

# JH AGRO



# www.jhagro.com

# JH MiniStrø System

#### JH MiniStrø

The system JH MiniStrø automatically distributes different bedding materials such as straw, hay, sawdust, sand and separated manure solids. In addition, the system is ideal for distributing roughage to sows and/or organic chickens. The system can be installed in both existing and new stables. JH MiniStrø robots are small, but hard working and distribute material several times a day in contrast to other systems.

The JH MiniStrø products have been produced since 2004.

#### Ein JH MiniStrø system consists of:

- A rail system
- A filling station, where material is stored and filled in the robot
- A robot that distributes the material in the stable

The filling of bales or loose material in the filling station is the only manual work in connection with the system.

#### A JHminiStrø system consists of:

The programming of the robot is done via a control panel on the robot. Via the buttons the functions are programmed i.e. tracks, actions e.g. start/stop distributing, distribution amount and width, distribute only right or left, start/stop filling etc.

#### For all robots apply:

- Drive 2-30 m / min.
- CPU control
- 18 different tracks up to 8 times daily
- battery operated
- batteries are charged at a charging station







Drive motor



## **Rails and other equipment**









#### Rail system

The JH MiniStrø robots drives on rails IPE 100-160 depending on the weight of the robot. The robot can also pass through 90<sup>o</sup> degree curves and rail switches. The rail is mounted on trusses or on the inventory in the stable. On the under side of the rail markers are attached, after which the robot orient itself. It is rarely necessary to strengthen the trusses in the stable, when installing a JH MiniStrø system.



#### Automatic rail lifting

In many stables the feed alley must be accessible for tractors or similar. The rails of the JH MiniStrø system can make this difficult. For this the automatic rail lifting system has been developed. The lifting/lowering of the rail that crosses the feed alley is controlled automatically by the robot or manually with a remote control.



#### Automatic doors

If the robot has to operate in several buildings, automatic doors can be installed. The doors maintain temperature and other conditions in the stable. The automatic doors works also in combination with fire doors. The doors are controlled from the robot.



# **Filling stations**

#### JH Bale Opening Device

The ball opening device is available for different bale sizes. The bales can be loaded from three sides. In the device alone fits one bale of straw, but the device can be combined with an additional feeder table, on which several bales can be stored. On the device the

JH Straw Chopper can be mounted to cut straw down to 2 cm at low voltage for a very fine material to be used in the robot.

#### JH Dosing Devices for Loose Material

The 2/5, and 944m<sup>3</sup> bunkers for chopped straw and/or sawdust are simple but sturdy constructions. They consist of an inclined bottom and a conveyor chain. The devices have a top shredder, which doses the bedding material into the robot.







#### Sand dosing

For the storage and dosing of sand in the robot. The device can contain 7 m<sup>3</sup> sand. The sand is filled in the robot via a rubber band. In the device can be stored enough sand for about one week. A hydraulic lid is offered separately for outside locations.

#### Flexibility

A JH Robot can pick up material from up to 4 different filling stations. For example from a mixer and a bale opening device for combined feeding and straw distribution.

#### Mixer

The JH MiniStrø vertical mixer allows the feeding of roughage such as corn silage to sows and egg-laying hens. The mixing container of the mixer has a powerful, vertical screw for mixing the material and knives to cut it. The mixer is available from 2 m<sup>3</sup> to 18 m<sup>3</sup>.





# Straw/Sawdust in Boxes

#### Straw / sawdust in boxes

Chopped straw and sawdust is ideal for bedding in boxes. The prerequisite for success is a dry and cut material. Extra absorbent and disinfecting agents can be added automatically to the straw and/or sawdust.

#### JH MiniStrø

JH MiniStrø automatically distributes straw or sawdust in all types of stables with boxes. The JH MiniStrø is mounted on a rail system and is therefore never in direct contact with animals or inventory. As filling station for straw or sawdust the JH bale opening device for bales or the 2, 5 or 9 m<sup>3</sup> dosing devices for loose material work well.

<b>EXAMPLE</b> JH MiniStrø in cow stable	

TECHNICAL DATA	280	350	525
Volume m <sup>3</sup>	0,280	0,350	0,525
Dimension: W	500 mm	500 mm	500 mm
Dimension: H	400 mm	500 mm	750 mm
Dimension: L	1400 mm	1400 mm	1400 mm
Weight	197 kg	211 kg	296 kg
Capacity ca.	100 - 150 animals	150 - 300 animals	300 - 500 animals
Speed	1-30 m/min.	1-30 m/min.	1-30 m/min.
Distribution width	0 - 5 m	0 - 5 m	0 - 5 m
Rail size	IPE 100	IPE 100	IPE 120
Batteries	2 x12 V	2 x 12 V	4 x 12 V
Bottom	Belt	Belt	Belt
Operation time	10 hours	10 hours	10 hours







#### Savings in the stable

Existing systems for distributing straw and sawdust bedding have that in common that they require a lot of space in the stable and solid floors. With the JHminiStrø the bedding material is distributed from a rail above the boxes, which saves investments in special inventory of the stable.

#### Save time and money

Distributing several times a day means a constant and good filling of bedding material in each box. By automating the distribution of bedding material with JH MiniStrø the time of spreading straw manually can be saved. With the frequent distribution of straw and/ or sawdust up to 8 times a day, the bedding material is optimally used, which can lead to savings of up to 30 % of the bedding material.



# Separated manure solids in boxes

#### Dried manure solids in boxes

dried manure solids is a new interesting alternative to the already known materials. Separated manure solids have the same advantages as sand - a flexible and steady bed that forms after the cow. Separated manure solids let the cow rest and thus contributes to good health. Distributing the manure solids several times a day has a positive effect on the formation of bacteria, which is significantly less, when distributing with JH MiniStrø.

#### JH MiniStrø

The JH MiniStrø robots for distribution of dried manure solids have a chain in the bottom istead of a belt for handling material. They also have more motor and battery capacity. JH MiniStrø is filled with dried manure solidss directly from a separator or by a dosing device. The JH MiniStrø robots will run up to 18 different tracks 8 times a day. This means that the dried manure solids are regularly distributed in a thin layer, which ensures that there is always fresh dry bedding in the boxes.



TECHNICAL DATA	420	525	750
Volume m <sup>3</sup>	0,420	0,525	0,750
Dimension: W	500 mm	500 mm	500 mm
Dimension: H	600 mm	750 mm	750 mm
Dimension: L	1400 mm	1400 mm	1900 mm
Weight	283 kg	359 kg	402 kg
Capacity ca.	400 - 500 animals	500 - 600 animals	600 - 700 animals
Speed	1-30 m/min.	1-30 m/min.	1-30 m/min.
Rail size	IPE 120	IPE 120	IPE 140
Batteries	2 X 12 V	2 X 12 V	4 X 12 V
Bottom	Chain	Chain	Chain
Operation time	10 hours	10 hours	10 hours





#### Savings in the stable

When manually distributing separated manure solids there is a considerable danger of overfilling the boxes and thus extra large losses of bedding material in the first few days after filling. The level of bedding material in the boxes by this method will be very different in each box. When automatically distributing with a JH MiniStrø robot the level of separated manure solids will be more even in the boxes as well as more dry, because of the distribution in thin layers.

#### Save time and money

JH MiniStrø makes it possible to have a system in the stable, where no external bedding material has to be added. The bedding material ist extracted from the manure that is already in the stable. This saves time, hard work and purchase aof bedding material.



# Sand in boxes

#### Sand in boxes

Sand in boxes is widely used in cattle farming. The great advantage of sand is its weight. Sand is a heavy material and quickly establishes a flexible and stable bed which is formed after the cow.

Sand has a good effect on the well-being of the cows since sand inhibits the growth of bacteria and liquid is transported away from the surface of the bed. Sand leaves the cow to rest long and thus contributes to good health in the stable.

#### JH MiniStrø

JH MiniStrø automatically distributes sand in all types of boxes. The JH MiniStrø robot is mounted on a rail system and is therefore not in contact with animals or other devices. The robot is filled from the 7 m<sup>3</sup> dosing device for sand.



TECHNICAL DATA	350
Volume m <sup>3</sup>	0,350
Dimension: W	500 mm
Dimension: H	500 mm
Dimension: L	1400 mm
Weight	277 kg
Capacity ca.	300 - 600 animals
Speed	1-30 m/min.
Rail size	IPE 120
Batteries	2 X 12 Volt
Bottom	Belt
Operation time	10 hours





#### Savings in the stable

Existing systems for sand distribution have that in common that they require a lot of space in the stable and solid floors. With the JH MiniStrø the sand is distributed from a rail above the boxes, which saves investments in special inventory of the stable.

#### Save time and money

Distribution several times a day means a constant and good degree of filling in each box. In most stables it will take about 5 min. per m<sup>3</sup> of sand for the transport and distribution in the boxes. By automating the distribution with JH MiniStrø this time can be saved. With the frequent distribution of sand up to 8 times per day, the sand is optimally used and can lead to a saving of up to 30 % of bedding material.



### **Enrichment material**

#### Rooting material

With JH MiniStrø it is possible to distribute straw as rooting material to pigs and sows in all housing s ections for both gestation crates and free-range sows. The robot is mounted on a rail system in the stable and therefore moves around freely in the stable.

#### JH MiniStrø

The JH MiniStrø robot is mounted on a rail system and is therefore not at any time in contact with animals or inventory in the stable.

JH MiniStrø can be installed in both new and existing stables, mostly without having to make changes to inventory or roof construction.



TECHNICAL DATA	280	350	525
Volume m <sup>3</sup>	0,280	0,350	0,525
Dimension: W	500 mm	500 mm	500 mm
Dimension: H	400 mm	500 mm	750 mm
Dimension: L	1400 mm	1400 mm	1400 mm
Weight	197 kg	211 kg	296 kg
Capacity ca.	1000 sows	1500 sows	2500 sows
Speed	1-30 m/min.	1-30 m/min.	1-30 m/min.
<b>Distribution width</b>	0-5 m	0-5 m	0-5 m
Rail size	IPE 100	IPE 100	IPE 120
Batteries	2 X 12 Volt	2 X 12 Volt	4 X 12 Volt
Bottom	Belt	Belt	Belt
Operation time	10 hours	10 hours	10 hours







#### Savings in the stable

Common to all systems on the market today to distribute rooting material is that they require relatively much space. A JH MiniStrø system does not take place around the stable, because it is mounted on rails. In addition, a rail mounted robot does not need to access through gates and doors in the stable, which can be reduced to a minimum.

#### Save time and money

By spreading straw several times a day, it is possible to avoid straw ending up in the slurry pits and it will not be necessary to invest in other types of enrichment material. With extra feeder tables on the JH bale opening device as filling station it is possible for the system to operate up to a week without intervention.



# **Deep litter**

#### Deep litter

The importance of a well-bedded deep litter is well known. Especially in dairy cow herds one will experience increased health, if you offer the animals a dry bed. When lying in a well-bedded and dry bed the udder is better supplied with blood, the cow has more time for rumination, the musculoskeletal system is relieved and the hoofs can dry.

#### JH MiniStrø

The largest JH MiniStrø robots are ideal for distributing large amounts of straw to pigs, cattle, goats etc. in deep litter stables. JH MiniStrø is mounted on a rail, and is never in contact with animals or inventory in the stable and does not interfere with the daily rhythm in the stable. JH MiniStrø robots for deep litter have extra large distribution plates for distribution of straw in a width of up to 6,5 meters.



#### Save 30 % straw with JH MiniStrø

With the regular distribution of straw up to 8 times a day, the straw is used in the most optimal way.



TECHNICAL DATA	1000	1500	3000
Volume m <sup>3</sup>	1	1,5	3
Dimension: W	750 mm	750 mm	1000 mm
Dimension: H	750 mm	1000 mm	1400 mm
Dimension: L	1900 mm	1900 mm	2200 mm
Weight	515 kg	569 kg	716 kg
Capacity ca.	20 - 50	50 - 100	100 - 200
	animals	animals	animals
Speed	1-30 m/min.	1-30 m/	1-30 m/min.
		min.	
<b>Distribution width</b>	0 - 6,5 m	0 - 6,5 m	0 - 6,5 m
Rail size	IPE 120	IPE 120	IPE 140
Batteries	4 X 12 Volt	4 X 12 Volt	4 X 12 Volt
Bottom	Chain	Chain	Chain
Operation time	10 hours	10 hours	10 hours

#### **Better environment**

The JH MiniStrø robot which moves with the help of batteries have a very low noise level, so that animals are not stressed, while having put new, fresh bedding material at their disposal. In pig stables the animals are able to conduct their natural search behavior, which reduces the risk of tail biting.







# Roughage for organic egg-laying hens and sows

Experiments show that the feeding of roughage reduces feather pecking and cannibalism among egg-laying hens significantly. The hens will be more healthy and more productive. Feeding of roughage to sows provide better saturated and thus less stressed animals.

#### JH MiniStrø

The JH MiniStrø allows floor feeding with roughage such as corn silage in stables with egg-laying hens or sows. The roughage is mixed in and dosed in the robot from the JH MiniStrø mixer. The mixing container of the mixer has a powerful, vertical screw for mixing the material.

#### EXAMPLE JH MiniStrø egg-laying hens



TECHNICAL DATA	350	525
Volume m <sup>3</sup>	0,350	0,525
Dimension: W	500 mm	500 mm
Dimension: H	500 mm	750 mm
Dimension: L	1400 mm	1400 mm
Weight	268 kg	359 kg
Capacity ca.	6.000 hens	10.000 hens
Speed	1-30 m/min.	1-30 m/min.
Distribution width	0 - 5 m	0 - 5 m
Rail size	IPE 120	IPE 120
Batteries	2 X 12 Volt	4 X 12 Volt
Bottom	Chain	Chain
Operation time	10 hours	10 hours



#### Benefits

The automatic distribution of corn silage with JHminiStrø allows simultaneous feeding of all animals. The JH MiniStrø robot can pick up material at various times from up to four different filling stations.

#### Animal welfare

The JH MiniStrø system can be used to meet new requirements of initiatives concerning increased animal welfare. The roughage is ideal as both saturation food and rooting material, when it is distributed in the free range areas of sows, but can also be combined with the distribution of straw.





JH Agro is launching a whole new generation of our control system for JH MiniStrø. With the new control system we have emphasized higher user-friendliness, increased flexibility and brand new applications for the farmer.

The new control system can be retrofitted to all existing JH MiniStrø setups, and it is now our recommended control system in all new JH MiniStrø machines.

#### You will receive several improvements and more streamlining, with the new control system:

#### Up to 5 JH ministrø machines on every rail system

- Enabled by our newly developed shift zone system
- The system can handle up to 20 wireless rail switches with feedback, ensuring flawless switches

#### Can be operated via PC, mobile phone or tablet.

- · Considerably simplifying the work for all employees
- Requires WIFI with internet access
- Internet access allows for quick remote support from JH Agro.
- On the control unit there is also an integrated 10" touch screen (optional)

#### Newly developed weighing system (optional)

- Provides accurate readings
- · Feeds according to a feeding graph, easily adjusted in the control system
- Feed consumption is recorded and is easily read on the display.

#### Can be operated via PC, mobile phone or tablet



#### ....and several more options

- The new wireless system can be used for rail switches with feedback
- Refill with feedback
- Rail lift with feedback
- Option to place ID tags on rails, ensuring that the JH MiniStrø machine is on the right route
- Capable of charging and filling the JH MiniStrø at the same time
- New hands-on menu where all functions can be operated

JH Agro A/S - Lundholmvej 41 - 7500 Holstebro - Denmark T: +45 97428189 - E: info@jhagro.com - www.jhagro.com

