

# User's manual Incubator type 1

Issued D.D. : 26-03-2013

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*The content of this manual is confidential. He who is in possession of it without knowledge of MS Broedmachines, obtained it illegally.*

### CE-Marking.

This incubator has a CE marking. This means that incubator type I meets the applicable requirements of the European guidelines. In the attached Declaration of Conformity you'll find the applicable guidelines.



*Use this machine only according to the manuals regulations .Consult MS Broedmachines when in doubt about use .*

We assume that you , your employees and others that come into contact with this machine ,know how to use the machine. This includes correct use ,maintenance and repair as written in this user's manual. This also means that employees are familiar with the use of machinery through training or experience.

Disclaimers:

MS Broedmachines excludes liability for unsafe situations, accidents and damages that result from:

- Ignoring warnings or instructions as shown on the Incubator type 1 or documentation
- Use for other purposes or under conditions other than specified in this documentation
- Changes to the Incubator type 1. This includes the use of other than original spare parts.
- Inadequate maintenance.
- Unauthorized removal of safety guards and / or safety features.
- The improper use of the machine.
- Adjustments and / or changes that affect the safety of the machinery must not be carried out without authorization of MS Broedmachines but are entirely the responsibility of the person who makes the adjustments. The guarantee becomes invalid when modifications and / or changes are made. After 10 years, the Incubator type 1 must be fully monitored by MS Broedmachines, otherwise the entitlement to service expires

MS Broedmachines is not liable for the damage caused by faults in the Incubator type 1 (For example, damage to products, business interruptions).

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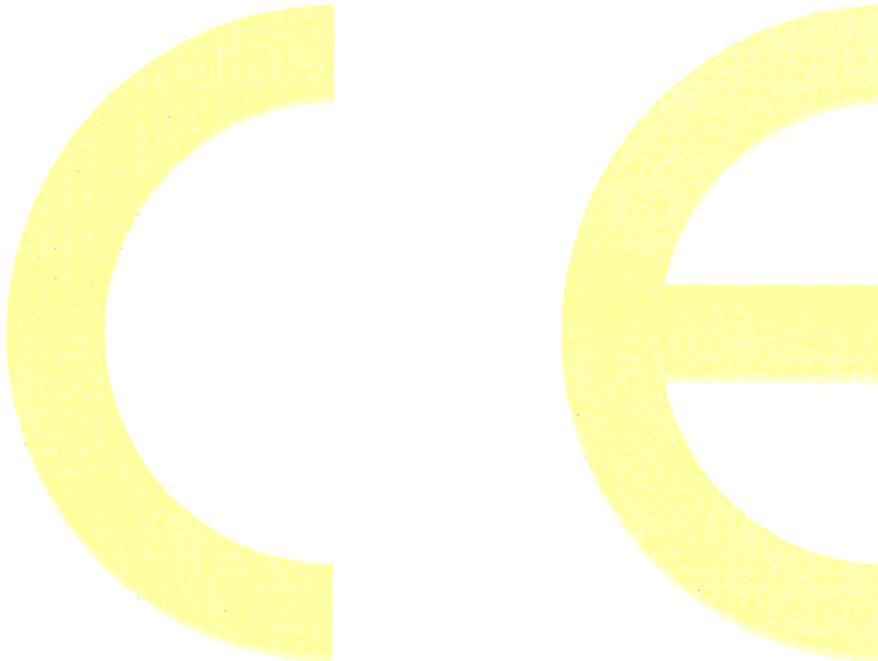
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The use of this documentation.

This documentation is written for the people who use the Incubator type 1. These are adult persons only.

MS Broedmachines has a technical construction file of the Incubator type 1. This file includes the following components:

- A risk analysis of the Incubator type 1 with a description of the necessary measures to be applied.

The technical documentation of the components that are part of the Incubator type 1.



*The text parts which are important for the safety of persons are printed in italics*



**Important tips or references are provided with additional single icon and bold text like this.**



*Pictures may slightly differ from the Incubator type 1*



# 1 INTRODUCTION

## 1.1 Functional description of incubator type 1

Incubator type 1 is intended for hatching eggs under controlled conditions

The Incubator type 1 consists of the following functional components. See pictures 1 to 3

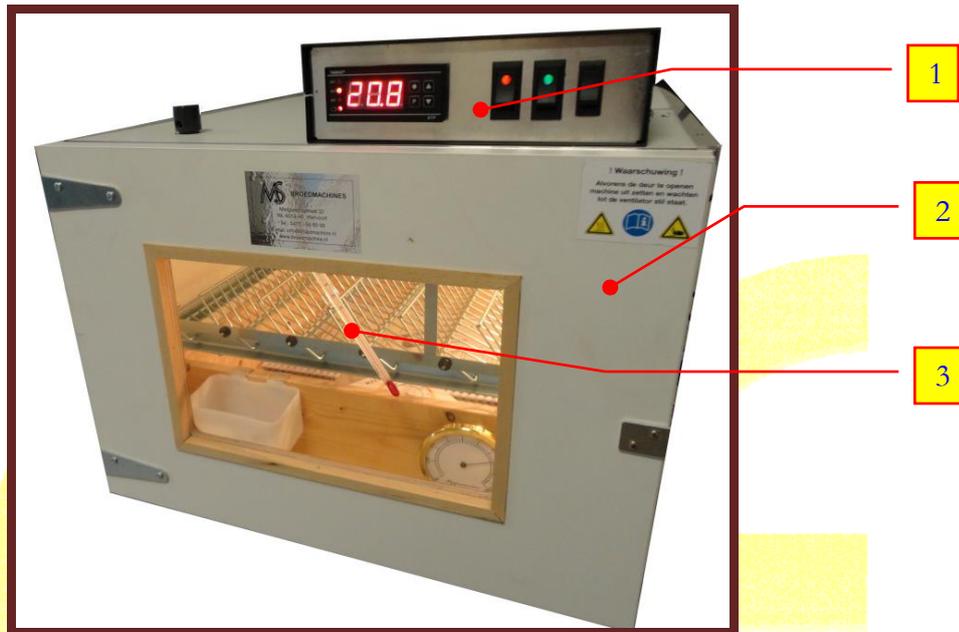


Photo 1: Overview Incubator type 1

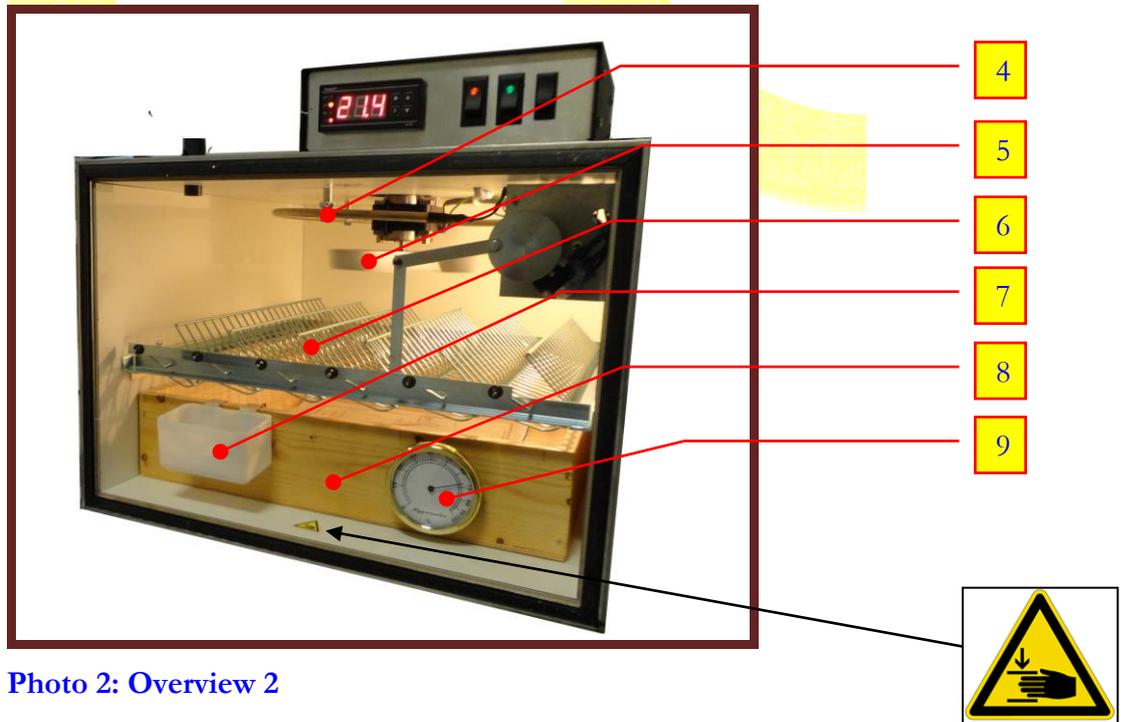
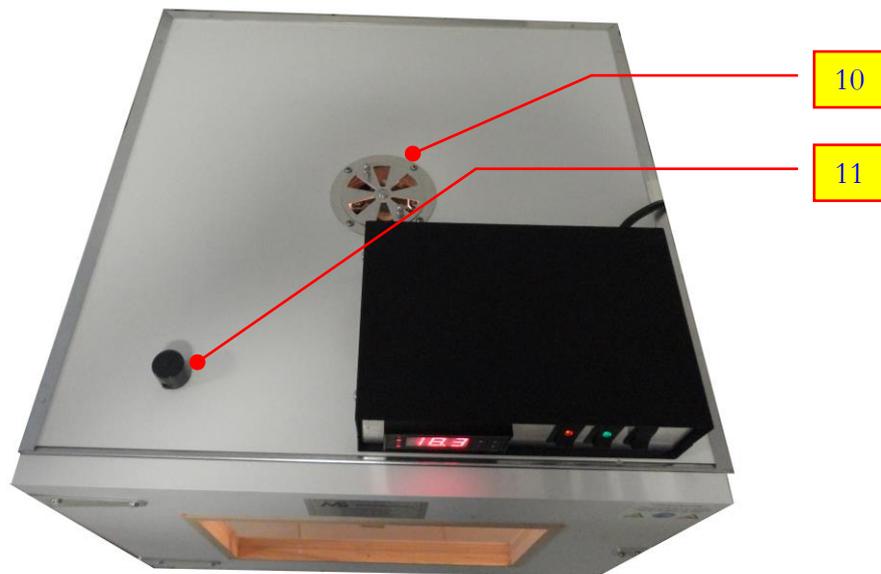


Photo 2: Overview 2



**Photo 3: Overview 3**

**Legend picture 1 to picture 3.**

1. Operating box
2. Enclosure with lockable door
3. Thermometer
4. Heating element
5. Ventilator
6. Egg tray ( manual operated or automatic(optional))
7. Water container
8. Hatching box
9. Hygrometer
10. Adjustable ventilation grille
11. Adjustable ventilation pipe

## 1.2 Necessary Accessories

The following additional parts are part of the Incubator type 1.

User's manual "Incubator type 1" (Your reading them now)

## 2 SAFETY

### 2.1 Introduction

*The Incubator Type 1 is designed and built to ensure safe use and maintenance. This applies to the application, the circumstances and conditions as described in this documentation. Reading this documentation and following the instructions are necessary for anyone who is authorized to work Incubator type 1. The activities listed in the operating instructions can be performed by service personnel. Activities not described in the operating instructions, may only be carried out by appropriately qualified personnel. Keys or special tools which are included to access certain areas or features may not be left on the machine. Only persons with the required knowledge or instructions may have access thereto.*

### 2.2 General safety rules

- Move the Incubator type 1 only in the lowest position.
- Do not unscrew the control box, risk of electrical shock
- Place the incubator type 1 on a stable vibration free surface.
- Provide adequate ambient lighting during cleaning and maintenance

### 2.3 Warnings on the machine

Warning texts / icons have been applied on the Incubator type 1.

The following rules apply:

- These texts may not be removed or damaged. The operator should regularly check.
- The operator is responsible that the texts are always clearly visible, legible and remain.

Below the applied icons / signs are displayed:

- A warning icon( figure 1) warns for the danger of the ventilator. See also Photo 2 and photo 5.



**figure 1: PIC 337 Beware injury to the hand**

- Residual risk of burns to the hands, this cannot be prevented due to the working of the machine, therefore, for this danger warned by the warning icon figure 2. See also Photo 2 and **Fout! Verwijzingsbron niet gevonden.**



**figure 2: PIC 315 Hot surface**

- The incubator type 1 is provided with a hinged door. If it is opened, one must first turn off the fan motor. For this the warning text of figure 3 was applied. See also photo 5.

<p style="text-align: center;">! Warning! Before opening the door Shut down machine and wait Until fan has completely stopped.</p>
--

**figure 3: Warning text**



Photo 4: Overview warning icons PIC 315

- The operator must be pointed out that he should only operate the installation after reading the user manual. For this is notified by means of the command icon figure 4 , it has been applied near the control panel, See also **Fout! Verwijzingsbron niet gevonden..**



figure 4: PIC 616 Follow operating instructions



! Warning!  
Before opening the door  
Shut down machine and wait  
Until fan has completely stopped.



### 3 SPECIFICATIONS

#### 3.1 Physical conditions of use

The following physical conditions apply:

During transport and storage	: +0 to 55 Degrees Celsius
Ambient temperature (when in use)	: +10 to +25 Degrees Celsius
Relative Humidity	: 40% to 70%
Lighting	: normal ambient lighting
Height	: air pressure up to 1000m above sea level



*The Incubator type 1 is not intended for outdoor use.*

*The Incubator type 1 is not suitable for explosion hazardous areas.*

#### 3.2 Applied relevant guidelines and standards

See the Declaration of Conformity.

#### 3.3 Specifications

- The Incubator type 1 is specified on the enclosed declaration of conformity

## 4 OPERATING INSTRUCTIONS



### 4.1 General

Read also the chapter about safety.

#### 4.1.1 operators

The Incubator type 1 can be operated by an adult person who has been informed about operating instructions and safety, as it is defined in the associated user documentation

#### 4.1.2 Personal protection

For operating the Incubator type 1, the operator is required to meet the following personal safety and personal protective equipment:

- Do not wear loose clothing, necklaces, rings, bracelets, etc.



*When in doubt, about the wearing of personal protective equipment in certain activities, always inquire of an expert in this matter.*

### 4.2 Overview of operating controls



**Photo 5: Overview of operating buttons symbols**

Legend Photo 5:

- A: Temperature control and readout
- B: On Off switch
- C: On Off switch automatic turning mechanism
- D: On Off switch light
- E: Humidity control and readout
- F: Manual Turning switch

The temperature or humidity setting can be changed via the display (A) or (E)

- Press for about 3 seconds on the "P", the set temperature/humidity will now be displayed
- Change the set temperature/humidity with the arrow keys (displayed in degrees Celsius, displayed in %)
- Press "P" again to confirm the new temperature/ humidity setting
- The display will now indicate the measured temperature/humidity

### 4.3 Operating incubator type I

If you want to start the Incubator type 1 one should strictly adhere to the following procedure, to ensure the personal safety.

The system may only be enabled when the following conditions are met:

- One needs to obey to all safety rules of section 2.2.
- All safety devices are functioning and there are no failures.

#### 4.3.1 Start up the machine

Check for connecting to the mains:

- The incubation room meets the requirements of sub section 4.3.2
  - All switches (B, C and D) are Off (letters in parentheses refer to the legend photo 6)
  - The egg tray is placed in the machine, eggs properly inserted, see under section 4.3.4.
  - The fluid reservoir is provided with water (if necessary)
  - The door is closed
1. Connect the machine to a grounded wall outlet (mains 230 volt 50Hz).
  2. Turn on the machine by means of switch B, the fan runs and the heater comes on.
  3. Via the display (A), one can set the desired temperature. See section 4.2.
  4. With Switch (D) the interior light can be switched On or Off
  5. Use switch (C) to turn the automatic turning system on, eggs will turn once every hour
  6. With switch (F) the turning system is forced to make a immediate turn.
  7. Via display (E), one can set the desired humidity. See section 4.2.

#### 4.3.2 Incubation room

The humidity in the incubation room should be between 40 and 70 %.  
The temperature must be above 10 degrees Celsius and below 25 degrees Celsius.  
The incubator needs to be placed on a solid base, vibrations have a negative influence on the development of the embryo.  
Most suitable is a table that is standing free from the wall, in order to keep vibrations away from the incubator.  
The best results will be obtained when the machine is operated by one person.

#### 4.3.3 Eggs

The quality of the eggs must be good, in order to get good results. Eggs from birds that have poor housing and husbandry will not be of the required quality for incubating.  
Do not save eggs for more than 14 days, and store them in a cool place (approx 10 C), make sure the eggs are turned once a day.

Shape of the egg. Eggs of average size and shape give the best results

Dirty eggs. Clean the eggs by scraping the dirt off with a knife. Never wash the eggs

Colour of the egg . The colour of the egg has no effect on the breeding results

Egg Candling. Candle the eggs before setting them in the incubator in order to find cracks, and see whether the yolk is in the middle of the egg.

Air chamber. The air chamber tells us whether an egg is suitable for breeding. A good breeding egg has a very small air chamber, at the beginning of incubation. The air chamber also helps us to check the development of the embryo.  
Candle the egg and mark the size of the air chamber every 4th day .

- If the air chamber grows too fast, the humidity is too LOW Close the ventilation holes in order to raise the humidity
- If the air chamber grows too slow, the humidity is too HIGH Open the ventilation holes in order to lower the humidity

Remember that the air chamber should be approx. 25 % of the egg just before hatching, or lose 12 to 14 % of its weight.

#### 4.3.4 Incubation

Set up the incubator at least 24 hours before setting the eggs, in order to make sure that everything is in good working order.

Set the temperature between 37 and 38 degrees Celsius or 99 and 100 Fahrenheit. The humidity cannot be set before the eggs are in the incubator, just open the ventilation holes a bit.

It is also recommendable to bring the eggs to room temperature a few hours before they are placed in the machine.

Once the machine is running well, the eggs are placed in the metal baskets with the point downwards.

Never place eggs that are too big in a baskets that is too small. Standard baskets can take eggs up to approx. 60 grams. For bigger eggs you will need a different tray.

Since the humidity has to be raised just before hatching you can only put additional eggs in the machine once a week. Placing eggs in the machine more often will result in poor hatching due to the humidity being too high.

Once the eggs are placed in the machine check the temperature once more and adjust if necessary.

To regulate humidity act as follows:

Start with a humidity of 40 to 45 %.

Humidity too high.....open the ventilation holes

Humidity too low .....close the ventilation holes

Only if the humidity is too low and the ventilation holes are completely closed, the water container needs to be filled in order to raise the humidity. You can partially cover the top of the water container, to reduce the influence of the added water.

#### 4.3.5 Turning the eggs

If your incubator is equipped with an automatic turning mechanism, the eggs will turn automatically 24 hours a day, every hour. If you have a semi automatic machine you must turn the eggs 3 times a day.

#### 4.3.6 Hatching

Two days before hatching take the eggs out of the baskets and put them in the hatching tray in the bottom of the machine.

During the last day raise the humidity to 55...65 % by filling the container with water.

From now on keep the machine closed as much as possible.

#### 4.3.7 Useful tips

Temperature: 37 to 38C (99 to 100F) the whole cycle

- Thermometer: Incubation thermometers are very sensitive to shocks. Always compare with another thermometer to test accuracy
- Humidity : first 19 days between 35 and 45 % During the last 2 days 55 to 65 %
- Candling : Candle the eggs after 8 days and remove the infertile eggs. Candle a second time on the 19th day prior to placing the eggs in the hatching tray.

## 4.4 Faults generally

### *Beware!*

A fault is always undesirable and often tried to be solved as soon as possible, always keep safety in mind and follow the instructions below:

- Only staff that is aware of the contents of this user documentation may perform operations on the machine. These individuals should receive information and instruction about the production process and the safe operation of the machine and know all the possible dangers involved and know how to deal with them . Always follow local labour and safety laws and environmental regulations.
- Never remove safety devices while the system is in operation. This can cause dangerous situations with possible irreparable injury. Use bridging tools for works that require removal of safety systems Use only spare parts supplied or recommended by the manufacturer. Keep enough spare parts in stock.

## 4.5 Cleaning

Clean the machine after each cycle.

When cleaning the incubator type 1, depending on the work to be performed, take the following actions::

- Very important: Make sure the machine is disconnected from the mains. This will prevent unexpected voltage on the Incubator type 1
- Thorough inspection of all parts for damage or defects, in doubt, always replace parts or have them assessed by an expert.
- Clean the Incubator type 1 with a damp cloth.

## 5 OTHER WORK

### 5.1 Maintenance instructions generally

Maintenance is of great importance for the reliability and lifetime of the incubator type 1 and its components. It is the responsibility of the user to detect irregularities in the operation of the machine and fix them in time. This will prevent, excessive wear of the components, and damage of incubator type 1. When preventive and /or corrective maintenance is carried out on Incubator type1 (depending on the work to be performed) the following actions are essential:

- Many accidents with machines happen during maintenance and repair. Therefore it is important that one follows the safety requirements . below three important safety instructions. These and the safety points from Chapter 2 should be observed.
  - *Very important: Disconnect the machine from the mains. This will prevent unexpected voltage Incubator type 1.*
  - *Think of your own safety and the safety of others Do not do things that can be considered unsafe*
  - *When a safety feature is to be removed for maintenance, place it back immediately after maintenance. Without all the safety features installed the incubator type 1 may not be connected to the mains.*

Preventive maintenance needs to be performed regularly, after every 1000 operating hours, but at least 1 time per year, the following activities must be carried out:

- The readability of the (possible) warnings, damage, and / or breakage.
- Inspection of all electrical cables and control panel for damage
- Thorough inspection of all parts for damage or defects, When in doubt, always replace components, or have them assessed by an expert.
- After the breeding season, store the incubator in a dry heated room, and remove the water from the machine. The machine must be returned to the manufacturer for repair once every 10 years.



*All worn out or beyond safe use damaged parts , must be replaced.*

## 5.2 Scrapping



The demolition must only be performed by qualified persons.

If the incubator type 1 is to be demolished the regulations for waste disposal , that apply at the time and place, should be taken into account.. The machine was built from generally known materials. At the time of construction waste treatment options consisted and risks for persons carrying out the scrapping where known.

## 6 MARKING ON THE MACHINE

### 6.1 Identification plate

For incubator type 1, the following data is mentioned on the identification plate:

EG-mark : CE  
name : MS Broedmachines  
adres : Margarethastraat 32 6014 AE Ittervoort  
serialnummer :  
year :

### 6.2 Warnings

See chapter 2 , Safety.

## 7 SPARE PARTS

The replacement of parts must be done efficiently and with *original spare parts*. MS Incubators has a construction file of all machines , containing all data of the machine.

Follow for fast and efficient processing of your order the following rules:

Provide the following information:

- **serialnumber**
- **which part**
- **place of the part**
- **nature of the breakdown**
- **contact person at your firm**

send your order to:

MS Broedmachines  
Margarethastraat 32  
6014 AE Ittervoort  
Nederland

Tel. 0475 568099

Fax. 0475 568155

E mail: [Info@broedmachine.nl](mailto:Info@broedmachine.nl)

Orders can also be placed thru our website: [www.broedmachine.nl](http://www.broedmachine.nl)

## 8 DECLARATION OF CONFORMITY

(According to Annex II.1.A of the machinery directive)

Concerning the Machinery Directive we,

MS Broedmachines, Margarethastraat 32, 6014 AE, Ittervoort, Nederland

Declare under our own responsibility:

We are the manufacturer of the product:

The incubator type 1 with Serial number:

--

230V/50Hz

Type	MS35	MS50	MS 80	MS 120	MS 160	MS 350	MS 700
M [kg]	15	17	17	22	27	35	60
P [W]	145	145	145	145	275	300	550
L [cm]	42.5	45	45	41	45	49	62
B [cm]	40.5	46	46	47	50	57	73
H [cm]	33	33	33	56	60	69	90

to which this declaration relates, is in accordance with the requirements of the following Directive (s):

- machinerichtlijn 2006/42/EG
- laagspanningsrichtlijn 2006/95/EG
- EMC richtlijn 2004/108/EG

The following harmonized standards have been applied:

- NEN-EN-ISO 12100
- NEN-EN 349
- NEN-EN 953
- NEN-EN-ISO 13857
- NEN-EN 60204-1

Place: Ittervoort

Date : 26-03-2013

Name : MS Broedmachines

Director: Ing. R.H.M. Rutten