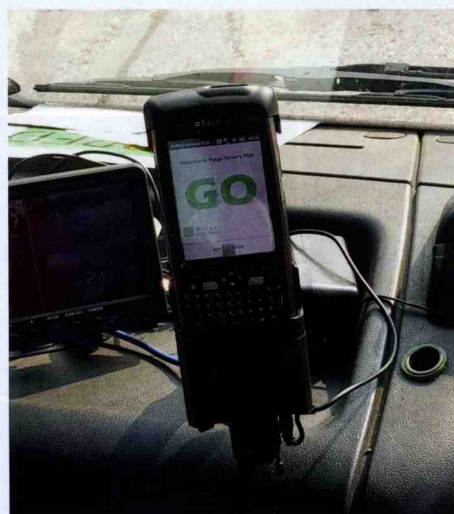


Axtec's dynamic axle weighbridge saves yard space compared with the traditional plate weighbridge in the background.



The Weigh Forward



VWS's PurGo handset communicates data wirelessly.

As our industry moves ever further towards collecting, handling and trading waste by weight (as well as what it is), Ainsley Fraser looks at the wide range of weighing options available – both on-board the vehicle and in the yard.

Fact ... waste management and recycling has become every bit as sophisticated as any other process industry. That means efficiency, accuracy, control, monitoring and compliance are pre-requisites ... as is good operational management and practice. So no surprises then that, as the costs of recycling and landfill taxes continue to climb, the capture and application of detailed weight data has become a much more exact science – and getting it right or wrong can have a direct impact on the bottom line.

Depending on the weight information you want, at what stage of the operation you want it, the desired accuracy and then how

you want to use it, there are now a whole load of options out there – so do your homework first ... what is it you want to do?

The logical starting point would seem to be deciding whether you want to – or are required to weigh as non-trade or 'trade approved'. The latter defines that your chosen weighing system is 'Fit for Trade' and meets the requirements of The National Measurements and Regulation Office (NMRO), formerly known as the National Weights and Measures Laboratory. It means that the equipment has been tested by them for, amongst other things, accuracy, radio interference, power surges and reliability.

"Most weighing system manufacturers offer options and solutions which can meet either. This is backed up with a high level of expert technical advice and experience to help the operator make the right choices", says Martin Parrack, now an independent consultant who advises on vehicle weighing and undertakes weighing audits and



VWS's Skip Weigher uses a load cell on the top of lifting arm assembly

vehicle gate checks. "It is a complex area and it is important to specify and match the equipment to deliver the best solution for the end customer's operation."

Let's start with On-Board Weighing Systems – where there are basically three options ... and as this is Skip Hire Magazine, let's begin 'at home'!

One increasingly popular skip loader solution is weighing the skip while it is suspended on the lifting chains during loading. Current systems incorporate a load cell between the top pin of the lifting arm assembly and the chain hanger bracket – any and all of which is a comparatively straightforward fit, reducing down time on installation. Another system utilises contact-free transducers and sensors to monitor lifting pressures. But both overcome some of the under-body space issues,

particularly on some Euro 6 chassis, where there is precious little room for any additional componentry.

There are both trade and non-trade systems available and additional 'wireless' features can include the ability to print out a ticket in the cab for the customer, storage of the data or even real-time communication of information back to base. The systems will also advise the driver if a skip exceeds the vehicle's gross payload but it cannot identify individual axle overloads.

Most other types of vehicle on-board systems involve load cells mounted between the chassis, the subframe or the vehicle body. These are typically high accuracy systems, which can be trade or non-trade – again, with the ability to print out tickets for the operator and the customer and link in real time to the office. The big difference is that these systems are able to give you individual axle weights and gross vehicle weights to ensure your vehicle is road legal.

On the ubiquitous hook loader, most manufacturers favour six load cells, mounted between the chassis and the subframe – so the bin is actually weighed once it has been fully loaded – not during the lifting operation with the stinger. The most accurate system for a tipper application utilises under-body load cells – usually fitted to the trunnions and under the ram – but an alternative is to use an oil sensor in the ram. This latter solution will not be as accurate and therefore cannot be used for 'trade'

Finally, there are basic load indicators – a

comparatively low cost, 'entry level' option which will give the driver an indication of an overload on either an individual axle or gross weight.

For Refuse Collection Vehicles (RCVs), there are some dedicated systems – and they are all pretty accurate. Weighing the actual bin on collection is a firm favourite and provides a very accurate way of monitoring the weights from a particular customer or location. There are both trade and non-trade systems available, although most systems use the same components ... it depends whether the system has been stamped and approved by Trading Standards.

Some of the systems have to stop the lift to weigh the bin, which slows the operation, whilst others weigh the bin dynamically, resulting in speedier operation. Tag readers can be fitted too, to identify the individual bin and all the data captured can be stored and/or sent back to the office for processing.

Other RCV systems include conventional load cells fitted between the chassis and the body and some which measure air pressure on the air backs.

Back at the yard, depot or on site, there is a whole different range of options.

Pit or surface mounted plate weighbridges are still the traditional method for monitoring loads coming onto and leaving site. With high levels of accuracy, they are ideal for trade applications. Issues which need careful consideration however, can include ensuring the right location, the type of vehicles you want to weigh and the potential for debris to gather under the plate. A site inspection by an experienced engineer is always recommended.

Where site or depot space is limited, dynamic (Weigh-In-Motion) axle weighbridges score hands down. While they require a full vehicle length before and after the weighing platform, they take up very little space and the ability of the small platform to withstand plant turning and driving over the deck makes it an ideal option for a busy yard. Accuracy is right up there too – given that most enforcement sites use the same systems.

Where no fixed weighing infrastructure is available, portable axle weighbridges are one solution. Depending on how many axles you want to weigh, the units can normally be carried in the back of a car or estate car and they are very quick to set up. Ideal then if you want to collect data on loads being collected from a site and to ensure departing vehicles are not overloaded on either individual axles or gross weight.

Then finally, there are portable wheel pads – a comparatively lower cost option but really for two axle vehicles only. Yes, they can be used for multi-axle vehicles provided you remember to place dummies or weigh pads under all the wheels of compensating axles.