DYNAMIC CONVEYOR CORPORATION

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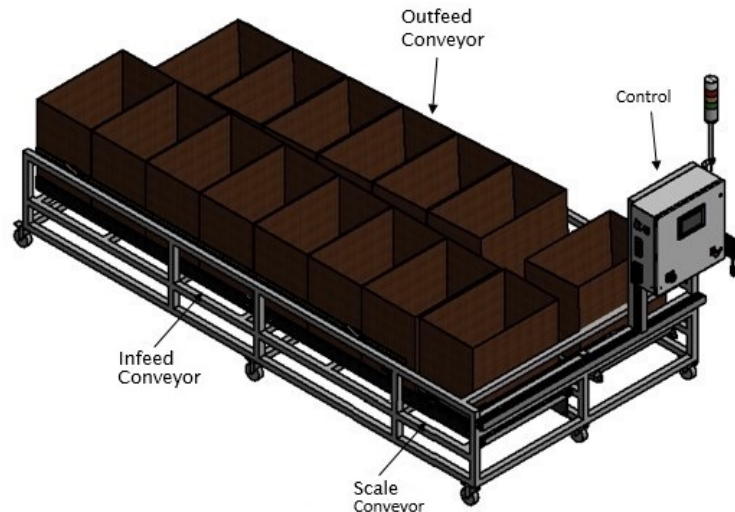www.dynamicconveyor.com

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Side By Side Box Filling By Weight/Count

Filling by Weight:

An operator will load the infeed conveyor with empty containers and remove any containers from the outfeed conveyor. The operator will load a recipe with the necessary information/parameters for the job that is being run. Press the auto mode touch button located on the HMI's main screen.

If there isn't a fault condition, the system will index an empty container to fill onto the scale conveyor, tare the container on the scale conveyor, and begin the filling cycle. The control will provide an Alarm-Output, 24VDC signal, if it encounters an alarm condition that would result in aborting the filling cycle. The Alarm-Output is available to interface with another control/system via a female M12 connector on the side of the provided control enclosure.

When the system is in a filling cycle, meaning that the container on the scale conveyor has not reached the target weight, the control will signal the parts feed conveyor to run at the normal filling speed.

In the recipe information, a near full percentage will be used to control the trickle feed of the parts feed conveyor(s), if the system is in weight mode. When the near full signal is active, the control will output a signal to slow the feed conveyor and start the part feed jog sequence. The amount of jog time can be edited on the user setup screen under the part feed conveyor jog timer.

When the near full signal is active and motion is detected on the scale (parts filling into the container), there will be a slight delay to check the weight after the parts have settled from the drop between the feed conveyor and the container on the scale conveyor. The conveyor will continue to run at a slow speed, with the motion delays, until the target weight is reached.

Once the target weight is reached, the container on the scale conveyor will shift to the outfeed conveyor and the system will load the empty box from the infeed conveyor onto the scale conveyor and restart the filling cycle.

Side By Side Box Filling By Weight/Count (continued)

Filling by Count:

An operator will load the infeed conveyor with empty containers and remove any containers from the outfeed conveyor. The operator will load a recipe with the necessary information/parameters for the job that is being run. Press the auto mode touch button located on the HMI's main screen.

If there isn't a fault condition, the system will index an empty container to fill onto the scale conveyor and begin the filling cycle. The control will provide an Alarm-Output, 24VDC signal, if it encounters an alarm condition that would result in aborting the filling cycle. The Alarm-Output is available to interface with another control/system via a female M12 connector on the side of the provided control enclosure.

When the system is in a filling cycle, meaning that the container on the scale conveyor has not reached the target count, the control will signal the parts feed conveyor to run.

Parts are introduced to the part feed conveyor and a mold cycle signal is sent to the control. The mold cycle signal is multiplied by the cavitation count to give the current count.

When the current count is greater than or equal to the target count, the counter is reset and the part feed conveyor off delay timer starts. When the part feed conveyor off delay timer reaches it user-defined set point, the part feed conveyor stops, the container on the scale conveyor will shift to the outfeed conveyor and the system will load the empty box from the infeed conveyor onto the scale conveyor and restart the filling cycle.

Standard Features:
- Infeed conveyor: 1.9" Itoh Denki powered roller on 3" centers
- Outfeed gravity conveyor: 1.375" rollers on 3" centers
- Scale conveyor: 1.9" Itoh Denki powered roller on 3" centers
- 150 user defined stored recipes (name, box count or box weight, # of mold cavities, near full%, over tolerance weight or part count)
- Alarm Handler screen (Motor faults, conveyors full warning, conveyors full alarm, conveyor empty warning, conveyor empty alarm, box removed during fill cycle)
- 3 Color Alarm Light w/Buzzer (Green: system running, Yellow: system warning, Red Light/ Buzzer: System alarm)
- I/O Diagnostics screen w/ manual PB output operation
- Auto mode manual bin shift HMI pushbutton
- M12 System communication I/O receptacle (24 VDC counter input, Alarm active dry contact output)
- M12 Part delivery conveyor I/O receptacle (24 VDC Run FWD & speed 2 input, PNP transistor alarm output)
- Oriental Motors servo motor control with absolute encoder (lift & pusher arm)
- Unitronics UniStream 7" HMI/PLC combo
- Ethernet I/P communication
- 4 port Ethernet switch
- Ethernet I/P Itoh Denki powered roller card
- Ethernet I/P Mettler Toledo weigh transmitter
- Oriental motors pusher arm actuator
- Adjustable guide rail on one side
- Anodized aluminum frame
- 75mm swivel lock casters
- Mettler Toledo weigh scale base

Side By Side Box Filling By Weight/Count (continued)

Additional Options Available:

- Additional Infeed conveyor
- Additional outfeed conveyor
- Part delivery conveyor
- E-stop w/ Phoenix contact safety relay
- Ethernet interface port
- Infeed conveyor box stop & wake up sensor
- Adjustable guide rail on both sides

Note:

It is recommended that the scale be professionally calibrated by Mettler Toledo so that the system can be optimized for your given operating conditions. Please contact them or your local scale service technician to have this done prior to operation.