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Sparkcup™

User Guide

Original User Guide

ROXELL®

EN | ENGLISH

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General information

IMPORTANT: These instructions must be read, understood and all points observed by the user, the responsible and operating personnel.

Obey the legal regulations and the applicable rules

This concerns, among other things, the European regulations and directives transposed into national legislation and/or the laws, safety and accident prevention regulations that apply in the user's country.

During assembly, operation and maintenance of the installation the legal regulations concerned and the applicable technical rules must be obeyed.

Intended use

The installation has been designed solely for intensive livestock use and has been developed according to the applicable rules of good workmanship. Extra loading of the product is therefore prohibited. Any other use is considered to be improper use. The manufacturer is not responsible for damage resulting therefrom. The user bears sole responsibility. The manufacturer can determine from the system data whether the product was used in accordance with the specified use.

Not-intended use

All use different than described in Intended Use is at the responsibility of the end user.

Liability

The (extended) warranty will not apply if any of the following has occurred: failure by the customer to inspect the delivered goods and report visible defects within 8 days of delivery with respect to the products, improper handling, transportation, modification or repair; accidents, defective or improper use; improper or defective assembly, installation, connection or maintenance (having regard to Roxell's most current assembly, installation, connection and maintenance manuals); improper modifications or manipulations of the operating system, hardware or any other software of the product by the customer; force majeure; negligence, lack of supervision or of maintenance on the part of customer; normal wear and tear; use of cleansing agents and disinfectants that are excluded in Roxell's most current use and maintenance manuals; use of cleansing agents and disinfectants in violation with the instructions received from the suppliers; or use of the products in an ATEX- surrounding.

The (extended) warranty shall not apply in the event of a defect caused either by materials or accessories supplied by or services rendered by the customer; or by an intervention by a person or entity which is not authorized or qualified for carrying out such intervention. Furthermore, the (extended) warranty will only apply if the products are used in livestock houses and if all parts or components of the products are supplied by Roxell.

Roxell will not be liable for any damages caused due to improper or defective use, assembly, installation, connection or maintenance of the products. In this respect, the customer expressly acknowledges that (i) all use, assembly, installation, connection or maintenance must be done in accordance with Roxell's most current assembly, installation, connection and maintenance manuals and (ii) the electrical installation on which the products must be connected must be done in accordance with applicable local legislation on electrical installations. Furthermore, the products must be tested both mechanically and electrically by the customer in accordance with state of the art techniques and applicable local legislation.

Personnel qualifications

User

The person who uses a function or operation of a product for their work or who works on the product. The user must be able to read the instructions for use and fully understand them. The user has knowledge of the functioning and construction of the installation.

Technically trained person

An expert who can assemble and maintain the installation **(mechanically/electrically**), and resolve malfunctions. On the basis of his/her technical training and experience, he/she has sufficient knowledge to be able to assess activities, recognize possible dangers and rectify dangerous situations.

Storage

Put all parts to be assembled in a room or at a location where the not yet assembled components are protected against weather influences.

Transport

Depending on the size of the parts and according to local circumstances and local legislation, the parts of the machine have to be transported with a forklift.

The forklift must be operated by a qualified person and in accordance with the rules of good workmanship. When lifting the load, always check if the center of gravity of the load is stable.

Dismantling

Dismantle the installation and its components in accordance with the environmental legislation of the country or the local authorities applicable at that time. All functioning products and exchange parts must be stored and disposed of in accordance with the applicable environmental regulations.

Environmental information for customers in the European Union

	The European legislation requires that equipment marked with this symbol on the product or packaging must not be collected with unsorted household waste. This symbol indicates that the waste electrical and electronic equipment (WEEE) cannot be disposed of in the regular household waste. We highly recommend that you bring your product to an official collection point so that an expert can remove the waste electrical and electronic equipment. Inform yourself of local legislation on separate collection of waste electrical and electronic equipment. Respect the local regulations and never dispose of the product together with household waste.

Information about waste disposal - electrical/electronic material for companies

1. **In the European Union**

   If you have used the product for commercial purposes and you want to dispose of it, contact Roxell, who will give you information about the return of the product. It is possible that you will have to pay a disposal charge for the return and recycling. Small products (and small quantities) can be processed by the local collection agencies.

2. **In other countries outside the European Union**

   If you want to dispose of this product, contact the local authorities for information concerning the correct disposal procedure.

The level of noise emission

The noise level of the installation in operation does not exceed 70 dB(A).

LOTOTO = Lock Out - Tag Out - Try Out

Before you begin: Everyone needs his own lock and tag (label), which can't be removed by other persons. Inform all the persons who are influenced by the procedure.

1 To block

- Localize all sources of energy (electric, hydraulic, pneumatic).
- Switch off.
- Take the relevant installation or process out of operation and lock it against reuse. You can do this by placing a padlock or other blocking mechanism (Lock Out).

2 To mark

Attach a sign, label or sticker to the padlock or blocking mechanism to reveal the nature and the expected duration of the work to other persons (Tag Out).

3 To check

- Check if the source of energy is switched off.
- Remove any remaining energy.
- Check that the installation or process is actually safe (Try Out).

Use personal protective equipment

Ensure you wear personal protective equipment (gloves, dust masks...).

Illuminance - sufficient lighting

- **A minimum illuminance of 200 lux is necessary** during usage, maintenance and installation.
- Provide at the installation **(portable) emergency lighting in case of power failure**.

Electrical equipment, control panels, components and drive units

- To operate control panels, there must be **at least 70 cm of free space.**
- Control panels must **always remain closed**. The key of the control panel must be in possession of an authorized person. Only an electrically trained person (see above) shall carry out maintenance activities inside the control panels.
- The necessary measures must be taken by the user to keep out **rats, mice and other vermin from the control panels**.
- If electrical equipment, control panels, components and drive units are damaged, the system must be stopped **immediately!**
- Electrical equipment, control panels, components and drive units should **never be sprayed with water or other liquid!**
- Electrical equipment, control panels, components and drive units should **never be covered with any material.**

Information about the residual risks - used safety signs

There are three levels of danger, which you can recognize from the following signal words:

- **DANGER**
- **WARNING**
- **CAUTION**

The nature and source of the imminent danger and possible consequences of not obeying warnings is stated here!

Symbol	Meaning
	**DANGER** indicates a direct imminent danger that can result in a serious or even fatal accident if the safety measures are not respected.
	**WARNING** indicates a possible imminent danger that can result in a serious accident or damage to the product if the safety measures are not respected.
	**CAUTION** indicates possible, dangerous situations that can result in minor physical injury or material damage if the safety measures are not respected.
	This symbol refers to supporting information.
	Allowed
	Not allowed
	This symbol will be used to draw your attention to matters that are of great importance for your safety. **It means: warning - follow the safety instructions. Disconnect the current and read the safety rules. In short: be alert. Ignoring these instructions can cause serious injuries or even death.**

WATER QUALITY

Warning

The health of the animals depends on the quality of their daily drinking water.

The water quality depends on:

- The phosphate, nitride, nitrite, chloride, iron, calcium and other concentrations.
- The deposits in the lines.
- The administration of medication.
- Cleaning and disinfection.

Have the water checked at regular intervals!

Maximum allowable concentration:

Ammonia	< 1 mg/l	(3.78mg/GAL)	Sulfates	< 100 mg/l	(378mg/GAL)
Chlorides	< 200 mg/l	(757mg/GAL)	Iron	< 0,2 mg/l	(0.76mg/GAL)
Phosphates	< 0,01 mg/l	(0.038mg/GAL)	Salt	< 1 mg/l	(3.78mg/GAL)
Manganese	< 0,1 mg/l	(0.38mg/GAL)	pH-value	5-8	
Nitrate	< 0,25 mg/l	(0.95mg/GAL)	Hardness (°DH)	<15	
Nitrite	< 0,1 mg/l	(0.38mg/GAL)			

Source: European Water Framework Directive 2000/60/EC

Phosphates/Nitrogens:

Algal growth:

Algae are organisms that use carbon dioxide as source of carbon for the production of new cell material. The required energy is provided by sunlight.

Algae blooms occur in standing or slowly moving water, usually having a high phosphate and nitrogen load (ammonia and nitrate).

Optimal growth temperature for algae:

18-45°C, pH value: 5-8.

Algae death due to lack of light and/or nutrients leads to mineralization by bacteria with oxygen consumption.

Impact on water	pH increase due to large amounts of carbon dioxide that are extracted from the water.
Impact on system	Cause: Loosened micro culture substances. Effect: Valve/nipples leakages.
Action	Remove deposits using stabilized hydrogen peroxide (H_2O_2) based products.

Nitrate/Nitrite:

Nitrate concentration > 0.25 mg/l: sandy soils with intensive livestock farming.

Ammonia concentration > 1 mg/l: in peaty soils.

Water from these soils usually has higher nitrite content. Unfit for consumption!

Impact on health  **Danger**	**Direct consumption of nitrite is deadly!** Nitrate is converted to ammonia in the body. One of the intermediate compounds is nitrite. When the chemical reaction is not completed (for some time), death ensues.
Action	Nitrate concentration ≤ 0.25 mg/l / Nitrite concentration ≤ 0.1 mg/l!

Iron:	
When water is pumped to the surface, iron occurs in its soluble ferrous form. The insoluble ferrous ions oxidize upon exposure to air or dissolved oxygen. These and other chemical reactions cause insoluble gelatinous deposits.	
Impact on water	Hardly any impact on health. Neutralizes the effectiveness of medication. Alters the taste, resulting in decreased water consumption.
Impact on system	Cause: Gelatinous compounds. Effect: Harmful to nipples, electric water valves if used.
Action	Eliminate the iron from the system if iron content > 0.2 mg/l!

Calcium:	
Hardness: Any deposits in the lines will usually remain there. If a chemical reaction takes place between mineral substances present, some inorganic compounds can serve as energy and nutrient source for the micro-organisms living in the water.	
Impact on health	Not harmful. Alters the taste, resulting in decreased water consumption.
Impact on system	Cause: Water becomes more conductive. Effect: Corrosion and calcium deposits.
Action	Soften the water.

Medication	
Harmful effects of medication	Some substances in the medication may loosen the organic deposits in the lines. Antibiotics: high risk of strong and rapid growth of moulds that use the sugar of some medicines as nutrient, resulting in gelatinous deposits.
Impact on health	Products lose their effectiveness.
Impact on system	Cause: Some substances in the medication may loosen the organic deposits in the li nes. Effect: Nipple leakages. Cause: Gelatinous deposits. Effect: Obstructions.
Action	Make sure lines are clean before administering medication. Clean the drinking system at regular intervals. Disinfect and flush properly after each medication. Residues of cleaning agents may reduce the effectiveness of the medicines.

Cleaning and disinfection	
Keep in mind the strength of the solutions and follow the supplier’s instructions for use! Always read the instructions of cleaning agents and disinfectants! Check whether the product may be used in an occupied house! Be aware of the implications of the combined use of different types of cleaning agents and disinfectants!	
Calcium and iron deposits (inorganic)	Remove by using acid agents.
Bacteria and moulds	Remove by using a chlorine-based disinfectant.
Organic deposits	Remove by using an alkaline cleaning agent.
Clean and disinfect the lines at regular intervals. Most agents only work properly with regular cleaning. Disinfect and flush properly after each medication.	

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OPERATOR'S GUIDE

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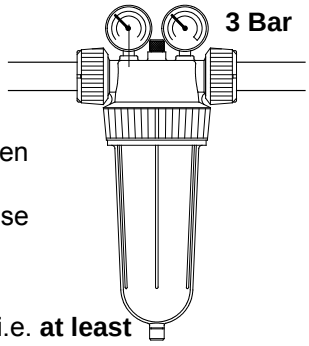
1. BEFORE THE CHICKS ARRIVE

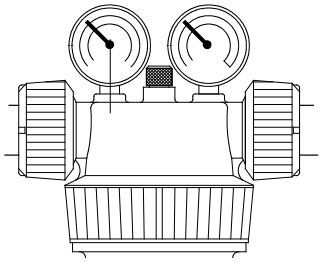
1. Take care to have a correct water pressure in the supply line : **between 2,5 and 3 BAR Max.** Use a central pressure restrictor.
The lines should meet the following requirements :

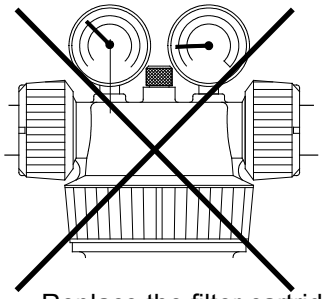
* Supply line up to the control panel : minimum 1" dia.
* Line between control panel and branch point of pressure regulators : between 1" and $1^1/_2$"dia. (according to specifications in the identikit).
* Branch lines in the house up to the pressure regulator : opaque water hose of min. $^3/_4$" dia.



2. Flush all the drinking lines. Make sure that you flush the lines long enough, i.e. **at least 1 minute per 10 meter** of drinking line.

3. Check the filter. Replace the filter cartridge if there is any difference between the water pressure before and after the filter.

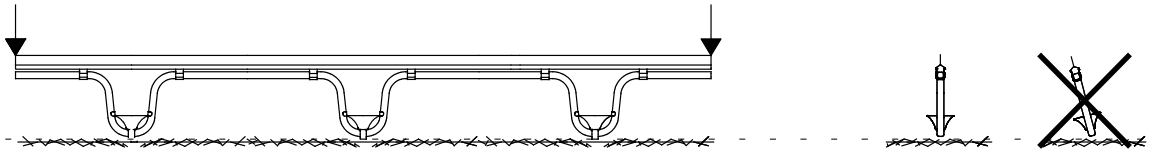




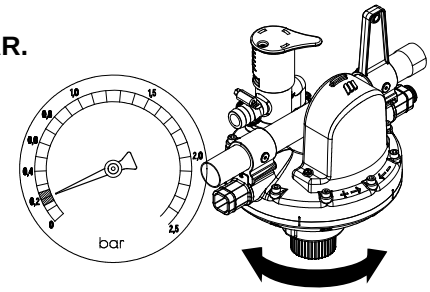
Replace the filter cartridge.

4. Install the conical float balls

5. Lower the lines. All cups must sink into the litter. Make sure that the cups are hanging vertically. Adjust the suspension if necessary.



6. Adjust the pressure on the drinking lines **between 0.15 and 0.25 BAR.**



IMPORTANT :
The **HIGHER** the water pressure, the **LOWER** the water level !
The **LOWER** the water pressure, the **HIGHER** the water level !

Pressures mentioned are indicative. The farmer's eye is the decisive factor !

Main point is that the user of a Sparkcup drinking system must judge the water level in the cups and adjust the water pressure to get the desired water level.

ALWAYS CHECK DAILY WATER CONSUMPTION.
FLUSH DRINKING LINES EVERY WEEK (1MIN/ 10 M LINE).
FLUSH THE LINES PROPERLY AFTER ADMINISTRATING MEDICINES, VACCINES OR CLEANING PRODUCTS.
GRADUALLY INCREASE HEIGHT OF DRINKING LINES AS ANIMALS GROW.

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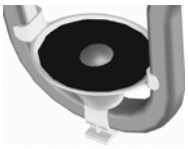
2. DURING THE CROP

BROILERS - BREEDERS & LAYERS REARING

SMALL CUP

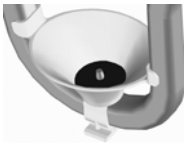


* Day 1 => cup filled with water.

High water level (P = 0.2 bar)

* Day 6: => teach animals how to touch float balls.

Low water level (P = 0.3- 0.5 bar)



* Day 8 -10 : => remove the float balls

Very low water level (P = 0.2 bar)

Week 2 : 0,3 Bar
Week 3 : 0,4 Bar
Week 4 : 0,6 Bar
Week 5 : 0,7 Bar
From week 6 : 0,7-0,8 Bar

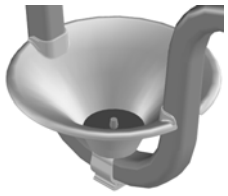
BREEDERS & LAYERS IN PRODUCTION (>18 WEEKS)

MEDIUM CUP

* Day 1 =>cup filled with water (manually).

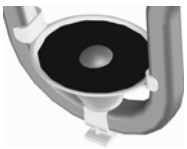
High water level (P = 0.3 bar)

Very low water level (P = 0.3 bar)



Day 3 : 0,4 Bar
Day 4 : 0,5 Bar
Day 5 : 0,6 Bar
Day 6 : 0,7 Bar
Day 7 : 0,8 Bar
From day 8 : 0,9 Bar

TURKEYS
SMALL CUP + BIG CUP

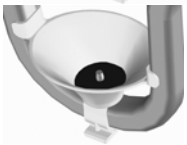


* Week 1 => cup filled with water.

High water level (P = 0.2 bar)

* Week 2 => teach animals how to touch float balls.

(P = 0.3 - 0,4 bar)

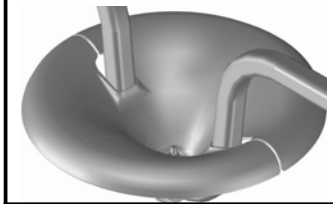


* Day 16-18 => remove the float balls

Very low water level (P = 0.2 bar)

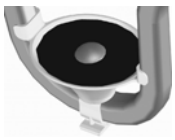
Week 4 : 0,3 Bar
Week 5 : 0,4 Bar
Week 6 : 0,5 Bar

IN WEEK 6 : REPLACE THE SMALL CUPS WITH BIG CUPS



Week 7 : 0,7 Bar
Week 8 : 0,8 Bar
From week 20 : 0,9 Bar

FOR DUCKS
SMALL CUP + BIG CUP

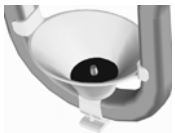


* Day 1 => cup filled with water.

High water level (P = 0.2 bar)

* Day 2: => teach animals how to touch float balls.

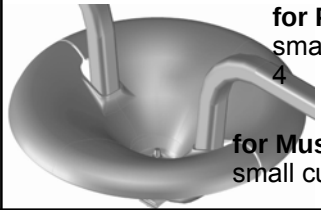
(P = 0.3-0,4 bar)



* Day 3 - 4: Remove float balls : **Peking ducks**.

* Day 5 - 6: Remove float balls : **Muscovy ducks**.

Very low water level (P = 0.2 bar)
Week 2 : 0,3 Bar
Week 3 : 0,4 Bar
Week 4 : 0,5 Bar



for Peking ducks : Replace the small cups with big cups in week 4

Week 5 : 0,7 Bar

for Muscovy ducks : Replace the small cups with big cups in week 5

DIRECTIONS FOR OPERATING THE SYSTEM

DENSITY

Number of birds per cup (Depends on the kind of animal and the climate.)	Climate	
	Normal	Warm
Broilers	**60**	**35**
Breeders	**35**	**25**
Commercial layers	**40**	**30**
Turkeys up to 6 weeks	**60**	**35**
Turkeys up to 13kg	**40**	**30**
Heavy turkeys > 13kg	**25**	**20**
Ducks	**40**	**30**

BEFORE STARTING UP AND AFTER EACH FLOCK

- Thoroughly flush the lines one after another. When flushing a line, keep other lines shut-off.
- Have lines under water pressure for a while and make sure that all valves close completely. If this is not the case, move the leaking valve to-and-fro until the valve shuts-off again. If not replace valve.
- Check the water pressure and the water supply.

AFTER LITTERING

- Put the float balls on the valves (only for day-old chicks).
- Lower the lines into the litter (level). On places with a risk for perching (e.g. around heating sources) you can install an antiperch bridge.
- Have lines under water pressure (about 0,2 – 0,3 bar). Cups will be filled up to about 5 – 10 mm beneath the edge.

TIP: It is very important to have birds equally spread over the whole house. You can i.e. put some paper underneath the drinking lines with some feed on.

DURING THE GROWING PERIOD

1. Adjust water pressure at about 0,3 – 0,5 bar upon arrival of the birds. This pressure will allow float balls to adjust water level in the cups.
2. After 6 days, increase pressure to about 0,4 bar. Now the birds will learn how to operate the float balls and get used to the higher resistance of the valve and to the lower water level.
3. After 4 – 5 days, slightly winch up the lines (about 1 – 2 cm) to keep cups free from litter.
4. Between the 8th and 10th day, you remove the float balls (always pro complete line). You can either remove them all at once or half of the number of lines the first day, and the other half the second day. Lower the pressure a little up to approx. 0,2 – 0,3 bar. The water level is then gradually lowered until there is about 0,5 cm of water in the cup.
   Removing the float balls too soon: birds will not get enough water.
   Removing them too late: birds will spill water and the habituation after removing the float balls will be more difficult.
5. During the next days and weeks, gradually increase water pressure to 0,7 bar after 4 weeks, making sure that there is always little water in the cups. Cups will clean themselves. Regularly check water level (about 0,5 cm) in a number of cups. For most animals the normal water level is about 0,5 – 1 cm. For turkeys this is about 1,5 – 3 cm. Don't set pressure too high: birds could have difficulty in operating the valves. Check water consumption on the water meter.
6. Thoroughly flush the lines after each medication or vaccination during the flock.
7. From week 4 to the end of the growing period, the water pressure is kept on 0,6 – 0,7 bar.
8. During the growing period, regularly winch up the lines so that during the first 4 weeks the top of the cup is at the same height as the back of the birds. After 4 weeks, winch up lines somewhat more so that the cup edge comes about 3cm above the back of the birds.

REMARK: ALWAYS GRADUALLY ADJUST WATER PRESSURE AND HEIGHT OF LINES!

ATTENTION: ALWAYS KEEP HOUSE FROST-PROOF! ROXELL NV DOES NOT TAKE RESPONSIBILITY FOR DEFECTIVE CUPS OR SYSTEM IN FROSTY WEATHER.

TO CHANGE CUPS/VALVES

TO DISASSEMBLE THE SMALL CUP

Remove the cup.

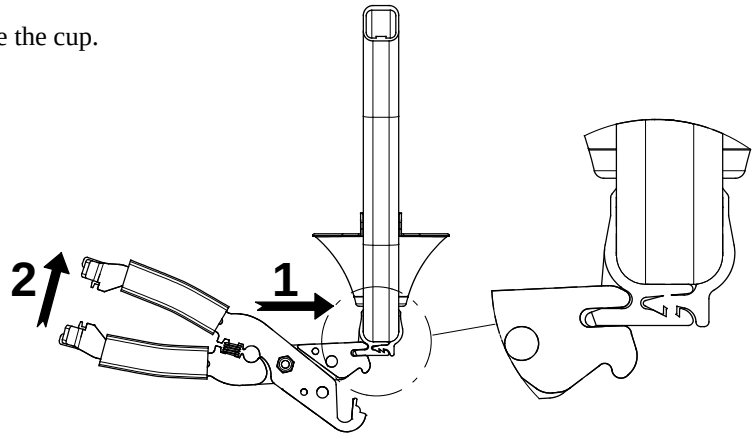
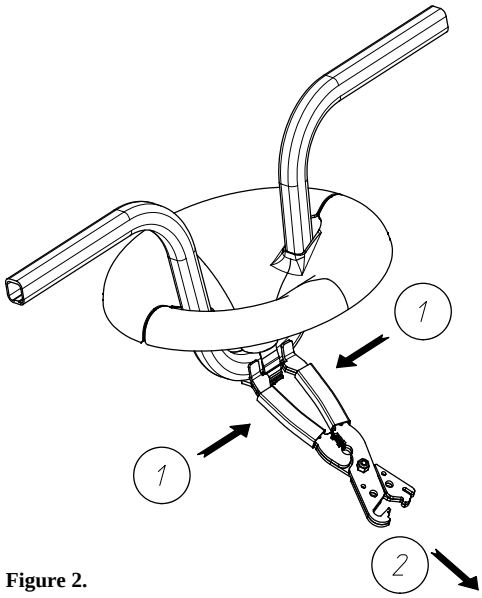


Figure 1.

TO DISASSEMBLE THE MEDIUM AND BIG CUP



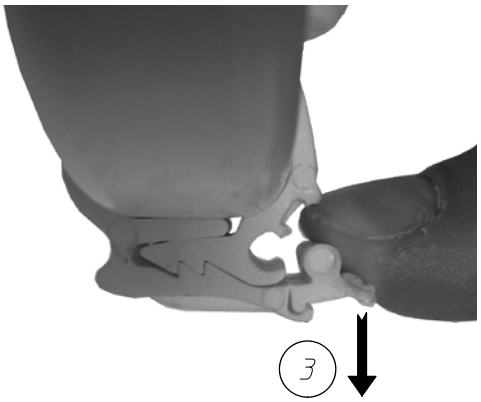


Figure 2.

TO REPLACE THE VALVE

Remove the cup.

Take away the water pressure from the line.

Remove the valve manually or with the special pliers.

Install a new sealing if necessary. Install a new valve and replace the cup.

Figure 3.

CHECKING THE WATER SUPPLY

This simple test shows you if the water supply meets the specifications:

- Put a bucket of at least 10 litres underneath **each water hose** (before you connect the flexible water hose to the pressure regulator) **(pressure regulator in "flushing" position!).**
- Open the water supply during 1 minute.
- If the water supply is OK, **all buckets** will hold 10 litres after 1 minute.

SATELLITE DRINKER

THE SATELLITE DRINKER is used together with the drinking lines to provide extra water when starting up turkey chicks, i.e. during the first 5-10 days.

Satellites are often used in combination with the infra-red heaters.

You can put up to 100 birds per cup, so that one satellite unit provides adequate water for maximum 500 turkeys.

OPERATION

Start with a water pressure of 0.2-0.3 bar on the drinking lines.

The pressure may vary according to circumstances such as length of the drinking line, feed pressure, water consumption, etc.. Increase the pressure if cups get too full.

Depending upon the sort of birds, remove the satellites after 5-10 days.

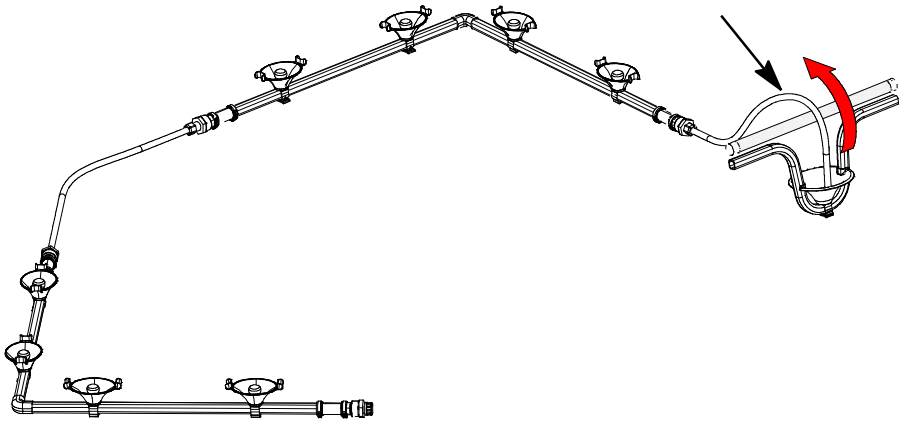
After removing the satellites, they should be cleaned, disinfected and thoroughly flushed.

Before using them the next time, make sure that all valves perfectly close.

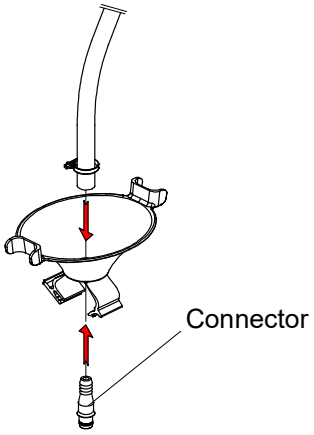
TO INSTALL THE SATELLITE DRINKER

1. Remove the cup and the nipple from the Sparkcup drinking line.

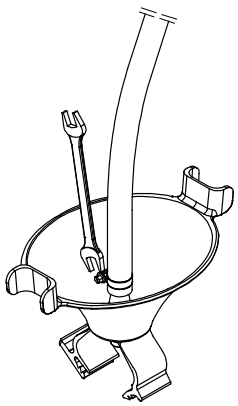
2. Let the hose run over the suspension tube in order to put less lateral force on the connector.



3. Install there a hose connector and a cup.



4. Fix the waterhose to the connector and tighten the clamp.



DISINFECTANTS AND PRODUCTS TO REMOVE ORGANIC POLLUTANTS.

The following acids, marked "A", can be used in solution. **Always rinse after using them!**

NAME	CHEM. FORMULA	VALVE
Acetic acid	C2H4O2	**A**
Acetic anhydride	C4H6O3	**A**
Ammonia	NH3 / NH4+	**A**
Ammoniumformate	CH5NO2	**A**
Ascorbic acid	C6H8O6	**A**
Citric acid	C6H8O7	**A**
Coppersolution		**A**
Fatty acids		**B**
Formic acid	CH2O2	**A**
Hydrochloric acid (cold) 37%	HCl	**A**
Hydrochloric acid (hot) 37%	HCl	**B**
Hydrogen peroxide (90%)	H2O2	**A**
Lactic acid (cold)	C3H6O3	**A**
Lactic acid (hot)	C3H6O3	**C**
Maleic acid	C4H4O4	**A**
Malic acid	C4H6O5	**A**
Peracetic acid	C2H4O3	**B**
Phosphoric acid	H3PO4	**A**
Potassium hypochlorite (Bleaching water)	KOCl	**A**
Propionic acid	C3H6O3	**A**
Sodium hypochlorite (Bleaching water)	NaOCl	**A**
Sulfuric acid (20% oleum)	H2SO4	**C**
Sulfuric acid (conc)	H2SO4	**B**
Sulphuric furic acid, sulfurous acid	H2SO3	**A**
Vanillin/metoxybensoldehyde	C8H8O3	**A**

LEGEND:

A = LITTLE INFLUENCE

B = MODERATE INFLUENCE

C = ADVISED AGAINST

This list is not complete. For products that are not mentioned on the list, please contact your supplier of the disinfectants, or the Roxell Service Desk.

MANUAL FLUSHING (STANDARD)

Each Sparkcup drinking line has a standard manual flushing system. This allows flushing the water pipes at random.

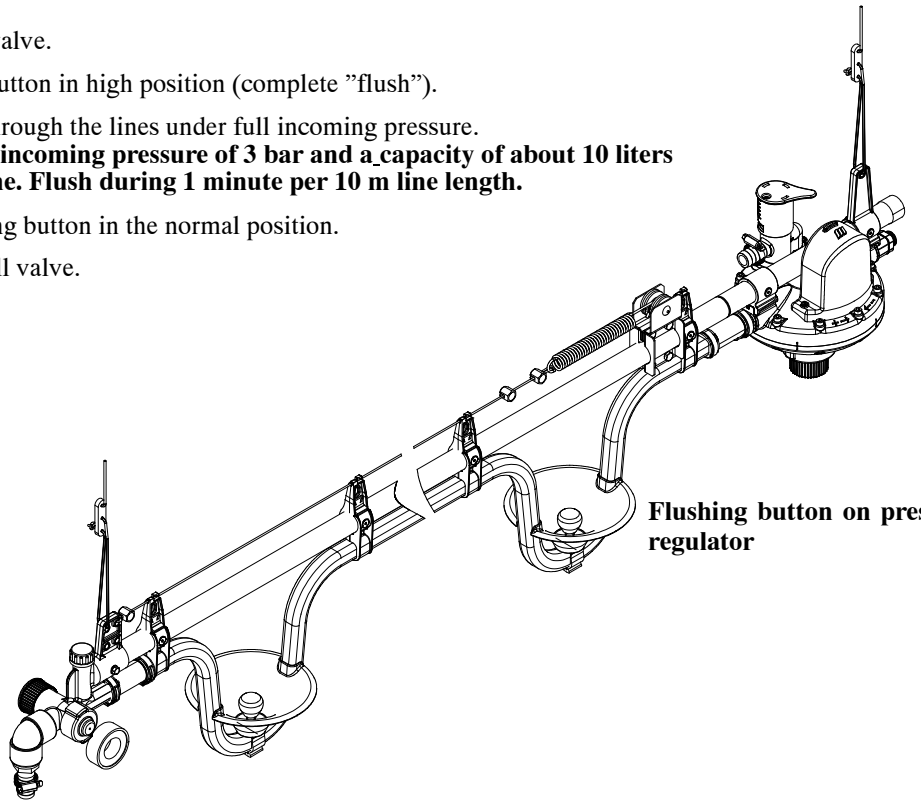
CAUTION

RESPECT THE PROCEDURE BELOW :

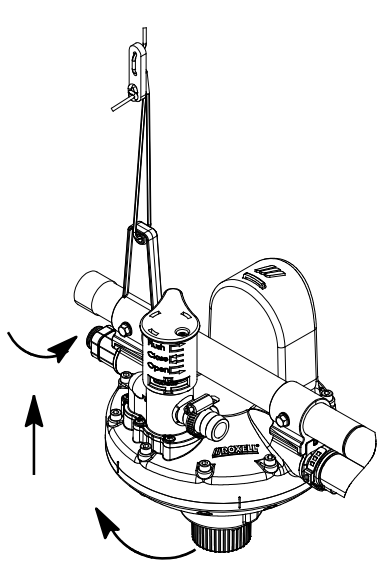
IF NOT, THE TOTAL SYSTEM IS UNNECESSARILY PUT UNDER TOO HIGH PRESSURE WITH DAMAGE RISK !

Procedure :

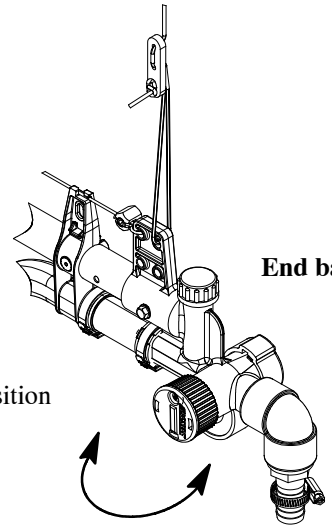
1. Open the end ball valve.
2. Turn the flushing button in high position (complete ”flush”).
3. The water is sent through the lines under full incoming pressure.
   Ideal flushing : **an incoming pressure of 3 bar and a capacity of about 10 liters per minute per line. Flush during 1 minute per 10 m line length.**
4. Set back the flushing button in the normal position.
5. Shut off the end ball valve.



Flushing button on pressure regulator



Turn into flushing position



End ball valve

Figure 1.

All lines can be flushed simultaneously when following the specifications for the right water supply.
With a low pressure water supply it is better to flush half of the lines or even line per line.

CONDUIT LAYOUT FOR STANDARD FLUSHING, FRONTAL PRESSURE REGULATORS.

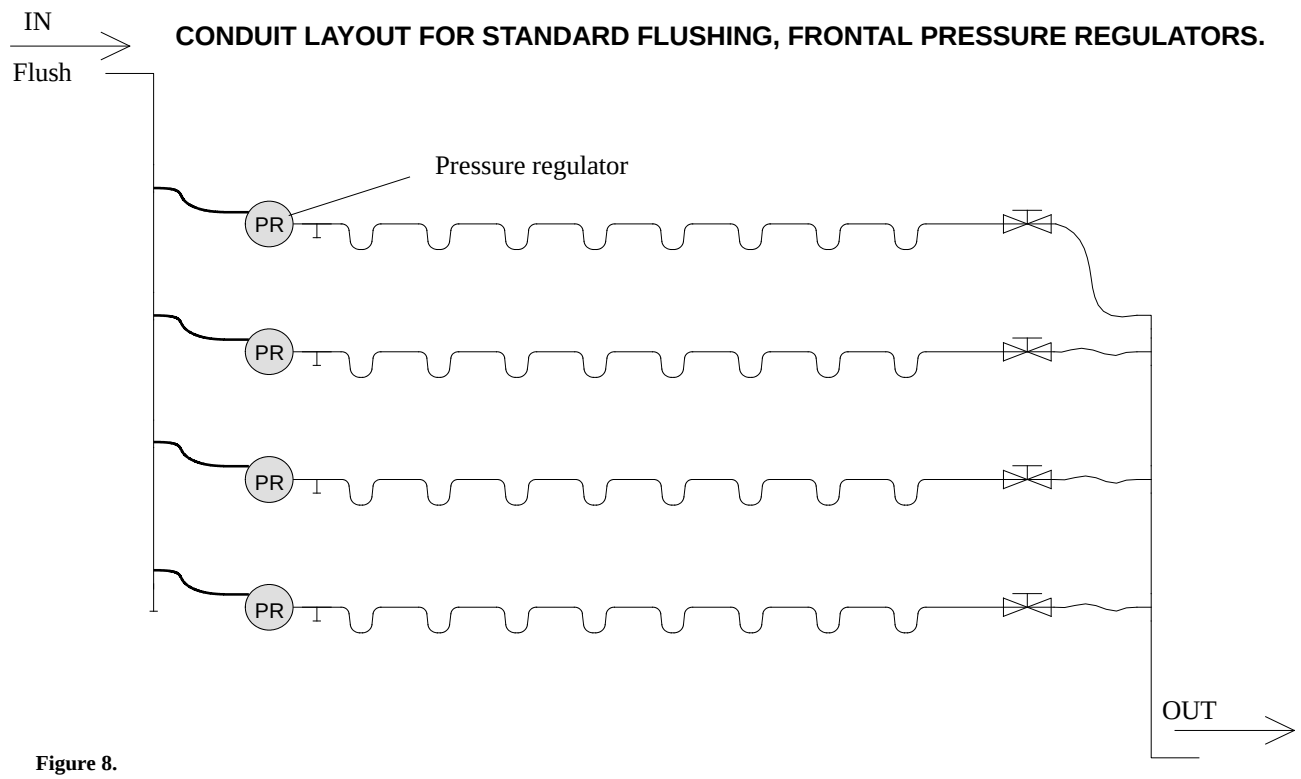


Figure 8.

CONDUIT LAYOUT FOR STANDARD FLUSHING, CENTRAL PRESSURE REGULATORS.

Pressure regulator in the middle of the line :
maximum 2 lines can be flushed simultaneously.
Follow the same procedure as fig . **First open both end ball valves!**

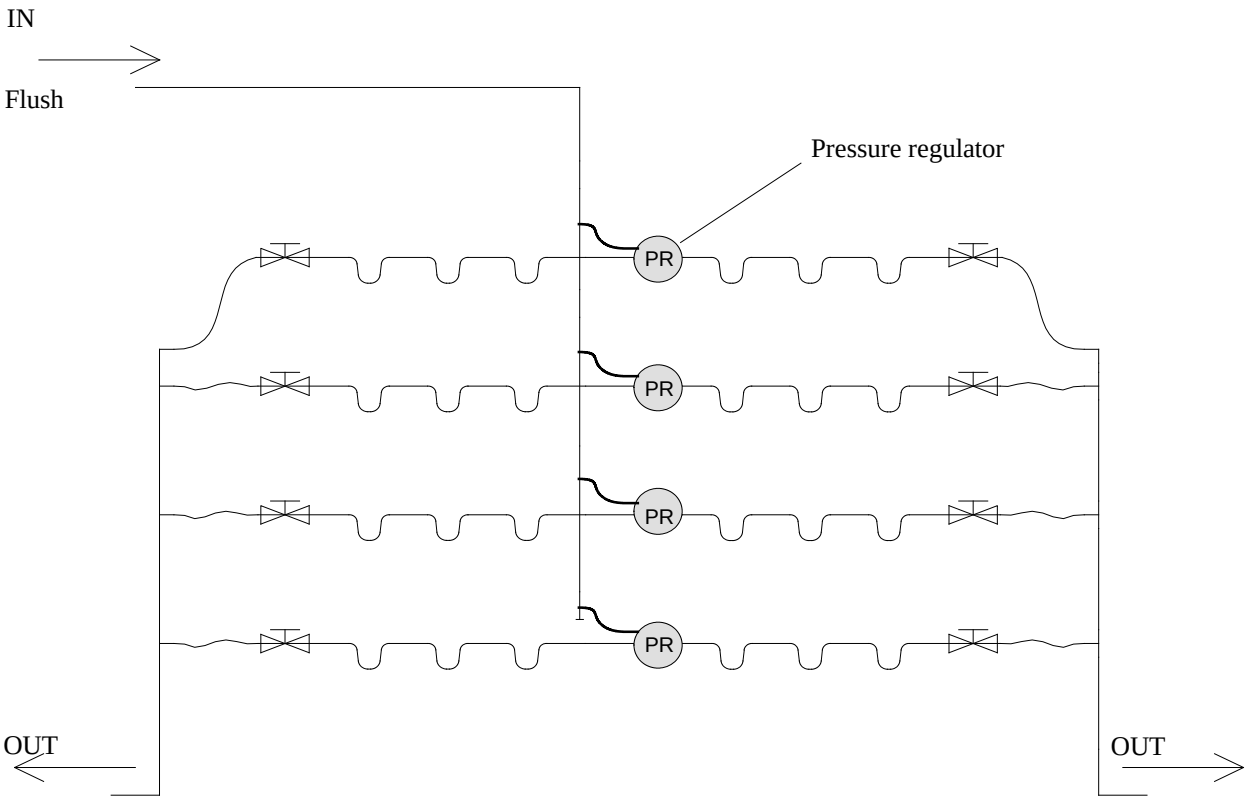


Figure 9.

OPTIONAL : SEMI-AUTOMATIC FLUSHING

CONDUIT LAYOUT FOR SEMI-AUTOMATIC FLUSHING, FRONTAL PRESSURE REGULATORS.

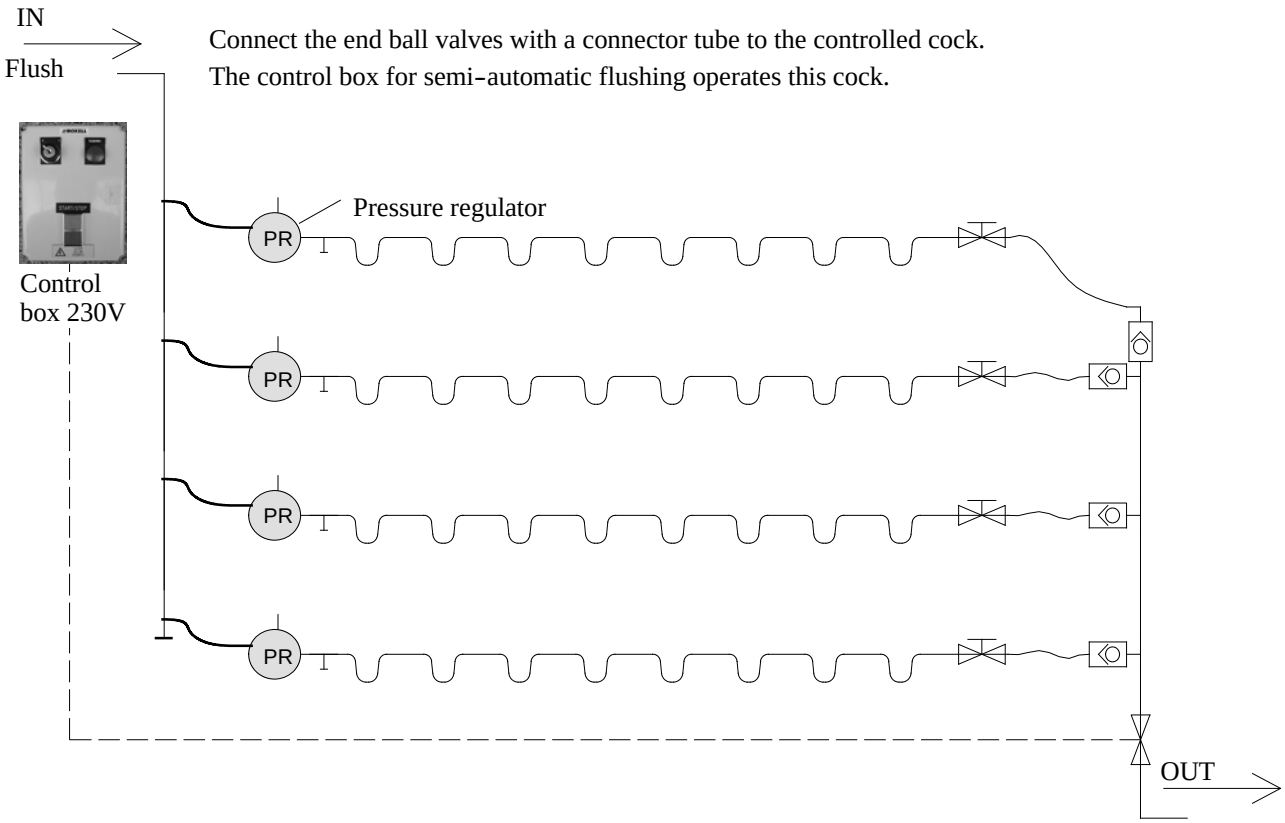


Figure 10.

CONDUIT LAYOUT FOR SEMI-AUTOMATIC FLUSHING, CENTRAL PRESSURE REGULATORS.

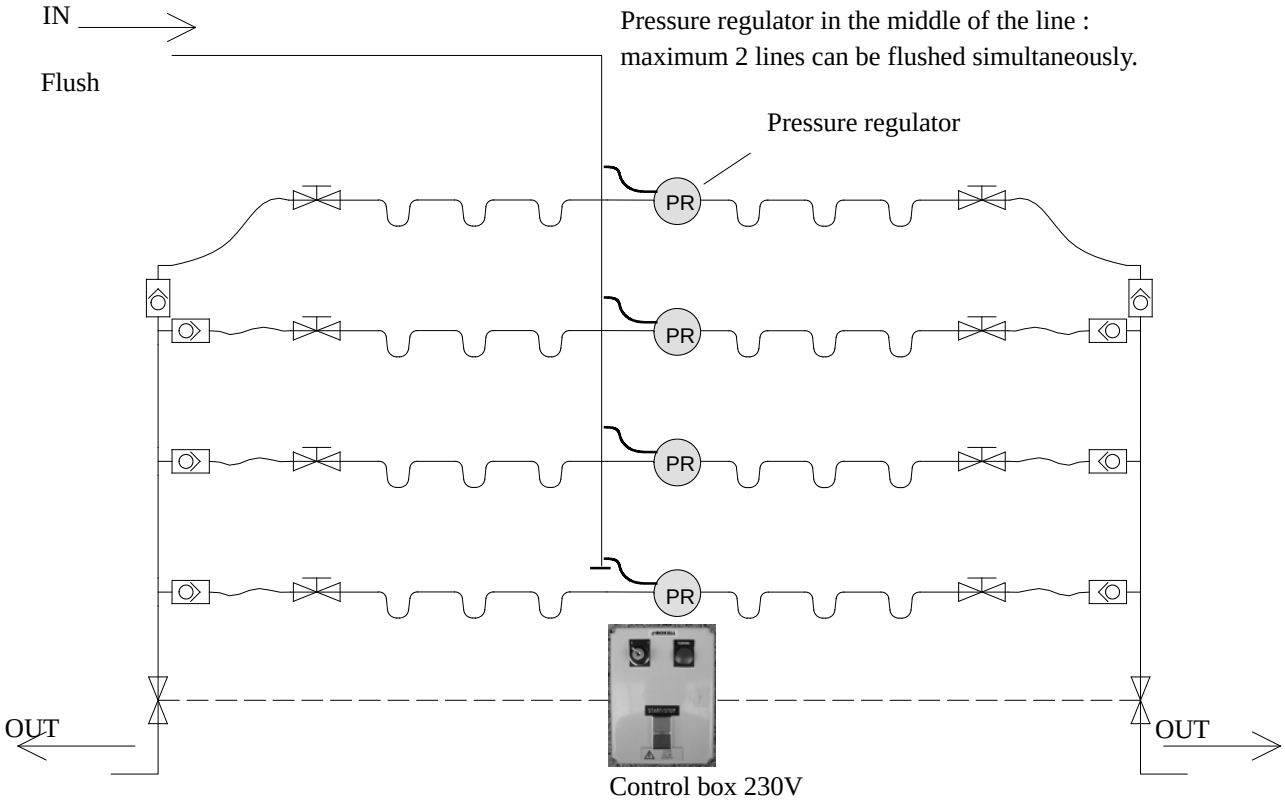


Figure 11.

To flush :

1. Turn the key contact to the ”I” position.
2. Push the green start button.
3. The red light goes on during one and a half minute (=time the controlled cock needs to change position).
4. When the cock is completely open the green light goes on.
5. Only then set the flushing button on the pressure regulator on flushing position.

After flushing :

1. Set back the flushing button back in the normal position.
2. Push the red stop button.
3. After about one and a half minute the end cock is shut off again.

Figure 12.

OPTIONAL : AUTOMATIC FLUSHING

CONDUIT LAYOUT FOR AUTOMATIC FLUSHING, FRONTAL PRESSURE REGULATORS.

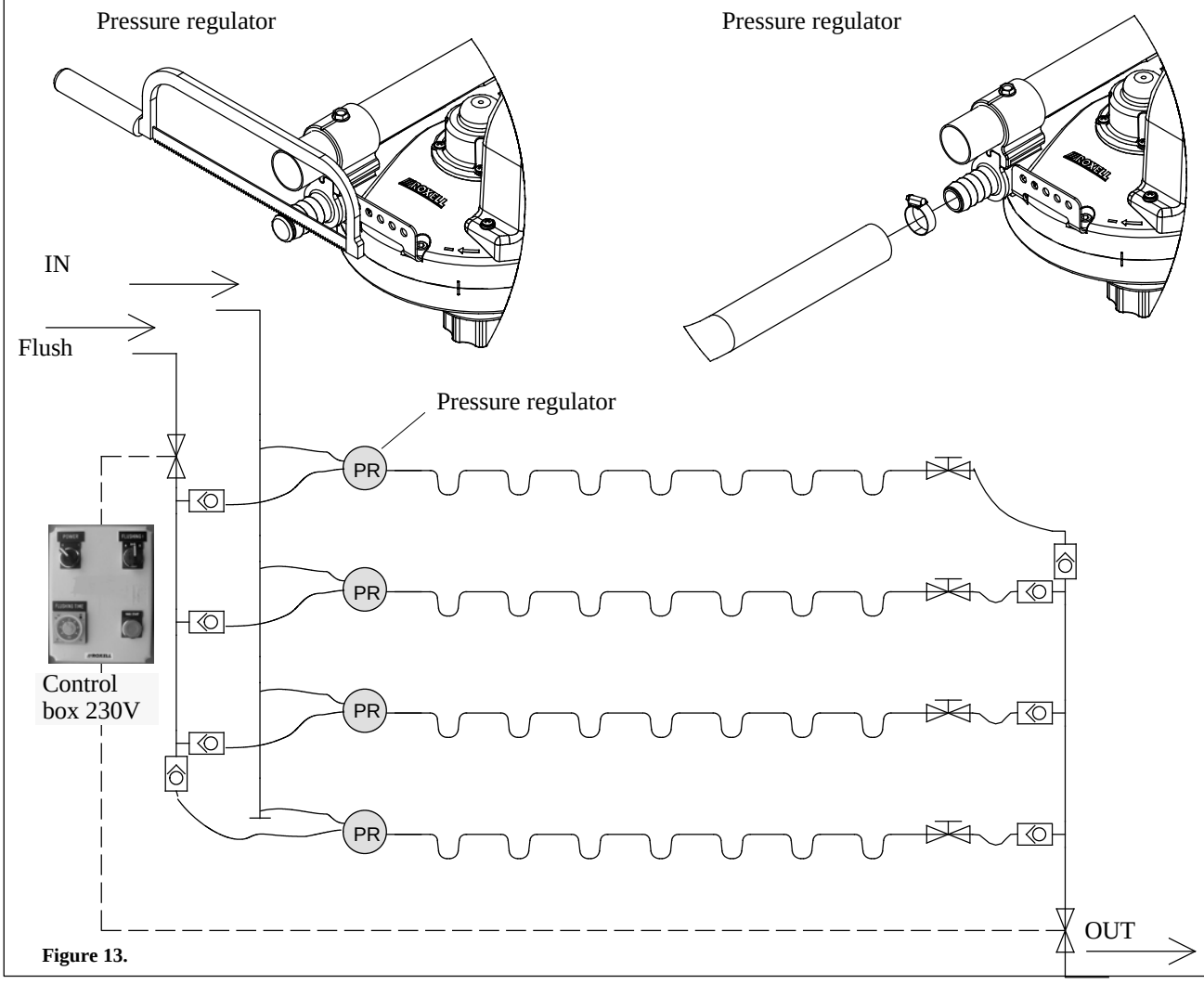


Figure 13.

1. Connect the lines one to another at the front and rear of the house with the collector tube that is connected to a controlled cock.

2. Set the flushing time on the time clock below.

Optimum flushing = 1 minute per 10m line length.

3. Put the selection button on A, B or A+B, according to the house layout (yes or not divided).

4. Press the manual start button. The box will activate all valves in the correct sequence and for the time programmed.

Figure 14.

CONDUIT LAYOUT FOR AUTOMATIC FLUSHING, CENTRAL PRESSURE REGULATORS.

Pressure regulator in the middle of the line :
both collectors (at the beginning and at the end) are the same.
Attention!
Watch the right flushing direction when installing the valves.

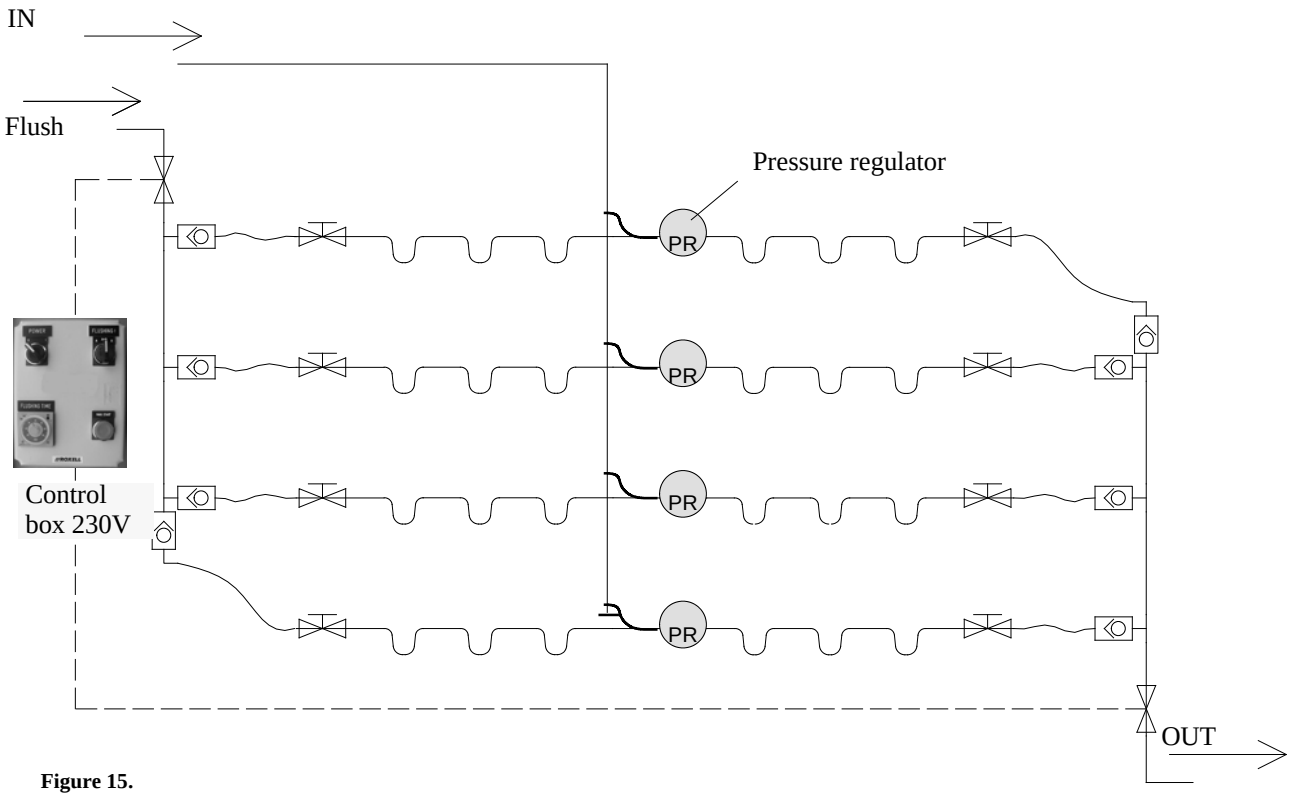


Figure 15.

TROUBLE SHOOTING GUIDE

DANGER

Switch off the main switch first.
Use personal protective equipment.

ACTIONS IN GREY BACKGROUND MUST BE DONE BY A TECHNICALLY TRAINED PERSON.

PROBLEM	CAUSE	CORRECTIVE ACTION
1. All cups running over.	**a.** Pressure regulator set too low (when using float balls).	- Increase the pressure on the regulator.
	b. End valve still open.	- Close the end valve.
2. Sections of cups running over.	**a.** Air in the line.	- Let air escape through a cup valve, or flush the line.
3. Individual cups running over.	**a.** Usually trash in the valve.	- Move the valve up and down to flush out particles. Replace valve if necessary.
4. Birds not getting enough water.	**a.** Restricted water supply.	- Adapt the water supply. Follow the specifications.
	b. Pressure set too high for young birds (use float balls for at least 7 days).	- Adapt the pressure (use the float balls at least for 7 days).
	c. Drinking lines suspended too high.	- Adapt the height.
	d. Trash in filters or line clogged.	- Replace the filters or clean the line.
5. Leaking valves.	**a.** Dirty system when starting up.	- Rinse the lines before using them.
	b. Bad water quality.	- Have the water tested by a renowned specialist.
	c. Vaccines/medicines.	- Rinse the lines before en after giving them.
	d. Water is polluted.	- Regularly replace the filter cartridge. Use clear water.
	e. Use of certain detergents/disinfectants/medecines.	- Consult the list of allowed products and check specifications of suppliers before using any of them.
6. Water wastage.	**a.** Incorrect height of the line.	- Adjust the height.
7. Water consumption too low.	**a.** Incorrect level of the line : - uneven floor. - suspension. - height of the line.	 - Level the litter on the floor. - Adjust the height. - Regularly adjust the height of the line.
	b. Water is too hot.	- Rinse every hour with fresh, cool water.
	c. Water pressure is too high.	- Adjust the water pressure.
	d. valves are silted up (vaccination/medicines).	- Rinse the line during the flock with a weak acid (e.g. acetic acid - solution 0,1 %). Repeat after the flock (solution 1 %). Consult the list of allowed products and check specifications of suppliers before using any of them.
	e. Pollution of individual valves.	- Move the pins of the valves until the dirt comes loose or change.
8. Leaking connectors.	**a.** Incorrect installation.	- Use the correct tools.
9. Connectors get loose.	**a.** Too much water pressure on the line.	- First open end valve before flushing. Maximum water pressure = 3 BAR.
	b. Incorrect procedure when rinsing.	- See instructions page 10 till 15.
	c. Broken clamping strip.	- Replace the clamping strip.
	d. Bad glue connection.	- Make a new glue connection. Use the prescribed glue.

PROBLEM	CAUSE	CORRECTIVE ACTION
10. Birds perch on the lines.	**a.** No cable for poultry perch guard is installed.	- Install cables for poultry perch guard or poultry perch system when needed.
	b. Cable for poultry perch guard is not electrified.	- Make a correct connection to the poultry perch guard (turn on). Check on short circuits.
	c. Cable for poultry perch guard not stretched enough.	- Control by expert.
	d. Wrong connection between the poultry perch guard and the line.	- Use the correct high voltage cable.
	e. There is no earthing.	- Provide a correct earthing for the profile.
	f. Birds have got into the habit of perching on the line.	- For breeders/layers : winch up the lines every evening and/or encourage the birds to move from the lines before switching off the lights.
11. The line sags.	**a.** Individual suspension points at incorrect height.	- Suspend the line horizontally.
12. Deformed suspensions.	**a.** Cable is stretched too much.	- Adjust the stretch on the cable.
	b. Birds perch on the line.	- See actions in case of birds perching on the system.
13. Line sags at the pressure regulator.	**a.** Incorrect height adjustment.	- Make sure that the pressure regulator is well aligned with the rest of the line.
14. Water pressure on the line is too high.	**a.** Pressure regulator is still in the "rinsing" position.	- Put in correct position.
	b. The pressure regulator is defective.	- Replace or repair the pressure regulator.
15. Suspension cord loose.	**a.** Incorrect fixing of the three hole string adjuster / adjusting plate.	- Install the three hole string adjuster clamp correctly and check the other suspension points.
16. Insufficient water supply in the house.	**a.** Water pressure is too low.	- Check the pump.
	b. Diameter of supply tube is too small.	- Install supply pipes of at least 25 mm diameter.
17. Difference between incoming and outgoing pressure in the filter.	**a.** Contamination of the filter set.	- Regularly replace the filter cartridge. Use clear water.
18. Insufficient water consumption when starting up the layers (production) at the age of 16-18 weeks.	**a.** Birds have been reared on another system. **b.** Not enough adaptation time.	- Longer period with light (24 hours). - Maximum light intensity. - Put some water into the cups. - Lower the water pressure temporarily to 0,3 bar.

HAND WINCH

GENERAL SAFETY RULES

Handlier voor drinklijnen voor pluimvee
Hand winch for drinking lines for poultry

DANGER

IMPORTANT

Carefully read the following instructions before USING the system

1. **PAY ATTENTION** when **WINCHING UP** or **WINCHING DOWN** the drinking lines:
   - **STOP** the handling in case of any malfunctioning.
   - **NEVER** stand **UNDERNEATH** the load when winching up or putting down the drinking lines.
2. **NEVER ALLOW UNAUTHORIZED PERSONS ENTER** the house during your absence.
3. **DON'T** wear **loose** clothing.
4. Only **adults** may handle the hand winch.
5. Only use the hand winch for **suspension of a ROXELL drinking line**.
6. Only use the hand winch with the **supplied handle**.
7. **ALWAYS** check the **condition of the hand winch and the cable** before operating.
   A **ravelled, kinked or damaged cable** must be replaced **IMMEDIATELY**.
   A **loose or damaged hand winch** must be replaced **IMMEDIATELY**.
8. **ALWAYS** check before use, if the **cable tie** on the drum weldment is ok.
9. **ALWAYS** check before use, if the **cable is not damaged**.
10. **ALWAYS** check that there are **at least 4 cable windings** on the drum weldment.
11. **NEVER** touch the **cable** and the **rotating parts** of the hand winch when in use.
12. Only use the hand winch when **NOBODY** is standing **underneath the load**.
13. **ALWAYS** look **at the load** while using the hand winch.
14. Always turn the handle **fluently**.
15. **PREVENT** that the load makes a **shocking movement**.
16. **Don't use water** to clean the hand winch.

FORBIDDEN: **NEVER** use the hand winch to lift persons.

DANGER: Getting jammed by the handle may cause **SERIOUS INJURIES.**

HAND WINCH
TROUBLE SHOOTING GUIDE

DANGER

Not respecting above-mentioned instructions can cause physical injury or material damage.
Use personal protective equipment.

ACTIONS IN GREY BACKGROUND MUST BE DONE BY A TECHNICALLY TRAINED PERSON.

CAUTION

IMPORTANT

SEE TO IT THAT YOU FIRST REMOVE EACH ELEMENT WHICH CAN OBSTRUCT A SAFE OPERATION OF THE SYSTEM!

PROBLEM	CAUSE	CORRECTIVE ACTION
1. Brake doesn't work.	a. Screw thread on the drive shaft or the handle is damaged.	- Replace the hand winch.
	b. Screw thread on the drive shaft or the handle is dirty.	- Clean the hand winch dry.
		- When **not ok**, please ask a technically trained person.
	c. Brake disks are dirty.	- Clean the hand winch dry.
		- When **not ok**, please ask a technically trained person.
	d. Handle has been screwed up against the locknut when turning down.	- Release the handle form the locknut.
2. Winching up doesn't work.	a. Load is too heavy.	- Limit the load till max. 300 kg.
	b. Cable to load is blocked somewhere.	- Release the cable.
	c. Drum weldment or drive shaft of the hand winch is blocked because of dirt or rust.	- Clean the hand winch and grease where necessary.
3. Putting down the load doesn't work.	a. Safety lock is switched on.	- Take the handle and unlock the safety lock.
	b. Cable to load is blocked somewhere.	- Release the cable.
	c. Drum weldment or drive shaft of the hand winch is blocked because of dirt or rust.	- Clean the hand winch and grease where necessary.

MAINTENANCE INSTRUCTIONS

DANGER

Use personal protective equipment.

- Remove all dirt and dust after each batch or at least every 6 months.
- See to it that the handle turns fluently on the screw thread of the main shaft.
- Don't use water to clean the hand winch.
- Use grease to grease moving parts.

02001204

Inbouwverklaring betreffende niet voltooide machines *(Richtlijn 2006/42/EG, Bijlage II.1.B)*
Declaration of incorporation of partly completed machinery *(Directive 2006/42/EC, Annex II.1.B)*

Fabrikant/Manufacturer:
Roxell BV, Industrielaan 13, 9990 Maldegem
Tel: +32 50 72 91 72
Fax: +32 50 71 67 21

Verklaart geheel onder eigen verantwoordelijkheid dat het product:
Declares on its own responsibility that the product:

Sparkcup/Sparknipple/Swii'Flo Nr: 025…/022…
Drinksysteem voor pluimvee (met pomp).
Drinking system for poultry (with pump).

Waarop deze verklaring betrekking heeft, in overeenstemming is met:
- de volgende richtlijnen: 2006/42/EG (Machinery Directive); 2014/30/EU (Electromagnetic Compatibility);
- de geharmoniseerde Europese Normen: EN ISO 12100:2010; EN ISO 13854:2019; EN ISO 13857:2019; EN IEC 60204-1:2018; EN IEC 61439-1:2021; EN IEC 61439-2:2021.

Het is verboden bovengenoemd product in gebruik te stellen voordat de machine waarin het wordt ingebouwd in overeenstemming met de bepalingen van de Machinerichtlijn is verklaard.

Tevens verbindt de fabrikant (of zijn gemachtigde) zich om op met redenen omkleed verzoek van de nationale autoriteiten de relevante informatie over deze niet voltooide machine door te geven. De wijze van doorgifte is digitaal. De wijze van informatieverschaffing laat de intellectueel-eigendomsrechten van de fabrikant van de niet voltooide machine onverlet**.**

(NL)

Relating to this declaration, is in accordance with
- The following directives 2006/42/EC (Machinery Directive); 2014/30/EU (Electromagnetic Compatibility).
- The harmonised European standards: EN ISO 12100:2010; EN ISO 13854:2019; EN ISO 13857:2019; EN IEC 60204-1:2018; EN IEC 61439-1:2021; EN IEC 61439-2:2021.

This product must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the Machinery Directive.

The manufacturer (or its agent) also undertakes, at the duly reasoned request of the national authorities, to provide the relevant information concerning this partly completed machinery. The method of transmission will be digital. The manner in which the information is provided does not prejudice the manufacturer's intellectual property rights concerning the partly completed machinery.

(EN)

Plaats, Datum / Place, Date : Maldegem, 01/01/2023

…….
Dhr. Gino Van Landuyt
Managing Director

"This part may only be filled out if all built-in subparts are delivered by Roxell"

EG-verklaring van overeenstemming *(Richtlijn 2006/42/EG, Bijlage II.1.A)*
EC-declaration of conformity *(Directive 2006/42/EC, Annex II.1A)*

Wij/We_____
(naam installateur/name fitter)

_____

_____
(volledig adres en land/complete address)

Verklaren geheel onder eigen verantwoording de
Declare completely on own justification that

_____
(naam machine/name machinery) (nummer CE-label/number CE-label)

In een installatie te hebben ingebouwd geheel volgens de Roxell-voorschriften en in overeenstemming met de bepalingen van de Machinerichtlijn.
Has been incorporated in conformity with the provisions of the Machinery Directive and the prescriptions of Roxell BV.

_____
(plaats, datum/place, date) (naam, handtekening/name, signature)

De EG-verklaring van overeenstemming / inbouwverklaring betreft uitsluitend de machine of niet voltooide machine in de toestand waarin zij op de markt is gebracht, met uitsluiting van de later bijvoorbeeld door de verdeler en/of installateur en/of eindgebruiker toegevoegde componenten en/of verrichte bewerkingen.

The EC-declaration of conformity / declaration of incorporation relates exclusively to the machinery or partly completed machine in the state in which it was placed on the market and excludes components which are added and/or operations carried out thereafter for instance by the distributor and/or the installer and/or the final user.

UK Declaration of Incorporation of partly completed machinery

Supply of Machinery (Safety) Regulations 2008

Manufacturer:
Roxell BV, Industrielaan 13, 9990 Maldegem
Tel: +32 50 72 91 72
Fax: +32 50 71 67 21

Declares on its own responsibility that the product:

Sparkcup/Sparknipple/Swii'Flo Nr: 025…/022…
Drinking system for poultry (with pump).

Relating to this declaration is in accordance with the essential requirements of

- The following Statutory Instruments:
  - Supply of Machinery (Safety) Regulations 2008
  - Electromagnetic Compatibility Regulations 2016
- The following Designated standards:

BS EN ISO 12100:2010; BS EN ISO 13854:2019; BS EN ISO 13857:2019;
BS EN IEC 60204-1:2018; BS EN IEC 61439-1:2021; BS EN IEC 61439-2:2021.

This product must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the Machinery Directive.
The manufacturer (or its agent) also undertakes, at the duly reasoned request of the national authorities, to provide the relevant information concerning this partly completed machinery. The method of transmission will be digital. The manner in which the information is provided does not prejudice the manufacturer's intellectual property rights concerning the partly completed machinery.

Place, Date: Maldegem, 01/01/2023

……
Dhr. Gino Van Landuyt
Managing Director

"This part may only be filled out if all built-in subparts are delivered by Roxell"

UK Declaration of Conformity

Supply of Machinery (Safety) Regulations 2008

We_____
(name installer)

_____

_____
(complete address)

Declare completely on own justification that

_____
(name machinery) (number UKCA-marking)

has been incorporated in conformity with the provisions Supply of Machinery (Safety) Regulations 2008 and the prescriptions of Roxell BV.

_____
(place, date) (name, signature)

The UK Declaration of Conformity / Declaration of Incorporation relates exclusively to the machinery or partly completed machine in the state in which it was placed on the market and excludes components which are added and/or operations carried out thereafter for instance by the distributor and/or the installer and/or the end user.

00105502

EG-verklaring van overeenstemming *(Richtlijn 2006/42/EG, Bijlage II.1.A)*
EC-declaration of conformity *(Directive 2006/42/EC, Annex II.1.A)*

Fabrikant/Manufacturer:
Roxell BV, Industrielaan 13, 9990 Maldegem
Tel: +32 50 72 91 72
Fax: +32 50 71 67 21

Verklaart geheel onder eigen verantwoordelijkheid dat het product:
Declares on its own responsibility that the product:

Winching system Nr: 00102368 / 00102087
Liersysteem voor voer- en drinklijnen; manueel en gemotoriseerd
Winching system for feed- and drink lines; manual and motorised
Nummer CE-label/number CE-label :_____

Waarop deze verklaring betrekking heeft, in overeenstemming is met:
- de volgende richtlijnen: 2006/42/EG (Machinerichtlijn); 2014/30/EU (Elektromagnetische Compatibiliteit);
- de geharmoniseerde Europese Normen: EN ISO 12100:2010; EN ISO 13854:2019; EN ISO 13857:2019; gemotoriseerd: EN IEC 60204-1:2018; EN IEC 61439-1:2021; EN IEC 61439-2:2021.

De EG-verklaring van overeenstemming / inbouwverklaring betreft uitsluitend de machine of niet voltooide machine in de toestand waarin zij op de markt is gebracht, met uitsluiting van de later door bijvoorbeeld de verdeler en/of installateur en/of eindgebruiker toegevoegde componenten en/of verrichte bewerkingen.

(NL)

Relating to this declaration is in accordance with
- The following directives 2006/42/EC (Machinery Directive); 2014/30/EU (Electromagnetic Compatibility).
- The harmonised European standards: EN ISO 12100:2010; EN ISO 13854:2019; EN ISO 13857:2019; motorised: EN IEC 60204-1:2018; EN IEC 61439-1:2021; EN IEC 61439-2:2021.

The EC-declaration of conformity / declaration of incorporation relates exclusively to the machinery or partly completed machine in the state in which it was placed on the market and excludes components which are added and/or operations carried out thereafter for instance by the distributor and/or the installer and/or the final user.

(EN)

Plaats, Datum / Place, Date: Maldegem, 01/01/2023

.....
Dhr. Gino Van Landuyt
Managing Director

UK Declaration of Conformity
Supply of Machinery (Safety) Regulations 2008

Manufacturer:
Roxell BV, Industrielaan 13, 9990 Maldegem
Tel: +32 50 72 91 72
Fax: +32 50 71 67 21

Declares on its own responsibility that the product:

Winching system Nr: 00102368 / 00102087
Winching system for feed- and drink lines; manual and motorised
Number UKCA-marking:_____

Relating to this declaration is in accordance with the essential requirements of

- The following Statutory Instruments:
  - Supply of Machinery (Safety) Regulations 2008
  - Electromagnetic Compatibility Regulations 2016
- The following Designated standards:

BS EN ISO 12100:2010; BS EN ISO 13854:2019; BS EN ISO 13857:2019; BS EN IEC 60204-1:2018; BS EN IEC 61439-1:2021; BS EN IEC 61439-2:2021.

The UK Declaration of Conformity / Declaration of Incorporation relates exclusively to the machinery or partly completed machine in the state in which it was placed on the market and excludes components which are added and/or operations carried out thereafter for instance by the distributor and/or the installer and/or the end user.

Place, Date: Maldegem, 01/01/2023

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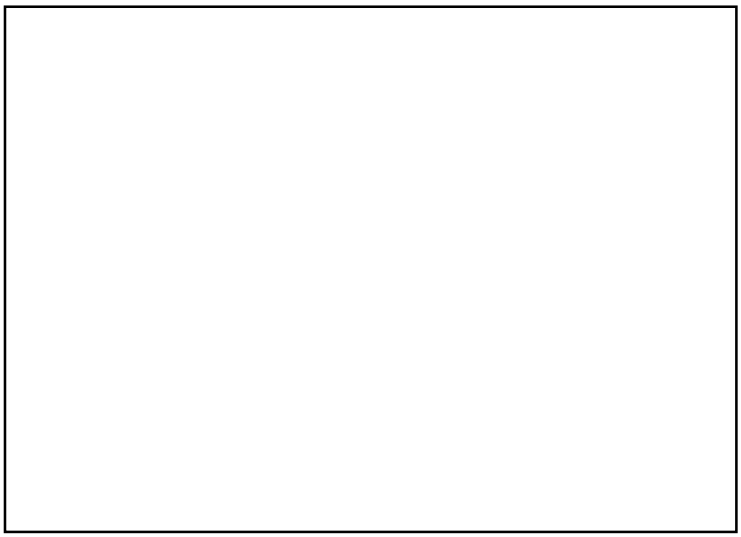
Dhr. Gino Van Landuyt
Managing Director



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