, you can go back to the initial
setting data.
Press the left and right arrows buttons   to select "SAVE," and press the SET
button.
Press the MODE button to return to the system setup menu if a backup is not necessary.
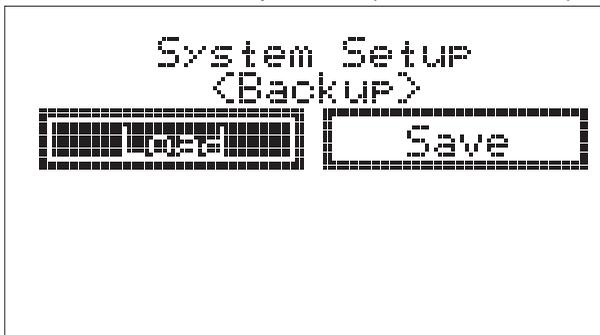
```
           System Setup
            <Backup>
    ┌─────────────┐ ┌─────────────┐
    │▓▓▓▓Load▓▓▓▓▓│ │    Save     │
    └─────────────┘ └─────────────┘
```

To save the data from F-CON SZ.

To load the backup data.
After pressing the SET button, press the left/right arrow button   to select "Yes"
for a backup.

System Setup
<Backup>

| Load | |
| Yes | No |
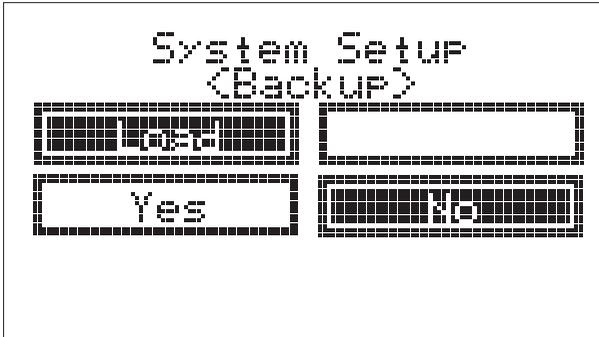
When the backup is completed, the word "Complete" will appear as below
Press any button to return to the system setup menu.

System Setup
<Backup>

Load	
Mss	
Complete	
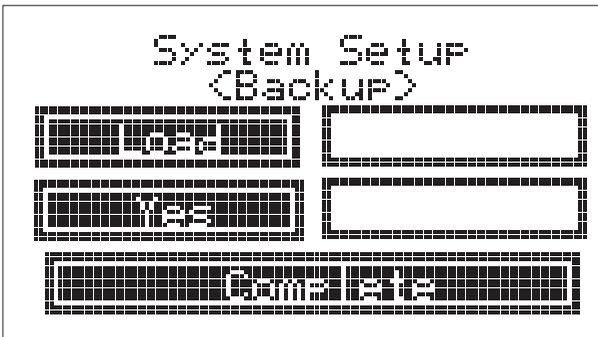
5.6.Adjust Menu (Adjust)

5.6.1.Adjust

The adjust menu consists of the following 4 items:
LED Adjustment
LCD Adjustment
Buzzer Adjustment
Unit Selection
The adjust menu is to adjust the F-CON Navigator's miscellaneous functions.
Press arrows buttons (   ) to select, and press the SET button.
Press the MODE button to return the system setup menu.

```
           System Setup
             <Adjust>
    ┌─────────────┐ ┌─────────────┐
    │   <LCD>     │ │   <LED>     │
    │    XX       │ │    80       │
    └─────────────┘ └─────────────┘
    ┌─────────────┐ ┌─────────────┐
    │  <Buzzer>   │ │   <Unit>    │
    │    ON       │ │     0       │
    └─────────────┘ └─────────────┘
```
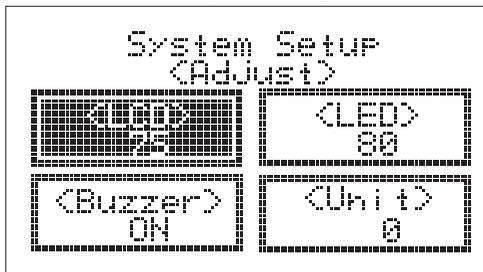
5.6.2 LED

The LED menu is to adjust brightness of LED backlight.
You can select the brightness by numbers.   The level of brightness goes up when the
number increases.
Press the up arrow button ( ) to increase the data by 1.
Press the down arrow button ( ) to decrease the data by 1.
Press the right arrow button ( ) to increase the data by 10.
Press the left arrow button ( ) to decrease the data by 10.
Press the SET button when the number is selected, and return to the adjust menu.
Press the MODE button to cancel, and return to the adjust menu.

Setting Range   LED   Range   0 100 0 Darkest ⟷ 100 Brightest
                LCD   Range   0 100 0 Lightest white ⟷ 100 Darkest Black
                Buzzer   Range   ON or OFF
                Unit   Range   0 4 TO select a unit combination for boost, speed
                                          and temperature.

Range	Boost Unit	Speed Unit	Temperature
	Pascal × 100kPa	kilometer km/h	Celsius ° C
	Pascal × 100kPa	Mile MPH	Celsius ° C
	Bar bar	kilometer km/h	Celsius ° C
	Bar bar	Mile MPH	Celsius ° C
	Pound psi	Mile MPH	Fahrenheit ° F

```
           System Setup
             <Adjust>
    ┌─────────────┐ ┌─────────────┐
    │   <LCD>     │ │             │
    │    XX       │ │             │
    └─────────────┘ └─────────────┘
    ┌─────────────┐ ┌─────────────┐
    │             │ │             │
    │             │ │             │
    └─────────────┘ └─────────────┘
```
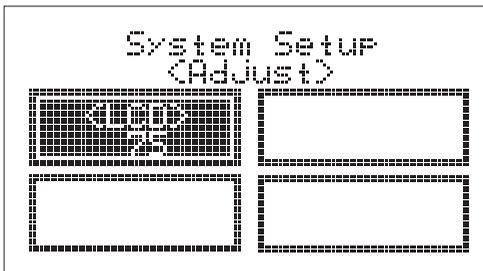
5.7.Other About

This about menu is to see which type of F-CON is connected and the version of F-CON Navigator is used.
Press any button to return to the system setup menu.

```
        System Setup
          <About>
 ┌─────────────┐ ┌─────────────┐
 │ F-CON SZ    │ │ Navigator   │
 │ Ver. 2.00   │ │ Ver. 1.00   │
 └─────────────┘ └─────────────┘
```
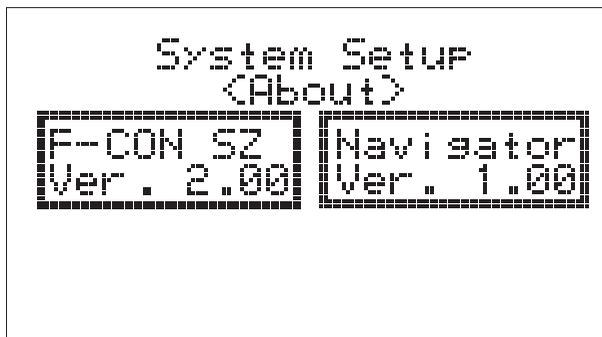
Maintenance

Check the vehicle condition daily.
Handle the product with clean hands.
The color of the product case might discolor by any dirt such as oil.
Clean the product with dry, soft cloth. Don't use alcohol, thinner,benzine, glass cleaner, oil, and other solvent.

Specification of the product

Operating Voltage..DC10 16V
Operating Temperature 10   70
Maximum consumed electric power..3W

< Unit Conversion Table >
Output	1PS 0.735kW	/	1kW 1.36PS	
Torque	1kgf m 9.81N m	/	1N m 0.102kgf m	
Pressure	1kgf/cm2 98.1kPa	/	1kPa 0.0102kgf/cm2	
Atmospheric Pressure	1kPa 7.50mmHg	/	1mmHg 0.1333kPa	

Record of Revision

Ver.	Date	Ver.
3-1.00	2003 8	1st edition

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