

User manual

Treatment crush

SA0042



Manufacturer:

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Introduction

Wopa Constructiebedrijf B.V. specialises in the development and production of hoof trimming and treatment crushes for cows and bulls for both professional users and cattle farmers.

Our crushes are developed and produced to the highest standards of safety, ease of use, animal welfare and hygiene, always striving to achieve an optimum.

This manual contains relevant information and instructions for installation, operation and maintenance of the machine.



- The machine is not suitable for use in environments with an explosion hazard.
- All persons responsible for operation must, at minimum, read and understand the sections in these operating instructions on its operation and safety in full.
- All persons responsible for assembly, installation, maintenance and/or repair must read and understand these operating instructions in full.
- The user is responsible for the interpretation and use of this manual in all circumstances. Contact the owner or supervisor in case of questions or doubts about the correct interpretation.
- This manual should be kept near the installation and within easy reach of the users.
- All significant maintenance work, adjustments to the installation and comments must be recorded in a logbook, see appendix 8.1.
- Modifications to the installation/machine are not permitted without the prior written approval of the supplier.
- Contact the supplier for special maintenance work not included in this manual.
- Always adhere to the safety requirements as indicated in section 3.
- The proper functioning and safety of the system can only be guaranteed if the recommended maintenance is done correctly and on time.

Warranty

The warranty is subject to the following limitations. The warranty period for products supplied by Wopa is 12 months from the date on the purchase document. This warranty is limited to manufacturing and material defects and therefore does not cover failures due to any part of the product being subject to any form of wear. Normal wear that can be expected from the use of this product is therefore excluded.

1. Wopa's responsibility is limited to the replacement of defective parts; we do not accept claims for any other damages or costs.
2. The warranty is voided automatically in case of overdue or poorly performed maintenance.
3. If there is any doubt about maintenance work or if the machine is not working correctly, the supplier should always be contacted.
4. The warranty does not apply if the defect is the result of improper or negligent use, or of maintenance performed contrary to the instructions provided in this manual.
5. The warranty is voided if repairs or modifications are made to the product by third parties.
6. Defects arising from damage or accidents caused by external factors are excluded from the warranty.
7. If we replace parts in accordance with the obligations of this warranty, the replaced parts then become our property.

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EC declaration of conformity (copy)

We,

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declare under our sole responsibility that the product:

machine:	Treatment crush
type:	SA0042
article numbers:	5.4111.0000.0 (Standard treatment box)
	5.4111.0010.0 (Electric treatment box)
	5.4111.0011.0 (Electric treatment box (small cows))

to which this declaration relates, is in conformity with the provisions of the following Directives:

2006/42/EC	(Machinery Directive)
2014/30/EU	(EMC Directive)

the following standards have been taken into account:

NEN-EN 12100	Safety of machinery. Basic concepts, general principles for design.
NEN-EN 349	Safety of machinery - Minimum gaps to avoid crushing of parts of the human body
NEN-EN ISO 13849-1	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design
NEN-EN 4413	Hydraulic fluid power - General rules and safety requirements for systems and their components
NEN-EN 60204-1	Safety of machinery - Electrical equipment of machines Part 1: General requirements

The undersigned is authorised to compile the Technical File:

The Netherlands - Harreveld, January 2021
Wopereis





J.W.A.

Director













Overview of symbols

The following symbols are used for all actions in which there is a risk to the safety of the user and/or technician and caution is required.

	Attention!
	Hazard: <ul style="list-style-type: none">• High voltage!
	Hazard: <ul style="list-style-type: none">• High temperature!
	Tip: <ul style="list-style-type: none">• Provides quick insight or gives tips to make certain actions easier and simpler.

Pictograms

A number of pictograms and warnings have been placed on the installation, among other things to alert users to possible risks.


Pictogram	Description	Location
	<ul style="list-style-type: none"> Type plate 	<ul style="list-style-type: none"> On the machine frame
	<ul style="list-style-type: none"> Read the user manual Wear safety glasses during mechanical operations. Wear hearing protection during mechanical operations. 	<ul style="list-style-type: none"> On the machine frame
	<ul style="list-style-type: none"> It is strictly prohibited for unauthorised persons to be present within the working area of the crush. 	<ul style="list-style-type: none"> On the machine frame
	<ul style="list-style-type: none"> Warning pictograms for System under pressure. 	<ul style="list-style-type: none"> On both sides of frame
	<ul style="list-style-type: none"> Entrapment hazard 	<ul style="list-style-type: none"> At the back gate. If this is present.
	<ul style="list-style-type: none"> Warning pictograms for mechanical and electrical hazards 	<ul style="list-style-type: none"> On the machine frame
	<ul style="list-style-type: none"> Warning pictogram Pinching hazard for hands 	<ul style="list-style-type: none"> On the machine frame
	<ul style="list-style-type: none"> Warning pictogram Do not walk under load during lifting 	<ul style="list-style-type: none"> On the machine frame
	<ul style="list-style-type: none"> Warning pictograms Electrical hazards. 	<ul style="list-style-type: none"> On the machine frame
	<p>ATTENTION!</p> <ul style="list-style-type: none"> Regularly check that the pictograms and markings are still clearly identifiable or legible. Replace them if this is no longer the case. 	

1. Technical information


	SA0042	
General		
Ambient temperature during operation	-10 to +40	°C
Noise production	< 75	dB(A)
Machine dimensions (base)		
Length	2320	mm
Width	1650	mm
Height	2370	mm
Weight	880	kg
Maximum dimensions (set up)		
Length	3120	mm
Width	1650	mm
Height	2370	mm
Weight	940	kg
Electrical connection *		
Power supply	1 or 3 phase	-
Voltage country-dependent	230 or 400	V
Required fuse	16	A
Connected load	3 or 4	kVA
Hydraulic installation		
Maximum operating pressure	145	bar
Tank filling capacity	17	litres
Oil type	See Figure 9	

- See the electrical diagram
- If the crush is provided with a 230 V plug, it must be connected to an electrical outlet that is protected by a residual current device. (always according to applicable local regulations) (30 mA)

2. Description of the installation

	<p style="text-align: center;">FUNCTION</p> <ul style="list-style-type: none">• This section gives an overview of the most important components and functions. If detailed information is available elsewhere in this manual, you will be directed to the specific sections.• The design of your crush may differ from the figures below.
---	---

2.1 Description of main components

	FUNCTION
	<ul style="list-style-type: none"> • The SA0042 is specially designed for hoof trimming and treatment of dairy cattle. • After the cow is secured in the crush, the cow can be treated at the desired areas by opening the respective side gates.

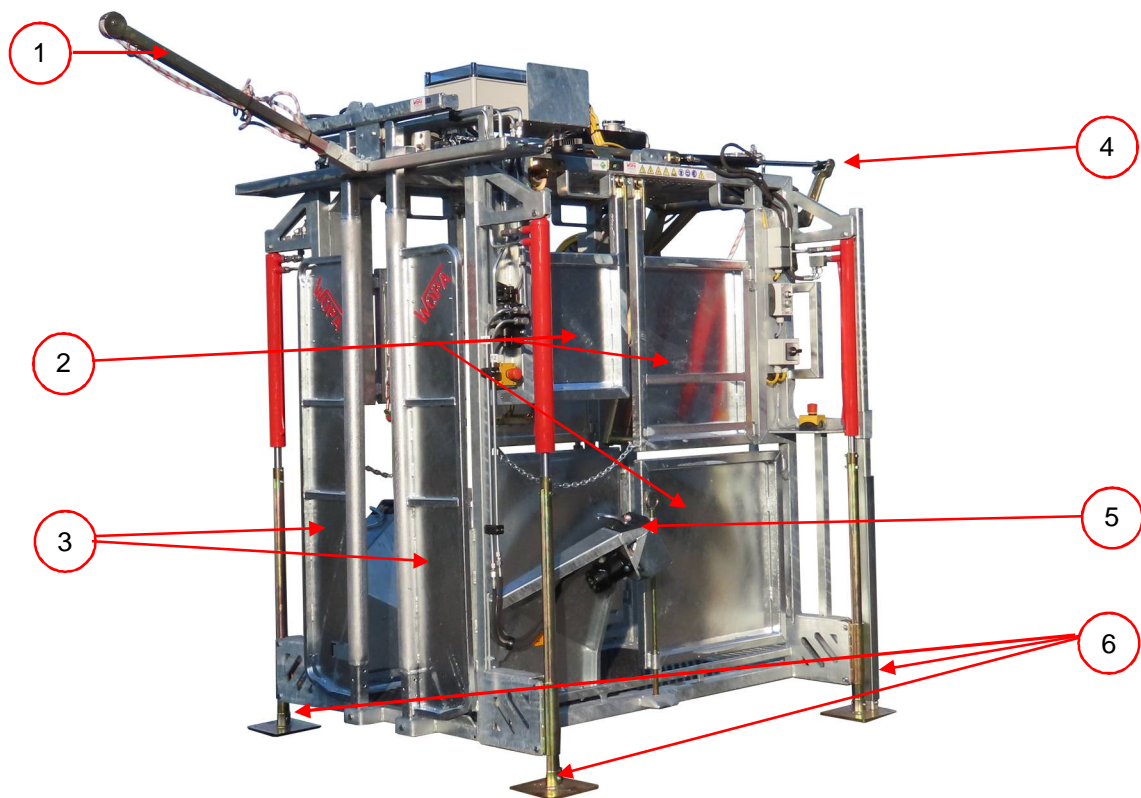




Figure 1: Overview SA0042

Main components of SA0042:

Figure 1	Component	Description	See Section
1	Head lifter	<ul style="list-style-type: none"> This component allows a rope to be used to pull the head forward, left and right to drench or give a bolus. One end attaches to the halter and the other end can be hooked on the side at the rope eye. 	
2	Side doors	<ul style="list-style-type: none"> The side doors can be opened to allow access to the cow for examination and treatment. 	
3	Front gate	<ul style="list-style-type: none"> The front gate can be set in all positions using the hydraulic lever at the right rear of the crush. Fully open: the cow can walk out of the crush at the front. Partially open (catch position): the cow's head can pass through the front gate, but not its withers. Closed: the front gate is closed behind the cow's head. 	
4	Back gate	<ul style="list-style-type: none"> This crush is equipped with a hydraulic back gate. After the cow is placed in the crush, the back gate is placed against the rear of the cow using the hydraulic lever. This allows you to control how tightly the back gate is set against the cow. The brace must be pressed tightly against the cow during trimming because otherwise the cow will lie down. The crush comes with a standard W-bracket that allows better fixation of the back legs. 	
5	Front leg support	<ul style="list-style-type: none"> The cow's front leg can be winched hydraulically onto the front leg support with a rope and hook. The leg is secured and can then be treated. 	5.4
6	Lift	<ul style="list-style-type: none"> The SA0042 is equipped with a lift that can go 60 cm high. This is important so you can easily reach the udder. The lift can be stopped at any desired height. The power take-off tubes must be replaced preventively every 5 years due to deterioration. 	-

2.2 Electrical system

	<p style="text-align: center;">FUNCTION</p> <ul style="list-style-type: none">• The electrical system provides power for the motor, controls, lights and electrical outlets.• See the electrical diagram for further details on the structure and operation of the electrical system included in the switch box on the crush.• The location of the control components in your installation may differ from the photo below.
	<p style="text-align: center;">ATTENTION!</p> <ul style="list-style-type: none">• Work on the electrical system may only be performed by a technical expert.

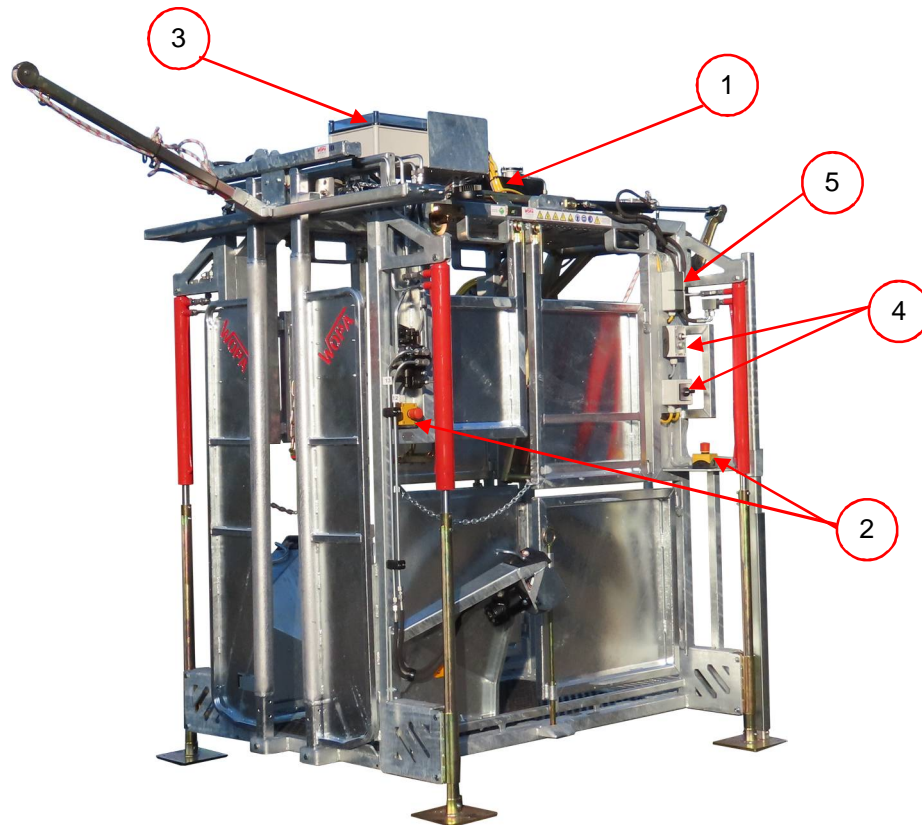


Figure 2: Overview of the electrical system.

Figure 2	Component	Description	Section/Location
1	Power supply cable with plug	<ul style="list-style-type: none"> To connect the machine to the power supply. 	
2	Emergency stop buttons	<ul style="list-style-type: none"> The emergency stop shuts down all movements. 	
3	Relay box	<ul style="list-style-type: none"> There is a switch box on top of the crush. This contains the control elements for the respective crush. 	
4	Control buttons	<ul style="list-style-type: none"> At the left rear, there is always a light switch, on/off switch and a start/reset button. For 230 V, there is also a constant running button to keep the motor running constantly. 	
5	Electrical outlets	<ul style="list-style-type: none"> E.g. an angle grinder and/or blow-dryer can be connected. (maximum total 3500 Watts) 	

Wireless remote control




	<p style="text-align: center;">FUNCTION</p> <ul style="list-style-type: none">• The wireless remote control is an option.• Be careful when operating the functions if there could be other people working around the crush.
---	---



Figure 3: Wireless remote control

2.3 Hydraulic system

	<p style="text-align: center;">FUNCTION</p> <ul style="list-style-type: none"> • The various functions are driven by the hydraulic system. • See the hydraulic diagram for a detailed description of the system. • The location of the control components in your installation may differ from the photo below.
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	<p style="text-align: center;">ATTENTION!</p> <ul style="list-style-type: none"> • Work on the hydraulic system may only be performed by a technical expert.
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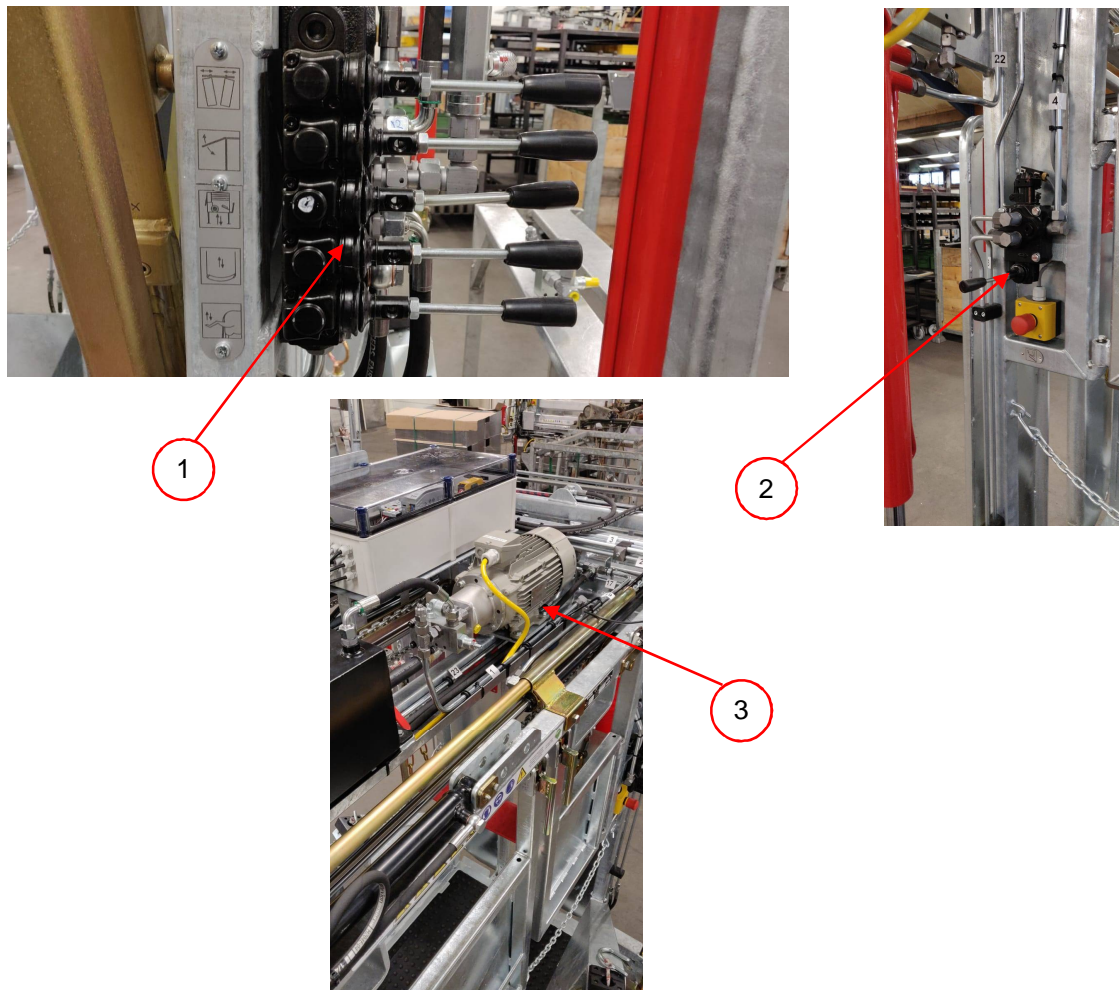




Figure 4: Overview of the hydraulic system.


Figure 4	Component	Description	Section/Location
1	Valve block in general	<ul style="list-style-type: none"> The valves are used to control the following functions: <ul style="list-style-type: none"> Front gate; When closing, it is stopped in the catch position in which the head can be inserted through the gate. Back gate Lift belly band rear foot 	Right rear
2	Front legs valve	<ul style="list-style-type: none"> This controls the front leg motor. 	Left and right front
3	Unit	<ul style="list-style-type: none"> To connect the machine to the power supply, see motor type plate. 	On top

3. Safety


3.1. General

	<ul style="list-style-type: none"> • The warranty and/or liability will be voided if damage occurs due to repairs and/or modifications not authorised by the supplier. • In case of malfunctions, contact the supplier. • The work area around the installation must be safe. The owner of the installation must take the necessary precautions for safe operation of the installation. • It is prohibited to start the installation in an environment with an explosion hazard. • The installation has been designed such that production is safe under normal ambient conditions. • The owner of the installation must ensure that the instructions in this manual are actually followed. • The safety features present may not be removed. • The correct operation and safety of the system can only be guaranteed if maintenance is carried out correctly and on time as stipulated. • If work needs to be done on the installation, the installation must be disconnected and blocked from the power supply. • There is a pinching hazard when operating powered moving parts. It is the operator's responsibility to ensure that movements are only started when no parts of their own or other people's bodies are in the vicinity of the pinch zone. • It is not permitted to go under a crush raised with a lift. If there is a fault in the installation, the crush could come down.
	<ul style="list-style-type: none"> • Only authorised persons designated by the owner may perform work on the electrical system. • Use internal procedures and monitoring to make sure that all applicable power supplies are shut off. • The installation may not be used during cleaning, inspection, repair or maintenance and must be disconnected from the electrical power supply using the plug and/or main switch. • Never perform welding work on the installation without first disconnecting the cable connection to the electrical components. • Never use the power supply from the control box to connect machines other than the hand tools provided.


3.2. During normal use

	<ul style="list-style-type: none">• Before starting work, check that no work is being done on the system and that it is ready for use.• Unauthorised persons must not enter the operational area of the installation. The operator is responsible for checking this.• Parts of the hydraulic system can reach high temperatures. Contact with these parts can cause injury.• Never unscrew hoses and pipes during operation due to high pressure.
---	--


3.3. Operating personnel

	<ul style="list-style-type: none">• Operating personnel must be 18 years of age or older.• Only authorised persons may perform work with or on the system• Personnel may only perform work for which they are trained. This applies to both maintenance work and normal use.• Operating personnel must be familiar with all potential situations so they can take quick and effective action in an emergency.• If an operating employee notices faults or hazards or disagrees with safety measures, this must be reported to the owner or supervisor.• Safety footwear is mandatory.• Appropriate work clothing is mandatory.• Everyone must observe the safety instructions. Otherwise they may pose a danger to themselves and others. Follow the work instructions strictly at all times.
---	--

4. Installation

	EXPLANATION <ul style="list-style-type: none">Refer to section 1: Technical data and the diagram provided for the correct specifications.
---	--

4.1. Moving.

	ATTENTION <ul style="list-style-type: none">The crushes are provided with fork pockets for moving the crush with forklift.
---	---

4.2. Positioning


	ATTENTION <ul style="list-style-type: none">The machine must be upright when moved and transported.Place the machine on a flat, stable surface that is not slippery.Follow the instructions in section 3 for all the work to be done. Failure to follow these instructions or disregarding them can lead to serious injury.
--	--



Figure 5: Positioning SA0042

4.3. Connecting the machine



ATTENTION

- Check that the voltage stated on the type plate is the same as the mains voltage. (See 1.0)
- The machine must always be connected to an earthed electrical outlet to avoid the risk of fire or electric shocks (the earth connection is coded green/yellow). (see 1.0)
- The electrical installation, including the electrical outlets, must be connected according to the applicable local regulations. (see 1.0)
- The power cable must always be free and nothing may be placed on it.
- Replace the power cable immediately if damaged.

5. Operation




ATTENTION

- Follow the instructions in section 3 for all the work to be done. Failure to follow these instructions or disregarding them can lead to serious injury.

5.1. Startup/Shutdown

No.:	What to do	Action	Result
1.	Switch on the electricity.	<ul style="list-style-type: none">• Insert the plug into the electrical outlet.	
2.	Reset the emergency stop buttons	<ul style="list-style-type: none">• See 5.2	
3.	Press the start button	<ul style="list-style-type: none">• Press the start button once.	The machine can be used.
4.	Switch off the electricity	<ul style="list-style-type: none">• After working, always set the switch to 0 and remove the power plug from the electrical outlet.	

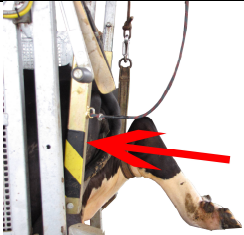

5.2. Emergency stop

	<p style="text-align: center;">ATTENTION</p> <ul style="list-style-type: none"> • In the event of a dangerous situation, always press the emergency stop. • Upon pressing the emergency stop, all movements are stopped. • To put the machine back into operation after an emergency stop, the emergency stop must be reset first. • Before resetting the emergency stop button, it is necessary to make sure that restarting the moving parts of the machine will not lead to a hazardous situation.
---	--

- **Reset emergency stop**

No.:	What to do	Action	Result
1.	Reset the emergency stop button	<ul style="list-style-type: none"> • Reset the emergency stop button by pulling it out or twisting it, depending on the type installed, so the button returns to its original position. • Then press the start button to work with the machine again. 	The machine is ready for use.

5.3. Production

No.	What to do	Action	Result
1.	Check that the crush is ready for use.	<ul style="list-style-type: none"> See section 5.1 	
2.	Prepare the front gate	<ul style="list-style-type: none"> Put the front gate in the catch position 	
3.	Place the cow in the crush	<ul style="list-style-type: none"> Lead the cow into the crush until its head is through the front gate. Close the front gate. 	
4.	Bring the back gate into position.	<ul style="list-style-type: none"> Use the back gate lever to move the back gate downward. Place it against the cow. 	
5.	Apply the belly band	<ul style="list-style-type: none"> Place the belly band under the belly behind the front legs and operate the belly band lever. 	
6.	Lift	<ul style="list-style-type: none"> Once the lift is raised 10 cm, the front gate can no longer be operated. 	
7.	Treat a rear leg	<ul style="list-style-type: none"> Place the hook around the rear leg and lift the leg up. Treat the rear leg Lower the leg and release it. 	
8.	Treat a front leg	<ul style="list-style-type: none"> Hook the front leg as in 5.4. Raise the leg up until the leg is secured on the block. Treat the front leg. Lower the front leg back down and remove the front leg hook. 	See 5.4.
9.	Treat the cow	<ul style="list-style-type: none"> Open the bottom gate at the position where the cow needs care. When the lift is operated, the upper doors should be closed and secured with a cotter pin. Perform the necessary treatments. Close the respective side gate. 	
10.	Loosen the belly band.	<ul style="list-style-type: none"> Operate the belly band lever to lower it to the ground. 	
11.	Release the crush	<ul style="list-style-type: none"> Make sure all the hooks are free. Open the front gate. <ul style="list-style-type: none"> Lead the cow out of the crush. 	
12.	Raise the back gate.	<ul style="list-style-type: none"> Operate the lever to raise the back gate. 	

5.4. Hooking front leg



ATTENTION

- The leg is hooked with a large hook (Figure 6:1).
- When using the large hook, there is no risk of injury to the cow from over-tightening.
- Watch for entrapment of hands and fingers when operating levers/buttons.

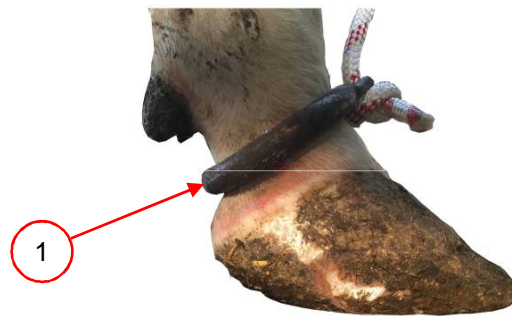


Figure 6: Hooking front leg

5.5. Releasing front gate in case of any problems




ATTENTION

- If the cow goes to the ground for any reason, you can lift the front gate out manually.
- Make sure the front gate is loose.
- Lift the front gate up and off the bolt.



Figure 7: Releasing front gate

6. Maintenance


	<p style="text-align: center;">ATTENTION!</p> <ul style="list-style-type: none"> • Always disconnect the machine from the power supply by setting the switch to 0 and disconnecting the plug. • Test the installation after maintenance work or repairs have been carried out to make sure the installation can be safely used again. • Only trained technicians may perform the maintenance work described or make repairs.
---	--

6.1. Maintenance diagram


The diagram below shows the maintenance activities that must be done.

Activity	note	Daily	weekly	Every 100 animals	Annually	Every 2 years	See section
General							
Check panic locks and hooks	Replace in case of visible damage						
Check ropes and chains	Replace in case of visible damage						
Check plugs, cables, controls and connections	Alert a qualified professional in case of visible damage.						
Cleaning							
Cleaning the machine							6.2
Lubrication							
Grease nipples on back gate sliding section	Bearing grease						6.3
Other grease nipples	Bearing grease						
Hydraulic installation							
Check the fluid level	Inspection is required every 500 animals or in case of leakage.						6.4
Replace oil and filter							

6.2. Cleaning the machine

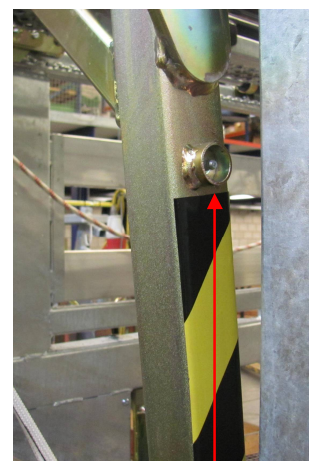
	<p style="text-align: center;">EXPLANATION</p> <ul style="list-style-type: none"> • A pressure washer may be used for cleaning. • When cleaning with a pressure washer, avoid spraying on bearing points, winches and motors. This can lead to a sharp reduction of the service life. • When cleaning with a pressure washer, avoid spraying on electrical components. This can lead to short circuits and a sharp reduction of the service life.
---	---

6.3. Lubricating the back gate

	<p style="text-align: center;">EXPLANATION</p> <ul style="list-style-type: none"> • The back gate is extended using gas springs mounted in the gate. • To prevent grease entering the gas pressure spring area and causing damage, the gate should only be lubricated when the gate is fully retracted.
---	--



1 2



3

Figure 8: overview of lubricating the back gate

No.	What to do	Action	Result
1.	Retract the back gate	<ul style="list-style-type: none"> • Attach the rear leg strap or hook to the back gate and pull it up until the back gate is fully retracted. 	
2.	Grease the nipples	<ul style="list-style-type: none"> • Lubricate the back gate nipples with a grease gun. 	

6.4. Check the oil level/change the oil

	<p style="text-align: center;">EXPLANATION</p>
---	---

- Checking the oil level ensures that the minimum necessary amount of oil is present. The cylinders must be retracted to do this. The plug must be unplugged from the electrical outlet.
- As a general rule, the oil and filter should be changed once per year.

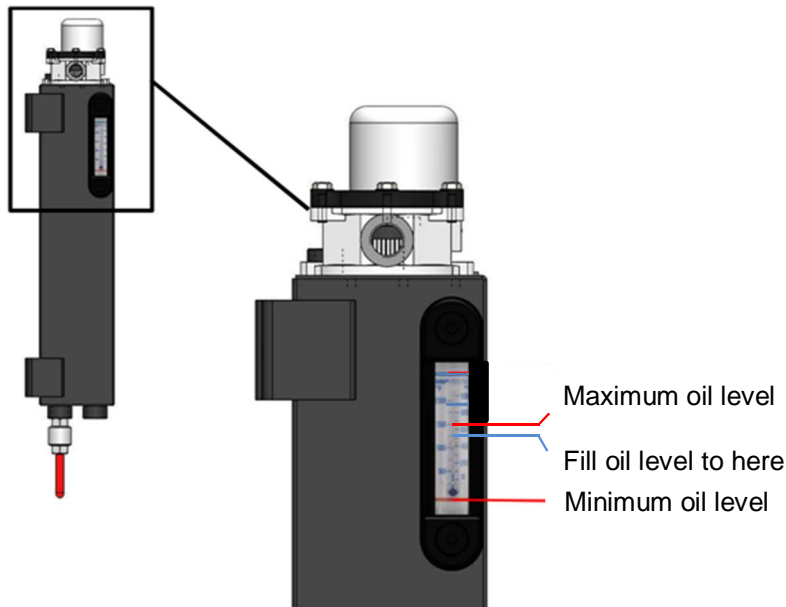


Figure 9: overview of filling hydraulic unit

- **Checking the oil level**

No.	What to do	Action	Result
1.	Retract the cylinders	<ul style="list-style-type: none"> • Place the cylinders of the installation in the retracted position by operating the valves. 	
2.	Switch off the controls.	<ul style="list-style-type: none"> • Make sure the emergency stop buttons are pressed in. • Disconnect the power supply from the power source. 	
3.	Check the oil level	<ul style="list-style-type: none"> • The oil level should now be between the minimum and maximum levels (see instructions for “changing oil”). 	

- **Changing oil**


No.	What to do	Action	Result
1.	Bring the oil to the tank	<ul style="list-style-type: none"> • See the instructions for "Checking the oil level" 	
2.	Remove the plug from the power source	<ul style="list-style-type: none"> • Remove the plug from the power source and make sure it cannot be plugged in. 	The crush is not electrified.
3.	Empty the tank	<ul style="list-style-type: none"> • Open the valve for the tank and drain the oil from the tank until it is empty. 	The tank runs empty.
4.	Close the valve	<ul style="list-style-type: none"> • Close the valve so no more oil can pass through. 	
5.	Fill the installation	<ul style="list-style-type: none"> • This must be done at the filter. First, clean the outside of the cover and filter. Remove the cover of the filter at the top of the tank by unscrewing the bolts. Then remove the cover and fill the tank at the hole of the filter. • Use the correct oil. (see Figure 10) 	
6.	Check the oil level	<ul style="list-style-type: none"> • Fill to the level shown in Figure 9. 	
7.	Install new filters	<ul style="list-style-type: none"> • Replace the filters. 	
8.	Put cover in place	<ul style="list-style-type: none"> • Install the cover and tighten it sufficiently. 	

- The following types of oil are suitable for use in the hydraulic system:

Supplier	Oil
Castrol	HYSPIN AWH – M 32 / 46
Mobil	UNIVIS N 32 / 46
Q8	HANDEL 32 / 46
Q8	HELLER 32 / 46
Texaco	RANDO 32 / 46
Texaco	HYDRAULIC OIL HDZ 32 / 46
Total	EQUIVIS ZS 32 / 46
Valvoline	100 ULTRAMAX HVLP 32 / 46
Petronas	HYDRAULIC HV 32 / 46
Gulf	HARMONY HVI 32 / 46
Shell	TELLUS S2 V 32 / 46
Shell	TELLUS T 32 / 46

Figure 10: hydraulic oil to be used

6.5. Replace filters.

	<p style="text-align: center;">EXPLANATION</p> <ul style="list-style-type: none">• Make sure the power supply is unplugged from the electrical outlet. Undo the bolts and replace the oil filter (Figure 11:1).• The tank is also equipped with a breather filter (Figure 11:2). This filters the air that enters the tank. To replace it, it can simply be opened by unscrewing it counter-clockwise.
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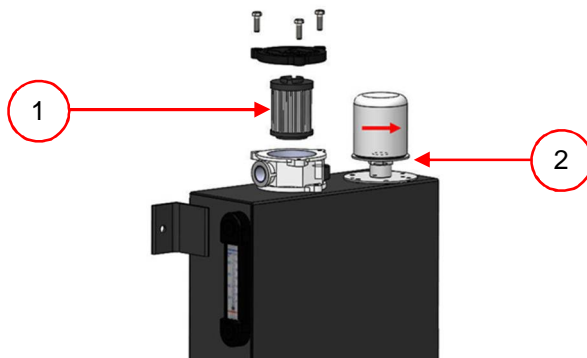


Figure 11: changing oil filters

7. Disposal as waste

Do not dispose of oil or machine parts with domestic waste. When replacing parts or changing oil at the end of their service life, make sure that all materials are collected and destroyed or reused in a legal and environmentally friendly manner.



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