



USER MANUAL



HG COMBI CUT

With touch



We thank you for buying the new HG Combi Cut.

Hedensted Gruppen A/S always tries to produce quality products, which you can count on. We are sure that you will be pleased with your new machine. To make sure that you get the most advantages from the machine from the start, it is important to study the functions very carefully.

The users manual contains, all the technical details and diagrams, an examination of the basis adjustments, a schedule with trouble shooting and mending of these, and a new section called “often asked questions” – or FAQ.

There are also small sections of spare parts with item numbers, which can be very useful.

There are pictures at the back of the manual of the machine and its parts. If you need service, it can be a great help both to you and our service team that we jointly according to the pictures can trace, where the problems are at the machine.

Therefore it is important that you always know, where the users manual is. We suggest that you keep it in the electric cupboard at the back of the machine.

From the factory the machine is rough adjusted, but because of the difference in mink, it is not sure that it fits 100 % to your mink.

An employee from Hedensted Gruppen will make the fine adjustment.

Before you get a visit for a start up, we will ask you, and the operator to read the user's manual thorough, and to make sure, that the persons, who are going to work with the machine are present during the visit.

You also must make sure, that there are supplies of air and power 380V, and that it is lead to the machine.

Hedensted Gruppen A/S wishes you great pleasure with your new HG Combicut.

Kindly regards

HEDENSTED GRUPPEN A/S

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2. Machine information.

HG Combi Cut TYPE:.....

MACHINE NO.:..... YEAR:.....

CUSTOMER:.....


DEALER:.....


.....

.....

.....

Id plate:

		Vejlevej 15, DK - 8722 Hedensted	
SERIE NR.	<input type="text"/>		
VOLT.	<input type="text" value="3+400+N+PE"/>		
AMP.	<input type="text" value="2,9"/>	AIR	<input type="text" value="7"/> BAR



3. Introduction.

HG Combi Cut is used for cutting up mink.

The slicing machine is constructed to carry out a correct cutting of the male/female mink combined with loosen the behind legs in one working operation.

The capacity of the machine with the leg loosener are up to about 180 pieces of mink pr. hour, and without the leg loosener up to about 350 pieces pr. hour (Both values are with trained users).

At the same time the machine has a flexible working area, which ensures a correct slicing of mink of variable sizes.

3.1 Construction.

HG Combi Cut is constructed in surface treated steel with painted shield. All the components are of the highest quality, and this combined with a well-arranged operation indicates, that this is a machine of high quality. Vertical and horizontal movements run on precision ball shears, which ensures a good repeatability.

3.2 Warranty.

There is 1 year of warranty on the HG Combi Cut.

Defect parts can be replaced, if the defect can be assigned to a fabrications error. Errors, which can be assigned to freight is not included in this warranty.

In cases of irresponsible treatment of the HG Combi Cut, no warranty is given, either on the machine or on damaged skins.

4. Warning.

Read this users manual **thoroughly** before using the machine.

Avoid staying too close to the machine, when you connect air and electricity, because the moveable parts can react quickly.

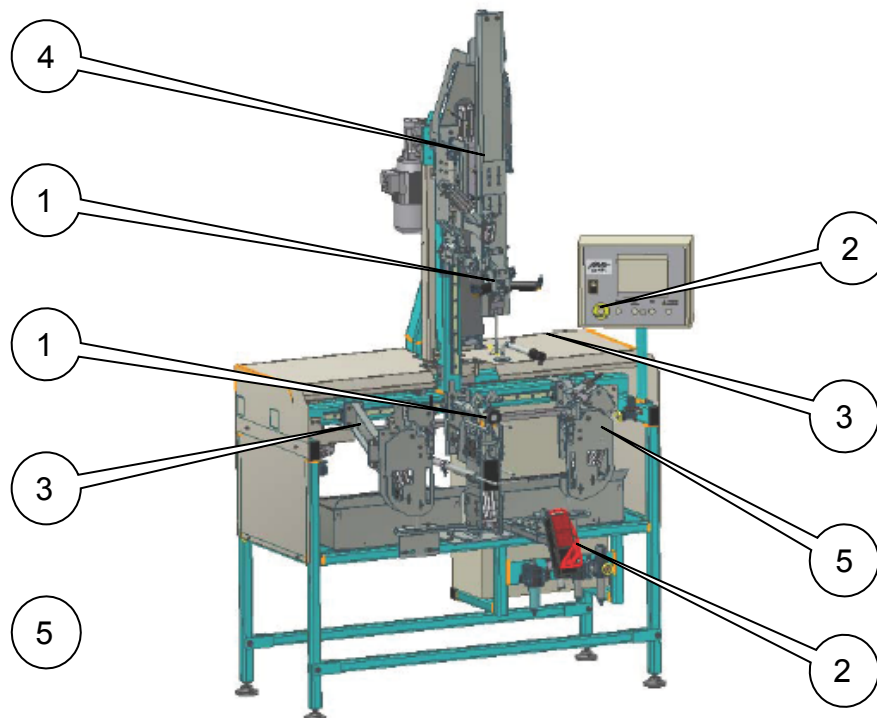
The operator must have instructions in use of the machine.

The slicing must only be used for slicing of mink.

Wrong use or ignorance of the security instructions can cause damages on the body or breakdown of the machinery.

Pay attention in following sectors:

1. Look out the machine contains rotating knives. (1)
2. Emergency stop must not be covered or put out of function. (2)
3. The slicing machine contains vertical and horizontal moveable knives. (3)
4. Look out the slicing machine contains vertical moveable parts.(4)
5. There is a risk of jamming your fingers in the paw holder. (5)
6. By use of the machine you have to use eye protectors.



4.1 Hazed signs.



DANGER – HIGH VOLTAGE

The operating box of the machine contains high voltage. Because of the danger, the box must not be opened by unauthorized employees.



DANGER – ROTATING PARTS.

Avoid touching the moveable parts of the machine with fingers or clothing, this can cause damages on the body.



DANGER – SHARP KNIVES.

The machine contains more sharp knives, both rotating pneumatic moveable. Avoid touching with fingers and clothing, this can cause damage of the body.



EAR- AND EYE-DEFENDERS DEMANDED.

During operation of the machine glasses must be used, because hair, sawdust and other objects can be thrown out.

During operation ear defenders must be used, because the sound level of the machine exceeds the normally allowed.

5. Setup of the Combi Cut.

The HG slicing machine has to be placed on a solid and plane floor, so that the machine can be operated standing or sitting on a special chair.

The height of the room must minimum be 3,00 cm.

The legs of the machine have to be adjusted, so that it stands in level and is steady without tipping. After setup you can remove the transport brackets on the legs of the machine by help of the 4 bolts, if they annoy the user.

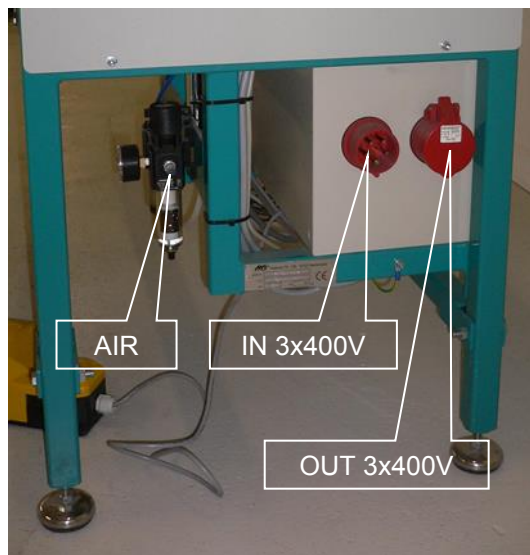
Notice that the weight of the machine is 300 kg.

Attention : Keep the transport fittings, if the machine has to removed.

5.1 Connection

Electricity:

The HG Combi Cut is fit with a 16A CEE-socket to which 400 volt is connected with zero and earth. The machine has a maximum power consumption on 2,9Amp during running.



Air:

The slicing machine demands a compressor pressure on min. 7 bar, and an air supply on min. 500 l/min. The air is connected with an air coupling of the Cejn 320.

To avoid stop in the slicing, it is important that the air, which is used in the slicing machine is free of water and dirt, as well as rust from old pipes.

Warning: The moveable parts will react quickly by connection of air.

Air tube and electric cable must not lay loose on the floor, because of risk of personal damage.

5.2 Connection of extra equipment.

The HG Combi Cut is fit with a 16A CEE socket with 3x400V. The socket is switched on and off on the main switch on the operation panel of the slicing machine. Extra equipment, such as HG Grid conveyor or HG Transport belt, which has to run at the same time as the slicing machine, can with advantage be connected to the socket.

5.3 Relocation.

Before moving the machine you have to disconnect the air- and electricity connection. Pay attention, the moveable parts of the machine can change position, when the machine vents.

Mount the transport brackets on the legs of the machine, and move it with a palletizer. Pay attention that the cables and the tubes of the machine are not squeezed.

Warning:

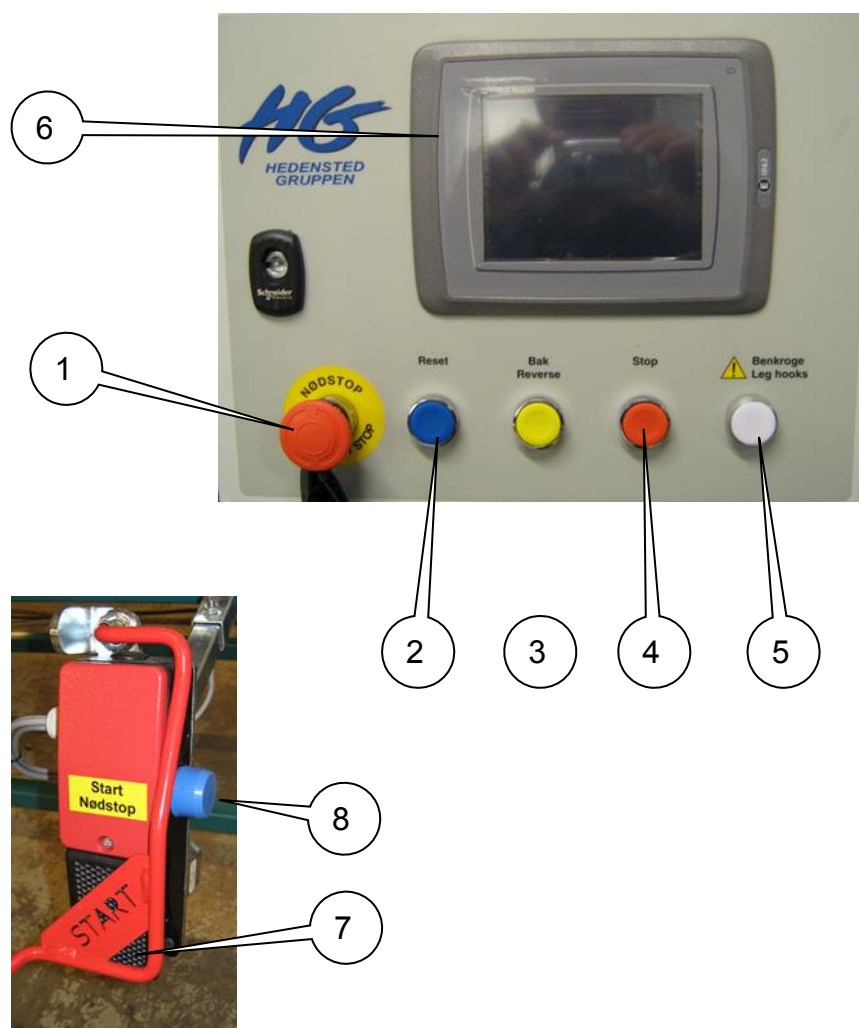
Do not lift the machine in the moveable tower.

Notice that the weight of the machine is 300 kg.

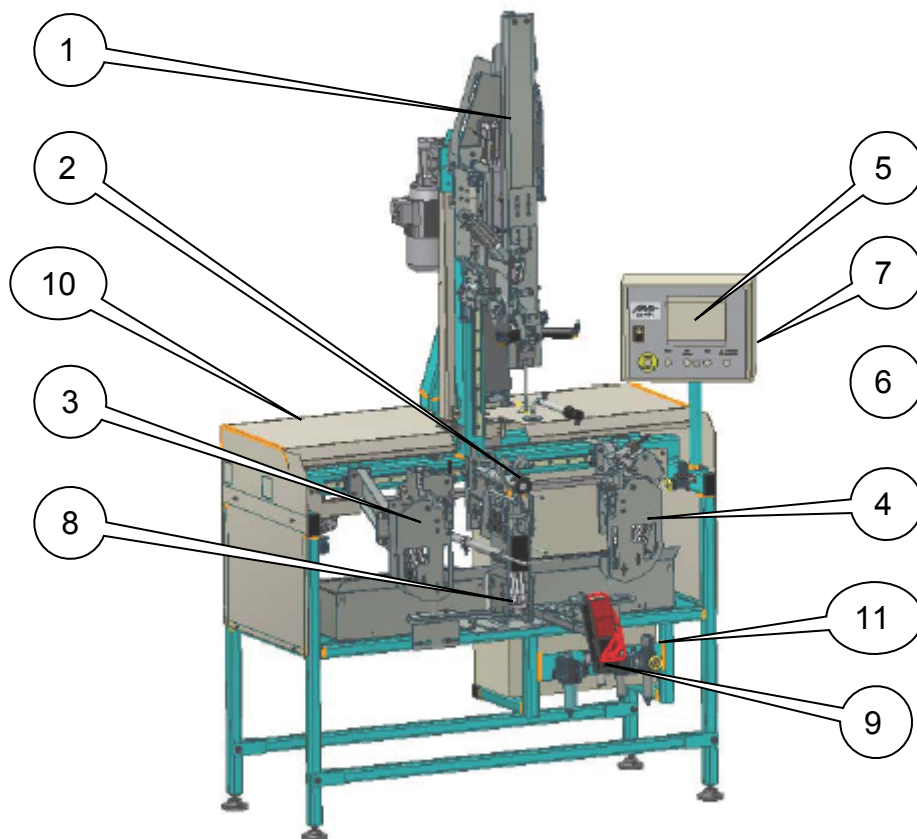
By setup on a new location repeat the procedure, which is described under section 5.

6. Control platform.

1. Emergency stop.
2. Reset.
3. Reverse – use by wrong inserted animal at the behind leg loosener procedure. By activating and simultaneous press on the foot pedal you can reverse in this sequence.
4. Stop – possibility for stopping between every sequence.
5. Lamp – blinks before hooks to the hind leg loosener closes
6. Mac panel. (See the section about programme)
7. Knee pedal with start & emergency stop.
1.Step = start, 2.step = emergency stop
8. Reset emergency stop in foto pedal.



1. Tower with tail roll, tail slicing and spade for belly.
Spade for back and tail, and pull off hooks for hind legs.
2. Cross knife.
3. Left paw holder/clip/cut system.
4. Right paw holder/clip/cut system.
5. Operation panel (MAC Panel).
6. Adjustment of stretch pressure.
7. Main switch.
8. Body holder.
9. Knee pedal.
10. Valve system.
11. Air pressure

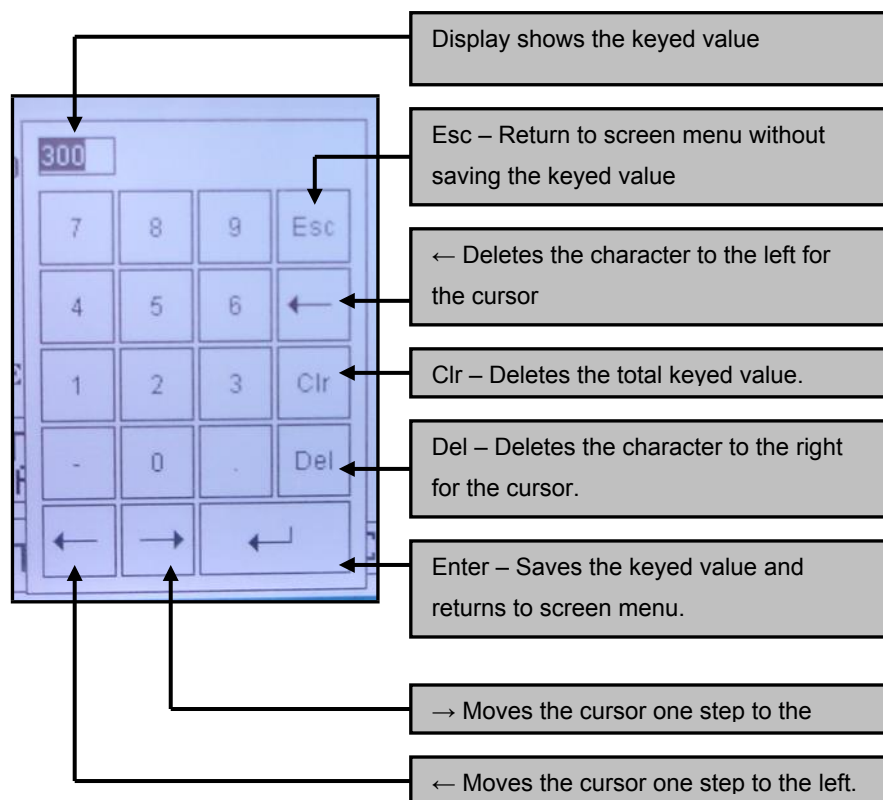


7. Operation of the Mac panel.

At the operation panel on the skinning machine there is a touch panel. The panel is used to adjust the machine to the user and his mink, but it can also inform the operator with different statistical information.

You operate the panel by pressing the display, on the area illustrated with the wanted menu. If you want to change a value, press on value and the below numeric keyboard emerge. Here you key the wanted value followed by enter.

The other keys on the keyboard have following functions:.

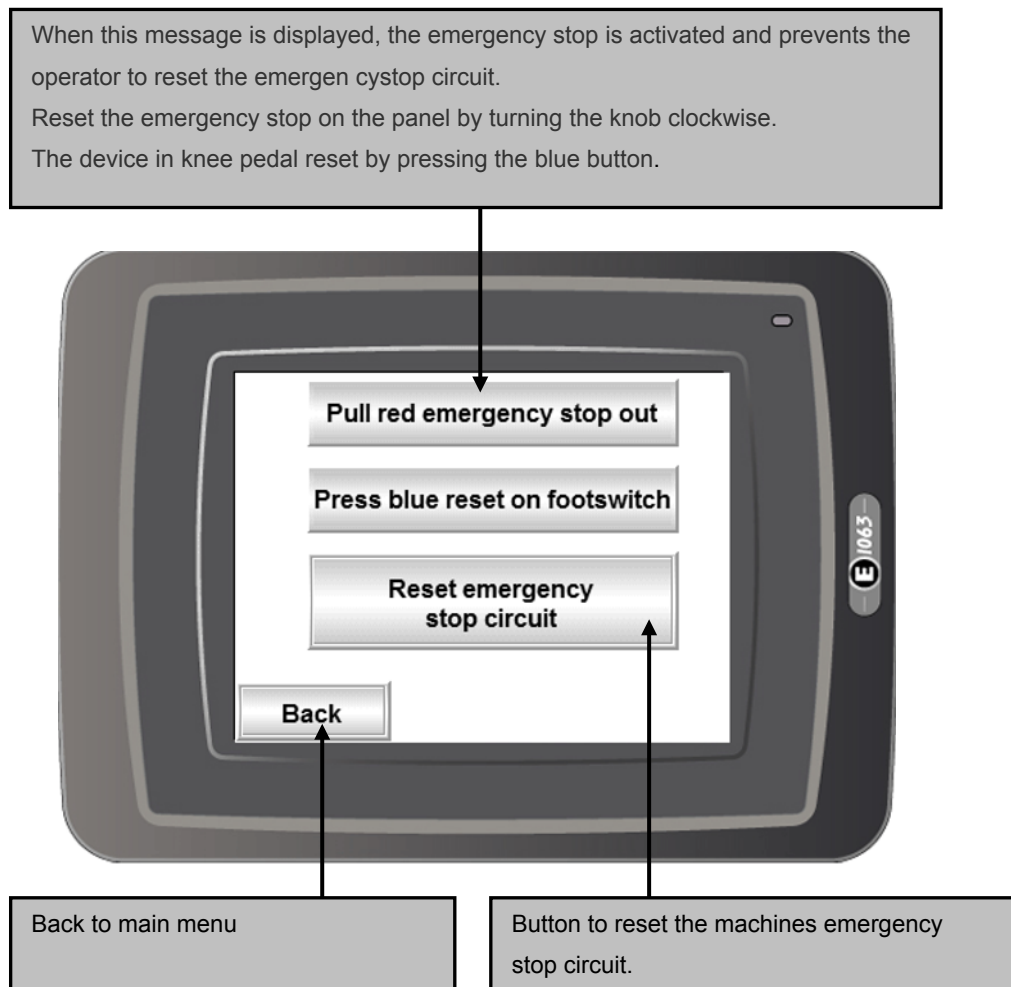


8. Description of screen pictures.

When you start up the below screen picture emerge. Reset the emergency stop circuit to activate the machine's operating system.

If the message at the top of the panel appears, deactivate emergency stop devices on the dashboard and pedal.

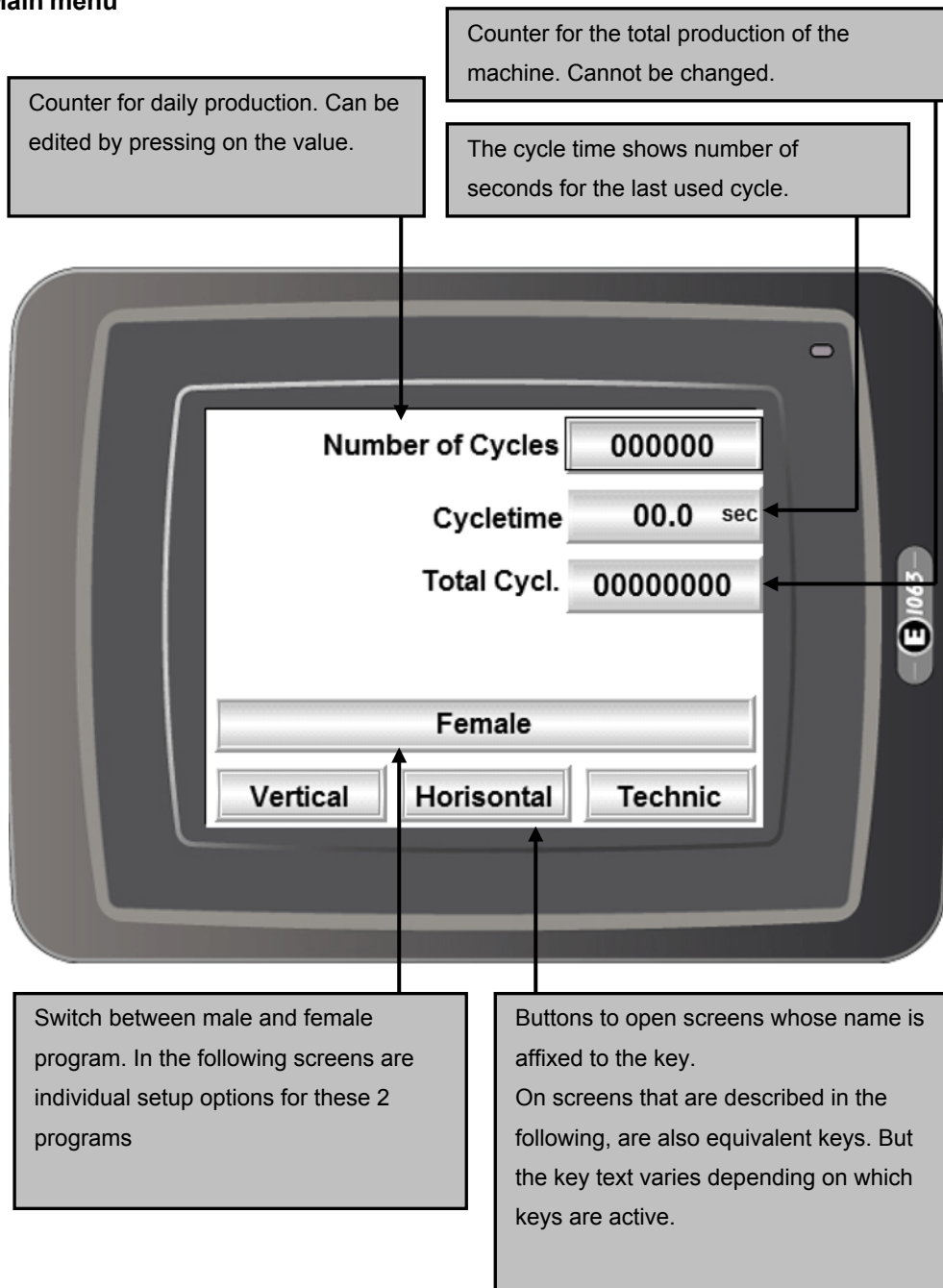
Now press the reset emergency stop circuit and the main menu appears.



This picture is the machine's main menu and by pressing "Return" key in the other screens it will returned to this.

In the middle of the screen displays the operator messages. The machine writes which program is active and alarms if it is missing a signal.

Main menu



Vertical menu.

Setting the depth of the triangle cut in Male and Female program

Setting the depth, the leghooks run, before it closes for Male and Female program.

	Male	Female
Spade down	000 mm	000 mm
Leghook Close	000 mm	000 mm
Startposition	000 mm	000 mm
Stretch off	000 mm	000 mm
Tailroller in	0.0 sec	0.0 sec

Back

Settings

Setting the position where the skinloosen sequence is completed, and it releases the animal. This way the machine does not have to drive all the way to the top if it is not necessary. When the tower has reached the position, it releases the animal, and the next cycle may begin. The distance is calculated from tower top and down.

Button for other settings on the vertical axis.

Setting the pause between the spade reaches its bottom position (Spade down) and the Tailroller closes.

Setting the tower's starting position in Male and Female program. The distance is calculated from the tower's top position.

Vertical settings menu.

Adjust the speed the belly spade runs down with.
Set as a % of max speed.

Adjust the speed the leg hooks run down with.
Set as a % of max speed

	Male	Female
Spade belly spd.	000 %	000 %
Leghook speed	000 %	000 %
Skind loosen spd.	000 %	000 %
Leghook	OFF	
Tailhook step	ON	
Vertical step	OFF	

Step tailhook is only active when vertical step is set to OFF. Here you can select if the operator wants a step between the tailhook close and the tower going up.
The feature can protect against pelting error at the tailhook when running without vertical steps.

You can disconnect the foot pedal to the tail spade and the tail hook. After the leghooks is closed, the machine will finish without further steps.

You can switch off the hind leg loosener module. Now the machine will run as an ordinary slicing machine.

Adjust the speed the tower runs up with, when you loosen the skin on the legs and the tail. Set as a % of max

Horizontal menu.

Setting the cross cut speed.
Speed entered in % of max speed.

Setting the number of paw cut.

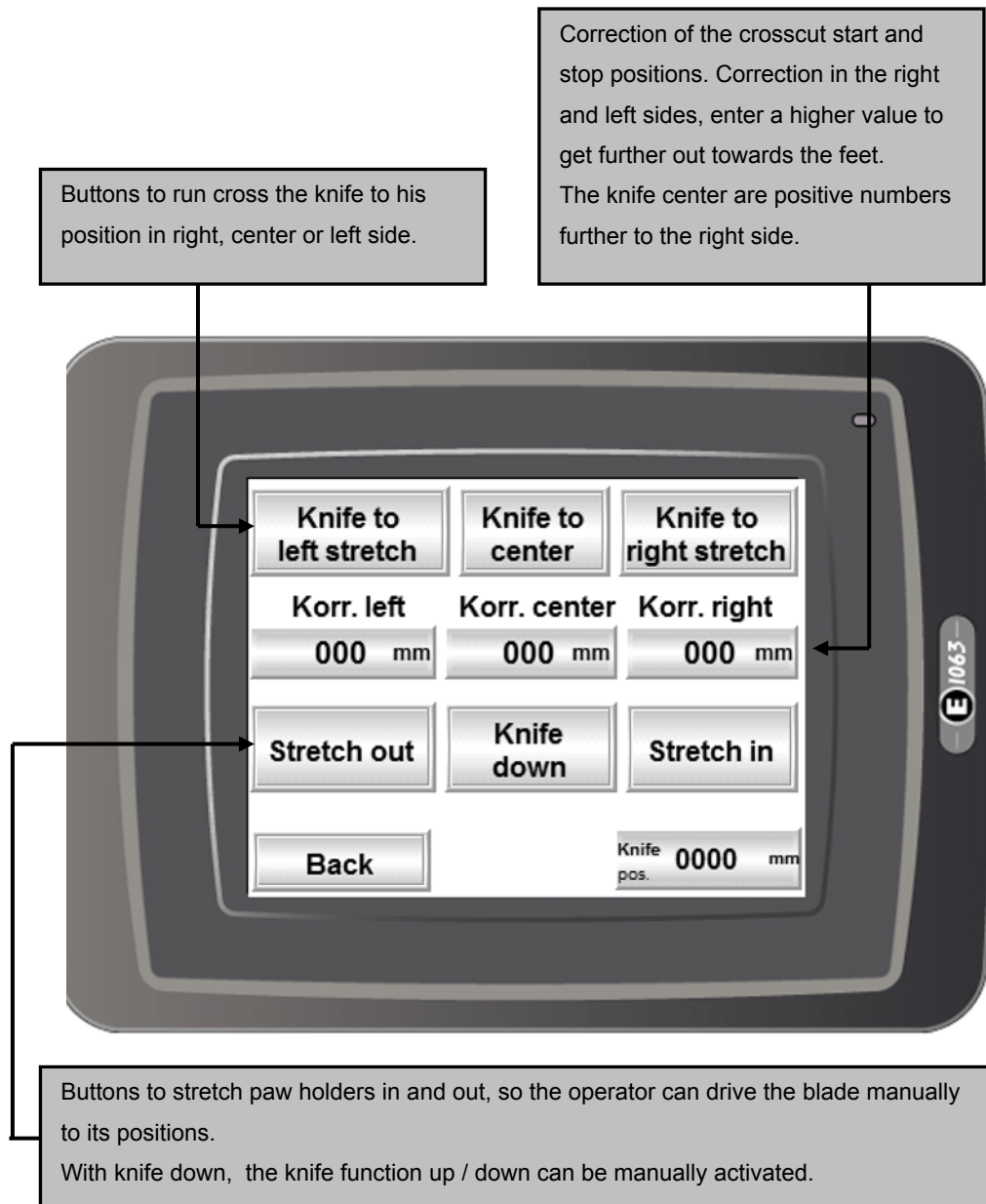
	Male	Female
Knife cutt.speed	000 %	000 %
No of pawcuts	0	0
Str.pos start knife	000 mm	000 mm
Extra stretch	0.0 sec	0.0 sec

Adjustment of extra stretch time.
Increasing this value makes it easier for the machine to find the correct cross cut position. At 0.1 sec the machine runs as fast as possible, and are default settings. If the stretch pressure is very low, it may be necessary to increase this time, so that the operator gets more time to put the animal correctly in before the knife reads its cutting position.

Setting stretch length before the knife starts to run.
When using a low-pressure stretch, a high value must be entered so the knife begin to position later.
Please note that the value does not exceed the animal's size. In this case, the knife remain in the starting position and wait.

If the crosscut knife runs left and will not continue, the margin between the stretch position and crosscut position are too large. Reset the machine and set stretch time up a bit.

Setting knife positions menu.

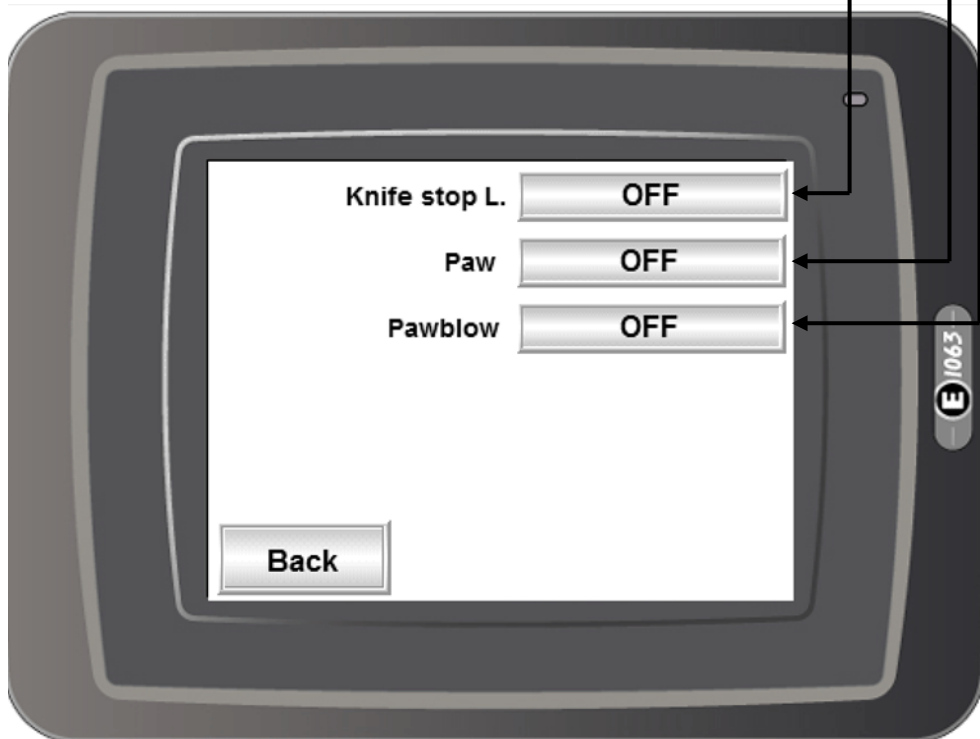


Vertical setting menu.

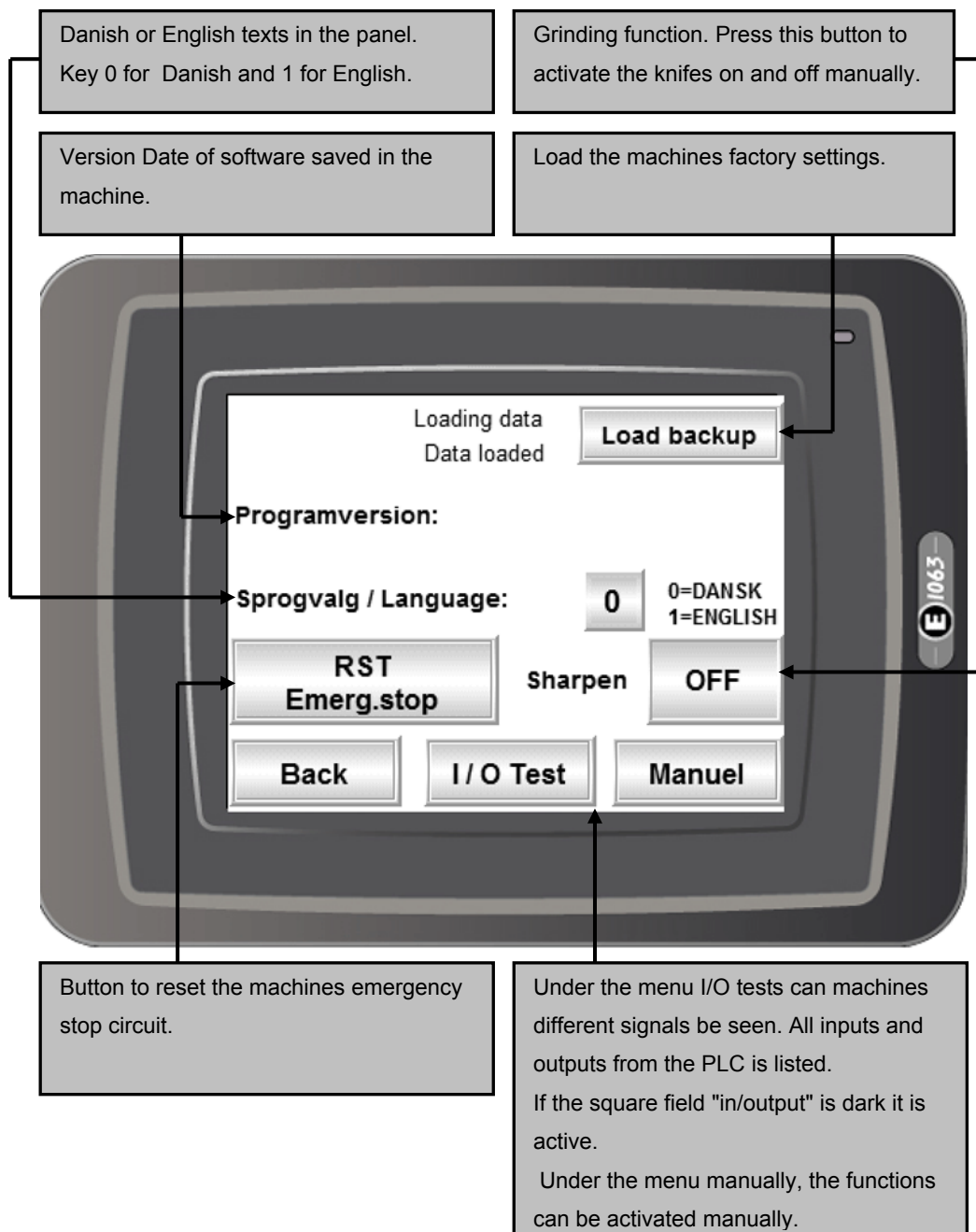
Blow of paws can here switched on and off. Blow can only be turned ON, when running with option Paw OFF.

Adjust the machine to run with paw clip (OF) or paw cut (ON).
When paw on function is used, paw blow cannot be turned ON.

Here you can turn on and off, the stop of the cross knife. At stop, the knife only drives on by activating the foot pedal. If you keep down the foot pedal after start the knife runs without stopping.



Technic menu.



8. Starting up the HG Combi Cut

The below procedure is made without mink.

1. Connect Electricity 3x400V+0+PE
2. Connect air Min. 7 bar.

Warning: The moveable parts will react quickly an run to starting position.

3. Check input pressure (7 bar)
4. Adjust the input pressure (7 bar)
5. Emergency stop on panel and pedal must be deactivated.
6. Press the button Reset Emergency stop on the touch panel.
7. Press the button Reset.
8. Press the foot pedal.

Warning: Now the machine will run a cycle.

9. Watch the stretch pressure (min. 1 bar - max. 4 bar)
10. After running a cycle the machine returns to starting position.
 - 10.1 You can adjust the stretch pressure
 - 10.2 Adjust other things in program
11. Repeat this procedure point. 7 to 9, until the machine has the wanted pressure.

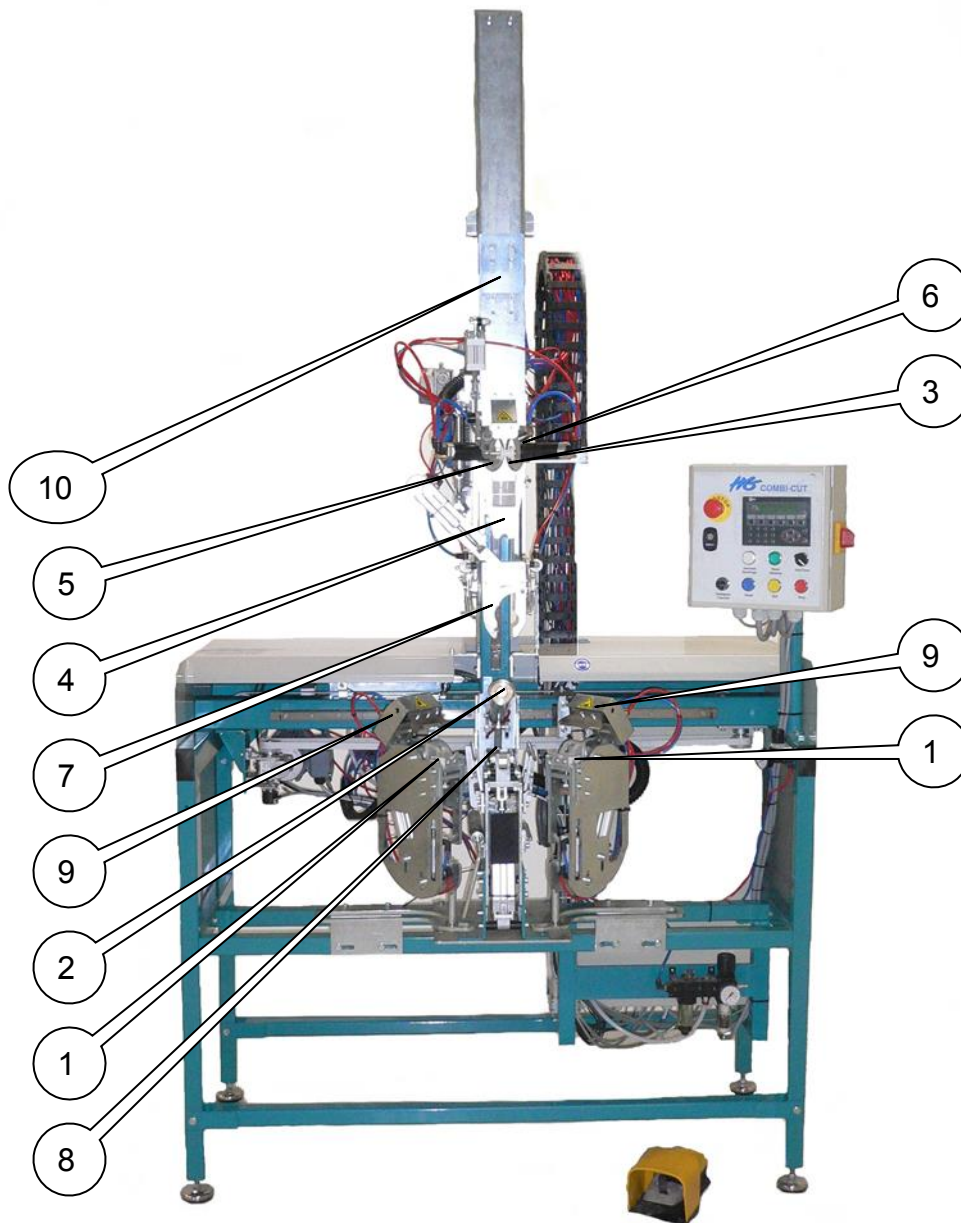
Warning: Only adjust the machine when it does not run, or you risk to get squeezed between the moveable parts of the machine.

When you adjust the machine, do not activate the knee pedal.

9. Operating the HG Combi Cut.

The slicing machine can be adjusted so that it fits to the need of the operator. The below description of the operation take basis in the factory adjustments, where the machine runs with hind leg loosener and step functions.

If the machine is adjusted to work as a ordinary slicing machine without hind leg loosener then skip point 10 – 15.



- 1 Take the rear paws of the mink between forefinger and thumb, so that the belly points against the machine.
- 2 Place the paws in the paw holders (1)
NOTICE! Do not place the paws too deep in the paw holders, this can cause that the slicing do not get optimal.

Warning: Avoid putting your fingers between the paw holders.

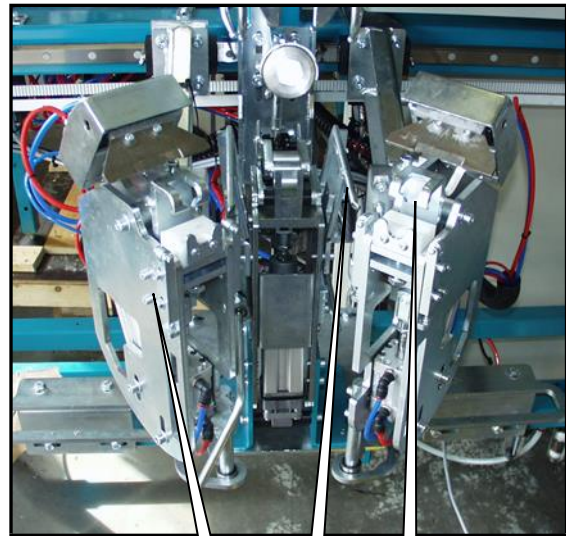
- 3 Lock the paw holders by activating the foot pedal.
- 4 Then the machine pulls the paws from each other, and at the same time the knife (2) runs against left.
- 5 Before you start to slice:
 - a) Fetch the tail of the mink with the right hand.
 - b) Turn the hand so that it is placed right under the tail root and the skin.
 - c) Decide the cut by pulling or pushing the body.
- 6 The Ø50 knife (2) to the long running cut now cuts from left against right. When the knife reaches the right hind leg, the knife returns to starting point.
- 7 The spade (4) runs down and loosens the skin on the belly.
- 8 The Ø80 knives (5) cut the V-cut by a down going movement.

- 9 Under the V-cut you lift the tail point to vertical position and you put the tail into the tail roll (3), and this will pull the tail against the nylon roll and cut the tail, while the spade runs up with a vertical movement. Now the tail is cut up. The spade returns to starting point.
- 10 The hind leg hooks runs out with a horizontal movement.
- 11 Step foot pedal. The tail is pulled, so that the cross cut opens up. You steer with the tail of the mink, so that the back hook is about 75 % free of the hind leg. Step pedal. Then the hook runs down with a vertical movement and stops with an open hook. Activated the foot pedal. Next step closes the hook around the thighbone.
- 12 Activate the foot pedal. Then the tail loosener spade (7) runs with a horizontal movement. Pull hard in the tail, and the spade runs down on the back of the mink.
Activate the foot pedal. Back hook closes.
- 13 Activate foot pedal. Body holder (8) is activated around the mink and is kept.
- 14 Paws are clipped (9) or cut – release the mink. (Section 13.3)
- 15 The tower (10) runs up vertical, at the same time hind leg and tail are loosened.
- 16 Body holder returns to starting position, and the mink dumps down on the conveyor belt.
- 17 The operator takes a new mink, and the machine returns to starting position.

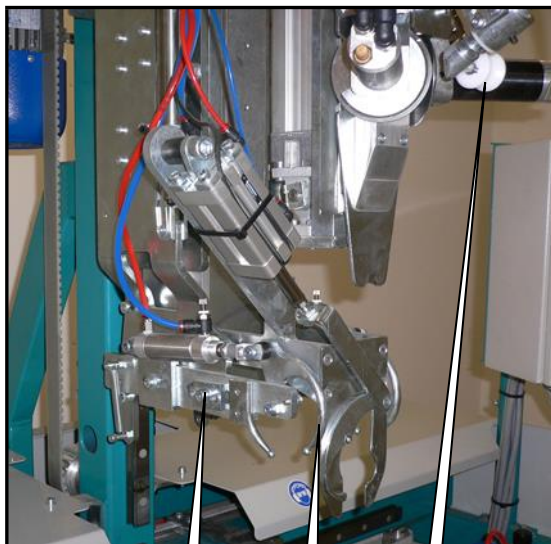
10. Adjustment

To obtain the optimal slicing it is necessary to adjust the machine individual to each operator.

1. Adjustment of the thigh supporter (1), so that the give a good support.
2. Adjust the paw clamp (2), so that the paw is properly tightened during the slicing.
3. Adjust the paw knife (3), so that it cuts or clips paw.
4. Adjustment of the hind leg hooks (4). These have to be adjusted in the MAC panel, so that they run 3 mm past the thigh supporter immediate after the hooks close. If they run too far you risk to spoil the hind leg skin.



3 1 2



6 4 5

5. Adjust the tail roll (5), so that the centre of the two 80 mm knives are right outside the upper edge of the tail roll.
6. Adjustment of the hooks to the hind leg loosener (6), it has to go down a 1/3 into the backside of the cut up hind legs.

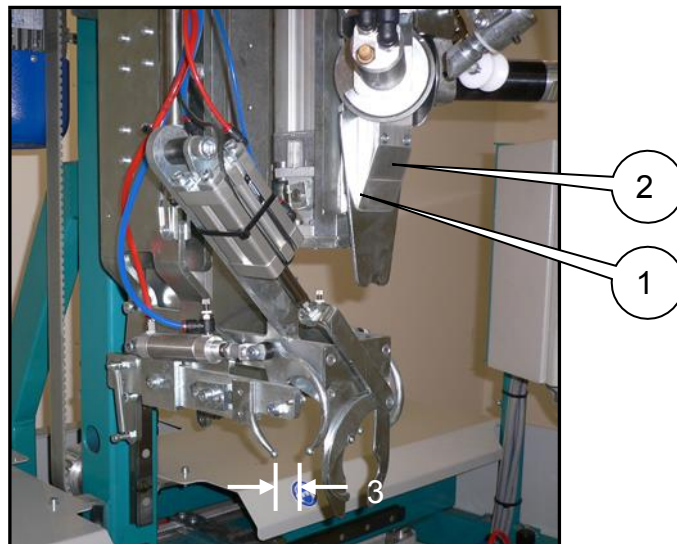
10.1 Change between male and female.

In the Mac panel you distinguish, as earlier mentioned, between male and female values for the position of the tower. The Male/Female reverser on the operation panel changes between these typed values.

To obtain the optimal slicing you also have to change between the wedges on the belly spade. The wedge positioned the mink correctly in proportion to the triangular cut.

By slicing of MALE mink wedge 1 has to be mounted alone.

By slicing of FEMALE mink the wedges 1 and 2 have to be mounted.



The hind leg hooks (3) have to be adjusted, so that the hooks close around between the skin and the thigh on the mink.

The opening on the hind leg hooks have to be adjusted to about 32 mm for MALE mink.

For FEMALE mink the opening has to be adjusted to about 16 mm.

The stretch pressure on the paw stretch also has to be changed between MALE and FEMALE.

By Male mink the stretch pressure is adjusted to about 3 bar.

By FEMALE mink the stretch pressure is adjusted to about 2 bar.

11. Maintenance/Cleaning

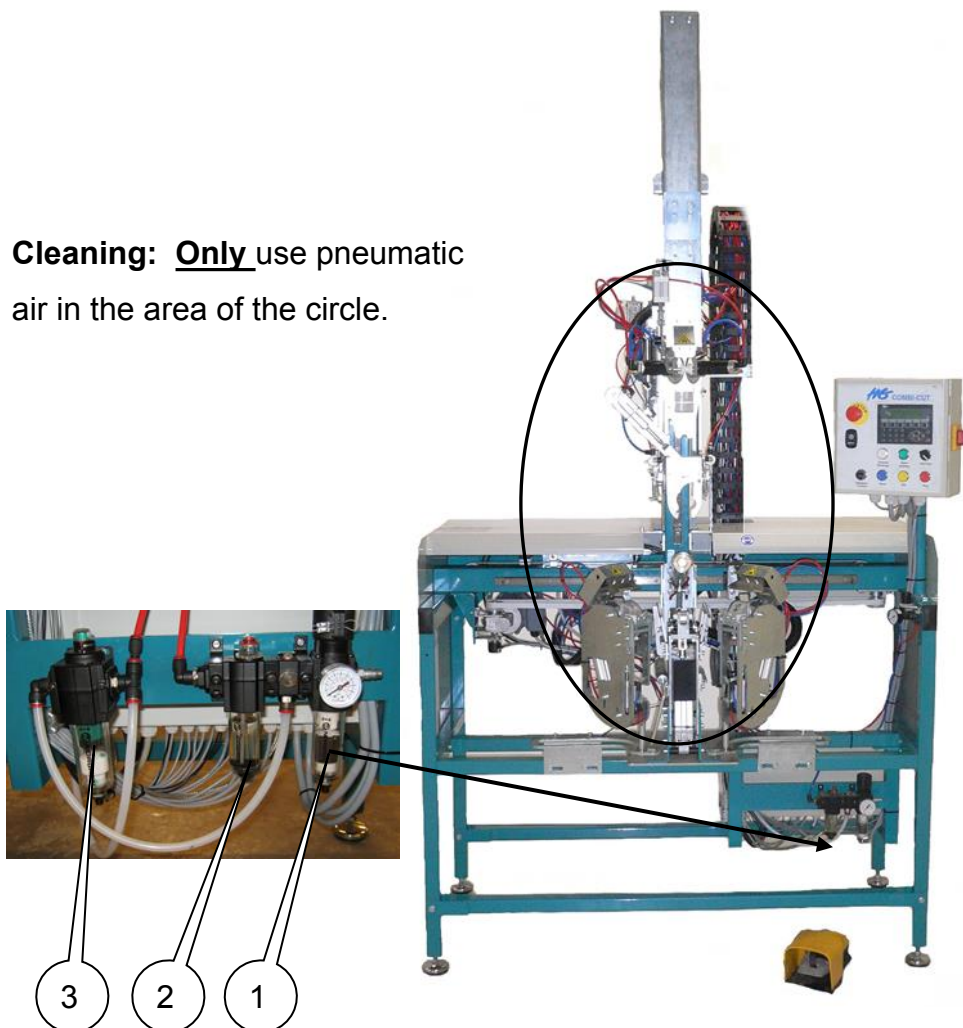
To make the slicing machine work optimal, you have to clean and maintain it after following description.

11.1 Daily cleaning and maintenance

Before you start cleaning, disconnect electricity and pneumatic air.

- 1 After use only clean the machine with pneumatic air.
- 2 Remove slicing rests and sawdust from the moveable parts of the machine, so they can run freely and easily.
- 3 Empty the water separator (1).
- 4 Check the air filters(1+3). Replace as needed.

Cleaning: Only use pneumatic air in the area of the circle.



11.2 Weekly cleaning and maintenance

Before cleaning the machine disconnect electricity and pneumatic air.

1. After use clean the machine with pneumatic air.
2. Empty water separator (1).
3. Check the oil level in the pneumatic lubricator and replenish after need (2).

Always use the right air oil: Statoil NUTO H 15.

Hedensted Gruppen – item no. 476550

4. Shears and slippery surfaces are dried clean and oiled with fine oil.
Hedensted Gruppen – item no.476590
5. The lubricating nipples of the shears are oiled with grease.
Hedensted Gruppen – Item no. 476570 (Patron 400g)

11.3 Storing of the HG Combi Cut.

To obtain a long lifetime and good reliability by starting up, it is necessary to clean the machine well and make an extra oiling. The slicing machine is cleaned as described under daily/weekly cleaning.

Shears and slippery surfaces are dried and oiled with fine oil

Hedensted Gruppen item no. 476590

The lubricating nipples of the shears are oiled with grease.

Hedensted Gruppen item no. 476570 (Patron 400g)

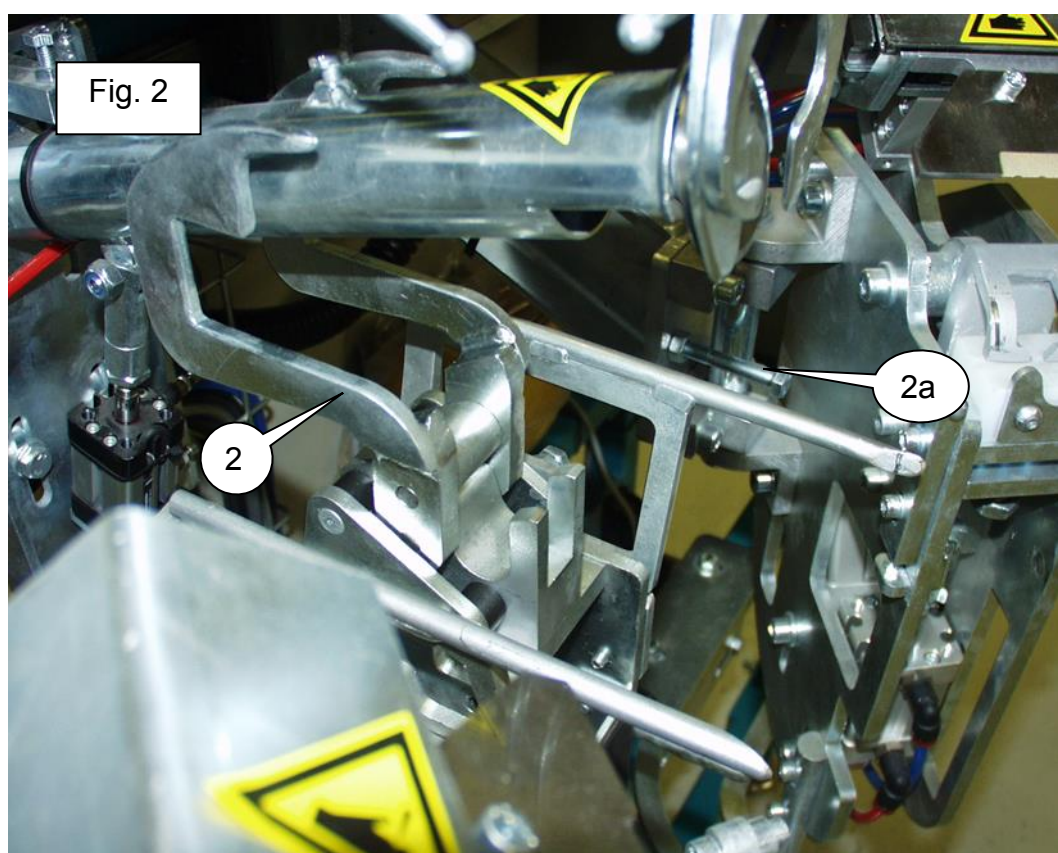
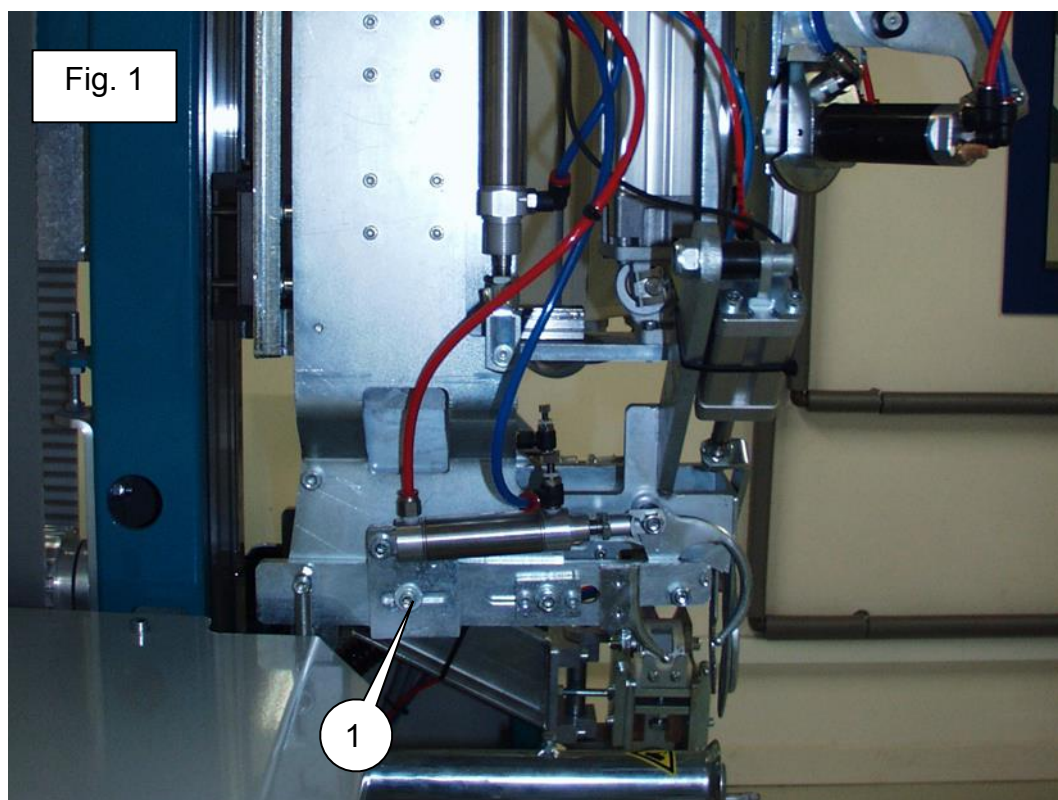
Oil the air engines extra well by opening the pneumatic lubricator and run a couple of times with the machine.

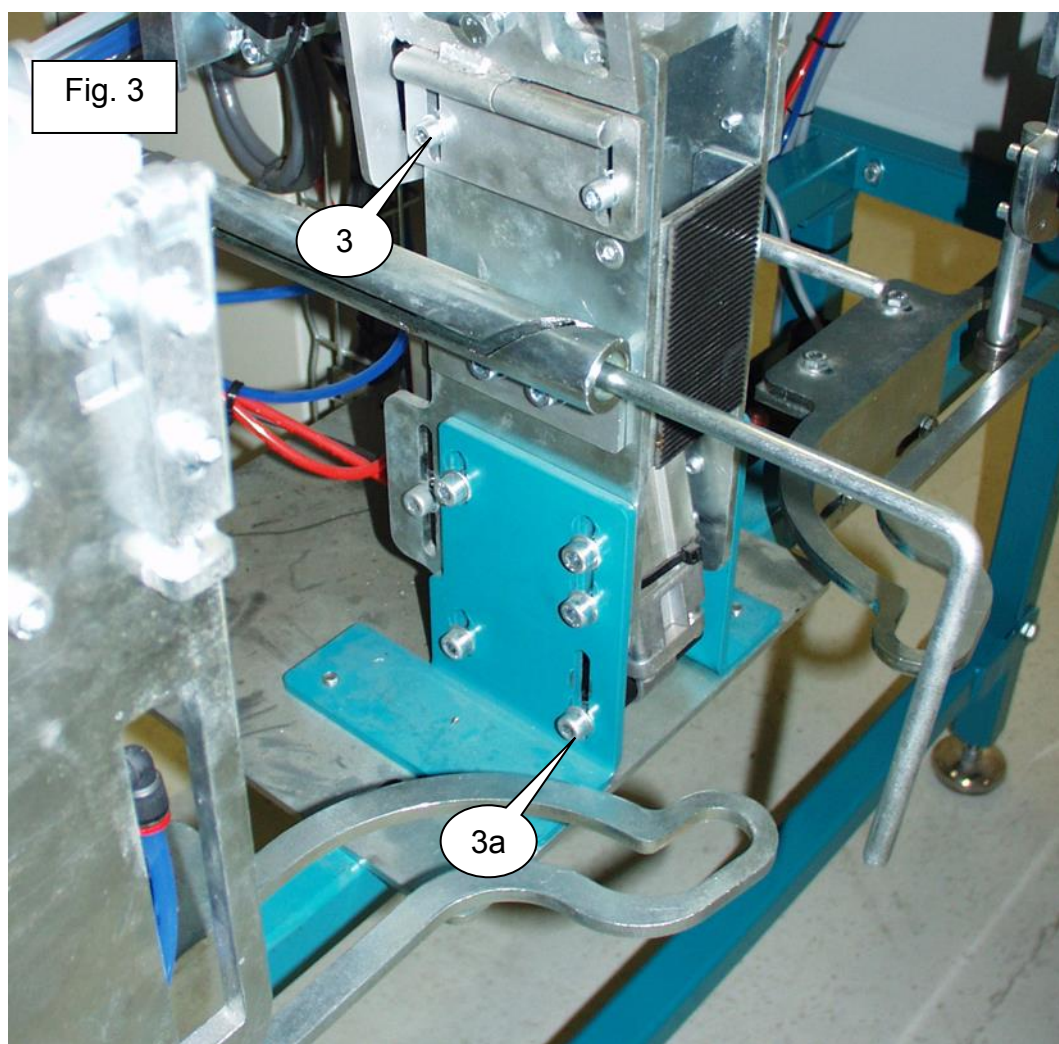
Remember: To close completely for the pneumacit lubricator again, and then open 1 round then it is ready for next season.

Always use the right air oil: Statoil NUTO H 15.

12. FAQ

Problem	Cause	Solution
When I put the mink in and step the pedal the paw is pulled out of the paw holder?	The stretch pressure is too high or there is dirt in the slide	Reduce the stretch pressure, and if it does not help, dismount the air of the machine, clean and massage the slide.
The cross-section is not quiet over the mink, even though I have just put it in?	The paw holders are mutual incorrectly adjusted.	Adjust the screws, which are marked with 2a on figure 2, so that the line between the two is quite right.
When I make a triangle cut, the cut is not deep enough?	The spade does not cut deep enough in the mink.	Adjust the depth in vertical data on the operating panel
When the legs are being loosened, the skin bursts on the thigh?	The cross cut is laid too far on the belly side of the legs, therefore it does not cross the paw blades.	
Too much meat is left on the thighs by loosening the legs?	The hooks do not close far enough round or it is bended.	Figure 1- open the hooks a little bit more with the adjustment screw
I have opened the hooks, but it does not help?		Adjust the depth on the hind leg loosener in the operating panel (vertical data), they have to be placed about 3-4 mm under the thigh holder.
Even though I close the hooks correctly round the thighs, it does not loosen well?	The hook does not close far enough round or it is bended	Try to increase the length and stroke, so that the balls just pass each other. If defect – then change the hook.
The tail spade makes a hole in the skin when it runs down?	The tail is stretched to hard out, or there can be a burr on the side of the spade.	
I have closed the tail hook and want to complete the skin, but the machine stops?	The signal for completing is missing, probably because some dirt is in the lock to the body holder.	Press reset on the panel, clean the lock and run the body again
I have cleaned the lock, but still it does not work?	When you run big minks, it can happen, that the body holder do not get far enough round to lock	Fig. 3 – At repeatable cases, try to increase the length of stroke by raising the cylinder 3-4mm (3a). At the same time lower the hind leg holder similar.
The tail is not cut up properly?	The tail roll is wrong adjusted, or it does not get close enough to the blade. The blade can be deaf.	Check that the tail roll attach can move unhindered in the length direction, clean for dirt. Sharpen the blades if necessary.
I have tried the various possibilities, but still it does not work?		Dismount the air of the machine and check that the tail roll can reach right to the blades. The tail roll has to be placed right beneath the centre of the blades.





13. EC Declaration of Conformity

Hedensted Gruppen A/S
Vejlevej 15,
8722 Hedensted

- herewith declares that:

HG slicing machine Combi Cut
Typenummer 207802

- is in conformity with the provision of:


The Machinery Directive 2006/42/EF
The low Voltage Directive 73/23/EØF

- and the following harmonised standards have been applied.

DS/EN 12100-1:2005
EN 60/439-3
DS/EN 13857:2008

1. november 2010

Hedensted



Jens Jørgen Madsen
Direktør

14. Technical specifications

Voltage	:	3x400V + N + PE
Connection	:	16A CEE
PLC-control	:	220 V/ 24 V DC
Pneumatic air	:	7 bar
Air volume	:	Min. 500 l/min.
Air connection	:	Cejn 320 quick coupling
Kapacity	:	180/350 mink pr. hour
Weight	:	300 kg
Dimensions	:	
Width	:	1400 mm
Transport hight	:	2400 mm
Operating hight	:	3000 mm
Length	:	900 mm