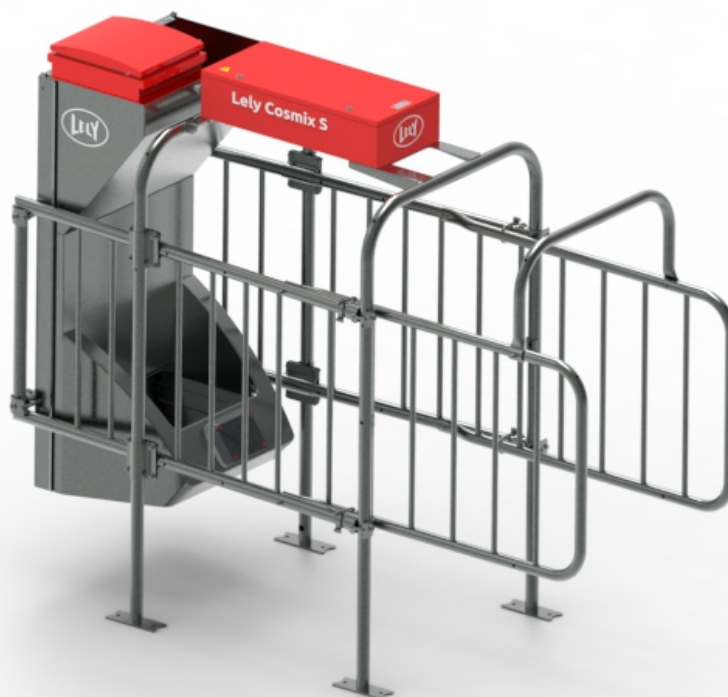


Lely Cosmix.



Operator Manual

en-US - English Original

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List of included amendments

Issue Date (yy/mm)	Revision	Chapter(s)	Remarks
24/04	-	All	initial issue



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Preface

Manual contents

This manual contains the information for the correct operating instructions and maintenance of the . The information in this manual is for operators:

- The operator uses the information to clean, maintain and operate the machine.



Study and understand this information thoroughly before you do maintenance on the machine. Failure to do so could result in damage to equipment or personal injury. Please consult your local Lely service provider if you do not understand the information in this manual, or if you need additional information. Store this manual in a safe place for future reference.

All information in this manual has been compiled with care. Lely shall not be liable for errors or faults in this manual. The recommendations are meant to serve as guidelines. All instructions, pictures and specifications in this manual are based on the latest information that was available at the time of publication. Your machine may comprise improvements, features or options that are not covered in this manual.

Applicability

The table below shows the type numbers of the machine for which this manual is applicable.

Model	Type number
Qwes ISO neck	5.2309.0000.1
Qwes H/HR-LD	5.2309.0040.1

Software version

The description, operation and procedures in this manual are based on the following software versions:

- Horizon version 1.6 or higher
- CM_v2.1.0 or higher

Standard Torque Loading of Parts

All the nuts, bolts and screws used on the are torque tightened to standard torque loadings applicable to the construction materials used.

If a part has a non-standard torque loading, it is specified in the applicable part of the manual.

Registration

The Type and Serial Number Plate is attached to the control box of the concentrate feeder, on the top. Always include the type and serial number of your concentrate feeder when you contact your local Lely service provider or order spare parts.

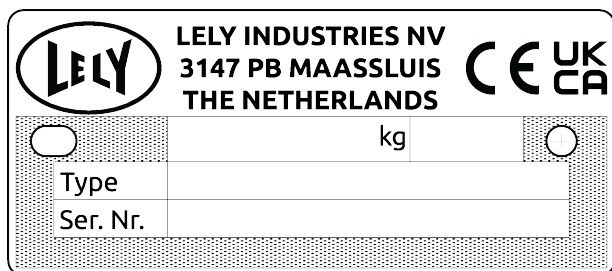


Figure 1. Type and serial number plate

We suggest you complete the table below with the type and serial numbers of your concentrate feeder. This makes sure you can easily find the information.

Type number	
Serial number	

Personnel Requirements



***Risk of accident from insufficiently qualified personnel.
Unqualified personnel working on the machine can be the cause of serious injuries and considerable damage to material.***

- All activities must only be carried out by qualified personnel.
- Keep unqualified personnel away from the machine.
- Only persons who can be expected to carry out their job reliably are authorized as personnel. Persons whose reactions are impaired, e.g. by drugs, alcohol, medications are not authorized to work with the machine.

5.2309.8537.0 -

Maintenance authorization



***Risk of accident from uncertified technicians.
Uncertified technicians doing maintenance on the machine can be the cause of serious injuries and considerable damage to material.
Only technicians certified by Lely Industries are authorized to do maintenance on the machine, except for the maintenance done by the operator as indicated in the operator manual. If people who are not certified by Lely Industries do maintenance on the machine, the warranty on the machine becomes invalid.***

Contact Number Local Service Provider

We suggest you write the telephone number and email address of your local service provider contact in the table below. This makes sure you can easily find the information.

Telephone number	
email address	



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5.2309.8537.0 -

Table of Contents

1	Cosmix S	1-1
1.1	Introduction	1-1
1.2	Intended use	1-1
2	Safety	2-1
2.1	Signal Icons	2-1
2.2	Safety Instructions	2-2
2.2.1	General safety	2-2
2.2.2	Electrical safety	2-3
2.2.3	Operating safety	2-3
2.2.4	Maintenance safety	2-3
2.3	Safety Decals	2-4
2.3.1	Location and explanation of safety decals	2-4
2.3.2	Maintenance of Safety Decals	2-5
2.3.3	Installation of Safety Decals	2-5
3	Specifications	3-1
3.1	Specifications and requirements	3-1
3.2	Dimensions and weight	3-3
3.3	Examine the Feed Type Suitability	3-4
3.3.1	Provide an Indication if the Feed is Suitable for the Hopper	3-4
3.3.2	Examine the Feed Suitability	3-6
4	Description and Operation	4-1
4.1	Introduction	4-1
4.2	Frame and fencing	4-2
4.3	Feed Unit	4-3
4.3.1	Feed unit	4-3
4.3.2	Feed hopper	4-3
4.4	Control Box	4-4
4.4.1	Control box	4-4
4.4.2	ADS3830 PCB	4-5
4.4.3	Air valves block	4-5
4.4.4	Photoelectric sensor	4-6
4.5	Cow Identification (ID) Readers	4-6
4.5.1	Qwes ISO neck ID reader	4-6
4.5.2	Qwes H/HR-LD identification	4-7
4.6	Operator Interface	4-8
4.6.1	Operator interface	4-8
4.6.2	The farm management application Horizon	4-8
4.6.2.1	Horizon	4-8

4.6.2.2	Dashboard of Horizon	4-8
4.6.3	Web interface (for calibration)	4-9
4.7	Operation	4-10
4.7.1	Identification	4-10
4.7.2	Feeding	4-11
4.7.3	End of visit	4-11
4.7.4	Interaction between the components	4-11
5	Operating Instructions	5-1
5.1	Operation in Horizon	5-1
5.1.1	List details about the rest feed in Horizon	5-1
5.1.2	List a feed overview in Horizon	5-1
5.1.3	List an intake per device in Horizon	5-2
6	Maintenance	6-1
6.1	Clean the machine	6-1
6.2	Clean the photocell	6-1
6.3	Calibrate the feed portion of the dispenser	6-2
7	Troubleshooting	7-1
7.1	Troubleshooting table	7-1
7.2	Clean the feed pipe	7-1
7.3	Unblock the feed hopper	7-7
7.4	Make Sure the cow has feed credit in Horizon	7-10
7.5	Make sure the cow number is less than 32000	7-10
8	Disposal	8-1
9	WEEE	9-1
10	Declaration of Conformity	10-1
10.1	EC Declaration of conformity	10-1
10.2	UKCA Declaration of conformity	10-2

1 Cosmix S

1.1 Introduction

The Lely Cosmix. supplies an exact portion of concentrates to cows to realize their maximum milk production or to cattle for optimal growth. The feed portion can be one feed type, or a mixture of two different types of concentrates.

An electronic tag on a collar on each cow enables the system to identify the cow via an unique number. There are two tag types:

- Qwes ACT for identification with an ISO ID reader
- Qwes H/HR-LD for identification with an infrared ID reader

The machine is installed in the barn.

The farm management application Horizon has information about each animal and based on this, determines the amount of feed to be dosed.

In combination with the Astronaut milking robot a closed system of milking and allocation of concentrates can be created.

1.2 Intended use

The Lely Cosmix. is designed to be used as an automated concentrate feeder for all dairy cows en beef cattle older than one year in the barn. Feed types that can be fed are dry concentrate feed in pellet form or prime material (raw material):

- Pellet diameter: 8 mm (0.3 in).
- Prime/Raw material particles: between 4 and 8 mm (between 0.16 and 0.3 in).

Feed types that have a high chance on bridging problems must not be fed.

Usage going beyond that does not constitute proper use. The manufacturer is not liable for damage resulting from improper use; the operator alone bears the risk.

Intended use also implies that the instructions and rules prescribed by the manufacturer are observed.



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2 Safety

2.1 Signal Icons

Note the use of the signal words DANGER, WARNING and CAUTION with the safety messages. The signal word for each message uses the following guidelines:



Danger

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Warning

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



Caution

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



Notice

Is used to address practices not related to physical injury e.g. property damage.



Tip

Indicates information that may help the reader, but not hazard related.

2.2 Safety Instructions

YOU are responsible for the SAFE operation and maintenance of your machine. YOU must make sure that you and anyone else who is going to operate, maintain or work in the vicinity of the machine knows all the related SAFETY information in this manual.

YOU are the key to safety. Good safety practices protect you and the people around you. Make these practices a working part of your safety program. Make sure that EVERYONE who operates, maintains or works near the machine obeys the safety precautions. Do not risk injury or death by ignoring good safety practices.

- Owners must train operators before they operate the machine. This training must be repeated at least annually.
- The operator must read, understand and obey all safety and operating instructions in the manual.
- A person who has not read and understood all safety and operating instructions is not permitted to operate the machine.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment and persons.
- Only use approved spare parts and make sure that they are only installed by authorized technicians.



The hazards in the operating zone and working area pose a risk of fatal injury to unauthorized persons.

Unauthorized persons who do not satisfy the requirements described herein are not aware of the hazards in the work area. Unauthorized persons are therefore at risk of serious or fatal injury.

- ***Keep unauthorized persons away from the operating zone and work area.***
- ***If in doubt, approach unauthorized persons and ask them to leave the operating zone and work area.***
- ***Stop work as long as unauthorized persons are within the operating zone and work area.***

5.2309.8537.0 -

2.2.1 General safety

- Read and understand the manual and all safety signs before you connect power supplies to operate, maintain or adjust the machine.
- Only trained persons are permitted to operate the machine.
- A first-aid kit must be available near the concentrate feeder. Store in a highly visible place.
- A carbon dioxide or foam fire extinguisher must be available near the machine. Store the fire extinguisher in a highly visible place.
- Install all protective covers and guards before you operate the machine.
- Wear the correct protective clothing (safety shoes).

- Disconnect and isolate the electrical power supply, release pneumatic pressure and wait for all moving parts to stop before you clean or do maintenance on the machine.
- Know the emergency medical center number for your area.
- Review safety related items with all operators frequently (annually).
- Contact your nearest Lely service provider if you have any questions.

2.2.2 Electrical safety

- Only an authorized electrician must install the electrical power supply for the machine.
- Make sure the electrical grounding of the electrical system and all parts of the machine meet the local rules and regulations.
- Have any damaged electrical lines, conduits, switches and components replaced immediately.

2.2.3 Operating safety

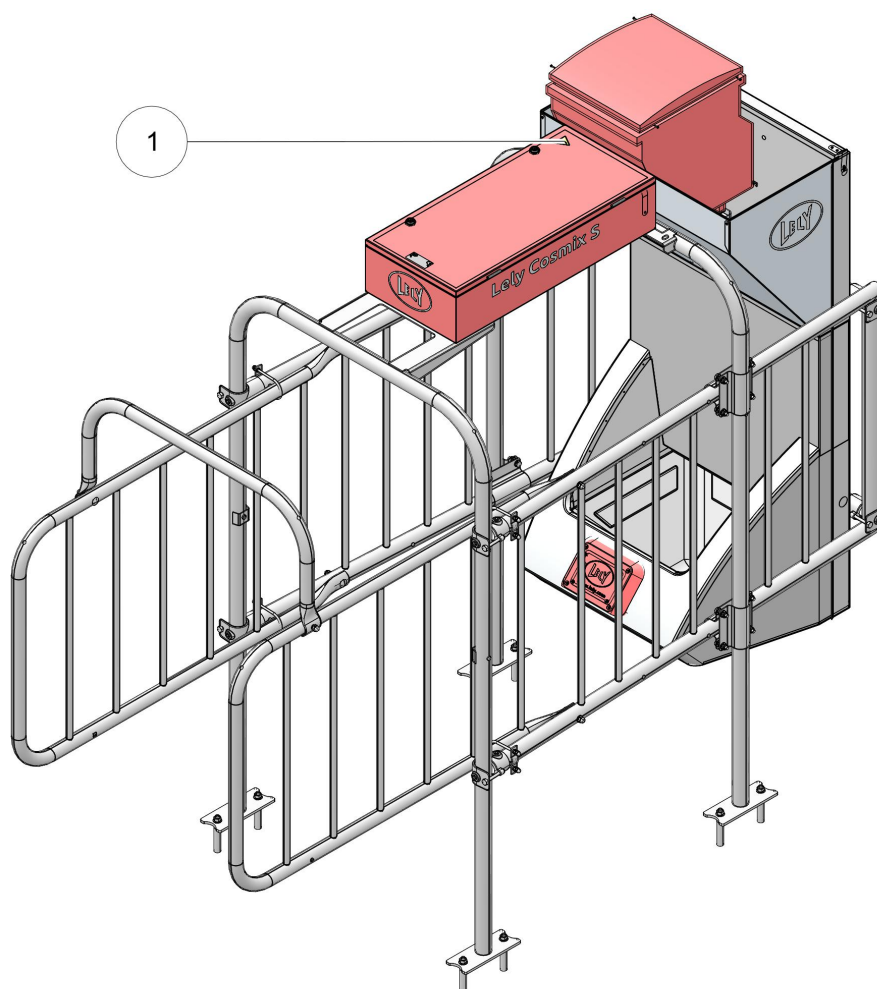
- Read and understand the applicable manual and all safety signs before you connect power supplies to operate, maintain or adjust the machine.
- Only trained persons are permitted to operate the machine.
- Disconnect and isolate the electrical power supply, release pneumatic pressure and wait for all moving parts to stop before you clean or do maintenance on the machine.
- Install all covers and guards before you operate the machine.
- Keep hands, feet, hair and clothing away from all moving parts.
- Keep unauthorized persons, especially small children away from the machine at all times.
- Before the pneumatic pressure is supplied to the machine, make sure all parts are tight and that all hoses and fittings are in good condition.
- Always be alert for unexpected movement of the cow. Cows can transmit large forces to parts of the machine.
- Contact your nearest Lely service provider if you have any questions.
- Review safety related items with all operators frequently (annually).

2.2.4 Maintenance safety

- Only trained persons are permitted to maintain the machine.
- Disconnect and isolate the electrical power supply, close off the air supply and release pneumatic pressure before you do work on the machine.
- Wear protective clothing, safety shoes and gloves when you maintain the machine.
- Make sure all covers and guards are installed when maintenance work is complete.

2.3 Safety Decals



2.3.1 Location and explanation of safety decals



5-2309-0000-000-001

Figure 2. Position of the safety decal

KEY: 1. Decal Electrocution hazard

No.	Decal	Explanation
2	 <p>Electrocution hazard decal (except Canada and USA)</p>  <p>Electrocution hazard decal (Canada and USA)</p>	<p>Caution: Electrocution hazard</p> <p>Risk of electric shock. Contact will cause electric shock or burn. Disconnect power before servicing.</p>

5.2309.8537.0 -

2.3.2 Maintenance of Safety Decals

Safety decals show important and useful information that will help you to safely operate and maintain the machine.

Obey the instructions below to make sure that all the decals stay in the correct position and condition.

- Keep the safety decals clean and legible at all times. Clean the safety decals with soap and water. Do not use mineral spirits, abrasive cleaners or other similar agents that may damage the safety decals.
- Replace safety decals that are missing or that are illegible.
- Safety decals can be purchased from your local Lely service provider.

2.3.3 Installation of Safety Decals

1. Make sure that the installation surface is clean and dry.
2. Make sure that the temperature of the mounting surface is not less than 5 °C (41 °F).
3. Find the correct position for the decal before you remove the backing paper.
4. Remove a small part of the cover paper.
5. Put the decal in the correct position on the installation surface and carefully push the small part of exposed adhesive surface of the decal onto the installation surface.
6. Slowly remove the cover paper and attach the rest of the decal to the installation surface.
7. Puncture small air pockets in the decal with a pin and use the cover paper to smoothen the decal.



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3 Specifications

3.1 Specifications and requirements

General operational conditions	
Ambient temperature	-15 to +40 °C (5 to 104 °F)
Humidity	5 - 99% non condensing
Capacity	
Capacity feed hopper	50 l (13.2 gal)
Number of feed hoppers	1 or 2
Feed type	
Concentrates*	Pellet diameter: 8 mm (0.3 in
Prime material (raw material)*	Size: 4 - 8 mm (0.16 - 0.3 in).
*) Feed types that have a high chance on bridging problems must not be fed. See Examine the feed type suitability.	
Control box	
PCB	ADS3830
Software version	CM_v2.1.0 or higher
Cow identification readers	
ISO ID reader neck	Qwes ISO
LD reader	Qwes H/HR-LD
Pressurized air supply	
Pressure input*	6 to 7.75 bar (87 to 112 PSI)
Connection	6 mm tube
Connected to	Central unit or air compressor unit
*) if necessary a pressure reducer (optional) must be installed	
Power supply	
Power supply	100 - 240 VAC

5.2309.8537.0 -

Earthing	
Earthing of the machine must comply with current earthing regulations for barns (obey local rules and standards)	
The earth wire must be connected to the earth point	
An authorized electrician must approve the final electrical installation (including earthing) and supply an official report that is given to the Lely service provider before the installation is used	

NOTICE

Warranty on electronics will not be given if the earthing is not correctly installed.

Network connection	
Cable type at least	LAN CAT.5e Ethernet cable, S-FTP 200 MHz (foil-screened twisted pair with overall screening (copper braiding)) with steel RJ-45 connector.
Maximum cable length	100 meters (109 yd) (a network switch (optional) must be installed if the distance is more than 100 meter (109 yd))

3.2 Dimensions and weight

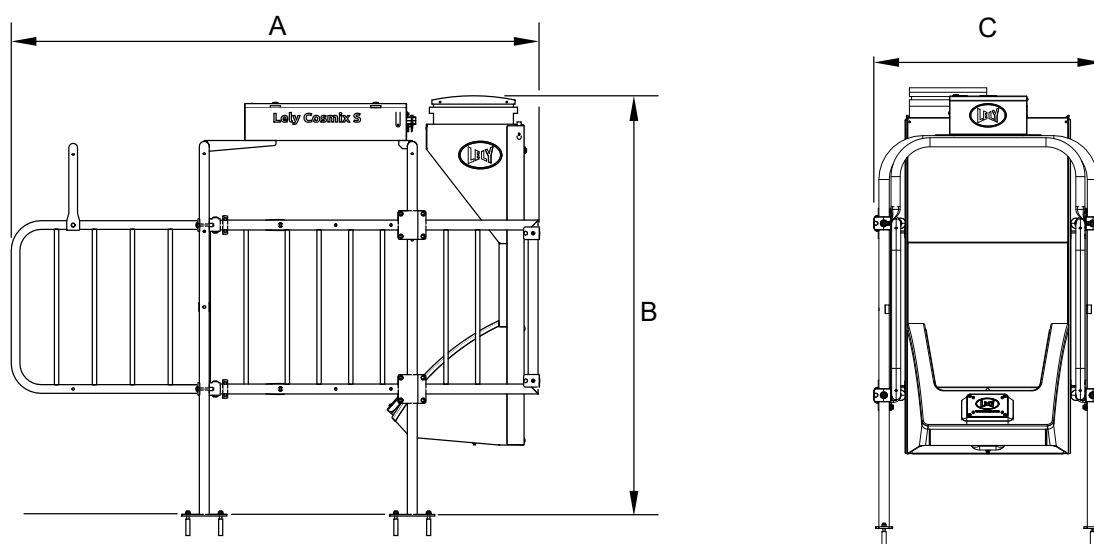


Figure 3. Side and front view

KEY:

A: Height: 205.1 cm (80.7 in)

B: Length: 257.7 cm (101.4 in)

C: Width: 106.5 cm (41.9 in)

- Weight: approx. 248 kg (547 lb)

3.3 Examine the Feed Type Suitability

3.3.1 Provide an Indication if the Feed is Suitable for the Hopper



Figure 4. Fill a cup



Figure 5. Press the feed down



Figure 6. Wipe off the excess of feed



Figure 7. Carefully tilt the cup



Figure 8. Wipe the surface clean, reposition of feed particles



Figure 9. Wipe the surface clean

1. Fill a cup with feed (see figure 4 on page 3-4).
2. Press the feed down with medium force (see figure 5 on page 3-4).
If the feed level is below the cups edge, fill it up and press it down again with (reasonable) force.
3. Wipe off the excess of feed above the cups edge (see figure 6 on page 3-4).

4. Place the cup on a flat surface and carefully tilt the cup on its side (see figure 7 on page 3-4).
5. Wipe away the feed on the surface that falls out of the cup. (see figure 8 on page 3-4).
After wiping away the excess of feed in front of the cup, the feed will repositioning in the cup.
6. Wipe again the excess of feed that falls out of the cup (see figure 9 on page 3-4).
7. Determine the angle (α°) of the feed in the cup (see figure 10 on page 3-5).
8. Determine the feed suitability (see table 1 on page 3-6).



Use a protractor ruler to determine the angle of the feed in the cup.

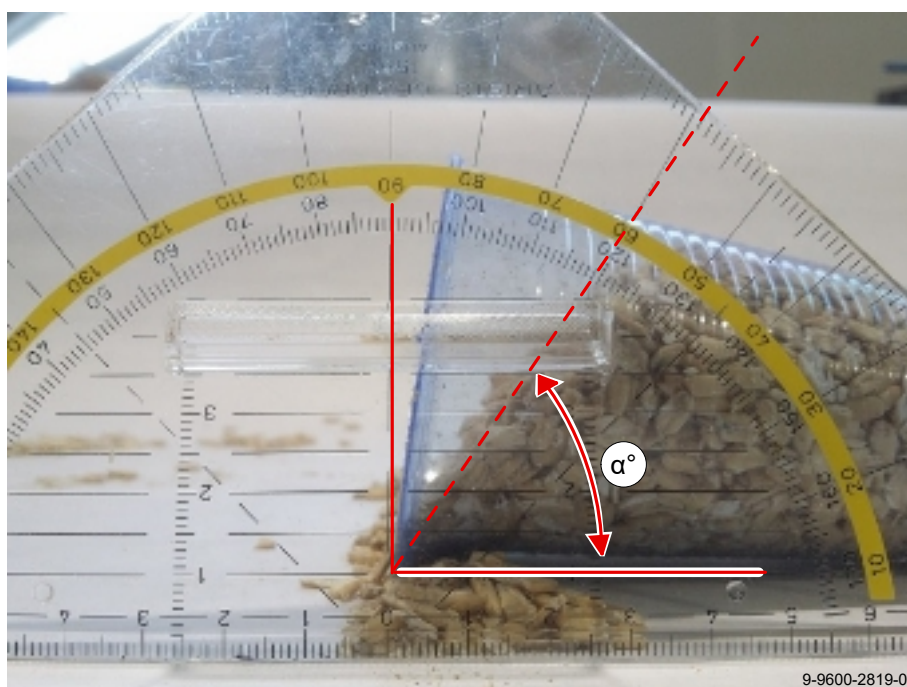


Figure 10. Determine the feed angle

3.3.2 Examine the Feed Suitability

Different types of Feed



Figure 11. Different type of feeds

KEY: From left to right, the feed types become more difficult to feed.

Risk indication and Feed Suitability

The steeper the angle (α°), the more likely it will cause bridging problems in the feed hopper. The angle vs risk analysis (see Provide an Indication if the Feed is Suitable for the Hopper on page 3-4) can be made on this test (see table 1 on page 3-6).

Table 1. Angle vs risk indication

Angle (α°)	Risk	Bridging
Angle (α°) < 45°.	Very low.	No bridging problems are expected.
45° ≤ Angle (α°) < 65°.	Low.	The chance of bridging problems in the hopper is low.
65° ≤ Angle (α°) < 75°.	Medium.	Occasional bridging problems can be expected. <ul style="list-style-type: none"> The farmer should be aware of increased risk.
75° ≤ Angle (α°).	High.	Bridging problems are very likely. <ul style="list-style-type: none"> The farmer should be aware of substantial risk. Using a different feed type is advised.

4 Description and Operation

4.1 Introduction

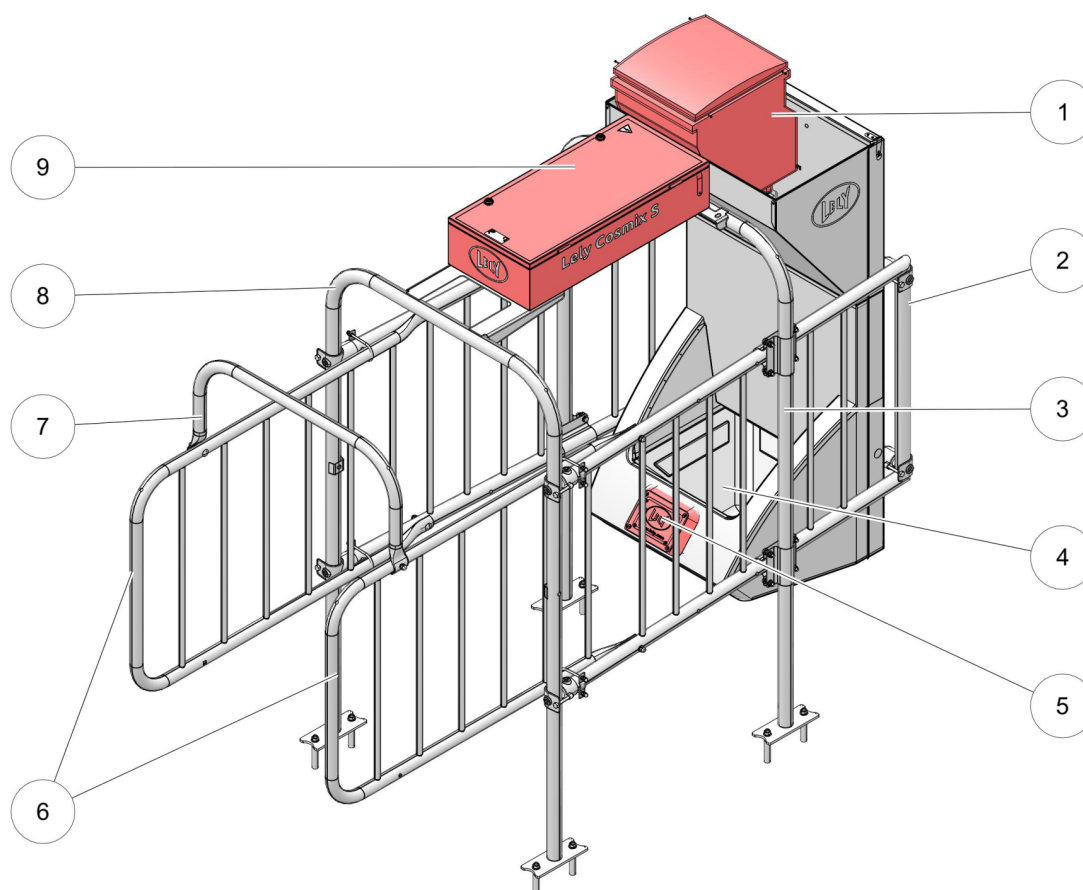
The machine has the following main parts:

- Frame and fencing
- Feed hopper(s) (1 - 2)
- Feed bin
- Control box
- Cow identification reader for Qwes ACT or Qwes LD identification.

The machine is installed in the barn.

The machine is connected to the Lely network.

The machine gets input from and sends output to the Horizon Farm Management application.



5-2309-0000-000-003

Figure 12. Main components with Qwes ACT identification

KEY: 1. Hopper in Feed unit - 2. Side fence - 3. Front portal - 4. Feed bin - 5. ID reader FSK ISO - 6. Rear fence - 7. Bracket - 8. Rear portal - 9. Control box

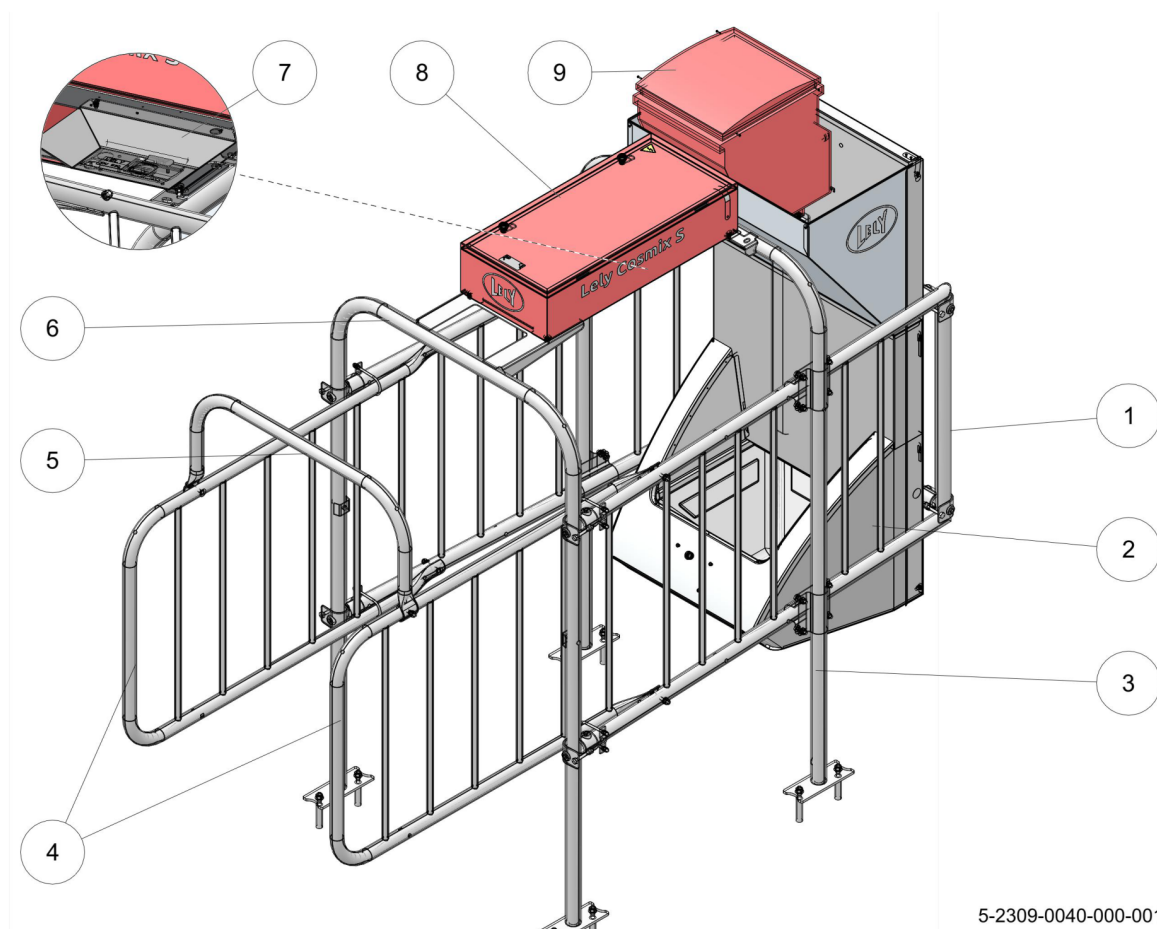


Figure 13. Main components with Qwes LD identification

KEY: 1. Side fence - 2. Feed bin - 3. Front portal - 4. Rear fence - 5. Bracket - 6. Rear portal - 7. Qwes LD reader - 8. Control box - 9. Hopper in Feed unit

4.2 Frame and fencing

The machine has the following frames and fences:

- Front portal
- Rear portal
- Side fence (2×)

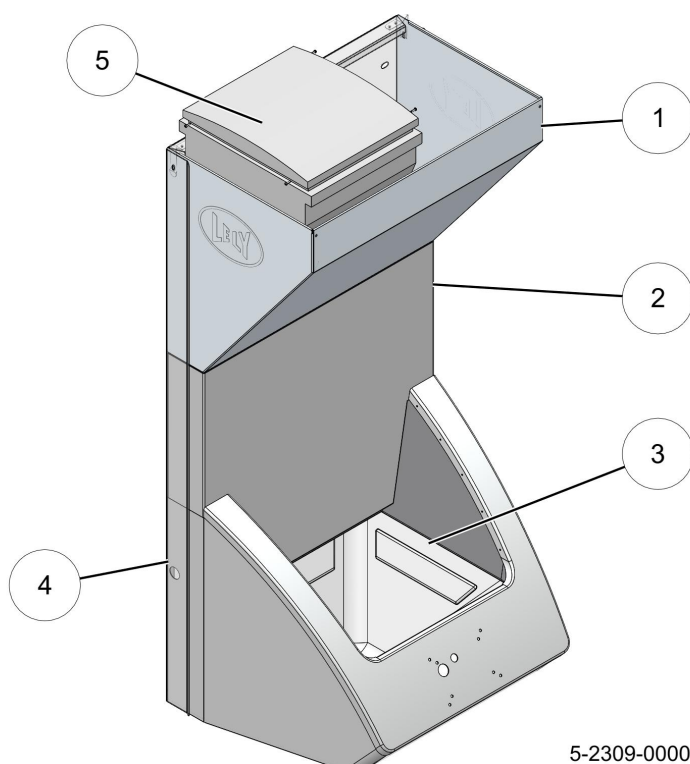
The two side fences are connected to the front and the rear portal. When installing the side fences the length of the concentrate feeder can be adjusted by 27 cm (10.6 in) longer or shorter.

4.3 Feed Unit

4.3.1 Feed unit

The feed unit can have 1 or 2 feed hoppers. The feed unit has the following parts:

- One or two feed hoppers.
- A stainless steel feed bin.
- A rear plate, cover plate and a front plate.



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Figure 14. Feed unit

KEY: 1. Cover plate - 2. Front plate - 3. Feed bin - 4. Rear plate - 5. Hopper

4.3.2 Feed hopper

The machine has one or two feed hoppers. Each feed hopper has a hopper, a dispenser and a drop pipe. In most cases the hoppers are filled by tube feeders that are connected to silos.

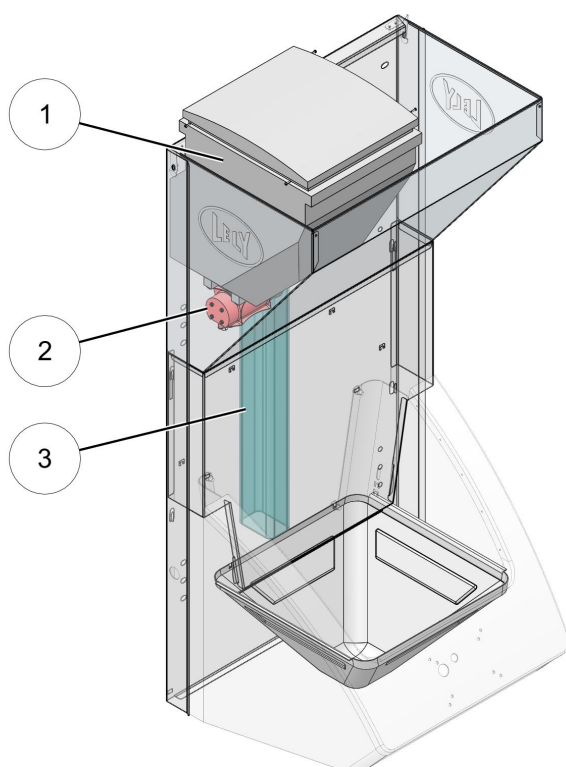
NOTICE

Lely does not supply tube feeders and silos.

The dispenser gives exactly the same volume each feed portion. It has a cylinder that retracts to fill with feed and extends to release the feed in the drop pipe. The weight of the volume of a feed portion must be calibrated when the feed type changes and when the silo is filled up with each new feed delivery.

The amount of concentrate to be fed to a cow is based on calculations made in Horizon. The proportion of each feed type and the total amount that is fed can be set per cow, group or herd.

The dosed feed falls through the drop pipe into the feed bin.



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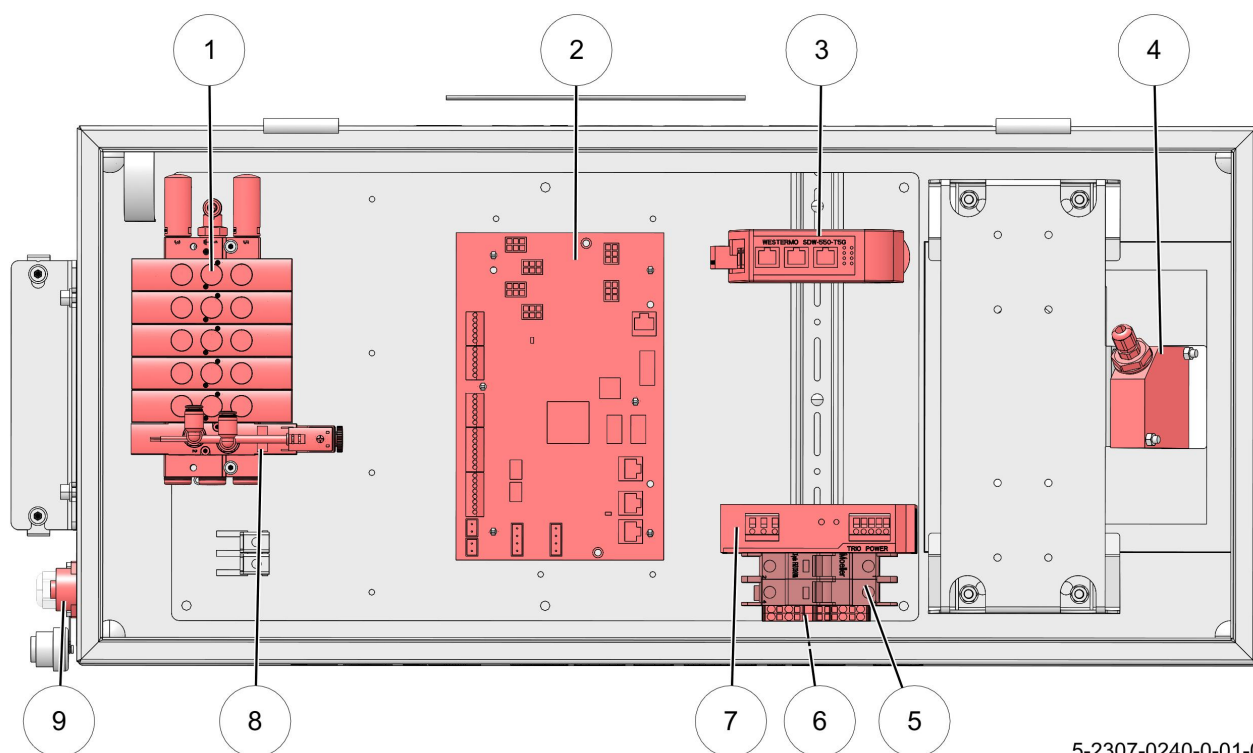
Figure 15. Feed unit

KEY: 1. Hopper - 2. Dispenser - 3. Drop pipe

4.4 Control Box

4.4.1 Control box

The control box controls the identification of cows and the supply of feed.



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Figure 16. Control box

KEY: 1. Air valve block - 2. ADS3830 pcb - 3. Network switch (optional) - 4. Photocell - 5. Circuit breaker - 6. Ground connector - 7. Power supply (24V) - 8. Solenoid air valve - 9. E-Link connector

The control box on top of the machine has the following parts:

- ADS3830 pcb
- Air valve(s)
- Photoelectric sensor
- 24V Power supply
- Circuit breaker
- Network switch (optional)
- Air pressure reducer (optional)

4.4.2 ADS3830 PCB

The ADS3830 pcb receives the signal from the photocell and communicates with the ID reader.

The control software that runs on the pcb communicates with Horizon.

The ADS3830 pcb controls the valves that supply air to the cylinders of the dispensers. The pcb is installed in the control box.

4.4.3 Air valves block

The air valves are solenoid valves and supply pressurized air to the cylinders of the feed hopper(s).

The air valves are installed on a valve terminal. A standard configuration has one solenoid valve and five blanking plates. If an additional feed hopper is installed, an additional air valve is also installed. The valves are controlled by the ADS3830 pcb.

4.4.4 Photoelectric sensor

The photoelectric sensor has a housing that contains an emitting element (infrared LED) and a receiving element (photodiode). It is installed on a bracket on the base plate of the control box.

The photoelectric sensor gets input when a cow is in the concentrate feeder.

The photoelectric sensor sends output to the ADS3830 pcb.

4.5 Cow Identification (ID) Readers

4.5.1 Qwes ISO neck ID reader

The Qwes ISO cow identification system has two components:

- The cow tag (Qwes ISO LD neck)
- The ID reader (ISO).

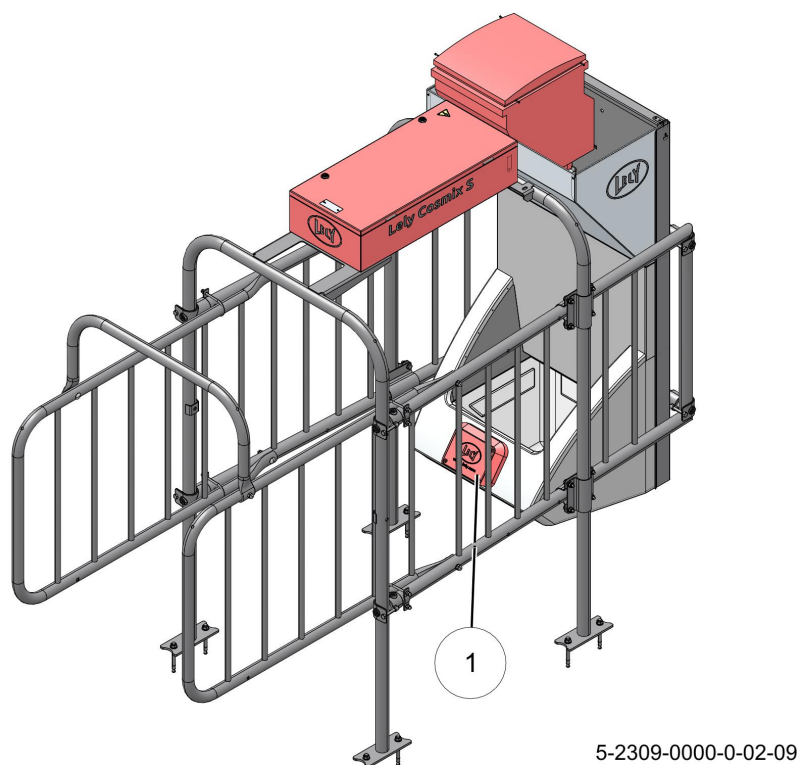


Figure 17. Qwes ISO neck ID reader

KEY: 1. ISO ID reader

The cow tag is installed on a collar on the neck of the cow.

The ID reader is a sealed plastic box with an internal antenna (MIMI). The box is installed on a mounting plate that is installed on the front plate under the feed bin.

4.5.2 Qwes H/HR-LD identification

The Qwes H/HR-LD cow identification system has two components:

- The cow tag (Qwes HR-LDn, Qwes H-LD or Qwes HR-LD).
- The Infrared ID reader (IDU 530).

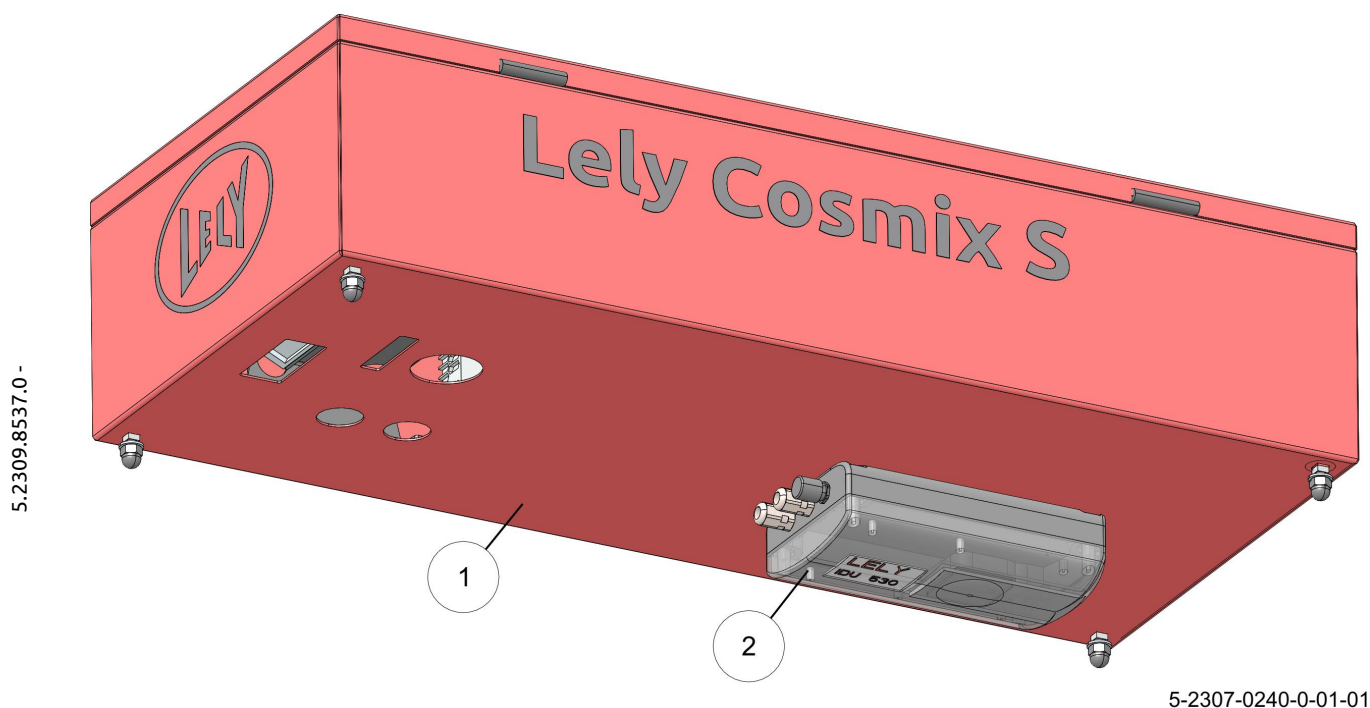


Figure 18. IR LD reader

KEY: 1. Bottom of the control box - 2. ID reader

The reader (IDU 530) is a plastic box installed in a stainless steel bracket below the control box . It has the following components:

- Infrared receiver and an RF transmitter.
- Indicator LEDs for cow presence and data transfer.
- PCB.

The transmitter, receiver and indicator LEDs are connected to the PCB, the PCB is connected to the ADS3830 PCB.

4.6 Operator Interface

4.6.1 Operator interface

The settings of the machine are made in the Farm Management Application Horizon. For calibration there is a web interface.

Lely technicians can use an E-Link Classic and change the machine settings.

4.6.2 The farm management application Horizon

4.6.2.1 Horizon

The Farm Management Application Horizon is used to:

- Setup the machine
- Set the amount of concentrate the machine supplies for every individual cow
- Show information about the feed consumption

The Horizon app receives data requests from the machine.

The Horizon app sends data (new and updated) to the machine.

4.6.2.2 Dashboard of Horizon

The Horizon application is displayed in a browser on a PC. The dashboard has the following parts:

- Header
- Navigation bar
- Data page

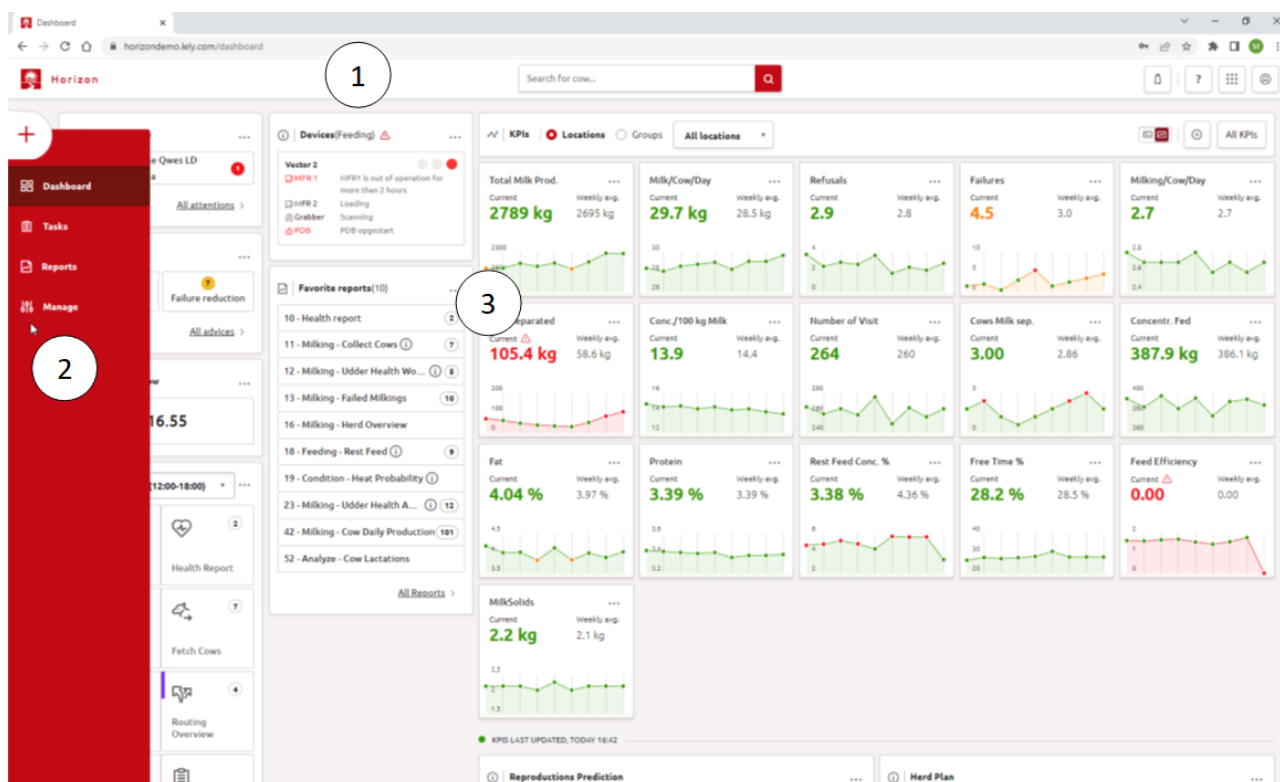


Figure 19. Horizon

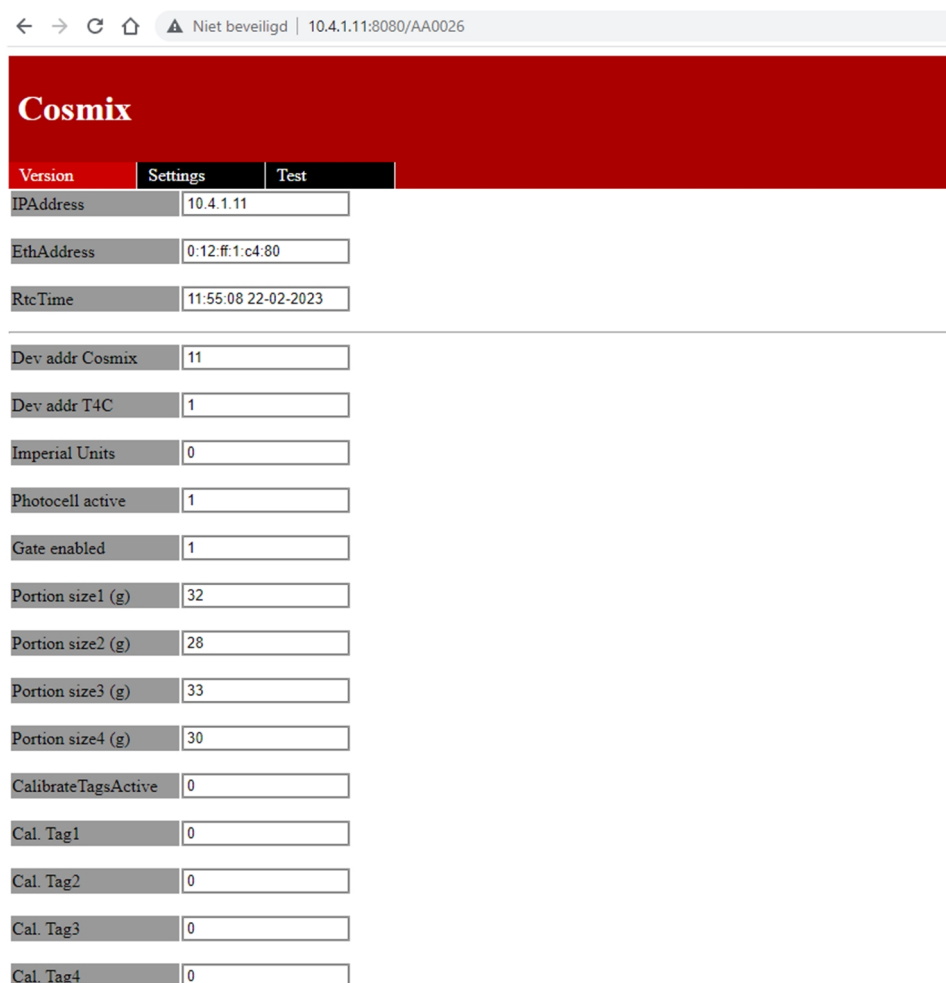
KEY: 1. Header - 2. Navigation bar - 3. Data page

4.6.3 Web interface (for calibration)

The web interface of the ADS3830 pcb is accessible with an internet browser on a PC connected to the Lely network (for example on the PC you use for Horizon). You can start this web page by typing: 10.4.1.11:8080

11 in this example is the number of the machine, this is usually the number for the first concentrate feeder, replace the machine number by the number of the machine you want to calibrate.

The web interface enables changes to be made to all the device settings except the IP-address. Only use the settings of this web page to calibrate the feed dispenser(s), other settings can be used by Lely technicians.



The screenshot shows a web browser window with the address bar displaying "Niet beveiligd | 10.4.1.11:8080/AA0026". The main content area has a red header with the "Cosmix" logo. Below the header, there are three tabs: "Version", "Settings", and "Test". The "Settings" tab is active, showing a list of configuration fields with their current values:

Field	Value
IPAddress	10.4.1.11
EthAddress	0:12:ff:1:c4:80
RtcTime	11:55:08 22-02-2023
Dev addr Cosmix	11
Dev addr T4C	1
Imperial Units	0
Photocell active	1
Gate enabled	1
Portion size1 (g)	32
Portion size2 (g)	28
Portion size3 (g)	33
Portion size4 (g)	30
CalibrateTagsActive	0
Cal. Tag1	0
Cal. Tag2	0
Cal. Tag3	0
Cal. Tag4	0

Figure 20. Web interface

4.7 Operation

4.7.1 Identification

Qwes ISO LD neck identification system

When the cow moves her head to the feed bin, the antenna in the ID reader reads the tag. The ID reader sends the data of the tag to the ADS3830 pcb.

Qwes HR LDn identification system

The photoelectric sensor on the control box detects the presence of a cow and activates the ID reader. A number of LEDs start flashing in the reader. This activates the cow tag which will send a radio signal back to the IDU 530 reader. The data is sent to the ADS3830 pcb. After that the ID reader will stop reading the tag to preserve the battery.

4.7.2 Feeding

The control system identifies the cow and synchronizes its information with the data in Horizon. Based on the information for the specific cow, the feed credit is calculated. If the cow has feed credit the control system opens the lock from the dosing unit(s) to provide the specific mix of concentrates for the cow.

Before the machine starts feeding, two conditions must be met:

- The cow has feed credit for the connected feed types
- The cow is allowed to eat concentrates in the machine (No block time).

Feed credit

The amount to be fed must be higher than 0 kg (0 lb) for at least one of the connected feed types. Also, the amount must be higher than the minimum portion size set in Horizon. The smallest portion that can be dosed is the same as the weight set during calibration. Depending on the type of feed this will be approximately 60 – 70 g (0.13 – 0.15 lb).

Allowance to eat

Cows are allowed to eat if:

- The visit is not in one of the blocking periods set in Horizon.
To set these advanced block times in Horizon select **Manage** go to the panel **Milk** and select **Milk access**. At the bottom on the right you can find the **Cosmix settings** and activate the advanced block times. Once activated, you can set the allowance before and after milking.
- Robot feeding is switched on. However if the feed types in the milking robot and Cosmix are different, or have a different name, the robot Feed must be set to off.
To set Robot Feeding on or off in horizon select **Manage** go to the panel **Devices** and select **Device Configuration**. Select or deselect **Robot Feed** for one or two feed stuffs.
- The cow is not due to be milked, which means that it is not necessary to attract the cow to go to the milking robot (and to eat her portion of concentrates in the robot).
To adjust the near to be milked interval in Horizon select **Manage** go to the panel **Milk** and select **Milk access**. At the bottom on the left you can find the setting **Near to be milked interval**: this is a setting for both the Cosmix and the Grazeway.

Consult your FMS advisor for the best settings for your farm.

4.7.3 End of visit

At the end of the visit, the dispensed amount of feed (eaten amount) is stored in the local database and sent to Horizon.

4.7.4 Interaction between the components

The machine is connected to the lely network. After installation, the machine is given a device ID and an IP address. These settings are used in the Horizon software.

The Horizon software

In Horizon the feeding criteria are set. Horizon supplies the ADS3830 pcb database with the necessary data. When a cow enters the machine for the first time, the ADS3830 pcb requests the cow data from Horizon. The first time the cow data request takes longer. Once the cow is in the database on the ADS3830 pcb, Horizon automatically synchronizes the cow data after each change of data.

The E-Link manual controller

The E-Link manual controller is used by the service technician to set the initial settings (after installation) and to test and monitor the machine.

The Cosmix web interface

The web page is used to calibrate the feed dispenser(s).

Service technicians can use the web page to set the initial settings (after installation) and to test and monitor the machine.

5 Operating Instructions

5.1 Operation in Horizon

5.1.1 List details about the rest feed in Horizon

NOTICE

Make sure the connection with Horizon is still working properly if:

- Two or more concentrate feeders are installed and
- The amount of rest feed in Horizon raises quickly.

1. In the navigation bar select: **Reports**.
Lines with available reports appear.

NOTICE

Make sure feed types that are fed in the concentrate feeder have a unique name. This makes it possible to report feeding details from the concentrate feeder separate from the milking robot.

2. Select report number 18. Feeding - Rest Feed.
Rest feed of each feed stuff is displayed for each cow.

NOTICE

Be aware that only cows that have rest feed are displayed in this report.

5.1.2 List a feed overview in Horizon

NOTICE

The report Feeding- Feed Overview Astronaut/Cosmix displays information about all cows.

1. In the navigation bar select: **Reports**.
Above the lines with available reports that appear, you can find several tabs.
2. Select the tab **Feeding** or **Device**.
You can find the overview on both tabs.

3. Select the report Feeding -Feed Overview Astronaut/Cosmix.

5.1.3 List an intake per device in Horizon

NOTICE

The report Feeding - Intake Overview Astronaut/Cosmix displays the total feed intake per device address and per feed type per day.

1. In the navigation bar select: **Reports**.
Above the lines with available reports that appear, you can find several tabs.
2. Select the tab **Feeding** or **Device**.
You can find the overview on both tabs.
3. Select the report Feeding - Intake Overview Astronaut/Cosmix.

6 Maintenance

6.1 Clean the machine

NOTICE

Do not use a high pressure cleaner or spout water on the control box and ID reader, this can cause serious damage to the electronics.

1. Use a wet brush or moist cloth to clean the machine.

6.2 Clean the photocell

⚠ WARNING

*Unexpected cow movement
Risk of being crushed or trampled.
Block the cow traffic.*

1. locate the photocell (2) under the control box (1)

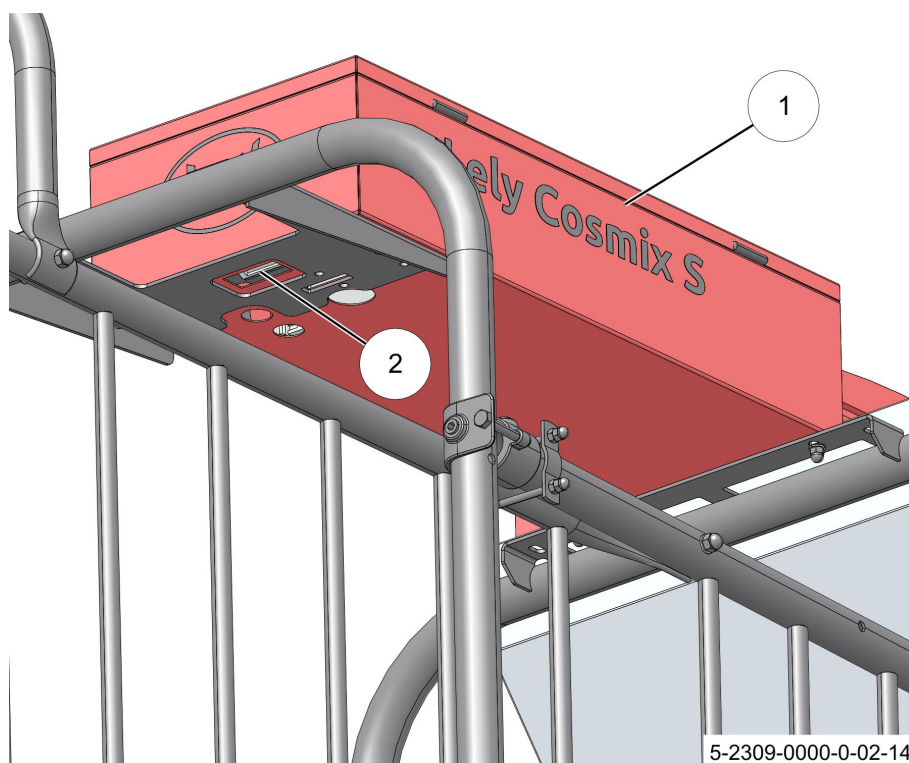


Figure 21. Photocell

KEY: 1. Control box - 2. Photocell

2. Clean the glass under the photocell with a soft moist towel and a small quantity of lens cleaner liquid.

6.3 Calibrate the feed portion of the dispenser

Necessary tools for this procedure:

- a scale to weigh the feed
- a cow tag and a second cow tag if a second feed hopper is installed
- a scoop to remove the feed from the bin
- a bucket

NOTICE

To supply the correct amount of feed, the feed portions must be calibrated every 3 months, or when the feed type in the hopper changes. The calibration weight is stored in the PCB.

1. Open a web browser on a PC connected to the Lely network.

NOTICE

The IP-address for the first concentrate feeder is usually 10.4.1.11 for the second 10.4.1.12 and so on. If this IP-address does not work, ask your Lely service technician for the correct IP-address.

2. Enter the IP-address: HTTP://10.4.1.xx:8080 (xx=11 or 12 and so on) in the address field of the web browser.



HTTP://10.4.11:8080



3. Select the tab Settings (1) (see figure 22 on page 6-4).

1

Cosmix

Version Settings Test

IPAddress 10.4.1.11

EthAddress 0:12:ff:1:c4:80

RtcTime 11:55:08 22-02-2023

Dev addr Cosmix 11

Dev addr T4C 1

Imperial Units 0

Photocell active 1

Gate enabled 1

Portion size1 (g) 32

Portion size2 (g) 28

Portion size3 (g) 33

Portion size4 (g) 30

CalibrateTagsActive 0

Cal. Tag1 0

Cal. Tag2 0

Cal. Tag3 0

Cal. Tag4 0

Figure 22. Web page settings tab

KEY: 1. Settings tab

4. In the field **Cal. Tag1** type the cow tag you will use to start the calibration and push <Enter> on the keyboard.
5. If there is a second hopper installed, repeat step 4 for the field **Cal. Tag2**, and make sure you use a different cow tag.
6. In the field **Calibrate TagsActive** change the zero into 1 and push <Enter>. The calibration tags are now activated, when the ID reader detects the tag, 10 portions will be dosed.



WARNING

Unexpected cow movement
Risk of being crushed or trampled.
Block the cow traffic.

7. Go to the machine and block the cow traffic.
8. Empty the feed bin if any feed is present.
9. Stand in front of the feed bin to activate the photocell and hold the calibration tag near the ID reader. The hopper will dispense 10 feed portions.
10. Put an empty bucket on the scale.
11. Reset the scale to zero.
12. Put the feed from the feed bin in the bucket.
13. Weigh the feed on the scale and make a note of the weight (in gram or lb).
14. If a second hopper is installed repeat step 9- 13 with the second cow tag.
15. Again open the web page on a browser on a PC connected to the Lely network.
16. Select the tab Settings.
17. Divide the noted weight by 10, and insert it in the field **Portion Size1** (in gram or lb) and push <Enter>.
18. If a second hopper is installed repeat step 17 for the field **Portion Size2** (in gram or lb) and push <Enter>.
19. In the field **Calibrate TagsActive** change the 1 into zero and push <Enter>. The calibration tags are now deactivated.



Make sure you always save the settings on the web page by pushing <Enter> on the keyboard.



If you are sure the calibration tag(s) is only used for calibration and will not be put on a cow, you can leave the tags always active.



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7 Troubleshooting

7.1 Troubleshooting table

Symptom	Possible cause	Solution
A particular cow is not fed	Responder number is not known in Horizon	Enter the correct responder number without leading zeros.
	The cow has no feed credit in Horizon	Make sure the cow has feed credit.
	The cow number is greater than 32000	Adjust the cow number.
	Other	Call your local Lely service provider.
The feed is delivered too fast	Cow recognition and feed delivery starts when the cow is away from the feed unit	Call your local Lely service provider.
Error message	Feed hopper and/or feed pipe and dispenser is clogged	<ul style="list-style-type: none"> Clean the feed pipe. Unblock the feed hopper.

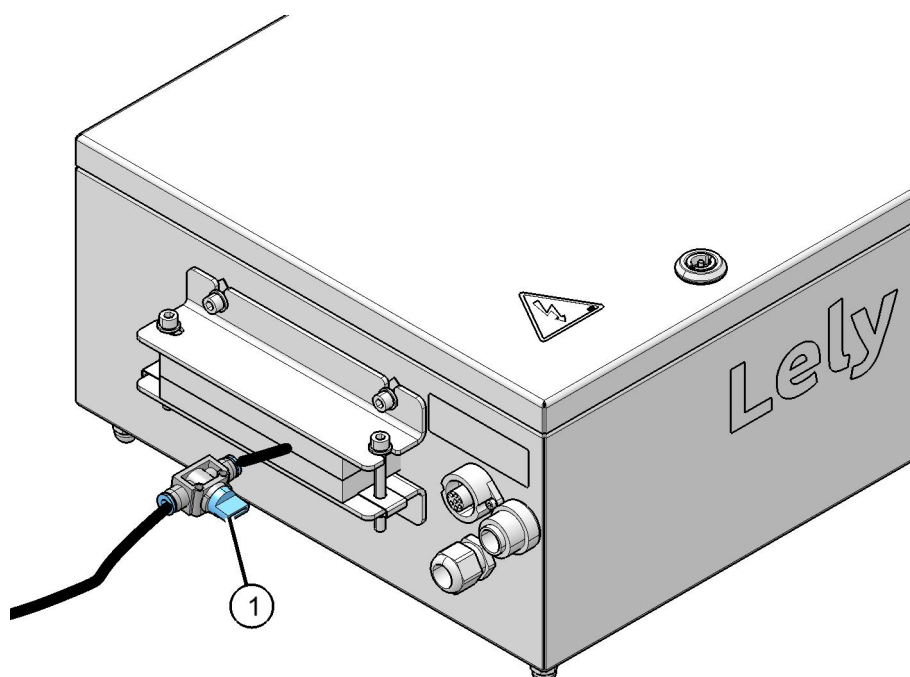
7.2 Clean the feed pipe



***Unexpected cow movement
Risk of being crushed or trampled.
Block the cow traffic.***

1. Block the cow traffic.
2. Disconnect the power, depending on your installation, pull the plug from the wall socket or turn the on/off switch to off.

3. Close the air supply valve (1) installed on the outside of the control box.



5-2307-0240-0-01-12

Figure 23. Air supply valve

KEY: 1. Air supply valve

4. Redirect cables and tubes that will be in the way when you lift the cover plate a bit.



*Sharp edges
Risk of getting cut by sharp edges.
Wear safety gloves.*

5. Wear safety gloves when you remove the cover plate.

6. Pull the springs (2) on both sides of the cover plate (1) and release the pin (4) from the slot.

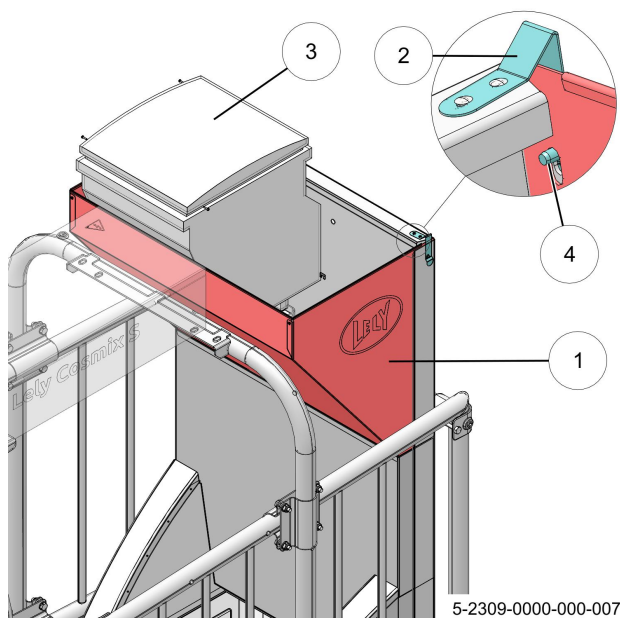


Figure 24. Release the cover plate

KEY: 1. Cover plate - 2. Spring bracket - 3. Hopper - 4. Pin

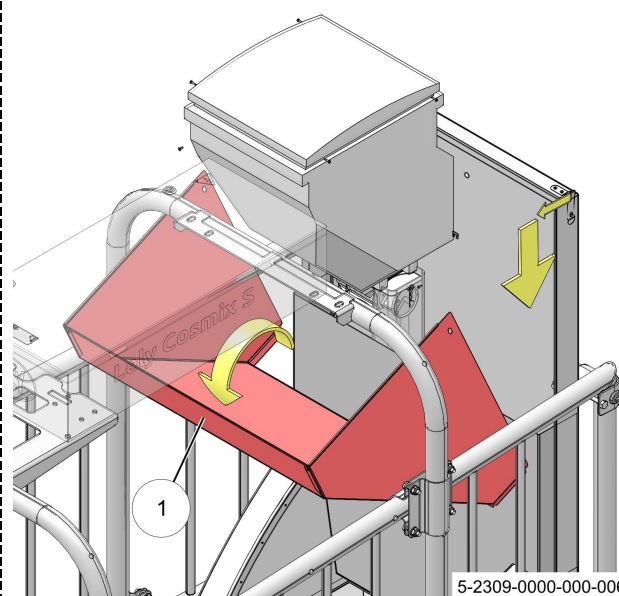


Figure 25. Remove the cover plate

7. Pull down and turn and remove the cover plate.

8. Lift and remove the front plate (1) from the hooks (2) on both sides of the rear plate.

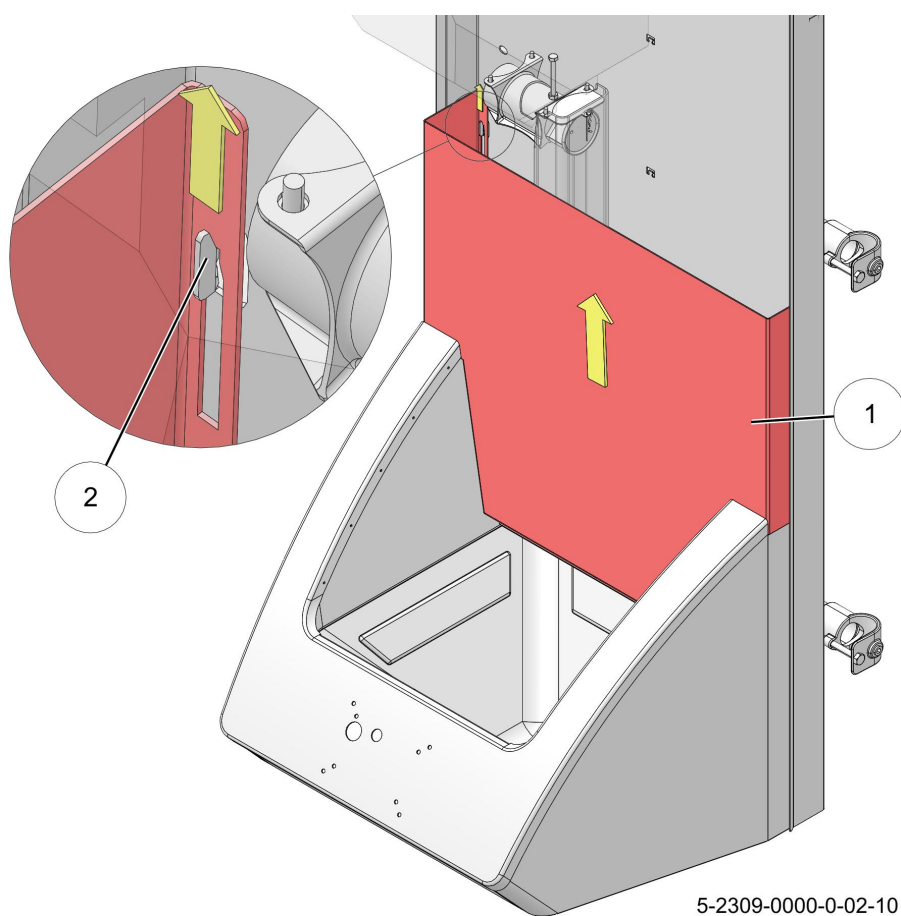
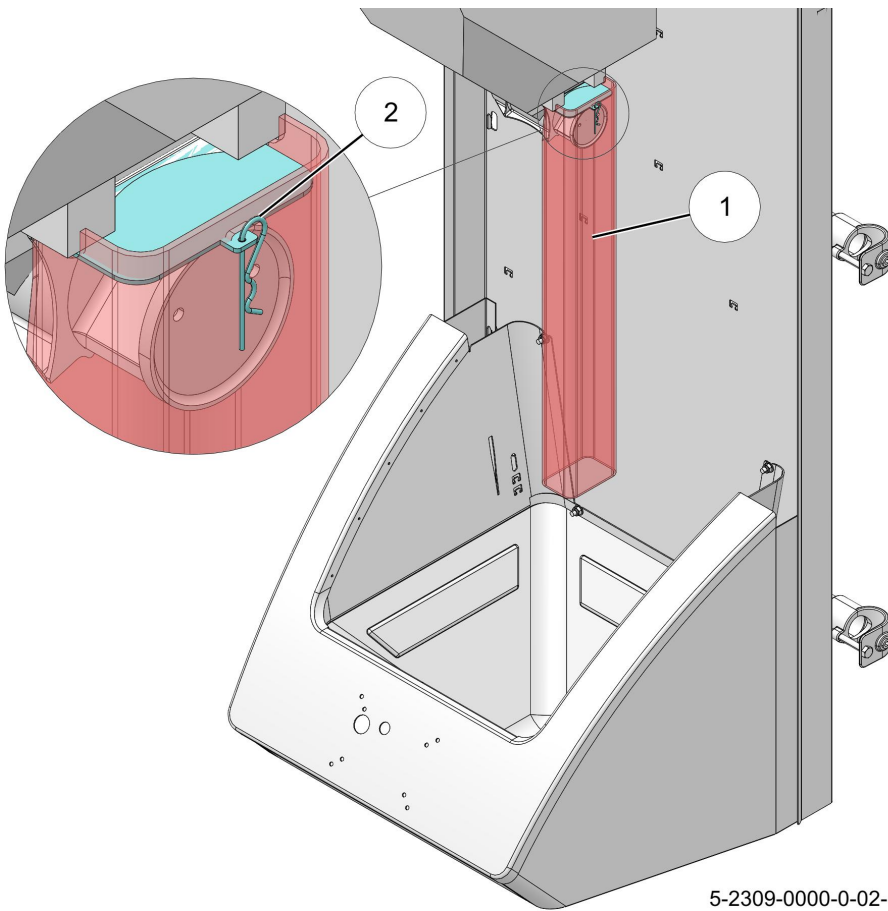


Figure 26. Remove the front plate

KEY: 1. Front plate - 2. Hook

9. Remove the retaining spring (2) from the feed pipe (1) and remove the feed pipe.



5-2309-0000-0-02-11

Figure 27. Remove the feed pipe

KEY: 1. Feed pipe - 2. Retaining spring clip

CAUTION

*Risk of entrapment of your fingers.
Serious injury of your fingers.
Make sure you have switched off the power and closed the manual air pressure valve before you touch the slide.*

10. Clean the feed pipe and the slide (1), the slide is the moving part of the dispenser valve.

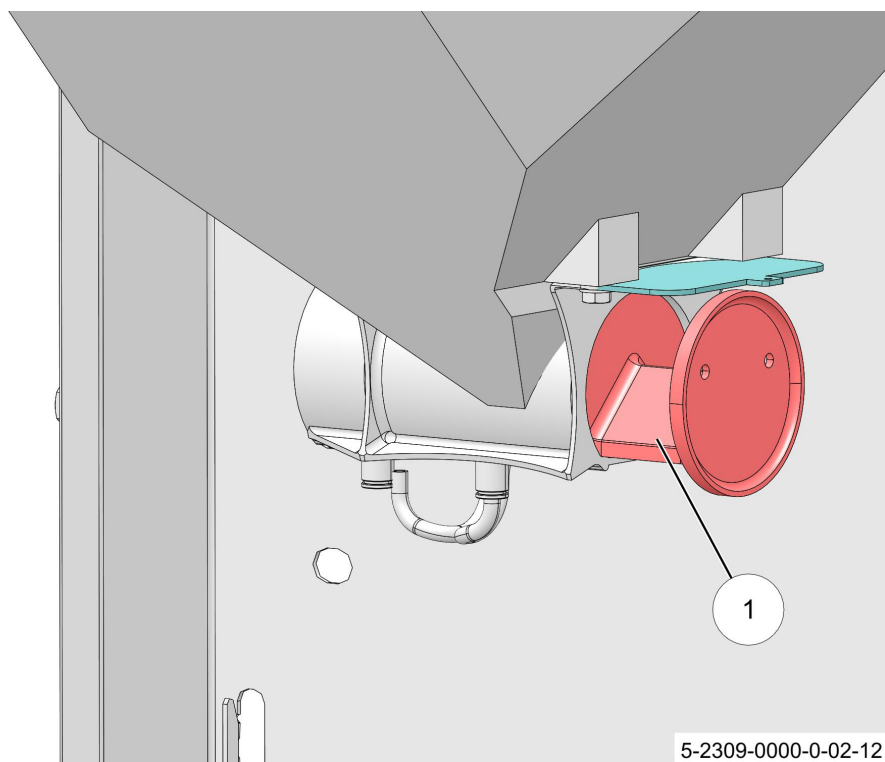


Figure 28. Dispenser valve

KEY: 1. Slide

11. Install the feed pipe (1) (see figure 27 on page 7-5) with the retaining spring clip (2).
12. install the front plate (1) (see figure 26 on page 7-4) on the rear plate (2).

13. Take the cover plate (3) inside the box in front of the feed box.

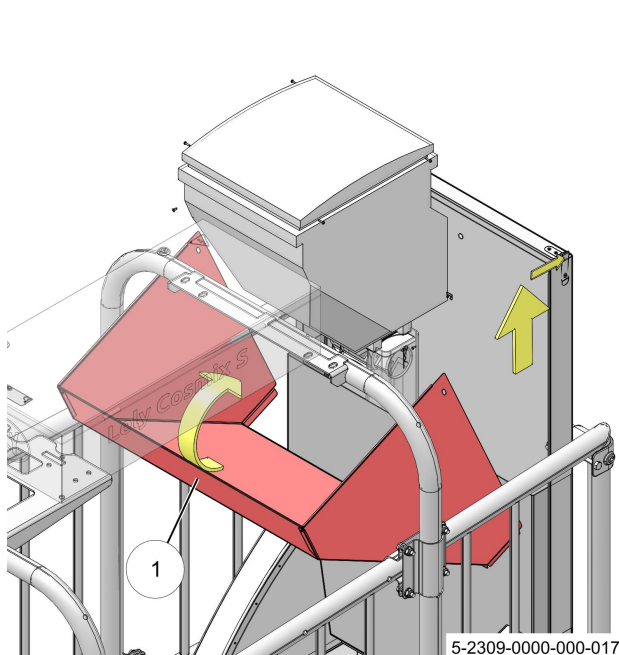


Figure 29. Install the cover plate

KEY: 1. Cover plate

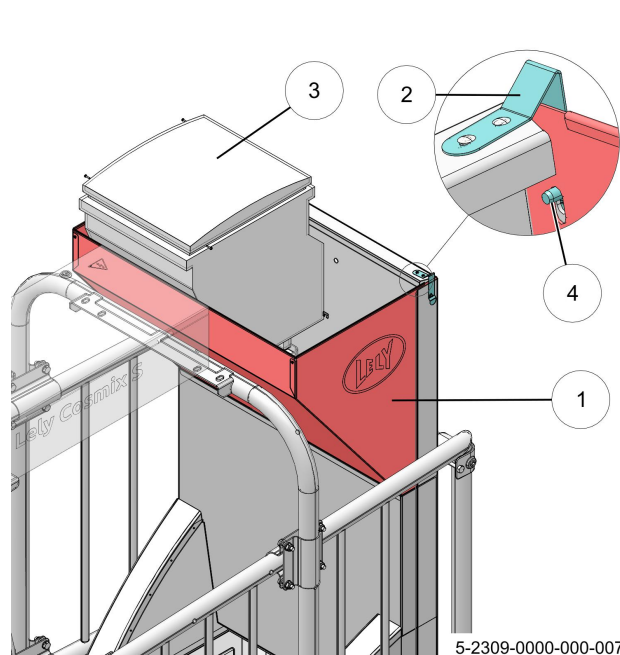


Figure 30. Secure the cover plate

KEY: 1. Cover plate - 2. Spring bracket - 3. Hopper - 4. Pin

14. Tilt the cover plate towards the feed hoppers.
15. Lift the cover plate and push it backward over the rear plate.
16. Install the cover plate (1) on the rear plate and click it in the spring brackets. Make sure the pins (4) secure the cover plate.
17. Open the air supply valve (1) (see figure 23 on page 7-2) installed on the outside of the control box.
18. Connect the power to the machine, depending on your installation, insert the plug to the wall socket or turn the on/off switch to on.
19. Unblock the cow traffic.

7.3 Unblock the feed hopper

1. Switch off the auger that transports the feed from the silo to the feed hopper.

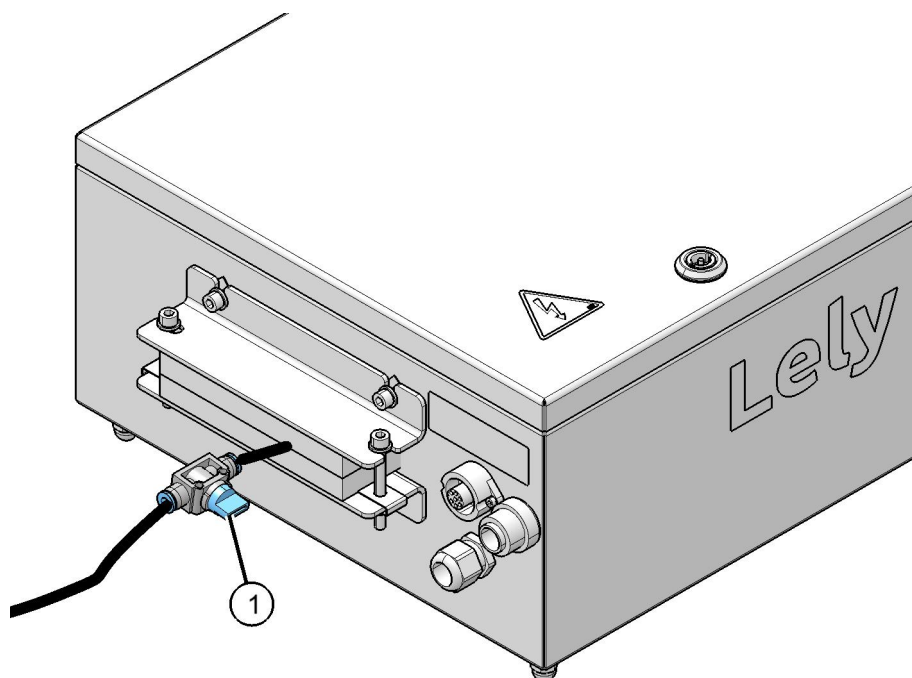


WARNING

**Unexpected cow movement
Risk of being crushed or trampled.
Block the cow traffic.**

2. Block the cow traffic.

3. Disconnect the power, depending on your installation, pull the plug from the wall socket or turn the on/off switch to off.
4. Close the air supply valve (1) installed on the outside of the control box.



5-2307-0240-0-01-12

Figure 31. Air supply valve

KEY: 1. Air supply valve

5. Use a proper scaffold or a double sided ladder and make sure the cows can not reach this and knock it over. Climb to the feed hopper cover.

6. Carefully lift the cover (1) of the feed hopper and make sure the feed pipe (2) from the silo stays in its place.

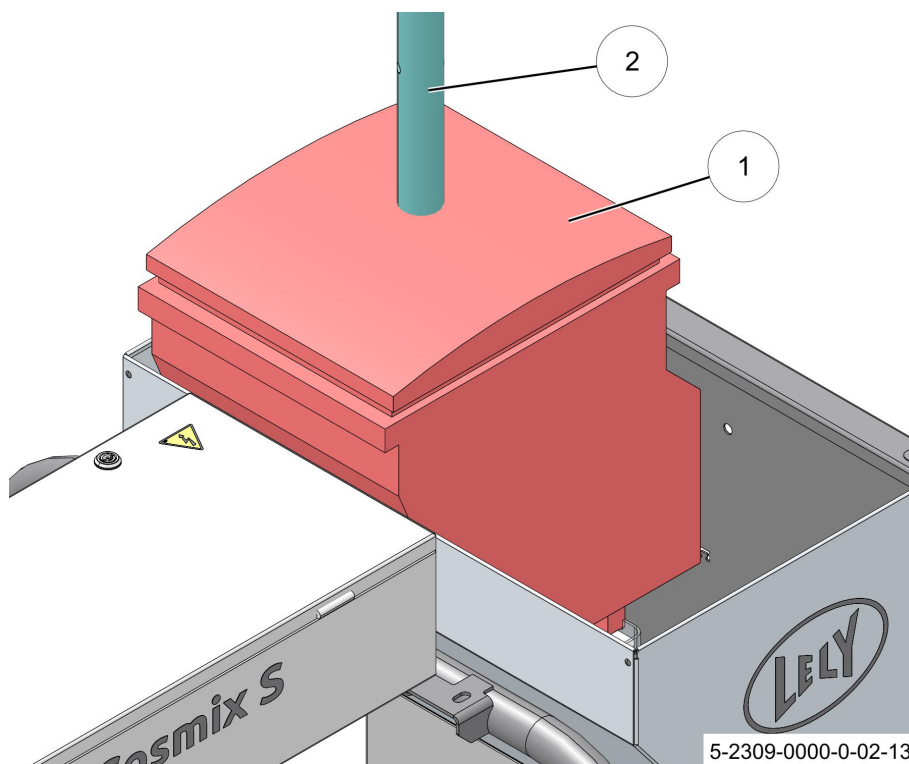


Figure 32. Feed hopper cover


KEY: 1. Feed hopper cover - 2. Feed pipe



*Risk of entrapment of your fingers.
Serious injury of your fingers.
Make sure you have switched off the power and closed the manual air pressure valve before you touch the slide.*

7. Find the blockage with your hand and remove it from the feed hopper.
8. Lower the cover on the feed hopper.
9. Open the air supply valve (1) (see figure 31 on page 7-8) installed on the outside of the control box.
10. Connect the power to the machine, depending on your installation, insert the plug to the wall socket or turn the on/off switch to on.
11. Unblock the cow traffic.
12. Switch on the auger that transports the feed from the silo to the feed hopper.

7.4 Make Sure the cow has feed credit in Horizon

1. Read the cow number from the cow responder.
2. In Horizon: Type the number in the navigation bar (**Search for cow ...**) and push . An overview of cow data appears on the screen.
3. Select the tab **Feed** for **Today**, (select today in the drop down list).
4. In the table see if the amount **Feeding Today** is more than **Total eaten today**, for the feed distributed in the Cosmix.

7.5 Make sure the cow number is less than 32000

NOTICE

The number of the cow is limited to 32000 by the Horizon software. This applies to all types of tags.

1. Read the responder number from the cow responder.
2. Make sure the number is less than 32000.

8 Disposal

Disposing this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

Decommissioning and disassembly of the product can be dangerous and must be done only by qualified recycling organizations. All components must be disposed in compliance with the local rules and regulations.

Lubricants and fluids must be disposed correctly to prevent pollution of the environment. Read the safety data sheets of the used lubricants and fluids for correct disposal. All lubricants, chemicals and fluids must be disposed in compliance with the local rules and regulations.



Disposal to sewer of cleaning water with concentrated chemicals may cause damage to health and the environment and must always be prevented.

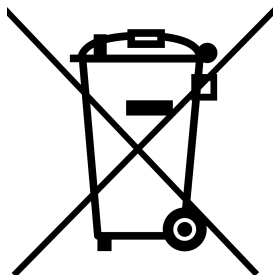
Contact your local authority or local Lely service provider for further details.



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9 WEEE



This symbol [crossed-out wheel bin WEEE Annex IV] indicates separate collection of electrical waste and electronic equipment in the European countries. We are committed to being a good corporate citizen. As part of that commitment, we strive to maintain an environmentally conscious manufacturing operation.

In accordance with the European Union WEEE (Waste Electrical and Electronic Equipment) Directive 2012/19/EC, we would like to notify you that this product might contain regulated materials, which upon disposal, according to the WEEE directive, require special reuse and recycling processing.

For this reason, Lely Industries N.V. has arranged that this product can be recycled at the local recycling/disposal companies to collect and recycle this product at no cost to you.

Additional local legislation may apply.

NOTICE

Please note, only this product itself falls under the WEEE Directive. When disposing of packaging and other related shipping materials we encourage you to recycle these items through the normal channels.



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10 Declaration of Conformity

10.1 EC Declaration of conformity



EC Declaration of Conformity

EC DECLARATION OF CONFORMITY
EG-KONFORMITÄTSEKTLÄRUNG
DECLARATION DE CONFORMITÉ AUX NORMES DE LA CE
DICHIARAZIONE CE DI CONFORMITÀ
CERTIFICADO DE CONFORMIDAD CEE
DECLARAÇÃO DE CONFORMIDADE CE
DEKLARACJA ZGODNOŚCI WE
ES – PREHLÁSENIE O ZHODE
VASTAVUS EU DIREKTIIVIDELE
ES ATITIKTIES DEKLARACIJA
ЗАЯВЛЕНИЕ О СООТВЕТСТВИИ НОРМАМ ЕС
EG - FÖRSÄKRAN OM ÖVERENSSTÄMMELSE
CB – SAMR/EMISYFIRLÝSING



ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ Ε.Ε.
DECLARATIE DE CONFORMITEIT E.E.
EU MEGFELELŐSÉGI NYILATKOZAT
ES-PROHLÁSENÍ O SHODĚ
DEKLARACJA ZGODNOŚCI WE
ES – PREHLÁSENIE O ZHODE
VASTAVUS EU DIREKTIIVIDELE
ES ATITIKTIES DEKLARACIJA
ЗАЯВЛЕНИЕ О СООТВЕТСТВИИ НОРМАМ ЕС
EG - POTVRDA O SUKLADNOSTI
ES IZJAVA O SKLADNOSTI

Wij fabrikant

We manufacturer
Der Hersteller
Nous, soussignés, le fabricant
fabricante
fabricante
producent
valmistaja
produsenten
tillverkare
framleiðandi

Lely Industries N.V.
Cornelis van der Lelylaan 1 • 3147 PB Maassluis • The Netherlands
tel. +31 (0)88 - 12 28 221 • fax +31 (0)88 - 12 28 222
www.lely.com

Εμείς, ο κατασκευαστής
fabrikant
výrobce
výrobce
producent
výrobca
tootja
gamintojas
производитель
proizvodac
naziv proizvajalca

verklaren geheel onder eigen verantwoordelijkheid dat de machine:
herewith declare, on our own responsibility, that the machinery:
erklärt hiermit eigenverantwortlich, dass die Maschine:
déclarons que les machines désignées ci-après :

productbeschrijving

description of product
Produktbezeichnung
description du produit
descrizione del prodotto
nombre del producto
designação de produto
produktnavn
tuotenimi
produktnavn
produktnamn
vörulysing

Lely Cosmix S

περιγραφή του προϊόντος
descrierea produsului
termék megnevezése
označení produktu
opis produktu
označenie výrobku
toote kirjeldus
gaminio aprašymas
наименование изделия
naziv proizvoda

typenummer

model number
Typnummer
numéro de modèle
numero di modello
modelo
número do modelo
modelnummer
mallinnumero
modellnummer
gerðarnúmer

5.2309.0000.1
5.2309.0040.1

αριθμός μοντέλου
numărul modelului
típus száma
numer modelu
typové číslo
toobi number
modelo numenis
номер модели
broj modela
številka artikla

waarop deze verklaring betrekking heeft, in overeenstemming is met de bepalingen van de volgende Richtlijn(en):
which this declaration refers to, is in accordance with the conditions of the following Directive(s):
worauf sich diese Erklärung bezieht, hergestellt ist gemäß den Bestimmungen der Richtlinie(n):
auxquelles la présente déclaration se rapporte, sont conformes aux dispositions de la ou des directives suivantes :

é conforme alle direttive
de acuerdo con las directivas
de acordo com a directiva
oplyder følgende direktiver
täyttää seuraavien direktiivien vaatimukset
opfylder følgende direktiver
uppfyller följande direktiv
uppfyllir eftirlitandi tilskipanir

Machine directive 2006/42/EC
Low voltage directive 2014/35/EC
Electromagnetic compatibility 2014/30/EC

conform cu directivele
rendelkezéseknek megfelelően
podle směrnice
zgodny z dyrektywą
vzhode so smernicami
direktivide jargi
pagal direktyvas
sootvetstvuyet trebovaniyam direktiv
po smjernicama
v skladu z direktivo

en in overeenstemming is met de volgende normen of andere normatieve documenten :
and is in conformity with the following standard(s) or other such specifications :
und den folgenden Normen oder vergleichbaren Spezifikationen entspricht:
et aux normes et autres spécifications suivantes :

é conforme alle norme
de acuerdo con las normas
de acordo com as normas
oplyder følgende standarder
täyttää seuraavien standardien vaatimukset
opfylder følgende standarder
uppfyller följande standarder
uppfyllir eftirlitandi staðla
πληροί τις προδιαγραφές

EN-ISO 12100:2010, EN 60204-1:2018,
EN 61000-6-2:2016, EN 61000-6-4:2018
EN 62368-1:2014

în conformitate cu standardele
megfelel a szabványoknak
odpovídá normám
zgodny z normą
zodpovedá normám
nomidele vastavus
atitinka standartus
sootvetstvuyet standartam normam
u skladu s standardima
v skladu s standardi

handtekening en datum

signature and date
Unterschrift und Datum
signature et date
firma e data
firma y fecha
assinatura e data
underskrift og dato
allekirjotus ja päiväs
signatur og dato
underskrift och datum
undirskrift og dagsetning

DocuSigned by:

869396A882AF449...
M. Brummel
Managing Director Milking
Lely Industries N.V.

DocuSigned by:

22641B42562B472...
A. Mateboer
Competence Director PD
Lely Industries N.V.

υπογραφή και ημερομηνία
semnătura și data
aláírás és dátum
podpis a datum
podpis i data
podpis a datum
allkir ja kuupäev
parašas in data
podpis y data
pöpis i datum
pöpis in datum

13-03-2024



10.2 UKCA Declaration of conformity



UKCA Declaration of Conformity

UK CA

We manufacturer

Lely Industries N.V.

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tel. +31 (0)88 - 12 28 221 • fax +31 (0)88 - 12 28 222 • www.lely.com

Authorised representative in the UK:

Lely Atlantic Limited • Unit 7 Quartz Point Stonebridgeroad • Coleshill • Birmingham • B46 3JL • United Kingdom

herewith declare, on our own responsibility, that the machinery:

Description of product

Lely Cosmix S

Model number

5.2309.0000.1
5.2309.0040.1

which this declaration refers to, is in accordance with the conditions of the following Directive(s):

Supply of Machinery (Safety) Regulations 2008 (UK)

Electrical Equipment (Safety) Regulations 2016 (UK)

Electromagnetic Compatibility Regulations 2016 (UK)

and is in conformity with the following standard(s) or other such specifications :

EN-ISO 12100:2010, EN 60204-1:2018,
EN 61000-6-2:2016, EN 61000-6-4:2018,
EN 62368-1:2014

Signature and date

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13-03-2024

5.2309.8537.0 -

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