



**INNOVADO**

**AUTOMATIC FEEDING**

**Schuitemaker**

A close-up photograph of a black and white cow's head. The cow is positioned in a metal stall, with its head and front legs visible. It is eating a large bundle of dry, yellowish-brown hay. The cow has a bright yellow ear tag on its left ear. The background is slightly blurred, showing the vertical bars of the stall and other parts of the farm environment.

*A win-win situation at all levels!*  
**Innovado**



In times of further automation and increases in scale within modern dairy farming, the automation process is becoming more and more important. At the same time, the social climate on the farm and within the family (e.g. in terms of leisure time and relaxation) is playing a more and more dominant role.

Schuitemaker has adopted a progressive policy with its developments. These days, automated dispensing of roughage is no longer a unique activity in the farmyard. The Innovado, Schuitemaker's automatic feeding system, goes one step further: Fully automatic roughage dispensing, straight 'from the silage clamp to the cow'!

Various tests have confirmed that dairy cows produce more milk when they are regularly fed on fresh roughage. Feeding cows with fresh roughage frequently and regularly has further advantages, such as:

- better feed efficiency
- less residual feed through frequently pushing and feeding
- more activity inside the barn
- better cow well-being and health

All that will ultimately contribute to a healthy cattle population and optimal yield.

# Schuitemaker



# STRAIGHT FROM SILAGE CLAMP >

4

## **Straight from the silage clamp to the cow...**

For more than 40 years, Schuitemaker has been the specialist in designing and manufacturing advanced machinery for processing roughage. No wonder the Schuitemaker Innovado is the logical result of combining experience, vision and philosophy. The Innovado is a fully automatic feed system that operates entirely by itself. In specialist terminology, the device is also known as an AGV (Automated Guided Vehicle). The Innovado moves unassisted, while the path of the machine inside the barn is set out by way of transponders; outside the barn it is controlled by means of RTK-GPS. The Innovado is also fitted with scanning equipment, allowing it to move safely and independently in the farm yard. The Innovado is entirely propelled by a modern combustion engine that meets all of today's environmental requirements. In combination with the electric-hydraulic system, the motor powers all components on board of the Innovado.

## **The Innovado**

The Innovado is a self-propelled mixer-feeder. It moves to the silage clamp by itself, cuts the feed, automatically cleans the silage clamps, mixes, moves back to the barn, pushed the feed into the feeding passage and returns to the silage clamp, all without the help of a driver. The route is mapped out by way of transponders and RTK-GPS.

Unique to the Innovado is the fully automatic process. The process has no shortcuts when it comes to achieving the highest possible feed efficiency. Feed bunkers or kitchens are not required. The Innovado feeds unassisted, straight from the silage clamp. This minimises the risk of heating and maximises the feed efficiency.





## SiS-navigationsystem

The SiS (Schuitemaker Intelligent System) navigation system receives all the necessary information for the proper operation of the machine. For instance, the SiS system coordinates the signals from the mobile mapping systems and the arrow signals to the transponders.



> TO THE COW

### **The system...**

The Innovado is linked to a feed management programme designed to set up the ration. The feed management programme uses wireless transmission to convey this information in real time to the SiS computer of the Innovado.

The SiS computer responds to this by starting the motor of the Innovado at the right time. The Innovado then brings the roughage from the silage clamp without any assistance. The GPS coordinates guides the machine on its way to the silage clamp. Once the Innovado has arrived at the silage clamp, the scanners take control and point to the exact position for the feed to be taken from the clamp.

### **Benefits of the Innovado include:**

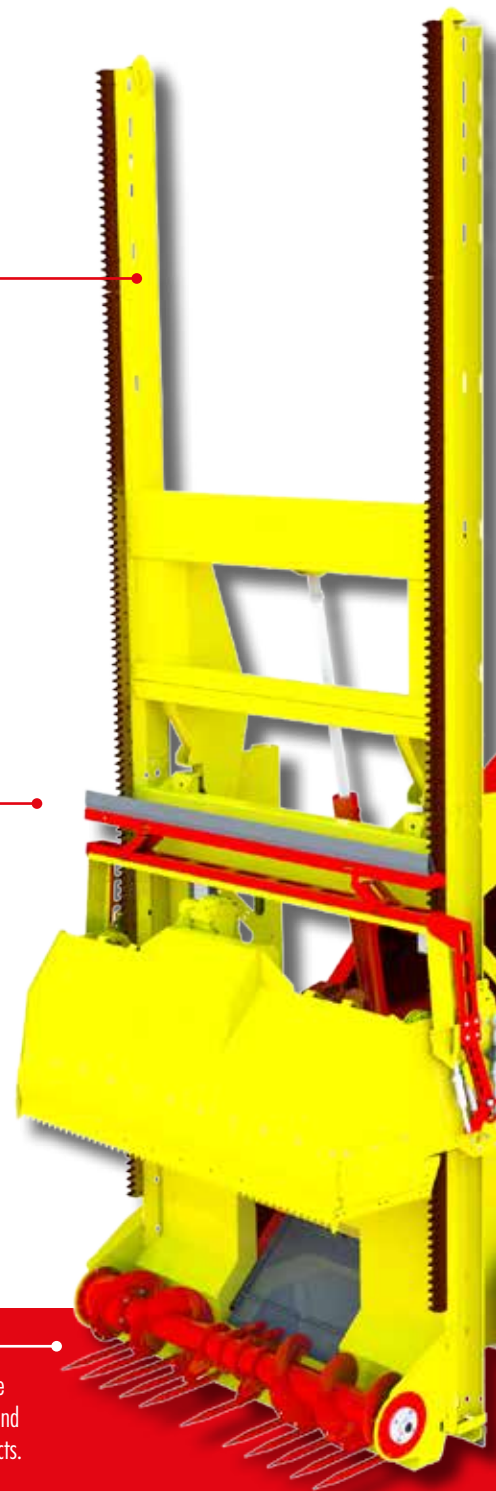
- + Straight from the silage clamp to the cow
- + Maximum feed efficiency
- + Fully automatic, without intermediary storage
- + Capable of being used on just about any (existing) farm
- + Continuously providing fresh feed contributes to the cow's health
- + Saves time and labour
- + Required feed composition is easily programmable

Folded framework to reach till 4.8 meter.

Safety switch folded while loading material.

The cutter provides straight silage faces that retain their structure and prevent heating.

The intake auger brings the material on the conveyor and is also used for bulk products.



# THE INNOVADO



Hydraulic feed slide.

Cross conveyor allows feeding to left and right.

Comprehensive scanning equipment for optimal safety.

Stainless steel mixing chamber (8 m<sup>3</sup>) with dual augers for optimal mixture and low power requirement.



### **From the silage clamp to the mixing chamber...**

Cutting and loading the fresh roughage is controlled by a uniquely designed cutting system. In the process of taking the roughage from the clamp, the Innovado uses a cutting method that preserves the structure of the feed. This cutting method, in combination with the assembled weighing device, is able to accurately load the ration to the nearest kilogram. The Innovado (vertically) cuts the feed layer by layer. This leaves a smooth silage face with a very low risk of an increase in temperature that could result in heating inside the clamp. The maximum working height of the Innovado in the cutting process is 4.8 metres. The Innovado has been programmed in a way that “cleaning action” is triggered prior to loading the feed. That means the machine starts by first of all loading any spilt feed that may still be lying in front of the silage clamp. Thanks to the cleaning action, the Innovado restricts the loss of feed to an absolute minimum. The Innovado can also be used to retrieve all kinds of (bulk) products (such as bales, pressed beet pulp, pellets, brewers’ grains, etc.) without the need for extra bunker systems in the farm yard. With a wireless connection, the Innovado can also be used to remotely control concentrate silos by loading dry and wet components as well as minerals. The advanced weighing system takes care of loading the correct amount of feed and stops after having reached this point. The Innovado is fitted with a mixing chamber that can hold up to 8 m<sup>3</sup>.

### **From the mixing chamber to the cow...**

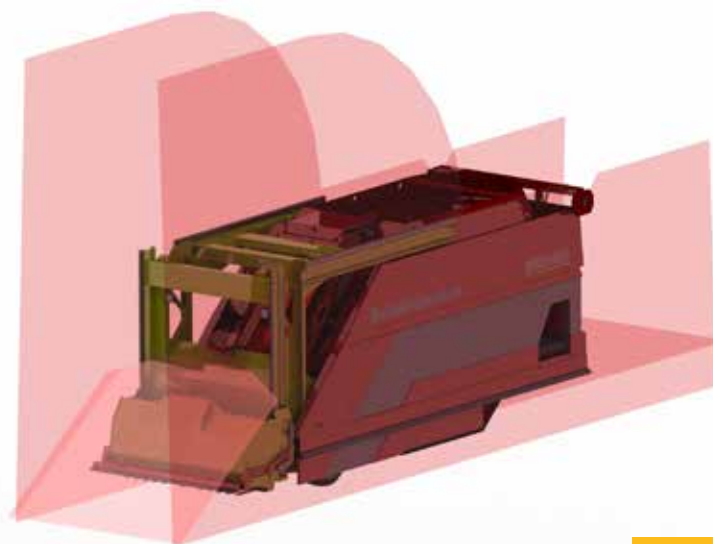
The mixing chamber has two vertical augers and a weighing system for the preparation of an airy and properly mixed ration. The mixing process in the chamber begins while the Innovado is loading; this requires only low power. The Innovado then moves to the group where the feed ration is meant for. A wireless connection will automatically open the doors to the barn. The Innovado calculates the feed distribution in kg per meter for even distribution along the entire length of the feed fence. The feed distribution will then start at the right spot and on the right side. The feed is taken to the feeding passage via the mixing chamber, the hydraulic driven feed slide and the cross-conveyor. The feed will be pushed together during the feed movements. The Innovado can unload the feed on either side of the machine, both on the left and on the right hand side, so it can also be used in narrow passages. After the feeding session, the dairy farmer will be able to study the feed efficiency in the feed management programme and review the recorded daily feed costs, dry matter contents, etc.



## Safety

The Innovado meets the most stringent safety requirements for self-propelled vehicles. The machine has sensors for continuously scanning the surrounding area (SiS Scanners). The system will stop immediately if people, animals or foreign objects come too close to the Innovado. After a little while the machine will resume the scanning process and try to continue its path. If its path is still blocked, the dairy farmer will be notified and asked to remove the obstacle. The Innovado has also been fitted with extra safety bumpers all around (redundancy). Cutting will take place in a no-go zone. The Innovado will immediately stop working when someone attempts to enter the no-go zone. The safety system runs independently from any other system and it will overrule any other system in the event of an imminent danger. SiS Scanners of the Innovado will detect any foreign objects in the path in a timely manner and, if this happens, immediately stop the machine. As an extra precaution, the wheels of the Innovado are mounted inside the chassis of the machine. And finally, the Innovado has been fitted with a manual emergency stop that can be activated from any side of the machine.

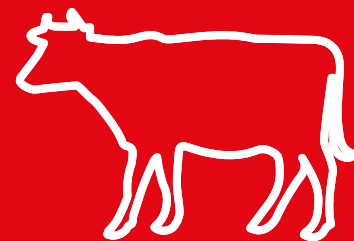
SiS-scanfield>



FROM THE  
SILAGE CLAMP



TO THE MIXING CHAMBER

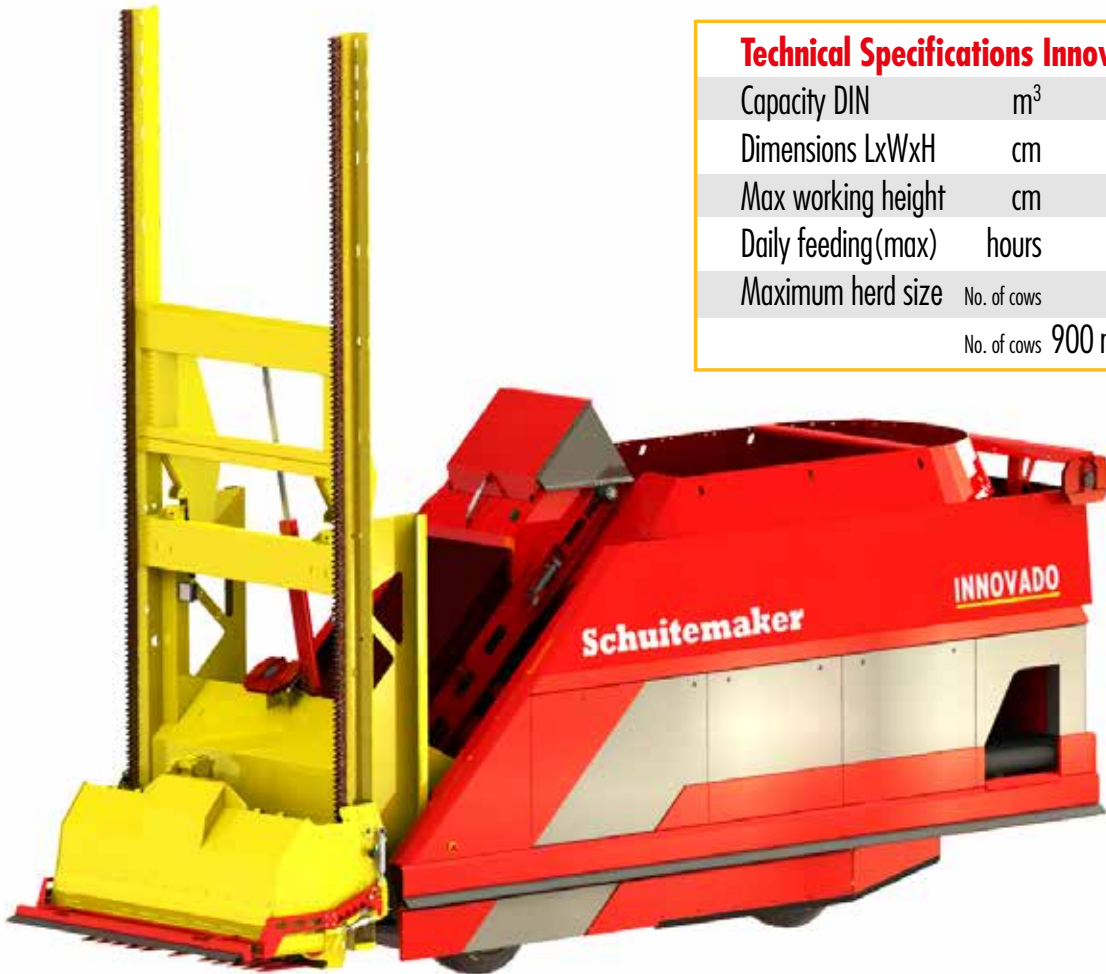


TO THE COW

**Existing barn? Newly built barn? Not a problem!**

The Schuitemaker Innovado automatic feeding system will not only provide the dairy farmer with fresh feed at any time, it also boasts a great economic and above all practical advantage. That is because the Innovado can be implemented in just about any type of barn. The only adjustment to an existing barn is the installation of a set of transponders. The Innovado can also be used for more than one barn at once. In other words, the machine can be used for dairy cows as well as in the young stock shed. The system is particularly suitable to fit in with the dairy farmer's future development plans without the need for massive capital expenditure for a feeding system.





### Technical Specifications Innovado

Capacity DIN	m <sup>3</sup>	8
Dimensions LxWxH	cm	670 x 230 x 320
Max working height	cm	480
Daily feeding(max)	hours	18
Maximum herd size	No. of cows	750 milking cows
	No. of cows	900 milking/young cows

### Innovado's strengths:

- + Straight from the silage clamp to the cow
- + No shortcuts when it comes to achieving the highest possible feed efficiency
- + The cutting method preserves the structure of the feed
- + SiS scanners and safety bumpers guarantee the safety with regard to the environment
- + All silage clamps and farm yards on solid ground (concrete, asphalt) can be used
- + The Innovado has a range of proven techniques and components on board
- + The Innovado has relatively low power requirements
- + Schuitemaker Intelligent System (SiS), a comprehensive control system for optimal, efficient and carefree feeding

Ontwerp: Twentse Storm Delden | SCHUI60355



**PARTNERS FOR LIFE.**



**Schuitemaker**

Schuitemaker Machines B.V. | Morsweg 18 - 7461 AG Rijssen - Holland  
Tel.: +31 (0)548 - 51 41 25 | [sales@sr-schuitemaker.nl](mailto:sales@sr-schuitemaker.nl) | [www.sr-schuitemaker.nl](http://www.sr-schuitemaker.nl)