



EFA
Meat Processing Power



STUNNING TONGS

tongs types

X

Y

XP

YP



This user manual is an integral part of the stunning tongs. Please read it carefully before installation, commissioning and use.

Please contact us for any further information.



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1. Tongs types

		pneumatic tongs	
			
			
X / XO	Y	XP	YP

Table 1. Tongs types

2. Design and parts list

Type X Tongs

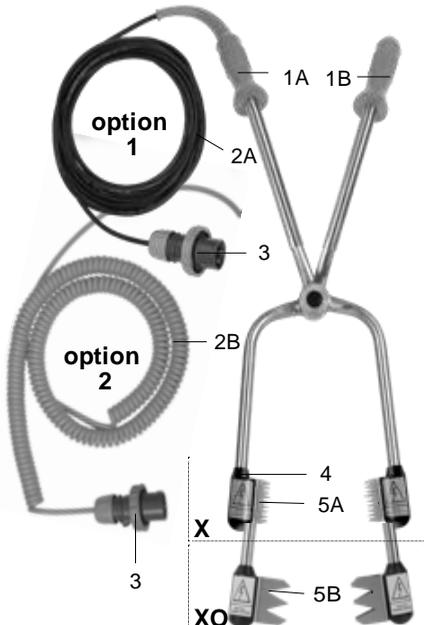


Table 2. Parts list

nr	name	index number
1A	long rubber handle	001983947
1B	short rubber handle	001983948
2A	straight power cord	001983945
2B	spiral power cord	001983950
3	industrial plug special 16 A IP67	001983949
4	cap (plastic head artificial)	001983957
5A	stainless steel electrodes X (PIGS)	001983956
5B	tainless steel electrodes X (SHEEP)	001983958

Fig. 1 Design of type X tongs

Type Y Tongs

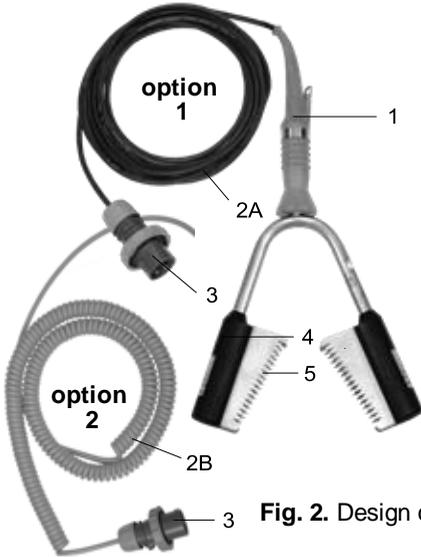


Fig. 2. Design of type Y tongs

Table 3. Parts list

nr	name	index number
1	long rubber handle	001983947
2A	straight power cord	001983945
2B	spiral power cord	001983950
3	industrial plug special 16 A IP67	001983949
4	cap (plastic head artificial)	001983957
5	stainless steel electrodes	001983959

Type XP Tongs

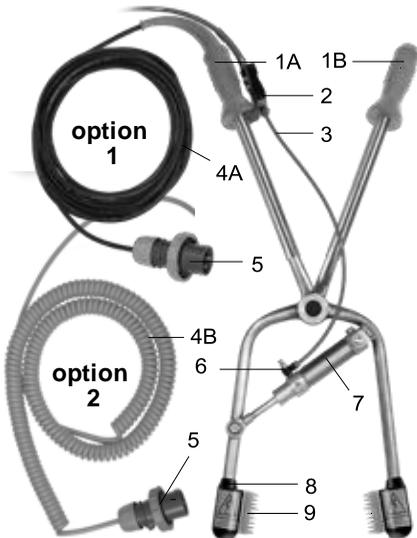


Fig. 3. Design of type XP tongs

Table 4. Parts list

nr	name	index number
1A	long rubber handle	001983947
1B	short rubber handle	001983948
2	distributor with trigger	001983951
3	pneumatic cord (blue)	001983954
4A	straight power cord	001983946
4B	power cord spiral	001983950
5	industrial plug special 16 A IP67	001983949
6	valve with force regulator	001983952
7	actuator	001983953
8	socket (plastic head artificial)	001983955
9	stainless steel electrodes	001983956

Type YP Tongs

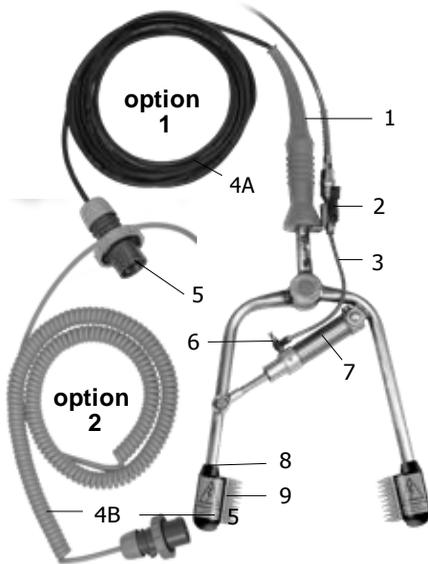


Table 5. Parts list

nr	name	index number
1	long rubber handle	001983947
2	distributor with trigger	001983951
3	pneumatic cord (blue)	001983954
4A	straight power cord	001983945
4B	power cord spiral	001983950
5	industrial plug special 16 A IP67	001983949
6	valve with force regulator	001983952
7	actuator	001983953
8	socket (plastic head artificial)	001983955
9	stainless steel electrodes	001983956

Fig. 4. Design of type YP tongs

3. Purpose

Tongs X, XP, XO, X(S), Y, YP are intended for electrical stunning of pigs, cattle, sheep and goats by applying electrodes to animal's head. The tongs are to be used with EFA VBE stunning devices as well as other stunning devices subject to manufacturer's agreement. The stunning tongs are made of stainless steel for durability and reliability. Special cable connected to the handle allows easy operation and rubber handles provide excellent grip. The stunning tongs design guarantees easy handling by the operator. Efficient current flow is guaranteed by sharp steel electrodes on the tongs ends.

The stunning tongs should only be used as intended.



- Do not immerse the tongs connected to the power supply in water.
- Do not use as animal chasing device.
- Do not short-circuit the electrodes on metal objects.
- Do not touch the electrodes with your hands and short-circuit them on human body.

4. Installing of the tongs

The stunning tongs are connected to the power supply using a special plug-socket set. It is recommended to install the tongs in a place with the lowest possible humidity. The tongs should be hung in a safe and convenient place during stunning intervals. When not in use, the tongs should be hung by the handle next to the stunning device. The handle should be fixed at a minimum height of 1.6 m.

The tongs should be disconnected from the power supply during cleaning.

5. Connection of XP and YP pneumatic tongs

1. Connect the pneumatic cable (1 - Fig. 5A, 5B) to the compressed air or compressor system (5-8 bar).
2. Press and hold the trigger (2 - Fig. 5A, 5B).
3. Set the pressure of the electrodes with the pressure regulator (3 - Fig. 5A, 5B).
4. Release the trigger (2 - Fig. 5A, 5B).
5. Connect the tongs to the VBE device.

After completing the above mentioned tasks, the tongs are ready for work.

Abb. 5A. Construction of the pneumatic pressure module

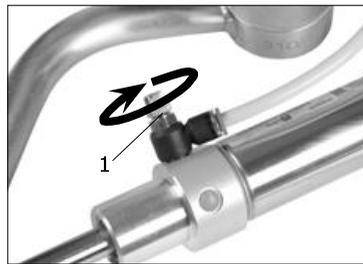
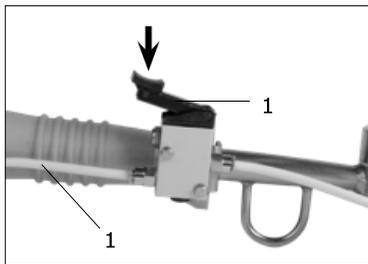
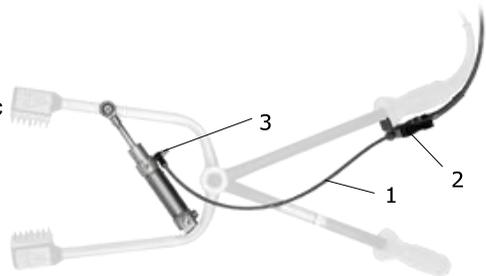


Abb. 5B. Construction of the pneumatic pressure module

6. Operation

The operation of the VBE device is based on the principle of automatic measurement of the body resistance of the stunned animal. In the state of readiness for operation, on the tongs openings there is only low, safe measuring voltage of about 15 V. When the electrodes are pressed against the animal's body, the resistance is measured and the stunning voltage <400 V is automatically applied which is also automatically disconnected after the process of stunning is finished (ie opening of the electrodes).

7. Operation step by step

The correct operation of the tongs consists in the following steps:

1. Connect the tongs to the VBE device.
2. Set the appropriate stunning program on the VBE device.
3. Place the electrodes on both sides of the animal's head so that each electrode is placed between the eye and the ear of the animal (Fig. 6).
4. After placing the electrodes of the stunning tongs to the animal's head, the supply control system will automatically set the correct stunning voltage, which is signaled by lighting of the red lamp.
5. After reaching the set value of electric charge / time in the VBE device the yellow lamp will light up and an acoustic signal will be activated. It is a sign that the stunning tongs should be removed from the head of the animal.
6. After removing the tongs, the red and yellow lights will go off and the acoustic signal will turn off. Only the electric charge / time will remain on the display of the VBE device from the last slaughter. The stunning current will decrease to 0 (display [A]), the voltage on the electrodes will only have a measuring of around 15 V (display [V]). From this moment, after 2 seconds, the device is ready for the next stunning process.

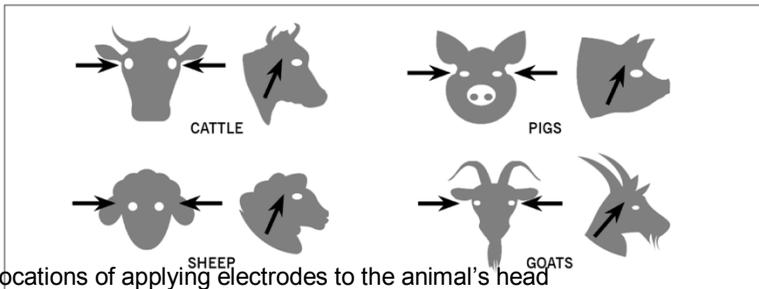


Fig. 6. Locations of applying electrodes to the animal's head

8. Work safety and service rules

Persons involved in the operation and maintenance of the device must be familiar with the instructions listed below and trained in its use and health and safety conditions at a given workplace. It is forbidden to make any alterations, because it is associated with the loss of the warranty and the producer's responsibility for the correct operation of the device. The device cannot be used for purposes other than intended.

- All work related to the maintenance of the device should be carried out with power disconnected.
- All repairs should be performed by the manufacturer.
- It is forbidden to make any alterations to the electrical installation, particularly to remove the power plug of the device and to replace the special plug in the stunning tongs with the degree of protection IP67.
- It is forbidden to connect a device with damaged external insulation to the mains.
- Children, disabled and untrained persons must not have access or use the device.

**WARNING!**

Failure to comply with the above-mentioned safety rules may result in electric shock, injury or death.

**WARNING!**

The device has an electronic system that protects against electric shock by shockproof tongs. However, it is forbidden to touch the human body with the electrodes.

**WARNING!**

In the event of voltage present on the electrodes outside the stunning process, – the red light will appear - it is essential to stop the work immediately, switch off the device and notify the manufacturer.

If the red lamp does not light up during the stunning process, follow the instructions in sections 12 and 13. If the malfunction still persists, have the device repaired without delay by the manufacturer.

9. Description of residual risk

Although the manufacturer takes responsibility for the construction and markings of the device, in order to eliminate hazards during operation as well as operation and maintenance, certain risk elements are unavoidable.

The residual risk results from incorrect or improper handling of the device by the device operator.

The greatest danger occurs when performing the following prohibited actions:

- using the device for purposes other than those described in the user's manual,
- making any alterations and repairs of the electrical installation,
- touching human body with the electrodes,
- plugging in the device to the network regardless of visible damage to the device,
- using the device as a toy by children, people with disabilities and untrained persons, which are not aware of the danger from an electrical device.

In presenting the residual risk, the stunning device VBE is treated as a device that was designed and manufactured according to the best state of technical knowledge.

Residual risk assessment

Recommendations to eliminate residual hazards (for people and the environment) when using the device:

- careful reading of the user manual,
- the ban on touching the human body with electrodes,
- the ban on making any alterations and repairs to the electrical installation,
- all repairs of the device must be performed by the manufacturer's service only,
- checking the earthing effectiveness of the mains supply before starting operation and systematically at least once a year by a licensed electrician,
- checking the technical condition before using the device and after carried out repairs,
- operating the device by persons who have read the operating instructions,
- protection of the device against access of children, the disabled and untrained people.

**WARNING!**

There is a residual risk in the event of failure to comply with the recommendations and tips listed above.

10. Explanation of the markings

The nameplate of the tongs contains:

- name, identifying mark of the manufacturer,
- model symbol,
- output voltage <math><400V</math>,
- output current 0,02-2,5A,
- degree of protection IP55,
- protection class II,
- work cycle S2 240,
- year of production,
- factory number.



Symbol indicating dangerous voltage.

The above signs should be protected against damage, and if damaged, they can be purchased from the device manufacturer.

11. Maintenance

It is necessary to clean the electrodes with a wire brush for stainless steels to ensure proper contact with the body of the animal and correct measurement of body resistance of the stunned animal and the effective flow of the stunning current. Do not immerse electrodes in cleaning and disinfecting solutions.

It is necessary to keep the tongs in proper technical condition. If the power cord is damaged, it should be replaced by the device manufacturer in order to avoid danger.

**WARNING!**

Do not wash the device with pressure washers!!! Cleaning must be performed manually, taking into account the safety conditions of using the electrical devices!!!

12. Technical service

The purpose of technical service is to keep the tongs in good working condition. The scope of maintenance activities should be in accordance with the following guidelines:

- Daily service before and after work based on constant monitoring technical condition of individual components and parts that have impact on work safety.
- Periodic maintenance consisting of determining the degree of wear of individual.
- Components and parts of the device as well as the removal of defects and damage.

**WARNING!**

According to the Regulation of the Minister of Agriculture and Rural Development dated September 9, 2004, Journal of Laws No. 205, item 2102, §5 point 4, devices and tools for stunning, check the technical condition before each stunning cycle.

**WARNING!**

In the event of irregularities in the operation of the device, the fault should be reported to the manufacturer's service.

**WARNING!**

Once a year, it is necessary to calibrate the VBE device and carry out technical review of the tongs at the manufacturer's. After positive calibration the manufacturer issues an appropriate document.

The manufacturer is not responsible for the technical condition of the device and its safe functioning in case of making repairs and servicing by the user.

If the device is completely worn out, it must be dismantled and scrapped in the following way:

- Disassemble parts connected with screws by unscrewing them.
- Worn and unusable parts should be taken to a collection point for used electrical equipment.

Take precautions and safety when disassembling by using appropriate hand tools and personal protective equipment (gloves, work clothes, apron)

13. The occurrence of potential faults and the way they are removed

PROBLEM	CAUSE	RECOMMENDATION
No stunning process	No voltage on the electrodes	<ul style="list-style-type: none"> • Clean the electrodes. • Check the tong's cord. • Report to the manufacturer's service

14. Characteristics of the VBE-6 stunning device

The VBE-6 consists of two basic units:

- a power supply unit with separation transformer with electronic measurement and control system as well as, PIG821 stunning parameters controller and parameters recorder,
- stunning tongs.

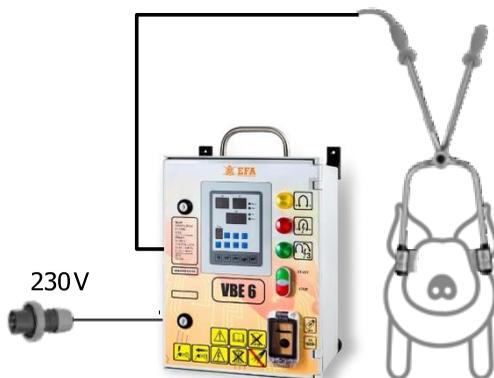
VBE 6

- output current: 0,02-2,5 A
- stunning voltage: < 400 V
- frequency: 50-700 Hz
- electric charge: 0,1-99,9C
- IP 55
- S2 240 (work cycle)
- protection class I



- tight high impact plastic enclosure
- safe animal recognition system
- light and sound signalling
- numerical display of stunning parameters
- smooth current and frequency adjustment during stunning process
- 9 different stunning programs (it is possible to change the parameters of each program)
- possibility to change stunning program with one button only

15. Outline of connecting the tongs to the VBE-6 device



16. The principle of the operation of the VBE-6 device

Device operation is based on automatic measurement of the body resistance of the animal being stunned. In standby mode, with open stunning tongs electrodes, only safe low voltage of approx. 15 V is supplied. After the electrodes contact the animal body, resistance is measured and the stunning voltage <400 V is automatically fed and disconnected after the stunning process is completed (i.e. electrodes are open).

The stunning parameters depend on the type and size of the animal (according to WE / 1099/2009).

Animal	Minimum current
sheep, calf, goat	1.0
lamb	0.6
pig	1.3
cattle <6mths ÷ >6mths	1.25 ÷ 1.28

Guidelines: In accordance with the Directive FSIS 6900.2 concerning Humane Handling and Slaughter of Livestock it is recommended to use frequency of up to 800 Hz.

The stunning device works according to the selected stunning program. The selected stunning program is displayed on a single Prog display. The stunning program number can be changed with the P button. Factory settings of the values of individual programs are on the device's SD card.

The user can change the order and parameters of a given program depending on the type of a stunned animal.

The method of changing of the stunning parameters is explained in point 10 of the VBE-6 user manual.

DECLARATION OF CONFORMITY

The manufacturer the product: VBE 6 animal stunning device

Year of manufacture 2017

to which this declaration pertains is compliant with the following:

- **Directive 2006/95/EC** on the requirements concerning electrical equipment, implemented by the Ordinance of the Minister of Economy of 21 August 2007 on general requirements concerning electrical equipment (Polish Journal of Laws Dz. U. no. 155 of 2007, pos. 1089) including the requirements of standards harmonized with the aforementioned Directives:

PN-EN 60335-1:2012	Household And Similar Electrical Appliances
PN-EN 60335-1/A11:2014	Safety - Part 1: General Requirements

PN-EN 60335-2-87:2004	Household and similar electrical appliances - Safety - Part 2-87: Particular requirements for electric animal-stunning equipment
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- **Directive 2004/108/EC** The aim of this Directive is to regulate the electromagnetic compatibility of equipment. It aims to ensure the functioning of the internal market by requiring equipment to comply with an adequate level of electromagnetic compatibility.

Included requirements of standards harmonized with the aforementioned Directives:

PN-EN 61000-4-2:2011	Electromagnetic compatibility (EMC)- Testing and measurement techniques. Electrostatic discharge immunity test.
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PN-EN 61000-4-4:2010	Electromagnetic compatibility (EMC)-Testing and measurement techniques Electrical fast transient/burst immunity test.
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PN-EN 61000-4-5:2010	Electromagnetic compatibility (EMC) -- Part 4-5: Testing and measurement techniques. Surge immunity test.
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PN-EN 61000-4-8:2010	Electromagnetic compatibility (EMC) -Testing and measurement techniques. Power frequency magnetic field immunity test.
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PN-EN 61000-4-9:1998	Electromagnetic compatibility (EMC)-Testing and measurement techniques Impulse magnetic field immunity test.
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PN-EN 61000-4-11:2007	Electromagnetic compatibility (EMC) -- Part 4-11: Testing and measurement techniques. Voltage dips, short interruptions and voltage variations immunity tests
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We simultaneously declare the conformity with the requirements of the following legal acts:

- Act on humane methods of livestock slaughter (7 U.S.C. 1901 and the following) FSIS Directive 6900.2 Revision 1 Appendix 1.
- Council (EC) Regulation No. 1099/2009 of 24 September 2009 on the protection of animals at the time of killing.
- The Instruction of the Main Veterinary Physician No. GIWz. 420/AW-1/10 of 12.01.2010

This declaration of conformity loses its validity if the product is changed or modified without our.

WARRANTY CARD

STUNNING TONGS

Factory no..... Year of manufacture..... Stunning tongs type.....

The stunning tongs were manufactured in accordance with the design and technical documentation included in the technical conditions of commissioning and manufacture. The tongs are designed to be used with EFA VBE stunning devices as well as with other stunning devices subject to manufacturer's agreement.

The guarantee is granted for a period of no longer than 12 months in accordance with the Journal of Laws of 2017.08.1025 i.e. - Act of 23 April 1964 - Civil Code and includes:

- materials
- performance
- assembly of parts, assemblies and components

The device is working properly and maintains the desired technical parameters

(signature of the person carrying out the inspection)

The guarantee is forfeited in case of:

- any unauthorised repairs or modifications of the device are made,
- the manufacturer being notified of the failure after 14 days from its occurrence.

The warranty shall be extended by the period of time required to repair the device during the warranty period.

Date of sale _____ Seller's signature _____

Sales point stamp

The stunning tongs are recyclable. The EFA company meets the requirements of the Act of September 11, 2015, on used electrical and electronic equipment.



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