I-RON MIX SYSTEM
AUTOMATED FEEDING SYSTEM

I-RON MIX SYSTEM

LUCAS SYSTEM

THE AUTOMATION AT YOUR SERVICE

Opting for automated system is a decisive step in the life of the farm. Indeed, the automation is making possible a new way of approaching cattle feeding and it gives total control on, the optimization of feeding costs, the appreciation of raw materials and the achievement of new profitable production goals.

It has been observed that a fast ingestion of a big quantity of food improve significantly the Ph of the rumen. The automated feeding fights against this phenomena by providing several times a day fresh and identical lunches throughout daytime. Moreover, the automation allows to easily adjust the ration and provides different nutritional inputs according to the lactation cycle of the different batches of animals.

The splitting of feeding is beneficial for the cattle at various levels, improved milk production, Improved meat production and better start for young animals. The general health state of the cattle is observed leading to a significant drop of diarrhea and better sanitary efficiency.

The automation reduces the time required to feed the cattle.This system works days and nights to guarantee a very quiet environment for the animals and gives a better circulation of cows to the milking robot to avoid hierarchy to the feeding table.

LUCAS SYSTEM

AN ENDLESS CUSTOMIZABLE SYSTEM

The automated solution I-Ron Mix System is a system that will be adapted according to the type of ingredient used for the ration, the distribution circuit inside the building and the space allocated for the kitchen, each installation is unique and Lucas G will accompany you to the definition of your project. The I-Ron Mix is composed by 4 complementary units, it has been developed thanks to a 20 years' experience, in mixed ration, cutting fodders, unrolling long product, distribution and automation. The I-Ron Mix is an evolutionary system thanks to its wire-guided navigation system.

FEED BUNKERS

These feeding tables ensure a precise delivery of the ingredient to the mixer regardless the type of material used:

- Feed bunker for bulk materials
- Feed bunker for round bales

MIXERS

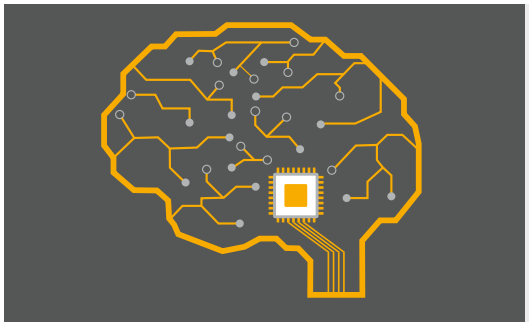
The essential units to a perfectly mixed and homogeneous ration, the result of more than 20 years of excellence:

- Stationnary mixer horizontal paddle
- Stationnary mixer vertical auger

THE ROBOT

4 in 1 wire-guided robot, ensuring:

- Distribution of the mixed ration
- Pushing back fodders
- Distribution of minerals and concentrates
- Straw-bedding



Xmanagement IC

The brain of the installation, allows a clear vision of all different components of the installation:

- Batches and recipes management
- Overall functioning
- Telematic

A KITCHEN CUSTOMIZABLE TO PROCESS THE INGREDIENTS USED FOR THE RATION

Lucas G has imagined the kitchen in a way that it has to be adapted to the ingredient of the recipe usually used and not the contrary. That is the reason why, the I-Ron Mix system has a wide range of feeding bunkers and options allowing to unroll, to cut and store wet, dry, in bulk fodders, square or even round bales regardless the size of strands (long or short). Feed bunkers are customizable and can be adapted according to the autonomy need of the farm, up to 5 days of storage for dry fodder.

DESIGNED TO WORK 24/7

Feed bunkers are built on 2 chain and slat ranges, protected with marine wood on the upper part and zinc on its lower part.

The design of the shredders for in bulk feed bunkers have been specially built in an helicoidal shape with straight teeth to improve the unrolling effect, the loading and the storage of fodder.

A line of barriers located above the upper shredder that filters the flow of fodder.

Silages or other fodder packaged in cube are loaded easily and comfortably.

IN BULK FEED BUNKERS SPECS

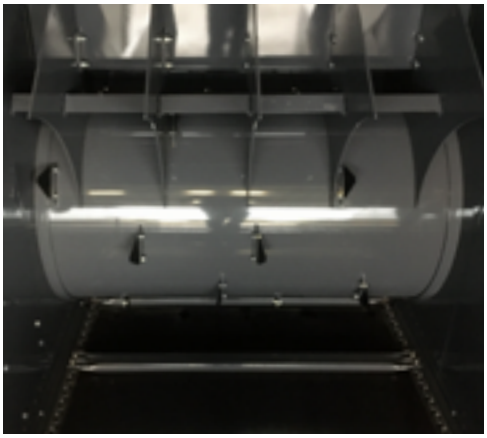
	Feed bunker M	Feed bunker L	Feed bunker XL
Capacity (m3)	8 to 13	16 to 26	24 to 40
Number of shredders	1 to 3	1 to 3	1 to 3
Useful length (m)	3.30	6,60	9,90
Useful width (m)	2,00	2,00	2,00
Useful height (m)	1,20 to 2,00	1,20 to 2,00	1,20 to 2,00

FEED BUNKERS DEDICATED TO ROUND BALES

VERY UNIQUE FEED BUNKERS

Lucas G has specially designed feed bunkers for the process of round bales to guarantee a clean cut and an easy unrolling for all fodders packed in a rounded shape up to Ø 1.80m (hay, straw, grass, dry or wet). These bunkers are composed by 3 parts:

- **The unrolling part** is fitted with a special shredder with an high torque electric motor. Storage 1 bale.
- **The storing part** with its own elevated moving floor that send the bale one after another one to the other part avoid excessive and useless pressure to the shredder. Storing from 1 to 3 bales.
- **The hydraulic rear door part** allows to easily and safely take off the net. Storage 1 extra bale.



ROUND BALES FEED BUNKERS SPECS

	Feed bunker BS	Feed bunker BM	Feed bunker BL	Feed bunker BXL
Round Bale capacity	1	2	3	4
Capacity with rear door	-	3	4	5
Number of shredders	1			
Diameter of the shredder (cm)	80			
Number of cutting sections	24			
Useful length (m)	2	4	6	8
Useful width (m)	1,40	1,40	1,40	1,40

OPTIMAL LOADING WITH NO EFFORT

STEPPING LOADING TECHNOLOGY

When the weight required is close, the moving floor is progressing with a timeout guaranteeing an error rate of loading < 2%. This system will give to the breeder the possibility to make rations of only 50 kg with a very high precision for batches of heifers and calves for instance.

OVER TORQUE TECHNOLOGY

In case of jamming, the over torque technology enables the rotor change the rotation of the shredders to unjam the feed bunker and ensure the functioning of the system without any exterior intervention.

AN HOMOGENEOUS MIX : OUR WILL

The mixing is an integral part of the I-Ron Mix automated feeding system, it is the primordial step for achieving a perfect mixed ration while respecting all nutritive properties of the raw materials used. To succeed in mixing, it is important that ingredients have enough space to be mixed easily with less possible efforts, thanks to the rolled tank the ration is mixed naturally by flourishing effect.

To guarantee optimal precision during loading, the diet feeder is equipped with 3 to 4 loading cells. It is the diet feeder that gives orders during the preparation of the ration, it stops the feed bunkers, hoppers to avoid overloading and wasting at the troughs. Thanks to this process, the system has outstanding results concerning the preparation of the ration – Gap between programmed ration and reality < 2%.

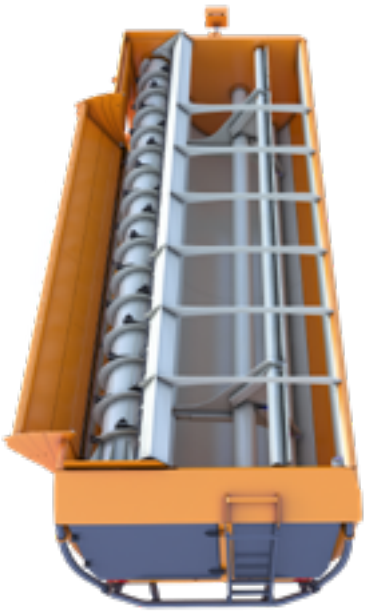
PERFECT INTEGRATION OF MINERALS AND CONCENTRATES

- Concentrates are precisely loaded inside the mixer to be properly integrated in the ration. The diet feeder stops during the loading of concentrates to avoid phenomenon of inertia.
- The minerals are loaded while the diet feeder is mixing because the hopper for mineral are calibrated by a number of impulsions to guarantee optimal precision.
- The I-Ron Mix system allows the integration of liquid ingredients like water, molasses trough pump systems.

A TAILORED MIXER TO YOUR FARM AND YOUR RATION

QUALIMIX STATIONARY: HORIZONTAL PADDLES MIXER

The combination of mixing paddles with an endless auger is making an homogeneous ration at very slow speed – 5 rpm. Mixing by paddles avoids useless recut of materials thanks to a mixing area without any knives.



Benefits of this solution:

- Homogeneity from 50 kg ration
- Gap of homogeneity <2% on 60 m distribution
- Suitable for fibrous rations

15m³ 20m³

SPIRMIX STATIONARY: VERTICAL AUGER DIET FEEDER

Augers are designed with steps to cut and aerate the ration for a perfect homogeneity from 10 to 60 rpm. Cut-off plate are reversed to block the fibre at the bottom of the tank to reduce the time required for cutting and mixing.

Benefits of this solution:

- Suitable for all types of rations
- Gap of homogeneity <3% on 60 m distribution
- Efficient mixing time

8m³ 12m³ 16m³ 20m³ 24m³

MAKING THE RATION FOR OTHER SITES

At any time the station can be managed manually. This system enables the user to load a bucket to go distribute a freshly mixed ration for the calves.

It is also possible to install a 2nd unloading conveyor at the exit of the mixer to load a distribution trailer.

EVOLUTIVE AND INTELLIGENT SYSTEM

With the I-Ron Mix System, the robot is a distributor of mixed ration. To know where is he and know which actions have to be done, the circuit of the robot is adorned the RFID chips buried on the ground that give him order according to the launched program (start of a batch / lowering the blade for pushing the fodder / start a the distribution / end of a batch / ...). To move around inside the farm, the robot is equipped with 3 wheels, including one front steering and driving wheel propelled by 4 batteries. When the robot does not have anything to do is going directly to its charging station. The robot is moving around the farm thanks to a wire-guided system which can be easily adapted to the evolution of the buildings.

SPECS

I-RON MIX	
Capacity (m^3)	2,5
Equivalent dairy cows / goats	350 / 1750
Hoppers	1 to 4 hoppers / 500 to 20 L
Dimensions	
Overall height (m)	2,20
Overall length (m)	2,90
Overall width / with straw spreading system (m)	2,10 / 2,55
Distribution & feeding corridors width	
Height of distribution (mm)	500 to 800
Feeding with no U-Turn / with straw spreading system (m)	2,50 / 2,95
Feeding with U-Turn / with straw spreading system (m)	3,00
Corridor with no-feeding / with straw spreading system (m)	2,20 / 2,65
Corridor with no-feeding with U-Turn / with straw spreading system (m)	2,45 / 2,90
Turning radius (m)	3,40
Specs	
Linear speed	3,5 km/h
Distribution speed	0,5 to 2,5 km/h
Slope acceptable	8 %
Autonomy	10h autonomy
Unladen weight (kg)	1500

THE FIRST 4 IN 1 ROBOT IN THE MARKET

DISTRIBUTING ROBOT OF MIXED RATION

To ensure an homogeneous distribution, the robot has 3 load cells and thanks to its constant communication with the kitchen, he knows in real-time the weight and the density of the ration which gives him the possibility to control the speed of the conveyor to have an homogeneous distribution from the beginning to the end of a batch – Gap < 2% distribution error on 60 m. The distribution conveyor unload the ration on the right or on the left side.

ROBOT FOR PUSHING BACK THE RATION

Equipped with a font blade to push the ration back to the fences, this action can also be done during the distribution or when the robot is empty.

DISTRIBUTOR OF MINERALS AND CONCENTRATES

Distribution of minerals and concentrates made thank to an Automatic and proportional distribution to movement system, by auger calibration for an extreme accuracy < 1% error. The distribution on additives is dissociated from the distribution of the mixed ration. For the distribution of concentrates, the hopper is in steel, for the distribution of minerals the hopper is in stainless steel for an improved lifetime due to the ingredient used.

Pros of the hopper:

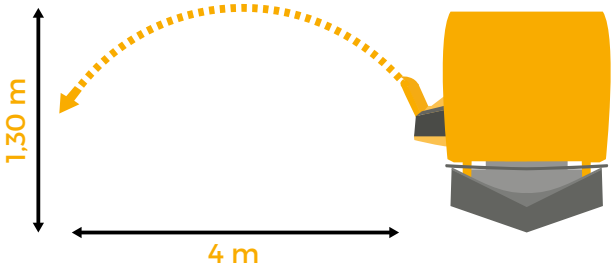
- Extreme control of expensive ingredient
- Stabilisation and homogeneity of the ration

STRAW SPREADING ROBOT

The last functionality of the I-Ron Mix robot is a straw spreading system composed of a soft brush located at the exit of the conveyor that ensures a spreading of straw without any dust and a deflector that orients the flow of straw above the fences.

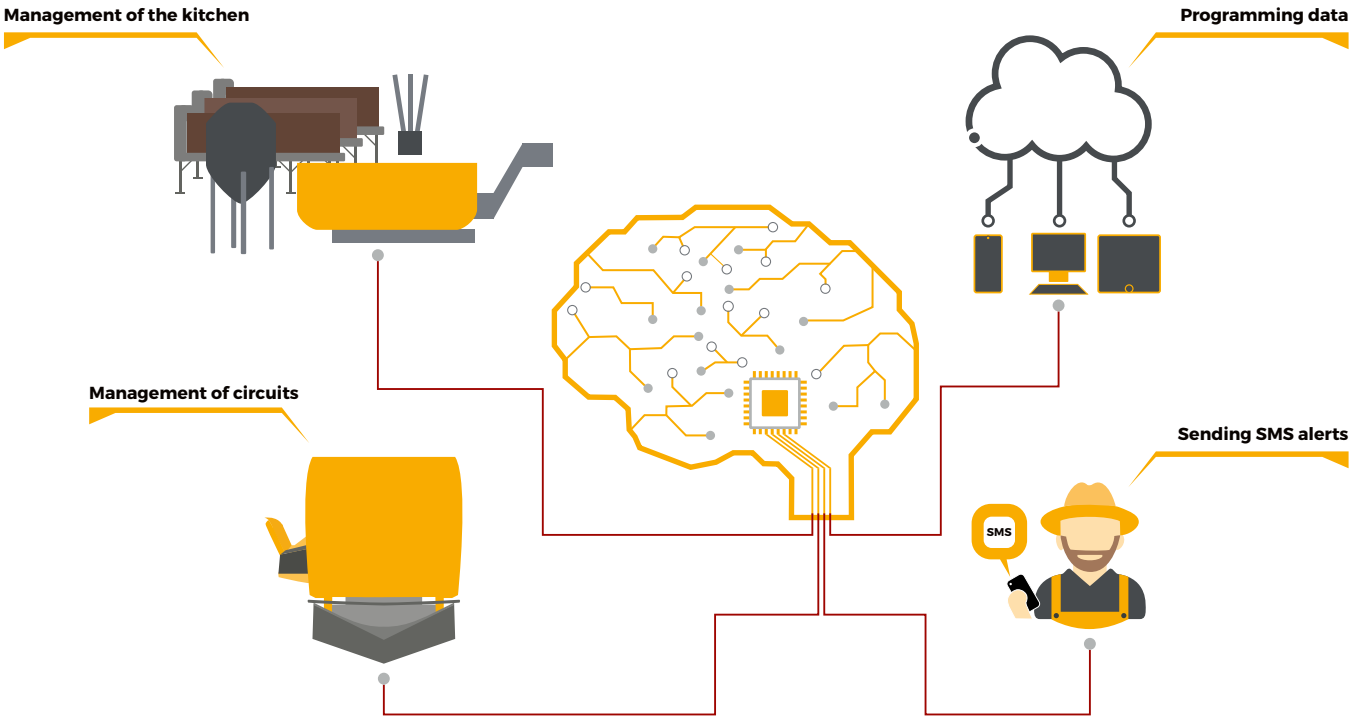
With this system, Lucas G is setting up a new way to approach bedding tasks by thinking of kilogram of straw by meter of feeding corridor and not by the number of bales.

SPREADING PERFORMANCE



Xmanagement IC

MANAGEMENT PLATFORM



All data related to the functioning of the installation are available on the home page of the software XManagement IC. Management of rations, the definition of batches, the daily planning for the distribution, stock management have to be define on the platform for an accurate and optimized control of the I-Ron Mix system.

TELEMATIC SUPPORT

For a remote assistance of running installation, Lucas G can at all time have an overview of the status in real-time of the I-Ron mix system.

- Setting up access and modification
- Updating versions and programs
- Alerts concerning preventive maintenance
- History of events

OUR USERS TESTIFY

FARM KERROLET

QUALIMIX 15M³

6 FEED BUNKERS

300 LU

For over 3 years, our I-Ron Mix is distributing 13 tons of wet and dry fodder per days to 300 Livestock Units (LU) in a dairy exploitation. Since we have this robot, our production cost has dropped and our milk production has raised to achieve 1 million and 754.000 L of milk/year. Our time spent on feeding has been divided by 7 and our electric bill divided by 3."

STRONG POINTS OF MY ROBOT

- Feeding 300 LU with only 1 robot (saturation 65%).
- Can prepare ration to be distributed on other sites.
- Outstanding mixing quality and distribution.
- Waste at troughs 1% maximum.
- Good herd health
- Reduction of the daily penalty.

I am using the I-Ron Mix for over 4 years for my 900 goats. Since the installation of the robot, the ingestion of my dairy goats has moved from 3.1 to 3.6 of dry matters per day and the milk production has raised up to 50 L of milk by goat per year."

FARM HUBLET

QUALIMIX 15M³

3 FEED BUNKERS

900 GOATS

STRONG POINTS OF MY ROBOT

- Outstanding loading and distribution precision.
- Can prepare ration to be distributed on other sites.
- Waste at troughs 1% maximum.
- Good herd health
- Reduction of the daily penalty.

R&D DEPARTMENT, CUSTOMER SERVICE, SPARE PARTS:
THE SPIRIT OF SERVICE EVERY DAY

Your Lucas G. dealer

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