Instruction Manual

SowSense

User Manual

Version 01.000 / October 2019 / EN

Original instructions

nedap

Pig Farming

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Additional information
For any information or questions regarding the product, please contact your own dealer.

SowSense

Content

1 Safety

Read this manual before using this product. Failure to follow the instructions and safety precautions in this manual may result in serious injury or death. Keep this manual in a safe location for future reference.

Symbols used in the manual

Danger	Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
Warning	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
Caution	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
	Indicates important information but not hazard related.
	Suggestions and advice to perform certain tasks more easily.

General safety instructions

Warning
Always turn off the mains power supply when working on the electrical installation.

Warning
Always wear proper protection when installing and maintaining the SowSense units.

Caution
Installation and service should only be done by locally qualified personnel.

Caution
Install the system according to the local rules and regulations.

Caution
We advise to install and maintain the Nedap SowSense units with at least 2 persons.

Working environment

Caution
The installation area must be free from any obstacles, including animals.

Caution
Make sure all components are installed out of reach of animals.

Caution
Make sure all cables are properly concealed, and form no danger for stumbling.

Caution
Take into account the high concentrations of ammonia when installing and maintaining the Nedap SowSense units.

Animal welfare and safety

The automated actions of the Nedap Livestock Management systems do never discharge the installer and the user of the system from his/her responsibility to assure **and** to take care of the well-being of the animals.

2 SowSense overview

Nedap SowSense is a smart system for individual animal management. Nedap SowSense identifies each sow, tracks her feed consumption and weight, monitors her heat behavior and transitions her to farrowing. Depending on the configuration, the system consists of the following units and components.

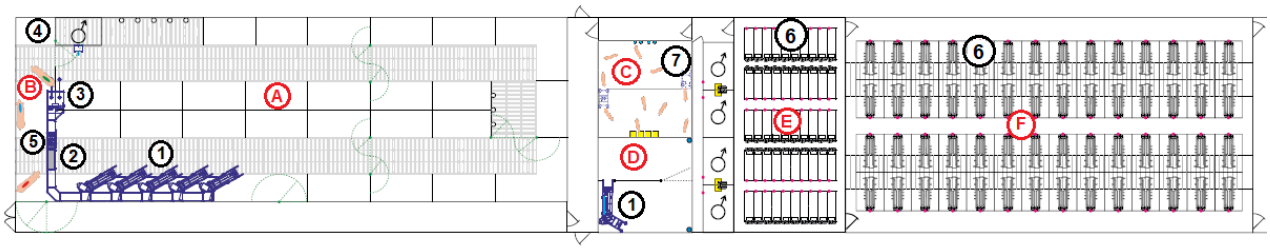


Figure 1: SowSense farm layout

A. Lying area of the Gestation section
B. Separation area of the Gestation section
C. Learning area gilts
D. Learning area gilts
E. Breeding section
F. Farrowing section

Table 1: Nedap SowSense system

	SowSense unit	Purpose
1	**Electronic Sow Feeders**	Provide sows in a group housing individually with the correct amount of feed, depending on pre-set parameters such as parity.
2	**Weight Sampler**	Measure the weight of individual sows and keep track of their weight development.
3	**Central Separator**	• Separate sows depending on their reproduction state. • Separate sows without an ear tag (with option ID-check). • Separate sows with an attention.
4	**Heat Detector**	Detect whether sows are in heat.
5	**Color Spray Marker**	Mark sows with one or more colors. The spray marker is normally mounted on the Central Separator (3), but it can be mounted on an Electronic Sow Feeder (1) or a Heat Detector (4) as well.
6	**Compact Feeders**	Feed one sow in a breeding or farrowing pen. Multiple feed portions per day can be distributed.
7	**Gilt Transitioner**	Prepare gilts for the use of the entrance gate and exit door of the Electronic Sow Feeder.

2.1 Electronic Sow Feeding and Farrowing Feeding

With Nedap Electronic Sow Feeding and Farrowing Feeding, the sows are automatically fed during their entire stay on the farm:

Birth > Insemination > Gestation > Farrowing

The Farrowing Feeding system can be used in combination with Electronic Sow Feeding, for which the animals are identified with EID (Electronic Identification) ear tags. The Farrowing Feeding system can also be used as a stand-alone system without individual identification with EID ear tags.

All sows are fed according to a feed plan. A feed plan consists of up tot three feed curves, in which the feed types and feed amounts are defined. The feed plans are created for the different phases of the sow's lifecycle; e.g. unbred gilts, bred gilts (parity 0), 1st parity sows, 2nd parity sows etc.

Feed curves

The feed curves are based on the farm locations: Breeding, Gestation and Farrowing

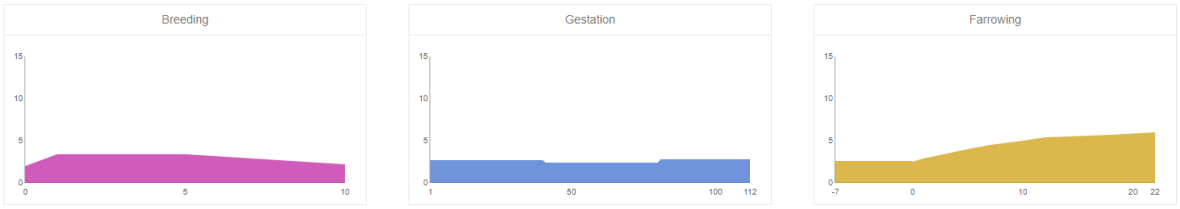


Figure 2: Example of a feed plan with 3 feed curves

The Breeding and Farrowing curves are not shown if Farrowing Feeding is not activated in the license.

Start dates

The feeding according to the feed curve starts after entering the start date of the feed curve:

Table 2: Feed curve start dates

Curve	Start date (day 0)
Breeding	Weaning date
Gestation	Insemination date
Farrowing	Expected farrowing date or actual farrowing date [1] [1]

[1] The expected farrowing date is calculated based on the insemination date: expected farrowing date = insemination date + 115 days. The value of 115 days is a default setting, but can be adjusted in the Calendar settings. Day 0 of the Farrowing curve is the expected or actual farrowing date.

Location change

When a group of sows is moved from one farm location to another, the sows will be fed according to the feed curve of the new location. When the start date is unknown, feeding will start on day 0 of the feed curve.

Example
When sows are moved from the gestation area to the farrowing area, changing the location in Velos will start the Farrowing feed curve.

When the parity of the sows increases, a new feed plan can be assigned. For example, the feed plan of 2nd parity sows is assigned instead of the feed plan of 1st parity sows.

See Create feed plans (page 22)

3 First use

The first time the Nedap SowSense system is used after installation, the following tasks must be completed by the installer (in cooperation with the farmer):

1. Configure the locations (page 10)
2. Configure the groups (page 12)
3. Connect the EID tags on the farrowing pens with the Velos locations (Farrowing Feeding with ESF only) (page 12)
4. Link the sows with the Velos locations (Farrowing Feeding with ESF only) (page 13)
5. Add feed types (page 14)
6. Add silos (page 15)
7. Set the feed types for the Electronic Sow and Compact Feeders (page 15)
8. Feed calibration Electronic Sow Feeder (page 16)
9. Feed calibration Compact Feeder (page 18)

For detailed installation instructions see the Installation Manuals, which can be obtained from your dealer or on our Business portal: https://www.portal.nedap-livestockmanagement.com.

3.1 Location settings

Groups of sows are moved to different locations of the farm in the different stages of the production cycle:

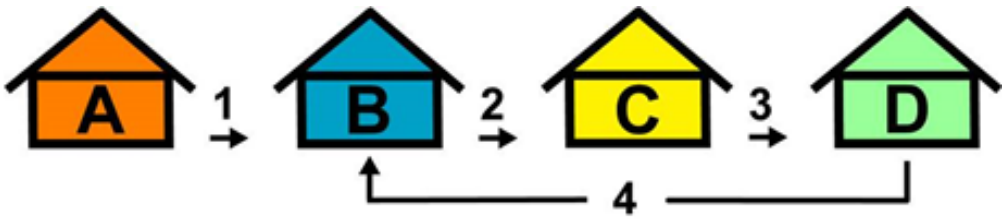


Figure 3: Farm locations example

A. Learning area with Electronic Sow Feeder for gilts
B. Breeding (Insemination) area with Compact Feeders
C. Gestation area with Electronic Sow Feeders
D. Farrowing area with Compact Feeders

Your farm layout must be defined in Velos by configuring the locations and the groups of sows (optional).

- *See Configure the locations (page 10).*
- *See Configure the groups (page 12).*

3.1.1 Groups

The animals can be managed in a static or dynamic group. The dynamic group can be combined with a separate learning area where new gilts and sows learn how to use the Electronic Sow Feeder.

3.1.1.1 Static group

A static group is a group of animals in the same gestation stage, living in one location. Each location has one Electronic Sow Feeder. All locations can be defined in Velos:

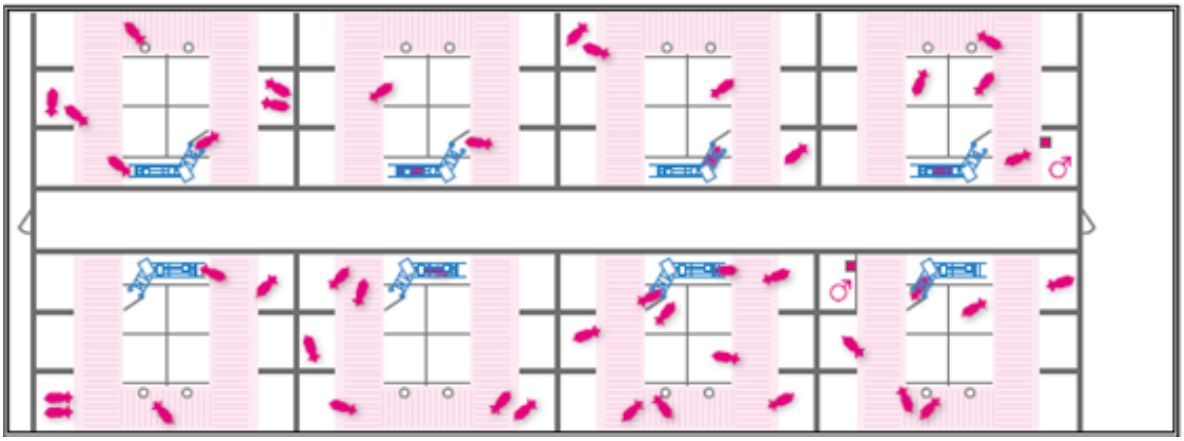


Figure 4: Eight static groups in gestation area

3.1.1.2 Dynamic group

A dynamic group is a group of animals in different gestation stages, living in one stable. A dynamic group is fed by multiple Electronic Sow Feeders. All locations (areas) in the stable can be defined in Velos:

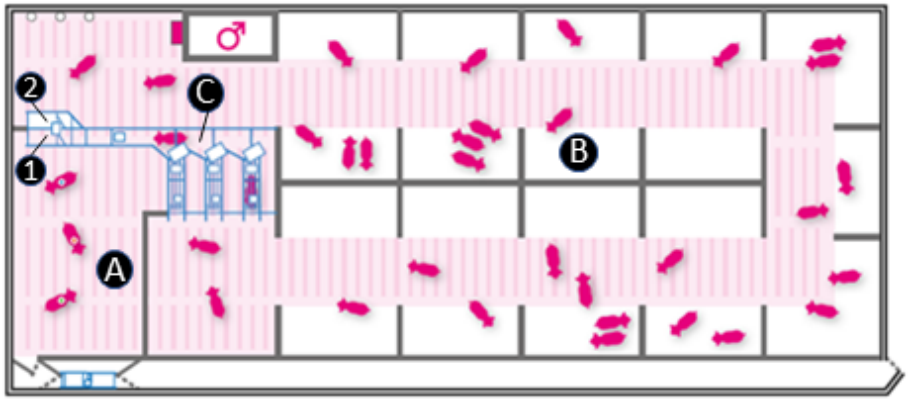


Figure 5: Dynamic group in gestation area

A. Separation area
B. Lying area
C. Corridor

1. Separation exit to the separation area
2. Default exit to the lying area

3.1.2 Maximum number of animals

When the Electronic Sow Feeders are combined with a separation unit, it is necessary to prevent an overflow of animals in the corridor, separation and learning area. Fill in the maximum number of animals when the location is added in Velos.

Calculate the capacity (maximum number of animals) of the locations as follows:

Table 3: Capacity calculation

Location	Calculation
Separation area	Floor area of separation area (m^2) / 1
Learning area	Floor area of learning area (m^2) / 2
Corridor	Number of feed stations + (Length of corridor (m) / 2) + 2

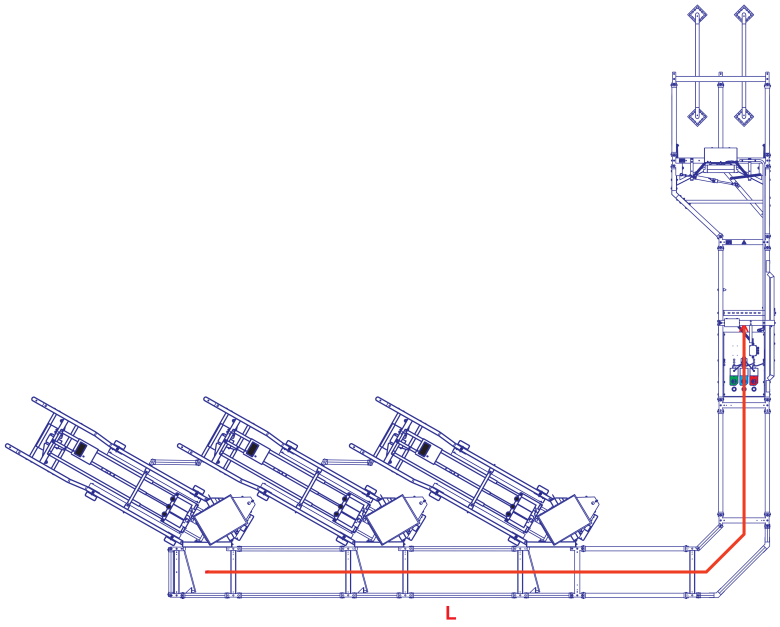


Figure 6: Corridor capacity example 1

Example 1
Maximum capacity of corridor = 3 (Electronic Sow Feeders) + ((8.8 m corridor length (L)) / 2) + 2 = 9.4

This means that 9 animals are allowed in the corridor

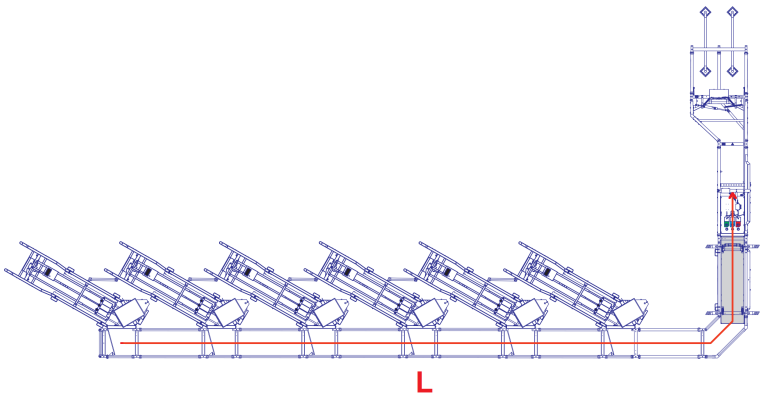


Figure 7: Corridor capacity example 2

Example 2
Maximum capacity of corridor = 6 (Electronic Sow Feeders) + ((14.9 m corridor length (L)) / 2) + 2 = 15.5

This means that 15 animals are allowed in the corridor

3.1.3 Configure the locations

You can create locations (areas and pens) based on your farm layout and assign a number and name to each location. The location type is chosen from a standard set of location types, including Breeding, Gestation and Farrowing areas.

- *It is recommended to apply a uniform numbering and naming system*
- *Each location needs a unique number and name.*

3.1.3.1 Add a new location

1. Go to **Settings > Farm > Locations.**
2. Click on **Add location**.
3. Select a location type in the pop-up menu:

Gestation section with central separation
Gestation section without central separation
Breeding section
Farrowing section
General location

4. Depending on the selected location type, the following data must to be filled in:

Number	Enter a unique number
Name	Enter a unique name
Type	The selected location type is displayed. **General** type: Select a type from the dropdown list, e.g. Gestation or Farrowing section
Tag	Enter the number of the EID tag assigned to the location (not Farrowing Feeding stand-alone)
Parent	Select the housing of the new location (e.g. farm) from the dropdown list
Pens	Enter the number of pens (maximum of 120 pens)
Corridor	Enter the capacity of the corridor (See Maximum number of animals (page 9)
Separation	Enter the capacity of the separation area (See Maximum number of animals (page 9)

5. Click on **Submit**.

Example for location numbering
Number of farrowing area 1 is 1000, the pens are numbered 1001 to 1120.

Farrowing Feeding stand-alone:
After creating the locations, Nedap Velos automatically generates animals, one animal for each farrowing pen, with the same animal number as the coupled farrowing pen. An additional license for this functionality is required.

***Farrowing Feeding with Electronic Sow Feeding (ESF)**:*
No animals are generated by Nedap Velos. Because all animals have EID ear tags, the animals must be entered in Nedap Velos and coupled to the pens with the hand-held (See Link the sows with the Velos locations (Farrowing Feeding with ESF only) (page 13).

3.1.3.2 Change an existing location

1. Go to **Settings > Farm > Locations.**
2. Click on the location that must be changed.
3. Depending on the selected location type, the following data can be changed:

Type	The selected location type is displayed and cannot be changed. Delete and recreate the location if the location type is not correct.
Number	Enter a unique number
Name	Enter a unique name
Tag	Enter the number of the EID tag assigned to the location

Parent	Select the housing of the new location (e.g. farm) from the dropdown list
Pens	Enter the number of pens (maximum of 120 pens)
Corridor	Enter the capacity of the corridor (See Maximum number of animals (page 9)
Separation	Enter the capacity of the separation area (See Maximum number of animals (page 9)

4. Click on **Submit**.

3.1.4 Configure the groups

Groups can be used to identify sows that are in the same production state:

Example 1
A one week system with 21 production groups. Groups number 1 to 21 consist of 16 gestation groups, 4 farrowing groups and 1 breeding group.

Example 2
A one week system with 52 insemination week number groups. Groups number 1 to 52 correspond with the week number of the insemination.

Add a new group

1. Go to **Settings > Farm > Groups**.
2. Select **Add group**.
3. Fill in the fields:
   - **Number**: Enter a unique number (e.g. the insemination week number).
   - **Name**: Enter the name of the group.
4. Click **Submit**.

3.1.5 Connect the EID tags on the farrowing pens with the Velos locations (Farrowing Feeding with ESF only)

The EID tags of all pens must be scanned with the handheld to connect each pen with a Velos location. The EID tags are mounted on the pens to give each pen a unique identification number.

- *All locations must be set up in Velos before connecting to the pens (See Configure the locations (page 10)).*
- *Only Nedap D22 EID tags can be used.*

1. Mount a Nedap D22 EID tag on each pen.
2. Connect the handheld to the computer with the USB cable.
3. In Velos, go to **Dashboard > Handheld**.
4. Click on **Send data to handheld**.
5. Disconnect the handheld from the computer.
   The handheld displays the first available pen without tag number, e.g. location 101.
6. Scan the EID tag of this pen.
   A checkmark is placed next to the scanned location (not visible). The handheld scanner the next available pen without tag number, e.g. location 102.
7. Scan the tags of all pens without tag number.
8. Connect the handheld to the computer with the USB cable.
9. Go to **Dashboard > Handheld**.
10. Click on **Received data: Locations**.
11. Click on **Submit all**.

All scanned ID tags are now connected to the locations in Velos.

3.1.6 Link the sows with the Velos locations (Farrowing Feeding with ESF only)

After the installation and each time new sows enter the farrowing pens, the sows must be scanned and linked with a Velos location. It is necessary to know which sow is in which pen to feed the sow correctly.

1. Check that the following actions have been carried out:
   a. All locations are set up in Velos and connected to the EID tags of the pens.

      See Connect the EID tags on the farrowing pens with the Velos locations (Farrowing Feeding with ESF only) (page 12)

   b. All sows, including tag numbers, are entered in Velos.
2. Connect the handheld to the computer with the USB cable.
3. In Velos, go to **Dashboard > Handheld**.
4. Click on **Send data to handheld**.
5. Disconnect the handheld from the computer.
6. Scan the EID tag of the sow.
   The handheld displays the number of the sow that was scanned.
7. Scan the EID tag of the corresponding pen.
   The handheld displays the scanned sow and location.
8. Repeat step 6 and 7 for all sows and pens.
9. Connect the scanner to the computer with the USB cable.
10. Go to **Dashboard > Handheld**.
11. Click on **Received data: Locations**.
12. Click on **Submit all**. All scanned ID tags are now linked with the locations in Velos.

Caution
In order to feed a sow according to the right feed curve, the system checks the type of location (e.g. gestation or farrowing) that is linked to the sow. When there is no location linked, the sow cannot be fed. In case of Farrowing Feeding, it means that a sow should be linked with a farrowing pen as described in this paragraph.

3.1.7 Link the sows with the locations (Farrowing Feeding stand-alone)

At the first time installation when all farrowing locations are created in Velos, Velos automatically generates the same amount of animals. The animals are automatically linked to a farrowing pen and have the same number as the pen number. When the sows are not tagged with EID ear tags , they are automatically coupled to a farrowing pen and have the same number as the farrowing pen.

Example
For farrowing pen 1001, animal 1001 is generated and coupled to that pen.

When new sows enter the farrowing pens they will automatically receive the existing animal number. Therefore it is important to clear the data of the sows that left the pens:

See Link new sows with the farrowing pens (Farrowing Feeding stand-alone) (page 30)

3.2 Feed settings

Before the feed plans for the sows can be defined, the feed types and feed silos need to be set up in Velos.

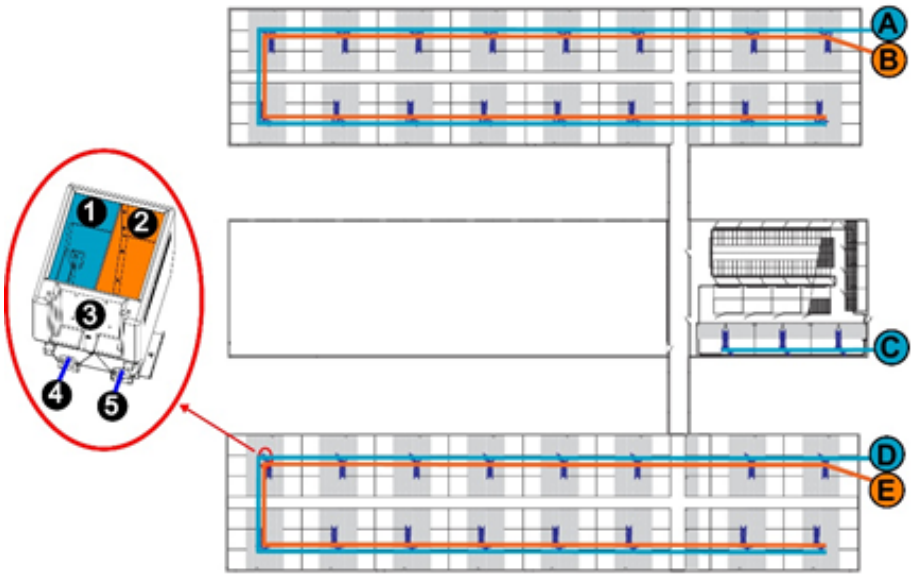


Figure 8: Example of feed types and silo settings

A. Silo A with feed type 1
B. Silo B with feed type 2
C. Silo C with feed type 1
D. Silo D with feed type 1
E. Silo E with feed type 2

1. Feed type 1
2. Feed type 2
3. Feed hopper on Electronic Sow Feeder
4. Output 1: Silo D
5. Output 2: Silo E

3.2.1 Add feed types

Depending on the license, three feed types are already set up:

- Breeding feed
- Gestation feed
- Farrowing feed

Only change the name or numbering of the existing feed types when necessary:

1. Go to **Settings > Feeding > Feed types**.
2. Click on the feed type that must be changed.
3. Change the number and/or name of the feed type.
4. Click on **OK**.

Add a new feed type as follows:

1. Go to **Settings > Feeding > Feed types**.
2. Click on **Add feed type**.
3. Fill in the following data:
   - **Number**: Number of the feed type
   - **Name**: Name of the feed type
   - **Color**: Color used to represent the feed type in the graphical display of the feed curves.
4. Click on **OK**.

3.2.2 Add silos

Depending on the license, three silos are already set up:

- Breeding silo
- Gestation silo
- Farrowing silo

Only change the name or numbering when necessary:

1. Go to **Settings > Feeding > Silos**.
2. Click on the silo that must be changed.
3. Change the number, name and/or feed type of the silo.
4. Click on **OK**.

Add a new silo as follows:

1. Go to **Settings > Feeding > Silos**.
2. Click on **Add silo**.
3. Fill in the following data:
   - Number of the silo
   - Name of the silo
   - Feed type
4. Click on **OK**.

3.2.3 Set the feed types for the Electronic Sow and Compact Feeders

Each Electronic Sow Feeder or Compact Feeder must be linked to at least one feed type in Velos.

Electronic Sow Feeders

1. Go to **Settings > Behavior components**.
2. Click on the Electronic Sow Feeder that must changed.
3. Go to **Output for feed 1**.
4. Select the correct feed type from the dropdown list.
5. Go to **Output for feed 2** if two feed types are distributed.
6. Select the second feed type from the dropdown list.
7. Click on **Submit**.

Compact Feeders

1. Go to **Settings > Behavior components**.
2. Click on **Add behavior components**.
3. Fill in the following data:
   - **Type**: Select **Section feeding** in the dropdown list.
   - **Name**: Name of the section (e,g, Farrowing section 1)
4. Click on **Next**.
5. Fill in the following data:
   - **Section**: Select the location from the dropdown list.
   - **First pen**: Select the first pen from the dropdown list.
   - **Last pen**: Select the last pen from the dropdown list.
   - **V-pack for motor 1-10**: Select VP3008 from the dropdown list.
   - **V-pack for motor 11-20**: Select VP3008 from the dropdown list (if applicable)
   - **Silo 1**: Select the feed type from the dropdown list.

- **Silo 2**: Select the feed type from the dropdown list (if applicable).
- **V-pack manual control**: Select VP3001 from the dropdown list.

6. Click on **Submit**.

3.3 Feed calibration

Every Electronic Sow Feeder or Compact Feeder must be calibrated for the feed type(s) used. The feed portion weight is calibrated to ensure that the right feed amount is delivered to the sows.

3.3.1 Feed calibration Electronic Sow Feeder

The feed portion weight must be calibrated for each feed type and each Electronic Sow Feeder during the startup of the system.

Furthermore, calibration is recommended after each new feed delivery and a change of the feed composition. With the relative calibration option, only one or a limited number of Electronic Sow Feeders need to be recalibrated.

Startup calibration

1. Assign a calibration tag to each feed type:
   a. Click on **Settings > Feeding > Calibration > Calibration responders**:
   b. Click on **Add** and enter the tag number.
   c. Choose the feed type that must be calibrated.
   d. Click on **Submit**.
   e. Repeat step 1b to 1d for each feed type.
2. Go to an Electronic Sow Feeder with an empty feed trough.
3. Put the tag in the antenna field until the Electronic Sow Feeder starts dispensing feed:
   a. Collect the dispensed feed.
   b. Weigh the total amount of dispensed feed.
   c. Note the weight.
4. Go to **Settings > Feeding > Calibration**.
   A list of all farm locations with Electronic Sow Feeders or Compact Feeders is shown.
5. Select the farm location(s) with the Electronic Sow Feeders that need to be calibrated.
6. Go to **Actions > Calibrate**.

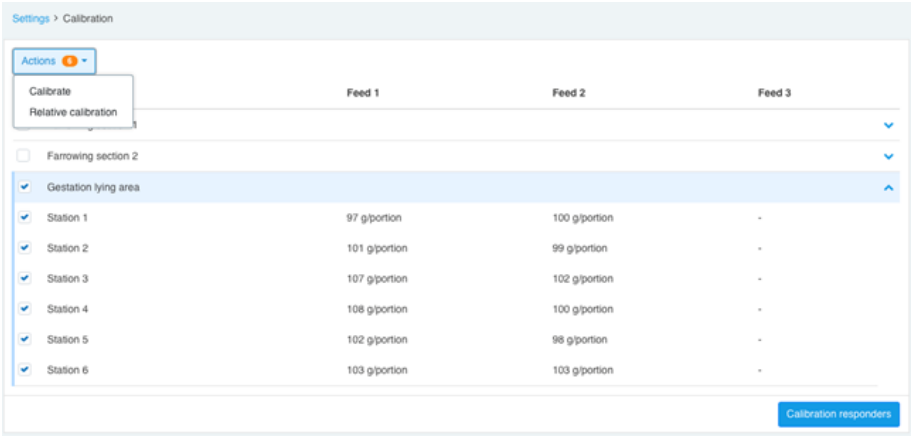


Figure 9: Calibration menu

7. The **Calibrate** window opens:
   a. Select the correct feed type.
   b. Fill in the weight of the dispensed feed you noted in step 3c.

The new calibration value is calculated automatically.

c. Click **Ok** to save the new calibration value(s).

8. Repeat step 5 to 7 for all farm locations with Electronic Sow Feeders and for all feed types.

Calibration after a new feed batch

1. Go to an Electronic Sow Feeder with an empty feed trough. This can be any feed station in the location.
2. Put the tag in the antenna field until the Electronic Sow Feeder starts dispensing feed:
   a. Collect the dispensed feed
   b. Weigh the total amount of dispensed feed.
   c. Note the weight.
3. Go to **Settings > Feeding > Calibration**.
4. Select the farm location where you collected the feed.
5. Go to **Actions > Relative calibration** (see Figure 9 (page 16)).
6. The **Relative Calibration** window opens:
   a. Select the correct feed type.
   b. Select the Sow Feeder where you collected the feed.
   c. Fill in the weight of the dispensed feed you noted in step 2c.
   The new calibration value and change percentage is calculated automatically.
   d. Click **Ok** to save the new calibration value and to apply the correction to all Electronic Sow Feeders in the location.

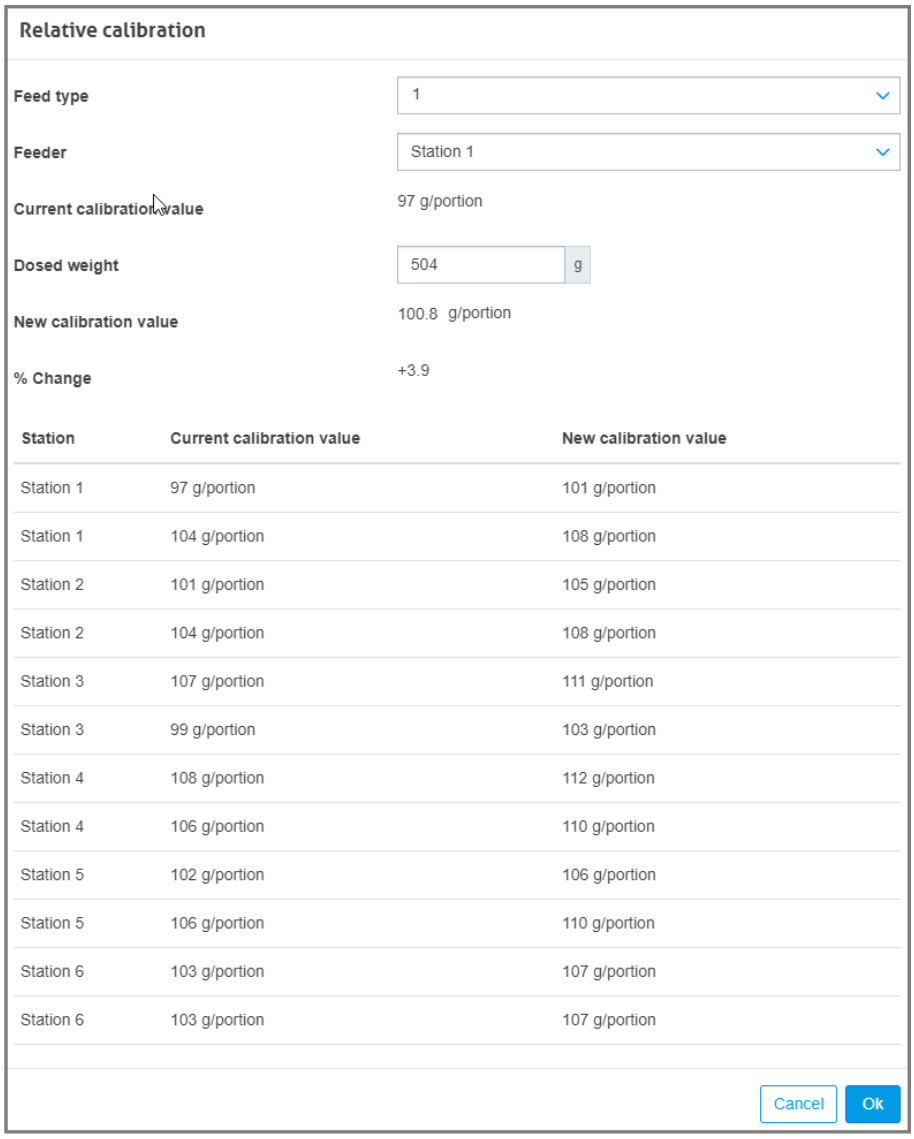


Figure 10: Relative calibration window

7. Repeat step 1 to 6 for all farm locations with Electronic Sow Feeders that are using the new feed batch.

3.3.2 Feed calibration Compact Feeder

The feed portion weight must be calibrated to ensure that the right feed amount is delivered by every Compact Feeder. At initial startup all pens must be calibrated.

Furthermore, calibration is recommended after each new feed delivery and a change of the feed composition. With the relative calibration option, only one or a limited number of Compact Feeders need to be recalibrated.

Make sure there is ALWAYS sufficient feed available in the feed line.

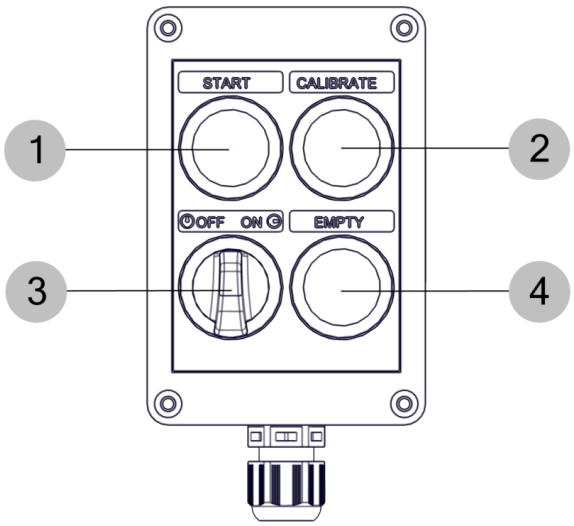


Figure 11: Feeding Control for Compact Feeder

1. *Green push button to bring feeding time forward*
2. *Blue push button to calibrate the system (> 5 sec.)*
3. *On/off switch*
4. *Yellow push button to empty the system (> 5 sec.)*

Startup calibration

Calibrate all Compact Feeders in a location as follows:

1. Activate the calibration mode by pressing the blue Calibrate button on the Feeding Control for **at least 5 seconds**. The blue light of the button starts blinking.

   The calibration mode remains active for 30 minutes. Press the blue Calibrate button on the Feeding Control for at least 5 seconds to stop or reactivate the calibration mode.

2. Go to **Quick view > Farrowing area (or Breeding area)**.
   A list with al Farrowing (or Breeding) areas is shown.
3. Select the Farrowing (or Breeding) area with the Compact Feeders that need to be calibrated.
4. Click on the pen number or click on the ⌄ button at the end of the line.
   The calibration information for the pen is shown, including the **Calibrate** button.

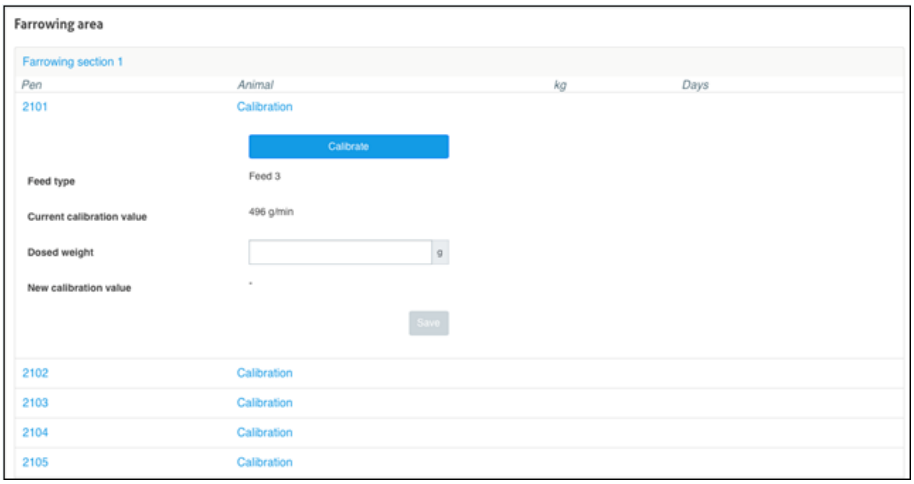


Figure 12: Calibration button

*The **Calibrate** button is only visible when the calibration mode is activated (see step 1).*

5. Calibrate the Compact Feeder in the pen:
   a. Press the blue **Calibrate** button on the screen.
      The Compact Feeder will dispense feed.
   b. Collect and weigh the dispensed feed.
   c. Fill in the weight in the **Dosed weight** field on the screen.
      The new calibration value is calculated automatically.
   d. Click **Save** to save the new calibration value.
6. Repeat step 4 and 5 for each pen in the list.
7. Press the blue Calibrate button on the Feeding Control for **at least 5 seconds** to quit the calibration mode or wait for the automatic time-out after 30 minutes. The blue light of the Calibrate button stops blinking.

Calibration after a new feed batch

Calibrate one Compact Feeder in a location as follows:

1. Activate the calibration mode by pressing the blue Calibrate button on the Feeding Control for **at least 5 seconds**. The blue light of the button starts blinking.

   The calibration mode remains active for 30 minutes. Press the blue Calibrate button on the Feeding Control for at least 5 seconds to stop or reactivate the calibration mode.

2. Go to **Quick view > Farrowing area (or Breeding area)**.
   A list with al Farrowing (or Breeding) areas is shown.
3. Select the Farrowing (or Breeding) area with the Compact Feeders that need to be recalibrated.
4. Click on a pen number or click on the ⌄ button at the end of the line.
   The calibration information for the pen is shown.

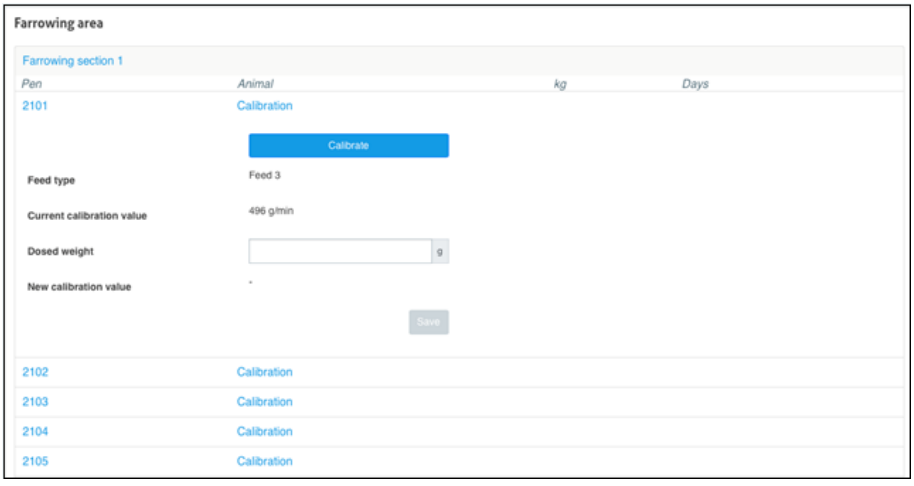


Figure 13: Calibration button

5. Recalibrate the Compact Feeder in the pen:
   a. Press the blue **Calibrate** button on the screen.
      The Compact Feeder will dispense feed.
   b. Collect and weigh the dispensed feed.
   c. Note the weight of the dispensed feed.
6. Go to **Settings > Feeding > Calibration**.

7. Select the Farrowing (or Breeding) area where you collected the feed.
8. Go to **Actions > Relative calibration**.
9. The **Relative calibration** window opens:
   a. Select the correct feed type.
   b. Select the pen where you collected the feed.
   c. Note the weight of the dispensed feed in the **Relative calibration** window.
      The new calibration value and change percentage is calculated automatically.
   d. Click **Ok** to save the new calibration value and to apply the correction to all Compact Feeders in the section.

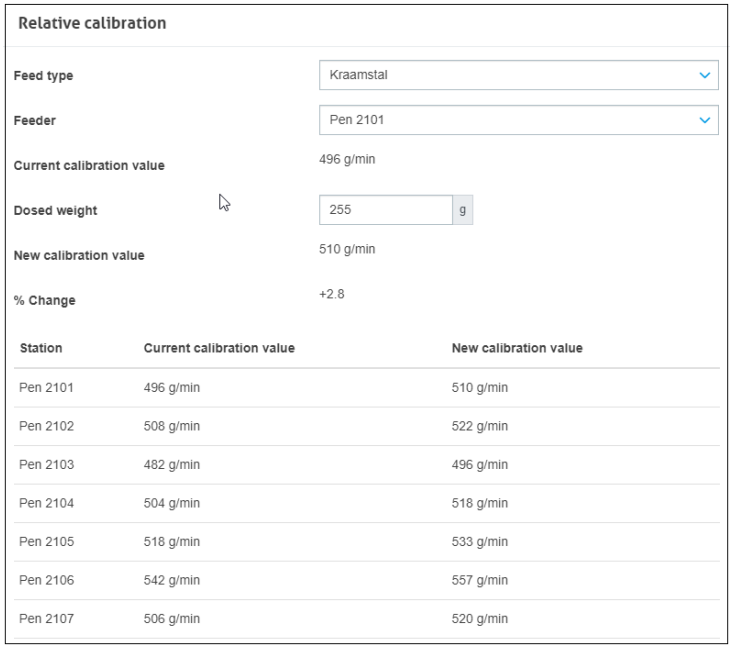


Figure 14: Relative calibration window

10. Repeat step 1 to 9 for all Farrowing (or Breeding) areas using the new feed batch.
11. Press the blue Calibrate button on the Feeding Control for **at least 5 seconds** to quit the calibration mode or wait for the automatic time-out after 30 minutes. The blue light of the Calibrate button stops blinking.

4 Operation

4.1 Create feed plans

When all feed types and silos are set up, the feed plans must be created. A feed plan makes it possible to adjust the amount of feed to the lifecycle of the animals, for example during gestation or farrowing. Multiple feed plans can be created to match the feed pattern for different groups of animals.

See Add feed types (page 14) and Add silos (page 15)

Caution
Depending on the license, the PC interface contains a default feed plan with one or more feed curves where the data is already filled in. This is only an example! Change the settings and adapt to the actual farm situation.

1. Go to **Settings > Feeding > Feed plans**.
2. Select **Add feed plan**.
3. Fill in an unique number and the name of the feed plan, for example "1st parity sows".
4. Click **OK**.
5. Complete the feed plan with the following settings:
   - Feed types (Select feed types (page 22))
   - Feed amounts (Define feed amounts (page 23))
   - Corrections (Define corrections (page 24))
   - Spreading (Define the spreading (page 25))
   - Limits (Define the limits (page 26))

4.1.1 Select feed types

A feed curve is created for each feed plan. The feed curve shows the increased, decreased or stable feed amounts over time. The start and end time for the feed curve must be set. For example, a Gestation feed curve starts at the insemination date and ends at the start time of the Farrowing feed curve.

The feed types must be selected per feed curve and can be switched on or off. Only the feed types that were added in Velos, can be selected.

See Add feed types (page 14)

1. Go to **Settings > Feeding > Feed plans**.
2. Select the feed plan that must be set up.
3. Select the correct feed curve:
   - Breeding
   - Gestation
   - Farrowing

   *For Electronic Sow Feeding, the **Gestation** feed curve must be defined. For Farrowing Feeding, the **Farrowing** feed curve must be defined.*
4. Select the tab **Feed types**.
5. Select one or more feed types by moving the switch from **Off** to **On**.

6. Click **OK**.

4.1.2 Define feed amounts

The feed curve defines for each day the amount of feed (per feed type) that must be fed to an animal. Up to three feed curves can be created for each feed plan, called Breeding, Gestation and Farrowing.

1. Go to **Settings > Feeding > Feed plans**.
2. Select the feed plan that must be set up.
3. Select the type of feed curve:
   - **Breeding**: Feed curve based on the weaning date.
   - **Gestation**: Feed curve based on insemination date.
   - **Farrowing**: Feed curve with different feed amounts before and after farrowing.
4. Select the tab **Feed amounts**.
5. Create the feed curve (see instructions below).
6. Click **OK**.

Caution
When the start dates for the feed curve are not entered in the calendar, the feed curve will not start. Until then, the sow will be fed according to the feed amount of day 0 of the curve.

Breeding

1. Fill in the days on the curve after weaning for which a feed amount must be defined. Day 0 is the weaning date.

   The weaning date can be set automatically after the birth date in the Calendar settings (see Set general calendar attentions (page 43))

2. Click **Add** to add a row, if necessary.
3. Fill in the feed amounts (kg) for each feed type.

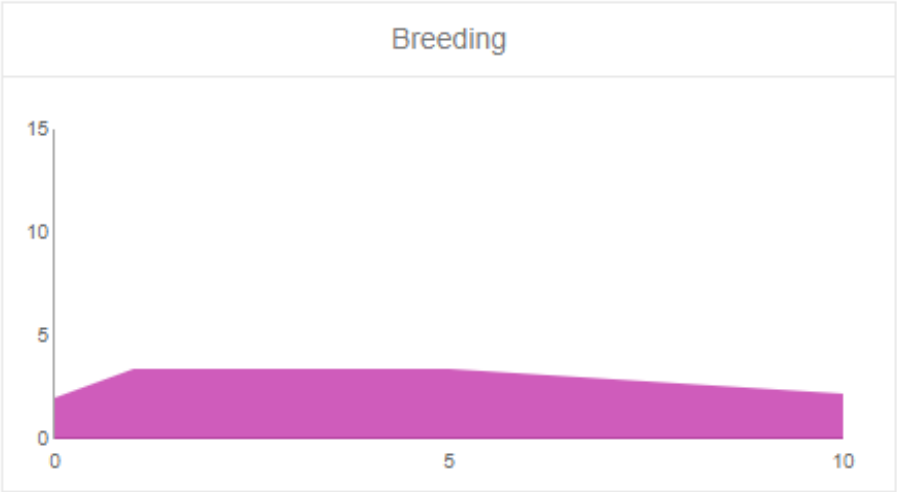


Figure 15: Example of a Breeding feed curve

Gestation

1. Fill in the days on the curve after insemination for which a feed amount must be defined. Day 0 is the insemination date.
2. Click **Add** to add a row, if necessary.
3. Fill in the feed amounts (kg) for each feed type.

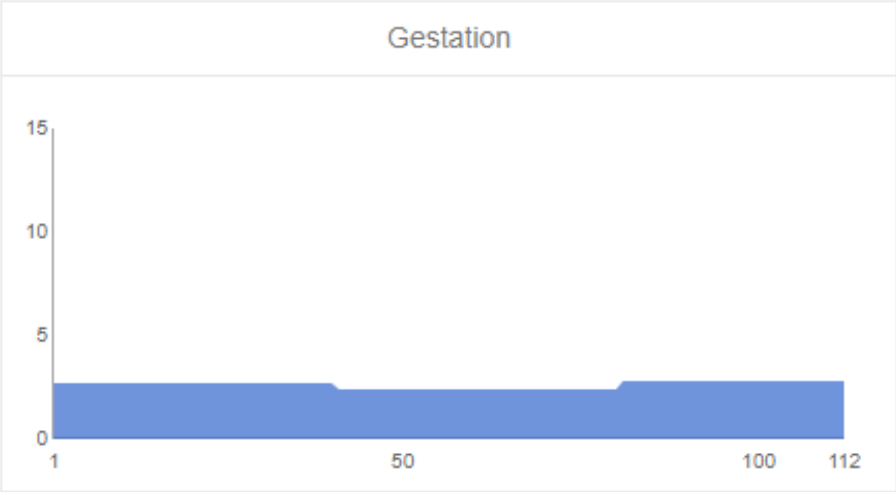


Figure 16: Example of a Gestation feed curve

Caution
The total amount of feed per day must be higher than 0.5 kg.

Farrowing

1. Fill in the days on the curve before farrowing for which a feed amount must be defined. Day 0 is the expected farrowing date (= insemination date + 115).
   a. Click **Add** to add a row, if necessary.
   b. Fill in the feed amounts (kg) for each feed type.
2. Fill in the days on the curve after farrowing for which a feed amount must be defined.
   a. Click **Add** to add a row, if necessary.
   b. Fill in the feed amounts (kg) for each feed type.

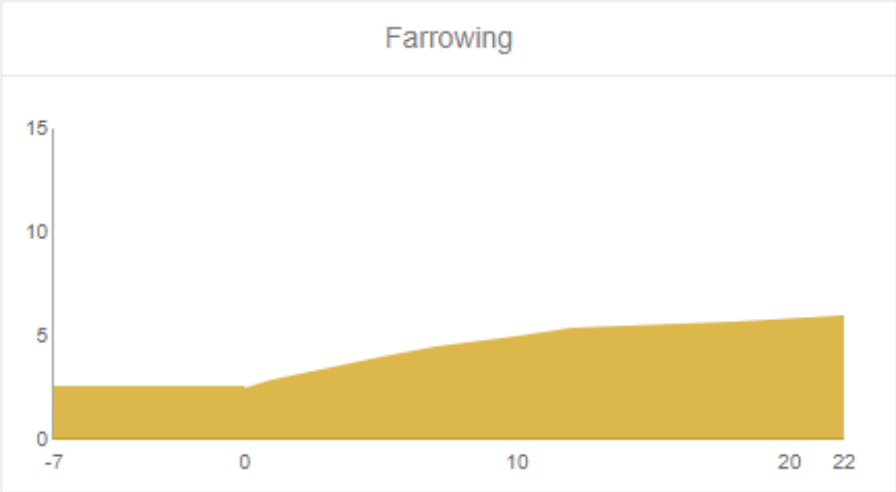


Figure 17: Example of a Farrowing feed curve

4.1.3 Define corrections

If necessary, define corrections for a specific feed plan. This can be useful when, for example, the weather suddenly changes and as a result the animals eat more or less. When correcting the feed plan it will affect all animals that are fed according to that feed plan.

The corrections can be created in three different categories: General correction, condition score correction and monthly correction.

1. Go to **Settings > Feeding > Feed plans**.
2. Select the feed plan that must be corrected.
3. Select the tab **Correction**.
4. Fill in the correction:
   a. **General correction**:
      1. **Absolute**: Fill in the amount of feed (kg) that must be substracted from or added to the daily feed amount (per feed type). If less feed is needed, fill in the minus sign (-) followed by the amount. E.g. current daily feed amount is 4 kg and should be corrected to 3 kg: fill in -1 kg.
      2. **Percentage**: Fill in the percentage of feed (%) that must be substracted from or added to the daily feed amount (per feed type). If less feed is needed, fill in the minus sign (-) followed by the percentage. E.g. current daily feed amount is 4 kg and should be corrected to 3 kg: fill in -25%.
   b. **Condition score corrections**: Corrections based on condition score is divided in 5 condition levels.

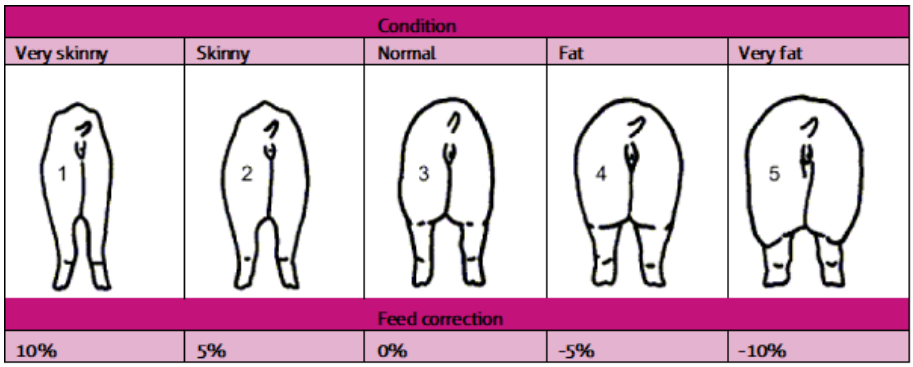


Figure 18: Condition scores

Table 4: Condition scores and related feed corrections

	Condition	Feed correction
1	Very skinny	10%
2	Skinny	5%
3	Normal	0%
4	Fat	-5%
5	Very fat	-10%

For example, very skinny: The animal is too skinny and must be fed more, fill in the percentage of the daily feed amount that must be fed more for animals in this condition. When filling in 10%, the animal will receive the daily feed amount plus the extra 10% (per feed type).

   c. **Monthly corrections**: Fill in the amount of feed (kg) that must be substracted from or added to the daily feed amount (per feed type) for each month. If less feed is needed, fill in the minus sign (-) followed by the amount. E.g. current daily feed amount is 3.5 kg and should be corrected to 3.2 kg in the month July: fill in -0.3 kg for July.
5. Click **OK**.

Caution
The corrections will be effective after the next feed start.

4.1.4 Define the spreading

The daily feed amount can be delivered once a day or spread in equal portions over the day.

1. Go to **Settings > Feeding > Feed plans**.

2. Select the feed plan that must be adjusted.
3. Select the feed curve.
4. Select the tab **Spreading**.
5. **Breeding** and **Farrowing** curve: A spreading table is shown, which is divided in 24 columns (hours of the day) and one or more rows (days on the feed curve). Each cell represents an hour of the day in which you fill in the percentage of the daily feed amount that must be fed.
   a. Change the days of the default table into the days when the spreading must be changed.
   b. Click **Add** to add a row to the table, if necessary.
   c. Click on a cell to activate the feed time.
   d. Fill in the percentage of the daily feed amount that must be fed at that time.

      - *The table cell will turn green when the percentage is > 0%.*
      - *The total percentages in a row must add up to 100%.*

   e. Complete the table for all unique days of the curve.

      Table 5: Example of the spreading for Farrowing Feeding

Day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Total
-7	0	0	0	0	0	0	0	0	**40**	0	0	0	0	0	0	0	**60**	0	0	0	0	0	0	0	100%
2	0	0	0	0	**20**	0	0	0	**20**	0	0	0	**25**	0	0	0	**35**	0	0	0	0	0	0	0	100%
7	0	0	0	0	**20**	0	0	0	**20**	0	0	0	**20**	0	0	0	**20**	0	0	**10**	0	0	**10**	0	100%

   f. Click **Ok** to save the table.
6. **Gestation** curve:
   a. Set the following parameters:
      - **Cycle time**: The cycle time is the total hours per day in which feed is distributed. The cycle time is set up at 24 hours and is not changeable.
      - **Number of periods**: The cycle time can be divided into a number of periods. In each period an equal part of the daily feed amount is distributed.
      - **Release period**: A release period is the period (time of the day) during which a sow could eat the remaining feed amount of the day. The number of release periods must be the same or less then the number of periods.

        Table 6: Recommended settings for dry feed (feed delivery once a day)

Cycle time	24
Number of periods	1
Release period	1

   b. Click **OK** to save the settings.

4.1.5 Define the limits

With the option **Limits** it is possible to control the way how animals are being fed. The animal can be prevented from consuming too much or not enough feed in one period.

1. Go to **Settings > Feeding > Feed plans**.
2. Select the feed plan that must be adjusted.
3. Select the tab **Limits**.
4. Set the following parameters:
   – **Feed speed**: Sets the feed amount dosed per minute.
   – **Min. period amount**: Avoids several visits caused by spreading feed for animals with a low daily feed amount.
   – **Max. period amount**: Protects an animal from consuming too much feed in one period.

   The following settings are advised:

Table 7: Feeding limits

	Feed speed	Min. period amount	Max. period amount
Bred gilts	120 gr./minute	0 kg	4 kg
1st parity sows	150 gr./minute	0 kg	4 kg
2nd parity sows	170 gr./minute	0 kg	4 kg
≥ 3rd parity sows	170 gr./minute	0 kg	4 kg
Unknown animals	150 gr./minute	0 kg	4 kg

5. Click **OK**.

Caution

- *The advised feed speeds are guidelines based on dry feed of pellets and dosing water and based on research. These speeds can vary for each farm and breed. Always check how fast the animals eat. The trough must be emptied before the entrance gate is opened for the next sow. Adjust feed speed settings if necessary.*
- *Max. period amount = maximum dosed feed amount for one period (default 24 hours). With this setting a sow can never get more than the maximum amount of 4 kg (dry feed) per period. Adjust the maximum amount if the feed table exceeds this limit.*
- *Dosing water together with one feed portion is important to facilitate the eating of the animals. Be sure that 40-50 ml water / per 100 gram feed is dosed.*

4.2 Manage feed plans

4.2.1 Start a feed plan

Caution

When the start dates for the feed curve are not entered in the Velos calendar, the feed curve will not start. Until then, the sow will be fed according to the feed amount of day 0.

1. Go to **Settings > Calender > General**.
2. Select the tab **General**.
3. Fill in the following data:

Weaning	Enter the number of days since farrowing.
Gestation	Enter the expected number of days between insemination and farrowing (default 115 days).
Heat cycle	Enter the number of days between two heat cycles (default 21 days).
Automatic pregnant	Check this box when the sow must get the status pregnant automatically, based on the number of days since insemination.
Automatic farrowing	Check this box when the farrowing date must be set automatically, based on the insemination date.

4. Click **Submit**.

Caution

Each sow in the farrowing area must be coupled to a pen with a Compact Feeder to start feeding (See Link the sows with the Velos locations (Farrowing Feeding with ESF only) (page 13)).

4.2.2 Add a new feed plan

1. Go to **Settings > Feeding > Feed plans**.
2. Select **Add feed plan**.
3. Fill in an unique number and the name of the feed plan, for example "1st parity sows".
4. Click **OK**.
5. Complete the feed plan as described in Create feed plans (page 22).

4.2.3 Rename a feed plan

A feed plan can be renamed without loosing any settings.

1. Go to **Settings > Feeding > Feed plans**.
2. Select the feed plan that must be renamed.
3. Select **Rename feed plan**.
4. Fill in the number and desired name.
5. Click **OK**.

4.2.4 Delete a feed plan

When a feed plan is deleted, all settings are lost and cannot be restored.

Warning
Before the feed plan is deleted, make sure that the feed plan is no longer assigned to any group of animals.

1. Go to **Settings > Feeding > Feed plans**.
2. Select the feed plan that must be deleted.
3. Select **Delete feed plan**.
4. Click **OK**.

4.2.5 Unknown animals

Animals with an EID ear tag that are identified for the first time, appear in the Velos Dashboard as unknown animals. These sows are added to the default group 99 and fed by the default feed plan. The animal location depends on the location of the feed station where it was identified.

1. Go to **Dashboard > Farm > Unknown animals**.
2. Select an unknown animal.
3. Change or fill in the fields, if necessary:
   - **Animal number**: Enter the correct animal number
   - **Life No**: Enter the registration number of the animal
   - **Location**: Check the location
   - **Feed plan**: Select the correct feed plan
   - **Birth date**: Enter the birth date
   - **Insemination**: Enter the insemination date
4. Click on **OK**.

The unknown animals are now being fed according to the correct feed plan..

4.2.6 Blocking feed

Optionally one or more blocking periods can be created for a feed station or a location. This can be useful when for example a rest period must be created prior to the feed start.

Blocking feed at feed station:

1. Go to **Settings > Feeding > Blocking**.
2. Select **Add block periods for station**.
3. Select the Electronic Sow Feeder from the dropdown list.
4. Fill in the start and end time of the first block period. E.g. from 06:00 till 08:00 AM.
5. Fill in more block periods, if required.
6. Click **Save**.

Blocking feed for location:

1. Go to **Settings > Feeding > Blocking**.
2. Select **Add block periods for location**.
3. Select the location from the dropdown list.
4. Fill in the start and end time of the first block period. E.g. from 06:00 till 08:00 AM.
5. Fill in more block periods, if required.
6. Click **Save**.

4.3 Farrowing Feeding

The sows in the farrowing pens may be in different stages of farrowing/lactation. This means that they need to be fed according to different feed plans and different feed amounts. Besides the feed amounts, the spreading of the feed times can also differ and the sows can be fed at different times.

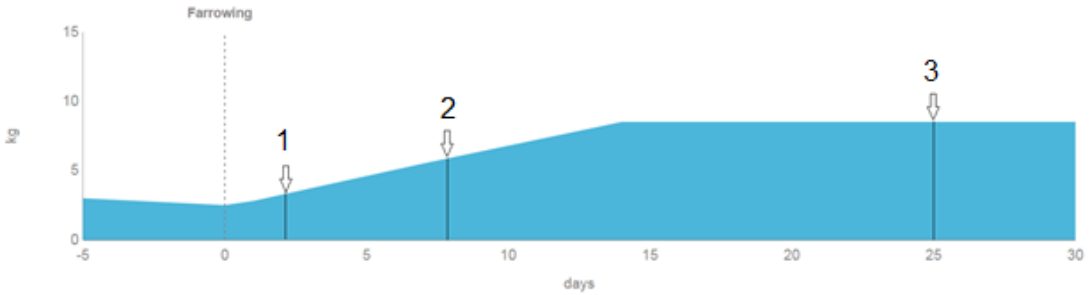


Figure 19: Example of feeding principle for 3 sows on the same calender day

Table 8: Example of feeding principle for 3 sows on the same calender day

Animal	Day on curve	Daily feed amount	Spreading	Feed time
Sow 1	2	3 kg	2 x 1.5 kg	8:00 AM + 4:00 PM
Sow 2	8	5.5 kg	2 x 2.75 kg	8:00 AM + 4:00 PM
Sow 3	25	8 kg	4 x 2 kg	4:00 AM + 8:00 AM + 12:00 noon + 4:00 PM

The daily feed amount can be adjusted for individual sows or groups of sows, as described in the following paragraphs:

1. Set the farrowing date (page 30)
2. Define individual sow corrections for farrowing feeding (page 31)
3. Start a farrowing feeding time manually (page 33)
4. Turn the feeding system off (page 33)

4.3.1 Set the farrowing date

The start date for the Farrowing feed curve is the farrowing date. To enter the farrowing date, follow the next steps:

1. Go to **Farm > Quick view > Farrowing area**.
2. Select the location.
3. Select the animal.
4. Set the farrowing date and time.

It is also possible to set the farrowing date in the **Quick Entry** menu.

1. Go to **Quick Entry**.
2. Enter an animal number or select a group.
3. Click **Next**.
4. Select **Action 1**.
5. Select the action **Calender - Farrowing** from the dropdown list.
6. Set the farrowing date and time.
7. Click **Apply to all**.

Until the actual farrowing date is filled in, the sow will be fed based on the expected farrowing date (if activated) or until day 0 of the Farrowing feed curve. The expected farrowing date is calculated based on the insemination date: expected farrowing date = insemination date + 115 days. The value of 115 days is a default setting, but can be adjusted in the Calendar settings.

Example
The pigs are born on the 12th of February, but the farmer enters the farrowing date in the system on the 15th of February. The sow will be fed according to day 3 of the Farrowing feed curve.

4.3.2 Link new sows with the farrowing pens (Farrowing Feeding stand-alone)

After the first time installation when all locations are set up, Nedap Velos automatically generates the same amount of animals. They are already coupled to a farrowing pen, and have the same number as the pen number. For example, for farrowing pen 1001, animal 1001 is generated and coupled to that pen.

Before new sows can enter the farrowing pens, the data of the sows that left the pens must be cleared. Follow the next steps to make the system ready to use for the new sows:

1. Go to **Quick Entry**.
2. Select **Location** and choose the section(s) of the sows that left the farrowing pens.
3. Click **Next**.
4. Check the box **Action 1** and select **Calender - Clear calendar events**.
5. Click **View Animals** to clear the calender events of one or more animals:
   a. Select the animals that left the farrowing pens
   b. Select **Actions > Submit** to clear the calender events.
6. Click **Apply to all** to clear the calender events of all animals in the section.
7. Click **Next**.

Now all calendar events of the sows that have left the farrowing pens are deleted. The animal numbers are still present in Velos and coupled to the farrowing pens. They can be used for feeding the next round of sows in the farrowing pens.

Enter the farrowing date of the new sows

Caution
Do not forget to enter the farrowing date for the new sows to make sure they are fed correctly according to the Farrowing feed curve.

If the farrowing date is not known yet, enter the insemination date to feed the sows according to the Farrowing feed curve before the expected farrowing date:

1. Go to **Quick Entry**.
2. Select **Number** and fill in the sow numbers for which the insemination date must be entered, or select **Location** and select the correct section.
3. Click **Next**.
4. Check the box **Action 1** and select **Calender - Insemination**.
5. Select the insemination date in the calender.
6. Select **Apply to all**.
7. Click **Next**

4.3.3 Define individual sow corrections for farrowing feeding

Monitoring and correcting the individual feeding of the sows in the farrowing pens can easily be done by smartphone or tablet. When applying theses corrections, they take effect immediately. When defining general changes, e.d. changing the sow to another feed plan, the changes take place at 12:00 midnight.

There are three different individual sow corrections:

- Change the daily feed amount (page 31)
- Turn the farrowing feeding on/off (page 32)
- Skip one or more feeding times (page 32)

After correcting the feed amount, the number of sows that have been corrected is displayed in the section overview **Farm > Farm overview**. Multiple corrections can be applied to one sow at the same time, but only one correction will be displayed in the overview. The correction with the highest priority will be displayed (1 = highest priority, 4 = lowest priority).

Table 9: Individual sow corrections overview

Priority	Color	Correction
1	Red	The feeding of the sow is turned off. The data will be displayed in red until the feeding is turned on again.
2	Orange	The feed amount of the sow has been **decreased** by percentage. The data of the sow will stay orange until the percentage correction is set back to 0.
3	Dark Blue	The feed amount of the sow has been **decreased** by skipping meals. The data of the sow will stay dark blue until the time of the skipped meals is over.
4	Green	The feed amount of the sow has been **increased** by percentage. The data of the sow will stay green until the percentage correction is set back to 0.
Default	Light blue	No active correction

4.3.3.1 Change the daily feed amount

The daily feed amount can be decreased or increased depending on the sow's needs. The adjustment can vary from -50% to +20% of the daily feed amount and will be applied on the whole feed curve.

1. Go to **Quick view > Farrowing area**.
2. Select the location.
3. Select the animal.

4. Set **Correction %**: Select the positive or negative correction in a percentage of the feed amount.
5. The correction will be applied immediately.

Example
A sow eats according to day 5 of the feed curve (4.9 kg). She does not eat all of the feed and the feed amount is decreased by 20% to 3.9 kg. For day 6 and further the feed amount will also be decreased by 20%.

4.3.3.2 Turn the farrowing feeding on/off

The farrowing feeding can be turned off completely. This means that the sow will not be fed until the feeding is turned on again.

1. Go to **Quick view > Farrowing area**.
2. Select the location.
3. Select the animal.
4. Set **Feeding** to **On** or **Off**.
5. The correction will be applied immediately.

Example
A sow eats according to day 7 of the feed curve (5.1 kg). She does not eat at all. The feeding is turned off on day 7 and not turned on yet.

4.3.3.3 Skip one or more feeding times

One or more feeding times can be skipped for one day|:

1. Go to **Quick view > Farrowing area**.
2. Select the location.
3. Select the animal.
4. Set the option **To be skipped**: Select the number of feeding times that must be skipped for one day.
5. The correction will be applied immediately.

Example
A sow eats according to day 6 of the feed curve (5.5 kg). She does not eat very well on day 6. Therefore it is decided to skip 2 of the 4 feeding times of day 7. The daily amount planned for day 7 (5.5 kg) is divided into 4 equal portions of 1.375 kg. The daily amount on day 7 is now reduced from 5.5 kg to 2,75 kg (2 portions of 1.375 kg). On day 8 the sow should eat according the feed curve again (6 kg).

4.3.4 Check the farm overview

An overview of all animals in the gestation, breeding or farrowing sections can be found in the farm overview:

1. Go to **Farm > Farm overview > Feeding**.
2. The following data is displayed:
   - Number of animals: Total number of animals on the farm.
   - **Gestation**:
     - Total amount of planned feed per section.
     - The feed balance for yesterday and today (in kg and percentage).
     - The number of animals per section.
     - Graph icon: Graphical display of the feed amount per day provided during the last 14 days.
   - **Farrowing**:

- Farrowed and total number of animals per section.
- Number of animals per section with increased feed amount.
- Number of animals per section with decreased feed amount.
- Number of animals per section with no feed supply.
- Feed balance for today.

– **Breeding**:
- Total amount of planned feed per section.
- The feed balance for yesterday and today (in kg and percentage).
- The number of animals per section.
- Graph icon: Graphical display of the feed amount per day provided during the last 14 days.

3. Click on a section to get an overview of all animals in the section.
4. Adjust the feeding settings, if necessary.

4.3.5 Start a farrowing feeding time manually

Although the system works completely automatically, it is possible to a start a farrowing feeding time earlier than scheduled:

1. Press the green button of the Feeding control.
2. A feed portion will be dosed immediately, unless a feeding time was already scheduled within one hour.

Caution
The next feeding time of all sows in this farrowing section will start and they are fed immediately. Therefore it is important that all feeding times are scheduled at the same time.

Example of right use of the start button
The next feeding time for all sows is scheduled at 8:00, but the start button is used at 7:00 AM. All sows in the section are fed at 7:00 AM.

Example of wrong use of the start button
The next feeding time is scheduled at 12:00 noon, but the start button is used at 11:00 AM. All sows in the section are fed at 11:00 AM, including the sows for which the feeding time was scheduled at 4:00 PM.

Table 10: Feeding times example

Day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Total
-7	0	0	0	0	0	0	0	0	**40**	0	0	0	0	0	0	0	**60**	0	0	0	0	0	0	0	100%
2	0	0	0	0	**20**	0	0	0	**20**	0	0	0	**25**	0	0	0	**35**	0	0	0	0	0	0	0	100%
7	0	0	0	0	**20**	0	0	0	**20**	0	0	0	**20**	0	0	0	**20**	0	0	**10**	0	0	**10**	0	100%

4.3.6 Turn the feeding system off

It is possible to turn off the feeding system completely for the entire farrowing section:

1. Turn the switch on the Feeding control in a horizontal position.
2. All Compact Feeders of the section will stop dosing feed.

To turn off one Compact Feeder: see Turn the farrowing feeding on/off (page 32)

4.4 Control the feeding process

4.4.1 Check feed amounts

Feed amounts and feed balances can be checked on location and animal level.

Location

1. Go to **Farm**.
2. Select the tab **Feeding**. An overview is shown of all locations and the total feed amounts. The feed amount of yesterday and today is shown in kg and percentage.
3. Select the [Graph] icon to view a graphical presentation of the feed amount over time.
4. Select a location to view the feed amounts per feed plan.

Animal

1. Go to **Farm**.
2. Fill in the animal number in the **Search** field.
3. Select the tab **Feeding**.
4. An overview is shown of the feed amounts per feed type for the animal.
5. Select the [Graph] icon to view a graphical presentation of the feed amount over time.
6. Select a location to view the feed amounts per feed plan.

4.4.2 Activate the feed curve of the next farm location

When animals are moved from one location to another, some data must be adjusted to start the correct feed curve of the feed plan.

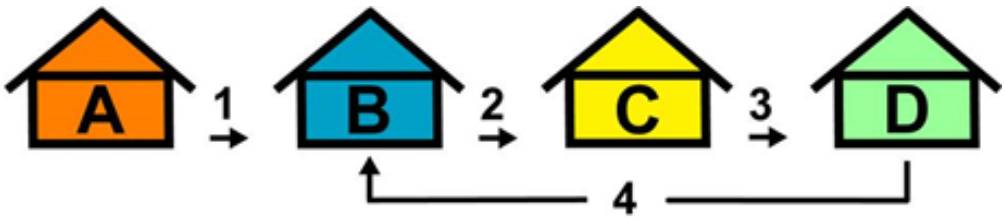


Figure 20: Farm locations

A. Learning area
B. Breeding (insemination) area
C. Gestation area
D. Farrowing area

Table 11: Activate new feed curve on location change

Action	Current location	New location	Data to change	Optional changes
1	Learning	Breeding	• Change location	• Adjust feed plan corrections
2	Breeding	Gestation	• Change location • Enter insemination date	• Change group number • Change condition score
3	Gestation	Farrowing	• Change location • Enter farrowing date (later)	• Adjust feed plan corrections
4	Farrowing	Breeding	• Change location • Enter weaning date	• Choose another feed plan because the parity has increased • Adjust feed plan corrections

Adjust the data as follows:

1. Go to **Quick Entry**.

2. Enter the animal number or select a group in the dropdown list.
3. Select a new feedplan in the dropdown list, if necessary.
4. Select a new location in the dropdown list.
5. Select a new attention type in the dropdown list, if necessary.
6. Click **Next**.
7. Select an action. Up to 5 actions can be created.
8. Select **Apply to all**.

4.4.3 Backup feeding

When the LAN connection between two VPU's is lost, the Electronic Sow Feeders connected to these (slave) VPU's immediately stop feeding the sows. In Velos, the attention "One or more VPU's are missing" appears on the **Dashboard**. It is important to restore the connection between the VPU's as soon as possible. In the meantime. Backup Feeding can be activated to enable the sows to eat.

During Backup Feeding, the sows are fed according to the following fixed rules:

Table 12: Backup Feeding rules

Backup Feeding rules	
Feed amount	2 kg feed/sow per 24 hours
Feed portion size	100 g
Feed speed	150 g/min
Feed type	Silo that is connected to Output 1 of the VP1001 on the Electronic Sow Feeder

When Backup Feeding is active, the blue light on the Electronic Sow Feeder flashes quickly 4 times. The feed amounts that the sows have eaten during Backup Feeding are not stored and visible in Velos.

Depending on the configuration of the pen, Backup Feeding can be started manually or automatically.

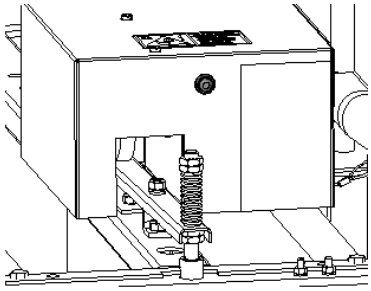


Figure 21: Start button on Electronic Sow Feeder

4.4.3.1 SowSense system without Central Separator

When the LAN connection between the VPU's is lost for more than 60 minutes, the system automatically starts Backup Feeding. When a sow enters the Electronic Sow Feeder, the feed will be distributed according to the fixed rules.

It is possible to start Backup Feeding earlier (within 60 minutes):

1. Short press the button on the front of the Electronic Sow Feeder 5 times or more.
2. Backup Feeding starts immediately.

4.4.3.2 SowSense system with Central Separator

When the LAN connection between the VPU's is lost, the Electronic Sow Feeder stations will be locked immediately. The separation unit moves to the default position and no sows will be separated anymore.

Open the Electronic Sow Feeders by starting Backup Feeding manually:

1. Short press the button on the front of the Electronic Sow Feeder 5 times or more.
2. Backup Feeding starts immediately for max. 60 minutes.
3. After 60 minutes, restart BackUp Feeding by repeating step 1.

It is possible to restart the next period of Backup Feeding before the last one has ended.

Caution
Backup Feeding never starts automatically in a pen with a Central Separator.

4.4.4 Activate feed balance attentions

To check if all animals have eaten their feed amounts, it is possible to generate Feed balance lists in Velos. When this option is activated, automatic attentions appear when an animal has not eaten all of the feed.

1. Go to **Settings > Feeding > Attentions**.
2. Fill in both values (absolute and percentage) for getting an attention.
3. Click **Save**.

An attention is only generated when both values are reached. For example, with the values set a 0.5 kg and 10%:

- Total feed amount of 5 kg: feed balance is 500 g or higher
- Total feed amount of 8 kg: feed balance is 800 g or higher

Example 1
The attention limits are set at 0.5 kg (absolute) and 10% (relative):
- Sow 2 gets a total feed amount of 8 kg/day > attention limit is 500 g absolute and 800 g relative (10% of 8 kg) > Feed balance attention is given if 800 g or more of the feed is not eaten.

Example 2
The attention limits are set at 0.5 kg (absolute) and 10% (relative):
- Sow 2 gets a total feed amount of 8 kg/day > attention limit is 500 g absolute and 800 g relative (10% of 8 kg) > Feed balance attention is given if 800 g or more of the feed is not eaten.

To view the feed balance attention:

1. Go to **Dashboard > Feeding > Feed balance.**
2. Click on the blue graphic sign to see the feed history per animal.

A negative feed balance is displayed when the animal has eaten more feed than desired. This can occur, for example, when the animal has already eaten (a large part) of her daily portion before the insemination date is entered. The Gestation feed curve starts and will result in the delivery of a new feed portion.

Reports

To view the reports of the feed balance attentions:

1. Go to **Reports > Feeding.** Several reports are available up to the last seven days.
2. Select one of the report options.

4.4.5 Feeding attentions

When a sow eats more or less than was planned, a feeding attention appears in Velos via **Dashboard > Feeding**.

Table 13: Electronic Sow Feeding attentions

Attention	Cause	Solution	Reference
Feed balance	The sow did not eat all of her meal	• Check if the feed correction (extra feed) is still necessary. • Check the condition of the sow	Define corrections (page 24)
New in feed station	Gilts entering the Gestation area for the first time or sows returning to the Gestation area are identified by the Electronic Sow Feeder.	• Enter the **Insemination date** • Adjust the **Group**, if necessary • Adjust the **Feed plan**, if necessary • Complete any missing data	Activate the feed curve of the next farm location (page 34)
Animals not fed	The sow cannot be fed because: • No feed type was defined in the feed plan. • The correct feed type is not available. The sow will be fed with 2 kg of the available feed type.	• Correct the feed plan. • Fill the feed silo or add another silo.	• Select feed types (page 22) • Add silos (page 15)

Table 14: Farrowing Feeding attentions

Attention	Cause	Solution	Reference
Feed balance	• A correction of the feeding has been done. • Farrowing Feeding has been turned off for the sow.	• Check if the correction is still necessary. • Turn on the feeding, if appropriate.	• Define corrections (page 24), Define individual sow corrections for farrowing feeding (page 31) • Turn the farrowing feeding on/off (page 32)
Feeding disabled	Farrowing Feeding for an individual sow has been turned off.	Turn on the feeding, if appropriate.	Turn the farrowing feeding on/off (page 32)
Section feeding disabled	Farrowing Feeding for all sows in the section has been turned off.	Turn on the feeding, if appropriate.	Turn the feeding system off (page 33)
Animals not fed	The sow cannot be fed because: • No feed type was defined in the feed plan. • The correct feed type is not available.	• Correct the feed plan. • Fill the feed silo or add another silo.	• Select feed types (page 22) • Add silos (page 15)

4.5 Weight monitoring

When a Nedap Weight Sampler is installed in the corridor between the Electronic Sow Feeder(s) and the Central Separator, the sows are weighed every time they are fed. The weights are stored and used to calculate week weights.

The week weights are used for the following checks:

- **Weight loss**: If a sow loses weight in two successive weeks, a weight loss attention is generated.
- **Weight check**: The weight of a sow can be checked against an ideal weight curve.

4.5.1 Operate the Weight Sampler

The Weight Sampler functions automatically. There are no special actions required. Under normal circumstances, only regular checks, cleaning and some maintenance (see Maintenance scheme (page 64)) must be done.

4.5.1.1 Monitor Weight Sampler

The functioning of the Weight Sampler can be monitored in real time.

1. Go to **Maintenance > Monitor - Behavior components**.

   When more than one VPU is installed, click the VPU to which a Weight Sampler is connected.

2. Select the Weight Sampler and click **View**. A simplified image of the Weight Sampler and weighing data appear on screen.

The EID tag number of the last sow that passed the Weight Sampler is shown at the bottom of the image. When the next sow walks over the weighing platform, its EID tag number and weight are displayed.

Since sows move over the weighing platform, the weight shown is not the real weight of the sows. The real weights are displayed as week weights (see Weight check (page 41)).

If there is no sow on the weighing platform, "0 KG" is shown.

Due to environmental factors the screen may occasionally show a different value, for example "1 KG". This is no cause for alarm, no further action is required.

4.5.2 Week weights

This section contains a brief explanation of how the system processes weighing data to generate week weights.

1. The system operates with week weights (based on a calendar week) only. Each calendar week starts on Monday morning at 00:00 hour.
2. Raw weight samples are pushed directly to a centralized database, without being processed locally.
3. Visiting weights are determined from the raw weight samples.
4. Day weights are determined from the visiting weights.
5. A minimum of 3 day weights are required to determine a correct week weight.

6. All calculating algorithms are executed in a centralized database.

- *Week weight data points are displayed in Velos (see Weight check (page 41)).*
- *When there is insufficient usable data to determine a correct week weight, no data points are displayed in Velos.*

4.5.2.1 Ideal weight curve

The Weight Sampler comes with a pre-set ideal weight curve for sow weights at insemination and weights at farrowing for parities 0 – 10, and with a default tolerance of 20 kg (44 lb.). Change these settings for the specific breed of your sows.

Always consult your genetic supplier to set up the ideal weight curve for your specific breed of sows before using the Weight Sampler.

1. Go to **Settings > Weight monitoring - Ideal weight curve**. The ideal weight curve graph is displayed.

Hover the mouse pointer over the graph to display weight values.

2. Enter the tolerance and the ideal weight for each parity at insemination and farrowing (see table with default values below).

Weights must be entered in kilograms. The pounds equivalent is shown between parentheses.

Tolerance	20 kg (44 lb.)	
Parity	**Weight at insemination**	**Weight at farrowing**
0	145 kg (320 lb.)	210 kg (463 lb.)
1	175 kg (386 lb.)	235 kg (518 lb.)
2	195 kg (430 lb.)	255 kg (562 lb.)
3	215 kg (474 lb.)	275 kg (606 lb.)

Tolerance	20 kg (44 lb.)	
Parity	**Weight at insemination**	**Weight at farrowing**
4	235 kg (518 lb.)	280 kg (617 lb.)
5	235 kg (518 lb.)	280 kg (617 lb.)
6	235 kg (518 lb.)	280 kg (617 lb.)
7	235 kg (518 lb.)	280 kg (617 lb.)
8	235 kg (518 lb.)	290 kg (639 lb.)
9	240 kg (529 lb.)	290 kg (639 lb.)
10	240 kg (529 lb.)	290 kg (639 lb.)

3. Click **Submit** to save the data.

4.5.2.2 Weight loss attentions

Weight loss definition

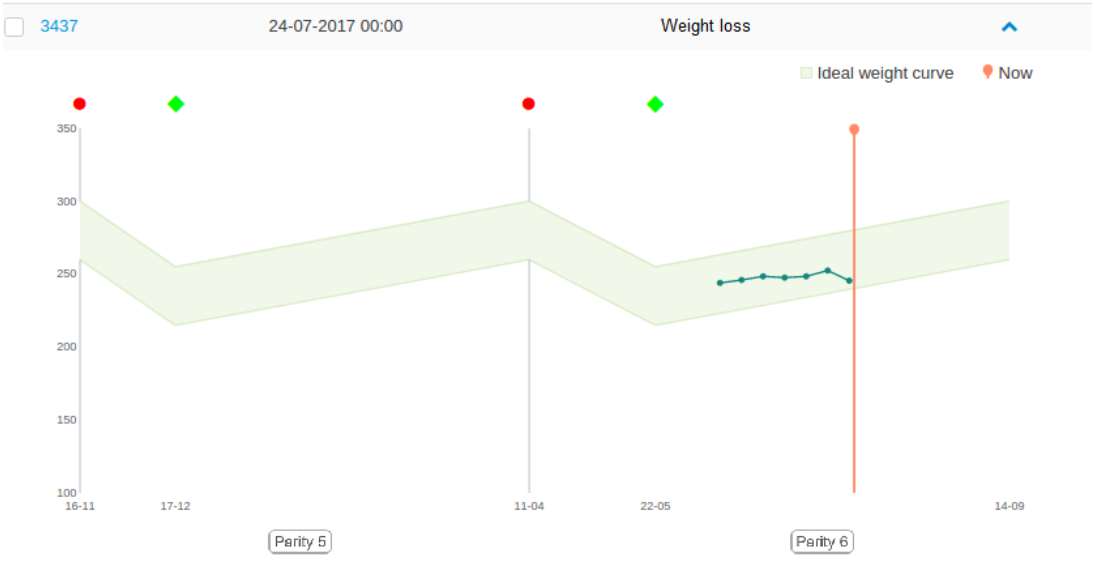
Sows that lose weight in two successive weeks get a "Weight loss attention". Weight loss may be an indication that there is something wrong with the animals, since sows normally show an increase in weight.

The software compares the present week weight with the previous week weight. If the weight loss is > 1%, a weight loss attention is issued.

Example: If a sow with a previous week weight of 250 kg (551 lb.) now has a week weight of less than 247.5 kg (545.6 lb.), it will get a weight loss attention

Examine weight loss attentions

1. Go to **Dashboard > Weight monitoring - Weight loss** (the number of sows with an attention is shown between brackets). A list of all sows with a weight loss appears.
2. Click the animal number you want to examine. The ideal weight curve for the last two parities (unless the sow is in its first parity) and the week weights of the sow are displayed.



- *Hover the mouse pointer over the graph and the data points to display the week weights and the animal number.*
- *Weight loss attentions remain active for a minimum of 1 week. They will remain active until a new week weight shows an increase in weight.*

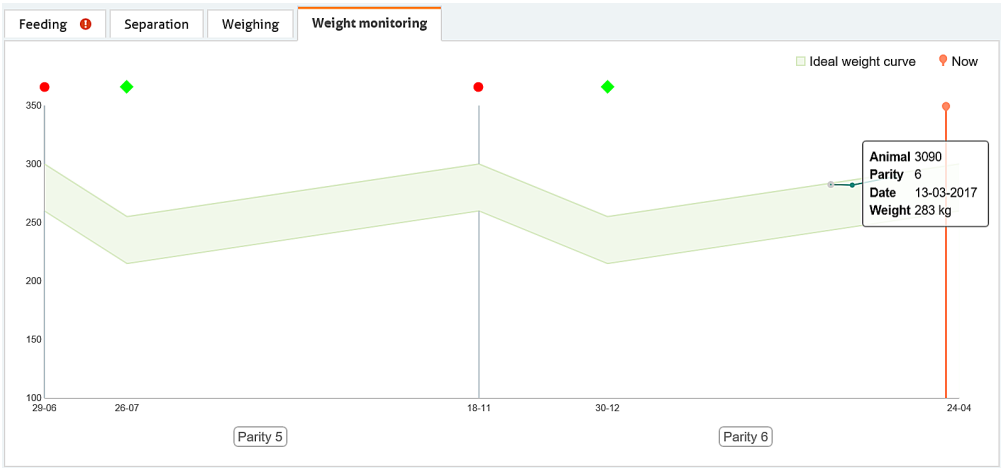
Possible actions
There are several actions possible to handle sows that show a weight loss.

1. Separate the sows to examine them and try to find the cause of the weight loss.
2. Mark sows with a weight loss with the Spray Marker to monitor them.
3. Check if the sows have a heat detection attention. This is an indication that the sow is no longer pregnant or that the sow has not become pregnant after the last insemination.
4. Change the condition score of sows with a weight loss (see below).

Condition setting
1. Go to **Dashboard > Weight monitoring - Weight loss** (the number of sows with an attention is shown between brackets). A list of all sows with a weight loss appears.
2. Select an animal or select all animals by marking the top box in front of **Animal**.
3. Click **Actions > Quick Entry**.
4. Select **Action 1**.
5. Select the action **General - Condition** from the dropdown list.
6. Select the condition score of the sow, e.g skinny (see Define corrections (page 24)).
7. Click **Apply to all** to confirm.

4.5.2.3 Weight check
The weights of sows in gestation are displayed in a graph.

1. Go to **Farm > Farm overview** and select a gestation location with a Weight Sampler in the dropdown list.
2. Click **View animals**. A list of all sows in that location appears.
3. Click on an animal number to see data for that animal.
   The data contains "Basic data", "Calendar data" and a "Weight monitoring" tab. The ideal weight curve of the last two parities is displayed in the **Weight monitoring** tab (unless the sow is in its first parity). The actual week weights are plotted in the graph.



Hover the mouse pointer over the graph and the data points to display the weights and the animal number.

Make sure that you have entered the data for the ideal weight curve (tolerance, parity numbers and weight values at insemination and farrowing) of your sows correctly (see Ideal weight curve (page 39)).

4. Click on the blue arrow pointing down after the animal number to display a list of all animals or click on the blue **<<** or **>>** to display data for the previous or next animal number.

How to use sow weights for injecting pharmaceuticals
Since the weight of the sows is know, these data can be used to determine the correct amount of pharmaceuticals for sows that are ill and need te be inoculated.

1. Go to **Farm > Farm overview** and select a gestation location with a Weight Sampler in the dropdown list.
2. Click **View animals**. A list of all sows in that location appears.
3. Click the animal number you want to inoculate.
4. Check the animal's weight to determine the correct amount of pharmaceuticals.

4.6 Farm management

4.6.1 Animal data

4.6.1.1 Add new animal numbers

New animals that will be fed by Electronic Sow Feeding must be tagged with an EID ear tag.

See Attach the EID tags (page 71)

Animals with an ear tag that are identified for the first time, appear in the Velos program as unknown animals. These sows are set in default group 99 and fed by the default feed plan. The animal location depends on the location of the station where it was identified.

1. Go to **Dashboard > Farm > Unknown animals**.
2. Select an unknown animal.
3. Change or fill in the fields, if necessary:
   - **Animal number**: Enter the correct animal number
   - **Life No**: Enter the registration number of the animal
   - **Location**: Check and change the location
   - **Feed plan**: Select the correct feed plan
   - **Birth date**: Enter the birth date
   - **Insemination**: Enter the insemination date
4. Click on **OK**.

4.6.1.2 Change the tag number or basic animal data

1. Go to **Farm** and type the animal number in the Search field or:
   a. Go to **Farm > Feeding** and select the location.
   b. Select **Watch aninals**.
   c. Select an animal in the list.
   d. Select **Animal overview**
2. Open the **Basic data** tab.
3. Select **Edit** and change the data, if necessary.
4. Click **Save**.

4.6.2 Calendar

The Dashboard calender shows lists of animals for which an event is planned or calculated to happen, for example a vaccination or an expected farrowing date. You can select which calender events must be shown by activating predefined calender events in Velos or creating your own custom calender events.

When a calender event is planned or calculated, an alert (calender attention) is generated. These calendar attentions are divided in two types: general attentions and custom attentions (based on custom events). The calendar attention list can be used as a checklist or action list.

4.6.2.1 Set general calendar attentions

General calendar attentions can be generated for general calendar events in Velos.

Set up the general calendar events

1. Go to **Settings > Calendar - General**.
2. In the **General** tab, fill in the following data:
   - **Weaning**: The number of days since farrowing that must used to calculate the expected weaning date.
   - **Gestation**: The number of days since insemination that must be used to calculate the expected farrowing date.
   - **Heat cycle**: The number of days that one heat cycle lasts.
3. Check the **Automatic pregnant** checkbox, if the status of the sow must be changed automatically to pregnant after a certain number of days. Fill in the number of days after insemination when the status must be changed.
4. Check the **Automatic farrowing** checkbox, if the parity of the sow must be calculated automatically.

For the Nedap system the parity is important, because the feed plans are based on parity and determine how the sow must be fed. To determine the parity number, the farrowing dates of a sow are used. When you usually don't fill in the farrowing dates, you can use the option 'Automatic farrowing' to let Velos automatically set the farrowing date, and with that, the parity of a sow. Automatic farrowing works as follows:

- *You fill in the latest insemination date of a sow.*
- *Velos checks if the prior insemination date was more than 115 days ago. If it is, Velos calculates the farrowing date by the prior insemination date +115 days.*
- *At the same time the parity raises, so that the animal data is correct.*

Caution

- *Do not forget to change the location of the animals in the software when they move to the farrowing pens to make sure the animals are not shown on the feed balance list.*
- *Do not use the Automatic farrowing function when you always fill in the farrowing date manually, or your management system sends the farrowing date to Velos.*

Activate the general calendar attentions

1. Go to **Settings > Calendar - General**.
2. In the **Attentions** tab, the following attentions are available:
   - **Pregnancy check**: Check the checkbox to activate this attention and fill in the number of days after insemination when the pregnancy check must be carried out.
   - **Weaning**: Check the checkbox to activate this attention and fill in the number of days before the expected weaning date.
   - **Farrowing**: Check the checkbox to activate this attention and fill in the number of days before the expeced farrowing date.

4.6.2.2 Set custom calendar attentions

Custom calendar attentions can be generated for custom calendar events in Velos.

Set up the custom calendar events

1. Go to **Settings > Calendar - Custom events**.
2. Click **Add**.
3. In the **Description** field fill in the name of the custom event.

Activate custom calender attentions

1. Go to **Settings > Calendar - Custom attentions**.
2. Click **Add attention**.

3. Fill in the following data:
   - **Event**: Select a general or custom event in the dropdown list, for which an attention must be generated.
   - **Parity**: Select a parity that must be combined with the event or select **All** if parity is not relevant.
   - **Attention**: Enter a name for the attention.
   - **After**: Enter the number of days between the event and the generation of the attention.
   - **Duration**: Enter the number of days that the attention must be displayed in the calendar.
4. Click **Ok**. The attention is added to the list.
5. Check the checkbox to activate the custom attention.

4.6.2.3 Remove calendar events and attentions

Calendar events and attentions can be removed if they are no longer valid or if you receive too many types of attentions.

Remove a general calendar event

1. Go to **Settings > Calender - General**.
2. In the **General** tab, clear the following data if required.
   - **Weaning**: The number of days since farrowing that must used to calculate the expected weaning date.
   - **Gestation**: The number of days since insemination that must be used to calculate the expected farrowing date.
   - **Heat cycle**: The number of days that one heat cycle lasts.

Remove a general calendar attention

1. Go to **Settings > Calendar - General**.
2. In the **Attentions** tab, the following attentions are available:
   - **Pregnancy check**: Clear the check box to activate this attention and fill in the number of days after insemination when the pregnancy check must be carried out.
   - **Weaning**: Clear the check box to activate this attention and fill in the number of days before the expected weaning date.
   - **Farrowing**: Clear the check box to activate this attention and fill in the number of days before the expeced farrowing date.

Remove a custom calender event

1. Go to **Settings > Calendar - Custom events**.
2. Clear the checkbox of the custom event that must be removed.
3. Select **Actions > Remove**.
4. Click **Ok** to confirm the removal.

Remove a custom calender attention

1. Go to **Settings > Calendar - Custom attentions**.
2. Clear the checkbox of the custom attention that must be removed.
3. Select **Actions > Remove**.
4. Click **Ok** to confirm the removal.

4.6.3 Separation/marking

The separation and spray marking options depend on the Velos configuration and licenses:

- **Marking**: Spray marker unit(s) can be used to mark individual sows in an Electronic Sow Feeder, Heat Detector or Central Separator unit.
- **Separation**: The Central Separator unit or an Electronic Sow Feeder with individual separation can separate individual sows to the separation area.

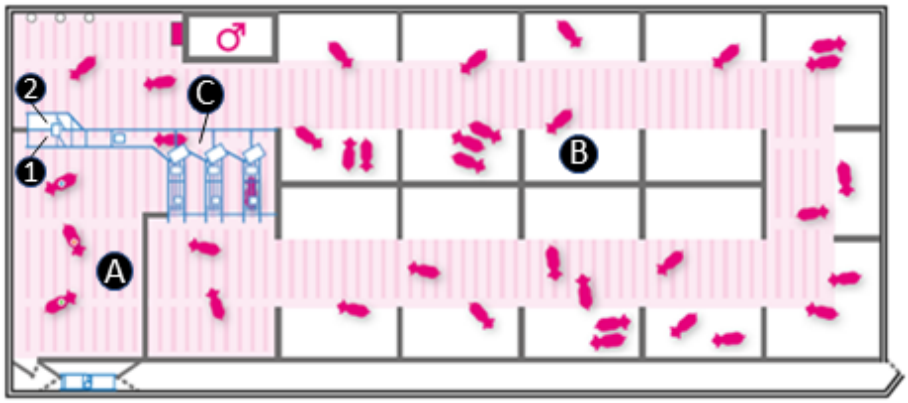


Figure 22: Sow house layout with central separation unit

1. Separation exit to the separation area
2. Default exit to the lying area
A. Separation area
B. Lying area
C. Corridor

4.6.3.1 Operate the Central Separator

The Nedap Central Separator unit separates individual sows in a group housing. The sows enter the separation unit via the Electronic Sow Feeders and the corridor. A sow that needs attention can be separated automatically to the separation area. Sows that are not separated are led back to the group.

Optionally, spray markers and/or ID check can be mounted on the separation unit:

- The spray marker marks selected sows with a colored spray.
- The ID check separates and/or sprays sows that have no or a defect ear tag.

Rules for separation and marking (e.g. on heat detection) can be created in Velos.

See Set up separation and marking rules (page 47)

The V-box on the Central Separator is equipped with two signal lights, two push buttons and a separation switch:

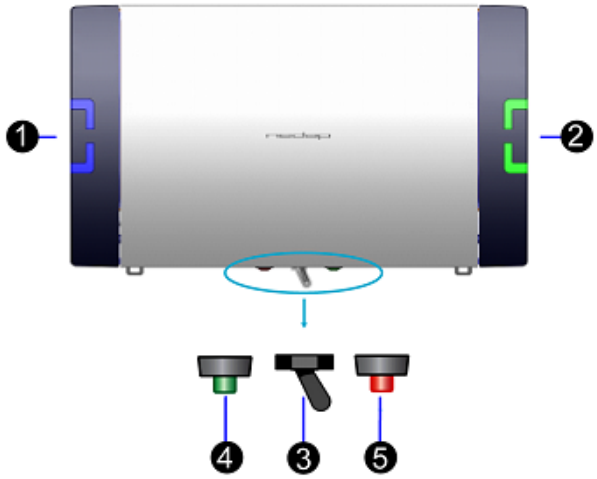


Figure 23: V-box with lights and buttons

1. Status light separation unit (blue light)
2. Status light number of sows in separation area (green light)
3. Switch manual separation
4. Reset counter sows in separation area (green button)
5. Reset system attention (red button)

Table 15: Signal lights

Color	Speed	Situation
Blue	Breathing	The antenna does not detect an animal (status Idle).
Blue	On	The antenna identifies a sow.
Blue	Flashing fast	System attention.
Green	Breathing weekly	Occurs after a separation reset: No sows separated.
Green	Breathing strongly	At least one sow has been separated. Intensity increases as more sows are separated.
Green	Blinking fast	The maximum number of sows has been reached in the separation area. The separation door will remain in the default exit position.

Table 16: Separation switch

Position	Result
Manual separation	All sows passing will be separated until the maximum number of animals is reached. This function can be used for learning sows to get used to the separation exit.
Automatic separation	The control unit will only separate selected animals.

Separation area reset button (green)
This button is used to reset the separated sow counter with the following procedure:

1. Remove all sows from the separation area.
2. Press the green reset button (> 1 second).
   After the reset the green light on the V-box will breathe weakly.
3. The animal location is changed automatically from separation area to lying area.

System attention reset button (red)
This button is used to reset the system attention with the following procedure:

1. Solve the problem that caused the system attention.
2. Remove the sows from the Electronic Sow Feeder(s) and the corridor.
3. Press the red reset button (> 1 second).
   After the reset the blue light on the V-box will breathe weakly.
4. The entrances of the Electronic Sow Feeders are unlocked automatically.

4.6.3.2 Set up separation and marking rules

1. Go to **Settings > Separation > Rules > Add separation/marking**.
2. Select if the separation/marking rule must be based on:
   - **Animal number**: Enter the number of individual animal(s) that needs to be separated/marked .
   - **Group number**: Select the group from the dropdown list if a complete group of animals must be separated/marked.
   - **Attention type**: Select the attention type for separation/marking on a specific event, for example heat detection or inoculation (can be added as a custom attention).

     - *See Separate and mark on heat attention (page 47)*
     - *See Separate and mark on a custom attention (page 48)*

3. Select one or both actions:
   - **Separation**: Check the box if separation is needed.
   - **Mark**: Activate by selecting a marking color from the dropdown list.
4. Create a schedule:
   a. **Remark**: Add text to identify the rule.
   b. **When**: Select a frequency from the dropdown list.
      - Select **Daily** to separate/mark sows every day.
      - Select **1 day** to separate/mark sows for a period of 24h.
      - Select **Multiple days** to separate/mark sows a certain number of days.
      - Select **Day of week** to separate/mark sows a certain day of the week (this can be every week, bi-weekly, every 3 or 4 weeks)

   c. **Start date**: Select a start date and time for the rule.
   d. **Number of days**: Enter the number of days for the **Multiple days** option.
   e. **Day of the week**: Select the day for the **Day of the week** option.
   f. **Every:** Select the frequency of the **Day of the week** option (every week, bi-weekly, every 3 or 4 weeks).
   g. **Repeat in separation period**: Enable the separation of the sow each time she visits the station.
5. Click **Save**.
6. To temporarily disable or permanently remove a rule:
   a. Click **Actions** and select **Disable** or **Remove**.

4.6.3.2.1 Separate and mark on heat attention

In most situations sows in heat should always be marked and separated. Default color used for this attention is blue:

1. Go to **Settings > Separation > Rules > Add separation/marking**.
2. Create the following separation and marking rule:

Attention type	Heat detection
Separate	Yes
Mark	Blue
Remark	Mark sows on heat
When	Daily
Start date	DD-MM-YYYY - XX:00 Select the date and time when the rule must be activated.

If the sows are marked by the spray marker on the Heat Detector, do not use the spray marker on the Central Separator.

4.6.3.3 Separate and mark on a custom attention

Custom attentions can also be used to set up a separation rule. First the custom attention must be created, next the attention is linked to separation rule.

Create a custom attention

1. Go to **Settings > Calendar > Custom attentions > Add attention**.
2. Create a new attention:
   a. **Event**: Select an event from the dropdown list.
   b. **Cycle**: Select a cycle number from the dropdown list.
   c. **Name**: Enter a name for the attention.
   d. **After**: Enter the number of days after the event when the attention must become active.
   e. **Duration**: Enter the duration of the attention.
3. Click **Ok**.
4. To remove an attention:
   a. click **Actions** and select **Remove**.

Table 17: Example custom attention

Event	Insemination
Cycle	1
Name	Vaccination 1st parity sows
After	60 (days)
Duration	7 (days)

Add the custom attention to a separation rule

1. Go to **Settings > Separation > Rules > Add separation/marking**.
2. Create a separation rule:
   a. **Attention type**: Select the custom attention type in the Calendar section of the dropdown list.
   b. **Separate**: Check the box.
   c. **Mark**: If required, activate by selecting a marking color from the dropdown list.
   d. Create a schedule.

   See Set up separation and marking rules (page 47)

3. Click **Save**.

Example separation rule based on custom attention

Attention type	Vaccination 1st parity sows
Separate	Yes
When	Day of week
Start date	10-09-2018 - 17:00
Day of week	Mon
Every	Week

All first parity sows pregnant for 61-67 days will be separated on Monday 10th of September from 17:00h onwards. The next separation will be on Monday 17th of September.

4.6.3.4 Check marked and separated animals

To obtain a list of separated or marked animals, proceed as follows:

1. Go to **Dashboard > Marking > Separated animals**, **Dashboard > Marking > Marked animals** or **Reports > Separation/Markings > Overview**.
2. A list of all separated or marked animals is shown:

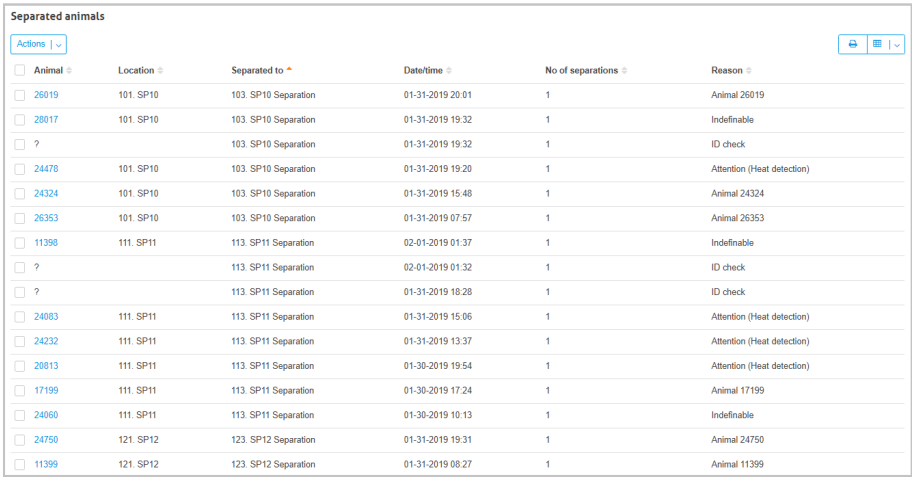


Figure 24: Separated animals

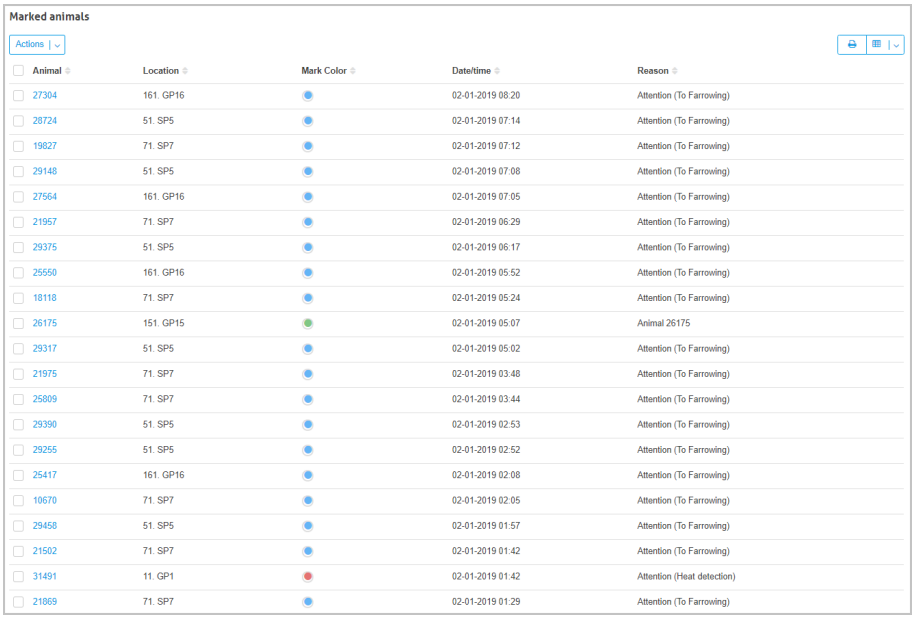


Figure 25: Marked animals

Caution
*Animals that are on the list will not be marked or separated again (unless **Repeat in separation period** is switched on). Animals that were deleted from the list will be marked or separated again if the marking/ separation rule is still active or when it is active again.*

4.6.3.5 Remove separated animals

The separated sows must be removed regularly from the separation area. Perform the following actions in the correct order:

1. Remove the sows from the separation area
2. Press the green button on the V-box of the Central Separator to clear the separation area in Velos.

Caution
Press the green button on the V-box after removing the sows from the separation area.

4.6.4 Heat Detector introduction

When the Nedap Heat Detector is placed in the lying area of a gestation section, the sows walk past the boar daily. Sows in heat visit the boar more often and longer than when not in heat. The Velos software determines the heat reference value (HRV) of each sow by the number of visits and the total visiting time. If the heat reference value reaches a certain limit (minimum heat reference value), the sow receives a heat attention.

If a spray marker is available on the Heat Detector, it can mark the sow with a heat attention with a colored spray.

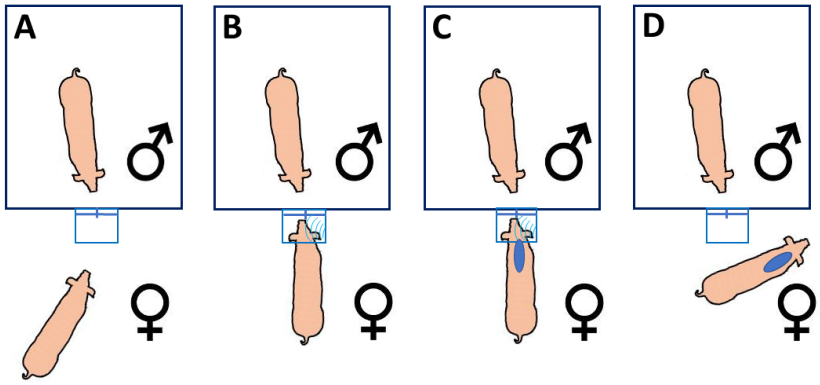


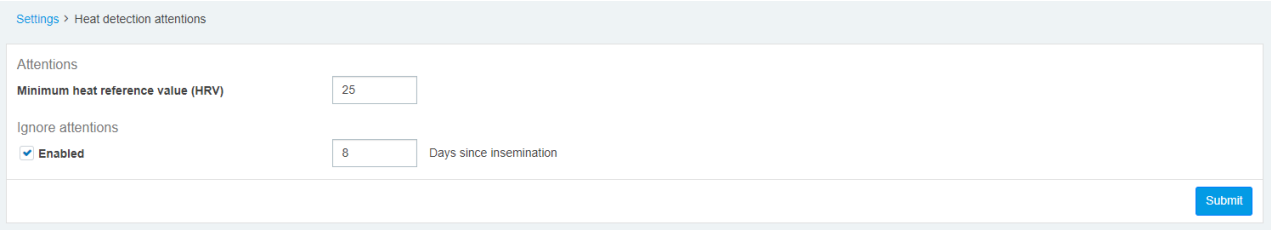
Figure 26: Heat detection principle

A	B	C	D
No animal identified	Animal identified	Animal identified	No animal identified
	HRV <= 25	HRV > 25	
	Animal not in heat	Animal in heat	Animal in heat
		Animal spray marked	Animal spray marked

4.6.4.1 Setting the minimum heat reference value (HRV)

A heat attention is generated for sows with a heat reference value (HRV) above the minimum value. The HRV setting is 25 by default, but can be adjusted:

1. Go to **Settings > Heat detection > Attentions**.



2. Adjust the minimum heat reference value (HRV) setting if necessary:

Minimum HRV setting	Result
< 25	Heat attention is generated sooner
> 25	Heat attention is generated later

3. If necessary, adjust the **Ignore attentions** setting.

The default setting enables the system to ignore heat attentions for 8 days after insemination. This is especially helpful in situations where sows are introduced to the group shortly after being inseminated, often still showing signs of heat. With the **Ignore attentions**setting these sows will be ignored, ensuring that only sows newly returned in heat will be detected.

4.6.4.2 Check animals in heat

To obtain a list of animals in heat, proceed as follows:

1. Go to **Dashboard > In Heat > Heat detection**.
2. A list of all animals in heat is shown:

The heat attention is valid for 48 hours. Therefore sows with attentions generated yesterday and today are listed.

4.7 Electronic Sow Feeding for new gilts and sows

New gilts and sows must learn to use the Electronic Sow Feeder before they are placed in a pen with sows used to feeding in the Electronic Sow Feeder.

Before gilts learn to use the Nedap Electronic Sow Feeder, they can already learn to pass through an entrance gate and exit door in the Nedap Gilt Transitioner.

See the Gilt Transitioner job aid on the Nedap Business Portal (https://www.portal.nedap-livestockmanagement.com).

Gilts and sows learn to use the Electronic Sow Feeder by opening the entrance and offering a feed portion. The side walls of the Electronic Sow Feeder can be adjusted to match the size of the animals.

See the Electronic Sow Feeder job aid on the Nedap Business Portal (https://www.portal.nedap-livestockmanagement.com).

5 Maintenance

Maintain the Nedap SowSense system according to the maintenance instructions in the installation manuals of the individual components:

- Electronic Sow Feeder
- Compact Feeder
- Central Separator
- Weight Sampler
- Heat Detector
- Spray marker (Electronic Sow Feeder, Central Separator, Heat Detector)

The installation manuals can be obtained from your dealer or on the Nedap Business portal (https://www.portal.nedap-livestockmanagement.com).

Caution

- *Always turn off the mains power supply when working on the electrical installation.*
- *Always turn off the air pressure supply when working on the pneumatic installation.*
- *Never powerwash the electrical components of the installation.*
- *Do not use corrosive and/or toxic cleaning agents.*

5.1 Electronic Sow Feeder

5.1.1 Maintenance scheme

Maintain the Electronic Sow Feeder according to the scheme below. Regular maintenance is necessary to keep the Electronic Sow Feeder in optimum condition and to maintain a stable feed supply.

Table 18: Maintenance scheme Electronic Sow Feeder

When	Part	Action	Who
After first use	Electronic Sow Feeder	Check if all bolts and nuts are secure. Tighten if necessary.	User
Weekly	Electronic Sow Feeder	Check the functioning of the whole system.	User
Weekly	Entrance door	Check the nuts.	User
Weekly	All moving parts e.g. hinges and bearings of doors	Replace damaged or worn parts.	User
Weekly	Springs and lock blocks (entrance gate)	Check and replace if necessary. See Check the essential parts of the mechanical entrance gate (page 59)	User
Weekly	Springs above doors (exit unit)	Adjust or replace if there is not enough tension.	User
Weekly	Door buffer belt (exit unit)	Tension: See Check the door buffer belt (page 55)	User
Weekly	Turning points doors	Adjust (e.g. height)	User
Weekly	Dosing cup	Position: See Check the position of the dosing cup (page 59)	User
Weekly	Bridging prevention bar (feed trough)	Remove feed that is stuck behind the bridging prevention bar.	User

When	Part	Action	Who
Monthly	Electronic Sow Feeder	Check if all bolts and nuts are secure. Tighten if necessary.	User
Monthly	Calibration auger portion weight	Regularly, especially with the delivery of new feed: See Feed calibration Electronic Sow Feeder (page 16)	User
Monthly	Check the dosed water quantity	Be sure that 40-50 ml water per 100 g feed is dosed: See Check the dosed water quantity (optional) (page 61)	User
Monthly	IR sensor (pneumatic gate)	Clean dirt from sensor. Check after replacement: See Check the IR sensor (pneumatic entrance) (page 61)	User
Monthly	Cylinder rod (pneumatic gate)	Replace damaged parts	User
Monthly	Cylinder sliding (pneumatic gate)	Lubricate: See Lubricate the cylinder sliding (pneumatic entrance) (page 62)	User
Monthly	Condensor (pneumatic gate)	Empty condensor	User
Every 6 months	Electronic Sow Feeder	Operation	User
Every 6 months	Entrance door lock (mechanical gate)	Operation: See Check the latch plate nuts (page 57) See Check the lock of the mechanical entrance gate (page 58)	User
Every 6 months	Entrance door sensor (mechanical gate)	The door sensor distance and the proximity switch position opposite of the center from the entrance door bracket: See Check the door sensor (page 55)	User
Every 6 months	Eccentric disk (mechanical gate)	The position of the eccentric disk: See Check the position of the eccentric disk (page 56)	User
Every 6 months	Entrance door sensor (pneumatic gate)	The distance between the entrance door and the proximity switch: See Check the door sensor (page 55)	User
Before each batch of new animals	Exit doors	Check the position and wearing of the shock absorber of the exit doors. Reposition or replace if necessary.	User

Warning
Cover all electronics and cylinders during cleaning.

5.1.2 Maintenance user instructions

5.1.2.1 Open the side panels

The side panels of the Electronic Sow Feeder can be removed for cleaning and maintenance purposes.

1. Secure the falling prevention cord on the side panel handle. This prevents the side panel from falling down when the side panel is removed.
2. Remove the side panel pins.
3. Take out the feed station side panels.

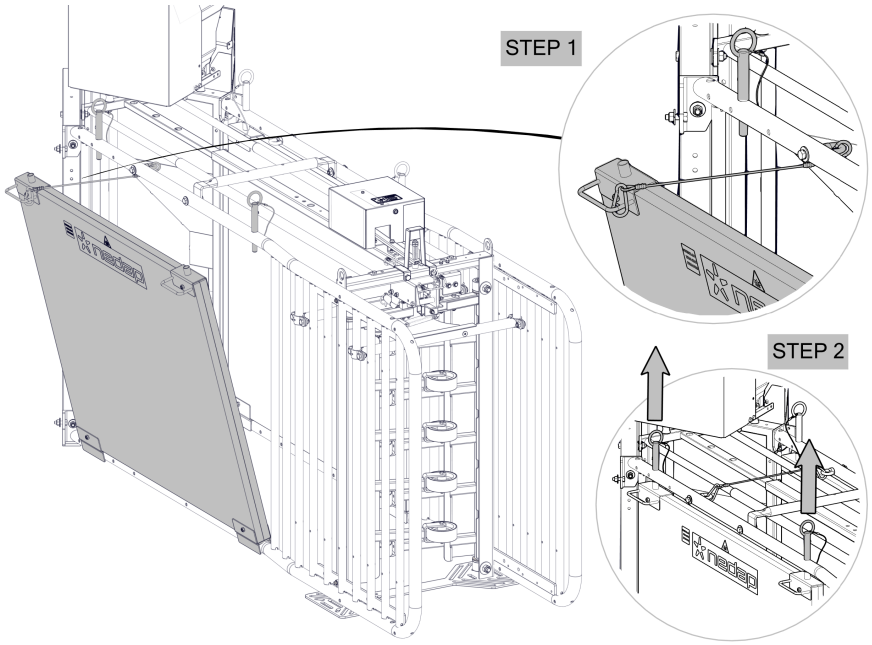


Figure 27: Secure the side panels with the falling prevention cord

5.1.2.2 Check the door buffer belt

The door buffer belt is installed to ensure a correct closure of an exit door. The door buffer belt must be checked regularly.

1. Check if the door closes at the right position. Adjust if necessary:
   a. If the door closed too tight or gets stuck, tighten the door belt.
   b. If the door doesn't close far enough, loosen the belt.

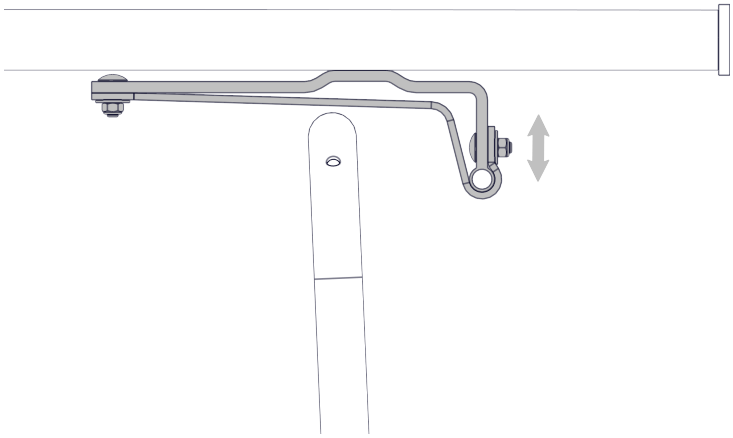


Figure 28: Door buffer belt position

5.1.2.3 Check the door sensor

The door sensor detects when a sow enters the Electronic Sow Feeder and activates the closure of the entrance gate. The door sensor must be checked regularly for proper functioning.

1. Close the door of the feed station.
2. Check the distance between the proximity switch and the detection bracket.
3. Adjust if the distance is less than 3 mm (0.12 in.) or more then 5 mm (0.20 in.).

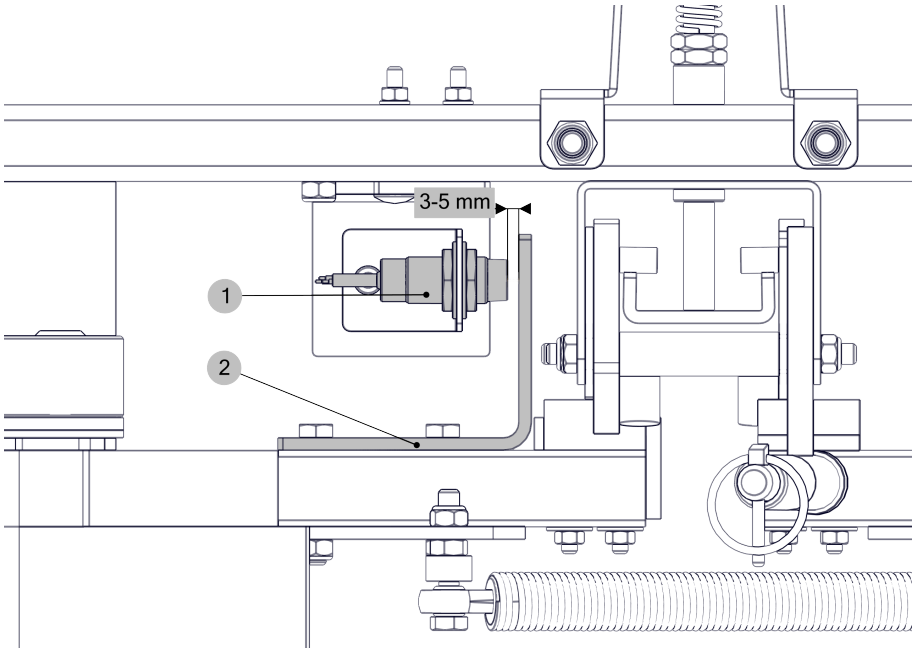


Figure 29: Mechanical entrance sensor distance (proximity switch opposite of door bracket)
1. Proximity switch *2. Detection bracket closed entrance door*

Pneumatic entrance (optional)

1. Close the door of the feed station.
2. Check the distance between the proximity switch and the door.
3. Adjust if the distance is less than 3 mm (0.12 in.) or more then 5 mm (0.20 in.).

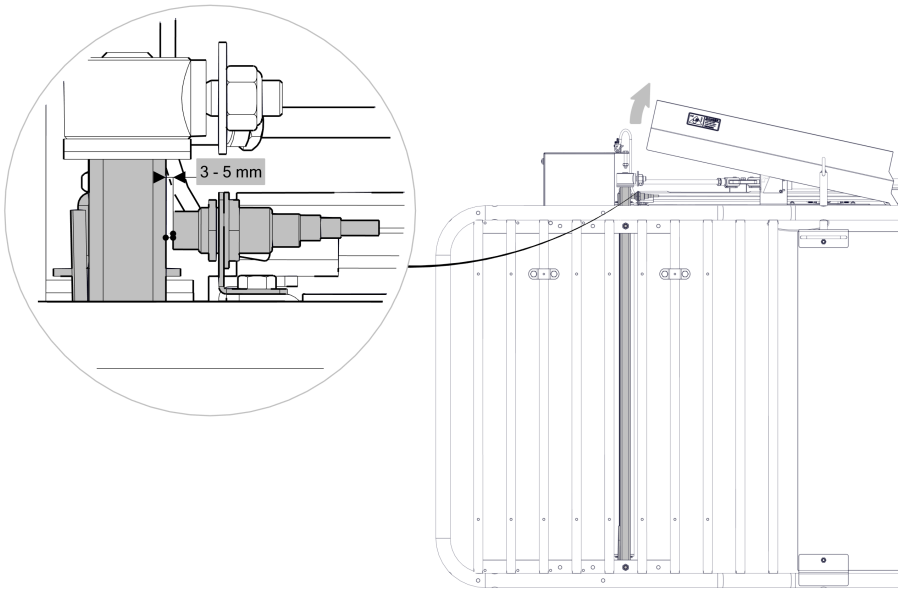


Figure 30: Check distance between entrance door and proximity switch

5.1.2.4 Check the position of the eccentric disk

1. Check the position of the eccentric disk of the Electronic Sow Feeder:
   a. **Locked position**: The broad side of the eccentric disk must be fully upwards.
   b. **Unlocked position**: The broad side of the eccentric disk must be fully downwards.

2. Adjust if necessary.

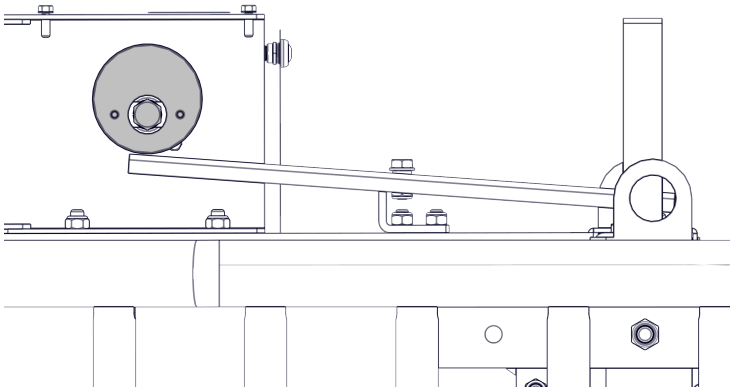


Figure 31: Locked position eccentric disk

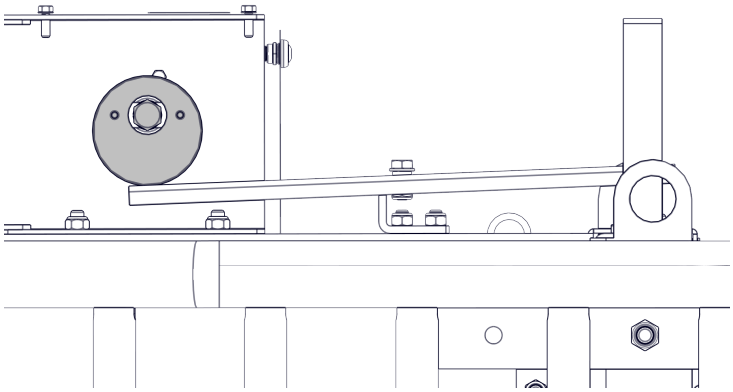


Figure 32: Unlocked position eccentric disk

5.1.2.5 Check the latch plate nuts

1. Check the 4 nuts of the latch plate:
   a. The 2 lower nuts must be tightened until the end of the screw thread.
   b. Do not change the position of the 2 upper nuts.

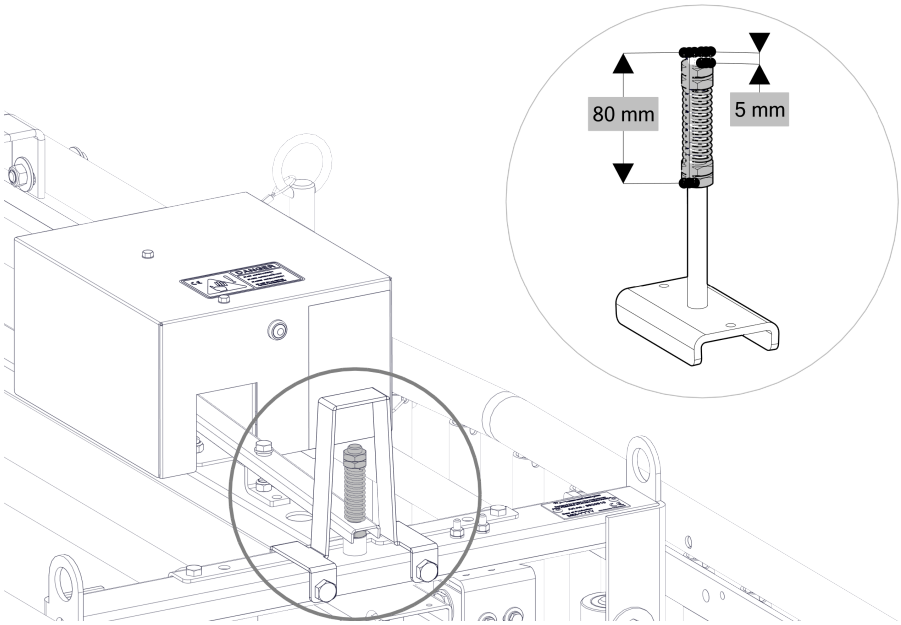


Figure 33: Check the latch plate nuts (80 mm (3.15 in.) / 5 mm (0.20 in.))

5.1.2.6 Check the lock of the mechanical entrance gate

1. Check the distance between the catch from the lock and the block on top of the entrance gate door in locked position (8-10 mm (0.31-0.39 in.) space).

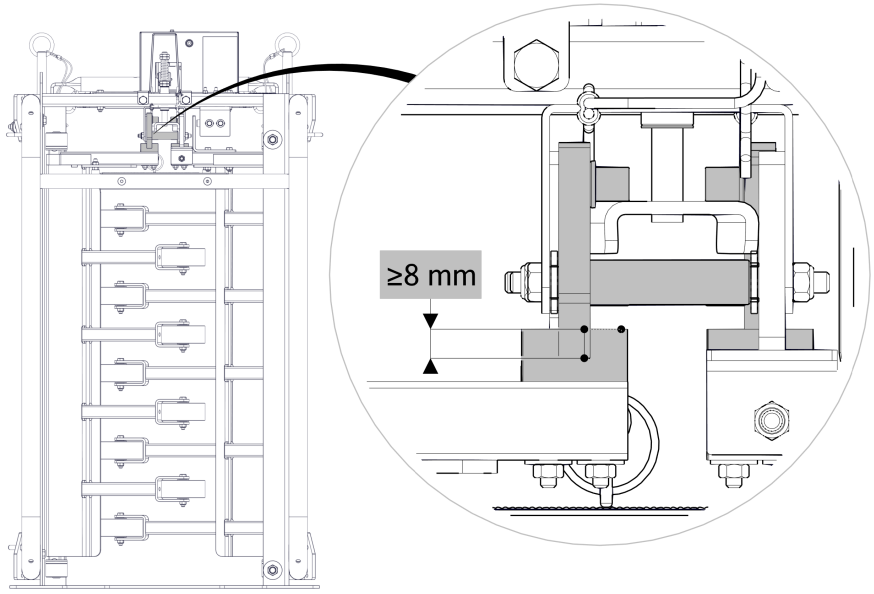


Figure 34: Check the lock

2. When the distance is not correct, replace the lock blocks on top of the entrance gate.

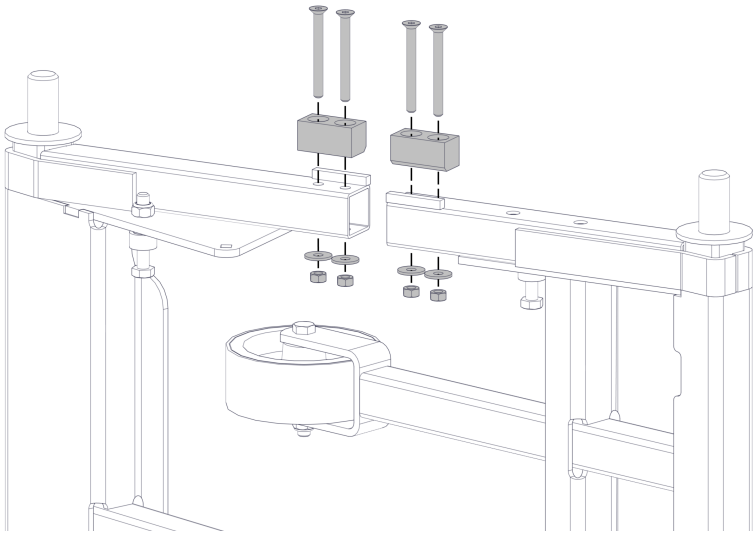


Figure 35: Replace the lock blocks

5.1.2.7 Check the essential parts of the mechanical entrance gate

1. Check the condition of the springs and lock blocks of the mechanical entrance gate regularly. They are essential for the proper functioning of the entrance gate

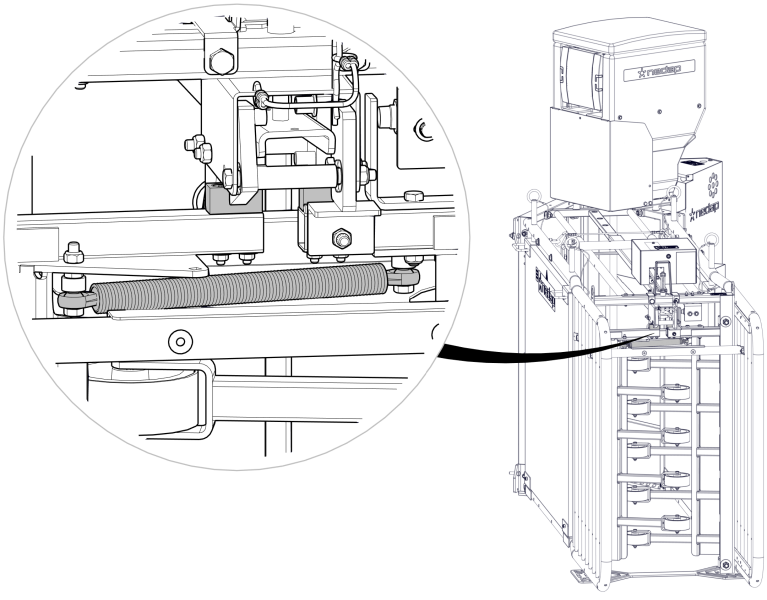


Figure 36: Check the springs and the lock blocks

5.1.2.8 Check the position of the dosing cup

Feed type 1

1. Activate output 1 of the VP1001 (see steps below) to check the position of the dosing cup:
   a. Briefly push the button four times ("it" appears in the display).
   b. Push and hold down the button until "it" blinks, then release the button.

c. Briefly push the button two times ("0-" appears in the display) .
d. Push and hold down the button until "01" blinks, then release the button

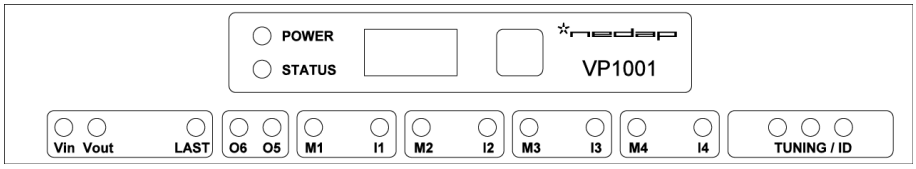
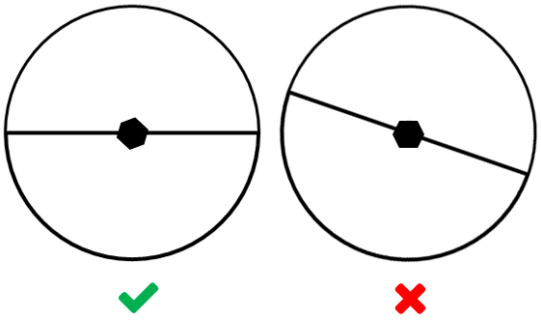


Figure 37: VP1001

The M1 LED lights up green to confirm that OUTPUT 1 is operational, the feed motor makes the cup turn.
If there is no error, "00" blinks after rotation.

e. Push the button briefly.
f. When the motor stops, the I1 LED lights up.
g. Check if the dosing cup is horizontal after rotation.



h. If the cup is not horizontal, loosen the fixing bolt and adjust the position.
i. Tighten the bolt to fix the cup in the horizontal position.
j. Repeat the procedure to check if the position of the cup is horizontal.
k. Push and hold down the button until the display goes blank to end the procedure.

Feed type 2

1. Activate output 2 of the VP1001 (see steps below) to check the position of the dosing cup:
   a. Briefly push the button four times ("it" appears in the display).
   b. Push and hold down the button until "it" blinks, then release the button.
   c. Briefly push the button three times.
   d. Push and hold down the button until "02" blinks, then release the button

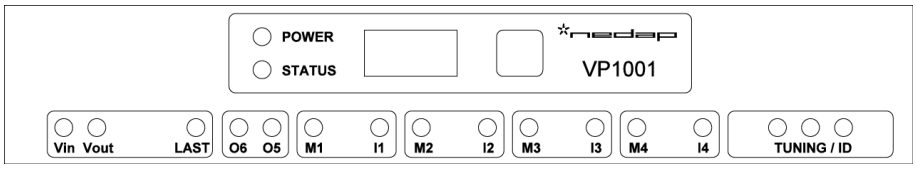
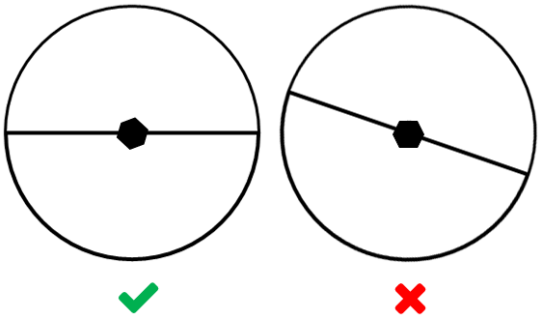


Figure 38: VP1001

The M2 LED lights up green to confirm that OUTPUT 2 is operational, the feed motor makes the cup turn.
In case there is no error, "00" blinks after rotation.

e. Push the button briefly.
f. When the motor stops, the I2 LED lights up.
g. Check if the dosing cup is horizontal after rotation.



h. If the cup is not horizontal, loosen the fixing bolt and adjust the position.
i. Tighten the bolt to fix the cup in the horizontal position.
j. Repeat the procedure to check if the position of the cup is horizontal.
k. Push and hold down the button until the display goes blank to end the procedure.

5.1.2.9 Check the dosed water quantity (optional)

Dispensing water together with each feed portion is important to facilitate the feed consumption of animals.

Make sure there is ALWAYS a water supply with sufficient capacity available.

If a water dosing set is installed in the Electronic Sow Feeder, it must be calibated

1. Obtain one water portion that is dispensed by the water dosing set in the Electronic Sow Feeder.
2. Calculate the water/feed ratio.
3. Check that the water/feed ratio meets the requirement of 40-50 ml water per 100 g feed.
4. Adjust the water pressure if necessary, following the installation instructions of the water dosing set.
5. Make sure the water pressure is stable.

5.1.2.10 Check the IR sensor (pneumatic entrance)

The IR sensor of the pneumatic entrance detects the presence of a sow in the Electronic Sow Feeder. The infrared beam of the sensor must detect at the correct height for proper sow detection.

1. Check if the IR sensor detects till 40 cm (16 in.) from the floor.
2. Adjust if necessary by turning the yellow screw on the IR sensor clockwise (to the right) until the V-pack shows a value of 0.0 on the display.

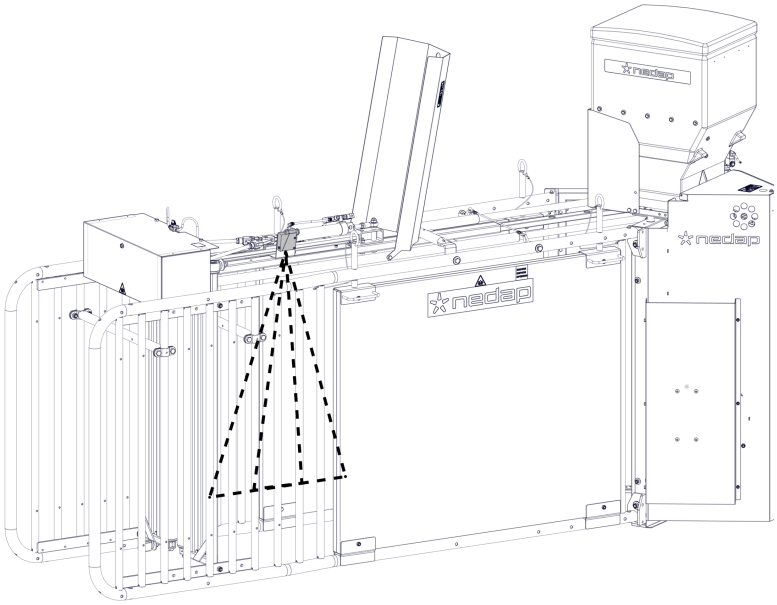


Figure 39: Set the IR sensor

5.1.2.11 Lubricate the cylinder sliding (pneumatic entrance)

The cylinder of the pneumatic entrance must be lubraticated regularly to ensure smooth opening of the entrance gate.

1. Lubricate the cylinder using a suitable lubricant.

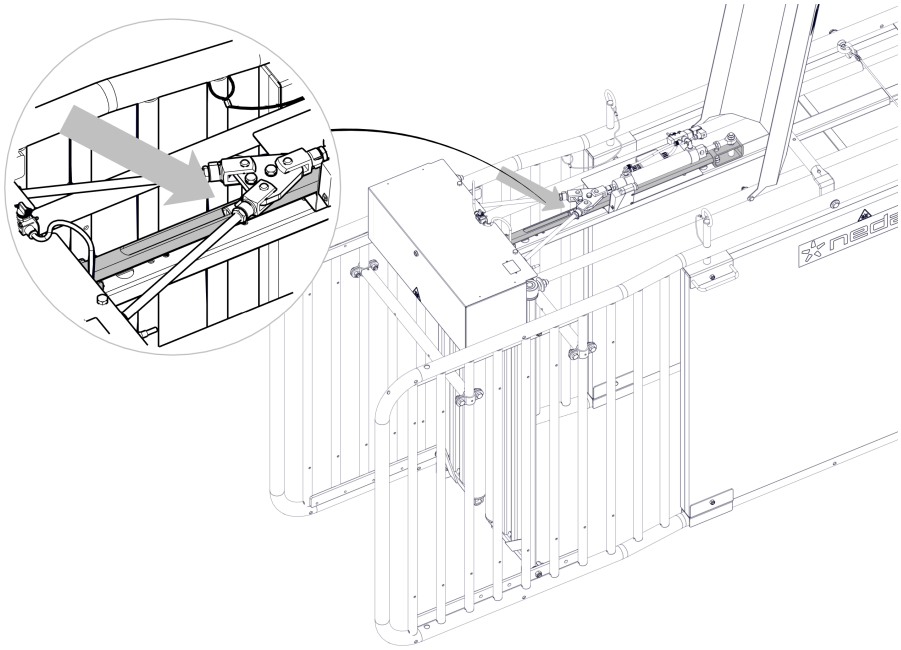


Figure 40: Lubricate the cylinder sliding

5.2 Compact Feeder

5.2.1 Maintenance scheme

Maintain the Compact Feeder according to the scheme below. Regular maintenance is necessary to keep the Compact Feeder in optimum condition and to maintain a stable feed supply.

Table 19: Maintenance scheme Compact Feeder

When	Part	Action	Who
After first two weeks of use	Compact Feeder + Activator (if installed)	Check the entire system	User
Daily	Compact Feeder + Activator (if installed)	Check the functioning of the system.	User
Monthly	Compact Feeder	Check if the Compact Feeder needs tightening	User
Monthly	Compact Feeder	Empty and clean the Compact Feeder	User
Monthly	Compact Feeder	Calibrate the Compact Feeder	User

It can be helpful to remove the auger for cleaning purposes.

Caution
Never clean the Compact Feeder with water.

5.3 Central Separator

5.3.1 Maintenance scheme

Maintain the Central Separator according to the scheme below.

Table 20: Maintenance scheme Central Separator

When	Part	Action	Who
After first week of use	Central Separator	Check if all bolts and nuts are secure. Tighten if necessary. Special attention to nuts on moving parts.	User
Daily	Central Separator	Remove dung and obstacles near the doors.	User
Weekly	Blocking of feed station entrance gates	Check if the entrance gates are blocked when the maximum number of sows in the corridor is reached.	User
Weekly	Stop separation of sows	Check if the separation is stopped when the maximum number of sows in the corridor is reached.	User
Monthly	All moving parts e.g. hinges and bearings of doors, pneumatic cylinder	Check al moving parts and tighten/adjust if necessary. Replace damaged or worn parts.	
Monthly	Springs above doors	Adjust or replace if there is not enough tension.	
Monthly	Exit door sensor(s)	Check the distance between the exit door of the Central Separator and the proximity switch. Sensor fixed firmly. See Check the door sensor (missing).	User
Monthly	ID check sensor	Check the distance between the entrance door of the Central Separator and the proximity switch. Sensor fixed firmly. See Check the ID check sensor (missing).	User
Monthly	Separation door	Check speed (separation switch) and buffering of the separation door of the Central Separator. Check the space between the wall and the separation door.	User
Monthly	Condenser of the air compressor	Empty condenser	

When	Part	Action	Who
Every 6 months	Door buffer belt (entrance and exit doors)	Check the tension of the door buffer belt of the entrance and exit doors of the Central Separator : See Check the door buffer belt (page 55)	
Every 6 months	Central Separator	Check if all bolts and nuts are secure. Tighten if necessary. Special attention to nuts on moving parts (e.g. separation door and cylinder).	User
Every 6 months	Central Separator	Check the functioning of the whole system.	User

Caution
Don't weld on separation units. This could affect their function and damage the electronics.

5.4 Weight Sampler

5.4.1 Maintenance scheme

Maintain the Weight Sampler according to the scheme below. Regular maintenance is necessary to keep the unit in optimum condition and to retain the weighing accuracy.

- *It is easier to perform maintenance if you isolate the sows first.*
- *For cleaning, remove the blue side panel and the bottom of the weighing platform.*

Table 21: Maintenance scheme Weight Sampler

When	Check	Action	Who
Daily	Check for obstructions under or against the weighing platform.	Remove obstructions if necessary.	User
Weekly	Check if the weighing indicator shows "0 kg" when there are no sows, dung or dirt on the weighing platform [1]).	Briefly push the ">T< TARE" key to set the display to "0 kg" if necessary [2]).	User
Monthly	Check for dung or dirt under the weighing platform.	Pressure wash if necessary.	User
	Check if the floor anchors are properly tightened.	First check if the Weight Sampler is level front to back and left to right. Adjust if necessary, then re-tighten the floor anchors.	User
Quarterly	Check the load cells for defects and malfunctioning.	Check the load cells according to Load cell check (page 66)	User Service Partner
	Check if the load cell bolts are properly tightened [3]).	Tighten if necessary.	User Service Partner
If necessary	Calibrate the unit.	See Calibrate the Weight Sampler (page 65)	User Service Partner

[1]) Due to environmental factors, the display may from time to time show weight values that are slightly above or below zero. This does NOT require to push the ">T< TARE" key.
[2]) Do NOT push the "ZERO" button to set the weighing indicator to 0 kg. If you do this, the unit must be re-calibrated.
[3]) The correct tightening moment for the load cell bolts is 30 Nm (22 lbf·ft.). Do NOT over-tighten the bolts to prevent damaging the load cells.

5.4.2 Maintenance user instructions

5.4.2.1 Calibrate the Weight Sampler

The Weight Sampler must be calibrated with a minimum metric weight of 180 kg ± 0.2 kg or a minimum USC weight of 400 lb. ± 7 oz. (= 181.5 kg ± 0.2 kg) before it can be used.
It must also be checked regularly to retain the weighing accuracy (see Maintenance scheme (page 64)).

Table 22: Calibration procedure

Action	Display
1. Push and hold the "I" and the "ƒ" keys of the weighing indicator at the same time until "Full SEtuP" appears in the display, followed by "bUiLd".	"Full SEtuP". "bUiLd".
2. Push the" >0< ZERO" key twice.	"CAL".
3. Push the ">T< TARE" key once. *Check if the weighing platform is empty, clean and free from obstacles on, under or against it.*	"ZErO".
4. Push the "ƒ" key twice.	"Z in P", followed by "0 kg". *This is the 0 kg calibration level of the weighing platform.*
5. Push the ">0< ZERO" key once	"CAL"
6. Push the ">T< TARE" key twice.	"SPAN".
7. Push the "SELECT" key once.	"00300.0 kg" (or another number) blinks in the display.
8. Push the "ƒ" key once.	The first digit blinks.
9. Enter the calibration weight that is going to be used. a. Push the "PRINT" key to edit the first digit. b. Push the "SELECT" key to go to the next digit. c. Repeat steps a and b until "00180.0 kg" or "00181.5 kg" is shown in the display.	"00180.0" ("00181.5 kg" when 400 lb. is used) must become visible in the display.
10. Put a total metric weight of 180 kg ± 0.2 kg or a USC weight of 400 lb. ± 7 oz. (= 181.5 kg ± 0.2 kg) evenly distributed on the weighing platform. *A known metric weight of 180 kg ± 0.2 kg or a known USC weight of 400 lb. ± 7 oz. (= 181.5 kg ± 0.2 kg) MUST be used for calibration, otherwise the weighing accuracy is too small to obtain dependable results.*	"00180.0" ("00181.5 kg" when 400 lb. is used)
11. Push the "ƒ" key once to set this calibration level for the Weight Sampler.	"S in P".
12. Push and hold the "I"and the "ƒ" keys at the same time until "SAvinG" appears in the display and a beep sounds. *The calibration settings are now stored.*	"SAvinG".
13. Remove the calibration weight. The display should now show "0.0 kg".	"0.0 kg".
14. The Weight Sampler is now ready for use.	

- *The weighing indicator only displays kilograms.*
- *Push the ">T< TARE" key to set the weighing indicator to zero (0 kg) if any number shows in the display when the weighing platform is clean and empty.*
- *If you push the ">0< ZERO" key by accident, the unit must be re-calibrated as described in the procedure above.*

5.4.2.2 Load cell check

If the weighing indicator shows an E2000 error, Velos will generate a system attention. This means that one or more of the load cells are malfunctioning and need to be checked.

If no system attention is shown but you suspect that one or more load cells are defective or disconnected, also perform the test procedure described below.

1. Put a calibration weight (20 kg, for example) on one of the corners of the weighing platform and check the weight in the display.
2. Remove the weight and check if the display returns to 0 kg.
3. Move the weight to the next corner and check if the weight in the display is equal to the weight of step 1.
4. Repeat step 1 to 3 until all 4 corners are checked.
5. The corner that shows a deviation in weight is the corner with a malfunctioning load cell.
6. Check the wiring of the suspected load cell and fix if possible.
7. Check the outside of the suspected load cell for visual damages and replace if necessary.
8. Recalibrate the Weight Sampler (see Calibrate the Weight Sampler (page 65)).
9. Repeat step 1 and 2 for the corner with the suspected load cell.
10. If the deviation reoccurs, disconnect the weighing frame from the load cell.
    The load cell needs to hang freely without any load.
11. Run the test menu on the weight indicator:

Table 23: Test menu

Action	Display
1. Push and hold the "I" and the "ƒ" keys of the weighing indicator at the same time until "Full SEtuP" appears in the display, followed by "bUiLd".	"Full SEtuP" "bUiLd"
2. Push the" >0< ZERO" until "tESt" appears in the display.	"tESt"
3. Push the "ƒ" (OK) key once. "SCALE" appears in the display.	"SCALE"
4. Push the "ƒ" (OK) key once. The test value appears in the display.	

12. Read the test value (in mV/V) in the display:

Table 24: Test results

Test value	Action
< -0.04 or > 0.04	The load cell is defective and needs to be replaced
> -0.04 and < 0.04	The load cell needs to be re-calibrated.

13. If necessary, replace the defective load cell.
14. Connect the weighing frame to the load cell(s).;
15. Recalibrate the Weight Sampler (see Calibrate the Weight Sampler (page 65)).

5.5 Heat Detector

5.5.1 Maintenance scheme

Maintain the Heat Detector according to the scheme below.

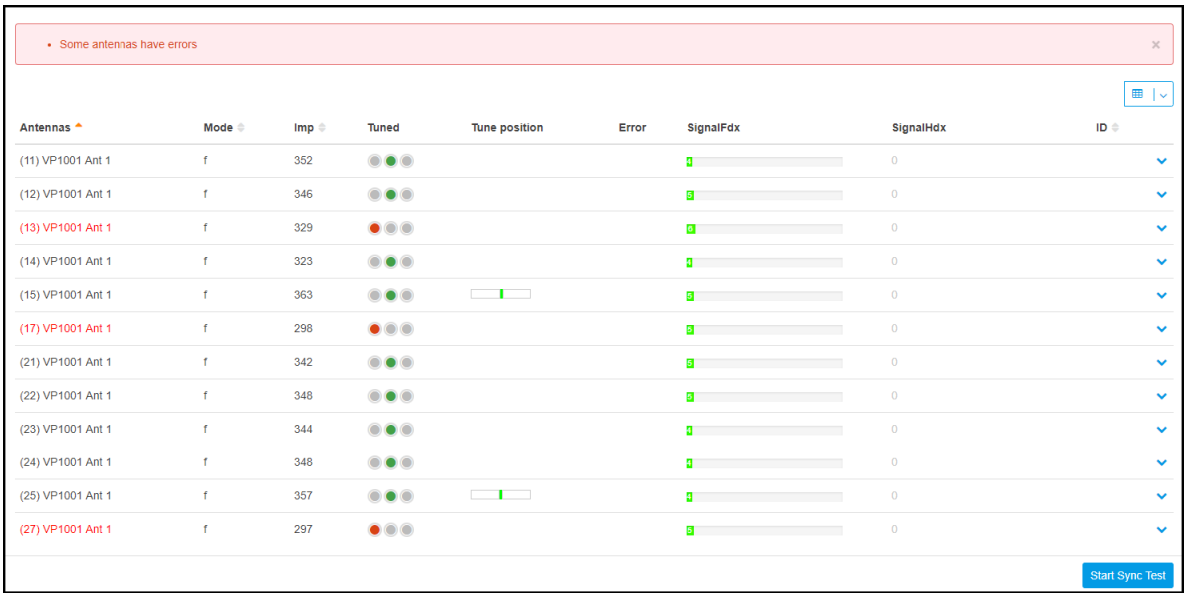
Table 25: Maintenance scheme Heat Detector

When	Part	Action	Who
Weekly	Antenna	Check the tuning of the antenna (see Tune the antenna (page 67))	User

5.5.2 Tune the antenna

To tune the antenna , follow the procedure below.

1. Go to **Maintenance > Identification** and select the correct VPU.
   A list of all antennas connected to the VPU is shown. Antennas that need to be tuned are displayed in red.



2. Go to the Heat Detector that needs tuning.
3. Remove the cover of the V-box on the Heat Detector.
4. Check the Tuning LEDs on the VP1001:

   Caution
   Tune the antenna with the orange adjustment tool that is delivered with the Heat Detector.

Tuning LEDs on VP1001	Description	Action
○ ● ○	Green on	Antenna tuning OK: No action needed
● ○ ○	Left red on	Antenna out of range: Turn the trimmer on the antenna to the right till the green LED is on
○ ○ ●	Right red on	Antenna out of range: Turn the trimmer on the antenna to the left till the green LED is on
● ○ ●	Red blinking	No antenna connected or low antenna signal: Check the antenna connection.
○ ○ ○	All off	Antenna switched off by the software: Go to **Settings > Identification** and select the correct VPU and antenna. Select the [On] box.

5.6 Spray marker

Spray markers can be mounted on the Central Separator, Heat Detector or Electronic Sow Feeder.

5.6.1 Maintenance scheme

Maintain the spray marker according to the scheme below. Regular maintenance is necessary to keep the spray marker in optimum condition.

Table 26: Maintenance scheme spray marker

When	Part	Action	Who
Weekly	Spray marker	Operate with test button	User
Every 6 months	Spray marker reservoir and hoses	Clean with clean water	User
Not going to be used for a long time	Spray marker	Clean the reservoir, pump, hoses and nozzle with clean water and fill the system with water to prevent drying out	User

6 Troubleshooting

6.1 System attentions

If an Electronic Sow Feeder, Compact Feeder, Weight Sample, Heat Detector or Central Separator is not functioning correctly, a system attention (alarm) is displayed in Velos. The blue light on the VPU will also flash.

1. In Velos go to **Dashboard > System attentions** to check the malfunction.
2. Check the cause of the system attention and solve the malfunction. For malfunctions concerning a SowSense unit, refer to the chapter "Troubleshooting" in the Installation manual of the unit.
3. Remove the system attention after having solved the problem.
4. Call your Service Partner if you are unable to solve the malfunction.

6.2 I cannot find my VPU in Windows Explorer

There are several ways to find the VPU besides Windows Explorer. Use the push button on the VPU (VP8001 or VP8002), or find your VPU with the online tool *Find my VPU*.

Find the VPU with the online tool

1. In your Internet browser, type *nedap-bi.com/find_my_vpu*.
2. All VPUs of the network are displayed. It can be just 1 VPU (VP8001 or VP8002), or multiple VPUs.
3. Click on the IP address of the VP8001 or VP8002 that is your VPU. The login window for Nedap Velos appears.
4. Log in with your username and password and click on **Login**.

Find the VPU with the push button

1. Open the V-box of the VPU (VP8001 or VP8002) and remove the cover.
2. Briefly push the button on the VPU (see **—>**). "iP" appears in the display, followed by the IP address.

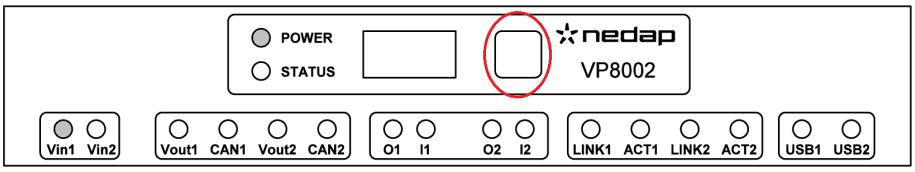


Figure 41: Position of push button (same position for VP8001)

3. Write down the numbers shown in the display, for example 192.168.1.41.

   When the IP address is 169.254.1.1 there is no connection to the router. If this is the case, check the wiring.

   The "." is shown in the display as "–".
   You can verify the address by briefly pushing the button again.

4. Open the internet browser and type the IP address. The login window for Nedap Velos appears.
5. Log in with your username and password and click on **Login**.

7 Glossary

Term	Description
Behavior component	The behavior of a standard hardware component and / or the total management system, set by Velos software.
CAN (bus)	Controller Area Network. A standard serial bus to connect electronic controllers.
Control unit	Box with the VP1001 or VP1007 to control a SowSense unit. Optional a VP3001 for spray marking.
Entrance gate	Gate of the Electronic Sow Feeder where the pigs enter the feeding station.
Feed curve	Specification of the daily amount of feed supplied per sow in a specific part of the production cycle, e.g. gestation
Feed hopper	Buffer of feed
Feed plan	Specification of the feed types and feed curves for a group of sows in the same lifecycle, e.g. 5th parity sows
EID	Electronic Identification
Switch	Device that connects the VPU(s) to a PC (LAN)
V-box	Housing for V-packs
V-pack	VP
VP1007	Reader Input/Output controller
VP2001	Power supply (25 Vdc, 2x 4 A)
VP3001	Reader Input/Output controller (optional for spray marking)
VP8001	Velos Processing Unit (VPU/VP8001)
VP8002	Velos Processing Unit (VPU/VP8002)
VPU	Velos Processing Unit (VPU/VP8001 or VPU/VP8002)
Velos CAN cable	Shielded 5 + 2-pole communication / power cable to connect VPUs and V-packs.
Velos software	Nedap software to control the system.

8 Appendix

8.1 Attach the EID tags

Gilts and sows must be tagged with an Electronic Identification (EID) ear tag a few days before the learning phase in the Electronic Sow Feeder starts.

Preparation

1. Write down the animal number on the male part of the tag.
2. Register the EID tag in Velos:
   a. Select **Add animal** on the V-Scan hand-held reader.
   b. Click **Ok**.
   c. Press the scan button on the handheld and scan the female EID part of the tag.
   d. Enter the animal number and click **Ok**.
   e. If required enter the:
      - Birth date
      - Group number
      - Location number

Tagging

1. Depress the spring clip.
2. Insert the female EID part in the tagger.
3. Slip the male part completely on the clipping tool.
4. Disinfect the entire tag by dipping or spraying with desinfectant solution.
5. Attach the EID tag in the middle of the right ear of the animal.

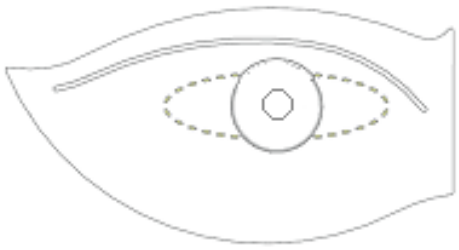


Figure 42: Correct tag placement

Caution

- *Remove old/defective EID tags from the ear.*
- *Always attach the ear tag in a new hole.*
- *Inspect the tag to check if it is attached correctly and with sufficient space between the tag and the ear for proper healing.*
- *Make sure that only one EID is attached in the sow's ear.*

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