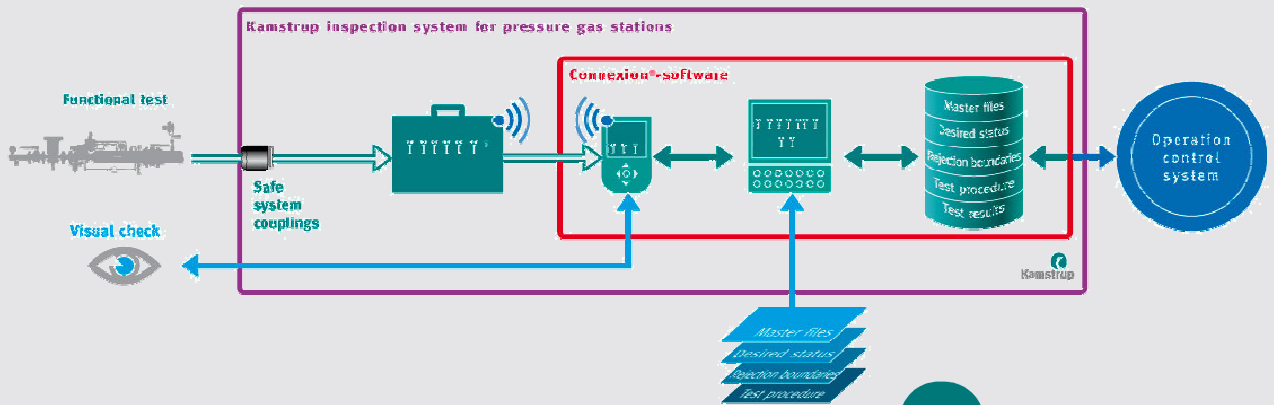


CONNEXION® - INSPECTOR



Kamstrup b.v.
P.O. Box 109
NL-6980 AC DOESBURG
Leigraafseweg 4
NL-6983 BP DOESBURG

T: +31 (0) 313 - 47 19 98
F: +31 (0) 313 - 47 32 90
kamstrup@kamstrup.nl
www.kamstrup.nl

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Preface

- This manual provides important information on the use of the CONNEXION® software. Please read this manual carefully.
- Various remarks and warnings in this manual are marked with symbols. Read these carefully and take measures where necessary.

The symbols used have the following meaning:

**REMARK**

Suggestions and recommendations to make tasks easier.

**NOTE**

A note draws the user's attention to potential problems.

**WARNING**

If the procedure is not carried out correctly, data or settings may be lost.

1 Introduction

1.1 The CONNEXION® software package

The Kamstrup inspection system for pressure regulator stations consists of two main parts: the portable PLEXOR® test device and the CONNEXION® software package.

With the portable and easy to handle PLEXOR® test device the performance of the main components of a pressure regulator station is meticulously tested. Reliable quantitative inspection results are achieved.

The PLEXOR® test device is connected to the pressure regulator station by means of specially designed safe measuring and diagnosis couplings that are permanently installed in the pressure regulator stations.

The inspection results obtained out of the above functional inspection of the pressure regulator station are automatically stored in a hand-held personal computer (PDA) without any specific action by the inspector being required.

The results of the visual inspection are entered manually. In this way, the condition of the installation is exactly recorded.

In the CONNEXION® software package the specific procedures used by the energy company for performing A and B inspections can be entered.

The CONNEXION® software package as a whole consists of four complementary modules: MANAGER, INSPECTOR, COMMUNICATOR and DIAGNOSTICS. A demo version of the DIAGNOSTICS module is supplied as a standard.

Main characteristics:

- It has been developed to be used in combination with the PLEXOR® test device.
- It performs inspections in a highly automated way on the basis of procedures already in use by the energy company.
- It renders a high degree of uniformity and efficiency in the performance of inspections.
- It is suitable to perform functional inspections of components. The identity and other data of components can be registered.
- Its operation-oriented (not component-oriented) structure guarantees a smooth integration with existing business management systems.

1.2 The MANAGER module

MANAGER is intended as a tool to organise the CONNEXION® software package and to deal with inspection procedures, pressure regulator station data and rejection boundaries.

Main characteristics:

- Company-specific inspection procedures and methodologies can be entered.
- There is sufficient capacity to control dozens of units from the INSPECTOR module.
- It manages the essential data of the PLEXOR® test device, such as serial number, Bluetooth address and calibration date.
- It manages the file locations for data exchange by the COMMUNICATOR module between INSPECTOR, MANAGER and a business management system, if any.

1.3 The INSPECTOR module

INSPECTOR is intended to be used by the inspector in the field. The software will guide the inspector through the mandatory procedure. The measuring data collected in the test are shown on screen on a real-time basis.

Main characteristics:

- It guides the inspector through the inspection procedure in a simple way. As a result, the inspections are fully reproducible.
- It assists the inspector in the performance of the inspection procedure by means of auxiliary texts. The energy company can set up inspection procedures per type of pressure regulator station.
- It represents the status of inspections in the list of pressure regulator stations and gas control lines.
- Clear-cut input by making use of condition codes, option lists and check lists.
- Simple user interface and a touch screen for the operation of INSPECTOR.
- The results from the inspection of a gas control line are stored automatically and without specific action needed from the inspector. The inspector only needs to enter the results of the visual check manually by means of the keyboard.
- Measurements that are carried out during tests with the PLEXOR® test device are initiated by INSPECTOR. That considerably simplifies the execution of an inspection.
- The actual gas pressure is displayed on a real-time basis.
- Data are stored by INSPECTOR on an SD card.
- The inspection results are labelled with time and date stamp.
- The inspection results are labelled with the identity of the PLEXOR® test device and the digital manometer or manometers with which the results have been obtained (traceability).
- Representation of the inspection results of previous and present inspections is possible.
- Inspection results are compared against the rejection boundaries that have been entered. In case of rejection it is reported and, after the inspection procedure has been completed, the inspection can be repeated.
- Software setup, inspection procedures, pressure regulator station data and rejection boundaries cannot be modified with INSPECTOR. Alterations can be made by means of the MANAGER module.

1.4 The DIAGNOSTICS module

By using DIAGNOSTICS selections can be made of the measuring data obtained from functional inspections. DIAGNOSTICS will import the selected data and present these graphically in the form of a condition diagram. This graphical drawing provides insight into the condition of a pressure regulator station, a gas control line or a component.

Main characteristics:

- The measuring data can easily be imported, by means of a script.
- The selected measuring data can be graphically presented. The graphical representation provides valuable information on the performance of components.
- Condition diagrams at different points of time can be presented in a graph (a trend graph). Such a trend graph in a simple way enables trend analyses to be made of the condition of a component or group of components. Condition diagram and trend graph can be selected on the basis of date.
- The condition diagrams of gas control lines of a pressure regulator station can be combined into a graphical drawing. With this function the performance of the gas control lines of a pressure regulator station can be compared against each other.
- Presentation of rejection boundaries and standard values in a condition diagram.
- Possibility to import and apply rejection boundaries that are laid down for a gas control line.
- Extensive zoom function.
- Memory of data for condition and trend graphs in Oracle® or Microsoft® Access database format.

DIAGNOSTICS allows for selecting and importing data for condition diagrams and trend graphs on the basis of various selection criteria. These determine which measuring data are stored in the DIAGNOSTICS database as input for condition or trend graphs.

Example:

At a measurement of the maximum actuating pressure of a safety valve device it is defined that the measuring data shall be saved in the database from 20 s before till 5 s after triggering of the safety device.

The required data are selected from the relevant measuring data.

As in each inspection procedure specific inspection operations are involved, the selection criteria can be prepared as per inspection procedure.

1.5 The COMMUNICATOR module

The COMMUNICATOR module is used for the synchronisation of data between INSPECTOR, the various applications and the database.

This module is also used for the synchronisation of data between the business management system and the Kamstrup inspection system for pressure regulator stations.

Main characteristics:

- Synchronisation of data between INSPECTOR, the various applications and the database.
- It can be installed separately.
- Input and output files in XML and/or ACCESS format can be used for data of pressure regulator stations and for inspection results.
- Information on INSPECTOR is shown in the COMMUNICATOR synchronisation screen, such as:
 1. INSPECTOR software version
 2. Most recent synchronisation date
 3. PDA serial number
 4. Battery status
 5. Memory status
- Status report on the synchronisation.
- Automatic synchronisation after the PDA has been connected to the desktop PC.

1.6 System integration with business management systems

CONNEXION[®] can be used in combination with all business management systems.

Thanks to this system integration the pressure regulator station data and the inspection results can be exchanged between the business management system and CONNEXION[®].

The file format used is XML (eXtensible Markup Language). XML Scheme Definition files (XSD) are available for a clear-cut description of the setup and information of the XML files.

The use of XML and XSD files relatively simplifies the system integration of CONNEXION[®] into a business management system.

As an option, the objects and related measuring points can be included in the inspection procedure. As a result, the software for maintenance management can easily recognise the results of a certain measuring point.

2 Definitions

Microsoft® ActiveSync®:	Program for establishing a connection between the PDA and the desktop PC. Once the connection has been made, data can be synchronised.
Management:	Create, open, store, modify, copy, move and remove data, including alterations of file locations.
Condition code:	Customer-specific code used by the recording of the inspection results.
CONNEXION®:	Software package that consists of the modules MANAGER, INSPECTOR, COMMUNICATOR and DIAGNOSTICS. A demo version of the DIAGNOSTICS module is supplied as a standard item.
Check list:	List with condition codes; for each condition code it is shown whether it complies with the requirements, or not.
Inspector:	Person who performs inspections.
Inspection:	A verification by a procedure performed with the aim to establish and assess the condition of a pressure regulator station.
Inspection procedure:	Procedure to carry out an inspection.
Inspection result:	Result of an inspection.
Check list:	List which allows only one option to be selected.
Manager:	Person who is in charge of the data of CONNEXION® and who takes care of the coupling between pressure regulator stations, gas control lines and inspection procedures.
Measuring data:	Collected data achieved in the measurement. The measuring data are used in two ways: 1. to determine the inspection results by INSPECTOR, 2. to represent the condition diagrams.
Measurement:	Pressure reading in the functional test by means of the PLEXOR® test device.
Option list:	List that presents a number of condition codes, the inspector indicating, which condition code and/or codes apply.
PDA:	Personal Digital Assistant (hand-held personal computer).
Script command:	Specific part of an inspection procedure. An inspection procedure is sequentially performed according to a script. A script consists of a number of script commands.

3 Scope of supply, identification

CONNEXION® comprises:

- CONNEXION® CD-ROM
This CD-ROM contains the MANAGER, INSPECTOR, COMMUNICATOR and DIAGNOSTICS software modules.
DIAGNOSTICS is installed as a demo version and can be activated and registered later by means of a code, if preferred. COMMUNICATOR in an XML version can also be activated and registered later, if preferred.
- Instruction card with brief installation description.
The INSPECTOR module is supplied as a robust and explosion-proof hand-held computer (zone 2 in conformity with ATEX Ex II 3G EEx nL IIC T4).

The INSPECTOR module

INSPECTOR is supplied including a PDA. The PDA is provided with an SD memory card for the storage of data of the pressure regulator station (gas station) and the inspection results.

As INSPECTOR has been specially designed to be used with Windows Mobile, there is no specific start-up procedure. Consequently, INSPECTOR is immediately ready for use after the PDA has been switched on. When an inspection is being performed, there is no need to close INSPECTOR in the meantime.

The inspection results are stored after an inspection procedure has been completed or aborted.

INSPECTOR assists the inspector in the execution of inspections of pressure regulator stations and gas control lines and also takes care of data storage and registration of inspection results.

The inspection results are compared with the rejection boundaries that have been laid down by the gas works beforehand. These rejection boundaries may have been specified on the basis of factory specifications of the components.

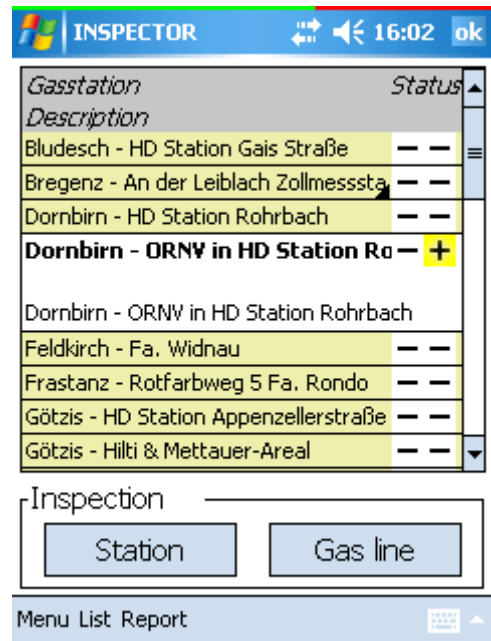
A desktop is displayed when the PDA is switched on. The desktop contains a few icons, such as.

- *INSPECTOR*: the application INSPECTOR
- *Battery*: to display information on the battery
- *Date/Time*: setting of date and clock time

On top of the screen there is a status bar that shows the status of the battery. A green line over the entire length means that the battery is fully loaded. As the battery is gradually discharged, the red part of the status bar is becoming longer.

When, on the top of the screen in the status *Spb Kiosk* is pressed, another menu pops up with the following items:

- *IPAQ wireless*: Used for switching on/off WiFi/Bluetooth
- *BT Manager*: Used for making a wireless connection with other Bluetooth devices
- *Owner Information*: The entered information is shown when the PDA is switched on.
- *Align Screen*: Used for justifying the touch screen
- *Regional Settings*: Used for country specific settings



INSPECTOR start-up screen



PDA Kiosk desktop



WARNING

If the country settings of the PDA and the desktop PC do not match, it is possible that the results database is not updated during synchronisation.

4 Screen layout

The INSPECTOR module has various screens. Each screen has been laid out to fit its purpose to allow for all relevant information to be displayed.

The most common functions can be activated on the screen by means of a button. Less common functions can be activated by means of the *Menu* bar.

4.1 Main screen

The main screen of INSPECTOR shows a list of pressure regulator stations (gas stations). After a pressure regulator station has been selected, the information on the pressure regulator station is displayed.

Once the button *Gas line* has been touched, the gas control lines of the selected pressure regulator station are displayed on the screen. After a gas control line has been selected, the data for the relevant gas control line appears.

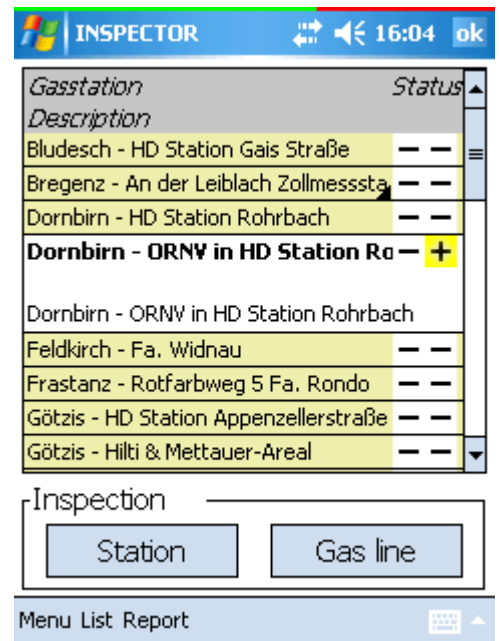
The inspection results of the previous inspection of a pressure regulator station and/or gas control line can be displayed through the *Menu* bar.

Function buttons of the pressure regulator station main screen :

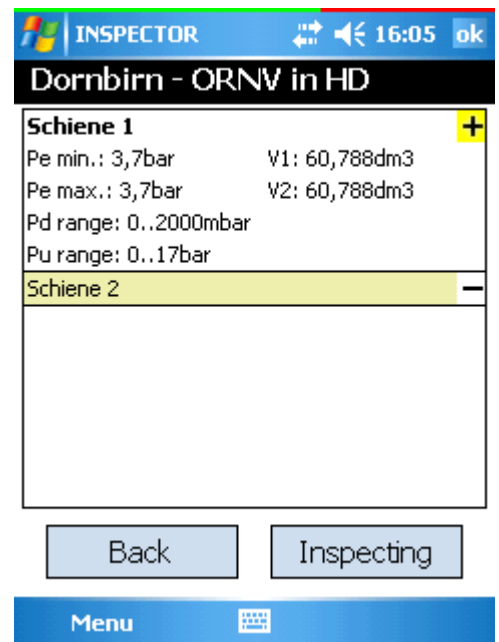
- *Station:*
Inspection of the selected pressure regulator station.
- *Gas line:*
Display of the gas control line screen.

Menu functions:

- *Information PLEXOR-test equipment:*
Display of the available PLEXOR test devices and selection of PLEXOR test device to execute the inspection.
- *Details PDA:*
Information on INSPECTOR software version and PDA serial number.
- *Show results of pressure regulator station or gas control line (depending on screen):*
Display of results of previous and actual inspection(s) of relevant pressure regulator station and/or gas control line.
- *Exit program:*
Exit from program.



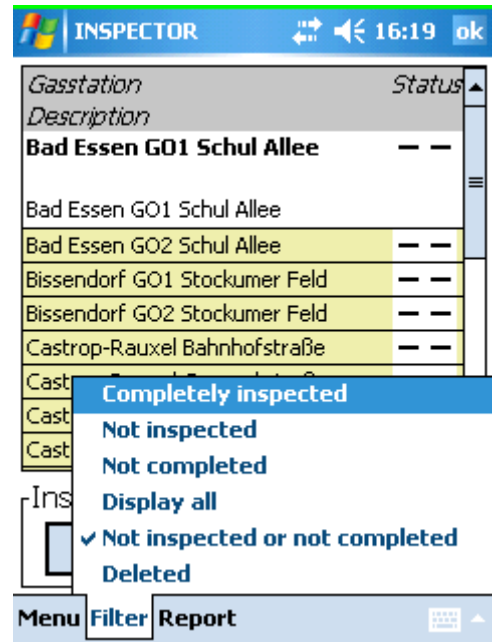
The main screen



Pressure regulator station and gas control line

Filter functions:

- *Completely inspected or no inspection involved:*
States that an inspection has been executed completely or that no inspection is involved.
- *Not inspected:*
States which gas control line or pressure regulator station has not yet been inspected.
- *Not completed:*
States which inspection has not yet been executed completely.
- *Display all:*
Displays all the available pressure regulator (gas) stations.
- *Not inspected or not completed:*
States which gas control lines/pressure regulator stations have not been inspected as well as which measurements have not been executed completely.
- *Deleted:*
The pressure regulator stations deleted by the inspector, e.g. because they no longer exist.



Filter functions

As a table:

Display	Status of pressure regulator station		Status of gas control lines of pressure regulator station
Completely inspected or no inspection involved	✓	and	✓
Not inspected	-	and	-
Not completed	+	or	+
Display all pressure regulator stations	Independent of status	and	Independent of status
Not inspected or not completed	All situations displayed "Not inspected" or "Not completed"		
Deleted	?	and	?

Representation of pressure regulator stations dependent on inspection status

4.2 Status display

The lists of pressure regulator stations and of gas control lines provide a status character which informs on the status of the inspection. The behaviour of the filter functions depends on the status.

Display	Colour	Status of pressure regulator station
–	White	Not inspected
+	Yellow	Inspection started but not completed
✓	Green	Inspection completed or no inspection involved
?	Orange	Pressure regulator station deleted by user

Status of the pressure regulator station on the screen of pressure regulator stations

Display	Colour	Status of gas control line; screen pressure regulator station
–	White	Status of all gas control lines of the pressure regulator station: Not inspected
+	Yellow	Status of one gas control line: Inspected: Gas control line not present or value(s) outside rejection boundaries
✓	Green	Status of all gas control lines of the pressure regulator station: Inspected
?	Orange	Status of all gas control lines of the pressure regulator station: Gas control line not present
✗	Red	Status of all gas control lines of the pressure regulator station: Completed, value(s) outside rejection boundaries

Status of the gas control lines on the screen of pressure regulator station

Display	Colour	Status of gas control line; screen gas control line
–	White	Not inspected
+	Yellow	Inspection started but not completed
✓	Green	Inspection completed or no inspection involved
?	Orange	Gas control line deleted by user
✗	Red	Inspection executed, value(s) outside rejection boundaries

Status of the gas control line on the screen of gas control line

5.3 Menu functions involved in the execution of inspections

The following menu functions are possible for the execution of an inspection:

- *Enter remarks:*
Enter remarks.
(Only active if the inspection procedure allows for entering remarks).
- *View results:*
Display inspection results of performed inspections.
- *Exit:*
Abort the inspection procedure. Inspection results are stored.

5 Information screens

5.1 PLEXOR® test device

INSPECTOR contains a list of PLEXOR® test devices with which an inspection can be made. The relevant PLEXOR® test device can be selected from this list.

Data on the allocated PLEXOR® test device are only shown when the user has made a selection.

The user can then initialise the test device to verify the correct performance of the wireless interface and the manometers.

The data of the used PLEXOR® test device are shown in the displayed screen.

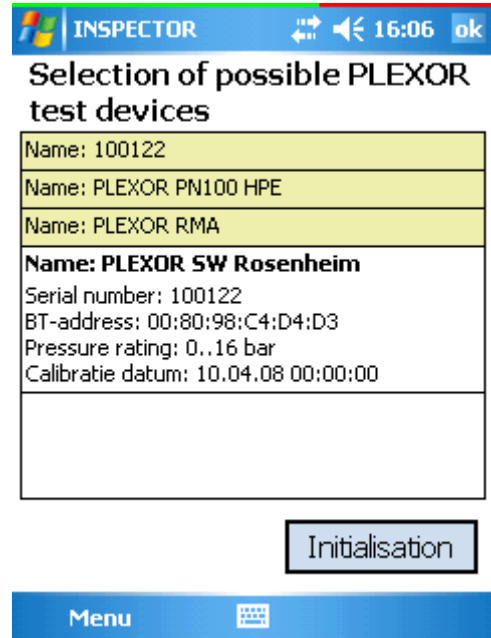
Each piece of PLEXOR® test equipment has a unique Bluetooth address. This address is linked to the serial number of the equipment.

Function button:

- Initialisation:*
Starting the initialisation process for the digital manometer(s). After successful initialisation the following message will appear:
Initialization finished! Digital manometer(s) is/are correctly initialized.

Menu functions:

- Close:*
Close the actual screen and return to main screen.



Information screen on the PLEXOR® test device used

5.1.1 Initialisation of the digital manometer(s)

Before the digital manometers are initialised, a wireless connection is made between the PDA and the PLEXOR® test device.

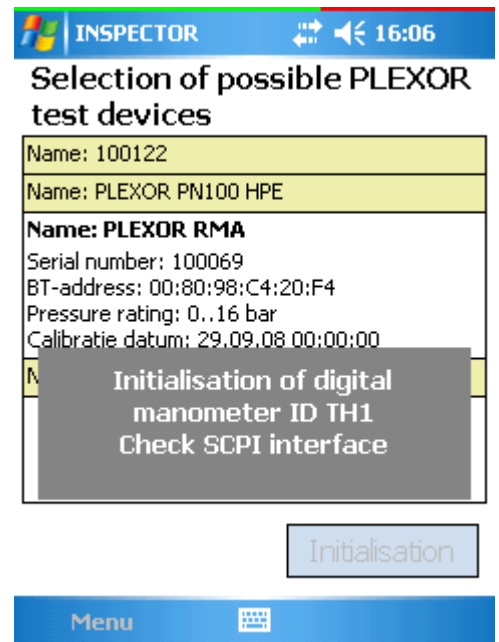
During the initialisation the status light (Init.) in the PLEXOR® test device will show.

Initialisation occurs on the basis of the digital manometer(s) that are defined in the inspection procedure.

- When the manometer for **p_u range** (TH1 – the inlet pressure) is defined, the digital manometer on the left-hand side will be initialised.
- When the manometer for **p_d range** (TH2 – the test pressure) is defined, the digital manometer on the right-hand side will be initialised.

During initialisation the program will perform the following steps:

1. Read the serial number of the digital manometer.
The serial number is saved with the test results together with the type number and the model number.
2. Read the battery status of the manometer.
If the battery status is 10 % lower than the value of the total battery capacity, the following message will appear:
 - *Verify status battery digital manometer.*
(Also the serial number of the digital manometer is shown.)
3. Test of the SCPI interface.
If the interface does not perform correctly, initialisation is aborted
4. Verify the self test results of the digital manometer involved.
5. Verify the result of the pressure range comparison between the digital manometer and the pre-set pressure range in the pressure regulator station data.
(Only after a measurement has been made).
If the pressure range appears not to correspond, initialisation is aborted

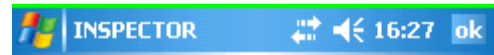


Initialisation of the digital manometer(s).

5.2 Information on INSPECTOR

The screen with INSPECTOR information will display the following data:

- *Version and Minor Release:* The version and subversion of the INSPECTOR module.
- *Serial number:* The PDA serial number. This serial number is used during the synchronisation of data in COMMUNICATOR. The PDA shall be established in the MANAGER module (PLEXOR® and COMMUNICATOR data) with this serial number.
- *Last started:* Latest start-up date.
- *Language.* The language of INSPECTOR can be set. The languages available are Nederlands, English and Deutsch.
- *Region.* The country-specific date and clock time setting can be selected. The setting of the PDA shall correspond with that of the PC with which data are exchanged.



Information INSPECTOR

Version: 5.1
Minor Release: 2.1.30
Serial number 0D9015E4830E0
Last started: 29.07.09 15:34:44

Language:

Region:



Screen with INSPECTOR information

6 Execution of inspections

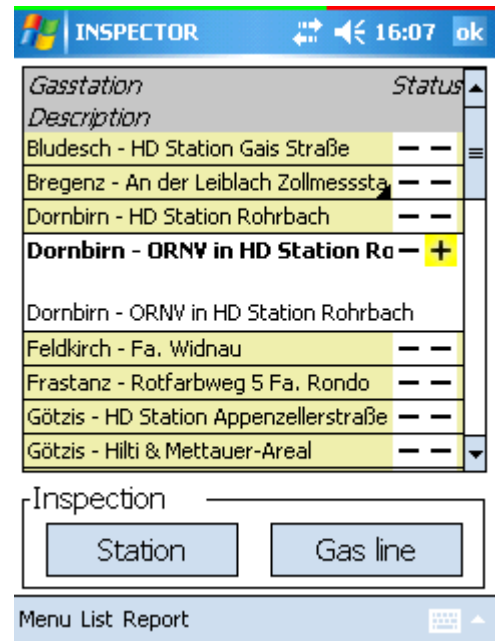
The inspector will select a pressure regulator station from the list.

To execute an inspection of a pressure regulator station the button *Station* is to be touched. Now, the inspection procedure for a visual inspection of a pressure regulator station is started.

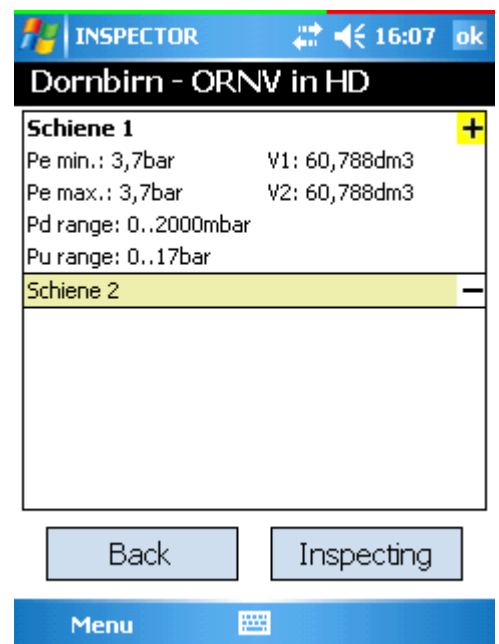
To execute an inspection of a gas control line the button *Gas line* is to be touched. A new screen is displayed to select a gas control line.

After a gas control line has been selected, the button *Inspecting* is touched to start the inspection of the selected gas control line.

Select *Back* to return to the list with pressure regulator (gas) stations.



Display of pressure regulator (gas) stations



Display of gas control lines.

6.1 Execution of a full or partial inspection procedure

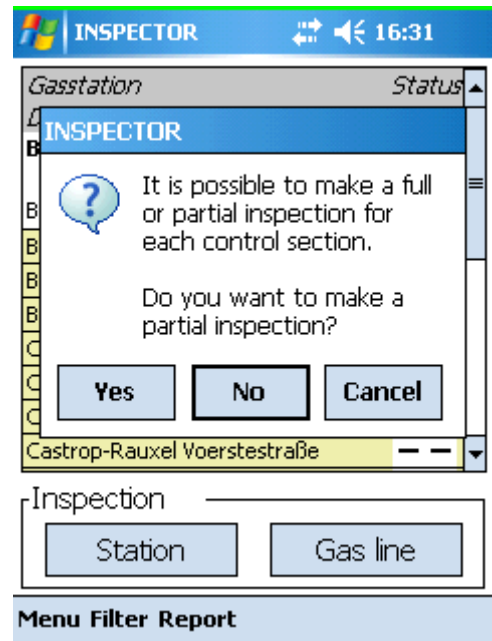
Inspection procedures can be performed in full or partial per section or subsection.

If required, a menu list appears.

Function buttons:

- **Yes:**
Make use of the possibility to execute a partial inspection procedure.
- **No:**
Do not make use of the possibility to execute a partial inspection procedure.
- **Cancel:**
Close this sub-screen without a selection being made.

If Yes is touched a section overview appears.



Message for the execution of a partial inspection procedure.

6.2 Section overview

Within these frames a section overview with two frames is presented of the various sections and sub-sections of the procedure to be executed, being:

- Execute sections.
- Do not execute sections.

Here it can be indicated which sections and/or subsections are to be executed or not:

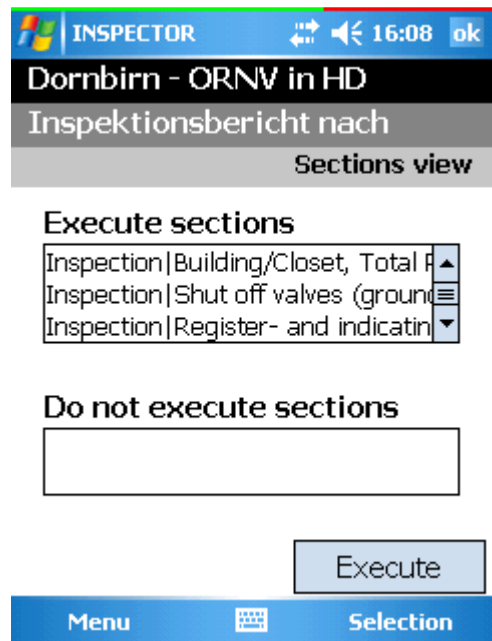
- Select an item within one or two selection frames. This item is then moved to the other selection survey frame.
- Execute this procedure till the sections and/or subsections to be executed are in the right frame.

Function buttons:

- **Execute:**
Execute the sections and/or subsections indicated.

Menu selection functions:

- **Menu -> Exit:**
Terminate the inspection procedure.
- **Selection -> All to "Execute sections":**
Execute all sections and/or subsections to frame *Execute sections*.
- **Selection -> All to "Do not execute sections":**
Do not execute all sections and/or subsections to frame *Do not execute sections*.



Section overview for the execution of a full or partial inspection procedure

6.3 Recommendation in case the inspection result is outside the rejection boundaries

Should the measuring results after termination of the inspection procedure not be within the rejection boundaries, the execution of (part of) the inspection procedure can be repeated.

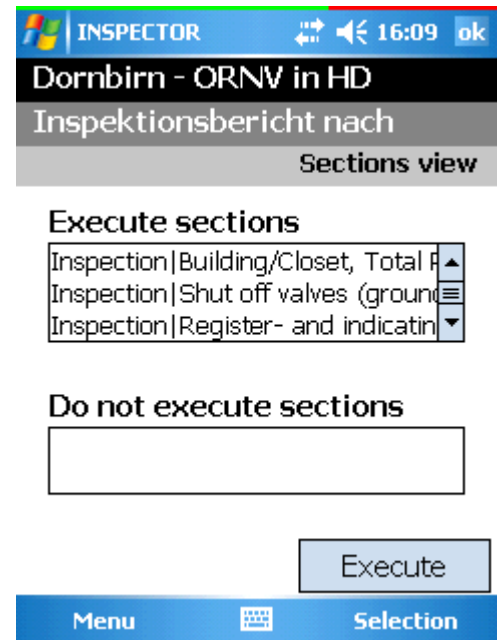
This option is activated as a standard provision, but may be switched off on request.

Function buttons:

- *Execute:*
Execution of the inspection procedure is limited to the selected sections or subsections.

Menu selection functions:

- *Menu -> Exit:*
Return to main screen.
- *Selection -> All to "Execute sections":*
Place items within frame *Execute sections*.
- *Selection -> All to "Do not execute sections":*
Place items in frame *Do not execute sections*.



Selection to repeat execution of sections and/or subsections.

7 Types of script commands

The inspection procedures are laid down in the MANAGER module. An inspection procedure is composed of a number of script commands.

CONNEXION® has 13 different script commands.

A script command can occur several times in an inspection procedure.

Script commands are subdivided into three categories on the basis of function, being:

1. **Instruction commands, the commands proper within a procedure.**

These are used for:

- Displaying the sections and subsections of a inspection procedure.
- Preparing work instructions for the inspector.
- Inserting a pause.

2. **Observation commands.**

These are used for:

- Recording an observation.
- Displaying option and check lists.
- Storing remarks.
- Showing a list box.


3. **Commands for the execution of measurements by means of the digital manometer(s) in the PLEXOR® test device, such as:**

- Measurement of leakage value.
- Measurement of average pressure.
- Measurement of maximum pressure.
- Measurement of minimum pressure.
- Measurement of actual pressure.
- Storage of measurement data during instructions or observations.

7.1 Script command: Execute measurement

During the execution of a measurement the actual pressure obtained from the digital manometer is displayed on the screen on a real-time basis. When the measurement has been terminated, the value is stored as an inspection result.

The screen shows the inspection result of the previous inspection and the entered rejection boundaries. An instruction, if defined in the script command, is displayed.

Touch icon  to choose between display of the instructions and of the data of the previous measurement with the corresponding rejection boundaries.

INSPECTOR will make a maximum of three attempts to receive the correct data. If this does not succeed, an error message will appear. This may be the case when an error message or even not a single readout has been received. Once an error message has been received, a new command to execute the measurement can be given.

During the execution of a time-related measurement a time bar will appear on the screen.

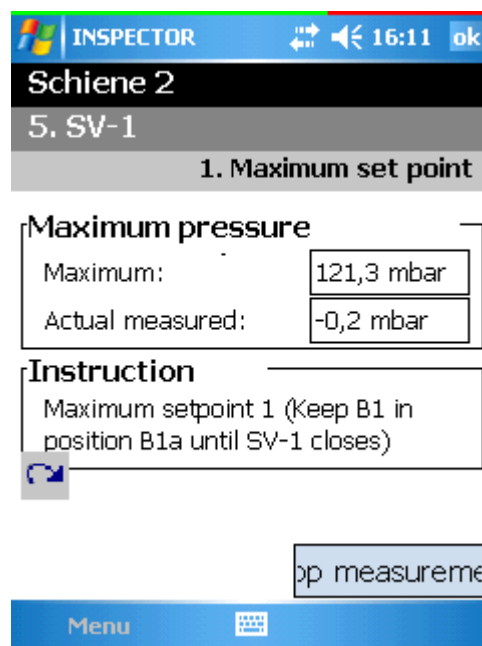
In case of a measurement that is not time-related, the user shall terminate the measurement with the button *Stop measurement*.

Function buttons:

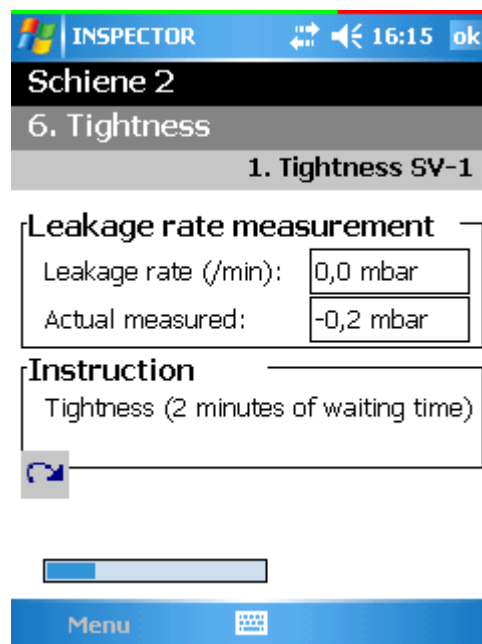
- *Stop measurement:*
Acknowledge that a measurement is to be terminated. The stop button will appear in a few seconds. When this button is touched, the measurement stops. Before the measurement is definitively stopped, the data are read out once more.
- *Next:* Proceed to the next step in the inspection procedure.

Remark

If an extra measuring period has been set in the script command, data reading will stop after this time has been elapsed.



Execution of a measurement



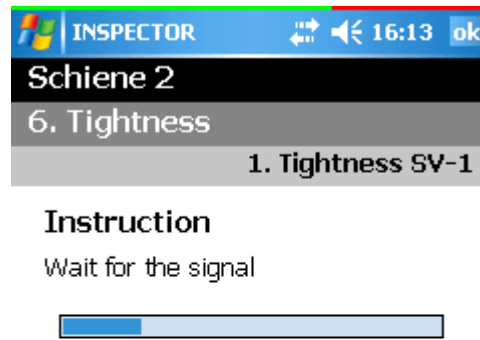
Execution of a time-related measurement

7.2 Script command: Pause

This script command is intended to insert a pause between two successive inspection actions.

In a pause, a time bar appears on the INSPECTOR screen.

When the time set has been elapsed, this is indicated by means of a sound signal and the button *Next* is shown.

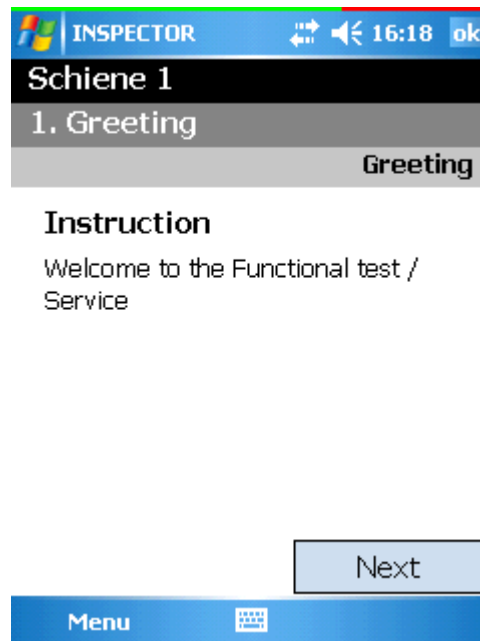


Presentation of a pause in INSPECTOR.

7.3 Script command: Instruction/information to the inspector

This script command is not only used to present an instruction to the inspector, but also to provide him with information that is necessary to take certain actions during the execution of the procedure.

To proceed to the next step in the procedure, touch *Next*.



Presentation of an instruction.

7.4 Script command: Enter observations

This script command is used to enter observations made by the inspector.

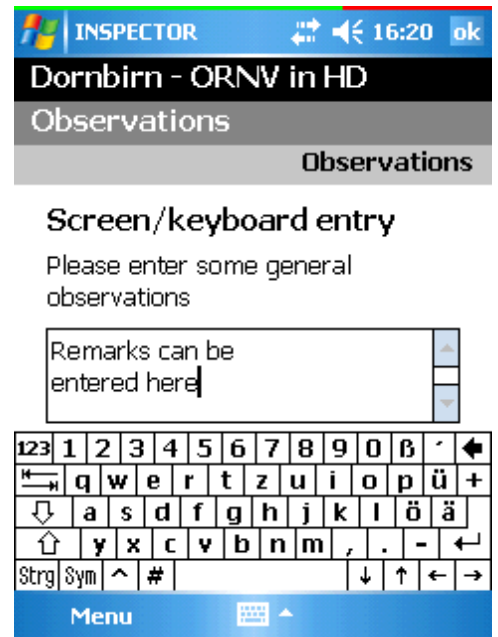
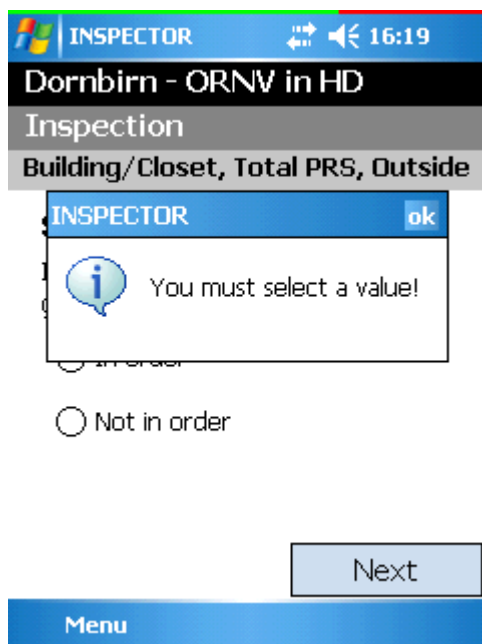
There are four options:

- *Multi-line input*
- *Single-line input*
- *2 options*
- *3 options*

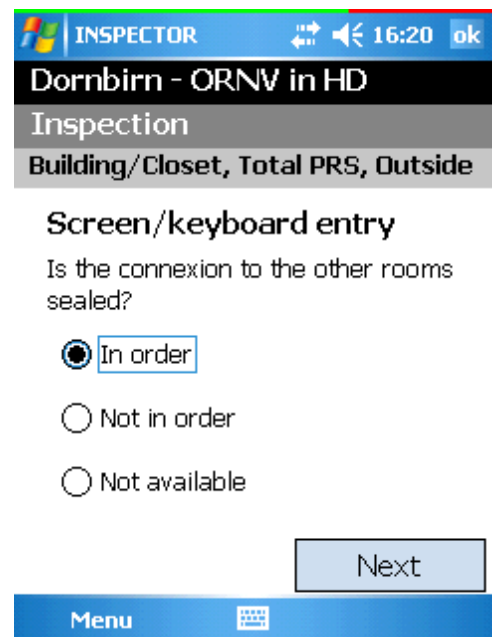
If the selection made with *Type of question* is: *Multi-line input* or *Single-line input*, the inspector will enter the observation by means of the keyboard.

If the selection made is: *2 options* or *3 options*, the inspector can choose the preferred option. The texts shown with the options were pre-set in MANAGER.

It may be obligatory to enter data. This has been set in the procedure by the manager. In this case, the following message will appear:



INSPECTOR screen with text entry option and keyboard



Input screen with 3 options

7.5 Script command: Option lists and check lists

Option lists and check lists allow for interaction with the inspector and are only supported in case of system integration with a business management system.

Per script command a maximum of five consecutive lists can be made.

Per list a maximum of twelve condition codes can be allocated.

An option list in INSPECTOR shows the various condition codes and their meaning. The inspector will select one or more condition codes, indicating which of the condition code indicated is relevant.

A check list in INSPECTOR shows the different condition codes and their meaning. The difference with a option list is that the inspector states per code that the condition code complies with the requirements.

The result of each inspection is stored in the results.

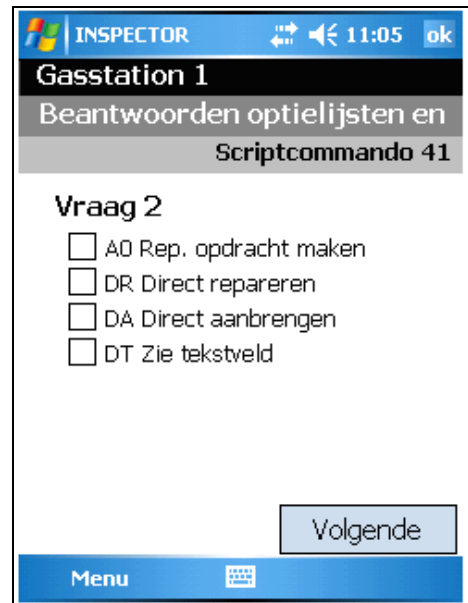
The tree structure compels the inspector to pass through the lists made.

Setting the script command

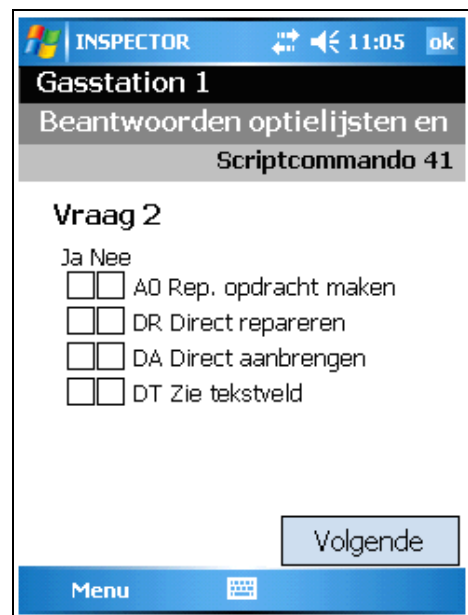
- *Show next list immediately:*
As soon as a condition code is selected in INSPECTOR the next list will be presented.

Settings of a list are:

- *List type:*
It can be decided here, whether the list is a check list or an option list.
- *List question:*
The question is shown here, that is asked when the list is presented.
- *One selection allowed:*
Only one item can be selected in the list.
- *Saving all condition codes:*
All the condition codes are stored in the inspection result. Per condition code it is stated whether it is selected in INSPECTOR or not. This is shown by including “;0” for not selected and by “;1” for selected behind the condition code in the inspection result. By using this function it is possible to distinguish later which condition codes were present.
- *Selection required:*
The inspector shall select a condition code in the option list. In case of a check list all the options shall always be passed through.
- *Do not display next list(s):*
When the condition code is selected it can be stated with this option that the next list(s) shall no longer be displayed. In that case, the script command is terminated.



Example of an option list in INSPECTOR



Example of a check list in INSPECTOR

8 Selection of groups of pressure regulator stations

If a business management system is used to manage the pressure regulator station data, the pressure regulator stations can be subdivided in groups, e.g. on the basis of a route layout.

The inspector selects the group of pressure regulator stations to be inspected.

Function buttons:

- *OK*:
Apply selection. The window with the pressure regulator stations is displayed.

Menu selection functions:

- *Selection -> All to "Groups to apply"*:
Move the selected item to *Groups not to apply*.
- *Selection -> All to "Groups not to apply"*:
Move the selected item to *Groups to apply*.



Selection of groups

9 Input options

INSPECTOR is designed such as to minimise the manual input by the inspector.

The inspection procedure is easily executed by means of check boxes and function buttons.

Less frequently used functions are visible by touching the on-screen *Menu* button.

Keyboard icon:

Different keyboards can be selected.

Touch icon  to select.

Possible keyboards:

- *Block Recognizer*
- *Ecom Keyboard*
- *Keyboard*
- *Letter recognizer*
- *Transcriber*

OK button:

The *OK* button in the PDA navigation field can be used to:

- close a screen,
- display the next screen.



The Menu icon and the keyboard icon



The Ecom keyboard



WARNING

Always use the original pencil supplied to prevent damage to the PDA screen.



REMARK

See the *ECOM instruments i.roc x10-EX Operating Instructions* manual for more information on keyboards available on the PDA.

10 Setting the PDA after empty battery

When the battery of the INSPECTOR PDA has been fully discharged, the data and programs in the RAM of the INSPECTOR PDA have been lost.

The Windows Mobile operating system is present in the ROM.

The inspection results stored by INSPECTOR are on the memory card. The memory card in the INSPECTOR PDA contains:

- The *Backup* folder “\2577” that contains the *Backup image* of the INSPECTOR PDA.
- The folder “\INSPECTOR V5” that contains the INSPECTOR software, the INSPECTOR configuration data and the inspection results.

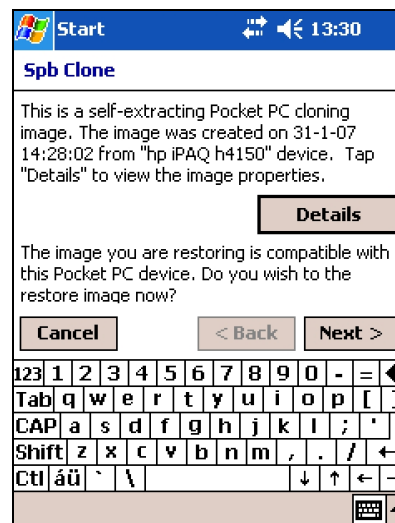
After the INSPECTOR PDA has been fully discharged and subsequently been connected to an external power source, the INSPECTOR PDA will perform a hard reset when re-started. To the hard reset belongs that the INSPECTOR PDA is set. For this, follow the instructions on the screen. Fully recharge the battery.

Load backup image

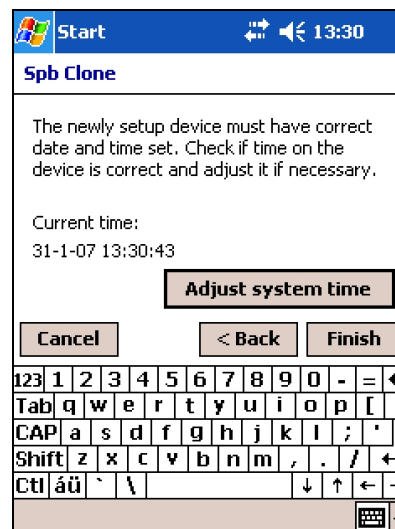
After these instructions have been completed the *Spb Clone* program is displayed (see *Spb Clone* screen 1). This program can load the *Backup image* of the INSPECTOR PDA (*Restore*). If *Spb Clone* is not executed, it is possible that the *Backup image* is no longer present on the memory card (\2577). In this case, contact Kamstrup b.v.

- The screen with the *Backup image* data is displayed (see *Spb Clone* screen 1). Touch “*Next*” to restore the *Backup image*.
- The next screen (see *Spb Clone* screen 2) has the possibility to set date and clock time of the INSPECTOR PDA. Select “*Adjust system time*” to modify date and clock time. The inspection results are labelled with a date and time stamp. Therefore, the system date and clock time shall be correct.
- Then select “*Finish*”
- Next, the restoration of the *Backup image* shall be confirmed; touch “*Yes*” (fig. 3).

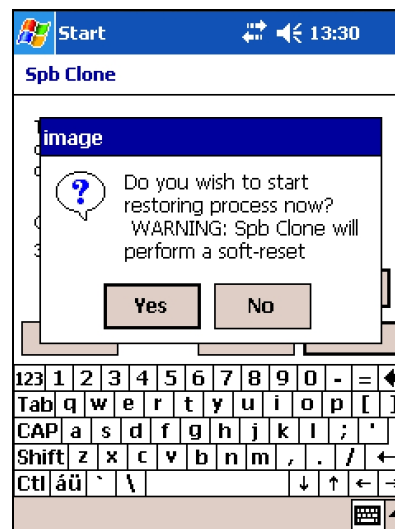
After the *Backup image* has been loaded, the *Spb Clone* program performs a soft reset. Subsequently, the Kiosk is displayed and INSPECTOR is ready for use. Consequently, it is not obligatory, first to exchange data with MANAGER.



Spb Clone screen 1



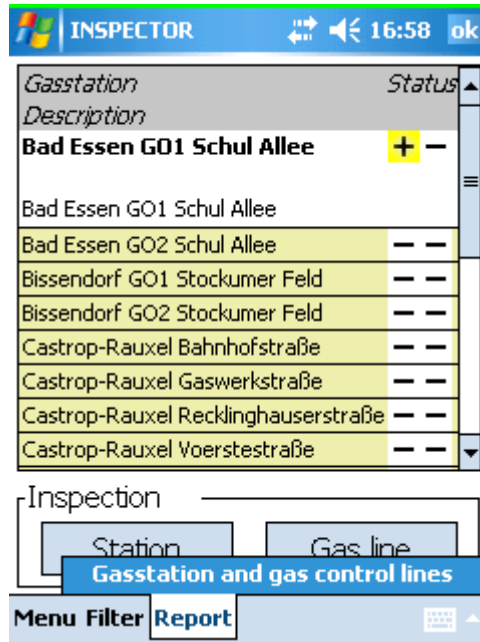
Spb Clone screen 2



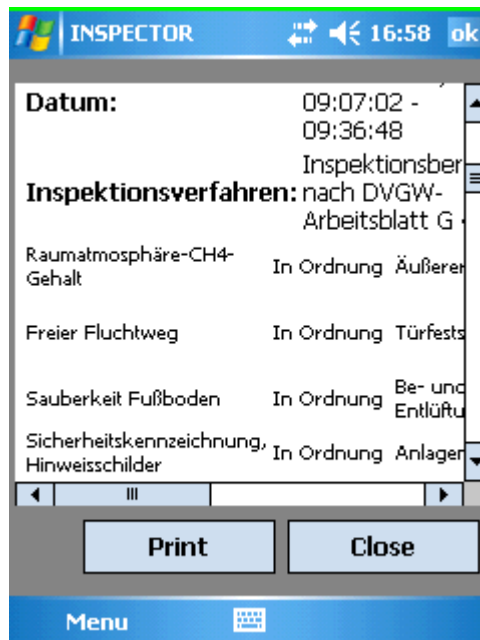
Spb Clone screen 3

11 Print inspection results from the INSPECTOR PDA

INSPECTOR has an option that the inspection results are printed directly from the PDA. This makes it possible for the user to leave the inspection results behind in the pressure regulator station (gas station).

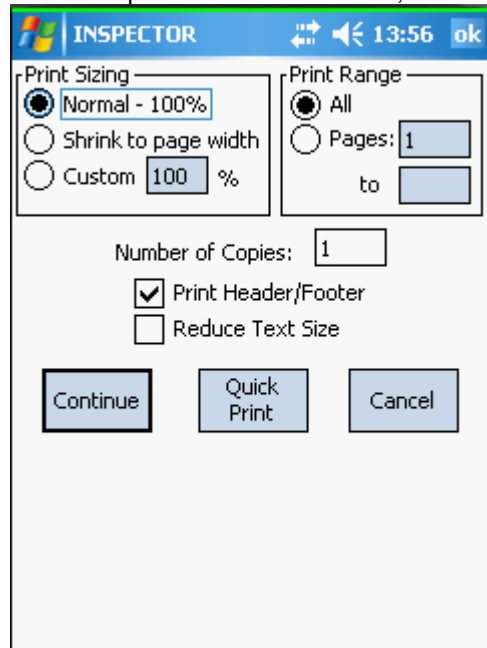


When the print option has been installed on the INSPECTOR PDA, the option *Report* is shown at the bottom of the INSPECTOR screen. When *Report* is selected the function *Gas station and gas control lines* is displayed. When this function is selected, the inspection results of the selected pressure regulator station and gas control lines are displayed in HTML format on the INSPECTOR screen.



It is possible to pass through the inspection results on the screen. Moreover, the buttons *Print* and *Close* appear.

- *Print:* After a printer with a *Bluetooth* port has been selected, the inspection results can be printed.



- *Close:* After this button has been selected, the print screen can be closed.



Kamstrup b.v.
PO Box 109
NL-6980 AC Doesburg
Leigraafseweg 4
NL-6983 BP Doesburg
TEL: +31 (0) 313 – 47 19 98
FAX: +31 (0) 313 – 47 32 90
kamstrup@kamstrup.nl
www.kamstrup.nl

DDO2112GHGB/10.2009/Rev. 04