

Production, Service & Trade Company

SCORPION®

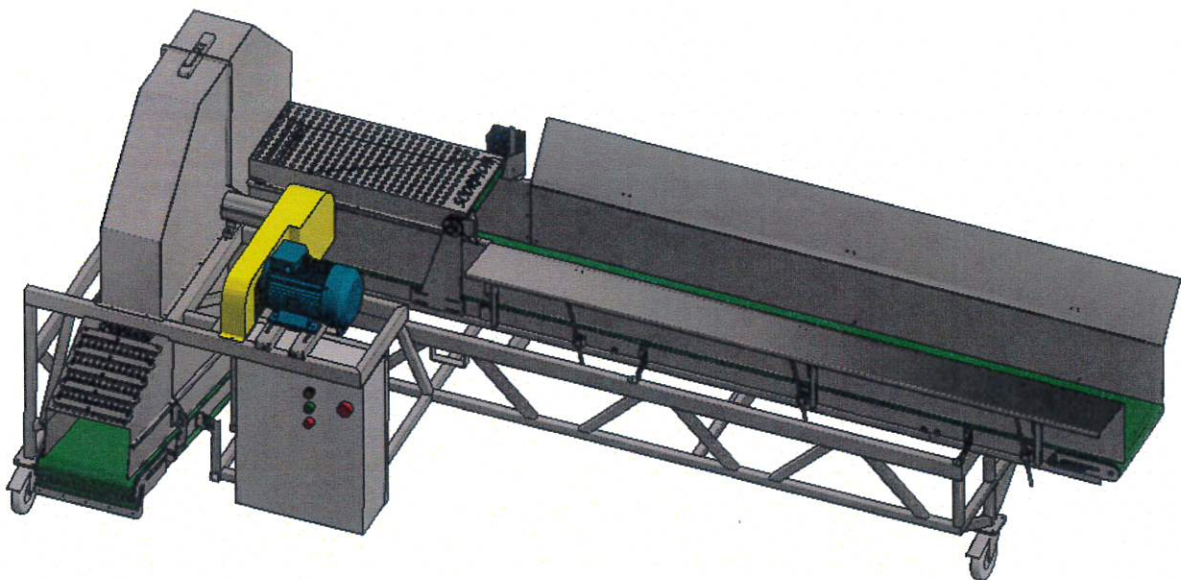


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MANUAL INSTRUCTION

Axe Cutter KT-450

Serial No. 1702.14.11.



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1. Assignment and applications

The basic application of the Axe cutter is cutting products such as fresh herbs and fresh plants. These machines are used very often in the tea and food industry. In the food industry it is used for grinding dried plants, vegetables and spices as mint, salvia, melissa, nettle, parsley, etc. In the extraction industry it is particularly used in lines which prepare raw materials for extraction. Axe cutters are used also very often in lines for processing fresh herbs as first step – to process material before separation leaves from stems. Axe cutter can be used also for cutting frozen herbs as echinacea roots, frozen flowers – thick grounded frozen plants for extracts. Capacity can achieve from 2t to 4t /1h of raw material given on axe cutter.

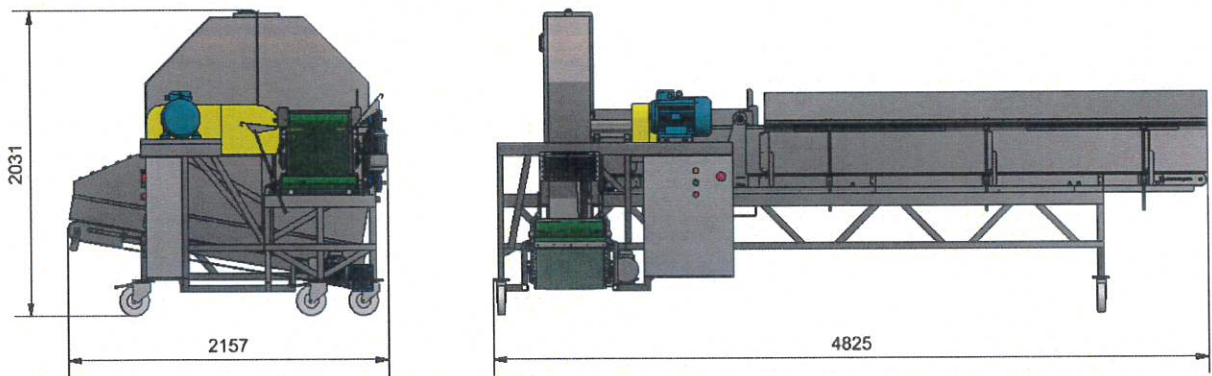
The axe cutter is intended to cutting fresh herbs, spices, fresh green vegetables, frozen herbs for extracts, etc. In particular this machine very good cooperates with other machines which take part in technological line in production process.

2. Technical profile

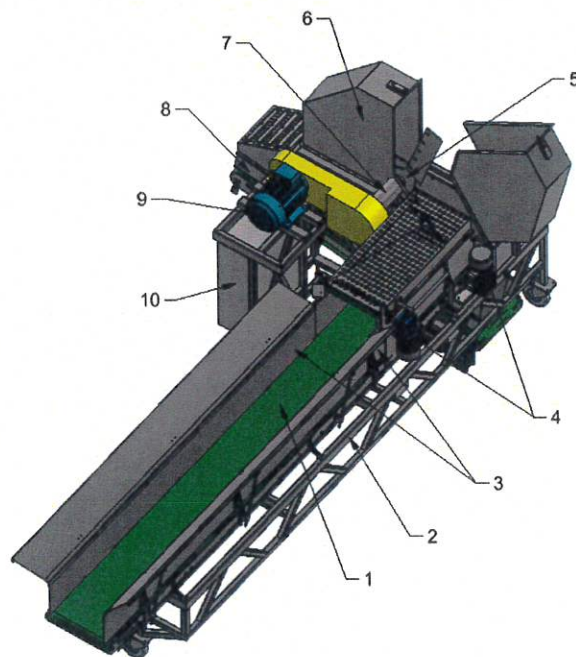
- efficiency (depends on kind of raw materials)	2000-4000kg/h
- the width of cut	450 mm
- the width of the main knife	574 mm
- the quantity of knives	3 units
- the width of the horizontal contra-knife	450 mm
- the quantity of contra-knife	1 units
- speed on the rotor	263 rev/min.
- the speed of cutting	789 tacts/min.
- worm gear for bands	2x NMRV 050 with axle I10
- worm gear for bands	2 items
- quantity of motors for the bands	2 items
- the range of length of cut	13÷45mm
- the range of cut (from inverter)	15-50Hz
- the kind of the vee-belt (anti static)	XPZ 1600
- the quantity of the vee-belt	6 units

- speed reducer output 41,7 r.p.m. for 15Hz and 139 r.p.m. for 50Hz
 - roll diameter 83mm
 - the power of the main electric motor 5,5 kW
 - feeders for loading belts 2 x 0,55 kW
 - rotation speed of belts for 15Hz is 10,5m/min and for 50Hz is 35m/min
 - the revolution speed of the main motor 965 revolutions/min
 - the revolution speed of the motors for feeders 1390 revolutions/min
 - the weight of the machine 1050 kg
- the dimension of the machine (length x width x height) 4825x2157x2031mm

3. Construction



Pic.1 Construction of the Axe Cutter KT-450



Pic.2 Construction of the Axe Cutter KT-450

In the picture 2 there is schematically shown the Axe Cutter KT-450. It consist of the following sets and parts:

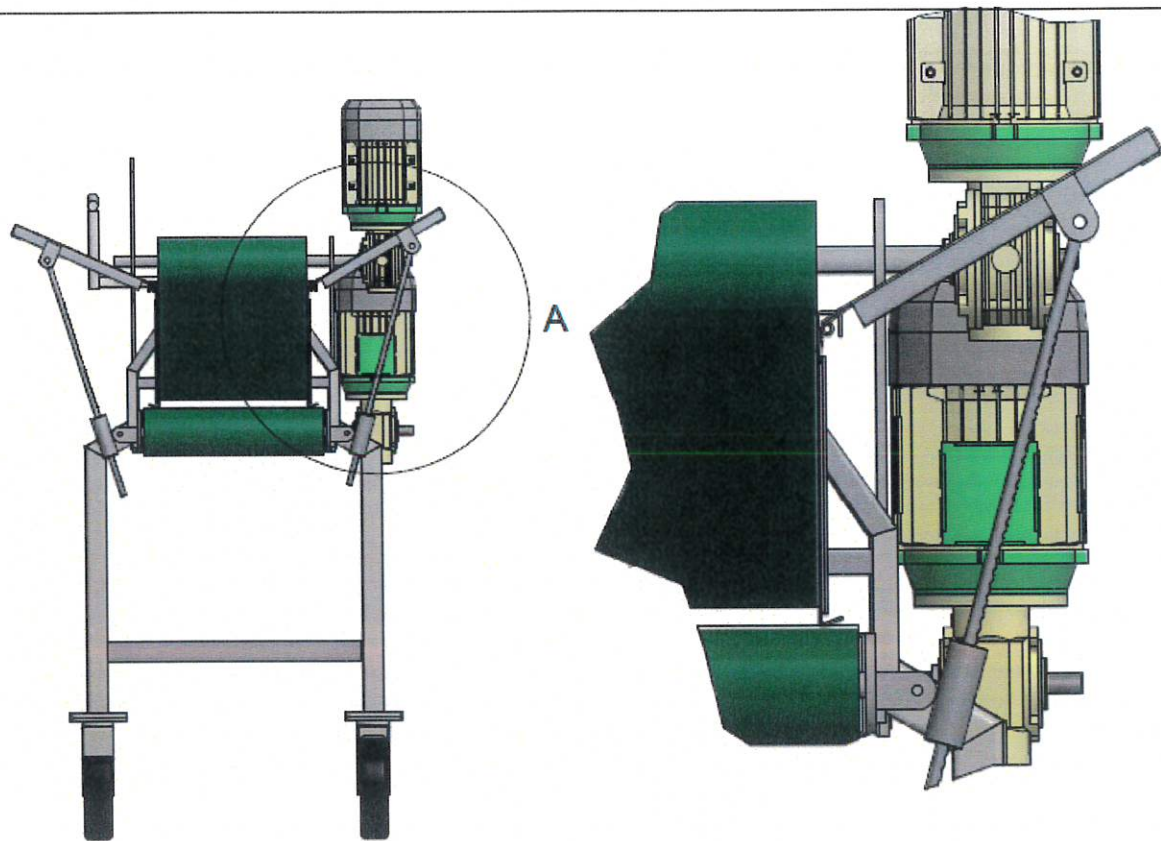
1. the inlet channel (2 belts)
2. the frame,
3. protection barriers of the belt transmission,
4. the electric motors of belts,
5. the cutting tool,
6. the cover of cutting tool chamber,
7. the bearing holder,
8. the outlet channel and place for receiving feeder,
9. the electric motor of cutting tool,
10. the control panel,

In the body of the cutter, on two rolling bearings, there is situated the three-arm rotor where are enclosed three knives. To the rotor (cutting tool) from the electric engine power transmission is drive by the belt transmission. There is set of contra-knives in the frame.

The cutting mechanism of the machine is covered by the protective barriers and gear wheels because of the industrial safety.

The knife make the rotary motion movement (looking from front - the rotor with knife make movement opposite as tips of clock).

The drive for the feeding conveyors (the power transmission) in the machine is provided with variable-speed transmission (with change regulation of revolution by using inverter). Size of cut is regulated by speed of loading the material on the cutting tool. It means that to have longer size of cut we make faster revolutions of feeding belts. To make shorter size of cut, we make slower speed of feeding belts.



Pic.3 Construction of the Axe Cutter KT-450 – loading feeders

4. Principles of operation

The raw material (fresh herbs) assigned for cutting are delivered in the area of the axe cutter, to the convenient place, because of convenience for the person working at the machine. The gathered raw material must be put to the band conveyor in enough thickness. This thickness is different for different kind of herbs. For example during cutting whole herbs, tobacco, flowers, or leaves from herbs there is possibility to put more raw material on the band. For hard raw materials like frozen plants, thickness on the band should be less. So depending on kind of the product the thickness of the raw material must be different on the conveyor for melissa, nettle, salvia, etc.

The raw material on the belt is traveling to the place, where it is slightly pressed in order to right cutting process begin.

The raw material at the moment of cutting is compressed in whistle.

The length of cut is regulated by inverter for the speed of the loading band which will serve herbs for process of cutting. To change the length of cut is necessary to regulate speed of cutting and speed of the band by using potentiometer which have to be set in the main electric box.

5. Arrangement

The axe cutter must be situated in a suitable place of the line with possibility to easy load raw material on the line. This equipment can also operate as singular machine for example for cutting flowers or frozen plants.

The foundation where the machines operate and stand must be horizontal. The place where stand the cutter must make provision for a free access and an optimal comfort for this machine operator.

After connecting the electric motor to a power source the direction of the right revolutions must be controlled

Direction of revolutions is marked on the protection barrier of the motor.

The direction of revolutions must be absolutely preserved!

Feeder from axe cutter can load herbs directly to the dryer.

6. Control before the first activating

Before the first activating or after a longer stoppage technical condition of axe cutter must be controlled as follows:

- control the tight correctness of all screws and nuts,
- control the belts tension according to point 11,
- control if in the cutting mechanism area is there any object that can damage it,
- control condition of bearings and lubrication condition,
- check condition of the bands,
- control condition of the cutting tool mechanism,
- check condition of the knives, the contra-knife,
- prepare receiving of raw material after cutting,

7. Activating and work control

Before activating the axe cutter you should prepare the receiving of the product after processing.

Activating of the machine depends on switching on the electric motors. It's not allowed switching on the machine under load, you have to reduce the revolutions to minimum by inverter of the belts.

Hand-batching of a grinding material must be uniform and it's quantity can't be bigger than the maximum load limit of the machine. However you should provide raw material free of foreign bodies such as metal parts, stones. In case of eventual loading or locking the cutter you should stop the machine, make the machine patent and ensure the reason of wrong feeding.

8. Retention

Stopping – switching off the machine depends on switching off the red button on/off. But before stop feeding the raw material to the axe cutter in order to empty the machine, then reduce the revolutions to minimum and switch off the electric motor of the cutter.

Before opening the door or removing protective barriers you have to absolutely switch off the machine by the switch master. After immobilizing the cutter the door of the machine (cover for cutting tool) can be open in order to clean, change the knives, or contra-knife.

Axe cutter is provided with limit-switch. It means that when you will open cover of the cutting tool mechanism the machine will be automatically stopped.

9. Cleaning

Cleaning can be make after opening the door of the machine, taking the protection barriers off. Cleaning can be achieving as required. It depends on the working period and kind of changing assortment of the product. Often dry-cleaning by sucking off, brushing or blowing is sufficient. As required the slicer can be clean on wet by sprinkling the parts with water under high pressure, because machine is done from stainless steel. Cleaned elements should be totally dried before assembling.

10. Replacement of knives

In time of replacement, regulation of the knives and the contra-knife the machine should be protect because of unplanned switching on.

Axe cutter has 3 knives, and 1 contra-knife made from 3 parts + 3 knives for spare.

In time of replacement and regulation of knives the cutter must be preserved because of unplanned switching on.

To replace the knife you have to open the protective barriers. Next you should loose the 5 screws M10 which hold each knife and 4 screws M-10 for regulation of holdfast. You should unscrew the bolts in order to get out the knives, and then you can go to assembling the new knife.

In order to unscrew the contra knife you have to unscrew 4 screws M-6 for each vertical contra-knife (2 vertical contra-knives) and unscrew 7 screws M-6 from the horizontal contra-knife. Now you can go on to install new contrary knives.

After finished work it is necessary to control if there is no tools inside the machine. If everything is correct you can close the cover, and loose the preservation of the belt pulley and go on to the raw material cutting.

Before disassembly and assembly of the knives should be retain particular care to not hurt on the cutting edges.

After finishing settings the door should be open and once again check condition of the knives turnings and the contrary knives.

Activate the machine on slow revolutions in order to check if knife don't hit on contrary knives.

11. Vee - belt tension control

Vee-belts tension need to be check casually. First belts tension, should be make after few hours of work. Required is such fan belts tension to under the thrust about 10 kg inside the wheels space, the belt sagged in about 10-15 mm.

12. Principles of industrial safety

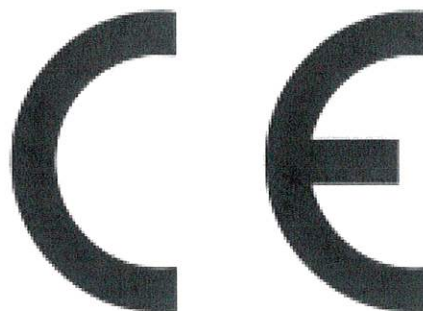
For assurance of safe work and service of the line for processing herbs, the user should comply the following recommendations:

- The machines must be operated by a person which has got acquainted with this Servicing Instructions,

- all works with the electric system should be make only by an authorized electrician,
- work on the machines with open door, taken off the protection barriers and the eyeholes (especially axe cutter) is forbidden and unacceptable,
- in working room there should be located a set of fire device,
- regulations, replacement of knives and contrary knives, should be make after switching of the machines from the voltage, and all others surveys, reparations can be make only after switching off the machines from the voltage.
- replacement of sieves, should be make after switching of the machines from the voltage.

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Rozdrażew, 19.09.2019



DECLARATION OF COMPLIANCE

We hereby declare that the product:

Designation: Axe Cutter KT-450
Serial number: 1702.14.11.

Meets requirements of the following directives:
Directive 2006/42/WE
Directive 2014/30/UE (former 2004/108/WE)

Applied harmonized standards, in particular:
PN-EN ISO 12100:2010
PN-EN ISO 14120:2016-03
PN-EN ISO 13857

Person authorized to compile technical documentation:

Łukasz Stasik

(name of authorized person)

Rozdrażew 19.09.2019

(place and date of issue)

Łukasz Stasik

(signature of authorized person)

WARRANTY

Manufacturer warranty is 24 months after the start-up carried out by a fitter from Scorpion.

The manufacturer will replace or repair at a point designated by themselves all the parts that have defects in material or workmanship. The manufacturer is not responsible for natural wear and tear of working parts.

Warranty claims expire if:

- The cutter is not operated as intended in the manner recommended by the manufacturer in the manual,
- Major changes have been made to the machine.

Further, the guarantee is void in the following cases:

- The cutter was overloaded.
- The machine has been damaged or destroyed in an accident,
- Repair or attempted repair without prior written authorization.
- The cutter has been damaged by foreign objects, eg. steel etc.

The user of the cutter is responsible for regular maintenance of the device in compliance the instruction. Neglecting to regulary service machine or replace normally worn parts such as belts, lubricating oils etc. may invalidate the warranty.

The 24-month warranty is subject to reviewing maintenance every 8 months for the Contractor of the machine.

This warranty is the only warranty of The Manufacturer, who does not hold responsibility for any obligations of third parties. The Manufacturer is not liable for damage as a consequence of breach of warranty obligations.

In order to start warranty proceedings, The Owner of the equipment is required to submit a complaint report directly to The Manufacturer. In each case of submitting a warranty claim following information must be provided:

1. Date of delivery/ receipt,
2. Serial number of the device,
3. The period of use,
4. Date of damage/ spoilage,
5. Cause of damage/ spoilage,
6. Meter read (if the machine is so equipped).