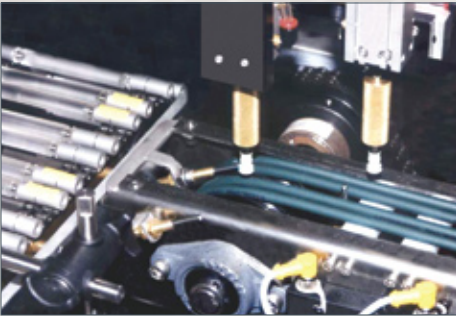




Industrial Manufacturing Glass Vial Handling System

Convey, Transfer, Combine, Pick And Place



Process, Features & Benefits

The system includes mechanical and electrical integration at the exit conveyor of a Lehr annealing oven. Glass vials exit the oven at 100 vials per minute, oriented supine, riding on a wire conveyor belt in rows of four, five, or six vials per row (depending upon vial size). The oven chain is comprised of a series of alternating hills and valleys across its width. Each row of vials is cradled within a valley to prevent rolling. Synchronous timing between the Farason unloader and the continuous motion oven conveyor.



A 2-axes pick and place receives a signal from a conveyor sensor that the next row of vials from the oven conveyor and places them down into a pair of round belt conveyors whose direction of travel is perpendicular that of the oven conveyor.

Vials nested between the round belts travel down toward an inspection conveyor on two parallel operating sets of belts. The belts are spaced and constructed such that glass shards and fragments are able to fall through preventing interference with subsequent operations.

A pair of independently operating, 2-axes, pick and place devices receive signals from conveyor mounted sensors that a vial is in position to remove and transfer to the inspection conveyor. Single head, vacuum, end effectors remove the vials from the round belt continuous motion conveyors and transfers them to the indexing inspection conveyor whose direction of travel is perpendicular that of the round belts.

The inspection conveyor and vision system was developed independently by the customer and sent to Farason for integration within the vial handling system. The indexing conveyor transferred two glass vials simultaneously past a series of cameras at 50 indexes/minute. Farason supplied the indexing drive and reject device.

A 2-axes pick and place equipped with a dual head, vacuum, end effector removes vials from the inspection conveyor and places them down into a carrier.

The carrier conveyor consists of a series of carriers that ride on an oval cam track. The carrier pivots at one end to allow the cam to rotate the carrier 90°, reorienting the carrier to a vertical position. Vials riding in the “V” shaped carriers are reoriented from their supine position to upright, cavity facing up. The carrier conveyor speed is electronically synchronized with the exit conveyor to maintain stability of the small diameter, lightweight glass vials at a high rate of speed. Vials are split into two lanes and enter a Farason integrated Alliance Conveyor accumulation and inspection table.

More Information

For more information on this, and many other Farason projects, please visit our website at www.farason.com or call us at (610) 383-6224.