# MINIFOOD


***INSTRUMENT FOR THE ANALYSIS OF OIL***

Version 02.00

P/Number **MAN 018**

Operator's Manual prepared by the Manufacturer:

**CDR srl**

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**History of revisions**

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## Compliance

These instructions have been prepared in accordance with the following technical standards and specifications:

| Standard | Edition | Title | Reference paragraphs |
|---|---|---|---|
| UNI EN 10653 | 11.1997 | Technical documentation. Quality of the technical documentation supplied with the product. | 5.5.1, 5.5.2 and 5.5.3 |
| UNI 10893 | 07.2000 | Technical documentation supplied with the product – Operating instructions – Arrangement and contents. | |

## Warnings for operators

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## Software-copyright

The software installed on *minifood* is intellectual property of CDR.

CE

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## CONTENTS

# 1 General information on the instructions

## 1.1 Introduction

This manual provides detailed instructions on the safety, features, installation, operation, use, maintenance and disposal of "*minifood*" manufactured by CDR S.r.l..
The contents of the manual are designed to provide training and information to the following categories of personnel:

- Personnel responsible for the use of the unit (installation, usage and storage)
- Personnel responsible for the maintenance of the unit, if this task is carried out by personnel other than operators

The device must be used in accordance with these instructions. It is therefore essential to **read them carefully** before performing any type of operation and closely follow all the instructions provided. The compliance with the provisions and recomendations given in this manual are an essential requirement to be able to use the device within the limits specified by the manufacturer.

In the event of inconsistencies between the content of this manual and the device, users must immediately remove the device from service and promptly inform the manufacturer thereof. **Incorrect or improper operations** may cause anomalies or faults. The directions for use are integral part of the device and must therefore be correctly preserved in a safe location accessible to operators (or to any person who may need to review them, provided that said person is duly authorized to use the device) during the whole life of the device.

These instructions shall always have to be supplied to the new user in the event the device is sold, rented or leased.

## 1.2 Preparation and compliance with instructions

This document was originally written in Italian. The manual forms integral part of the "Technical File" of the device that is kept in the archives of CDR S.r.l.

CDR S.r.l. does not offer official or implict warranties in connection to this manual, its quality, its performance or its correct use for all possible types of applications. In the event of discrepancies in the translation, though carried out by CDR S.r.l., users shall exclusively have to refer to the Italian version.



## 1.3 Intended use

*minifood* is a portable analyzer that uses a sophisticated spectrophometric technology in combination with a series of dedicated reagents to measure the **urea value** in milk and **chlorides** in cheese, water solutions, brines, preservative liquids, mashed products and sauces.

The device does not come into direct contact with the samples of food matrices being analyzed and does not therefore require specific maintenance. In addition, minifood uses disposable pre-dispensed cuvettes which can be handled by unskilled personnel and that do not require the preparation of specific reagents. The test is carried out by injecting into the vial, which contains a preset amount of buffer solution, a small predefined amount of sample that produces a series of colorimetric reactions when placed into contact with specific reagents.

## 1.4 How to use the manual

The manual is identified by means of a code (MAN018) and is divided into progressively numbered chapters.

In addition to the information provided by means of text (description of information), the manual also contains photographs and drawings.

Photographs and drawings (that are generically referred to as figures) are progressively numbered and followed by a brief description.

Figure 1.1 *minifood*

The example on the side of this page shows "Figure 1.1 ", where the first 1 indicates the chapter and the second 1 is the progressive number of the figure within the chapter (the following figure will be numbered as "Figure 1.2" and so on).

Figures always refer to the paragraph in which they are inserted and their caption contains a description of the paragraph (in this case Figure 1.1 refers to the description of paragraph 1.3 because it provides further information to understand the content of this paragraph).

It is very important for operators to know the meaning of the symbols that are referred to as pictograms in technical jargon.

Depending on their shape and color, pictograms may provide the following information:

- **DANGER** (triangular pictogram, with a black frame on a yellow background and a black graphical symbol)
- **PROHIBITION** (round pictogram with a red frame on a white background with a black graphical symbol)
- **OBLIGATION** (round pictogram on a blue background with a white graphical symbol)
- **GRAPHICAL SYMBOL** (defined as easily identifiable figure and used to provide information in addition to the instructions contained in the text)

The sections that follow provide a description of the pictograms that may appear in the manual.

Description of symbols

| ***DANGER SYMBOLS*** | | | | | |
|---|---|---|---|---|---|
|  | WARNING |  | ELECTRIC SHOCK |  | TOXIC SUBSTANCES |
|  | BIOLOGICAL HAZARD | | | | |

| ***PROHIBITION SYMBOLS*** | | | | | |
|---|---|---|---|---|---|
|  | SMOKING FORBIDDEN |  | ENTRANCE PERMITTED TO AUTHORIZED ONLY | | |

| ***GENERIC SYMBOLS*** | | | | | |
|---|---|---|---|---|---|
|  | READ DIRECTIONS FOR USE |  | GENERAL INFORMATION FOR THE USER | | |



### 1.5 Description of notes

To draw the attention of operators on relevant information, the manual uses a table divided into 2 columns, as described below:

| 1 | 2 |
|---|---|

1. **Position of the pictogram**:
2. **Description of the note**:

- A note with a **grey background** signals an **hazard for the operator**
- A note with a **white background** signals an **hazard for the equipment**

Examples:

HAZARD FOR THE OPERATOR

**HAZARD** …….

HAZARD FOR THE EQUIPMENT

**ATTENTION ……**

NOTE

**NOTE**
General note that is regarded important for the operator

# 2 Safety

## 2.1 Safety of the device

### 2.1.1 Directives used during design

The device has been designed and manufactured in accordance with the main safety and health requirements:

| TABLE 1: DIRECTIVES USED DURING DESIGN | |
|---|---|
| **Directive number** | **Title and Italian law with which it has been acknowledged** |
| **89/336/EEC**<br>**And subsequent integrations** | |

### 2.1.2 Regulations and standards used for design and testing

FoodLab complies with the following standard requirements:

| | |
|---|---|
| **EN 50081/1** | Electromagnetic compatibility: issue – residential environments – light industry. |
| **EN 55022.A** | Radio interference on IT equipment. |
| **EN 50082/2** | Sensitivity to irradiated and induced electromagnetic interference. |
| **ENV 50140** | Electromagnetic compatibility: immunity test to irradiated RF files and related standards. |

The product has been manufactured in compliance with a quality guarantee and assurance system compliant with the international standard ISO 9001 ed. 2000, which has been certified by an accredited institute.

### 2.1.3 Compliance of the product

The device is sold with a CE marking in compliance with Directive 89/336/EEC and subsequent amendments and integrations.
All changes that alter the design and manufacturing characteristics of the device and that have not been explicitly authorized by CDR S.r.l. invalidate its compliance and consequently also the user's right to use it.
Applications that are not specifically detailed in this manual must be considered arbitrary. CDR S.r.l. cannot be regarded responsible for damages originating from the failure to comply with technical specifications and from the improper use of the device and the biological substances.



## 2.2 Recommended applications

### 2.2.1 Permitted use

*miniFOOD* is designed to perform food tests and can be used with cuvettes, code CDR 230012, only.

### 2.2.2 Forbidden use

The device cannot be use used for tests on biological matrices that differ from those described in methods and for which the device has been specifically calibrated during manufacturing.

The device cannot be used with assay samples that have not been specifically released by CDR.

The device cannot be used to perform continuous diagnostic tests.

### 2.2.3 Personnel authorized to use the device

The personnel authorized to use the device must be duly trained to work in biological environments and be therefore familiar with the type of substances used in these applications.

### 2.2.4 Personal protection devices

When handling hazardous biological products, operators should always wear gloves in latex that do not damage the device.

### 2.2.5 Training

Before using the device, all operators should be familiar with the instructions contained in this manual.

## 2.3 Warnings on residual risks

The device does not exhibit residual risks.

# 3 General information on instructions

## 3.1 Characteristics

| | |
|---|---|
| Control unit: | Mitsubishi controller |
| Reading cell: | Thermostated |
| Incubation cell: | Thermostated |
| Power supply: | 12V dc |
| Absorption: | 500 mA max |

## 3.2 Nameplate

The device is fitted with a nameplate with the EC marking and identification data (see the example in Figure 3.1).

Given the importance of this nameplate, it is important to observe the following:

- ✓ Do not remove the nameplate from the original location
- ✓ Do not change or alter the data shown on the nameplate
- ✓ Do not clean the nameplate with abrasive products


Figure 3.1 Nameplate



## 3.3 Technical specifications

Figure 3.2 *minifood*

Overall weight: 470 g

| TABLE 2: SIZE | |
|---|---|
| **Length** | 243 mm |
| **Width** | 130 mm |
| **Height** | 60 mm |

## 3.4 Environmental conditions

The device and its components can be used in environments with a temperature t = ranging from +15° to 35°C and a relative humidity from 20% to 90% , non condensing.

# 4 Transportation, storage and installation

## 4.1 Transportation and storage

### 4.1.1 Packing, handling and transportation

CDR supplies *minifood* in a cardboard box.
Said box can be easily handled manually.
The device should always be transported in covered vehicles so that the box is not exposed to atmospheric agents. It is important to remember that cardboard is unable to protect the device from rain, snow and wind.

### 4.1.2 Storage

The device must always stored in its box and indoors at a temperature t = ranging from – 20° to +70°C and a relative humidity ranging from 20% to 90% , non condensing.
The storage location must not be exposed to polluting agents such as humidity, dust, acids, corrosive gases, salt, fumes, etc.
Do not stack more than 5 boxes.

### 4.1.3 Storage and/or disposal of the packing

The manufacturer always recommends to preserve the original box in the event it is necessary to transport the device and install it in another location. In terms of disposal, cardboard is not regarded hazardous for people, animals or materials. Before disposing of the package, see Directive 94/62/EC relating packing materials and boxes.



## 4.2 Installation

### 4.2.1 Receipt of material: visual inspection

Each device is tested with specific procedures and instrumentation by CDR before delivery to customers. However, during transport the device may be damaged for unforeseen reasons that are not directly imputable to CDR. Therefore, it is extremely important to visually check the box and the device to verify that it has not been damaged during transport and return it to the Maintenance department for a functional inspection of damage is reported.

### 4.2.2 Positioning the device and connecting it to the power supply

**NO SMOKING**
It is advisable to not smoke during the positioning, connection and use of the device in order not to damage it.

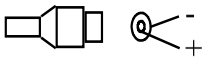
**ATTENTION!**
For a correct use of the device, place the power supply at a distance above one meter from *minifood*.

The installation of *minifood* must be performed as follows:

- Remove the device from the box and place it on a workbench, making sure it is not exposed to sudden temperature variations or excessive light.
- Connect the external power supply supplied with the device to the rear connector (Figure 4.1) using the dedicated jack, and to a 110 Vac/220 Vac socket.


Figure 4.1 Rear connector

- When using a different power supply, always check that its rating matches safety and electric specifications (12 Vdc – 1A) (EC marking) and that the polarity of connectors is followed (Figure 4.2 power supply).




+ 12 Vdc 1,4 A

Figure 4.2 Polarity of power supply

### 4.2.3 Connecting the data transmission cables

To be able to use *minifood* with a host computer and download analytical data, use cable code CDR 229800 and connect it to connector RS232.



## 5 Operation

### 5.1 Operating procedures

#### 5.1.1 Switching the device on

Verify that the reading cell is empty.

Press the On/Off switch to start the heating phase, which lasts a few minutes.
The screen displays:

**Minifood – Olive**
**Warming up…**

The LED next to the reading cell lights in red. The screen toggles between "Heating" and the histogram that provides a graphical indication of the temperature reached. At the end of the heating phase, the LED switches off and the screen displays this message:

**Minifood – Olive**
**Select test**

Press the ACID key to carry out the acidity test.

Press the PEROX key to carry out the peroxide tests.

### 5.1.2 Calibration

In some cases the following message displays after the pre-warming stage:

| Calibration<br>Cover the well and press Enter |
|---|

Cover the reading cell with the cover
to protect it from light and press 


The following message flashes: please wait

The second line of the screen displays an histogram that shows the progress of calibration or the sensor used for the selected test, followed by an histogram related to the sensor used for the test.

At the end of calibration,
the following message displays:

| Calibration<br>finished |
|---|

Press 




### 5.1.3 Error during calibration

If the following message appears at the end of calibration:

| Error ! |
|---|

Verify that the reading cell is free, then switch the device off and on.

The device may require the calibration to be repeated.

If the ERROR message continues to display at the end of the calibration,

use the  keys to scroll the list and check which test is not available.

### 5.1.4 SELECTING PARAMETER F*

Select the test you wish to run, specify if you wish to change the value of factor **F*** set on the device, then perform the following operations.

Press menu and ▶.

Scroll values from F1 to F10 by pressing ▲▼.

Select the desired value.

Confirm the selection by pressing enter, then menu



### 5.1.5 RUNNING ACIDITY TEST

Select the test by pressing ACID.

Prepare the sample following the instructions provided in test methods.

Pre-warm the cuvette and insert the sample or the reagent only for at least 5 minutes into the incubation cell..

The screen displays the test name, “Low acidity”:

```
-      Low acidity      -
       insert  blank
```

Selecting high or low acidity pressing ACID

Insert the cuvette into the reading cell and press enter

If this test tube contains degraded reagent (expired, polluted) the following message will be displayed

```
-      Low acidity      -
       Invalid Blank
```

It is necessary to insert again a new sample of reagent and press enter

The screen displays:

```
-        Low acidity    -
       insert  sample
```

After a few seconds, the screen displays:

```
-        Low acidity    -
          Wait...
```

At the end of the reaction, the LED next to the reading cell starts to blink in green and the screen displays:

```
                -          Low acidity    -
N° Test                Value                    ol  %
```

Where

**Test no.** corresponds to the number of tests carried out since turning the device on. If the device is switched off and on again, it resets to test no. 1.

**Value** indicates the value of oleic acidity in %

After completing the test, press enter to return to the initial menu.

To cancel the testwhile it is running, press ◀ .



### 5.1.6 RUNNING A PEROXIDE TEST

Select the test by pressing PEROX

Prepare the sample following the instructions provided in test methods.

Pre-warm the cuvette and insert the sample or the reagent only for at least 5 minutes into the incubation cell..

The screen displays the test name, “PEROX”:

```
-          Perox          -
       insert  blank
```

Insert the cuvette into the reading cell and press enter

If this test tube contains degraded reagent (expired, polluted) the following message will be displayed

```
-          Perox      -
       Invalid Blank
```

It is necessary to insert again a new sample of reagent and press enter

The display will show this message:

```
-        Perox        -
insert  sample
```

Place the sample of oil to be analysed into the test tube and after agitating by inverting it, insert the second R2 reagent and agitate it again.

Insert the cuvette into the reading cell and press:


The screen shows :

```
-        Perox        -
Please wait . . .
```

After 2 minutes, the screen displays:

```
                -      Perox      -
Test n.      Value of peroxides in      mEO/Kg
```

Where:

**Test no.** corresponds to the number of test that have been performed since switching the device on. When you switch the device off, the test number is reset to 1.

**Value** indicates the value of number of peroxides in mEO/Kg



### 5.1.7 TEST ON PEROXIDES REAGENT

The instrument gives to the user the possibility of testing the reagent in order to check if its standard analytical characteristics have been maintained during time.

The following procedure shows how to perform this test.

Put the cuvette to be tested in the INCUBATION CELL for at least 5 minutes.

Add a drop of R2 reagent and shake it gently (move it up and down 3-4 times).

Select Peroxides test pressing:


The display will show

```
-        Perox        -
insert  blank
```

Then insert the cuvette in the READING CELL and press

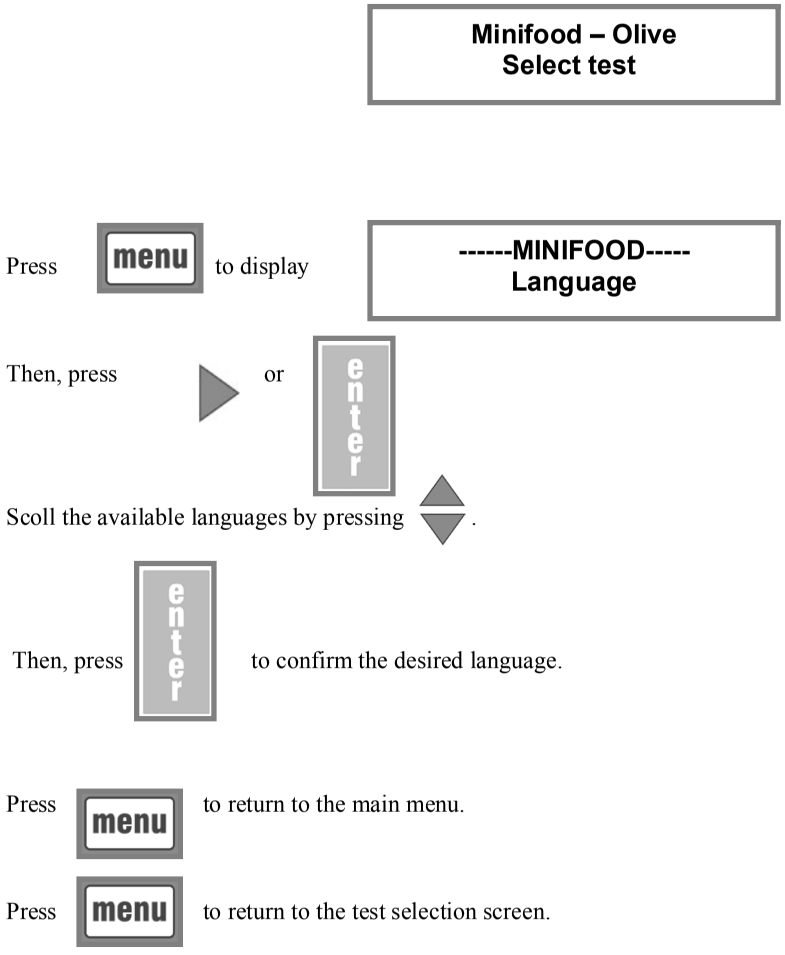

If this test tube contains degraded reagent (expired, polluted) the following message will be displayed:

```
-        Perox        -
Invalid Blank
```

In the other case, if the reagent is valid, the instrument displays the standard message (“Insert sample”) and it is possible to proceed with the analysis, simply adding the proper quantity of oil the the cuvette before pressing “Enter”:

### 5.1.8 SELECTING THE LANGUAGE

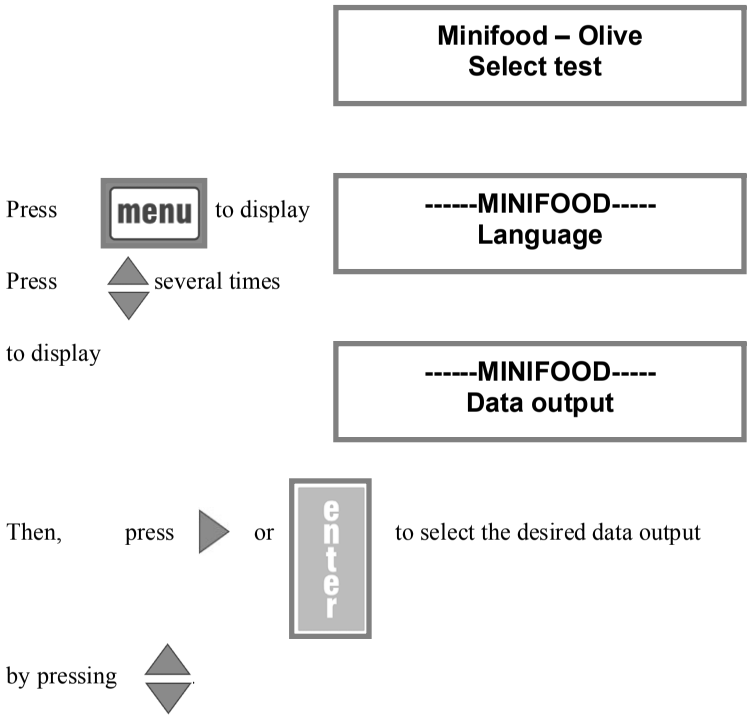
Switch the device on and wait for the pre-warning to complete. The following message displays:






### 5.1.9 SELECTING THE DATA OUTPUT

Switch the device on and wait for the pre-warming phase to complete. The following message displays on the screen:




- **Printer,** which has to be connected to the RS232 port of the device.
- **Host,** to interface the device with a PC through port RS232.
- **No,** to cancel the selection.

Press menu to return to the test selection screen.

# 6 Maintenance

## 6.1 Diagnostics and control

*minifood* is very simple to use because it does not require specific calibration operations or specific precautions.
Therefore, the instructions below refer only to the most common problems. For more complex issues, it is advisable to contact the Technical Support Service of CDR.

| PROBLEM | CORRECTIVE ACTION |
|---|---|
| The device does not switch on and the display does not display any information | Try to reinsert the power connector, then verify that the supply voltages are present at the input of the power supply (220Vac) and of the device (12Vdc). If necessary, replace the external power supply with another one with equivalent characteristics, paying attention to polarity. |
| Read values are not aligned with historical data | Attention! The calibration procedure of the device is very simple but must be performed correctly. Always check, during calibration, that the reading cells are not blocked by cuvettes and can be reached by direct light. |
| Read values are not aligned with historical data | The entered test parameters (if different from default ones) are stored in the device memory until you press "Default". In programming mode it is essential to verify that the stored parameters match the desired ones. |
| Read values are not aligned with historical data | Verify that the device has been correctly installed (see paragraph 4.2). |
| The K-factor cannot be entered manually | This parameter can also be inserted manually in "Programming" mode for KINETIC tests only, but must be calculated analytically in other test modes. |
| The device does not print the reference values | Verify that the reference has been selected with key"2: Ref. " |

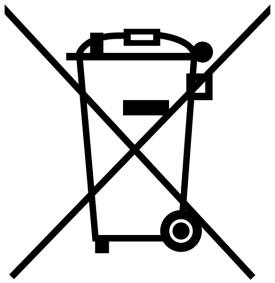


# 7 Spare parts and consumables

| | |
|---|---|
| **Power supply** | Code CDR ALC008: 12V dc – 1.0A |
| **PC communication cable** | Code CDR 229800 |

## 8 Disposal

**Information on Disposal of Waste Electrical & Electronic Equipment (Applicable in the European Union)**



This symbol on the equipment means that used electrical and electronic products shall not be mixed with unsorted municipal waste.

For proper collection, treatment and recycling, please contact our office when the equipment has reached the end of its life. We will advise you regarding the equipment disposal.

[redacted]

### General informations

Disposing of this product correctly will help to prevent potential negative consequences for the environment and human health, which could otherwise arise from inappropriate waste handling. The recycling of materials will help to conserve natural resources. Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

Updated information on www.cdr-mediared.it