



# **Operating Manual for HEKA-Incubators**

**Model: Heka-Format**



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## Preface

The purpose of this manual is to familiarise the reader with the incubator and provide instructions on use.

The operating manual contains important information for the safe, economic, and correct operation of the incubator. Compliance with this manual helps to avoid dangers, minimise repair costs and downtime, and increase the reliability and service life of the machine.

The operating manual is suitable for adding environmental protection regulations to the instructions on the basis of existing national accident prevention regulations.

The operating manual must always be kept at the place of deployment of the incubator. All individuals who are authorised to work with the incubator must read and observe the operating manual. This includes instructions in the following areas:

- Operation
- Troubleshooting
- Care and maintenance
- Transport

The operator must ensure that only authorised persons work with the incubator. The operator must check the incubator for externally visible damage and defects on a daily basis. Moreover, the operator must promptly report any changes that impair the safety. This also includes changes in the operating behaviour. The incubator may only be operated if its condition is flawless.

As a matter of principle, safety equipment must not be removed or disabled.

Should it be necessary to remove safety equipment during preparation, repair, or maintenance, the safety equipment must be reinstalled immediately upon completion of the maintenance or repair work.





The manufacturer does not assume any liability for damages resulting from unauthorised modification of the incubator.

All safety information and warnings on the incubator must be observed.

In addition to the information in the operating manual, the generally applicable safety and accident prevention regulations must also be complied with.

# Structure of the safety instructions

All safety instructions have a uniform structure:

Pictogram	Signal word		
		Meaning	Consequences of non-observance
 General danger	<b>Danger!</b>	Imminent danger to persons	Very severe to fatal injury
	<b>Warning!</b>	Potentially very dangerous situation for persons	Very severe to fatal injury
 Dangerous electric voltage	<b>Caution!</b>	Potentially dangerous situation for persons	Minor injury
	<b>Attention!</b>	Potential damage to property	Damage to the device
		Useful information or tip	

## Other notes in the operating manual

### Caution! Risk of injury due to hot surface!



Warning pointing to a risk of injury to the operator from hot surfaces.



Please read and observe the operating manual.



Disconnect the power plug before opening the device.

# General safety instructions!

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**Caution!** Non-observance of the following safety precautions can result in bodily injury or damage to the incubator.



Apart from the notes listed below, please also observe the general safety and accident prevention regulations.

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## **Read the operating manual!**

Do not start using the incubator until you have read the associated operating manual.

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- Do not operate the incubator on the ground. Keep a minimum distance of 50 cm from the ground!
- Do not use the incubator outdoors.
- Do not place the incubator in direct sunlight (counts also for storage and transport).
- Before connecting the incubator, compare the voltage of the power supply with the voltage on the type plate.
- In accordance with the intended use, the incubator may only be used to incubate eggs.
- Never operate the incubator if any part(s) are damaged, if it does not function properly, or if you suspect damage.
- Defective power cables may only be replaced by the manufacturer, its customer service, or a similarly qualified person.
- Maintenance work may only be performed by appropriately trained personnel.
- Repair work and special maintenance work may only be performed by authorised personnel (manufacturer's personnel) or appropriately trained personnel.
- Work on the electrical equipment may only be performed by qualified electricians and persons instructed in electrical engineering (see DIN VDE 0105).
- Working on live parts and equipment is not permitted.
- Conversion or modification of the incubator is not permitted.

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# 1 Description

The HEKA-Format incubator consists of a three-part structure:

The control compartment with the controls contains the incubator control unit.

The technology compartment contains the "technology" (fan and heater), and the lower part the incubation or hatching chamber with trays.

<p><b>Incubator</b></p> 	<p>Incubation or hatching B/S chamber</p> <p>E Electronics compartment T "Technology compartment" 0 Controls 6 Air vent 12 Incubation thermometer 11 Incubation or hatching tray 10 Turning mechanism (optional)</p>
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<p><b>Control elements (0)</b></p> 	<p>4 Power on 5 Interior light on 2 Indicator yellow = device on 1 Indicator red = heater is on 3 Temperature control</p>
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In the HEKA-Format with automatic turning, the motor is located at the back of the device.



- 8 Housing for turning motor
- 7 Turning motor cable

## 2 Setup and Connection

Set up the incubator at least 50 cm above the ground; do not set it up outdoors, in direct sunlight oder next to a heating. A power supply (230 V / 50 Hz) must be available at the installation site. The incubator must not be connected to an offgrid-inverter, which are used in autonomous power-supply like solar-electricity-power-supply

The ideal ambient temperate is 10°C - 20°C. However, smooth function is also guaranteed at an ambient temperature of 0°C - 25°C (with air-cooling up to 29°C, with water-cooling up to 40°C).

After setting up the device, check the incubation chamber and remove any items such as the thermometer and other accessories that were ordered and stored in the incubation chamber during transport. After removing all foreign items from the incubation chamber, you can connect the device to the mains.

## 3 Switching on the incubator

Use the switch (4) to switch the device on —> the yellow indicator (2) and the fan starts running. The indicator (1) lights up when the heater starts working. Use the knob (3) to adjust the temperature. The mark on the knob should point straight up, as this position is more or less suitable for the incubation temperature. The incubation temperature is reached after about 30 - 60 minutes, depending on the ambient temperature, and the red indicator (1) goes off. During this time, you can check the accuracy of the incubation thermometer.



### **Attention**

Until the incubator has reached and holds the correct, set temperature precisely, do not put eggs into the incubator !

### **Checking the temperature**

Temperature has been checked and calibrated in our factory. Nevertheless, for total safety checking the temperature might be reasonable (thermometer could have been damaged on transport).

To do this, immerse the incubation thermometer (12) and a calibrated clinical thermometer in a water tank with a temperature of about 38°C. Should you notice any deviation between the two thermometers, the difference must be added to or deducted from the incubation thermometer display. The incubation thermometer will work properly even if this needs to be done.

## **4 Setting the Temperature**

First, insert the checked thermometer in the holder and opening at the right side of the housing (7) of the incubator. Proceed with utmost care, as the thermometer is very fragile.

Before you start with the fine adjustment, you should wait several hours (one night, if possible) until the incubation trays and all parts of the device are fully heated.

Afterwards, you can start with the fine adjustment. This is done with the knob (5), the indicator (4), and the thermometer (7).

Turn the knob (5) to the right to increase the temperature; the red indicator (4) will light up. To reduce the temperature, turn the knob to the left.

Turn the adjustment knob carefully: a movement of 1 mm will increase or reduce the temperature by 1/10.



Generally, we recommend a temperature of 37,8°C. For incubating bantam, quails or pheasants (partly also duck and geese) we recommend 37,5-37,6°C - for raptors, parrots and parakeet a temperature of 37,0-37,2°C. If different (poultry-)eggs are incubated together, you should set a temperature of 37,7-37,8°C. Ostriches, rheas and nandus are an exception with much less temperature.



## 5 Adjusting the humidity

The required humidity is achieved by first filling **one** part of the three-part water tray supplied, and placing it at the centre of the incubator floor. The water tray needs to be topped up at least every 2nd day as the water evaporates.

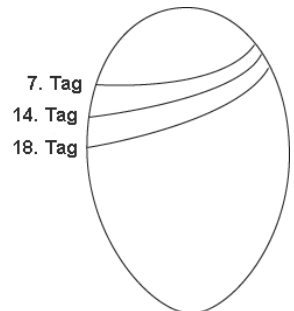
**Two days** before the planning hatching date, fill the second part of the water tray, and **one day** before hatching the third part of the water tray. After filling the second part of the tray, the humidity continually increases; after filling the third part, the required relative humidity in the incubator is reached.

For fine-adjustment of the humidity according to the instructions below open (humidity falls) or close (humidity raises) the air-vent (6) a bit more – but never close it completely! A first – most of the times suitable – adjustment of the air-vent to have it half-open.

### 5.1 Incubation humidity

Apart from the temperature, the incubation humidity plays a significant role for the incubation results. During incubation, every egg must lose weight. The weight loss must amount to at least 15% of the fresh egg. A weight loss of 17% is ideal. You can check this with a special accuracy weighing machine – breeders of very valuable (and thus mostly sensitive, difficult to incubate) animals weigh every single egg every day and adjust the humidity according to the weight-loss to come to 100% hatching success (the higher humidity, the less weight-loss; and vice versa).

With the weight-loss comes along a steadily growing air cell. This can be checked with a candling-lamp to adjust the humidity (if necessary; the less humidity, the bigger the air cell). The air cell must be steadily growing over the complete time of incubating – until shortly before hatching it takes about one-third of the egg.



*Fig.: Optimum size of the air cell in a chicken-egg (incubation-length: 21 days)*

Due to the different characteristics of the eggshell, a different humidity is necessary for various kinds of fowl to come to the right weight-loss

and size of the air cell. For example, a chicken egg (at the same humidity) loses weight much more slowly than a waterfowl egg.

The weight-loss even varies for chicken of different types, which means that the eggs normally should be incubated at different humidity levels. The weight loss is also determined by the size of the egg.

If the humidity is too high, the air-bulb remains too small and maybe does not even reach  $\frac{1}{4}$  of the egg. This unfavourable development leads to extremely poor hatching-result.

Thus, it is necessary to check the development of the air-bulb (or the weight-loss) continuously. As soon as you note, that the air-bulb is not growing steadily, the humidity must be lowered (i.e.: the air-vent must be opened more).



When you take eggs out of the incubator for weighing or candling and thus you switched on the light – don't forget to switch it off again.

Light should not be switched on (when door closed) longer than 5 minutes.

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## 5.2 Hygrometer as implemental (not included)

A hygrometer can be a useful implemental for measuring the humidity. However, the problem with using a hygrometer is that there are no calibrated values. Thus, hygrometers of different manufacturers always show different values of humidity. Basing on our hygrometers of the incubator-series "Standard" we recommend the following well-proven mean values, which experiential lead to very good hatching-results:

Chicken and bantam eggs	50 – 55 %
Goose eggs	55 – 60 %
Duck eggs	58 – 65 %
Pheasant eggs	45 – 53 %
Quail eggs	48 – 52 %
Ostrich eggs	19 – 23 %
Emu eggs	40 – 45 %
Rhea eggs	52 – 58 %

But please note, that there are also considerably outliers because of the characteristics of the eggshell (e.g. Marans: 40-45%) and/or the climate of their natural habitat (e.g. Crested-partridge 65-70%; Muscovy ducks 50-55%).

For parakeet and parrot eggs general recommendations are not possible, because the required humidity varies extremely. The required humidity depends on the location of their natural breeding areas (humid tropics or dry savanna). For incubating species from very arid/dry habitats normally you need a humidity as low as possible (viz.: no water in the incubator/water basin; air-vent(s) fully open). Only in the hatching stage the humidity is raised as normal.

## 6 Inserting the hatching eggs

After setting the correct humidity and temperature values, place the eggs (horizontal or slightly vertical with air cell on top) on the incubation trays in the incubator.

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### Attention!



Handle the hatching eggs with care. Hatching eggs are very sensitive, especially after the incubation process has started.

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Please make sure that the eggs are not too old (maximum 10-14 days). If you store the eggs more than 4-5 days: daily turn the eggs, don't store too dry, optimum temperature: 12-15°C.

## 7 Cooling the Eggs

The eggs can be cooled in two different ways. If you do not want to cool all eggs, you only need to take the incubation trays with the eggs to be cooled out of the device. Then close the door of the incubator immediately. If the door will/must be open longer than some seconds, switch off the incubator, while the door is open. An easier method would be to switch the incubator off for some time and open the door. In this case, all eggs are cooled. Generally, chicken eggs do not need to be cooled. Wildfowl and waterfowl eggs, however, must be cooled once a day.

Especially when incubating goose eggs, cooling is an important factor that has a decisive effect on the hatching result. The embryo is strengthened by the cooling. We recommend cooling goose eggs once a day from the 11<sup>th</sup> to the 27<sup>th</sup> incubation day (for species with incubation period of 30 days). The cooling time should be at least 30 minutes, though longer cooling phases (up to about 1 hour) are not detrimental.

## **8 Turning the Eggs**

### **8.1 Semi-automatic Turning**

Eggs can be turned from the first day without any effect on the hatching result. Chicken eggs must be turned from the third day after insertion, and duck and goose eggs from the fourth day. The eggs should be turned at least twice a day; three times would be even better. The eggs should be turned at equal intervals and at the same times (if possible).

In devices with semiautomatic turning, the eggs can be turned by drawing the turning trays out and pushing them back. Use a soft pen to mark the eggs with an "X" on one side and a "0" on the other. In this way, you can monitor the turning process.

### **8.2 Fully-automatic Turning (optional)**

In incubators with automatic turning, the eggs are turned automatically. The eggs are turned for 2 hours in one direction and then for 2 hours in the other direction. This process continues permanently, though the movement is not evident.

The motor for the turning mechanism is located in the housing attached to the back of the device. Please connect the plug of the power cord to the mains. Thus, the automatic mechanism is activated. We recommend activating the automatic mechanism on the day on which the eggs are inserted.

For checking the turning, use a soft pen to mark the eggs with an "X" on one side and a "0" on the other. In this way, you can monitor the turning process. Check the position of the eggs every 2-3 days (at not identical times). If the position of the eggs is exactly the same like when you checked last time, check again 2 hours later. If the position again has not changed, the turning does not work. Take away the wing-nut and the white connector and turn manually like described in chapter 5.1. For solving the problem of the fully-automatic turning, contact us.

If the fully-automatic turning is activated, the turning works continuously very slowly: 12 times a day - one turning within 2 hours.

## **9 Putting the Eggs into the Hatching Trays**

3 days before the date of hatching the eggs should be put into the hatching trays or into the hatcher; the eggs must not be turned anymore. Switch off the turning. In the hatching stage all eggs need a higher humidity than in the incubation stage. Humidity should be 20-25% higher than before in the incubation stage (e.g. from 53% to 73-78%). Raising of the humidity should be made in steps. First day 10% more, next day again 10% more – and when the chicks begin to come out of the eggs again some percentage more.



Don't raise the humidity to more than 90% - otherwise there's risk of chicks not drying and having water (condensed) on the bottom of the incubator. When the pane of a double-glass door begins to steam up, reduce the humidity a bit. Only for waterfowl and other eggs, which already needed very high humidity in the stage of incubating, it can be necessary or helpful to have such a high humidity (of 80-90%), that the double-glass pane begins to steam up.

If you use simple hatching trays (without cover), place them central, so that to the door and to the back you just have little space left. Nevertheless, with very agile chicks it can happen, that some hop over the edge of the hatching tray. To avoid risk of drowning in the water basin, cover the water basin with mesh-wire or net – or alternatively use our pedigree-hatching-trays with cover and partitions.

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## **10 Shutting-down after incubation**

When you have had hatching in the incubator and plan to put in eggs shortly, make at least a light maintenance and care according to chapter 11. Take out the water basin(s) and run the incubator without water until the humidity has fallen to that value, which you need for the next incubation stage.

If you don't plan to put in eggs shortly, make maintenance and care like described in chapter 11. Switch-on again the incubator after maintenance and care (without water in the water basins !) and run it until the humidity doesn't fall anymore. Depending on the room, weather conditions and season this will be 30-50%. Thus you avoid, that high humidity (from last hatching or from cleaning) remain in the incubator without possibility to really get it out while storage / until next incubation.

Afterwards switch off and unplug the incubator.

# 11 Maintenance and care

## 11.1 Incubation or hatching chamber of the device

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We recommend cleaning the hatching device or incubator thoroughly and disinfecting it after every major hatch.

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### Attention!



After disinfection, the incubator must be ventilated according to the manufacturer's instructions. We recommend waiting a few days before using the hatching device/incubator again.

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The incubation chamber and the incubation trays must be cleaned and disinfected regularly. To do this:

- Open the hatching device/incubator
- Take out the water tray and remove incubation dust, incubation dirt, and other residue from the water tray.
- Remove the hatching/incubating trays
- Clean and disinfect the hatching/incubating chamber and the hatching/incubating trays (with “Amo-Des” or “Euphagol”)
- Reinstall the hatching/incubating trays
- Put in again the water basin

## 11.2 Technical Compartment

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**Disconnect the power plug before opening the cover.**

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### Caution! Dangerous voltage!



Before cleaning, disconnect the power plug to make sure no voltage is present.

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### Caution! Danger of injury from hot surface!



Before opening the lid, wait for approximately 10 minutes until the heating elements have cooled off.

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Regularly clean and disinfect the "technology compartment" under the lid:

- Unscrew the screws at each corner of the incubator cover (total of four).
- Lift the lid, exerting slight pressure.
- Remove incubation dust, incubation dirt, and residue
- Disinfect the hatching device/incubator (with “Amo-Des” or “Euphagol”)

- Close the lid.
- Re-tighten the screws.

### 11.3 Replacing the power cable

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#### Attention!



Defective power cables may only be replaced by the manufacturer, its customer service, or a similarly qualified person.

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## 12 FAQ – frequent questions

- "Why do I need to install the device 50cm above floor level?"  
→ To protect it against flooding.

## 13 Disposal



**WEEE reg. no.:**  
**DE 96968236**

The sticker with the crossed out wheeled bin on this product indicates that this product must not be disposed of as domestic waste. To avoid a potential impairment of the environment or human health, this product must not be treated as domestic waste but must be recycled in an eco-friendly manner.

For information concerning disposal, please contact the manufacturer of the product. We will have your product collected by a forwarding agent.

HEKA-Brutgeräte      Tel: +49 5244 1718  
Langer Schemm 290      Fax: +49 5244 10159  
D-33397 Rietberg



## 14 CE Declaration of Conformity

**Manufacturer** HEKA-Brutgeräte  
address Langer Schemm 290 D-33397 Rietberg,  
Germany

**hereby declares that the**

Product HEKA-Standard  
Models HEKA Format

**is in conformity with the following directives:**

98/37/EC Machinery Directive  
73/23/EEC Low Voltage Directive  
2004/108/EC EMC Directive

The following standards were applied to assess the conformity:

DIN EN ISO 12 000-1  
DIN EN ISO 12 000-2  
DIN EN 60 204-1  
DIN EN 60 335-1  
DIN EN 60 335-2-71



The conformity of the products with the above-mentioned standards and directives is confirmed with the CE mark.

A handwritten signature in cursive script, appearing to read 'Ch. Hemel'.

Rietberg, 20 August  
2006

Ch. Hemel

## **15 Appendix: Analysis of mistakes at incubation / bad hatching**

Normally, 5-10% of the eggs are unfertilized. If less than 70-80% of the remaining chicks hatch, you should analyse the reason(s) to have better success at next hatching. Analysing the symptoms first of all allow the following conclusions (further reading in specialized books), whereof “too high humidity in incubating stage” is the absolutely most frequent mistake.

### **Mostly died in first week:**

Wrong storage of eggs, parental predisposition, virus infection, incubation-temperature much too high/low, no turning, (too long) cooling of eggs

### **Mostly died in second week (without huge loss in first week):**

Huge parental vitamin deficiency, infection in incubator, overheating or undercooling at candling, too high (seldom: too low) humidity at incubation, oxygen deficiency

### **Mostly died in third week before beginning of respiration by lung (without huge loss before):**

All a.m. factors, especially too high or too low humidity in incubation stage

### **Died at hatching, eggshell circular scored:**

Too low humidity at hatching stage

### **Died at hatching, eggshell pierced (central or astride; liquid leaves at pierced point):**

Too high humidity at hatching stage

### **Hatched chicks stick at eggshell:**

Too low humidity (especially at hatching stage)

### **Hatched chicks are clammy:**

Too high humidity at incubation stage

### **Hatched chicks uncleanly cut the cord:**

Too high temperature or oscillations in temperature

### **Hatched chicks with stressed respiration:**

Too high humidity in incubation stage, too less humidity at hatching stage, temperature too high at hatching stage

### **Hatched chicks malformed:**

Temperature too high/low or oscillating, heredity

## 16 Appendix: Incubation Periods

### Domesticated Birds:

Bantam:	19-21 Days
Chicken:	21 Days
Ducks:	28 Days
Geese:	28-35 Days
Guineafowl:	27 Days

Muscovy Ducks:	35 Days
Peacocks (all species):	28 Days
Pigeons:	16-18 Days
Turkeys:	28 Days

### Wild Birds

Mallards:	25-26 Days
Partridges:	23 Days
Pheasants:	24 Days

Quails:	23 Days
Vulturine Guineafowl:	23-24 Days

### Flightless Birds

Emu:	57-62 Days
Rhea:	35-40 Days

Ostrich:	35-42 Days
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### Pheasants

Alectoris:	23-26 Days
Amherst's Pheasant:	23 Days
Arborophila:	20-24 Days
Barbary Partridge:	25 Days
Black Francolin:	18-19 Days
Blood Pheasant:	28 Days
Blue Eared Pheasant:	26-28 Days
Brown Eared Pheasant:	26-27 Days
Bulwer's Pheasant:	25 Days
Copper Pheasant:	24-25 Days
Crested Argus:	25 Days
Crested Fireback:	24-25 Days
Crestless Fireback:	24-25 Days
Cheer Pheasant:	26 Days
Edward's Pheasant:	21-23 Days
Elliot's Pheasant:	25 Days
Gallopheasants:	23-25 Days
Golden Pheasant:	23 Days

Great Argus:	25 Days
Himalayan Snowcock:	27-28 Days
Hume's Pheasant:	27 Days
Junglefowl:	19-21 Days
Koklass Pheasant:	21-23 Days
Lewis's Silver Pheasant:	23 Days
Mikado Pheasant:	26-28 Days
Monals:	27 Days
Peacock-Pheasants:	21-22 Days
Red-legged Partridge:	23-24 Days
Reeves's Pheasant:	24-25 Days
Salvadori's Pheasant:	22-25 Days
Sand Partridge:	27 Days
Silver Pheasant:	25 Days
Sri Lankan Junglefowl:	18 Days
Swinhoe's Pheasant:	25 Days
Tragopans:	28 Days
White Eared Pheasant:	24 Days

### Quails

Banded Quail:	21-23 Days
Bearded Tree Quail:	28 Days

Montezuma Quail:	25-26 Days
Mountain Quail:	24-25 Days

Brown Quail:	20-22 Days	New Zealand Quail:	21 Days
California Quail:	22-23 Days	Northern Bobwhite:	21 Days
Crested Bobwhite:	22-23 Days	Painted Bush Quail:	16-18 Days
Crested Partridge:	18-20 Days	Rain Quail:	18-19 Days
Harlequin Quail:	14-16 Days	Scaled Quail:	23 Days
Japanese Quail:	18 Days	Spot-Winged Wood-Q.:	18-19 Days
King Quail:	18 Days	Yucatan Bobwhite:	23-24 Days
Long Tailed Quail:	28 Days		

### **Grouse**

Black Grouse:	26 Days	Ruffed Grouse:	24 Days
Dusky Grouse:	25 Days	Sharp-tailed Grouse:	24-25 Days
Greater Prairie Chicken:	24-25 Days	Spruce Grouse:	21-22 Days
Hazel Grouse:	25 Days	Western Capercaillie:	26-28 Days
Red Grouse:	22 Days	Willow Ptarmigan:	23 Days
Rock Ptarmigan:	20-21 Days		

### **Swans**

Bewick's Swan:	30 Days	Mute Swan:	37 Days
Black-necked Swan:	36 Days	Trumpeter Swan:	33 Days
Black Swan:	36 Days	Tundra Swan:	36 Days
Coscoroba Swan:	35 Days	Whooper Swan:	36 Days

### **Geese**

Bar-headed Goose:	28 Days	Hawaiian Goose:	29 Days
Barnacle Goose:	28 Days	Lesser White-fronted G.:	25 Days
Brant:	22 Days	Pink-footed Goose:	28 Days
Canada Goose:	28 Days	Red-breasted Goose:	25 Days
Emperor Goose:	24 Days	Ross's Goose:	23 Days
Fighting Geese:	28-31 Days	Snow Goose:	25 Days
Greater White-fronted Goose:	26 Days	Taiga Bean Goose:	25-29 Days
Greylag Goose:	28 Days	Toulouse Goose:	30 Days

### **Anserinae**

Andean Goose:	30 Days	Kelp Goose:	32 Days
Ashy-headed Goose:	30 Days	Orinoco Goose:	30 Days
Blue-Winged Goose:	31 Days	Ruddy-headed Goose:	30 Days
Egyptian Goose:	30 Days	Upland Goose:	30 Days
Freckled Duck:	26-28 Days		

**Whistling Ducks**

Black-bellied Whistl. Duck:	28 Days
Fulvous Whistling Duck:	28 Days
Lesser Whistling Duck:	28 Days
Plumed Whistling Duck:	30 Days

Spotted Whistling Duck:	31 Days
Wandering Whistl. Duck:	30 Days
West Indian Whistl. Duck:	30 Days
White-faced Whistl. Duck:	28 Days

**Anatidae**

Cape Barren Goose:	30 Days
Radjah Shelduck:	30 Days

Ruddy Shelduck:	30 Days
Shelduck:	30 Days

**Perching Ducks**

Australian Wood Duck:	30 Days
Knob-billed Duck:	30 Days

Mandarin Duck:	32 Days
Wood Duck:	32 Days

**Eider Ducks**

Common Eider:	24 Days
King Eider:	22 Days

Spectacled Eider:	24 Days
Steller's Eider:	24 Days

**Teals**

Baikal Teal:	24-28 Days
Blue-winged Teal:	24 Days
Brazilian Teal:	25 Days
Bronze-winged Duck:	30-31 Days
Brown Teal:	28 Days
Cape Teal:	25 Days
Chestnut Teal:	26 Days
Cinnamon Teal:	24 Days
Garganey:	24 Days
Green-winged Teal:	24 Days

Grey Teal:	25 Days
Hottentot Teal:	24 Days
Marbled Duck:	25 Days
Puna Teal:	26 Days
Red-billed Teal:	25-28 Days
Ringed Teal:	24-28 Days
Sharp-winged Teal:	24 Days
Silver Teal:	25 Days
Yellow-billed Teal:	24 Days

**Shovelers**

Australian Shoveler:	24 Days
Cape Shoveler:	26 Days
New Zealand Shoveler:	26 Days

Nordic Shoveler:	25 Days
Red Shoveler:	25 Days
Shoveler:	26 Days

**Wigeons**

American Wigeon:	24 Days
Chiloé Wigeon:	26 Days
Eurasian Wigeon:	25 Days

Falcated Duck:	25 Days
Gadwall:	26 Days

<b>Oxyurinae</b>			
Masked Duck:	24 Days	White-backed Duck:	26 Days
Ruddy Duck:	24 Days		
<b>Mergansers</b>			
Goosander:	30 Days	Red-breasted Merganser:	30 Days
Hooded Merganser:	28 Days	Smew:	28 Days
<b>Goldeneyes</b>			
American Goldeneye:	28 Days	Eurasian Goldeneye:	28 Days
Bufflehead:	22 Days	Barrow's Goldeneye:	30 Days
<b>Pintails</b>			
Chilean Pintail:	25 Days	White-cheeked Pintail:	25 Days
Northern Pintail:	22-23 Days	Yellow-billed Pintail:	25-26 Days
<b>Mallards</b>			
African Black Duck:	28-30 Days	Mottled Duck:	26 Days
American Black Duck:	26 Days	Pacific Black Duck:	26 Days
Hawaiian Duck:	26 Days	Philippine Duck:	26 Days
Indian Spot-billed Duck:	26 Days	White Pekin:	28 Days
Laysan Duck:	26 Days	Yellow-billed Duck:	27 Days
Mallard:	26 Days		
<b>Pochards</b>			
Baer's Pochard:	27 Days	Red-crested Pochard:	27 Days
Canvasback:	26 Days	Redhead:	28 Days
Common Pochard:	27 Days	Ring-necked Duck:	23-26 Days
Ferruginous Duck:	26 Days	Rosy-billed Pochard:	28 Days
Greater Scaup:	24-28 Days	Southern Pochard:	26 Days
New-Zealand Scaup:	26 Days	Tufted Duck:	25 Days
<b>Scoters</b>			
Common Scoter:	28 Days	Long-tailed Duck:	23 Days
Harlequin Duck:	30 Days	Velvet Scoter:	28 Days
<b>Doves</b>			
Collared Dove:	14 Days	Galápagos Dove:	16 Days
Common Ground Dove:	12-14 Days	Gallicolumba:	15 Days
Common Wood Pigeon:	15 Days	Laughing Dove:	13 Days
Crested Pigeons:	17-19 Days	Mourning Dove:	15 Days

Diamond Dove: 13 Days  
 Domestic Pigeon: 17 Days  
 Eurasian Collared Dove: 16 Days  
 European Turtle Dove: 14 Days

Namaqua Dove: 14-15 Days  
 Rock Dove: 17 Days  
 Western Crowned Pigeon: 28 Days

**Parrots / Parakeets / Oscine Birds**

Amazonas Parrots: 24-29 Days  
 Black-Capped Lory: 23-26 Days  
 Blue-and-yellow Macaw: 28 Days  
 Blue Eyed Cockatoo: 28 Days  
 Blue-winged Macaw: 24-26 Days  
 Budgerigar: 18 Days  
 Citron-crested Cockatoo: 24 Days  
 Domestic Canary: 13 Days  
 Galah: 23 Days  
 Gang-gang Cockatoo: 25-27 Days  
 Grey Parrot: 26-30 Days  
 Hyacinth Macaw: 24-29 Days  
 Large Parrots: 23-25 Days  
 Little Corella: 29 Days  
 Long-billed Corella: 29 Days  
 Macaws: 26-28 Days

Major Mitchell's Cockatoo: 27 Days  
 Medium Parrots: 18-20 Days  
 Red-tailed Black Cockat.: 28 Days  
 Red-vented Cockatoo: 28 Days  
 Salmon-crested Cockatoo: 30 Days  
 Scarlet-chested Parrot: 18 Days  
 Solomon Island Parrot: 28-30 Days  
 Sulphur-crested Cockatoo: 30 Days  
 Sun parakeet: 26 Days  
 Tanimbar Corella: 28 Days  
 Western Corella: 23-24 Days  
 White Cockatoo: 28-30 Days  
 Yellow-crested Cockatoo: 24 Days  
 Yellow-naped Amazon: 25-27 Days  
 Yellow-tailed Black Cock.: 29 Days

**Birds of Prey / Owls**

Amur Falcon: 28-30 Days  
 Barn Owl: 32 Days  
 Black Kite: 32 Days  
 Common Kestrel: 30 Days  
 Eurasian Eagle-owl: 33 Days  
 Eurasian Pygmy Owl: 28-30 Days

Gyrfalcon: 30-32 Days  
 Northern Goshawk: 35-37 Days  
 Peregrine Falcon: 34 Days  
 Red Kite: 35 Days  
 Tawny Owl: 32 Days

**No responsibility is taken for the correctness of this information!**

**You are welcome to tell us corrections and additions!**

