

MIXER **WAGONS**

SELF-PROPELLED **FULL ELECTRIC**



Full Electric Self-Propelled Mixer Wagon Line

The revolution in animal feeding has begun cost efficiency, quiet operation, animal welfare, reduced gaseous emissions, and the use of electricity produced on the farm. From a futuristic vision and an innovative spirit comes the Leader PF Full Electric, a series of mixer wagons conceived to be fully 100% electric, not just a simple replacement.

The Full Electric range complements that of trailed and diesel-powered self-propelled mixer wagons, making Faresin the manufacturer with the broadest range on the market.

Faresin has a long track record in Full Electric work machines, beginning in 2018 with the showcasing of the world's first electric telehandler.



Models		1.11	1.14B	1.17	2.18	2.20	2.22	2.24
Dimensions								
Height	mm	2.875	2.980	3.280	2.730	2.865	3.030	3.190
Width	mm	2.440	2.550	2.550	2.475	2.475	2.475	2.470
Overall length	mm	7.650	7.650	8.090	9.900	9.755	9.820	10.000
Discharge height	mm	610	600	600	600	600	600	600
Steering radius	mm	7.800	7.800	7.800	6.100	6.100	6.100	6.100
Weights								
Number of augers	n.	1	1	1	2	2	2	2
Capacity	m³	11	14	17	18	20	22	24
Unladen weight	kg	11.000	12.000	12.600	15.500	16.000	16.500	17.000
Motor								
Service motor	kW	23	23	23	23	23	23	23
Traction motor	kW	52	52	52	52	52	52	52
Mixing motor	kW	40	40	40	52	52	52	52
Shredder motor	kW	34	34	34	34	34	34	34
Transmission								
2 speed		●	●	●	●	●	●	●
Speed	km/h	25	25	25	20	20	20	20
Steering modes		Front, concentric and crab steering						
Axles								
Steering / Drive wheels		4 / 2	4 / 2	4 / 2	4 / 4	4 / 4	4 / 4	4 / 4
Suspensions		Front axle hydro-pneumatic						
Hydraulics								
Service distributor		Electro-proportional						
Flow rate of hydraulic services	l/bar	92/180	92/180	92/180	92/180	92/180	92/180	92/180
Milling Cutter								
Cutter width	mm	2.040	2.040	2.040	2.040	2.040	2.040	2.040
Shredder roller outer diameter	mm	600	600	600	600	600	600	600
Cutting height	mm	4.950	4.940	5.350	5.005	4.990	5.380	5.380
Smart Feed Tech								
Telematics Farmatics		●	●	●	●	●	●	●
Nutritional content verification		○	○	○	○	○	○	○
Herd management app		○	○	○	○	○	○	○

● Standard ○ Optional - Not available

The Leader PF Full Electric has been designed to use electricity produced on farms in large quantities by means of photovoltaic or cogeneration systems, at extremely low cost.

The use of electric technology, with its quiet operation and zero gaseous emissions, supports animal welfare and allows certification of the production chain.

The Leader PF Full Electric mixer wagon range currently includes seven models, with mixing tub capacities from 11 to 24 m³, with one or two vertical augers.

A portfolio of innovative and eco-friendly solutions that meets the needs of livestock facilities and agricultural enterprises, enhancing the use of biogas cogeneration plants or solar panel installations for electricity production.

Available batteries for self-propelled mixers

Batteries *		Standard	Optional
Performance			
Type		LFP lithium battery	
Rated energy	kW/h	91,3	137
Rated voltage	V	435	435
Capacity	Ah	210	315
Range			
Range for standard intensive cycle	up to	4 mixes	7 mixes

Charger *		Standard	Optional
Standard 22 kW			
Typical charge time from 0 to 100% with 22 kW three-phase AC Wallbox, 32 A - 400 V		4 h	7 h

* The values indicated may vary, even significantly, due to environmental conditions, usage patterns, and charging system. They may also be affected by other factors that are not always foreseeable or measurable.



The Power of Experience

The Leader PF Full Electric mixer wagons embody all the experience and innovation that Faresin has acquired over nearly 50 years of manufacturing livestock machinery.

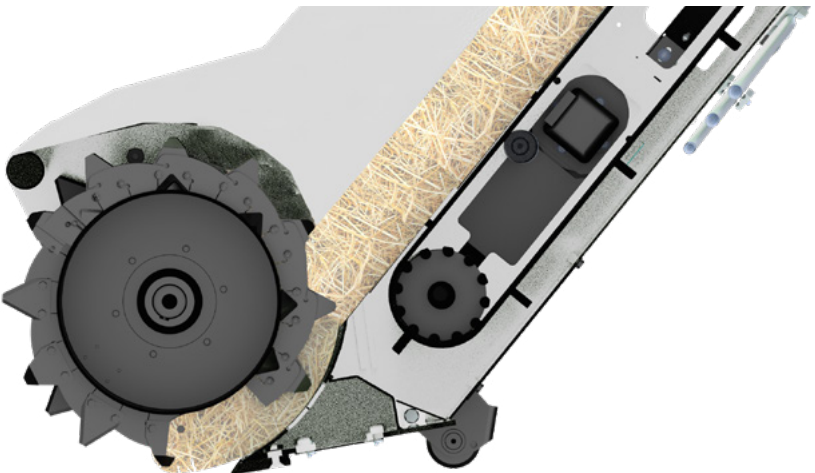
The machine layout, structure, sturdiness, manoeuvrability, ease of driving, and so on, follows the same layout as the internal combustion versions. It is important to emphasise that the Leader PF Full Electric mixer wagons derive from a complete redesign of the power transmission system, not merely a replacement of the internal combustion engine. There are 4 electric motors dedicated to travelling, mixing, and loading.



Shredder and Feed Channel

Unlike some electrified solutions on the market without a shredder, Faresin has equipped the new Leader PF Full Electric with a powerful 2,000 mm front shredder, driven by a 34 kW electric motor, allowing automatic loading of the different recipe ingredients.

The generous 800 mm wide loading channel is fitted with a sturdy rubber conveyor belt, which quickly conveys the shredded product into the mixing tub. The transport speed is adjustable depending on the ingredient being loaded, and the driving rollers operating the belt ensure quiet, efficient operation, preventing product residue from wrapping around the rollers.



Mixing tub – Engineering Harmony

The distinctive geometry of the mixing tub, combined with the specially designed auger profile equipped with a repositionable power blade, allows for the rapid preparation of homogeneous mixes, while preserving the organoleptic properties of the fibre. The 40 kW electric motor, connected to a robust epicyclic gearbox, delivers the required power for all types of mixes, with 8 mixing speeds that allow the machine's performance to be adapted to the recipe.

The Faresin mixing tub, made from S355 carbon steel, is both lightweight and durable, with wall thicknesses ranging from 8 mm up to 20 mm.

Where increased resistance to corrosion and wear is required, AISI 304 stainless steel linings are available, providing protection against acid attack and ensuring the longest possible machine service life.

PF Auger

The auger is the beating heart of the Faresin unifeed wagon, which directly affects cutting efficiency, mixing time, and the softness of the mix. Drawing on 50 years of experience, Faresin has developed solutions tailored to all types of livestock operation, ensuring fibre quality, ingredient homogeneity, a clean tank, and uniform discharge flow.

Such hands-on experience enables Faresin to provide augers with a functional design that delivers outstanding performance and, not least, reduces power consumption and therefore fuel usage.



Precise and Uniform Cutting

The two counter-blades in the mixing tub are hydraulically controlled and can be activated in automatic or timed mode directly from the driver's station. The hydraulic side hopper, available on request, allows small quantities of supplements to be added to the mix safely and conveniently from ground level.

Adjustable and Full Discharge

The combination of auger design, mixing tub geometry, and unloading blades allows the mix to be fully emptied, ensuring a clean tank bottom and consistent distribution in the feed trough. This is further aided by the generous size of the discharge hatch and the one-piece plastic conveyor belt.

Precision, Homogeneity, and Profitability

Precision is essential in achieving good results and keeping feed costs under control.

This is why, through the electronic weighing and dosing system, or via the various farm management solutions such as Farm Manager Web and AI Feeding, it is possible to programme recipes, monitor the ingredients being loaded, and optimise the farm's profitability using Faresin's exclusive solutions with or without the aid of AI.



Power and Traction under All Conditions

Traction is provided by a 52 kW electric motor positioned on the rear axle, which, via a driveshaft, also transfers power to the front axle.

The system features two mechanical gears with a shift at standstill:

- Single-auger models: 0-10 / 0-25 km/h.
- Twin-auger models: 0-10 / 0-20 km/h.

Adjustable Height

The hydro-pneumatic suspension, adjustable in height via a cabin control, ensures a comfortable and safe ride.

Three Steering Modes

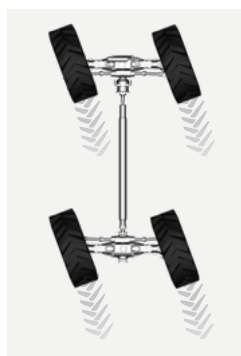
Like the internal combustion version, the Leader PF Full Electric features 4-wheel drive and 4-wheel steering, allowing for 3 steering modes concentric, crab, and front-wheel only.



Front-wheel steering



Concentric steering



Crab steering

PF Cab: Control, Visibility and Comfort

The cab on the PF self-propelled mixer wagon has been designed to meet the needs of operators who spend many hours at work and features a driving position that integrates primary control management via joystick and secondary functions via a front keypad. Control and comfort come as standard when operating a PF mixer wagon.

Here, ergonomics and innovation come together. The side console, including storage compartments and a 12V socket, works in harmony with the height- and depth-adjustable suspended seat, offering the operator comfort and practicality in all stages of work.

Each control has been designed to be simple and intuitive the electro-proportional joystick manages the main functions, while the dedicated keypads allow for quick adjustment of secondary functions. The in-cab controls allow accurate modulation of the loading and unloading belt speeds.

The 10" interactive colour display enhances the operator experience, with integrated diagnostics, quick settings, and visualisation of nutritional content readings provided by the Polisphec NIR system. An advanced tool that simplifies operation and provides a clear overview of all machine parameters.

With the PF cab, the operator enjoys the perfect combination of comfort, efficiency, and technology, for work that is always more productive and rewarding.



Weighing System

Precision is key in achieving good results and keeping feed costs under control. For this reason, all Faresin mixing wagons use an easy-to-use electronic weighing and dosing system.

The specific positioning of the weighing sensors, between the mixing tub and the chassis, ensures precise and effective control loading of feed. The 10" display, strategically positioned for optimal visibility, enables the operator to accurately monitor the quantities of product loaded, with the option to programme over 200 recipes. Additional repeater units of a variety of sizes may be added to the system according to specific requirements.

No Compromise

The Leader Full Electric is the result of Faresin's extensive experience in mixer wagon production and years of research and development, aimed at delivering productivity equivalent to a diesel-powered model. Four electric motors provide truly impressive work performance.

Tested under various conditions, the runtime reaches up to 4 full mixes without recharging, meeting the normal daily requirements for feed preparation.



Electric Power

A 91 kW, 210 Ah lithium-ion battery is fitted as standard in the rear motor compartment. Additional battery capacity is available on request.

The motor responsible for machine motion and traction is a 52 kW electric motor, allowing the machine to reach 25 km/h. The feeding system is powered by a 34 kW motor, ensuring high performance even with wrapped hay bales.

The shredder delivers perfect fibre cutting performance with all types of forage. Mixing, driven by the augers, is powered by a 40 kW electric motor, capable of handling all types of challenges.

All hydraulic movements of the machine are operated by a dedicated 23 kW electric motor, ensuring smooth operation, even during simultaneous activities.

Easy Charging

The LFP battery can be recharged with full flexibility using the Universal Charge system, a single plug-in interface compatible with both 220 V single-phase and 400 V three-phase supplies. Additionally, the machine features an energy recovery system that stores energy during braking and throttle release, increasing battery autonomy.

A Wallbox charger is supplied as standard with the machine.

Innovation That Boosts Profitability

Leader PF Full Electric mixer wagons are a major innovation in unifeed preparation, while also providing a significant opportunity to reduce livestock production costs.

Electric machines have substantially lower maintenance costs (over 80% less) and, most importantly, very low operating costs, since they run on electricity rather than diesel which is much cheaper.

The result is that the absolute cost of preparing a single mix is considerably lower compared to any other diesel-powered solution.

Savings can be even greater if the electricity is self-produced on the farm, either through biogas cogeneration or solar panels.

In addition to financial savings, there are lower environmental costs, meaning a reduced environmental impact up to 30 tonnes of CO₂ emissions can be avoided every year!

The economic benefits of Leader PF Full Electric mixer wagons increase with the daily hours of use.

In livestock facilities with intensive mixer wagon usage, the Leader PF Full Electric can achieve annual savings of several tens of thousands of euros.



Battery Runtime and Longevity

All Faresin batteries are engineered for intensive professional use and built to last. These are lithium batteries, more precisely LFP (Lithium Iron Phosphate).

Under normal working conditions, the battery runtime allows for the preparation of 3 to 4 full mixes, and with a quick recharge cycle, the same number of additional mixes can be prepared. In a typical daily schedule, the Leader PF Full Electric, with a full overnight charge, can operate intensively throughout the morning. After a quick recharge during the lunch break, it can continue working hard throughout the afternoon. In practice, the machine with a standard battery pack can complete up to 6-8 mixes with no difficulty.

The battery pack comes with a manufacturer's guarantee, ensuring 80% charge capacity retention after 2,000 full charge cycles. In practical terms, this means the battery pack maintains approximately 80% of its original runtime even after around 10 years of charging under medium-intensity use.



Nutritional content and ration homogeneity verification

Most modern approaches aim to increase the level of precision when preparing a feed mix: precise ingredient quantities, greater adherence to the nutritional content specified in the feed recipe, respect for fibre length, and verification of the uniformity of the mix particles.

Nutritional content verification systems

In 2014, Faresin was the first to offer a nutritional content verification system based on a highly precise spectrometric (NIR) system: Polispec NIR.

Polispec NIR, integrated with the mixer wagon, allows knowing the precise weight of each loaded ingredient and its qualitative nutritional content. In practice, Polispec NIR allows knowing that the wagon's contents are consistent with the feed manufacturer's recipe during loading and mixing at all times. The integrated Polispec NIR offers the highest precision possible today without waiting times and represents the practical solution for applying the Precision Feeding technique.

Complying with the required quantities of proteins, starches, fats, and fibre ensures that each animal receives the required amount and can therefore express its productive potential, whether in meat or milk production. Polispec NIR is an exclusive Faresin solution integrated with the weighing system and mix management.



IOF: optimal mix homogeneity

Thanks to the integrated Polispec NIR system, Faresin has developed, in collaboration with the University of Padua, an indicator of optimal mixing status (IOF, Faresin Homogeneity Index).

This allows optimising mixing times stopping the mixing when the ingredients are homogeneous and the fibre length corresponds to the preset values.



Solutions for advanced herd management

Farm Manager Web

Advanced app that collects all data produced by the mixer wagon weighing system in a cloud space. The app, available online, allows you to manage the setup of multiple recipes, the creation of animal groups, the warehouse and milk production management, and processes other data that can be entered manually. It is possible to create KPIs useful for managing herd productivity.

Farm Manager Web is a native app for the remote management of the mixer wagon and is available as an option for all trailed and self-propelled mixer wagons.

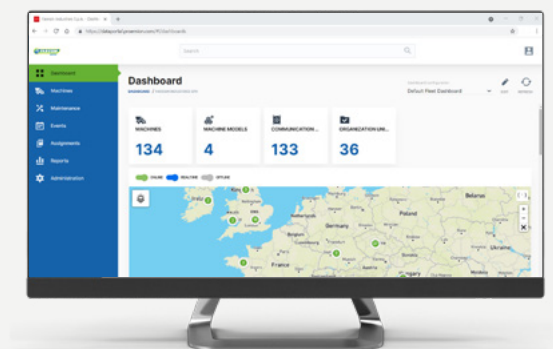
AI Feeding

The most advanced app offered by Faresin, it is based on Web Feeding and offers some highly distinctive additional capabilities. Thanks to deep learning, federated analysis, and artificial intelligence, AI Feeding is able to structure and analyse all available farm data and to directly suggest possible actions to improve farm profitability. From identifying animals to be moved in groups to reporting heats, etc.

AI Feeding integrates the use of IOF, Faresin's proprietary homogeneity index, which continuously verifies the nutritional content and mixing level of the feed ration. This is made possible by the presence of Polispes NIR, a system for the qualitative verification of the nutritional content.

AI Feeding is an exclusive Faresin app that maximises the full potential of the Faresin mixer wagons, making them the true hub for collecting and processing company information.

VALORI IN LATTAZIONE										NOTIFICAZIONI	
Vacche	216	216	286	282	29,8	29,2	Latte, kg/v	- Notion suggestion - suggestion for 100% LATTE available at infomix computer - Vacche - il giorno da			- Notion suggestion - suggestion for STALLA a LATTE available at infomix computer - Vacche - il giorno da
Costo di alimentazione, €/t (SS)	262	261	Costo di alimentazione, €/vacca	7,82	7,65	Reddito, €/vacca	22,22				
IOF, €/vacca	14,4	14,68	IOF, €/kg	3,110	3,161	EUR %	20,9	- Notion suggestion - suggestion for STALLA a LATTE available at infomix computer - Vacche - il giorno da			- Notion suggestion - suggestion for STALLA a LATTE available at infomix computer - Vacche - il giorno da
Latte venduto kg/g	7,810	7,824	Deviazione SS, %	-0,2	-0,26	N'escreto, kg/g	140				
P'escreto, kg/g	11	11	Carico (t) deviazione, %	0,2	0,2	Carico (kg) deviazione, %	-0,4	- Notion suggestion - suggestion for STALLA a LATTE available at infomix computer - Vacche - il giorno da			- Notion suggestion - suggestion for STALLA a LATTE available at infomix computer - Vacche - il giorno da



Stay connected and in control with Farmatics

Farmatics is a suite of telematics solutions developed to provide high-level support for our customers. Telematics technology consisting of hardware, eSIM, software application and data-management server allows Faresin machines to be monitored remotely, anywhere in the world. Our main goal is to provide our customers with guaranteed assistance and machine support, preventing work interruptions and minimising downtime.

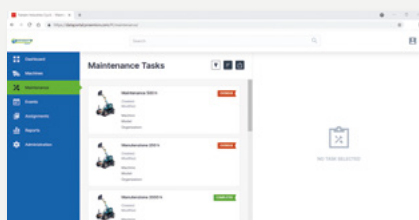
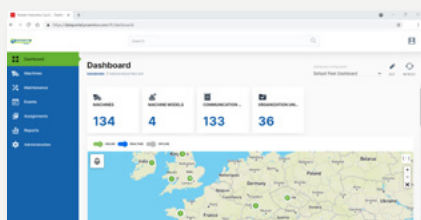
In modern fleet management, it is becoming increasingly important to maintain full oversight of each machine's status and performance. Adhering to scheduled maintenance, monitoring geographical location and checking functionality remotely are all opportunities in improving efficiency.

Faresin offers three levels of Farmatics service.

- Starter Pack, which, in addition to geographical positioning, enables passive remote diagnostics.
- Pro Pack, which also includes maintenance scheduling, data collection and the creation of graphical usage statistics.
- Elite Pack, the most advanced telematics service, which includes active remote diagnostics and remote updates of control units.

Faresin's Farmatics system provides greater peace of mind in managing your fleet, ensuring functionality, traceability of tasks carried out and long-term value retention.

Contact your Faresin dealer for more information about Farmatics packages issues are identified more quickly, service interventions can be scheduled in advance, and telehandler performance is monitored with the utmost care.



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