When people complain about having to deal with a lot of manure in their workplace, they’re usually speaking figuratively. Those who are being literal are probably in the mushroom industry.

CNC is one of Europe’s largest suppliers of compost and casing soil for growing mushrooms. An important tool they need in their systems is a reliable and robust conveyor belt weighing device which effectively measures the weight of the conveyed material.

Oh, and they’d prefer that the system be resistant to some of the stickier elements of compost too.

CNC, The Netherlands, produces Phase I, II, and III compost. The company strives to be a sustainable link in the supply chain, something that is abundantly clear considering that their compost is made from the byproducts of other industries such as:

- horse manure from riding stables
- chicken manure from poultry farms
- straw from the growth of cereals
- recycled gypsum.

What’s more, after it has been used to grow mushrooms, the spent compost serves as a soil improvement medium for agriculture. In this way, it truly is the gift that keeps on giving.
CNC is committed to creativity and innovation as well as staying up to date with cutting-edge technology. Not only do they have a dedicated Research and Development department that is always looking for new ways to improve its compost, the company is also constantly refining the technology used in that production.

To this end, CNC wanted an inventive solution to properly fill and empty the tunnels where the compost matures. They turned to Hoving Holland Int., an OEM that specializes in custom installations for mushroom culture, and a supplier of Siemens products.

The challenge

Phase III compost matures in long, dark tunnels over a period of more than two weeks. CNC uses a large piece of transportable equipment called a “cassette conveyor”–a series of stacked conveyor belts that can be rolled out like a fire ladder–to fill these tunnels. Once the raw material is in the tunnel, technicians blow in oxygen to encourage the maturation process and, when it is ready, a tunnel-winch pulls the new phase III compost out.

Efficient maturation of the compost depends greatly on the correct distribution of raw material within the tunnel. If there is too much compost, then it cannot be properly aerated. If there is too little, then the space is not being used to its full potential.

To accurately measure the volume of compost going into the tunnel, the company needed to install a belt scale to continuously weigh the material as it travelled on the conveyor belt. However, there was limited space, as well as the obstruction of a central support beam under the belt, that precluded most models of belt scales.

CNC had already tried several suppliers, but none could meet the challenge. Hoving Holland Int. proposed a solution that included a Milltronics MCS belt scale, a Milltronics BW500 integrator, as well as a Milltronics Junction Box.

The solution

The Milltronics MCS Belt scale is a single-idler unit that uses stainless steel triple-beam parallelogram load cells that are impervious to horizontal forces from the belt. At only 4” (10 cm) in overall height, it is very compact and can mount to any conveyor belt width up to 60” (152 cm). This relatively small size made it an ideal choice for installation in the limited space of the cassette conveyor.

To go along with this belt scale, Hoving Holland Int. recommended the following additional equipment:

1. **Milltronics BW500**
   A compact integrator offering the latest in weighing functionality and industrial communications.

2. **Speed sensors**
   Equipment that was custom engineered by Hoving Holland Int.

Hoving Holland Int. technicians installed a sliding plate to transfer the weight onto the load cells of the Milltronics MCS, and then tied it in with an S7-300 PLC, HMI Panel, Remote I/O, and Scalance Wifi to maintain constant contact with the plant’s control and data systems.
The benefits

The installation of the Milltronics MCS belt scale and the Milltronics BW500 integrator has solved the problem at the CNC Milsbeek location. The equipment operates with the necessary stability and accuracy in feeding a specific amount of compost into the maturation tunnels. As a result, the compost can develop in the optimum environment, a key condition for maintaining a demanding production schedule.

As Dolf Doddema, electro engineer of Hoving Holland Int. says, “The MCS scale fitted exactly in the slim design of the cassette conveyor system, and gave us the performance that we needed. Easy to install and easy to configure.”

Oh, and by the way, this solution is resistant to the aforementioned clingier ingredients of compost as well.