

FLEXIBLE APPLICATION OF FLOOR CONVEYOR SYSTEMS

Parts Transport on a Sound Basis

Whether they are used for vertical inclines or large work jigs, floor conveyors offer numerous advantages for parts transport with regard to process reliability, flexibility and investment. We present some practical examples.

— A conveyor system based on the HD 100 single line floor conveyor system from Caldan Conveyor A/S was built for one of the leading motor cycle producers in China. Together with a Chinese partner company, Caldan designed the system in such a way that motorcycle fuel tanks can be conveyed through the coating booth in a flat position while continuously rotating.

To achieve this, the rail system was built upright and the skids move vertically through the booth. During the coating process, the tanks turn on a rotating head fixed to a skid. According to the operator, the newly installed conveyor concept has resulted in improvements in application and in the cleanliness of both the booth and the conveyor. The system has been in operation since summer 2010 and is to be extended by the addition of two more units.

Vertical transport of the parts carriers

Also designed on the basis of the HD 100 model is the HD 100 "Stepper" floor conveyor, which was used to build a pilot system for one of Asia's leading carmakers. The operator had specified that parts also had to be able to travel vertically without tilting. This requirement was already implemented during the project phase, initially in a test system for presentation purposes, and the finished system was subsequently installed.



At a Chinese motorcycle producer, the motorcycle fuel tanks rotate as they travel through the coating booth



Floor conveyors on a vertical incline, here during pre-inspection at the factory

The advantage of this conveyor system is that the workpiece carriers and the workpieces connected to them always remain vertical and are not tilted even over 30° inclines. In practice, this is beneficial for the workpiece fixtures and the workpiece geometry. The pitch between the parts is always the same and they do not move apart even when overcoming inclines – an advantage that can otherwise be achieved only by using expensive lifting stations. In the meantime, the first system has been installed in Malaysia and is used as a pilot system for other plants run by the operator.

Solution for larger work jigs

In the field of heavy-duty (HD) conveyor technology, a system with larger, stur-

dier skids was built for an automotive supplier and was put into operation at the beginning of 2010. This system features all the properties of the standard system but can also be used especially for larger work jigs. The system is already being used in four plants. In this solution, sizes of 2500 x 2000 x 1500 mm can generally be conveyed on a skid, which also has a positive effect on the cost-effectiveness of the system.

Systems for light loads

In addition to heavy-duty floor conveyors, systems for light loads are also available. In 2010, Caldan further developed the existing system for the construction of two plants, one for a German plant engineering company and one for a Chi-

nese partner company. This was an upgrade of the type LD (light duty) model, the smallest version of the floor conveyor. The system was designed in such a way that the parts can be forced to rotate over the entire conveyor distance. This also ensures precise guidance over the entire path. In this case too, the entire conveyor technology was built at the supplier’s plant and was tested by the user. The system has all the features of a conventional spindle conveyor but offers greater stability. ─

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