



**JH MiniStrø PRO-Control  
Manual - Owner  
English**



## Foreword

### Dear Customer

Congratulations on your purchase of our new JH MiniStrø PRO-Control.

JH Agro A / S works systematically to ensure a high user-friendliness when operating the JH MiniStrø PRO-Control.

This manual contains information that is important for correct and safe use.

Please read this manual carefully before using the JH MiniStrø PRO-Control.

The manual is structured in such a way, that the detailed information flow is provided in the order in which you would need it.

This manual describes the current version of the JH MiniStrø PRO-Control. JH Agro A/S reserves the right to change and improve on both manual, design and construction of the JH MiniStrø PRO-Control without any obligation to update such changes on previously supplied products.

Our mission is to develop, produce and sell technical solutions for agriculture, which provides both added value and environmental value for the individual farmer.

We therefore hope that you will be satisfied with your new JH MiniStrø PRO-control.

Enjoy.

Kind Regards

JH Agro A/S



Lars Rahbæk  
CEO

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## Product data

<b>Name</b>	JH MiniStrø PRO-Control
<b>Version</b>	2.2.334
<b>Content - Hardware</b>	Touch screen in a Heavy-duty edition.
<b>Content – Software</b>	The software platform is based on Windows 10. To access the program remotely, you must install either TeamViewer or Google Chrome Remote Desktop. This installation is NOT a standard part of the JH MiniStrø Pro-Control.
<b>Dimensions</b>	JH MiniStrø PRO-Control 400: H300xW400xD135 (mm). JH MiniStrø PRO-Control 600: H300xW600xD135 (mm).
<b>Maintenance</b>	Windows 10 automatically updates Windows. Updates to the program part of JH MiniStrø PRO-Control can be purchased as needed.
<b>Cleaning</b>	Wipe over with a moist hard-wrung cloth. The control is NOT waterproof, therefore do not use a jet cleaner (high-pressure washer) or likewise for cleaning.
<b>Guarantee</b>	According to applicable Danish legislation.

## Safety rules and guidelines

<b>Touchscreen</b>	The screen is a Touch Screen. Therefore, only use fingers to operate the screen, no tools, pens or sharp objects.
<b>Cleaning / repairs</b>	<b>Never</b> clean and / or carry out repair work on the control unit without the main isolator being switched off and locked.
<b>Fuses Never</b>	<b>Never</b> install fuses with a higher rating in the electrical installations than what is specified and installed from the manufacturer.
<b>Electrical installations</b>	Electrical installations and electrical repairs <b>must</b> be carried out by an authorized electrician or an authorized JH Agro service technician.
<b>Service inspection on JH MiniStrø</b>	Routine service inspection is carried out once a year. This is important, as failure to comply can lead to operational shutdown and cause personal injury. For all service inspections, the power must be disconnected. Contact your JH MiniStrø supplier for a service inspection and agreement.
<b>Changes to the control</b>	Modification of the control and associated installations may only be done by authorized personnel by the supplier who can assess whether the change complies with the requirements of the EU Machinery Directive and, if necessary, can draw up an EU declaration of conformity.
<b>Batteries</b>	Replaced batteries <b>must</b> be disposed of properly, at a public approved recycling- or destruction facility.

## Features



	JH MiniStrø Basic-Control	JH MiniStrø PRO-Control
Control of lanes and starting times	√	√
10" touch screen		√
Remote control via PC / tablet / smartphone		√
Possibility of changing zones		√
Weight management (extra cost)		√
Mail on alarm		√
Motor running hour counter reset functionality		√
Easy reeboot function (Updating Windows)		√
Improved "switch on way back" option		√
Extended filling time		√

## User Manual

## Main Screen – Start-up (screenshot 1A)

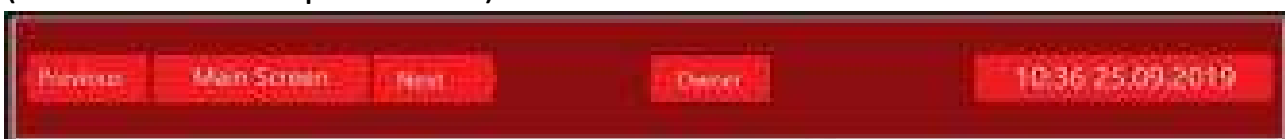


This is the first screen you see, when the system is on and ready for instruction input.

Here you can:

- Choose to access the program either as "Owner" or "User".
- Start up JH MiniStrø.

## Main Screen – Start-up (screenshot 1A – part 1 of 3)



- **The fields "Previous" and "Next"**

Switch between the previous or the next page. Only when the JH MiniStrø program is set on "Stop".

- **The field "User" / "Owner"**  
Choose whether you want to access the program as "User" (almost always advised) or as "Owner" (for super user or technician).  
This manual addresses the "Owner" (super user/technician).
- **The "Time and date" field**  
Displays the current time and date (follows the time registration from your Windows program).

## Main Screen – Start-up

(screenshot 1A – part 2 of 3)



- **The "Queue" field**  
Will be empty on this page.
- **The "Status" field**  
Will be empty on this page. However, battery voltage can be read.

## Main Screen – Start-up

(screenshot 1A – part 3 of 3)





- **The "Alarm log" field**  
Displays whether there is a current alarm.
- **The "Start" / "Stop" field**  
To start the JH MiniStrø, press "Start". The JH MiniStrø now starts to feed/spread according to the programmed plan.  
To stop the JH MiniStrø, press "Stop".  
To operate the JH MiniStrø manually, JH MiniStrø must be set in "Stop" mode.  
**IMPORTANT!** If you press "Stop", the JH MiniStrø stops its activity and must then be manually reset and returned to "Home". See ([screenshot 7A – part 2 of 2](#)).
- **The "Reset"**  
Used for resetting the JH MiniStrø. You can reset the JH MiniStrø wherever it is, but always after reset, you must manually return it to "Home". See ([screenshot 7A – part 2 of 2](#)).

## Main Screen – Operation (screenshot 1B)

The screenshot displays the JH MiniStrø Main Screen interface. At the top, there are navigation buttons: 'Previous', 'Main Screen', 'Next', and 'Change'. The date and time '10:45 25.09.2019' are shown in the top right corner.

The main content area is divided into three sections:

- Queue:** A table listing tasks with columns for #, Route, Start Time, Status, and Action.
 

#	Route	Start Time	Status	Action
1	#1	11:00	Waiting	Start Cancel
10	#2	12:00	Waiting	Start Cancel
11	#1	Manual	Waiting	Start Cancel
12	#2	Manual	Waiting	Start Cancel
13	#1	Manual	Waiting	Start Cancel
- Status:** A panel showing various system status indicators such as 'Alarm Status', 'Active Route', 'Current Job', 'Current Motor', 'Speed', 'Engine Status', 'Fuel Status', 'Fuel Level', 'Fuel Filter', 'Fueling Status', 'Fuel Pressure', 'Total Oil Pressure', and 'Speed'.
- Alarm Log:** A table listing alarm events with columns for Time, Alarm Name, Status, and Action.
 

Time	Alarm Name	Status	Action
10:39 25.09.2019	Lost connect with Right plate	Active	Reset
10:42 25.09.2019	Lost connection with panel PC. No response	Active	Reset
10:42 25.09.2019	Lost connect with Drive motor 1. Connect Right plate	Active	Reset

On the right side, there are two large buttons: 'Stop' (red) and 'Pause' (blue).

This is the page you see, when you have pressed "Start" on the Start-up screen.

Here you see the status of the tasks that are in progress and a status of the tasks that are in queue to be executed and / or whether there are any alarms on the system.

Here you can:

- Get an overview of the current status of your system.
- Start or stop a scheduled feed / spread.
- Reset an alarm.
- Completely stop the JH MiniStrø (must be restarted manually).
- Pause the JH MiniStrø.

## Main Screen – Operation

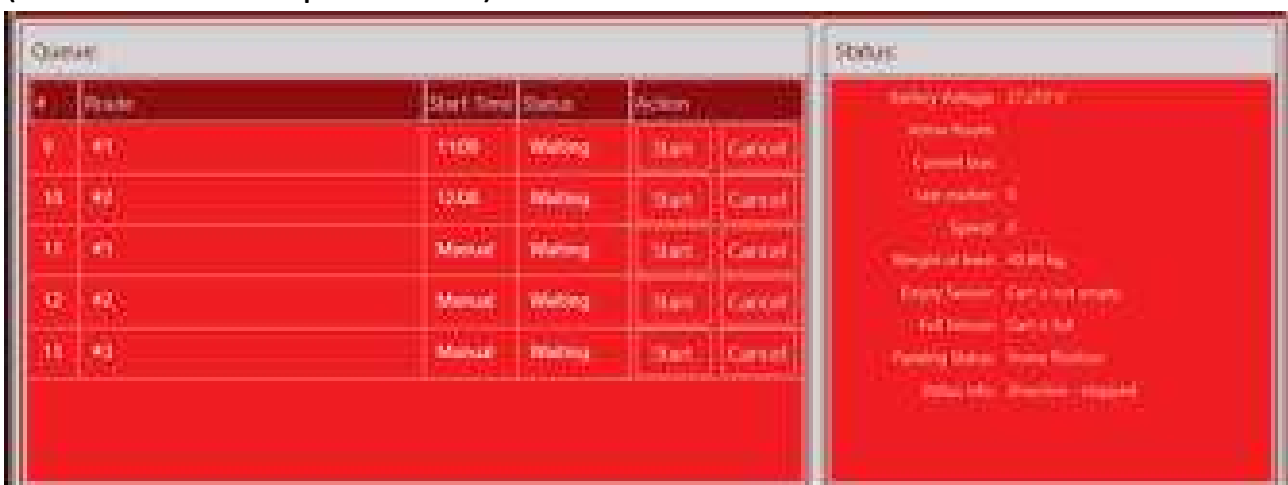
(screenshot 1B – part 1 of 3)



- The fields "Previous" and "Next"**  
 Switch between previous or next screen. Only when the JH MiniStrø program is set on "Stop".
- The field "User" / "Owner"**  
 Choose whether you want to access the program as "User" (if you are a regular user of the system) or "Owner" (if you are a super user or technician).  
 This manual addresses the "Owner" (super user/technician).
- The "Time and date" field**  
 Displays the current time and date (follows the time registration in your Windows program).

## Main Screen – Operation

(screenshot 1B – part 2 of 3)



- The field "#" (route no.)**  
 Here you can see which route JH MiniStrø is currently running or which route(s) it will be running later.  
 In this screenshot, the JH MiniStrø is currently in waiting position for route no. 1 and 2 to start respectively at 11 and 12 o'clock. 3 Manual routes are in waiting, and can be used when needed.
- The "Route" field "**  
 Shows which route and in which barn the JH MiniStrø is programmed to run.  
 If you wish to change, add or permanently delete a route: See [screenshot 2 – part 2 of 2](#)).

- **The "Start Time" field**

Indicates the time of the trip the JH MiniStrø is currently running as well as the time for the remaining scheduled trips during the day. If one or more "Manual" trips have been created on this screen, you can, manually run an extra trip with the JH MiniStrø. If you want to make changes to "Start Time", see ([screenshot 4 – part 2 of 2](#)).

- **The "Status" field**

Here you can see whether the JH MiniStrø is in operation (running) or if the JH MiniStrø is in waiting position to get started.

- **The "Start" field**

If you want the JH MiniStrø to run an EXTRA trip NOW, press "Start". This will NOT affect the existing programmed tours.

- **The field "Cancel"**

The activity is stopped, the JH MiniStrø returns home and this trip disappears from the screen. "Cancel" can only be used once the route HAS started .

- **The "Status" Field**

Here you can see:

**Battery voltage:** Must be between 24 – 28 V.

**Active route:** When the JH MiniStrø is "in activity", the current running route can be seen here.

**Current box:** When the JH MiniStrø is "in activity", it shows here which box or area it is running in.

**Last marker:** When the JH MiniStrø is "in activity", you can see which marker the JH MiniStrø has passed last. Showing how far it has come on its route and what orders it last received.

**Speed:** Indicates the speed of the JH MiniStrø, shown in percent from 1- 100%. Be aware that the JH MiniStrø sets the speed gradually up / down in connection with start / stop.

**Weight of feed:** Shows the actual JH MiniStrø load in kg. (Weighing module is optional).

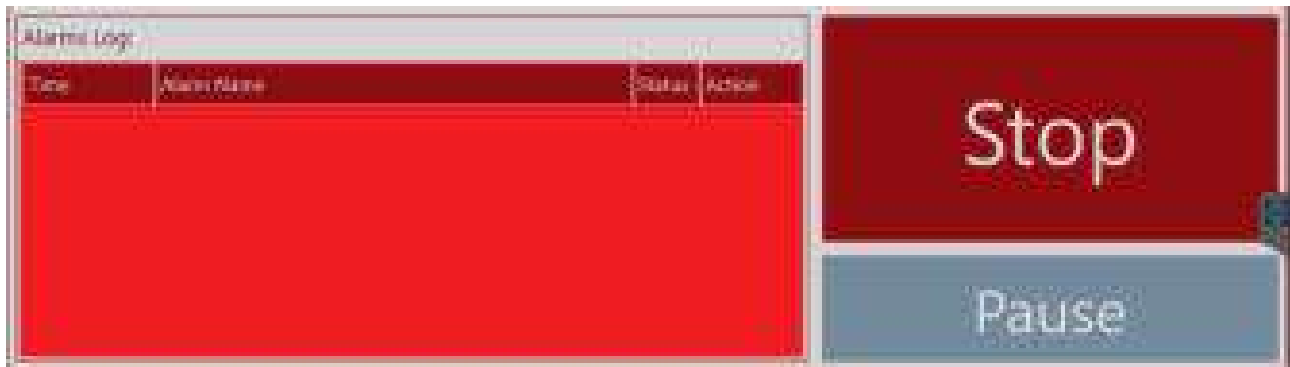
**Empty sensor:** Registers if the cart is empty or not empty.

**Full sensor:** Registers if the cart is full or not full.

**Feeding status:** Here you can monitor what the JH MiniStrø is currently doing: For example; Moving forward, feeding, returning home or has an alarm etc.

**Status info:** Here you can see in which direction the JH MiniStrø is currently moving. Is it running forward, backward or has stopped.

## Main Screen – Operation – No Alarm (screenshot 1B – part 3 of 3)



- **The field "Alarms log"**  
When the field is empty, JH MiniStrø runs as planned.
- **The "Stop" field**  
If you press "Stop", all operation stops. To resume operation, JH MiniStrø must be manually returned to "Home" and restarted. See ([screenshot 7A – part 2 of 2](#)).
- **The "Pause" field**  
If you press "Pause", the operation will temporarily stop wherever the JH MiniStrø is situated. The field now reads "Resume". When you want to resume operation, press "Resume" and the JH MiniStrø will continue the planned activity. In the "Pause" field is also the option of switching to manual. See ([screenshot 7A – part 2 of 2](#)).

## Main Screen – Operation – With Alarm (screenshot 1B – part 3 of 3 with alarm)



- **The field "Alarms log"**  
Here you can see any current alarms.
- The alarm describes the error type and in most cases, you can correct the error yourself. Once the error has been identified and rectified, press "Reset" and the alarm will disappear. Now the JH

MiniStrø will resume its original program. The most frequent alarms are listed below. If you receive alarms in addition to these, please contact an internal JH Agro technician.

- **Common alarms**

Error	ID	Description	Remedying / solution
Lost connection with one or more motors.	122	One or more motors or motor controls cannot be registered in the control system.	Check the function of the motors and the motor controls. Check the motor control fuse.
Emergency stop button registered as pressed.	124	The safety circuit has been interrupted due to an emergency stop.	Check that all emergency stops are functional and safety circuits are closed.
Fail to fill	162	JH MiniStrø has not registered a full cart following maximum filling time	Error at hopper is remedied. Reset error enables to resume filling. Maximum filling time is automatically reset.
Lost connection with panel PC	253	Internal communication error.	Reset the error, press "Stop" and then "Start" again. If error persists, switch off and on, on the main switch.
Marker home calculation error	299	The system detected an error in counting markers and stopped. At "Marker home calculation error", the error is first detected as the machine returns home and will therefore not cause a stop, but is merely a warning.	Check if the route is correctly programmed according to the number of markers. Check if any marker has fallen down.
Low battery voltage	302	The battery voltage is low and the cart will, as far as possible, automatically move to the charging station.	Charge battery. Check that charging is in progress. (see charging voltage in manual control, should be over 24 Volt)
Critical battery voltage	303	The battery voltage is very low. The cart will stop completely and cannot be used. Touchscreen / PC may be set to also turn off.	Remove batteries and connect them to an external charger.
Motor overload	306	Motor protection has disengaged the motor to prevent motor damage.	Check if something is caught in the propulsion motor, spreading discs, bearings or bottom chain. Reset errors to resume trip if possible, otherwise the machine must be returned to home position.

Rail switch error	340	Communication with rail switch control failed. Rail switch has not shifted.	Check the power supply to the rail switch. Visually check that both the antenna for the JH MiniStrø control box and the antenna for the rail switch control box are OK.
RM check in/out error	365/367	Error in checking-in / - out in the rail switch zone.	The rail switch zone is blocked by another JH MiniStrø machine. Remedy the error and reset the rail switch zone by manual control.
RM error	368	RailMaster fault report. Rail switch has not shifted.	Check the function of the rail switch. Check the power supply to the rail switch.
RM load standalone rail switch error	373	Rail switch has not shifted.	Check for mechanical error on the rail switch.
RM route blocked	377	JH MiniStrø has asked for permission to enter a route blocked by RailMaster.	RailMaster must be reset. See ( <a href="#">screenshot 31 – part 2 of 2</a> )
RFID error.	571	JH MiniStrø has not been able to read a correct RFID tag at the correct marker.	Check that the RFID tag is working and that JH MiniStrø is at the correct marker. Also, make sure the RFID tag has the correct ID number entered in the route.

## Routes

(screenshot 2)

Route #	Route Description	Number Of Rows	Status	Operations
1	Shade T	1	Active	Disable Edit Delete
2	Shade 1	2	Active	Disable Edit Delete
3	Shade 1	1	Inactive	Disable Edit Delete

Create New Route

Here you can deactivate, change or delete previously created and programmed routes.  
Here you can also create new routes.

Here you can:

- Get an overview of programmed routes as well as the status of whether the route is active or inactive.
- Deactivate or activate a programmed route.
- Program JH MiniStrø to create, change or permanently delete a route.



## Routes

(screenshot 2 – part 1 of 2)



- **The fields "Previous" and "Next"**  
Switch between previous or next screen. Only when the JH MiniStrø program is set on "Stop".
- **The field "User" / "Owner"**  
Choose whether you want to access the program as "User" (if you are a regular user of the system) or "Owner" (if you are a super user or technician).  
This manual addresses the "Owner" (super user/technician).
- **The "Time and date" field**  
Displays the current time and date (follows the time registration from your Windows program).

## Routes

(screenshot 2 – part 2 of 2)



- **The "Route" field**

Here you can see the number of routes JH MiniStrø runs per day.

- **The "Route Description" field**

The name of the route. This will typically be described according to the barn or area in which the route is running.

If you want to change the name of the route, press directly on the name to change.

- **The field "Number of Boxes"**

Here is shown the number of areas (boxes) the JH MiniStrø will be spreading/feeding for each route. If you want to change the number of boxes in the route, press the "Edit" field.

- **The "Status" field**

Here you can see if the individual route is active or inactive.

If you want to change the status of a route, access the adjacent fields found under the field "Operations".

- **The field "Operations"**

**Disable/ Enable:** Here you can enable or disable a programmed route.

**Edit:** Here you open for the module where you can make all the changes for the programmed route.

**Delete:** Here you delete a programmed route permanently. NB! Please note that pressing "Delete" will delete the route without further notice. If you have deleted a route by mistake, you can always create a new. Press the field "Create New Route" in the lower right hand corner of the screen and follow the instructions.

- **The field "Create New Route"**

To create a new route, you press this field.

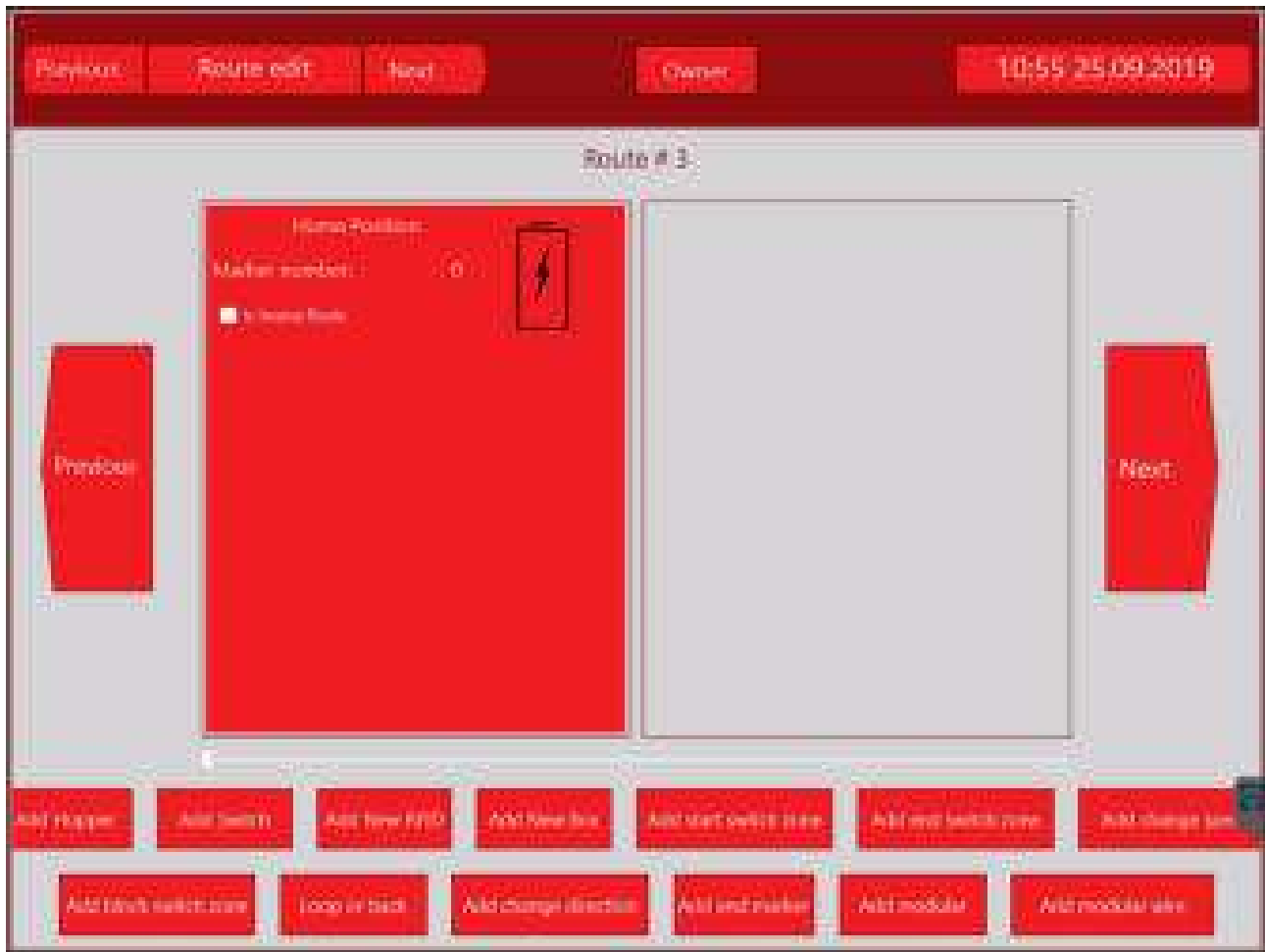
For more information on the programming of a route:

Programming a route ([screenshot 3A – part 2 of 2](#)).

Programming the time schedules for spreading / feeding ([screenshot 4 - part 2 of 2](#)).

Programming the spreading plan ([screenshot 5 – part 3 of 3](#)).

## Route edit – Start-up (screenshot 3A)



Here you program all the specifics for each JH MiniStrø route.

Here you can:

- Plan the route of the JH MiniStrø.
- Edit number of boxes / areas for the individual route.
- Edit in how JH MiniStrø must interact with any external equipment (hopper, rotor flash, etc.).

## Route edit

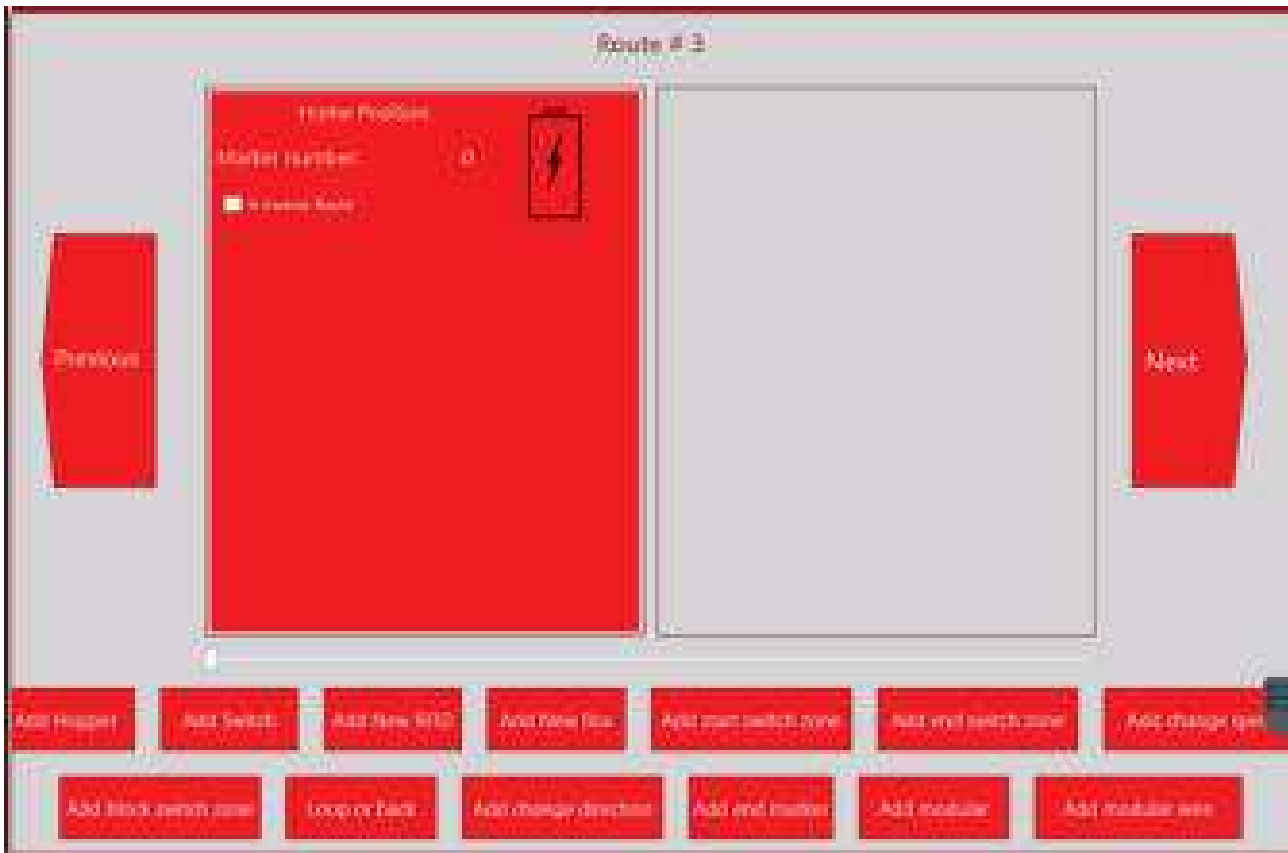
(screenshot 3A – part 1 of 2)



- **The fields "Previous" and "Next"**  
Switch between previous or next screen. Only when the JH MiniStrø program is set on "Stop".
- **The field "User" / "Owner"**  
Choose whether you want to access the program as "User" (if you are a regular user of the system) or "Owner" (if you are a super user or technician).  
This manual addresses the "Owner" (super user/technician).
- **The "Time and date" field**  
Displays the current time and date (follows the time registration from your Windows program).

## Route edit – Home Position

(screenshot 3A – part 2 of 2)



“Home Position” is always the first step when creating / editing routes.

This is the starting point for the JH MiniStrø and its location when it is in “Home Position”.

Therefore, the configuration of rules for the JH MiniStrø always begin with “Home Position” as the starting point.

Here you can:

- Decide in which direction the JH MiniStrø should take from the starting point.

### Edit routes – Home Position

- **The “Route # 3” field (heading)**

Here you see which route you are currently programming.

To choose a different route you must:

Press the “Previous” arrow (the arrows shown at the top of the screenshot and press only once).

Here you can select the route you want. Press hereafter “Edit” and you will return to the above screenshot of the chosen route.

- **The fields "Previous" and "Next"**

Here you will see all the configured rules for the route in question.  
The number of configured rules typically varies from route to route.

- **The "Home Position" field**

This will always be the first defined rule for the route.  
If you need the JH MiniStrø to start up in reverse, check the box "Is Inverse Route".  
This may be relevant if the JH MiniStrø home position is located in the middle of the rail network.

- **The fields at the bottom of the screenshot**

Here you will find all the options for rule configuration / programming of the JH MiniStrø.  
You can choose freely among the individual options in how you want to programme the JH MiniStrø routes.  
The individual options are further described on the following pages.  
To keep it simple, we have chosen to describe them in the same order as they appear on the screen, but in general, you can select among the rules as best suited for the individual route.

## Route edit – Add Hopper (screenshot 3B – part 2 of 2)



Here you define how and how much the hopper must feed / spread at the individual marker. This is too where you decide how JH MiniStrø will handle the loading of feed / material in the cart.

Here you can:

- Fill the cart with feed / spreading material.
- Decide when the JH MiniStrø will determine if the cart is full.
- Select whether the JH MiniStrø will receive its information from IR sensors or from wireless signals.
- Choose how JH MiniStrø will handle an alarm situation.

### Route edit – Add hopper

- **The field "Add Hopper"**  
To add hopper, you must:  
1) Press the field "Add Hopper". You will now see this screen:



2) Press "Enable".

Now you see the screenshot as shown above on the previous page and you can now edit the rule. NB! In ([screenshot 3B – part 2 of 2](#)) two "Hopper" have been created. One with Type of control - IR and one with Type of control – wireless. This is just an illustration.

- **The field "Hopper"**

Here you define the number of the individual hopper. Typically the first one will be named "1". If you have more than one hopper, that feeds the JH MiniStrø, it would be natural to name them "2" and "3" etc.

- **The field "Marker"**

Here you specify at which marker number the JH MiniStrø must perform the desired activity.

- **The field "Loading type"**

Here you specify by which loading type the JH MiniStrø will be filled. There are 3 options to choose from; "By sensor", "By Time" or "By Weight" (weight is a separate purchase module - See manual for weighing module). The following fields are adapted to the selection you make here.

- **The field "Time, sec"**

This field is visible if you chose the loading type: "By Time". Specify with seconds the time in which the hopper must fill the cart.

- **The field "Weight"**

This field is visible if you chose the loading type: "By Weight". Separate purchase module – see manual for weighing module.

- **The field "Charging on Hopper"**

The field is visible regardless of the loading type selected: "By sensor" or "By Time" or "By Weight". Check this box, if the JH MiniStrø is to be charged while parked at the hopper. Note, this is only possible if a charger is mounted on the hopper.

- **The field "Maximum filling time"**

The field is visible regardless of the loading type selected: "By sensor" or "By Time" or "By Weight". Here you specify the maximum time for which the hopper must fill the JH MiniStrø cart (600 sec. is a good starting point). Once the maximum filling time is reached, the hopper will stop filling the JH

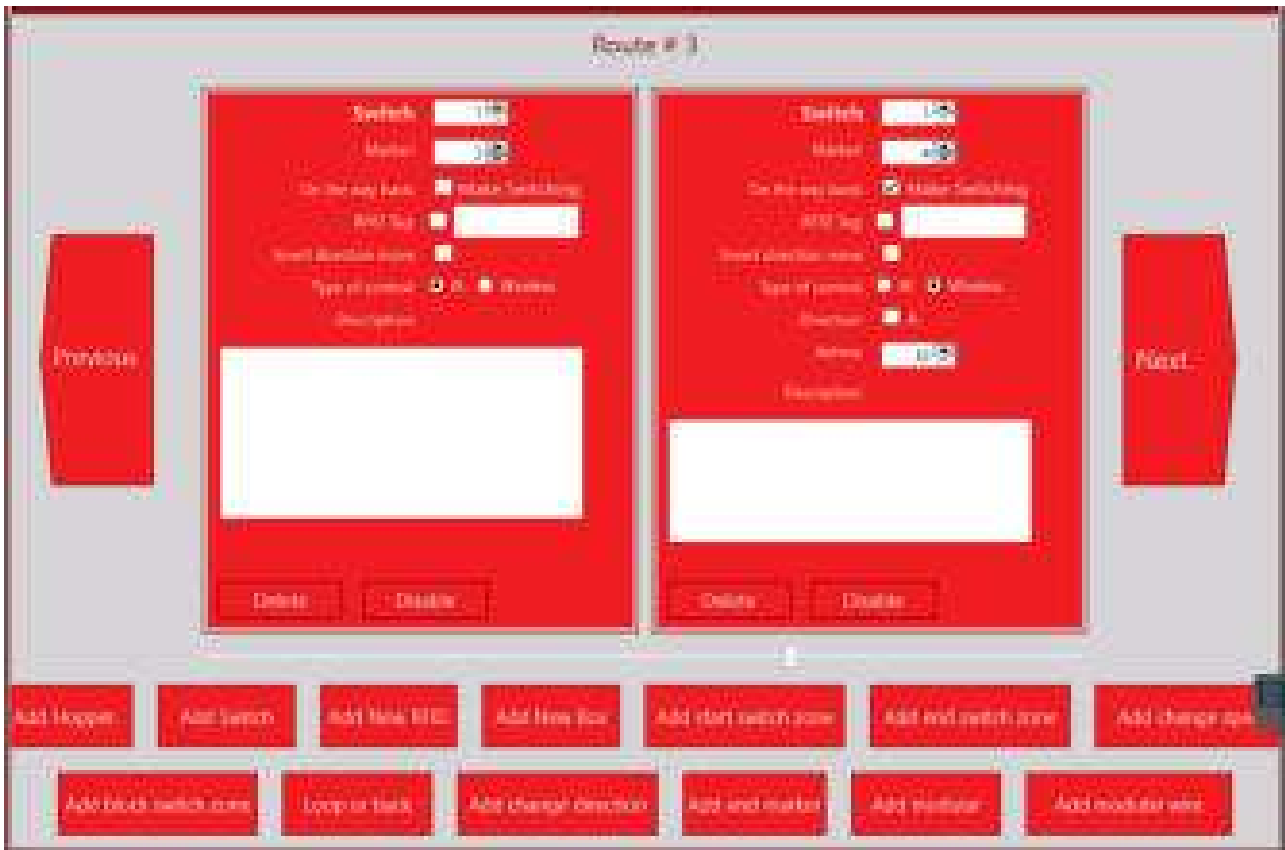


MiniStrø, even if the cart is not filled up to the level it should be. If the indicated level is NOT reached within the given time frame, the JH MiniStrø will go into alarm.

- **The field "Back to home at alarm"**  
The field is visible regardless of the loading type selected: "By sensor" or "By Time" or "By Weight". Check this box, if you want the JH MiniStrø to return to home position, when it has gone into alarm.
- **The field "Full sensor delay, sec"**  
The field is visible regardless of the loading type selected: "By sensor" or "By Time" or "By Weight". Specify here the length of time the sensor must register a full cart, before it stops sensing (5 seconds is a good starting point). This is to prevent the hopper from unnecessarily stopping too often, for example due to differences in the feeding material (e.g. if a "lump" of material falls down, which inadvertently activates the full sensor).
- **The field "Hopper wait time, sec"**  
The field is visible regardless of the loading type selected: "By sensor" or "By Time" or "By Weight". When the sensor has registered a full cart, the hopper stops filling.  
In the field "Hopper wait time, sec" you can choose to specify a time frame (30 seconds is a good starting point), in which the sensor continues to ask if the cart still is full.  
If it is not full, the hopper will restart the filling, until the sensor again indicates that the cart is full.  
Once the sensor has registered a full cart for the duration of this time frame, then the JH MiniStrø will run the planned route (adding a waiting time may be relevant, for example, if the cart is being filled with light material, which may take longer to "fall into place" in the cart).
- **The field "Type of control"**  
The field is visible regardless of the loading type selected: "By sensor" or "By Time" or "By Weight".  
IR: Is selected if the hopper communicates via infrared transmission.  
Wireless: Is selected if the hopper communicates via radio frequency transmission (wireless).
- **The field "Direction"**  
The field is visible if you chose the Type of control: "Wireless".  
Select in which direction the hopper must run; Direction A or B (depends on how the wires are mounted in the control box).
- **The field "Address" (under Direction)**  
The field is visible if you chose the Type of control: "Wireless".  
Here you specify the ID number of the wireless unit with which the JH MiniStrø must communicate.  
The ID number is set in the control box.
- **The field "Wireless sensor"**  
Is currently not in use. Is in development.
- **The field "Type of sensor - IR"**  
Is currently not in use. Is in development.

- **The field "Type of sensor – Button"**  
Is currently not in use. Is in development.
- **The field "Address" (under Wireless sensor)**  
Is currently not in use. Is in development.
- **The field "Delete"**  
If you press "Delete" the rule in question will be deleted without further notice. This can only be restored, by creating a new rule.
- **The field "Disable"**  
"Disable" will put the rule in question on hold. The other rules for the route will continue as planned. If you want to disable the entire route, this can be done here ([screenshot 2 – part 2 of 2](#)).

## Route edit – Add Switch (screenshot 3C – part 2 of 2)



Here you define all the rail switches as well as determine how the switches will be positioned for the way back, meaning AFTER the JH MiniStrø has run through the switches.

It is important to note that there is a difference in how you incorporate the switches, depending on which "Type of control" is installed, IR or Wireless.

Here you can:

- Set up the rules for the JH MiniStrø route (rail switch).
- Set up the rules for how the rail switches are positioned, after the JH MiniStrø is home.

### Route edit – Add Switch

- **The field "Add Switch"**  
To add a rail switch you must:  
1) Press the field "Add Switch".  
The below screen will appear:



2) Press "Enable".

Now you see the screenshot as shown above on the previous page and you can now edit the rule.

NB! On ([screenshot 3C – part 2 of 2](#)) two "Switch" have been created. One with Type of control - IR and one with Type of control – wireless. This is just an illustration.

- **The field "Switch"**

Here you define the number of the individual rail switch. Typically the first one will be named "1". If you have more than one rail switch it would be natural to name them "2" and "3" etc.

- **The field "Marker"**

Here you specify at which marker number the JH MiniStrø must perform the desired activity.

- **The field "On the way back"**

First start with the field "Type of control" (a field further down), where you must choose between "IR" and "Wireless". Once you have made your choice, return to the field "On the way back".

**If you chose "IR" under "Type of control":** Check the box next to the field "On the way back", **IF** JH MiniStrø must shift the switches back to the starting point, **AFTER** running through them on the way home.

**If you chose "Wireless" under "Type of control":** Skip the field "On the way back". A choice is made at a later stage.

- **The field "RFID Tag"**

Separate purchase module: This module controls if the JH MiniStrø is in the right place at the right time. If this is not the case, an alarm will go off.

- **The field "Invert direction move"**

Here you decide whether the JH MiniStrø must change direction at the marker number indicated in the field "Marker". This may be relevant in a number of different situations, for example when the JH MiniStrø has to return home, making sure it is not positioned "backwards" when it is in home position.

- **The field "Type of control"**

The field is visible regardless of the type of control you choose: "IR" or "Wireless".

**IR:** Is selected if the hopper communicates via infrared transmission.

**Wireless:** Is selected if the hopper communicates via radio frequency transmission (wireless).

- **The field "Direction"**

The field is visible if you chose the Type of control: "Wireless".

Select in which position the rail switch must be in; Direction A or B (depends on how the wires are mounted in the control box).

- **The field "Address" (under Direction)**

The field is visible if you chose the Type of control: "Wireless".

Here you specify the ID number of the wireless unit with which the JH MiniStrø must communicate. The ID number is set in the control box.

- **The field "Description"**

Here you can, if you wish, write an optional text. The text does not appear anywhere else in the program.

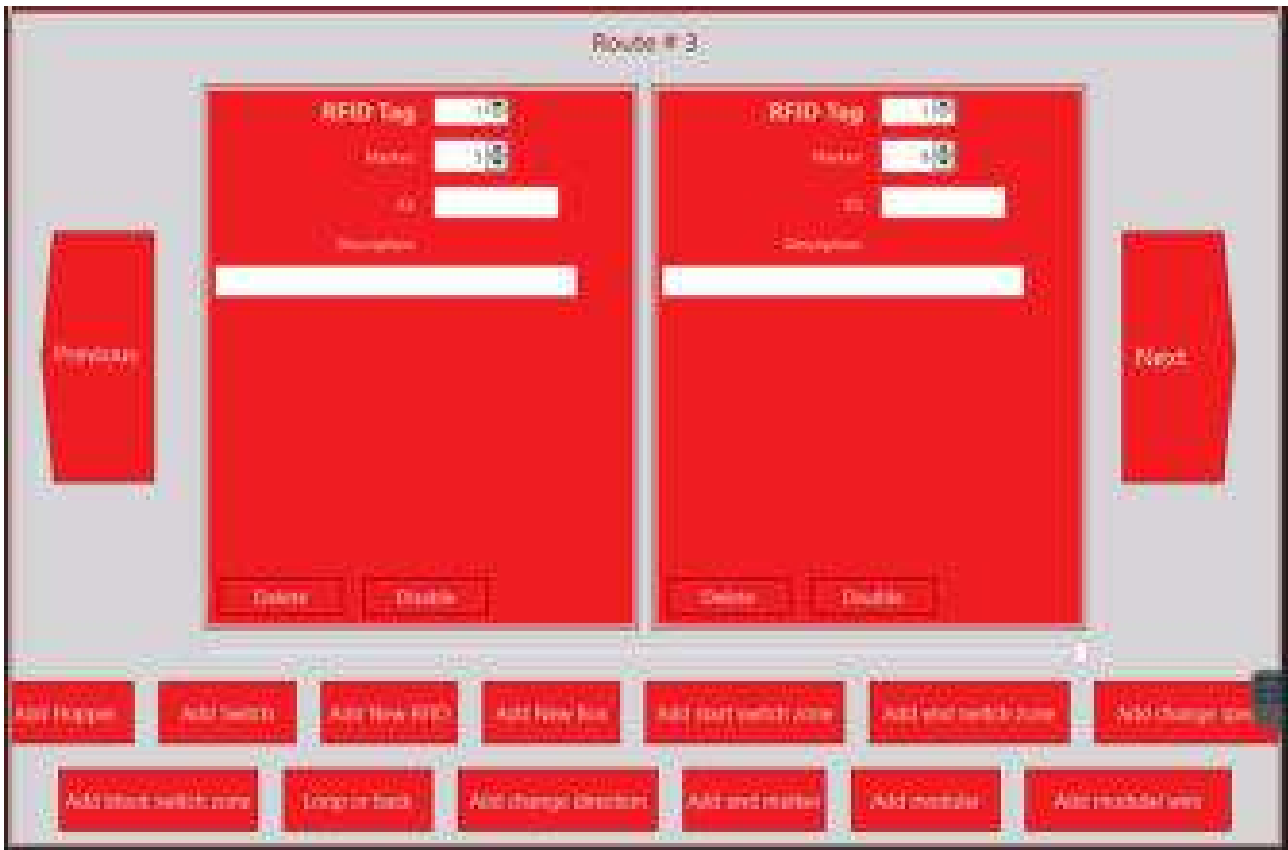
- **The field "Delete"**

If you press "Delete" the rule in question will be deleted without further notice. This can only be restored, by creating a new rule.

- **The field "Disable"**

"Disable" will put the rule in question on hold. The other rules for the route will continue as planned. If you want to disable the entire route, this can be done here ([screenshot 2 – part 2 of 2](#)).

## Route edit – Add New RFID – Separately purchased module (screenshot 3D – part 2 of 2)



Here you can add an ID number for a specific position, enabling the JH MiniStrø to go into alarm if it is not in the right place at the right time.

RFID tags are an additional control feature, enabling you, always to have an overview of the system running properly.

Here you have:

- An additional control that tells you if the JH MiniStrø is NOT running its route as scheduled.

### Route edit – Add New RFID

RFID Tag is an add-on purchase.

Skip this instruction if this module is not installed. RFID Tag is an additional control, triggering an alarm, if the JH MiniStrø is not in the right place at the right time.

- **The field "Add New RFID"**  
To add a RFID you must:  
1) Press the field "Add New RFID".  
The below screen will appear:



2) Press "Enable".

Now you see the screenshot as shown above on the previous page and you can now edit the rule.

NB! On ([screenshot 3D – part 2 of 2](#)) two "RFID Tag" have been created. This is just an illustration.

- **The field "RFID Tag"**

Here you define the number of the individual RFID tag. Typically the first one will be named "1". If you have more than RFID tag it would be natural to name them "2" and "3" etc.

- **The field "Marker"**

Here you specify at which marker number the JH MiniStrø must perform the desired activity.

- **The "ID" field**

Here you specify the unique ID number that the RFID Tag must check when being passed, in order to determine the position of the JH MiniStrø.

- **The field "Description"**

Here you can, if you wish, write an optional text. The text does not appear anywhere else in the program.

- **The field "Delete"**

If you press "Delete" the rule in question will be deleted without further notice. This can only be restored, by creating a new rule.

- **The field "Disable"**

"Disable" will put the rule in question on hold. The other rules for the route will continue as planned. If you want to disable the entire route, this can be done here ([screenshot 2 – part 2 of 2](#)).

## Route edit – Add New Box (screenshot 3E – part 2 of 2)



Here you specify in which area the JH MiniStrø must spread / feed. Here you also specify the direction the JH MiniStrø must feed as well as the amount of feed.

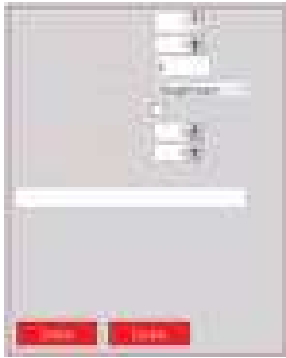
Here you can:

- Set up the rule for where the JH MiniStrø must begin spreading / feeding and where the JH MiniStrø must stop spreading / feeding.
- Specify in the direction in which the JH MiniStrø must feed.

### Route edit – Add New Box

- **The field "Add New Box"**  
To add a Box you must:  
1) Press the field "Add New Box".  
The below screen will appear:





2) Press "Enable".

Now you see the screenshot as shown above on the previous page and you can now edit the rule. NB! On ([screenshot 3E – part 2 of 2](#)) two "Box#" have been created. One without "Init actuator" and one with "Init actuator". This is just an illustration.

- **The field "Box#"**

Here you specify the number of the individual box (feeding- / spreading area). The first box area will typically be named "no. 1". If there are more than one box area (feeding- / spreading area) these will consequently be named no. 2, no. 3 etc.

- **The field "Start Marker"**

Here you specify at which marker number the JH MiniStrø must perform the desired activity.

- **The field "End marker"**

Here you specify at which marker number the JH MiniStrø must end the desired activity.

- **The field "Feeding direction"**

Here you choose whether the JH MiniStrø must spread to both sides, to the left side, to the right side or straight down. Note, if you do not check the box at the field "Init actuator" (see description below), the spreading discs will perform according to latest setting.

- **The field "Init actuator"**

**Unchecked box:** Used if JH MiniStrø is to spread / feed with actuator (spreading discs) in the same position as the last one used.

**Checked box:** Used if the JH MiniStrø must spread / feed in a DIFFERENT position than last used.

- **The field "Timeout"**

The field "Timeout" is only visible if the field "Init actuator" is checked. Here you specify the number of seconds the JH MiniStrø must wait before starting to spread / feed. The entered interval must correspond to the number of seconds the actuator (the spreading discs) will need to move to the new desired position. 16 sec. is a good starting point.

- **The fields "Current transferred feed" and "Maximum transferred feed"**

Separate purchase module - See manual for weight module.

- **The field "Description"**

Here you can, if you wish, write an optional text. The text does not appear anywhere else in the program.

- **The field "Delete"**

If you press "Delete" the rule in question will be deleted without further notice. This can only be restored, by creating a new rule.

- **The field "Disable"**

"Disable" will put the rule in question on hold. The other rules for the route will continue as planned. If you want to disable the entire route, this can be done here ([screenshot 2 – part 2 of 2](#)).

## Route edit – Add start switch zone

(screenshot 3F – part 2 of 2)



Both the rule "Add start switch zone", the rule "Add end switch zone" as well as the rule "Add block switch zone" are only used if there are more than one JH MiniStrø machines using the same rail network.

If there is only one JH MiniStrø on the rail network, skip the settings of these 3 rules.

The programming of rules in a common rail switch zone means that there is only one JH MiniStrø machine per defined area at a time. This is necessary to ensure that two JH MiniStrø machines do not get in the way of each other.

Here you can:

- Set the rules for a rail switch zone, enabling the use of more than one JH MiniStrø on the same rail network at a time.
- Set the rules for how the rail switch is positioned, in case a JH MiniStrø must run in reverse before the route is finished, e.g. to return home for more material.

### Route edit – Add start switch zone

NB! The rule "Add start switch zone" must only be used if there are more than one JH MiniStrø machine on the same rail network.

- **The field "Add start switch zone"**

To add a start switch zone, you must:

1) Press the field "Add start switch zone".

The below screen will appear:



2) Press "Enable".

Now you see the screenshot as shown above on the previous page and you can now edit the rule.

NB! On ([screenshot 3F – part 2 of 2](#)) two "Start switch zone" have been created. One without a switch and one with one switch created. This is just an illustration.

- **The field "Marker"**

Here you specify at which marker number the rail switch zone must start.

Here the JH MiniStrø will ask if the lane is free and if it has permission to drive into the area. If not, the JH MiniStrø will stay in its position and ask again after a short time interval.

Once the rail master says "GO", the JH MiniStrø will ask all the rail switches to position themselves correctly. It is first when all the rail switches are positioned correctly, that the JH MiniStrø will begin its route.

- **The field "Add switch"**

**Num of switch:** When you add a rail switch, the program automatically gives the rail switch a consecutive number. You must create the same number of rail switches as are physically found in the rail switch zone, though typically it makes most sense to create them via several "Add start switch zone" modules.

**Position:** Here you choose whether the rail switch must position itself in position "A" or "B".

Remember that the JH MiniStrø, before entering the area, requests that all rail switches be set so that it can start its planned route without hindrance.

NB! If you find that JH MiniStrø goes off in alarm here, it may be due to the blocking of a switch.

This is done to avoid accidentally programming two JH MiniStrø machines to run the same route.

Read more about the rule "Add block switch zone" here ([screenshot 3I – part 2 of 2](#)).

**Position backward:** Set the individual rail switches so that the JH MiniStrø can freely run back along the same track, in the case it encounters an end marker and must drive home or if it runs out of material and needs to return home for a refill.

- **The field "Delete switch"**

NB! If you press "Delete switch" it will ALWAYS be the rail switch at the BOTTOM of the screenshot that is deleted, EVEN if you have marked another. This is to ensure that you start the setup of the rule again so that the risk of making mistakes is minimized. Furthermore, note that pressing

"Delete" will delete the rail switch without further notice.

- **The field "Invert direction move"**

The field "Invert direction move" can be used in several situations, for example, to ensure that the JH MiniStrø is turned in the right direction e.g. when reaching its home position to charge the batteries.

- **The field "Delete"**

If you press "Delete" the rule in question will be deleted without further notice. This can only be restored, by creating a new rule.

- **The field "Disable"**

"Disable" will put the rule in question on hold. The other rules for the route will continue as planned. If you want to disable the entire route, this can be done here ([screenshot 2 – part 2 of 2](#)).

## Route edit – Add end switch zone (screenshot 3G – part 2 of 2)



Both the rule "Add start switch zone", the rule "Add end switch zone" as well as the rule "Add block switch zone" are only used if there are more than one JH MiniStrø machines using the same rail network. If there is only one JH MiniStrø on the rail network, skip the settings of these 3 rules.

With an "Add end switch zone" you end the JH MiniStrø route on the common rail network. Typically, therefore, you need to create an "End switch zone", all the places where JH MiniStrø runs OUT of the common rail network. It may be to perform a task, or it may be because the JH MiniStrø has finished its route and is driving home. When the JH MiniStrø runs through an "End switch zone" marker, it gets checked out of the common rail network. This in turn means that a pending second JH MiniStrø machine can now be allowed to drive into the area.

Here you can:

- "End switch zone" marker, check the JH MiniStrø out of the common rail network. (the "End switch zone" indicates the end of a common rail network).
- Ask the JH MiniStrø to go home.

### Route edit – Add end switch zone

NB! The rule "Add end switch zone" must only be used when more than one JH MiniStrø machine uses the same rail network.

- **The field "Add end switch zone"**

To add an end switch zone, you must:

1) Press the field "Add end switch zone".

The below screen will appear:



2) Press "Enable".

Now you see the screenshot as shown above on the previous page and you can now edit the rule.

NB! On ([screenshot 3G – part 2 of 2](#)) two "End switch zone" have been created. One without a switch and one with one switch created. This is just an illustration.

- **The field "Marker"**

Select the number of the marker that will indicate the end of the common rail network.

The JH MiniStrø will check out of the common rail network, at the entered marker number, which means that any second pending JH MiniStrø machine can now be allowed to check into the area.

- **The field "Add switch"**

**Num of switch:** When you add a rail switch, the program automatically gives the rail switch a consecutive number.

**Position backward** Here you can determine the position of the rail switch, so that the JH MiniStrø can return to home position (0).

- **The field "Invert direction move"**

If you check the "Invert direction move" field, the JH MiniStrø will change direction at the indicated marker.

NB! However, keep in mind that the basic principle of this module is to CHECK the JH MiniStrø OUT of the common rail network. If you check the "Invert direction move" field, JH MiniStrø is still moving on the common rail network, but is now checked out and is therefore no longer protected against collision with any other JH MiniStrø machine on the common rail network.

- **The field "Go to home"**

Is always used together with the underlying field "Count of marker to home".

A check in this box indicates that the JH MiniStrø must return to home position (marker 0).

Note that this feature means that the JH MiniStrø will first check out of the common rail network when it has reached home (marker 0).

This ensures that no other JH MiniStrø machine can run in this area before the first JH MiniStrø is completely home.

- **The field "Count of marker to home"**

Is always used with the previous field "Go to home".

Indicate the number of markers the JH MiniStrø must count, before reaching its home position (marker 0).

The JH MiniStrø will first check out of the common rail network, when it has passed the indicated number of markers.

- **The field "Delete"**

If you press "Delete" the rule in question will be deleted without further notice. This can only be restored by creating a new rule.

- **The field "Disable"**

"Disable" will put the rule in question on hold. The other rules for the route will continue as planned. If you want to disable the entire route, this can be done here ([screenshot 2 – part 2 of 2](#)).



## Route edit – Add change speed (screenshot 3H – part 2 of 2)



With this rule you can decide with which speed the JH MiniStrø must run.

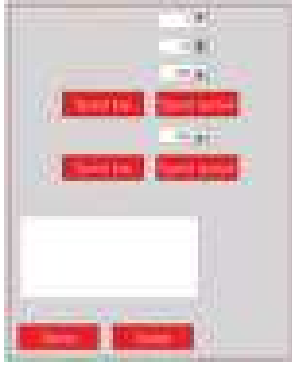
It may be relevant to lower the speed if the JH MiniStrø, among others, has to go through fire doors, if there are any height differences or difficult rail switches.

Here you can:

- Lower / raise the speed at the different rail sections.

### Route edit – Add change speed

- **The field "Add change speed"**  
To add "Add change speed", you must:  
1) Press the field "Add change speed".  
The below screen will appear:



2) Press "Enable".

Now you see the screenshot as shown above on the previous page and you can now edit the rule.

NB! On ([screenshot 3H – part 2 of 2](#)) two "Changing speed" zones have been created. This is just an illustration.

- **The field "Changing speed"**

Here you define the number of the individual speed change. The first speed change will typically be named "no. 1". If there are more than one speed changes, these will consequently be named no. 2, no. 3 etc.

- **The field "Marker"**

Here you indicate at which marker number the JH MiniStrø must alter its speed.

- **The field "Forward speed"**

Here you can indicate in % precisely how fast the JH MiniStrø must run. Note that the JH MiniStrø will continue at this speed until a new message is given. Therefore, it is often required to create two "Changing speed" rules, one right after the other.

- **The fields "Speed low" and "Speed normal"**

Instead of choosing the manual setting for speed, you can choose between these two default settings instead. Remember that the JH MiniStrø continues at the same speed until otherwise informed. Therefore, two "Changing speed" rules are usually created, one after the other.

- **The field "Backward speed"**

If the JH MiniStrø has had the need, for example, to lower the speed one way, then normally it is also necessary when the JH MiniStrø is to return again.

This can be set under the field "Backward speed".

Remember that you will typically encounter the highest marker number here first, which is why setting up "Backward speed" should typically be done opposite of "Forward speed".

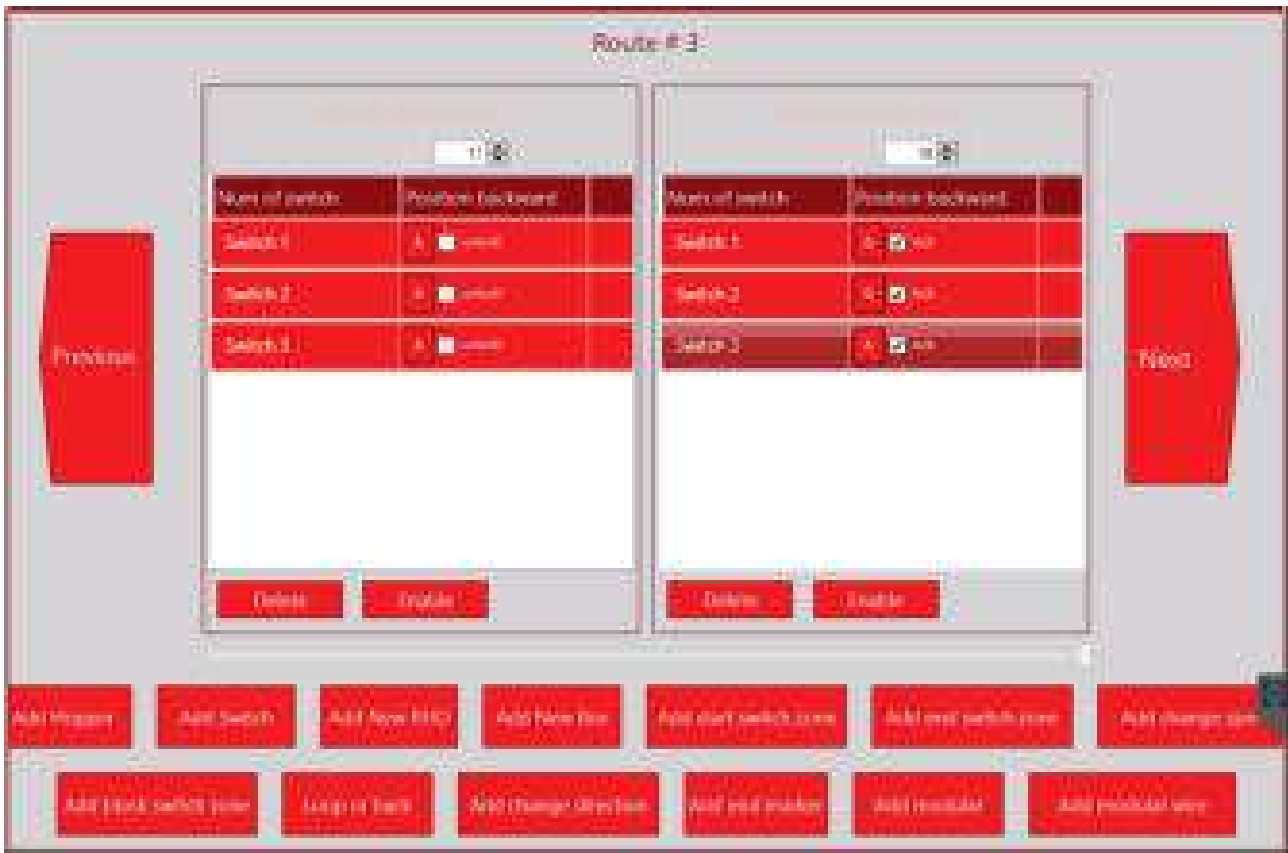
If the route is circular, the field "Backward speed" is not used, here the field can simply be ignored.

- **The field "Description"**

Here you can, if you wish, write an optional text. The text does not appear anywhere else in the program.

- **The field "Delete"**  
If you press "Delete" the rule in question will be deleted without further notice. This can only be restored, by creating a new rule.
- **The field "Disable"**  
"Disable" will put the rule in question on hold. The other rules for the route will continue as planned. If you want to disable the entire route, this can be done here ([screenshot 2 – part 2 of 2](#)).

## Route edit – Add block switch zone (screenshot 31 – part 2 of 2)



Both the rule "Add start switch zone", the rule "Add end switch zone" as well as the rule "Add block switch zone" are only used if there are more than one JH MiniStrø machines using the same rail network. If there is only one JH MiniStrø on the rail network, skip the settings of these 3 rules.

The function "Block switch zone" blocks the access to a specific area (prevents a JH MiniStrø machine from using a blocked direction). This is to prevent two JH MiniStrø machines from running to the same area at the same time.

Here you can:

- Decide which position to block "A" or "B", where after the direction will be locked.

### Route edit – Add block switch zone

- **The field "Add block switch zone"**  
To add "Add block switch zone", you must:  
1) Press the field "Add change speed".  
The below screen will appear:



2) Press "Enable".

Now you see the screenshot as shown above on the previous page and you can now edit the rule. NB! On ([screenshot 31 – part 2 of 2](#)) two "Block switch zone" zones have been created. This is just an illustration.

- **The field "Marker"**

Here you define at which marker number the JH MiniStrø must block a rail switch.

- **The field "Num of switch"**

Here you see how many rail switches have been created.

If you wish to change this number you can do it here: ([screenshot 6 – part 2B of 2](#)).

- **The field "Position backward"**

**Choose "A" or "B":** Select the position of which another JH MiniStrø CANNOT run.

NOTE, that in reality the rule will not change the switch to the chosen position. The rail switch will still be positioned, as originally defined. Another JH MiniStrø machine just cannot run through the blocked position of the rail switch.

If another JH MiniStrø machine asks for permission to use the blocked position on the rail switch, the JH MiniStrø goes into alarm and does not take any further action until the problem is resolved manually. The reason for the alarm to be resolved manually is because if this problem occurs, it is often because the JH MiniStrø is not programmed correctly from the start. Therefore, with an alarm like this, one always has to consider whether something has to be changed in the programming.

Please note that the rule is only activated if the box "Lock" has been checked in the following field.

- **Select "Lock" or "Unlock":** It is first when you have checked the box "Lock" that the above function is active.

- **The field "Delete"**

If you press "Delete" the rule in question will be deleted without further notice. This can only be restored, by creating a new rule.

- **The field "Disable"**

"Disable" will put the rule in question on hold. The other rules for the route will continue as planned. If you want to disable the entire route, this can be done here ([screenshot 2 – part 2 of 2](#)).

## Route edit – Loop or back (screenshot 3J – part 2 of 2)



If the JH MiniStrø runs out of spreading- / feeding material, it is programmed to drive home by the same route it came by. In some cases though, a different route may be shorter.

This applies, for example, if the JH MiniStrø is running in loop.

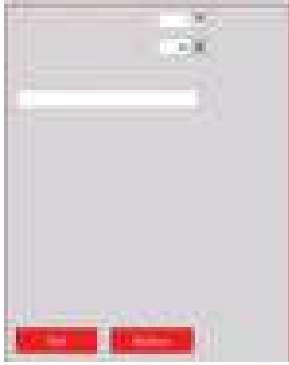
If you place a marker halfway through the route and the JH MiniStrø runs dry of material, then it knows that AFTER this marker, the shortest way home is to CONTINUE the route. If the JH MiniStrø runs dry of material BEFORE reaching the indicated marker, the JH MiniStrø will know that the shortest way home is RETURNING the way it came.

Here you can:

- Tell the JH MiniStrø which position the "Loop or back" marker has.

### Route edit – Loop or back

- **The field "Loop or back"**  
To add "Loop or back", you must:  
1) Press the field "Loop or back".  
The below screen will appear:



2) Press "Enable".

Now you see the screenshot as shown above on the previous page and you can now edit the rule.

NB! On ([screenshot 3J – part 2 of 2](#)) two "Loop or back" fields have been created. This is just an illustration.

- **The field "Loop or back"**

Here you specify the number of "Point of no return". It will typically be named "no. 1".

NB! There can only be one "Point of no return" for each route.

- **The field "Marker"**

Here you specify which marker number you want to be the "Point of no return".

- **The field "Description"**

Here you can, if you wish, write an optional text. The text does not appear anywhere else in the program.

- **The field "Delete"**

If you press "Delete" the rule in question will be deleted without further notice. This can only be restored, by creating a new rule.

- **The field "Disable"**

"Disable" will put the rule in question on hold. The other rules for the route will continue as planned. If you want to disable the entire route, this can be done here ([screenshot 2 – part 2 of 2](#)).

## Route edit – Add change direction (screenshot 3K – part 2 of 2)



With this rule you can change direction, be aware though, that you can only change direction one time per route.

This rule is most OFTEN used in connection with the purchased weight module, when wanting to first spread a certain amount to one side and then another amount to the other side.

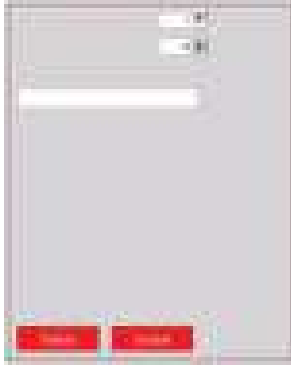
Here you can:

- Change the direction of the JH MiniStrø.

### Route edit – Add change direction

- **The field "Add change direction"**  
To add "Add change direction", you must:  
1) Press the field "Add change direction".  
The below screen will appear:





2) Press "Enable".

Now you see the screenshot as shown above on the previous page and you can now edit the rule. See ([screenshot 3K – part 2 of 2](#)).

NB! In the previous screenshot you see both a "Add change direction" rule as well as a "Add end marker" rule. This is just an illustration.

- **The field "Change direction"**

Here you set the number of the individual direction change. It will typically be named "no. 1".

NB! You can only create ONE direction change per route.

- **The field "Marker"**

Here you specify at which marker number you want the JH MiniStrø to change direction.

- **The field "Description"**

Here you can, if you wish, write an optional text. The text does not appear anywhere else in the program.

- **The field "Delete"**

If you press "Delete" the rule in question will be deleted without further notice. This can only be restored by creating a new rule.

- **The field "Disable"**

"Disable" will put the rule in question on hold. The other rules for the route will continue as planned. If you want to disable the entire route, this can be done here ([screenshot 2 – part 2 of 2](#)).

## Route edit – Add end marker (screenshot 3L – part 2 of 2)



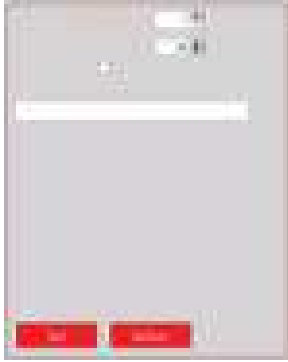
With this rule, you can inform the JH MiniStrø that the route has ended and it should return home to home position (marker 0).

Here you can:

- Inform the JH MiniStrø that the route has ended.
- Inform the JH MiniStrø to return home.
- Inform the JH MiniStrø that it should end the route (check out).

### Route edit – Add end marker

- **The field "Add end marker"**  
To add "Add end marker", you must:  
1) Press the field "Add end marker".  
The below screen will appear:



2) Press "Enable".

Now you see the screenshot as shown above on the previous page and you can now edit the rule.

NB! In ([screenshot 3L – part 2 of 2](#)) there is created both a "Add change direction" rule well as a "Add end marker" rule. This is just an illustration.

- **The field "End marker"**

Here you set the number of the end marker. It will always be named "no. 1", as there can only be one end marker per route.

- **The field "Marker"**

Here you specify at which marker number you want the JH MiniStrø to change direction.

- **The field "Is home"**

Is the route circular, then you can at this marker check the "Is home" box, which will inform the JH MiniStrø that it is now home (home position 0) and must end its route (check out).

- **The field "Description"**

Here you can, if you wish, write an optional text. The text does not appear anywhere else in the program.

- **The field "Delete"**

If you press "Delete" the rule in question will be deleted without further notice. This can only be restored, by creating a new rule.

- **The field "Disable"**

"Disable" will put the rule in question on hold. The other rules for the route will continue as planned. If you want to disable the entire route, this can be done here ([screenshot 2 – part 2 of 2](#)).

## Route edit – Add modular (screenshot 3M – part 2 of 2)



This rule and the following rule (Add modular wire), are basically the same. The only difference is that this rule applies to internal equipment (IR transmitter, bottom chain, charger relay, cutter, actuator) while the second rule applies to external equipment (rail switch, elevator, siren, doors etc.).

With this rule, you can create your own small program in the program.

The rule is most often used in situations where there is physically tight space in the barn or where several tasks must be performed in a short time.

Here you can perform many different functions at one marker.

NB! Note, however, that ALL normal functions here are disabled. This means, for example, that if you ask the cutter to start, it will not stop again by itself. It stops only when it receives a new order; For example, "Stop".

A rule should therefore typically always include the following 3 functions:

- 1) "Start" (e.g.; Cutter starts).
- 2) "Time interval" (e.g.; How long should the cutter run).
- 3) "Stop" (e.g.; Cutter stops).

Here you can:

- Create a program, where you start and stop motors (e.g. drive motor, cutter, spreading discs, bottom chain etc.).
- Create a program, where you program the actuator (spreading discs) manually.
- Create a program, where you pull or release built-in relays (ex. rotor flash).

## Route edit – Add modular

- **The field "Add modular"**

To add "Add modular", you must:

1) Press the field "Add modular".

The below screen will appear:



2) Press "Enable".

Now you see the screenshot as shown above on the previous page and you can now edit the rule.

NB! On ([screenshot 3M – part 2 of 2](#)) two "Add modular" have been created. This is just an illustration.

- **The field "Modular"**

Here you define the number of the individual program in the program. The first will typically be named "no. 1". If there are more areas where you want to add more than one modular to the individual route, these will consequently be named no. 2, no. 3 etc.

- **The field "Marker"**

Here you define at which marker number the JH MiniStrø must execute the program in the program.

- **The field "Invert impulse command on return"**

Only used if "Add impulse" is selected (see below). If checked, the extra digital output (switches 1 and 2) will switch back when the JH MiniStrø is on its way back to its home position.

- **The fields "Add Motors", "Add relay", "Add actuator"**

Here is shown "Add motors":

**Add motor:** Press the field "Add Motors" to create a rule which involves a motor.

**Select motor:** Choose between the installed motors (e.g. bottom chain, cutter).

**Speed:** Determine the speed at which the motor in question should run (in percent).

**Direction:** Determine the direction for which the JH MiniStrø should move in, when it receives a forward signal.

**Stop:** Determine whether you want to START or STOP the motor in question.

**Delete:** Press the "X" box to delete the activity from the program.

- **The fields "Add IR", "Add Impulse", "Add pause"**

**Add IR:** Turn IR on or off, e.g. rail switch track Timeout indicates for how long the IR transmitter should be active (max time 3600ms).

**Add Impulse:** Respectively turns on and off any additional digital output (switch 1 and 2). Switches 1 and 2 are potential-free contacts with both NC and NO outputs.

**Add pause:** Here you enter in terms of seconds the time in which the JH MiniStrø will execute the previous order (e.g. for how long the motor must be started before it stops again).

- **The field "Delete"**

If you press "Delete" the rule in question will be deleted without further notice. This can only be restored, by creating a new rule.

- **The field "Disable"**

"Disable" will put the rule in question on hold. The other rules for the route will continue as planned. If you want to disable the entire route, this can be done here ([screenshot 2 – part 2 of 2](#)).

NB! Please note that the program puts all other functions out of order, including empty / full sensors. This means that a cutter, which is set to shred, will first stop shredding when it receives a new order to do so. A typical module, therefore, should ALWAYS contain at least 3 commands: a start command, a time interval command (add pause), and a stop command. (See below example).



## Route edit – Add modular wire (screenshot 3N – part 2 of 2)



This rule and the previous rule (Add modular) are basically the same. The only difference is that this rule applies to external equipment (rail switch, elevator, siren, doors etc.) while the second rule applies to internal equipment (IR transmitter, bottom chain, charger relay, cutter, actuator).

With this rule, you can create your own small program in the program.

The rule is mostly used in situations where there is physically tight space in the barn or where several tasks must be performed in a short time.

Here you can perform many different functions at one marker.

NB! Note, however, that ALL normal functions here are disabled. This means, for example, that if you ask the siren to start, it will not stop again by itself. It stops only when it receives a new order; For example, "Stop".

A rule should therefore typically always include the following 3 functions:

- 1) "Start" (e.g.; Siren starts).
- 2) "Time interval" (e.g.; How long should the siren run).
- 3) "Stop" (e.g.; Siren stops).

Here you can:

- Create a program, where you start and stop stand-alone equipment (e.g. siren or elevator).
- Create a program, where you turn on or shut off the IR (e.g. external equipment as elevator, sirens, doors, etc.).

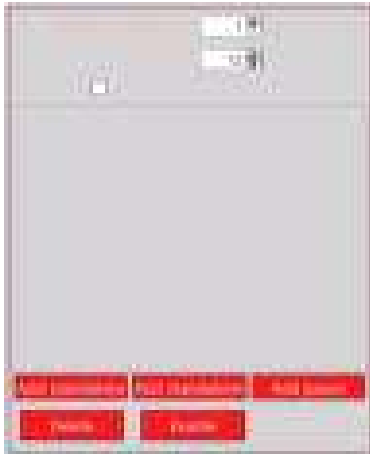
## Route edit – Add modular wire

- **The field "Add modular wire"**

To add "Add modular wire", you must:

1) Press the field "Add modular wire".

The below screen will appear:



2) Press "Enable".

Now you see the screenshot as shown above on the previous page and you can now edit the rule. NB! On ([screenshot 3N – part 2 of 2](#)) two "Add modular wire" have been created. This is just an illustration.

- **The field "Modular"**

Here you define the number of the individual program in the program. The first will typically be named "no. 1". If there are more areas where you want to add modular to the individual route, these will consequently be named no. 2, no. 3 etc.

- **The field "Marker"**

Here you define at which marker number the JH MiniStrø must execute the program in the program.

- **The field "Invert impulse command on return"**

If the box is checked here, the "Add standalone" position changes, when the JH MiniStrø is on its way back to home position.

- **The field "Add standalone control 1"**

**State:** Enter the ID number of the controller you wish to communicate with.

**State:** Enter the desired state of output on the control box.

**Delete:** Press the "X" box to delete the rule. It is possible to undo the deletion.



- **The field "Pause"**

**Timeout:** Here you enter the length at which the standalone equipment should continue to execute the initiated order (how long will JH MiniStrø wait before receiving a new order).

**Delete:** Press the "X" box to delete the rule. It is possible to undo the deletion.

- **The field "Standalone control 3"**

**State:** Enter the ID number of the controller you wish to communicate with.

**State:** Basically there is no difference between Standalone 1 and Standalone 2. Here you can simply choose between "A" and "B" instead of between - 0 +.

**Delete:** Press the "X" box to delete the rule. It is possible to undo the deletion.

- **The field "Delete"**

If you press "Delete" the rule in question will be deleted without further notice. This can only be restored, by creating a new rule.

- **The field "Disable"**

"Disable" will put the rule in question on hold. The other rules for the route will continue as planned. If you want to disable the entire route, this can be done here ([screenshot 2 – part 2 of 2](#)).

## Scheduler (screenshot 4)

Route #	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7	Time 8
1	11:00	11:15	11:30	11:45	12:00	12:15	12:30	12:45
2	12:00	12:15	12:30	12:45	13:00	13:15	13:30	13:45
1	14:00	14:15	14:30	14:45	15:00	15:15	15:30	15:45

Here you see how many routes have been created, as well as all the timings created for feeding / spreading.

Here you can:

- Get an overview of the number of routes created as well as the number of created feeding times / spreading times.
- Program the JH MiniStrø to change / add / remove times for spreading / feeding.

## Scheduler (screenshot 4 – part 1 of 2)

Previous	Scheduler	Next	Done	11:34 25.09.2019
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- **The fields "Previous" and "Next"**

Change between the next or previous screenshot. Only when the JH MiniStrø program is set on "Stop".

- **The field "User" / "Owner"**

Choose whether you want to access the program as "User" (if you are a normal user of the system) or as "Owner" (if you are a super user or a technician)

This manual addresses the "Owner" (super user/technician).

- **The field "Time and date"**

Displays the current time and date (follows the time registration in your Windows program).

## Scheduler

(screenshot 4 – part 2 of 2)



- **Activate / Deactivate start time**

1) Press on the field (the route) you want to activate / deactivate.

If the field is black you can deactivate it (the field will then become grey and JH MiniStrø will not run the route).

If the field is grey you can activate it (the field becomes black and JH MiniStrø will run the route).

- **Add / change a time**

1) Press on the field you want to change.

2) Set the time.

3) Press OK. (Note! The field must be black for the route to be active).

- **NB! You CANNOT add additional routes or add "Manual routes" here. See instead ([screenshot 2 – part 2 of 2](#)).**

## Feeding Plan (screenshot 5)

No. #	Status	Feeding mode	Num of animal	Start val of food, kg	Num of days	Current day	End val of food, kg	Time, sec	Speed of motor, %	Speed of plant, %	Speed of conveyor, %
1	Active	By speed				0			100	100	70
2	Active	By Time				0		0	100	100	70
3	Active	By Weight	0	0	0	0	0		100	100	70

On this page, you get an overview of the different routes the JH MiniStrø will run per day. In addition, you can edit many different parameters and activate / deactivate the individual routes.

Here you can:

- See the specifications of the individual routes (number of animals, boxes, material, speed, frequencies).
- Edit the individual routes.
- Activate or deactivate the individual routes.

## Feeding Plan

(screenshot 5 – part 1 of 3)



- **The fields "Previous" and "Next"**  
Change between the next or previous screenshot. Only when the JH MiniStrø program is set on "Stop".
- **The field "User" / "Owner"**  
Choose whether you want to access the program as "User" (if you are a normal user of the system) or as "Owner" (if you are a super user or a technician)  
This manual addresses the "Owner" (super user/technician).
- **The field "Time and date"**  
Displays the current time and date (follows the time registration in your Windows program).

## Feeding Plan

(screenshot 5 – part 2 of 3)



Here you can:

- See each individual route created. A dark colour indicates the chosen route.
- The "Next" and "Previous" arrows can only be used, if there are more than 4 routes.  
Use these arrows to scroll between the different routes if there are more than 4 routes.

## Feeding Plan

(screenshot 5 – part 3 of 3)

Row #	Material	Feeding mode	Name of animal	Start vol of feed, kg	Max. of days	Current day	End vol of feed, kg	Time, sec	Speed of motor, %	Speed of plate, %	Speed of conveyor, %
1	Active	By speed			1	1			100	100	70
2	Active	By Time			1	1			100	100	70
3	Active	By Weight	1	1	1	1	10		100	100	70

- **The field "Box #"**

Here you can see which boxes / sections the JH MiniStrø is going to, in the individual route. In the above screenshot, there are 3 boxes / sections in route no. 1.  
The actual set-up in number of boxes is changed here ([screenshot 3E – part 2 of 2](#)).
- **The field "Status"**

Here you activate or deactivate each individual box, so that the JH MiniStrø in the future will either include the box in question or skip the box in question.
- **The field "Feeding mode"**

Here you indicate by which method the JH MiniStrø must use to spread the material in the cart. There are three options (by speed, by time and by weight). The following fields are adapted to the selection you make here.

**By speed:** Here you decide at which speed the JH MiniStrø must run in the individual box. You can adjust the speed of the cross conveyor belt and the speed of the bottom chain conveyor. This allows you to determine how much JH MiniStrø will have to spread / feed in each box.

**By time:** Here you can plan the spreading / feeding in each individual box according to the parameters of both time and speed (how long time must the JH MiniStrø stay in the box / section in question, as well as at what speed should the motors run at).

**By weight:** Extra purchase module – See manual for weight module.  
The following fields are adapted to the selection you make here.
- **The field "Num of animal"**

The field is only accessible if you have selected the feeding mode: "By weight".  
Extra purchase module – see manual for weight module.
- **The field "Start val of feed, kg"**

The field is only accessible if you have selected the feeding mode: "By weight".  
Extra purchase module – see manual for weight module.
- **The field "Num of days"**

The field is only accessible if you have selected the feeding mode: "By weight".  
Extra purchase module – see manual for weight module.
- **The field "Current day"**

The field is accessible no matter which feeding mode is chosen: "By speed" or "By time" or "By weight".  
Extra purchase module – see manual for weight module.
- **The field "End val of feed, kg"**

The field is only accessible if you have selected the feeding mode: "By weight".  
Extra purchase module – see manual for weight module.
- **The field "Time, sec"**

The field is only accessible if you have selected the feeding mode: "By time".

Here you enter how many seconds you want the JH MiniStrø to stay in each box / section and to feed / spread material.

- **The field "Speed of motion, %"**

The field is accessible no matter which feeding mode is chosen.

Here you enter how fast the JH MiniStrø must run. The slower the JH MiniStrø runs, the more material it potentially can spread at a time.

The speed is given in percent. The recommended speed lies between 50-100%.

- **The field "Speed of plate, %" (Spreading discs / cross conveyor belt are optional)**

The field is accessible no matter which feeding mode is chosen.

Here you enter how fast the spreading discs must run. The lower the value, the less area will be spread with material.

The speed is given in percent. The recommended speed lies between 60-100%.

- **The field "Speed of conveyor, %"**

The field is accessible no matter which feeding mode is chosen.

Here you enter how fast the bottom conveyor chain must run. The lower the value, the less material will be spread.

The speed is given in percent. The recommended speed lies between 50-100%.

## Settings (screenshot 6)



On this screenshot, you will find the technical settings.

These are the technical settings, which forms the base for all other operations of the JH MiniStrø. It is this page you must access FIRST, when installing a new JH MiniStrø machine.

After the initial setting of the technical parameters, changing of the parameters should only rarely be necessary.

Here you can among others:

- Set the basic speed of all motors.
- Set basic battery voltage parameters.
- Set basic parameters to alarm.



## Settings

(screenshot 6 – part 1 of 2)



- **The fields "Previous" and "Next"**  
Change between the next or previous screenshot. Only when the JH MiniStrø program is set on "Stop".
- **The field "User" / "Owner"**  
Choose whether you want to access the program as "User" (if you are a normal user of the system) or as "Owner" (if you are a super user or a technician)  
This manual addresses the "Owner" (super user/technician).
- **The field "Time and date"**  
Displays the current time and date (follows the time registration in your Windows program).

## Settings

(screenshot 6 – part 2A of 2)



- **The field "Fill only empty cart"**

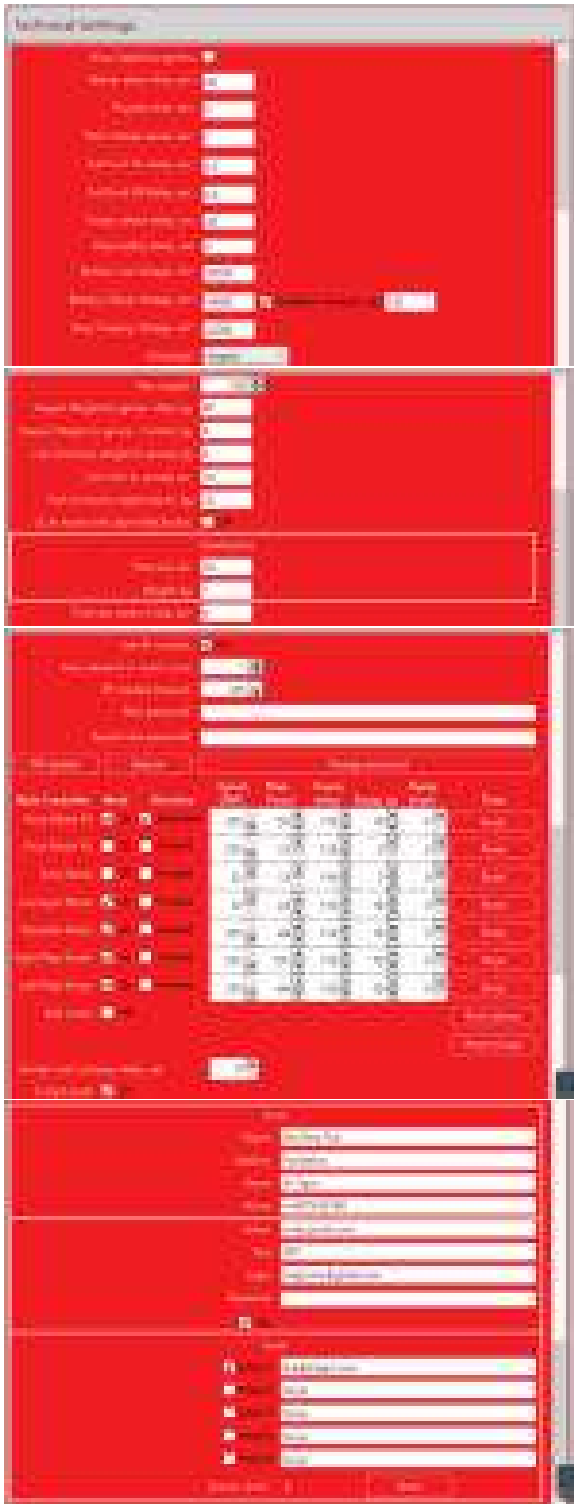
**No check mark:** The JH MiniStrø is filled, whether it is empty or not (is typically used, if the material added is self-levelling).

**Check mark:** The JH MiniStrø will only fill the cart when it is empty (is typically used, if the material added is NOT self-levelling).

- **The field "Speed"**  
Here you enter which speeds to select via the program's shortcut keys. A good starting point is 60% for low speed, 85% for high speed and 50% for others (cutter etc.).
- **The field "COM port"**  
Specifies which port on the PC to use. Typically, it will always be COM port no. 1.
- **The field "Motor current"**  
Here is entered the motors maximum allowed current use before the power is cut off by the controls,, e.g. 20 Amps (this is to protect the motor from overload).  
The value to enter can be found on the nameplates of the respective motors.  
NB! Note that the next time you log in, the program has converted the value to a hex value. Just ignore this.
- **The field "Technical"**  
The field "Technical" in the lower right hand corner opens a new window, where a code must be entered. The code is set to "0" by default. After you enter the code, another page of technical settings opens. The code can (not recommended) be changed, when the new page is opened, under the field "New code". See ([screenshot 6 – part 2B of 2](#)).

## Technical Settings

(screenshot 6 – part 2B of 2)



- **The field "Show DataExchangeTest"**  
Reserved for JH Agro's in-house technicians.

- **The field "Marker alarm time, sec"**

Here is specified in seconds the time of which the JH MiniStrø may take from one marker to the next. Remember to enter the time interval that applies to the LONGEST distance between two markers on the ENTIRE route.  
If the time interval is exceeded, the JH MiniStrø will stop and go into alarm.
- **The field "IR pulse time, sec"**

Here you specify for how many seconds the IR transmitter must be active (send signals to the receiver), when positioned under a marker.
- **The field "Track change pause, sec"**

Here is specified in seconds the time for which the JH MiniStrø must wait, from it has sent a command for a rail switch to change position until the JH MiniStrø may proceed ahead. A good starting point can be 10 seconds.
- **The fields "On Timer, sec" and "Off Timer, sec"**

Is for controlling any optional equipment (e.g. extra sensors and such).
- **The field "Empty sensor delay, sec"**

Here is specified in seconds, the length of time the JH MiniStrø must register being empty, before it actually reacts, this is so any irregularities in the feeding-/ spreading material can be levelled out, BEFORE the JH MiniStrø decides it is empty and returns to the hopper to be refilled.  
The starting point here can vary, as it depends on the structure of the material that the JH MiniStrø carries.
- **The field "Stop button delay, sec"**

Here is specified in seconds the time for which the JH MiniStrø must wait, AFTER the stop-button NO longer is activated, before it may proceed ahead again. This is to increase the probability that any animals, that have been standing in the way of the JH MiniStrø machine, have now moved.
- **The field "Battery Low Voltage, mV"**

If the battery voltage drops below the entered value, the JH MiniStrø will discontinue its route and drive home and charge. The value 21000 mV should not be changed.
- **The field " Battery Critical Voltage, mV"**

If the battery voltage drops below the entered value, the JH MiniStrø will stop and go into alarm. With the current battery voltage, the JH MiniStrø cannot reach home and charge. The value 18000 mV should not be changed.
- **The field "Shutdown timeout, sec"**

Checking the box and entering a value (15 seconds could be a good bid) will not shut down JH MiniStrø's PC until it has felt a voltage loss in the specified time interval. (This is to prevent the PC from accidentally shutting down at a momentary loss of power).

- **The field "Stop charging Voltage, sec"**

Stop charging Voltage is an added protection so the JH MiniStrø batteries do not overcharge. It is recommended that the value 32000 mV is not changed.

- **The field "Language"**

The JH MiniStrø is pre-programmed with the purchased language-package, therefore it is rarely necessary having to make changes here.

In case this does become necessary, this is what to do:

- 1) Choose the language needed, in the field.
- 2) Press Alt F4 – You will now see the desktop.
- 3) Press the Windows key (bottom left corner) and search for "Language" - Follow the Windows language selection instructions.
- 4) Back to the desktop, touch the small icon (the man) in the left vertical column (if you cannot see him, then press the "Window key" again).
- 5) After pressing the "Man" icon, press the "MiniStrø" icon.
- 6) Now select "JH Staldservice" and then press "Log in".
- 7) Back on the desktop, press "JHAgroPCPanelApp".

The language has now changed.

- **The fields relating to "Weight"**

Applies to the following 6 fields: Purchase module - See manual for weight module.

- **The field "Go to home with alarm RMCheckIn"**

Only relevant if more than one JH MiniStrø machine must use the same rail network.

Explanation: When JH MiniStrø reaches the "Start switch zone", it asks for permission to enter the common rail network, see ([screenshot 3F – part 2 of 2](#)).

By checking / unchecking this feature here, you can decide what JH MiniStrø should do if it does NOT get a response from the rail-master.

**Checked:** The JH MiniStrø must drive home and finish the route. This is to prevent the JH MiniStrø from discharging the battery.

**Unchecked:** JH MiniStrø must stay in place and go into alarm.

- **The field "Stabilization"**

Extra purchase module - See manual for weight module.

- **The field "Time out works in box, sec"**

Extra purchase module - See manual for weight module.

- **The field "Use RF module" (radio frequency)**

**Checked:** All wireless device programming commands become visible in the menu.

**Unchecked:** All wireless device programming commands disappear from the menu.

This means:

If wireless communication is used for external devices, the field must be checked.

If IR (infra-red) communication is used for external devices, DO NOT tick this box..

- **The field "Max railswitch in switch zone"**

Only relevant if more than one JH MiniStrø machine must use the same rail network.  
Here you define how many rail switches the rail master must communicate with in the rail switch zone.

- **The field "RF module timeout"**

May only be changed by prior arrangement with internal technicians from JH Agro.  
The default value should be 200.

- **The field "New password"**

It is basically recommended that you do NOT change the password:

If you choose to do so, you must:

- 1) Enter new password. There are no requirements for length or symbols, BUT if letters or characters are used, the Windows virtual keyboard must be used afterwards (see Windows for more info).
- 2) Repeat new password.
- 3) Press the "Change Password" field.

- **The field "FW Update" (firmware)**

Reserved for JH Agro's in-house technicians.  
Main board software up-date.

- **The field "Reset statistic"**

Reserved for JH Agro's in-house technicians:  
Resets all operating hours statistics for motors. NO deletion alerts are provided. The feature is under development.

- **The field "Main Controller"**

Here you control all the motors, that CAN be connected to the JH MiniStrø.

- **The field "Mask"**

Here you mark off which motors that are ACTUALLY found on the respective JH MiniStrø machine.

- **The field "Direction"**

Here is indicated in which direction the motor will rotate when the JH MiniStrø machine receives a "forward"-signal.

- **The field "Speed, 100%"**

Here you indicate in percentage the speed in which the motor should to run. 100% corresponds to the maximum performance of the motor. The value is given here as a hex number where in this case 100% corresponds to 255.

NB! This also means that if you enter a lower hex number here, for example, corresponding to 80% of the maximum performance of the motor, and then a User subsequently enters 100% under, for example, "Feeding plan", the motor will run 100% of the 80% that is entered here.

- **The field "Max Power"**

Max power and Motor current describe the same thing. The only difference is that under the field "Motor current" the value is stated in Ampere and in the field "Max Power" the value is given as a Hex number.

NB! It is always recommended to enter the value as Ampere, as the actual value in Ampere is always indicated on the motors nameplate. See ([screenshot 6 – part 2A of 2](#)).

- **The field "Power delay"**

Here is entered the time, (hex-number) where the current occasionally is allowed to be higher, than what is indicated as maximum Ampere on the motor, WITHOUT the JH MiniStrø going into alarm.

The value entered must not exceed Hex-number 110 without the explicit permission of JH Agro's internal technicians

- **The field "Rump up"**

The Acceleration time will always be dependant of the size and weight of the actual JH MiniStrø machine, but a good starting point will be a value of around 10.

- **The field "Rump down"**

**Motor not mounted:** If no motor brake (optional equipment) is installed, set the value to 0.

**Motor mounted:** If a motor brake is installed, the entered value must NEVER be under 10. What the optimal value then must be, depends entirely on the size and weight of JH MiniStrø and what it is loaded with of material.

- **The field "Time"**

Here you can reset the motor running hour counter on the different motors, alarms and charger. Reset should only occur when replacing a motor or the like. The counter is seen here: ([screenshot 8](#)).

- **The field "Belt motor"**

If a cross belt is mounted on the JH MiniStrø, you must put the check the box "Mask", just as you do with the other connected motors.

A new menu opens, where you decide whether to install the cross belt via the right spreading disc motor or the left spreading disc motor.

- **The field "Shreder and Conveyor delay, sec"**

Here you enter, the number of seconds the shredder must run, BEFORE the bottom chain starts moving material forward.

The number of seconds to enter completely depends of the material type, how long it is kept in the cart and what the room temperature is (e.g. if the material is frozen).

- **The field "Is digit panel"**

**Touch screen:** If the JH MiniStrø is controlled via a touch screen, the "Is digit panel" must be on.

**PC:** If the JH MiniStrø is controlled vi a regular PC, it is not important that the "Is digit panel" is on.

NB!! However, you should, as a starting point, NOT turn off the "Is digit panel".



If you have turned off "Is digit panel" and you need to access the JH MiniStrø via touch screen, you need to download a keyboard via Windows (follow instructions in Windows manual).

- **The field "Object"**  
Here you enter the name of the JH MiniStrø machine (you choose the name yourself)
- **The field "Address"**  
Here you enter the address of where the JH MiniStrø machine is placed.
- **The field " Name"**  
Here you enter the name of the company in which the JH MiniStrø machine is placed.
- **The field "Phone"**  
Here you enter the customers phone number.
- **The field: "Server"**  
Must be filled out for the system to automatically send out e-mail(s) if JH MiniStrø alarm occurs. Contact your IT support for further guidance and assistance.
- **The field: "Port"**  
Must be filled out for the system to automatically send out e-mail(s) if JH MiniStrø alarm occurs. Contact your IT support for further guidance and assistance.
- **The field: "Login"**  
Must be filled out for the system to automatically send out e-mail(s) if JH MiniStrø alarm occurs. Contact your IT support for further guidance and assistance.
- **The field: "Password"**  
Must be filled out for the system to automatically send out e-mail(s) if JH MiniStrø alarm occurs. Contact your IT support for further guidance and assistance.
- **The field: "SSL"**  
Must be filled out for the system to automatically send out e-mail(s) if JH MiniStrø alarm occurs. Contact your IT support for further guidance and assistance.
- **The field: "Email"**  
Here you enter the emails of those the system must send emails to if JH MiniStrø alarm occurs. You can enter up to five email addresses.
- **The field "Queue count"**  
Here you can see the number of e-mails, waiting in line to be sent.  
If the Queue count does NOT show "0" here, this can be a dispatch error (possibly either a network- or server error).

- **The field "Reset"**

Here you can reset the queue of e-mails, that have not been sent.

## Manual Control – Start-up (screenshot 7A)



This page is exclusively used for manually operating the JH MiniStrø and for checking the functionality of the individual parameters, as well as for running tests and / or for troubleshooting.

### **NOTE!**

To switch to manual control, always press "Start".

Be aware that the normal programming for JH MiniStrø is now switched off and that JH MiniStrø now ONLY works with manual operation until "Stop" is pressed again.

Here you can:

- Manually run the JH MiniStrø forwards or backwards or home to starting position.
- Test the functionality of the individual parameters.
- Check the status of the sensors, relays, motors etc.

## Manual Control – Basic control

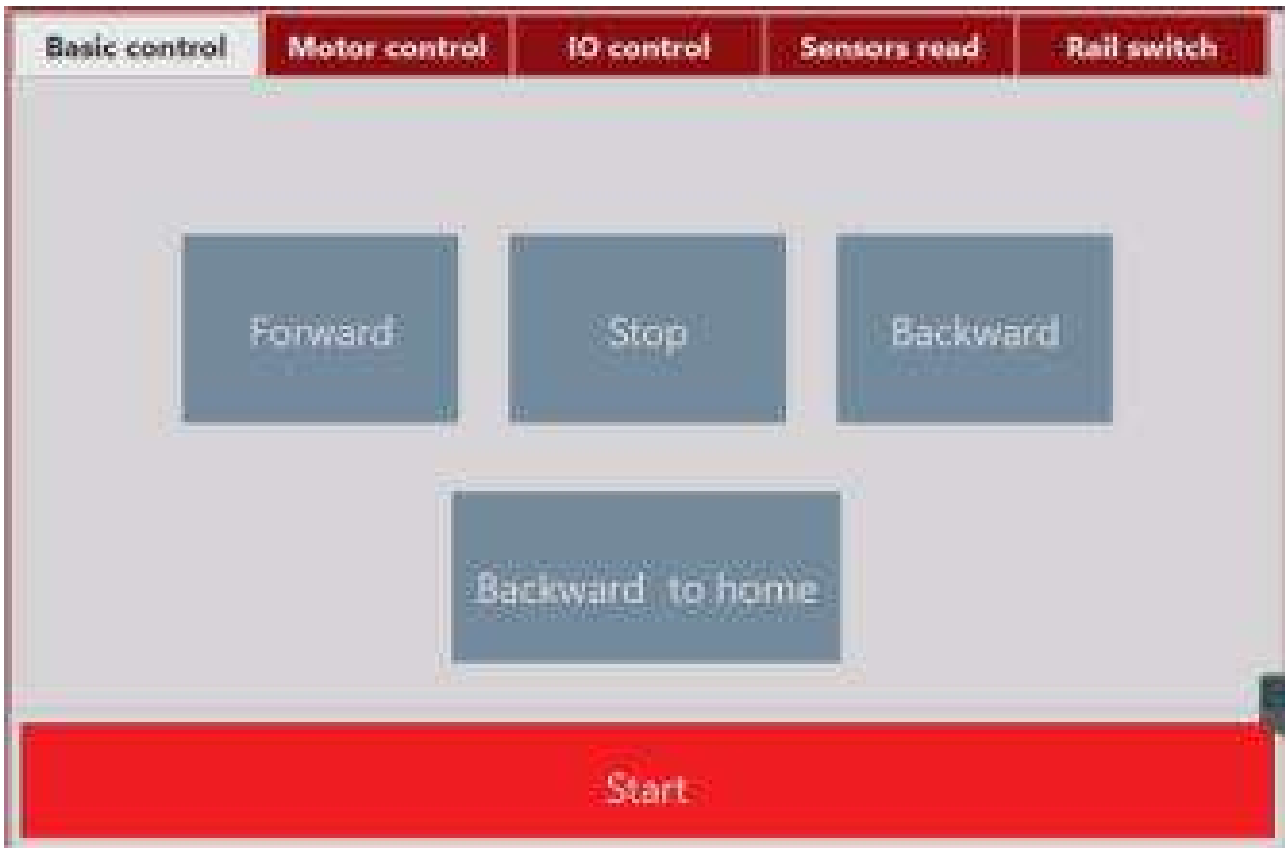
(screenshot 7A – part 1 of 2)



- **The fields "Previous" and "Next"**  
Change between the next or previous screenshot. Only when the JH MiniStrø program is set on "Stop".
- **The field "User" / "Owner"**  
Choose whether you want to access the program as "User" (if you are a normal user of the system) or as "Owner" (if you are a super user or a technician)  
This manual addresses the "Owner" (super user/technician).
- **The field "Time and date"**  
Displays the current time and date (follows the time registration in your Windows program).

## Manual Control – Basic control

(screenshot 7A – part 2 of 2)



Here you can:

- Manually run the JH MiniStrø forwards and backwards or home to starting position.

### IMPORTANT

Here you can control the JH MiniStrø manually.

To enable the option to navigate manually, press "Start" at the bottom of the screen.

JH MiniStrø must constantly be monitored when switching to manual control.

- **The field "Start" (changes to "Stop", once the program is started)**  
You activate manual control by pressing "Start" at the bottom of the screen.  
Please note that the normal program for the JH MiniStrø is now out of operation and the JH MiniStrø is now operated exclusively through manual control.
- **The field "Forward"**  
When pressing "Forward" the JH MiniStrø runs forward and stops first when "Stop" is pressed.
- **The field "Stop"**  
JH MiniStrø first stops the activity started when you press "Stop".

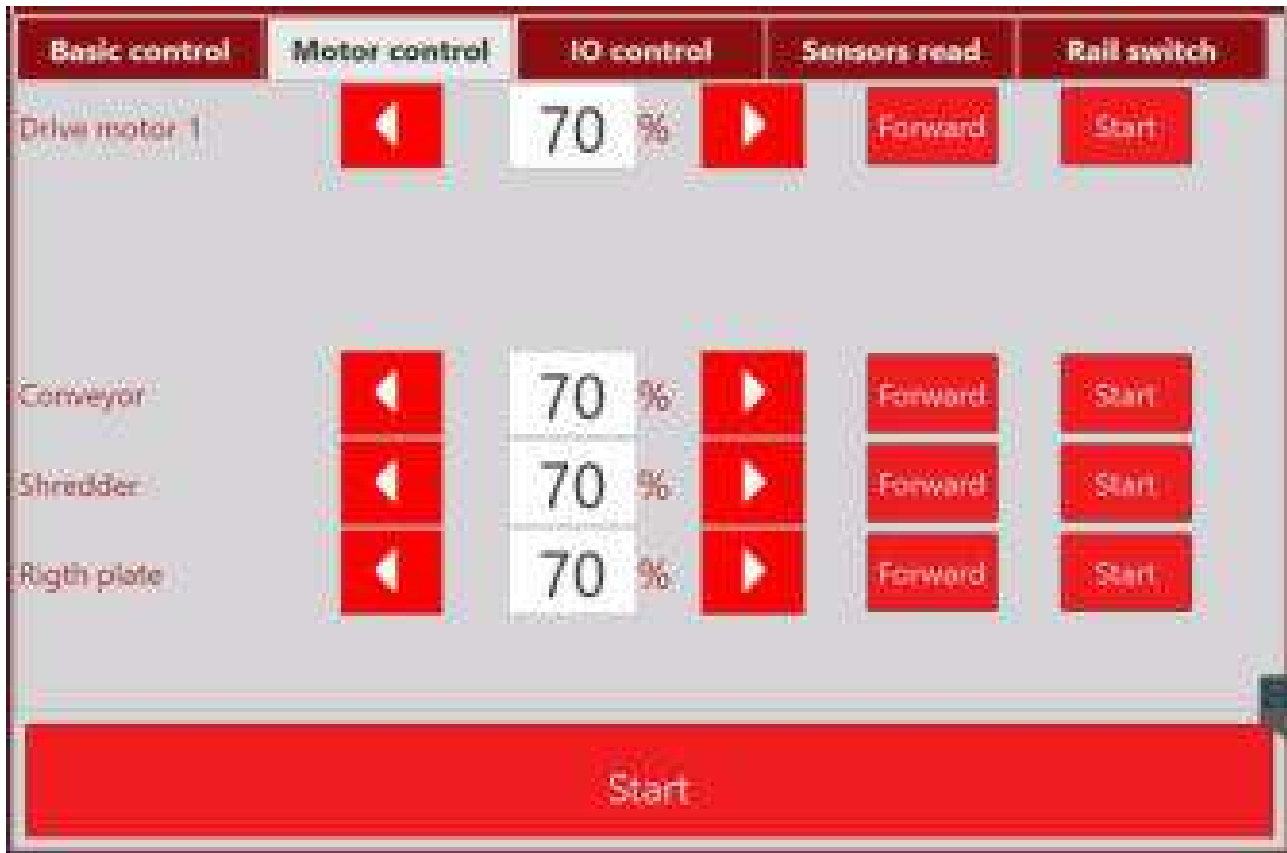
- **The field "Backward"**  
When you press "Backward" the JH MiniStrø runs backwards and stops first when you press "Stop".
- **The field "Backward to home"**  
JH MiniStrø drives home to its home position.

## IMPORTANT

To return to automatic control, you must:

- 1) Press "Stop" on the screen OR exit the manual control by pressing the "Previous" or "Next" arrows in the upper section.  
AND
- 2) Go to "Main screen - Start-up" ([screenshot 1A – part 3 of 3](#)) and press "Start".  
(If you fail to do this, the JH MiniStrø will NOT restart).

## Manual Control– Motor control (screenshot 7B – part 2 of 2)



Here you can:

- Test the functionality of the individual motors.

### IMPORTANT

Here you control the JH MiniStrø manually.

To enable the option to navigate manually, press "Start" at the bottom of the screen.

JH MiniStrø must constantly be monitored when switching to manual control.

- **The field "Start" (changes to "Stop", once the program is started)**  
You activate manual control by pressing "Start" at the bottom of the screen.  
Please note that the normal program for the JH MiniStrø is now out of operation and the JH MiniStrø is now operated exclusively through manual control.
- **The fields "Arrow forward" and "Arrow backward".**  
Here you regulate the speed at which you want to test the individual motors. It is recommended to test them at a "medium" speed (between approx. 50-70%).

- **The field "Forward" / "Backward"**  
Here you choose the direction you want the motor to run.
- **The field "Start" (changes to "Stop", once the program is started)**  
Here you activate the chosen motor and stop it again once testing is done.

## IMPORTANT

To return to automatic control, you must:

- 1) Press "Stop" on the screen OR exit the manual control by pressing the "Previous" or "Next" arrows in the upper section.  
AND
- 2) Go to "Main screen - Start-up" ([screenshot 1A – part 3 of 3](#)) and press "Start".  
(If you fail to do this, the JH MiniStrø will NOT restart).



## Manual Control - IO control

(screenshot 7C – part 2 of 2)



Here you can:

- Test the sensors, relays, motors etc.

### IMPORTANT

Here you control the JH MiniStrø manually.

To enable the option to navigate manually, press "Start" at the bottom of the screen.

JH MiniStrø must constantly be monitored when switching to manual control.

- **The field "Start" (changes to "Stop", once the program is started)**  
You activate manual control by pressing "Start" at the bottom of the screen.  
Please note that the normal program for the JH MiniStrø is now out of operation and the JH MiniStrø is now operated exclusively through manual control.
- **The field "On" (changes to "Off", once the program is started)**  
Here you can activate or deactivate the individual parameters.

- **The field "IR"**  
Here you can test if the infra-red sensors respond correctly ( on / off).
- **The fields "Actuator Forward" / "Actuator Backward"**  
Here you can test the extension / retraction of the spreading discs (actuator).
- **The field "Spare out 1"**  
Not currently in use.
- **The fields "Alarm relay" / "Charger relay" / "Motor relay"**  
Here you can test if the individual relays are working correctly (could be a test of on/off of the rotor flash, alarms or other things).
- **The fields "Set impulse out state 1" / "Set impulse out state 2"**  
Here you can test any other accessories.

## IMPORTANT

To return to automatic control, you must:

- 1) Press "Stop" on the screen OR exit the manual control by pressing the "Previous" or "Next" arrows in the upper section.  
AND
- 2) Go to "Main screen - Start-up" ([screenshot 1A – part 3 of 3](#)) and press "Start".  
(If you fail to do this, the JH MiniStrø will NOT restart).

## Manual Control - Sensors read (screenshot 7D – part 2 of 2)



Here you can:

- Read the status of various parameters (sensors, sensors, battery etc.).
- Reset any error message on motors or other equipment.

### IMPORTANT

Here you control the JH MiniStrø manually.

To enable the option to navigate manually, press "Start" at the bottom of the screen.

JH MiniStrø must constantly be monitored when switching to manual control.

- **The field "Battery ADC value"**

Here you can read the current voltage on the battery.

- **The field "Sensor Empty"**

Here you can read if the sensor registers if the JH MiniStrø is empty.

NB! This is NOT the same as the JH MiniStrø is actually empty. It is only an expression of what the sensor registers (empty / not empty).

**Active:** The Empty-sensor registers that there is NO material in the defined area measured.

**Inactive:** The empty-sensor is inactive, meaning there IS material in the defined measurable area.

- **The field "Sensor front Full"**  
Not currently in use.
- **The field "Sensor Full"**  
Here you can read if the sensor registers the JH MiniStrø as full.  
NB! This is NOT the same as the JH MiniStrø is actually full. It is only an expression of what the sensor registers (empty / not empty).  
**Active:** The Full sensor registers that there IS material in the defined area measured.  
**Inactive:** The Full sensor is inactive, meaning there is NO material in the defined measurable area.
- **The field "Error"**  
If an error occurs the 0x00 0x00 0x00 changes to an error code with an associated text  
The error is reset following ended error correction, by pressing the "Reset" button.
- **The field "Home\_Position\_Sensor"**  
Here you can see if the JH MiniStrø is in home position (Marker 0).  
**Active:** JH MiniStrø is home.  
**Inactive:** JH MiniStrø is not home.
- **The field "Position Marker Sensor"**  
Here you can read if the JH MiniStrø is in contact with a position marker.  
**Active:** JH MiniStrø is in contact with a position marker.  
**Inactive:** JH MiniStrø is not in contact with a position marker.
- **The field "Weight"**  
Extra purchase module - See manual for weight module.
- **The field "Analog inputs"**  
Here you can read the current voltage on the various analogue functions (discs / belts / electrical controls / batteries etc.
- **The field "Digital\_inputs":**  
Here you can read the status of the various digital inputs (stop button (collision button), emergency stop button, etc.). In the case of problem solving in connection with an emergency stop, it is always a good idea to check that all three of the following conditions are checked.  
**Stop button (collision button):**  
**0:** The Stop button is not activated (JH MiniStrø is running / can run).  
**1:** The Stop button activated (JH MiniStrø cannot run).  
**Reset button:**  
**0:** The Reset button is activated (JH MiniStrø cannot run).  
**1:** The Reset button is not activated (JH MiniStrø is running / can run).  
**Emergency stop button:**  
**0:** The Emergency stop button is activated (JH MiniStrø cannot run).  
**1:** The Emergency stop button is not activated (JH MiniStrø is running / can run).

- **Digital\_ inputs: weighting input / Spare input**  
Not currently in use.

## **IMPORTANT**

To return to automatic control, you must:

- 1) Press "Stop" on the screen OR exit the manual control by pressing the "Previous" or "Next" arrows in the upper section.  
AND
- 2) Go to "Main screen - Start-up" ([screenshot 1A – part 3 of 3](#)) and press "Start".  
(If you fail to do this, the JH MiniStrø will NOT restart).

## Manual Control – Rail switch

(screenshot 7E – part 2 of 2)



Here you can:

- Check the status of JH MiniStrø in connection with rail switch zones (common rail network).
- Reset railmaster (e.g. if there has been a need to manually run the JH MiniStrø to its home position).
- Manually set and test a route / rail switch in the rail switch zone (common rail network).

### IMPORTANT

Here you can control the JH MiniStrø manually.

To enable the option to navigate manually, press "Start" at the bottom of the screen.

JH MiniStrø must constantly be monitored when switching to manual control.

- **The field "Switch zone state"**  
Here you can see whether the JH MiniStrø is checked in or out of the rail switch zone (Common rail network).
- **The field "Communication settings"**  
Here you can see the latest communications from the JH MiniStrø and the Railmaster.

- **The field "Standalone"**

Here you can manually request a rail switch to change direction.

**Adress:** Here is indicated the ID number of the wireless unit that the JH MiniStrø must communicate with.

The ID number is set in the control box.

**Command:** Select the position in which the rail switch should be in when pressing "Send".

**Set:** To execute the command, press the "Set" button at the far right side of the screen.

- **The field "Reset switching zone"**

Here you can reset the Railmaster.

NB! It is important to remember ALWAYS to reset here, in case it has been necessary to manually drive the JH MiniStrø home. Exactly this function cancels all check-ins and / or blocks of the rail switch.

- **The field "Check in/ out"**

Here you can manually test the function Check in / Check out.

- **The field "Switches" (For this JH MiniStrø there are 3 rail switches)**

**Position:** Here you decide which position you want the rail switch to switch to.

**Update:** Here you decide which rail switches you want to include.

**Lock:** Here you decide, if there are rail switches you want to lock in a certain position.

**Set (enter):** The commands in "Position" and "Update" are only activated when you press "Set".

**Lock (enter):** The commands in "Lock" (locking of rail switches) are only activated when "Lock" is pressed.

NB! Be aware that the JH MiniStrø only starts the programmed route when the "Set" / "Lock" keys are activated.

## IMPORTANT

To return to automatic control, you must:

- 1) Press "Stop" on the screen OR exit the manual control by pressing the "Previous" or "Next" arrows in the upper section.  
AND
- 2) Go to "Main screen - Start-up" ([screenshot 1A – part 3 of 3](#)) and press "Start".  
(If you fail to do this, the JH MiniStrø will NOT restart).

## Log View (screenshot 8)



On this page you get an overview of the alarms, actions as well as the system changes that have been on the JH MiniStrø.

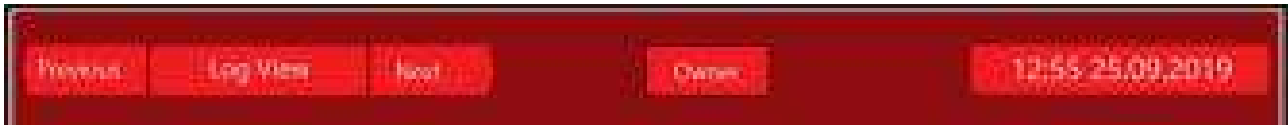
Here you can:

- Document what alarms have occurred.
- Document what actions the JH MiniStrø has actively performed.
- Document what system changes have been.



## Log View

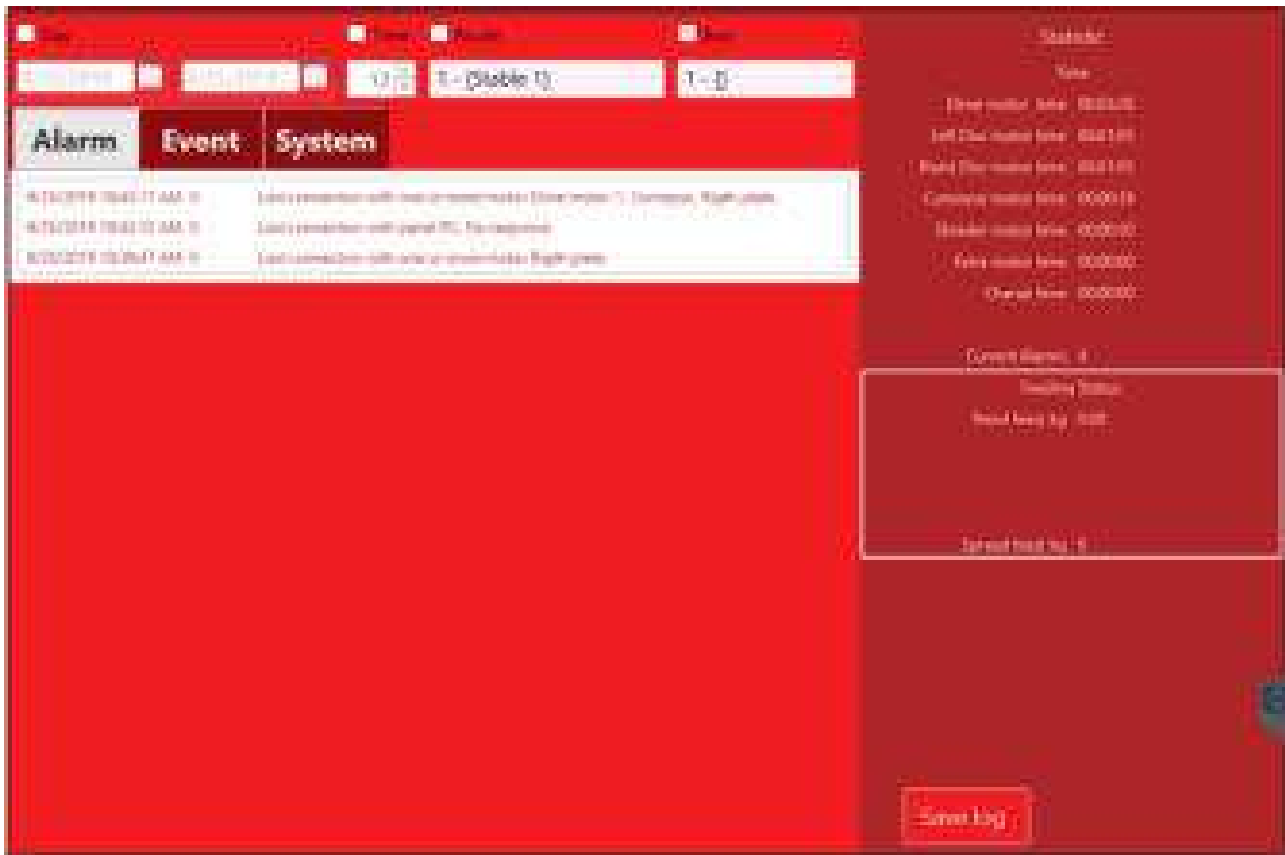
(screenshot 8 – part 1 of 2)



- **The fields "Previous" and "Next"**  
Change between the next or previous screenshot. Only when the JH MiniStrø program is set on "Stop".
- **The field "User" / "Owner"**  
Choose whether you want to access the program as "User" (if you are a normal user of the system) or as "Owner" (if you are a super user or a technician).  
This manual addresses the "Owner" (super user/technician).
- **The field "Time and date"**  
Displays the current time and date (follows the time registration in your Windows program).

## Log View

(screenshot 8 – part 2 of 2)



- **The filter fields, "day", "Time", "Route", "Box", at the top of the above shown screenshot**  
Here you can filter through what data you wish to see.
- **The fields "Alarm" – "Event" – "System"**  
**Alarm:** Displays alarms during the chosen period.  
**Event:** Displays actions performed during the chosen period.  
**System:** Shows what system changes have occurred during the chosen period.
- **The field "Statistic - Time"**  
Currently not in use.
- **Feltet "Statistic – Current Alarms"**  
Her vises det samlede antal alarmer, der i alt har været på JH MiniStrø.
- **The field "Statistic – Feeding Status"**  
Extra purchase module - See manual for weight module.
- **The field "Save log"**  
Here you can export the desired data directly into a CSV file and save it to your document folder.

## FAQ

### How do I switch on the screen / the PC?

Open the control box by loosening the screws in the corners. The power button is located at the bottom of the screen in one corner. If the screen does not turn on and Windows does not reboot, contact your JH MiniStrø supplier.

### How do I start the program?

Double-click the "JHAgroPCPanelApp" icon to launch the app. The app automatically starts together with Windows. If this does not happen, restart your Windows application.

### How do I turn off the app?

From the PC with a keyboard, press "ALT-F4". From the touch screen, swipe from the left side towards the middle. Then you can press the X in the right hand corner.

### Windows needs to reboot, what do I do?

Microsoft regularly sends out updates for Windows and it is recommended to keep your PC updated. Updates may take a long time (1-2 hours) ending with a restart of the PC. It is therefore recommended to do this outside normal operating hours.

### I cannot connect to TeamViewer ?

Make sure that the JH MiniStrø PC is switched on and that wireless access is available in the JH MiniStrø domain area. If this does not solve the problem, contact TeamViewer.

### I want to save on battery use, what do I do?

Turn off the PC as you would a regular PC. Turn off the JH Agro app (see section 3). Note the procedure for turning on the PC again (see section 1.)

### How do I get to the edit pages?

To go to the edit pages via the "Previous" and "Next" arrows, you must first pause JH MiniStrø by pressing "Pause". See ([screenshot 1A – part 3 of 3](#)). Now you can go to the edit pages via the previous and next keys.

REMEMBER, when you have finished editing, to go back to the Main screen and press "Resume" or "Start" again.

**How do I start a route manually?**

See ([screenshot 7A – part 2 of 2](#)).

**How do I reset an error?**

All errors are reset by pressing the "Reset" button. See ([screenshot 1A - part 3 of 3](#)). When resetting some errors, JH MiniStrø will attempt to resume the route. It could e.g. be "Error in filling". Other errors require that JH MiniStrø is returned manually to the home position. This could e.g. be "Marker count error". See how you run the MiniStrø "Home" ([screenshot 7A – part 2 of 2](#)).

**How do I deactivate / activate a route?**

See ([screenshot 2 – part 2 of 2](#)).

**How do I deactivate / activate a box?**

If there are no animals in a box for a period, the number of animals is inactivated under "Feeding Plan". See ([screenshot 5 – part 3 of 3](#)). If you want to permanently add or remove a box see ([screenshot 3E – part 2 of 2](#)).

**Where do I change the feed quantity per box?**

The speed of the box, the speed of the drive and the speed of the spreading discs can be adjusted on the page "Feeding Plan". See ([screenshot 5 – part 3 of 3](#)).

**How do I change start times?**

The start times for the individual routes can be changed from the (time) "Scheduler" page by clicking on the relevant start time. See ([screenshot 4 – part 2 of 2](#)).

**I can only see manual routes on the list?**

The start-up screen ([screenshot 1B – part 2 of 3](#)) shows the REMAINING programmed routes of the day. The "Scheduler" screen ([screenshot 4 – part 2 of 2](#)) shows ALL the programmed routes both active and inactive and this is where you can edit them.

**Can I make the JH MiniStrø run every other day?**

Unfortunately no. The time schedule does not contain a date control, so all active routes are run daily.

**Can the JH MiniStrø run more than 8 times a day?**

Yes, you just need to create 2 identical routes.

**The "Manuel control" is not working?**

Enable to switch to Manual control, you must:  
1) Go to the screenshot "Manual Control".  
See ([screenshot 7A – part 2 of 2](#)).

- 2) activate "Manual Control" by pressing "Start" at the bottom of the screen.
- How do I set the clock?**  
It is the Windows program that controls the clock. You must therefore set the clock via your Windows program.
- The JH MiniStrø has gone into alarm?**  
Most alarms are easy and quick to solve.  
See ([screenshot 1B – part 3 of 3](#)).
- What is the password for "Technical Settings"?**  
By default, the password is 0 (zero). This can be changed, but it is not recommended.
- How do I change the language?**  
The language must be changed two places. It must be changed in the app itself and in your Windows program.  
See ([screenshot 6 – part 2B of 2](#)).
- JH MiniStrø does not fill evenly. What do I do?**  
This can typically be corrected by adjusting a sensor. However, if this happens at the start-up of a route, it may be due to the function "Fill only empty cart". Check this setting.  
See ([screenshot 6 – part 2A of 2](#)).
- JH MiniStrø does not always fill the cart at the hopper?**  
The function "Fill only empty cart" is activated.  
See ([screenshot 6 – part 2A of 2](#)).
- The motor control fuses often blow out?**  
First check for mechanical errors and thereafter check if the correct motor current value is entered.  
See ([screenshot 6 – part 2A of 2](#)).
- Where do I change the forward speed?**  
When nothing else is defined, the default value is "high". If you want to change the speed, (possibly because you are approaching a rail switch) this can be done here:  
([screenshot 3H – part 2 of 2](#)).  
You can also see ([screenshot 6 – part 2A of 2](#)) and ([screenshot 6 – part 2B of 2](#)).
- The rail switch fails to switch on time. How do I fix this?**  
Under "Technical Settings" you find the function "Track change pause, sec". Here the time is set for how long the JH MiniStrø must wait before proceeding, AFTER the "Change" signal is sent.  
See ([screenshot 6 – part 2B of 2](#)).
- The JH MiniStrø returns to the hopper, even if it is not empty?**  
The Empty-sensor must physically be adjusted or it may be necessary to change the

- settings for "Empty sensor delay, sec".  
See ([screenshot 6 – part 2B of 2](#)).
- Where do I activate the use of wireless features?** Under Technical Settings "Use RF module".  
See ([screenshot 6 – part 2B of 2](#)).
- The numeric keypad for entering numbers has disappeared?** Look at the bottom of the page with Technical Settings ([screenshot 6 – part 2B of 2](#)).
- The motor runs in the wrong direction?** Under "Technical Settings" you will find all the settings for all the motors. Here you also find the function "Direction". Add or remove the tick to change the direction of rotation.  
See ([screenshot 6 – part 2B of 2](#)).  
Then test the motor under "Manual Control – Motor control" see ([screenshot 7B – part 2 of 2](#)).
- Where do I see the battery and / or charging voltage?** Under "Manual Control" – "Sensors read" you will find all analogue inputs, including the battery voltage, see ([screenshot 7D – part 2 of 2](#)).  
If the charger relay is pulled (can be done under "IO control", see ([screenshot 7C - part 2 of 2](#)), the charging voltage is shown.
- How do I test a sensor or a button?** All signals from all sensors / buttons can be read in "Manual Control" – "Sensor read", see ([screenshot 7D – part 2 of 2](#)).
- "Manual Control" does not work, what do I do?** Check that the emergency stop is not pressed and then press the reset button on the side of the control box. Now press on the long "Start" button at the bottom of the screen.
- Can I test a marker sensor?** Yes, Go to "Manual Control" ([screenshot 7B – part 2 of 2](#)) start the Drive motor one and then change tab to "Sensors read" ([screenshot 7D – part 2 of 2](#)) and from here keep an eye on whether the marker sensor is activated or not.
- The Log does not show all the routes?** The log can sort in what is viewed by e.g. date or a specific route. Make sure all check marks are cleared when sorting.
- I cannot restart the JH MiniStrø?** Reset the programme and drive the JH MiniStrø to home position and start up again, see ([screenshot 1A – part 3 of 3](#)).