



User Manual

E093 SMARTBOW Eartag



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IMPORTANT
READ CAREFULLY BEFORE USE!
KEEP THE MANUAL FOR FUTURE CONSULTATION!

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Table of content

1	Introduction	5
1.1	General Information	5
1.2	Trademarks, Copyright and Disclaimer	5
2	Electromagnetic Compatibility (EMC)	8
2.1	Europe	8
2.2	USA	8
2.2.1	User Information acc. to FCC15.21:	8
2.2.2	Statement for Class B digital device acc. to FCC 15.105	8
2.3	Canada	8
2.3.1	Statement acc. RSS Gen Issue 3, Sect. 7.1.3	8
3	Safety	9
3.1	Safety Labels	9
3.2	Signal words and their meaning	10
3.3	Operating states	11
3.4	Electrical safety	11
3.5	Operation	12
3.6	Repair and Service	12
3.7	Transport	13
3.8	Batteries	13
3.9	Magnetic fields	14
3.10	Waste disposal/Environmental protection	14
3.11	Position of safety labels	15
3.11.1	Eartag applicator SMARTBOW	15
3.11.2	Eartag scissors	15
3.11.3	Eartag magnetic key	15
4	The SMARTBOW Eartag	16
4.1	General product information	16
4.2	Scope of supply	17
4.3	Technical Data	18
4.4	Modification on the SMARTBOW Eartag	19
4.5.1	General warranty conditions	19
4.5.2	Warranty coverage	20
4.5.3	Warranty exclusion	20
4.5.4	Support Hotline	20
5	Installation	21

5.2	Mounting the SMARTBOW Eartag	23
5.3	Removing the SMARTBOW Eartag	24
5.4	Instruction for replacing the thorn and the battery	25
6	Equipment, spare parts	26
6.1	Equipment	26
6.1.1	SMARTBOW Eartag key without magnet	26
6.1.2	SMARTBOW Eartag key with magnet	26
6.1.3	SMARTBOW Eartag applicator	27
6.1.4	Eartag scissors	27
6.2	Spare parts	28
6.2.1	Thorn exchange set	28
6.2.2	Battery exchange set	28
6.3	List of available equipment	29
7	Transport and storage	30
7.1	Transport	30
7.2	Storage	30
7.3	Cleaning	31
8	Trouble Shooting	31
9	Waste	32
10	Support	34
11	Lists	35
11.1	List of figures	35
11.2	List of tables	36
12	GLOSSAR	36
13	List of includes amendments	37

1 Introduction

1.1 General Information

Welcome to the SMARTBOW manual. We are happy that you have decided to buy our solution.

You will find the technical information, operating instructions and instructions for maintenance and fault elimination. Read this information carefully before operating the SMARTBOW system and make sure you are familiar with it. Non-observance may result in injury or damage to the system. If there is an unclear point or if you would like more information, please contact our support team. Please read through the warranty conditions to know your rights and obligations.

Keep the manual within range, to be able to use it immediately.

1.2 Trademarks, Copyright and Disclaimer

SMARTBOW is a registered trademark of MKW electronics GmbH.

The exclusive right of use underlies the company MKW electronics GmbH. All rights reserved.

The statements contained in this publication are only for information and should not be understood as a sale offer. Certain products may not be available in some countries and the delivered products may differ from those shown in the pictures. Neither this edition nor parts of it may be copied or published by print or any other means without the written permission of MKW electronics GmbH (in the following MKWE).

The content of this publication has been compiled with the utmost care. Nevertheless MKWE is not liable for any damages that may arise from errors or omissions in this publication.

The German manual is the original manual. Translations into other languages are based on the German manual as a source document. MKWE is not liable for discrepancies between the original German manual and versions in other languages. In case of conflicts in the content and accuracy of translated manuals, the German manual is the reference document.

The compliance to this manual as well as the conditions and methods of installation, operation, use and maintenance of the system cannot be monitored by the manufacturer. Improper installation can cause damages to material and persons. Therefore, we assume no responsibility or liability for any loss, damage or costs arising from incorrect installation, improper operation or incorrect usage and maintenance which are associated in any way. We

also assume no responsibility for patent infringements or violations of the rights of third parties arising from the use of this system.

For improvement in terms of design, operation, and/or reliability MKWE reserves the right to modify the products described in this document without prior notice. MKWE rejects from all liability related with the use or application of the product described here.

All SMARTBOW products have been developed to assist farmers in their daily work with their herd as good as possible. Because of variations in farm management, MKWE cannot be responsible for the economic results of each individual farm.

As soon as it becomes evident that safe operation is no longer possible (e.g. if there is visible damage), remove the system immediately from power supply.

1.3 We ask for your feedback

All information of this manual has been compiled with the utmost care. The recommendations are intended as guidelines. The instructions, illustrations and specifications in this manual are based on the current information available at the time of publication. Your SMARTBOW system may contain improvements and equipment or options that are not covered in this manual. New information based on the feedback from our customers, are continuously updated and expanded.

We hope SMARTBOW fits your expectations and we like to receive your feedback (please send an email to support@smartbow.at or call +43 (0) 7732 3711-175).

The SMARTBOW Team

2 Electromagnetic Compatibility (EMC)

2.1 Europe

For additional regulatory information, see the Regulatory Compliance homepage on www.smartbow.at at the following location <http://www.smartbow.at/en/legal.html>

2.2 USA

2.2.1 User Information acc. to FCC15.21:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2.2.2 Statement for Class B digital device acc. to FCC 15.105

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

2.3 Canada

2.3.1 Statement acc. RSS Gen Issue 3, Sect. 7.1.3

This device complies with Part 15 of the FCC Rules and with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

3 Safety

3.1 Safety Labels

The following safety labels are used on the different SMARTBOW products to warn against risks and dangers.

	Warning of a magnetic field
	Hazards due to batteries
	Risk of hand injury
	European-label for the separate collection of electrical and electronic appliances Further information in chapter 9 Disposal

The security labels on your product show important and useful information, which will help you to use and maintain the SMARTBOW Eartag safely. Follow to the instructions below to ensure that all labels remain in perfect condition and in the right place.

Make sure that the safety labels are always clean and legible. Do not use solvents, scouring agents or other comparable cleaning agents which could damage the sticker.

Replace lost or illegible safety stickers.

Safety labels can be obtained from the MKWE support.

3.2 Signal words and their meaning

The following signal words are used in the manual in order to warn the reader about risks and dangers.



DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury



CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor, moderate or serious injury.



ATTENTION

Indicates information considered important, but not hazard-related, e.g. information relating to possible property damage.

These signal words are in accordance with the standard definition for civil applications in the European Economic Area. Definitions that deviate from the standard definition may also exist in other economic areas or military applications. It is therefore essential to make sure that the signal words described here are always used just with the related product documentation and the related product. The use of signal words in connection with unrelated products or documentation can result in misinterpretation and in personal injury or material damage.

3.3 Operating states

The SMARTBOW Eartag may be operated only under the operating conditions and the positions specified by the manufacturer. Applicable local or national safety regulations and rules for the prevention of accidents must be observed in all work performed.

The Eartag is exclusively produced for mounting on farm animals. In particular, the manufacturer allows the use of SMARTBOW® Eartag for all categories of cows, e.g. milking cows, beef cattle, calves and breeding pigs. Any other use is only permitted with a written permission of MKW electronics GmbH.

Do not place the Eartag on heat-generating devices such as radiators or fan heaters and do not expose it to direct sunlight. The ambient temperature must not exceed the maximum temperature specified in the product documentation or in the data sheet. Product overheating can damage the Eartag.

3.4 Electrical safety

Unless expressly permitted, never remove the cover or any part of the housing while the SMARTBOW Eartag is in operation. Doing so will expose circuits and components and can lead to injuries, fire or damage to the Eartag.

Any object that is not designed to be placed in the openings of the housing must not be used for this purpose. Doing so can cause damage to the Eartags.

Unless specified otherwise, the Eartag is protected against the ingress of liquids. When the battery compartment is opened it must be protected against penetration by liquids. If the necessary precautions are not taken the Eartag may be damaged.

Do not use the Eartag under adverse environmental conditions such as

- dust
- inflammable gases, vapours and solvents
- strong vibrations

An operation under the conditions described above may damage the Eartags.

Prior to cleaning the Eartags, disconnect it completely from the power supply (e.g. battery). Use a soft, non-lining cloth to clean the product. Never use chemical cleaning agents such as alcohol, acetone or diluents for cellulose lacquers.

3.5 Operation

In some countries there are laws about digital positioning and tracking of people, animals and/or objects. Only the user is responsible not to violate such laws or regulations.

Before you start processing the SMARTBOW Eartag mechanically and/or thermally or before you disassemble it, be sure to read and pay special attention to the chapter 9 "Waste disposal".

Depending on the function, the Eartag can produce an elevated level of electromagnetic radiation, which is within the range of the legal standards. Considering that unborn babies require increased protection, pregnant women must be protected by appropriate measures. Persons with pacemakers may also be exposed to risks from electromagnetic radiation. The employer/operator must evaluate workplaces where there is a special risk of exposure to radiation and if necessary, take measures to avoid the potential danger.

Should a fire occur, the Eartag may release hazardous substances (gases, fluids, etc.) that can cause health problems. Therefore, suitable measures must be taken, e.g. protective masks and protective clothing must be worn.

3.6 Repair and Service

Adjustments, replacement of parts and repair may be performed only by electrical experts authorized by MKWE. Only original parts may be used for replacing parts. A safety test must always be performed after parts have been replaced (visual inspection, functional test). This helps to ensure the continued safety of SMARTBOW Eartags.

3.7 Transport

The packaging of the Eartags protects the housing and in particular the thorn for drawing the ear tag, from damage.

If you have to return Eartags to MKWE, they should be packed so that external influences cannot cause damage to the board.

3.8 Batteries

In the SMARTBOW Eartag a Panasonic CR 2477 button cell battery is implemented, with respect to which, the following safety guidelines have to be applied.

Cells must not be disassembled, opened or crushed.

Cells or batteries must not be exposed to heat or fire. Storage in direct sunlight must be avoided. Keep cells and batteries clean and dry. Clean soiled connectors using a dry, clean cloth.

Cells or batteries must not be short-circuited. Cells or batteries must not be stored in a box or in a drawer where they can short-circuit each other, or where they can be short-circuited by other conductive materials. Cells and batteries must not be removed from the original packaging until they are ready to be used.

Cells and batteries must not be exposed to any mechanical shocks that are stronger than permitted.

If a cell develops a leak, the fluid must not be allowed to come into contact with the skin or eyes. If contact occurs, wash the affected area with plenty of water and seek medical aid.

Button batteries must be kept away from children. If a battery is swallowed consult a doctor immediately.

Improperly replacing or charging cells or batteries that contain alkaline electrolytes (e.g. lithium cells) can cause explosions. Replace cells or batteries only with the matching MKWE type (see parts list) in order to ensure the safety of SMARTBOW Eartags.

Cells and batteries must be recycled and kept separate from residual waste. Observe the national regulations regarding waste disposal and recycling.

3.9 Magnetic fields

Please be aware that magnetic fields delete data media (diskettes, hard disks, USB flash drives, digital cameras, check cards, credit cards, audio and video cassettes) and can affect or destroy electronic and mechanical components, e.g. pacemaker monitors, compasses, counters, etc. In any case keep a safety distance of about 1 meter.

Do not use the magnets in locations where they are exposed to high heat ($> 80^{\circ}\text{C}$).

Magnetic fields of permanent magnets have, according to present knowledge, no measurable positive or negative influence on people. A health risk due to the magnetic field of a permanent magnet is unlikely but cannot be completely excluded. A health risk due to the magnetic field of a permanent magnet is unlikely but cannot be completely excluded.

3.10 Waste disposal/Environmental protection

The SMARTBOW Eartag has a battery that must not be disposed of with unsorted municipal waste, but must be collected separately. It may only be disposed of at a suitable collection point or via MKWE.

Waste electrical and electronic equipment must not be disposed of with unsorted municipal waste, but must be collected separately.

If products or their components are mechanically and/or thermally processed in a manner that goes beyond their intended use, hazardous substances (heavy-metal dust such as lead, beryllium, nickel) may be released. For this reason, the product may only be disassembled by specially trained personnel. Improper disassembly may be hazardous to your health. The national waste disposal regulations must be observed.

3.11 Position of safety labels

3.11.1 Eartag applicator SMARTBOW

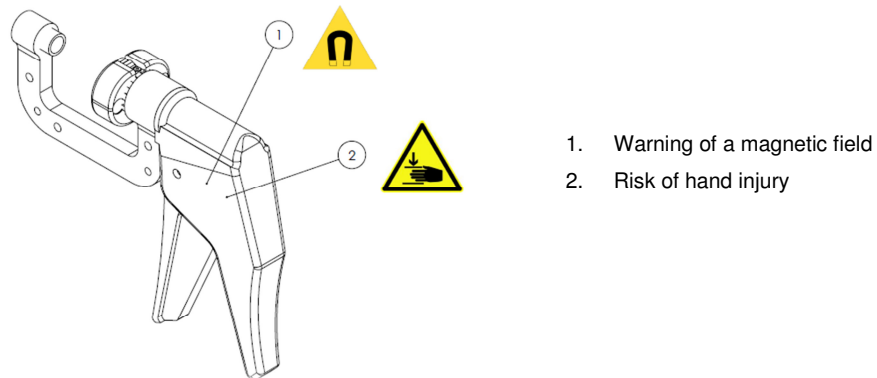


Figure 1: Safety labels Eartag applicator

3.11.2 Eartag scissors

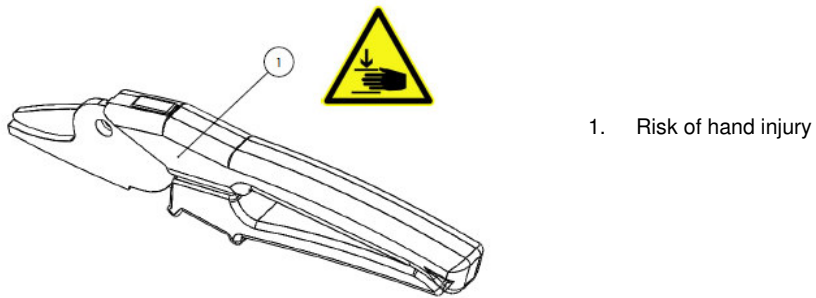


Figure 2: Safety labels Eartag scissors

3.11.3 Eartag magnetic key



Figure 3: Safety labels Eartag magnetic key

4 The SMARTBOW Eartag

4.1 General product information



Figure 4: SMARTBOW Eartag

The SMARTBOW Eartag is attached to the animal's ear by using the applicator. Through radio signals the position of Eartags is determined in the barn. The communication and data exchange between the Eartags and the SMARTBOW station operates via the SMARTBOW Wallpoints in the barn or outdoor area

The SMARTBOW Eartag consists of the following components:

- Housing incl. electronics and battery contacts
- Panasonic CR 2477 button cell battery
- Battery cover with O-ring and thorn
- Female part

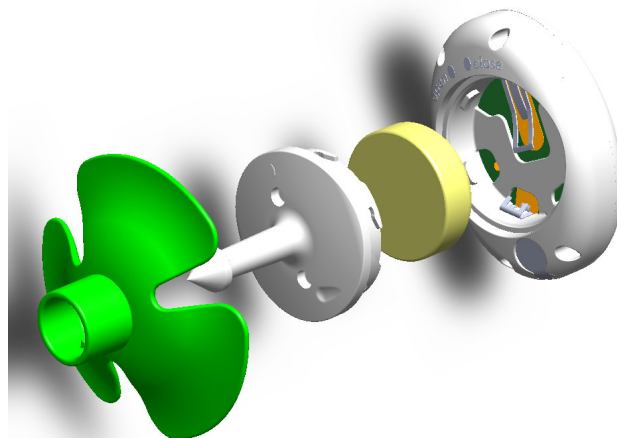


Figure 5: Eartag components

In the Eartag various components for monitoring the animals are integrated. Their values are passed by radio in the 2,4 GHz ISM band via the SMARTBOW® Wallpoints to the SMARTBOW® Station for evaluation:

- Radio chip
- Acceleration sensor (to detect patterns such as heat, rumination, etc.)
- Temperature sensor (for measuring the ambient temperature)

The activation of Eartags is contactless via an internal reed contact.

Special attention was paid on the form of the housing, to avoid that the cow tears out the Eartag in the stabling, at games or scratching. In addition, the Eartag was designed light, small and compact. The housing of the SMARTBOW Eartags fulfils the protection class IP 68.

The SMARTBOW Eartag can be removed without damage by the SMARTBOW Eartag scissors and reused for another animal. Only the female part, the battery cover with the thorn and if necessary the battery has to be replaced. A replacement kit can be obtained from MKW electronics GmbH.

4.2 Scope of supply

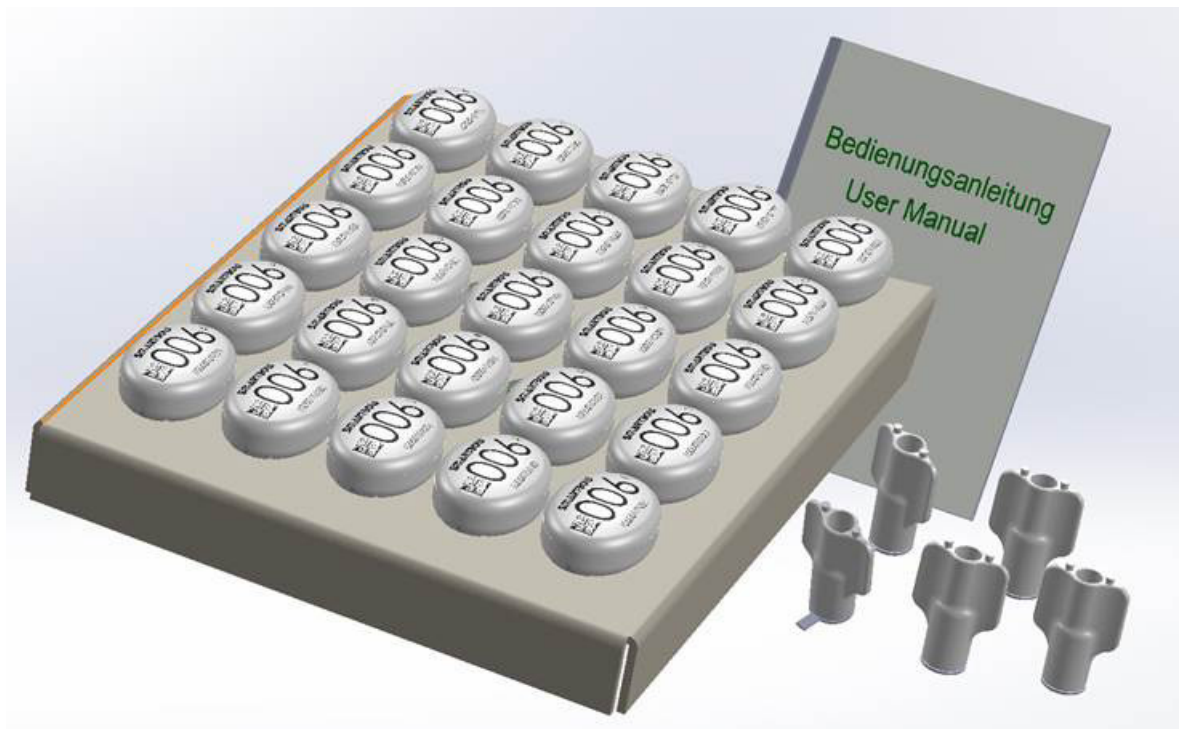


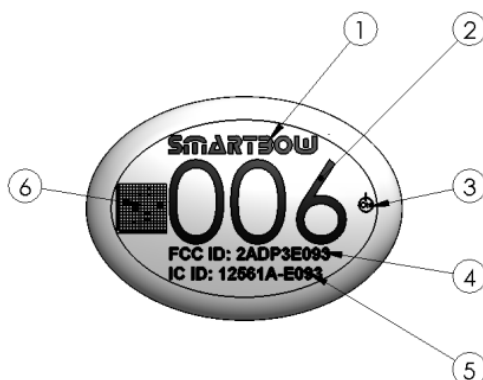
Figure 6: Scope of supply

The scope of supply includes the SMARTBOW Eartags, 5 pcs. SMARTBOW Eartag magnetic keys and a user manual.

4.3 Technical Data

Type	SMARTBOW Eartag V9.3
Power supply	Battery Panasonic CR2477, 1000mAh,exchangeable
Battery lifetime	about 2 years ¹
Transmission frequency	1 - 1/3600Hz
Typical indoor range	300m, line of sight
Typical location accuracy	80% < 1m ²
Location accuracy average all measurements	1,21m ³
Resolution	1cm
Measuring range acceleration sensor	±2g
Operating temperature	-20 to +60°C
Storage temperature	0 to 35°C
Dimensions (l x w x h)	52 x 36 x 17mm
Weight	34,1g
Protection class	IP68

Table 1: Technical Data SMARTBOW Eartag



1. Original manufacturer's mark
2. Customised tag-ID
3. Mark of the activation point
4. FCC ID
5. IC ID
6. Data Matrix Code

Figure 7: Eartag labelling elements

¹ Depending on the activity of the animal, the update rate and the environment

² Conditions defined by MKW electronics GmbH

³ Conditions defined by MKW electronics GmbH

4.4 Modification on the SMARTBOW Eartag

MKW electronics GmbH approves the change of thorns and batteries by the customer only by using the intended original spare parts as listed in chapter 6.2 spare parts.

MKW electronics GmbH doesn't approve any modifications on the products that are made by unauthorized persons. Modifications can have negative effects on the quality and proper function of the products of MKW electronics GmbH.

4.5 General and special warranty conditions

4.5.1 General warranty conditions

These general warranty conditions apply only in connection with the general terms and conditions of sale (GTC) of MKW electronics GmbH (in short MKWE) at the purchasing moment of the Eartag. The current version of the GTC is visible on the homepage of MKWE (<http://www.mkwe.at>).

The warranty always begins on the date of transfer of the SMARTBOW® Eartags bought from MKWE or an authorized seller of MKWE and refers to any material or production damage, which may occur while normal using. The warranty period is derived from the proof of purchase.

Please keep the original proof of purchase in a safe place. MKWE and its authorized service partners reserve the right to refuse a warranty repair or a warranty confirmation if a proof cannot be provided.

If you have to return a SMARTBOW Eartag please make sure that it is packed securely.

Please send us with the SMARTBOW Eartag a detailed description of the problem. In order to assert your claims or before sending, please contact the MKWE Support.

The SMARTBOW Eartag always has to be sent completely, that means with all parts from the scope of supply. An incomplete reception of shipment will delay the repair / exchange. MKWE does not take over any liability for additionally sent materials, which do not belong to the original scope of supply.

This warranty does not have any effect on your existing statutory warranty claims and is subject to the laws of the country, in which the SMARTBOW Eartags were bought by the end customer from the authorized distributor and is valid only in this country.

4.5.2 Warranty coverage

In case of a fault in your SMARTBOW Eartag covered by this warranty, MKWE ensures the repair or the replacement of the SMARTBOW Eartag. The decision whether to repair or replace the Eartag will be made by MKWE. For this reason MKWE will decide if the sent SMARTBOW Eartag will be replaced in the same quality and function.

We assume no guarantee for batteries and rechargeable batteries; the same applies for expendable materials, which mean parts which must be replaced at regular intervals, such as thorns.

If it turns out during the repair, that it is an error that is not covered by warranty, MKWE reserves the right to charge a handling fee as well as the costs for the repair (material and labour) which refers to an estimate.

4.5.3 Warranty exclusion

MKWE makes no guarantees for failure and damage caused by external influences (heat, water, lightning, etc.), accidental damage, improper use, changes, alterations and extensions made on the SMARTBOW Eartag, use of foreign parts, neglect, improper packaging, improper storage or loss in returning the SMARTBOW Eartags.

This warranty is void if the defect in the SMARTBOW Eartags is caused by maintenance or repair, which was performed by someone else than the MKWE or an authorized service partner. The warranty also void if labels or serial numbers of the SMARTBOW Eartags or a component of the SMARTBOW Eartags is changed or made illegible.

4.5.4 Support Hotline

Before returning the Eartag to MKWE we recommend to contact us via the support hotline or by mail. You will receive further information on how you can make your claim under warranty.

The SMARTBOW support is available via support@smartbow.at or +43 (0) 7732 3711-175).

5 Installation

5.1 Activating the SMARTBOW Eartag

When the SMARTBOW Eartag is delivered, it is in a power saving mode. It is activated via a magnetic field that actuates an internal reed switch. To establish a reliable contact, it is necessary to apply the magnetic field at the right point of the SMARTBOW Eartag.

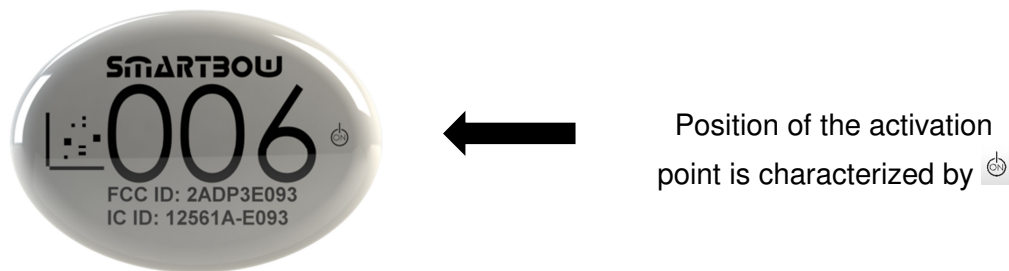
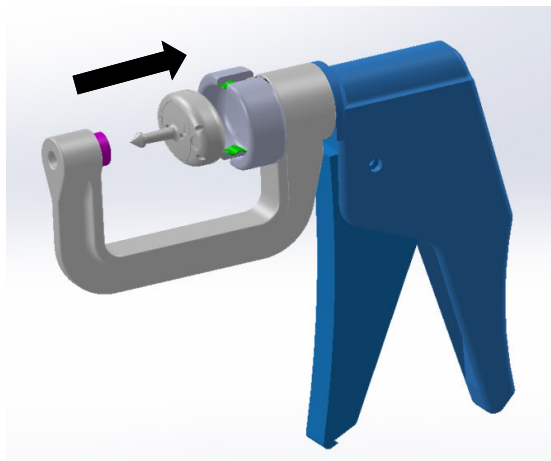


Figure 8: Position of the SMARTBOW Eartag activation point



For a quick handling the necessary permanent magnets are already incorporated in the SMARTBOW Eartag applicator. The activation of the SMARTBOW Eartags happens therefore automatically as soon as the SMARTBOW Eartag is placed into the SMARTBOW Eartag applicator. The location of the SMARTBOW Eartags makes no difference.

Figure 9: Automatic activation by the SMARTBOW Eartag applicator

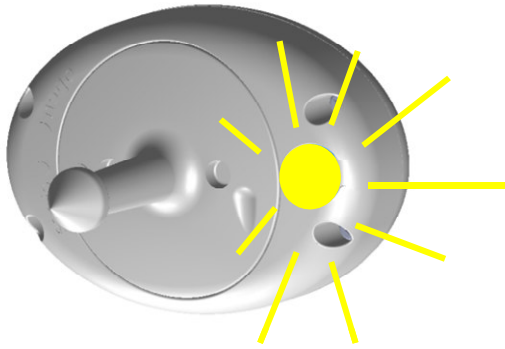


Figure 11: Visual feedback when activating

Please pay attention to the storage temperature range of SMARTBOW Eartags as described in chapter 4.2 Technical data. If however the temperature of the SMARTBOW Eartags gets below 0°C, we recommend to bring the SMARTBOW Eartags to room temperature before activating it.

In case of successful activation the interior LED flashes 3 times at intervals of 1s. You can control this via the transparent viewing window arranged on the back of the SMARTBOW Eartag.

5.2 Mounting the SMARTBOW Eartag



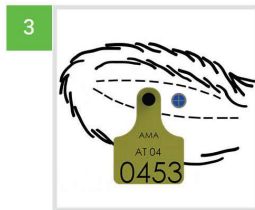
1 Insert the female part of the SMARTBOW Eartag in the applicator.



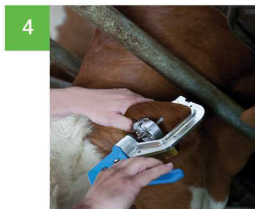
2 Insert the male part of the SMARTBOW Eartag in the applicator.



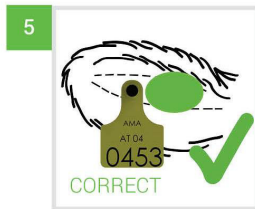
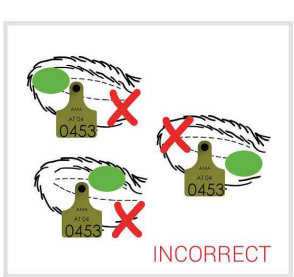
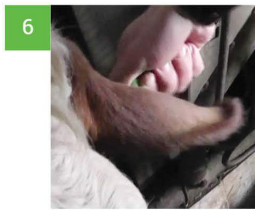
3 In case of successful activation interior LED flashes 3 times at intervals of 1s. You can control this via the transparent viewing window arranged on the reverse of the SMARTBOW Eartag.



3 Locate the correct position for the SMARTBOW Eartag. The Eartags should be placed in the middle of the ear to reduce tag loss and the risk of infection.



4 Apply the SMARTBOW Eartag, always with the male part entering from the FRONT (inside) of the ear.



6 Twist the SMARTBOW Eartag lightly in both directions.



7 Correctly positioned SMARTBOW Eartag.

Figure 12: Mounting instruction SMARTBOW Eartag

⚠ CAUTION

Risk of cutting with the SMARTBOW Eartag applicator by uncontrolled movement of the animals. Always be alert to sudden movements of the animal. Fasten the animals whenever possible in the stabling.

⚠ ATTENTION

Always use the correct Eartag applicator to be sure that the sensors may not be damaged and the Eartag is placed safely.

Only put the Eartag in one ear of the animal.

5.3 Removing the SMARTBOW Eartag

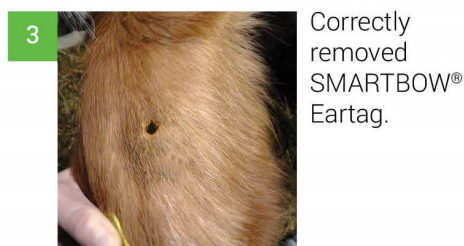


Figure 13: Instruction for removing the SMARTBOW Eartag

⚠ CAUTION

Risk of cutting with the SMARTBOW Eartag scissors by uncontrolled movement of the animals. Always be alert to sudden movements of the animal. Fasten the animals whenever possible in the stabling.

5.4 Instruction for replacing the thorn and the battery

- 1



Put the key in the penetrations on the back of the SMARTBOW Eartag..
- 2



Open the SMARTBOW Eartag by turning the magnet key to the left. (see the inscription „open“ on the Eartag)
- 3



Please put the used battery and the used battery cover to the waste separation system.
- 4



Please take a new battery cover and a new battery. Take care, that the positive battery terminal is on the top. Make sure that the black O-ring is mounted on the thorn.


- 5



Please clean the housing if necessary. Use the magnet key to put the battery cover in the housing of the SMARTBOW Eartags with the gap above the small battery contact.
- 6



To close the battery, turn the key to the right until you hear the clicking of the bayonet cap. (see the inscription „close“ on the Eartag)
- 7



Correct closed SMART-BOW Eartag after changing the battery.

Figure 14: Instruction for replacing the thorn and the battery

ATTENTION

Clean the SMARTBOW Eartag before changing the battery to prevent a penetration of dirt into the interior of the SMARTBOW Eartag.

Please use the right key for opening the SMARTBOW Eartag to make sure that they are not disturbed.

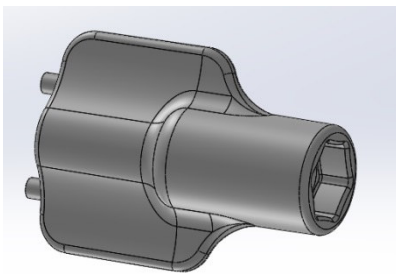
CAUTION

Keep batteries away from children. If a battery is swallowed consult a doctor immediately.

6 Equipment, spare parts

6.1 Equipment

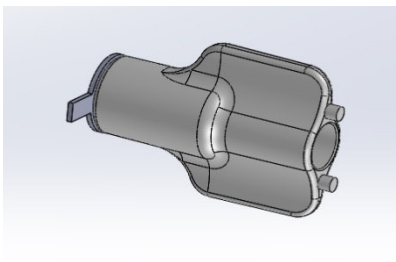
6.1.1 SMARTBOW Eartag key without magnet



Use the SMARTBOW Eartag key without magnet to change the thorn or battery.

Figure 15: SMARTBOW Eartag key without magnet

6.1.2 SMARTBOW Eartag key with magnet



In addition the SMARTBOW Eartag key is also available with a magnet. This can also be used for activating the SMARTBOW Eartag. Note: The end face attached metal plate is used to the magnetic shielding and must be removed before use.

Figure 16: SMARTBOW Eartag key with magnet

6.1.3 SMARTBOW Eartag applicator

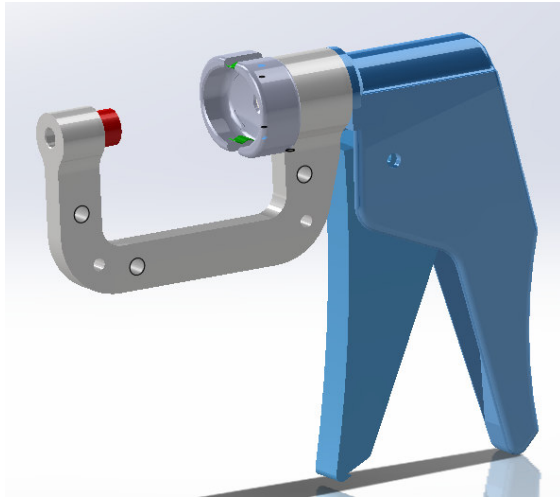


Figure 17: SMARTBOW Eartag applicator

Use the Eartag applicator SMARTBOW for mounting the Eartag on the animal. The thorn of the Eartags penetrates the animal's ear and snaps into the female part. In this forward movement, a spring is stretched, which provides a quick withdrawal of the Eartag slot after engaging the Eartag. Therefore a quick disengagement of the Eartag applicator from the ear of the animal is possible.



CAUTION

Risk of trapping by the automatic spin back of the SMARTBOW Eartag slot.

6.1.4 Eartag scissors

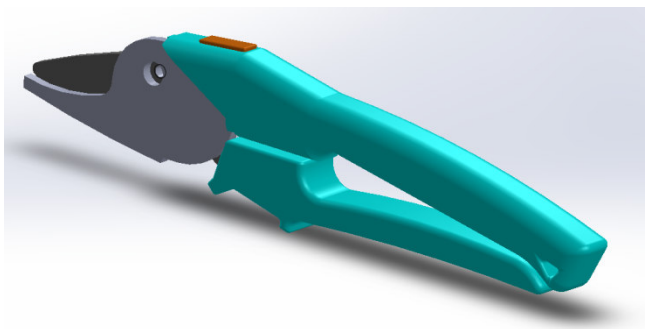


Figure 18: SMARTBOW Eartag scissors

Use the Eartag scissors to remove the Eartag from the animal.



CAUTION

Risk of cutting with the SMARTBOW Eartag scissors by uncontrolled movement of the animals. Always be alert to sudden movements of the animal. Fasten the animals whenever possible in the stabling.

6.2 Spare parts

6.2.1 Thorn exchange set

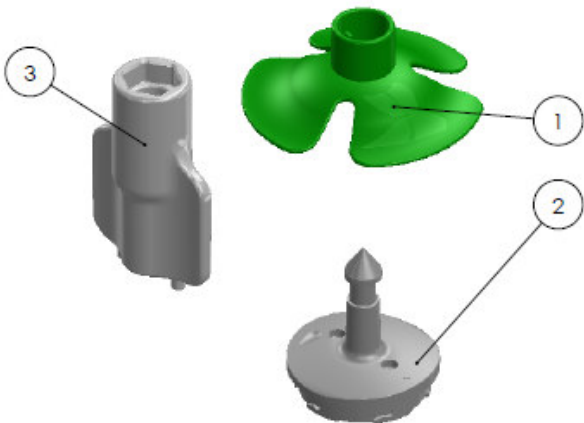


Figure 19: Thorn exchange set

Pos.- Nr.:	Term	Amount 200303 standard	Amount 200309 large
1	counterpart D46 green	20	100
2	thorn thick 34mm	20	100
3	Eartag key without magnet	2	10

Table 2: Components thorn exchange set

6.2.2 Battery exchange set

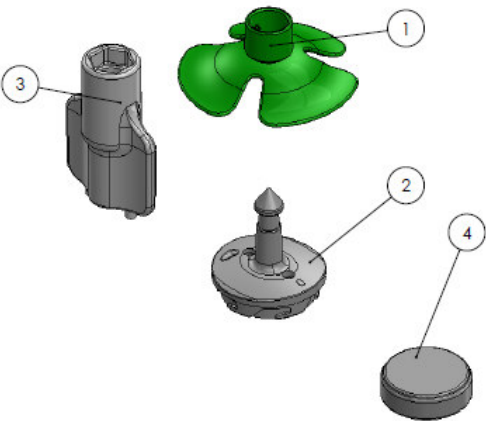


Figure 20: Battery exchange set

Pos.- Nr.:	Term	Amount 200203 standard	Amount 200209 large
1	counterparts D46 green	20	100
2	thorn thick 34mm	20	100
3	Eartag key without magnet	2	10
4	Button battery Panasonic CR2477	20	100

Table 3: Components battery exchange kit

Note: Only use replacement batteries of manufacturer Panasonic type CR2477

6.3 List of available equipment

Part-No.:	Term
900021	Eartag key with magnet
900027	Eartag key without magnet
200021	Eartag scissors
200023	Eartag applicator SMARTBOW
200303	Thorn exchange kit standard D46 green 20 pieces
200309	Thorn exchange kit large D46 green 100 pieces
200203	Battery exchange kit standard D46 green 20 pieces
200209	Battery exchange kit large D46 green 100 pieces

Table 4: Available spare parts and equipment

7 Transport and storage

7.1 Transport

Always use the original packaging for transporting the SMARTBOW Eartag to avoid scratching the surface and unintended activation of the Eartag.

7.2 Storage

Store the Eartag in dry, cool, clean surroundings and avoid direct sunlight. Please note the storage temperature range as in chapter 4.3 Technical Data.

Store the Eartag not right next to strong magnetic fields such as the SMARTBOW Eartag key with magnet or other magnetic fields. Avoid long-term storage in or close to the SMARTBOW Eartag applicator. The Eartag gets activated by magnetic fields, which leads to a significant reduction in battery life.

Do not store already used Eartags open (without thorn). The penetration of dust and moisture may have a functional impairment or failure of the Eartag result.

7.3 Cleaning



ATTENTION

Clean the SMARTBOW Eartag just closed!

Heavy soiling of the housing can be removed mechanically with a spatula. Avoid the use of sharp tools. Clean the housing with a damp cloth and mild cleaning agent. Do not use any abrasives or solvents such as alcohol, acetone, nitro thinner.

8 Trouble Shooting

This chapter contains a list of faults and solutions.

Problem	Reason	Solution
SMARTBOW Eartag does not flash when it is inserted into the SMARTBOW Eartag applicator	battery is discharged	insert new battery (see chapter 5.4)
	battery is inserted incorrectly	insert the battery with the correct polarity (see chapter 5.4)
	no battery inserted	insert the battery with the correct polarity ((see chapter 5.4)
	battery contacts are dirty or foreign object between battery and battery contact	clean the battery compartment and battery contacts
	soiled transparent viewing window	clean transparent viewing window on the SMARTBOW Eartag (see chapter 7.3 cleaning)
	magnet in the SMARTBOW Eartag applicator broken or missing	try to activate the SMARTBOW Eartag before placing it in the applicator with the SMARTBOW Eartag key with magnet. Hold the magnet to the activation point. (see 5.1)

	faulty SMARTBOW Eartag	please contact the service hotline +43 (0) 7731 3711 - 165
SMARTBOW Eartag does not appear in the SMARTBOW Client Software	SMARTBOW Eartag not activated	to activate the SMARTBOW Eartag hold the SMARTBOW Eartag key with magnet on the activation point.
	faulty SMARTBOW Eartag	please contact the service hotline +43 (0) 7731 3711 - 165
increased losses of SMARTBOW Eartags	inconvenient geometries in the stabling	reduce critical points (e.g.: sharp edges, Y-shaped geometries) in the accessible areas of the animals in the barn

Table 5: Troubleshooting

9 Waste

Please do your part to protect the environment by disposing used Eartags environmentally friendly under European WEEE Directive 2002/96/EG (directive on electrical and electronic equipment), the Battery Directive (2006/66/EG) and/or national laws. Improper disposal of electronic products could have a negative impact on the environment and human health due to potentially hazardous substances.

The package contains the following materials:

- corrugated cardboard/cardboard
 - films/flat bags of polyethylene
 - adhesive tape of PVC
-
- Keep packaging materials away from children - can cause suffocation!
 - Bring the packaging to an official collection point.



Batteries are hazardous waste. In the European Union (EU) this label indicates that the batteries in this product should be collected separately and not be disposed of with household waste. For a proper battery disposal appropriate containers are available in the shops which sell batteries and communal collection points.



This label is used in the European Union (EU) as an indicator that this product still contains valuable materials and must be supplied separately from unsorted urban waste. For this purpose, please remove the battery. Make sure that the worn out Eartags are not damaged before or while returning them.



MKW electronics GmbH is focused on sustainability and takes over all duties of the return and disposal for EU manufacturers. Please contact your MKW electronics service center to dispose of the product environmentally friendly. A separate collection and proper recycling of the electronic waste helps to use natural resources carefully. Your cooperation in the correct disposal of this product enables the effective use of natural resources.

10 Support

For support and customer service please do not hesitate to contact our SMARTBOW team.

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11 Lists

11.1 List of figures

Figure 1: Safety labels Eartag applicator.....	15
Figure 2: Safety labels Eartag scissors	15
Figure 3: Safety labels Eartag magnetic key	15
Figure 4: SMARTBOW Eartag	16
Figure 5: Eartag components.....	16
Figure 6: Scope of supply	17
Figure 7: Eartag labelling elements.....	18
Figure 8: Position of the SMARTBOW Eartag activation point	21
Figure 9: Automatic activation by the SMARTBOW Eartag applicator	21
Figure 10: Visual feedback when activated	22
Figure 11: Visual feedback when activating	22
Figure 12: Mounting instruction SMARTBOW Eartag.....	23
Figure 13: Instruction for removing the SMARTBOW Eartag.....	24
Figure 14: Instruction for replacing the thorn and the battery	25
Figure 15: SMARTBOW Eartag key without magnet.....	26
Figure 16: SMARTBOW Eartag key with magnet.....	26
Figure 17: SMARTBOW Eartag applicator.....	27
Figure 18: SMARTBOW Eartag scissors.....	27
Figure 19: Thorn exchange set	28
Figure 20: Battery exchange set	28

11.2 List of tables

Table 1: Technical Data SMARTBOW Eartag18

Table 2: Components thorn exchange set.....28

Table 3: Components battery exchange kit29

Table 4: Available spare parts and equipment29

Table 5: Troubleshooting32

12 GLOSSAR

SMARTBOW Wallpoint	Receiver which is used for forwarding Data and calculation of position
SMARTBOW Station	Local server at the farm for data analysis

13 List of includes amendments

Date	Version	Remark
01.11.2014	1	Original
10.02.2015	2	Label changed