



## Concord N

### Product Description

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CONCORD N is the latest version of the world-renowned CONCORD handling system and features a completely revised control system based on the industry-standard Siemens S7 PLC.

With its robust space frame construction, CONCORD N provides a stable and reliable mass-flow link, which maximises the efficiency of any one-to-one or multi-linking high-speed make/pack line. The reservoir incorporates a unique non-degrading, in-line buffer, which automatically compensates for small maker/packer speed mismatches and allows controlled reservoir accelerations.

#### **Features**

##### RESERVOIR

- Up to 18,000 cpm throughput
- Rigid space frame reservoir structure
- Durable off-the-shelf conveyor
- Long-life slide track
- Non-degrading in-line buffer
- Automatic conveyor slack elimination
- Self-calibration of capacity status

#### **MFE**

- Modular construction
- Input/output height options
- Length settings from front
- Left hand, right hand and
- Twin headboard options



#### **Controls**

- Industry standard
- On-board electric's
- On-board motor inverters
- Touch screen operator interface
- Full diagnostics
- Long term optimisation of
- Individual conveyor speeds
- Expandable for MIS and
- Module optimisation
- Maker/packer speed
- Optimisation option

#### **MFE**

Being of a robust, totally modular construction, the mass-flow elevator is capable of catering for a variety of input and output height options to accommodate specific customer requirements.

The modularity also caters for single left hand/right hand and twin headboard options and includes hand catching and dump options.

The system can be reversed to clear the reservoir by means of the hand catcher or dump.

All product length settings can be carried out from the front of the machine using non-adjustable spacers. Access is provided to all sections of the elevator for periodic maintenance etc.



### **Reservoir**

The reservoir is constructed on a rigid space-frame structure, which provides absolute stability during product transfer. Supports can be positioned in a wide range of floor mounted or hanging options to cater for particular customer requirements or machine configurations.

Cigarettes are conveyed on a durable off-the-shelf conveyor. The conveyor tension is controlled automatically, thus minimising the need for maintenance and operator intervention. Maintenance requirements are further minimised by the introduction of a new long-life slide rail which has more than doubled the life of the rail, making replacement a very rare occurrence – even for systems operating on a three-shelf basis.

### **Buffer**

CONCORD N employs a unique in-line buffer to ensure system stability and minimise the main reservoir acceleration rates. There are no dormant cigarettes within this in-line buffer.

The buffer section of the cigarette path comprises the lower wheel, which is automatically driven in, or out on a slideway to lengthen or shorten the active conveyor as circumstances dictate. Short-term over-production will cause the wheel to move out and short-term under-production will cause the wheel to move in the opposite direction, thus lengthening or shortening the active conveyor without mobilising the main reservoir. The buffer position is continuously and accurately monitored by an ultrasonic detector. The buffer will always be returned to the mean position.

Should either the maker or packer stop, the buffer and reservoir are activated simultaneously, the buffer compensating for the controlled acceleration/deceleration of the reservoir.

By controlling the acceleration and deceleration of the reservoir, the product is not subjected to any undue degradation.

### **System Optimisation Option**

Optimum performance of the maker/packer combination can be achieved by the automatic speed adjustment of either linked machine according to the level of cigarettes within the reservoir.

The reservoir capacity status encoder is automatically self-calibrating. The encoder works in conjunction with two detectors. One will be activated when the reservoir is full and will reset the encoder to 100%, the other is activated when the reservoir is empty, resetting the encoder to zero. This ensures that the encoder signals truly represent the fill status of the reservoir.

### **Conveyor Speed Optimisation**

Each conveyor is digitally speed monitored in conjunction with the appropriate cigarette stack height sensor. In the event that there is a long-term deviation from the ideal sensor position, the conveyor speed will be automatically reset in order to optimise the product flow, particularly at the junction.

### **Controls**

The control system is based on the Siemens S7 PLC, a universally accepted standard, providing a familiar environment for the electronics engineer, with component replacements readily available off-the-shelf.



The touch-screen operator interface provides the operator with comprehensive machine status and diagnostic displays. All stack heights are now monitored by ultrasonic sensors, which require no setting and are thus easily replaced.

Ease of installation and maintenance is a major feature of CONCORD N. All machine electric's are now mounted on-board the machine and each motor has an on-board inverter. Both these features have resulted in a considerable reduction in wiring and the consequent time needed to make the previously necessary interconnections. The removal of the stand-alone cabinets has also seen a considerable reduction in the machine footprint.

### New Layout Options

CONCORD N is available with three standard reservoir sizes – 4, 6 or 8 tiers with capacities of 87,000, 130,000 and 173,000 cigarettes respectively. These are based on the standard wheel pitch of 6 metres.

Now further options are available which enable manufacturers with limited height restrictions to achieve increased from 4 and 6 tier versions. These increased capacities are obtained from “stretched” versions of the reservoirs, based on an increased wheel pitch of 10.3 metres and provide a capacity of 134,000 cigarettes with 4 tiers and 200,000 cigarettes with 6 tiers. In each case the reservoir is extended over the maker and is therefore effected with no increase in the footprint.

