



## INVERTED POWER & FREE SYSTEM EFFICIENT, VERSATILE AND EASY ON RESOURCES

THE NEW POWER & FREE-SYSTEM WAS DEVELOPED WITH A VIEW TO MAKING CONVEYING TASKS IN FINISHING PROCESSES MORE FLEXIBLE AND COST-EFFICIENT.

### **Lean in (almost) every respect**

The system is characterized by the “inverted” floor-mounted construction. It has the advantages of the floor-mounted circular conveyor, multi-track spindle conveyor and skid conveyor combined with those offered by conventional power & free overhead conveyors. Even though it is extremely versatile, the system requires fewer drives and control components. The compact dual-rail system can be integrated in and around paint lines without the need for a base or complicated steel construction. All this keeps costs down. The conveyor below the workpieces prevents soiling of the components.

### **Variable operating modes and speeds**

With the inverted power & free-system, the carrier trolleys holding the workpieces are conveyed in one rail. These trolleys can be engaged or disengaged. The conveying chain runs in the second rail with fixed pusher dogs. This intelligent mechanical solution ensures a fast, reliable and simple transfer from chain to chain – even where speeds in the various processes differ. This ensures highly efficient production. Moreover, the system is fitted with switches for merging or diverting the carriers to different process destinations, for overtaking, sorting or counting off the required number of carriers. It is also useful for creating flexible buffers or time windows for application rinsing processes. Moreover, the system allows specified carriers to make repeated circuits, while other carriers can be sent directly to certain processes – eliminating detours to unnecessary heating and cooling zones. In many cases, transfers between separate spindle circular conveyors, which are usually performed by robot or transfer devices, can be omitted.

### **Turning device saves production space**

A turning device integrated in the carriers makes it possible to turn workpieces 90°. This is particularly advantageous where long workpieces are concerned, such as bumpers. These can be buffered widthwise one behind another to save space, and then conveyed lengthwise in preparation for the painting process. The workpieces can be turned automatically either during transfer or when stationary, depending on requirements.

### **Oil-free operation – even in high-temperature area**

The inverted power & free-system was developed for wet and powder coating lines. The design of the chains, together with the use of special materials and lubricants for the bearings, guarantees oil-free operation with minimum maintenance, even for applications at high temperatures.

### **Low-noise system**

Another advantage of the conveyor system is that it runs quietly – particularly as compared with skid conveyors. The noise level was reduced by using fixed chain dogs. All components required for the power & free movements are integrated in the carrier trolley.

### **Compact construction saves resources**

The system features a compact design with a low overall height and width. This means that it takes up far less space than a skid system. Even the inlet and outlet openings of the various booths can be reduced in size, which is in turn advantageous for the process in terms of air flows and power requirements. Moreover, the low dead weight of the trolleys helps reduce power consumption.

### **High level of process reliability and minimum maintenance**

The new inverted power & free-system uses tried-and-trusted standard components. At the same time, many identical components are employed, such as actuators and stoppers. This ensures high process reliability while minimizing maintenance and spare parts inventory levels.

The system is controlled by the ESM (Energy Saving Module) field bus that has already been successfully employed in power & free overhead conveyors. The power distribution and control unit are housed together.

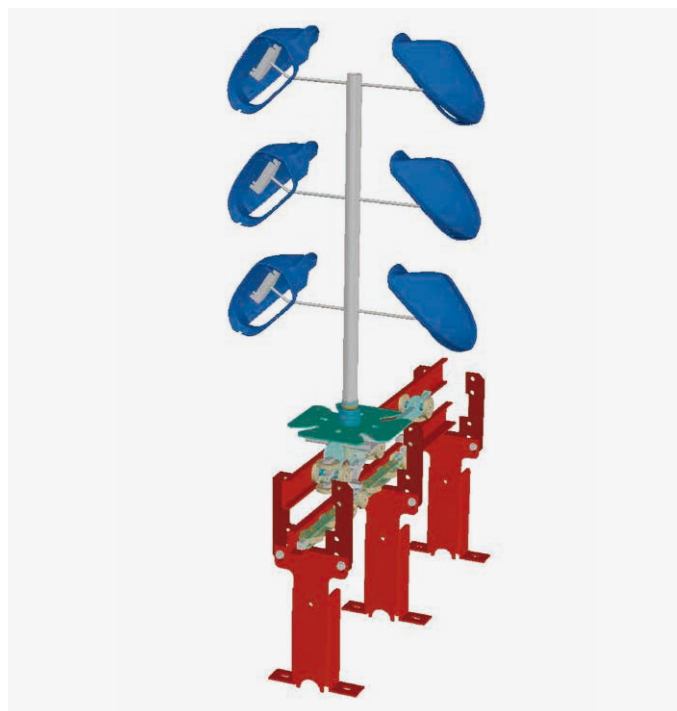
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### Advantages at a glance

- Saves energy and space thanks to its compact design and 90° turning device
- More efficient finishing processes through fast transfer and flexible operating modes
- High process reliability and low maintenance through the use of standardized components, fewer drives and sensors
- Reliable applications at high temperatures and clean workpieces thanks to oil-free chains and conveyors placed below
- Low noise level through the use of an enclosed chain rail and fixed pusher dogs
- Intelligent control system using proven ESM busbar for installation and control design

### Technical data

Overall height	600 mm
Overall width	180 mm
Speed	from 0.5 m/min. to 12 m/min.



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