Contact:
MEIER-BRAKENBERG
Phone +49 (0) 52 62/99 39 90

Field report: Animal scales from Meier-Brakenberg

Lower, faster and
intuitive 'traffic lights'

Meier-Brakenberg surprised EuroTier 2018 goers by presenting a new weighing computer and a weighing machine for animal groups with an even lower-profile weighing deck. Curious, we put the revised scales for individual animals and groups through their paces in the pig shed

Narrow margins in pig finishing make it indispensable to weigh each pig once per production cycle. The ideal point in time is around Day 82 of the finisher period, which means two or three weeks before the animals are sold to the abattoir.

Yet selling finished pigs "just like that" may result in a substantial monetary loss, which was shown by an evaluation of the Westphalian producer ring in Germany. The evaluation showed that farms that had no scales lost €3.72 on average per animal, because the animal was either underweight or overweight. By comparison, farmers who determined the slaughter date by weighing their animals lost only €1.23 on average.

This means weighing makes a difference of €2.49 per animal, and a farm with 2,000 feeder pig places and three production cycles will lose €15,000 per year – a substantial margin, even if you subtract the extra feeding costs and further expenses.

Yet weighing animals is time consuming and physically demanding. Therefore, a user-friendly weighing technology is essential. It starts with a display that indicates the weight instantly, even if the animals are anxious and agitated. Also, the technology should be lightweight and compact so it is easy to use and can be moved by one person.

At EuroTier 2018, Meier-Brakenberg presented their revised weighing machines for individual animals and groups of animals. We explored the new features in a field test.

This is where Meier-Brakenberg comes into the picture. The company is owned by Wolfgang Meier, a farmer and pig finisher himself. In the late 1990s, he wanted to weigh his pigs, but he couldn't find the right scales that suited his needs. So, the entrepreneur rolled up his sleeves and developed his own solution – to the effect that his company found itself exhibiting its first animal weighing machines at EuroTier 2000. Since then, it has continued building its weighing machines for individual animals and groups without any major changes until EuroTier 2018 when the units were ready for an update. The changes to the group scales principally concern the lower-profile design termed 'low-floor' by the manufacturer. In addition, both weighing machines

barrow will easily manage the 2cm step, which eliminates the need for embedding the deck in the floor. Excellent!
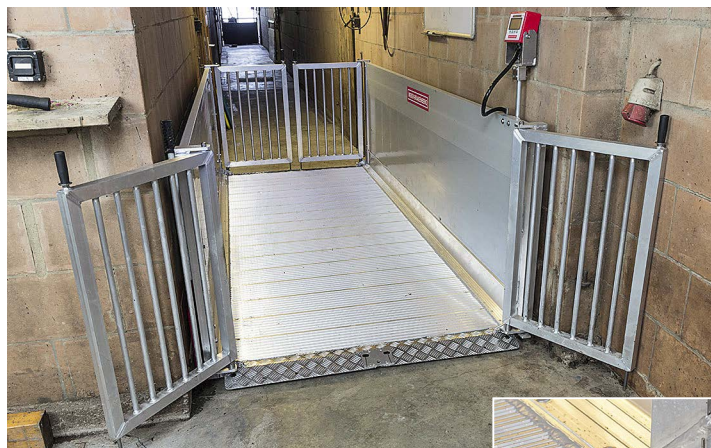
Another novelty to the benefit of man and animal is the reduced slip surface of the aluminium boards. In addition, the boards along the sides were given small angles which present a very effective way of securing the gates when open.
The chassis was taken over from the predecessor model. It is very useful for moving the unit to the next pen to reduce animal movement.
It consists of two idler wheels that are fitted without tools and a wheeled tow bar. Another detail that has been taken over from its predecessor is the pedal that

The low-floor weighing machine runs on idler wheels that are fitted without tools.

received a new weighing computer that boasts a 'traffic light' LED bar and a memory to process the weighing data. Both weighing machines are now optionally available as calibratable versions and with a transponder sensor for animal identification so the data can be evaluated by individual animal. But let's take one detail at a time.

First up, the weighing machines for groups of animals, which are also called stationary or low-floor scales. Available in various lengths (2.10 - 5.10m) and widths (1.10 - 1.80m), they are suitable for control weighing of groups of four to 20 animals before these are transported to the abattoir and also for weighing individual animals to determine the slaughter date.
The weighing deck is only 5cm off the ground – compared with 8cm on the predecessor model – so the animals will readily step and walk on it (and leave it too). They access the platform over a ramp which reduces the step again to an effective 2cm. This low-floor design is also good for farmers, because the pressure washer or wheel

The weighing machine for animal groups underwent a comprehensive update. Novelties include the weighing computer and the reduced-slip surface.
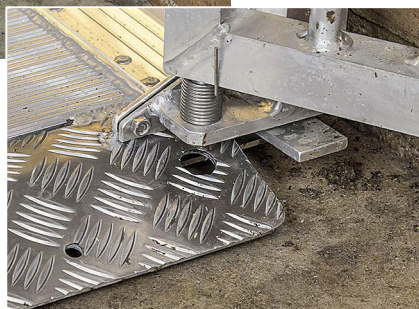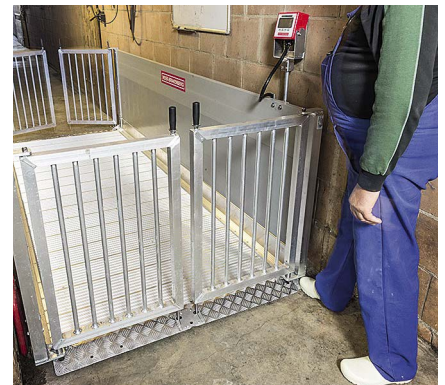
Photos: Tovornik

The standard-fit pedal controls the opposite gate remotely.

Springs on the gates make sure the gates stay reliably open after release.

remotely opens the gate on the opposite side so the pigs will leave the unit through the other end towards the truck. No need for staff to squeeze through the group to open the gate on the other side. The remote gate opening mechanism is a great idea, especially as the gates have springs that not only open them but also keep them opened. But note: only one remote control pedal is standard specification for the low-floor unit,

The low-floor weighing machine boasts a weighing deck that's only 5cm off the ground (right). This in conjunction with an aluminium ramp has reduced the step-on height to 2cm. So wheeled equipment – even on small wheels – can overcome the weighing platform, which eliminates the need of embedding it in the floor.

a second pedal is a €345 option which cannot be retrofitted but has to be specified at the time of purchase.

The weighing machine for individual animals. This lightweight and compact model is suitable for use in aisles or pens and is currently offered in five versions – two 1.75m-long units for finishers, one having solid sides and another having sides with bars for selecting the gilts.

The third version is for weighing piglets, the fourth 2.25m long unit for sows and the last version is a platform model.

We tested the mobile unit for individual animals (WA 18 model). The solid and patented sides prevent the animals from becoming distracted by their pen

The unit for individual animals goes through nearly any door in the shed – despite the terminal sticking out.

You enter three weight ranges to customise the traffic light system to your needs.

mates, which expedites the procedure. Thanks to the special wheel configuration, you can roll the unit even when tilted to nearly vertical, so it basically goes into any pen despite its 1.75m x 0.58m x 1.00m dimensions. Excellent!

Less excellent is the fact that the terminal unit sticks out when the unit is tilted so it is at risk of hitting a door post and getting damaged. But Meier-Brakenberg says they have not heard of any such incident yet.

A useful feature is the standard driving board which is a unique and patented Meier-Brakenberg design. It is operated from the rear by pulling a lever which swings the board in front of the animal's head, restricting the available space for the animal. This and the clanging noise of the mechanism will ideally encourage the animal to reverse from the deck. Conversely, if the animal is to leave the unit through the front gate, you simply refit the lever and use it to open the front gate. Consequently, weighing can actually be done by a single person.

Let's move on to the new WA 300 weighing computer which is supplied

The data can be exported to a USB 2.0 drive and from there to the office PC.

with both the weighing machine for individual animals and for groups. The all-important and bright-white screen displays 3cm-high digits which are easy to read – no glasses needed. The bright screen is not too power sapping, and so the optional battery lasts for as many as 12 hours in permanent use – enough for a long working day. Furthermore, the display screen defaults to standby mode after a weight reading has not changed for 15 seconds. And in case the bat-

tery is indeed nearing depletion, the low-battery indicator light comes on as early as 1½ hours before the actual 'blackout'.

The ground-breaking novelty about the weighing computer is its standard traffic light system. The green, amber and red lights indicate at a single glance whether the animal is ready for sale now or in one or two weeks. The farmer just enters three 'Hi' and 'Lo' target weight ranges to the computer.

For example, red lights show that the animal is ready for sale now. You can then spray or pen mark the pig with the appropriate colour so you won't have to repeat the weighing during the production cycle. Wolfgang Meier weighs his pigs only once, i.e. on Day 82 after their arrival.

The unit offers intuitive use, but German users would appreciate an German interface.

For so-called 'zero weighing' all animals of a group are driven onto the deck. Then each animal leaves the deck one at a time. As each leaves, its weight is indicated marked by a minus sign.
The software has meanwhile been reprogrammed so the 'traffic light' system also works for negative readings.

This means, the traffic light system saves farmers the trouble of converting weights again and again so they are compatible with the abattoir system. The traffic light system is also a great help for staff who find it hard to get to grips with the abattoir's user interface.

In addition, the computer also does the counting, which eliminates fiddling around with a pen and notepad in the pig house. For example, the system counts how many

PLUS AND MINUS

- ⊕ Lightweight and rugged design
- ⊕ Traffic light system expedites weighing
- ⊕ Low step-on height
- ⊕ Instant readout of the weight
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- ⊖ Terminal does not fold and sticks out
- ⊖ English-only decals and controls
- ⊖ 2nd remote gate control is no retrofit option

animals have been weighed since the computer was last booted up and also indicates the total weight.

One drawback, though, is that the stored data are lost when the computer is turned off. However, the results of each day are permanently stored in the internal memory of the weighing computer – which is another

new and very intriguing feature. More than that: you can now export the data to a USB 2.0 drive and to an Excel file that sorts them by date, time and weight, which makes each weighing more comprehensible and sales dates easier to plan.

We liked the fact that the current weight is indicated accurately at the very second the animals enter the weighing deck. To achieve that, it does 20 weighing operations per second and dynamically indicates the averaged result.

But that's not all. Here is another neat feature: If the pigs defecate before they leave the deck, the system will tare automatically and default to zero.

The weighing machine for groups offers a special feature that the manufacturer calls 'zero weighing'. What's this? Many farmers buy group scales just to determine the weight at sale to verify the abattoir data.

The weighing machine for animal groups from Meier-Brakenberg can also be used to determine the weight of individual animals. To do this, you drive all animals from one pen into the weighing unit – which is of course easier than separating individual animals from the group. Then you make the animals leave the unit one by one. As one leaves the deck the screen displays its weight marked by a minus sign.

But the traffic light system on our weighing computer would no longer work when the system was computing 'negative weight'. Meier-Brakenberg listened to our criticism and said they have

since amended the software so that the 'traffic lights' also come on for negative weights.

Pressing the Save button accumulates and saves all weighing data.

Other points worth mentioning:
- All cabling is routed inside the posts to protect it from rodents.
- The manufacturer gives a three-year warranty on the entire weighing unit on the basis that the extended period reflects the rugged and shockproof design of the weighing beams and waterproof weighing cells.
- The mobile weighing machine for individual animals have aluminium weighing beams and can weigh up to 1,000kg.
- The weighing beams on the stationary weighing machine are made from stainless steel and cover a weighing range of up to 4,500kg.
- The controls and decals are in English.

Lastly, the prices: Prices for the mobile weighing machine for individual animals in full specification and with solid sides start at €2,190. The most expensive and largest model is the unit for individual sows which costs €3,090 (all pricing excl. VAT).

The prices for the low-floor weighing machine for animal groups start at €4,250, which is the price for the smallest version of up to four pigs, and top out at €5,850 for the largest version (1.80 x 5.10m) which can handle groups of 20 animals. Custom sizes are possible and are a €400 option irrespective of the version.

€1,990 is the price for a calibratable unit. The extra remote control that unlocks the opposite gate costs €345, the chassis is €295 excl. VAT.

Summary: To make weighing easier for pig producers, Wolfgang Meier-Brakenberg launched his first weighing machines 19 years ago, one for individual animals and one for groups of animals. The two machines were given an update for EuroTier 2018.

The low-floor weighing unit is just 2cm off the ground, allowing animals to step on it with ease, and because it presents no obstacle in the main aisle, it doesn't require embedding.

All weighing machines have the new WA 300 weighing computer which gives clear digital read-outs, indicates green, amber or red lights, features the zero weighing option and exports data to a USB drive for transfer to the office PC. **MZ**

DATA SHEET

Animal scales from Meier-Brakenberg	WA 18 scales for individual animals	WASTN low-floor scales
Kerb weight	53kg	Depending on size
No. of weighing bars	2	4
Weight range	0-1,000kg	4,500kg
Height from floor	7cm	5cm[1]
Internal dimensions	142/47/80cm	Depending on model
External length	175cm	210-510cm
External width	58cm	110-180cm
Height	126cm	124cm
Standard specification	Traffic light system, USB port, automatic taring, remote gate control	Traffic light system
Option (all scales)	Calibratable, transponder reading	
Option (depending on model)	–	Chassis, 2nd remote gate control
Terminal	**WA300**	
Dimensions (l/w/h)	183/75/156 mm	
Kerb weight	1.9kg	
Control voltage	6 V DC	
Power input	230V	
Protection	IP 54	
Battery	Standard	Option
Battery service life	12 hours	
Operating temperature	10-40 °C	
Price excl. VAT	€2,190	€4,250 - €5,850

Manufacturer information; [1] 2cm step height