

Siloking TruckLine eTruck 8:

## Quiet please

Electric drive is coming to ag, and one of the pioneering vehicles is a diet feeder. Manufacturer Siloking points out that its E-Truck is about more than just feeding; it's also about keeping things quiet in the barn

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Powered purely by battery, Siloking's E-Truck is also very compact. Photos: TB.

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Electric drive is coming to ag, and one of the pioneering vehicles is a diet feeder. Manufacturer Siloking points out that its E-Truck is about more than just feeding; it's also about keeping things quiet in the barn

**M**anufacturers using lower-horsepower engines will be facing a tougher engineering challenge to incorporate stricter engine emission components into already tight spaces. This could pose a particular challenge for smaller companies producing a limited number of machines requiring a hefty research and development budget. So where possible it makes sense to avoid the combustion issue altogether and simply switch to electric. This is one reason why Siloking has come up with the E-Truck, which Kverneland will be bringing to the UK this year.

But is a loader-filled self-propelled a viable solution? Definitely, says Siloking, after doing initial tests trialling a diesel-powered option. Centrepiece of the new E-Truck is of course the battery, sourced from Jungheinrich, which



On the assembly line it is easy to spot the 1.2t battery mounted directly over the front axle. The cab is a bespoke design for this machine.



The drive axle comes from a Jungheinrich forklift. It delivers 18kW.



The cab controls have been kept very simple and are logically laid out. Specification includes a rear-view camera as standard.



The weighing system is Wi-Fi compatible. The colour display shows all of the machine's data.

has a wealth of experience producing electric-powered forklifts. The company supplies the 1,200kg, 465A/hr lead-acid battery (a 620 A/hr optional battery) and the electric motors. Jungheinrich already uses the drive axle in its 12.0t forklift and it delivers 18kW power. The feeder's mixing auger needs 15kW. When charged to 80%, the 465A/hr battery will easily last through two mixes, while a fully charged battery should provide enough power for three as long the ground is not too steep or rough. With the larger 620A/hr

power pack in place, Siloking says that this increases to five mixes per day on the 10m<sup>3</sup> version. When the charge level has dropped to its minimum, the E-Truck will default to 'safety mode', meaning it only travels very slowly.

The machine's design is straightforward and uncluttered. The 1.2t battery mounts above the drive axle, directly behind the narrow cab, creating some ballast to maximise traction. The chassis under the tub sits close to the ground so the separate loader required to fill the 8m<sup>3</sup> capacity hopper only has to clear 2.25m, this low overall height also helping when working around older buildings.

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## eTruck 1408

Capacities: 8 m<sup>3</sup>, 10 m<sup>3</sup> and 14 m<sup>3</sup>



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The auger is driven by a 15kW motor. It can operate at three different speeds. When set to 45rpm, it gives a good hopper clean-out.



The cows are waiting at the feed fence but all they can hear is a strange whizzing sound. Visibility to the front is excellent, while decent mirrors give a view of the flanks.

## Data sheet

### Siloking TruckLine eTruck 8

Tub capacity	8m <sup>3</sup>
Mixing	One vertical auger with 1.75 flights and five blades
Auger speed	17, 33 and 45rpm
Drive	
Mixing auger	15kW
Transmission	18kW
Hydraulic system	3.5kW
Battery	Lead-acid battery with 465A/hr (620A/hr option)
Battery weight	1,200kg
Tyres	355/50 R22.5 (front), 27 x 10-12 (rear)
Kerb weight	6,500kg
Dimensions	5,98m long, 2,23m wide and 2,25m high
Price	From £85,000

Manufacturer's information



The charger has a 400V two-pin plug. An empty battery takes 11 hours to recharge.

The E-Truck is rear-steered, with the double wheels able to perform tight 45° turns resulting in a turning circle of about 11m.

We were happy with the overall design and engineering. Turning the ignition and whirring off without sound was a light bulb moment. Machine operation is as straightforward as the design. The operator simply pre-selects direction of travel from the steering wheel, steps on the drive pedal and the feeder whizzes off at up to 20km/hr, albeit the hydraulic system is a bit low in capacity. All switches reside on the armrest to the right, including the switch for the auger and feed dispensing door. All of the controls are logically grouped. There are two screens on the A-post: one for the rear-view camera and the other displays general info about the machine and the tub weighing system.

**We also liked the mixing elements – one auger and two counter blades – and the quality of their work.** The auger can rotate at a high 45rpm, which ensures the tub is almost completely emptied. The weighing system is accurate down to the kilogramme. And thanks to the standard Wi-Fi aerial on the cab, the feeder operator can tap into an internet-based weighing program and retrieve the current real-time reading on the display. Excellent. The entire mixing cycle is automatically documented and saved.

Unlike other electric farm machines such as compact loaders, a diet feeder has a very predictable work schedule, with feeding times usually taking place at the same time every day. This gives a window between morning

and evening feeding as well as at night when the batteries can be recharged. Standard charging an empty battery takes 11 hours (the charger is also supplied by Jungheinrich). If you want more battery capacity, you can opt for a bigger pack or a fast charger, which will do the job in 5.5 hours.

Siloking has conducted stress tests and recorded the electricity consumption levels in very long and wet grass silage and at very erratic temperatures. Processing 400t of mixed feed, the E-Truck used approximately 3kWh of electric power per tonne of fodder. This is equivalent to around 0.3 litres of diesel per tonne. No trailed feeder and old tractor combination will run on that little fuel. Another part of the reduced running cost bill is lower maintenance. Oil needs changing every 1,000 hours – 12l for the hydraulic system, 17l into the worm gear, which is mounted to the motor, and 7l for the drive axle.

After charging up, you connect a water hose to supply distilled water to the battery elements. Battery longevity is still an unknown, though Siloking reckons it should last 1,600 charging cycles, which should be enough for 4.5 years work. After this time its capacity will have dropped to 60%, but any battery suffers this reduced capacity. The lower capacity will not affect feeder performance; it just needs to be recharged more often. Disposal of a lead-acid battery is expensive – and so is a new battery.

## Further details in a nutshell:

- Any technician should be capable of working on the 80V low voltage system
- All of the electric lines are shrouded to protect them from rodents
- The drive axle has a differential gearbox which mounts on the rear wheel. A shaft running through the hollow shaft from the motor connects the diff with the right front wheel
- Loading height is a rather low 2.25m
- Three hopper sizes are available: single-auger 8 and 10m<sup>3</sup>, and a twin-auger 14m<sup>3</sup>.

**Summary:** Not only is the Siloking E-Truck feeder virtually silent, the battery-powered self-propelled keeps livestock buildings free of exhaust gases.

The compact self-propelled can tuck into tight buildings, but the 8m<sup>3</sup> hopper is filled by a separate loader. Cost of this technology is expected to be around £85,000, and UK distributor Kverneland will have a machine on display at the Royal Highland Show this summer.

TB