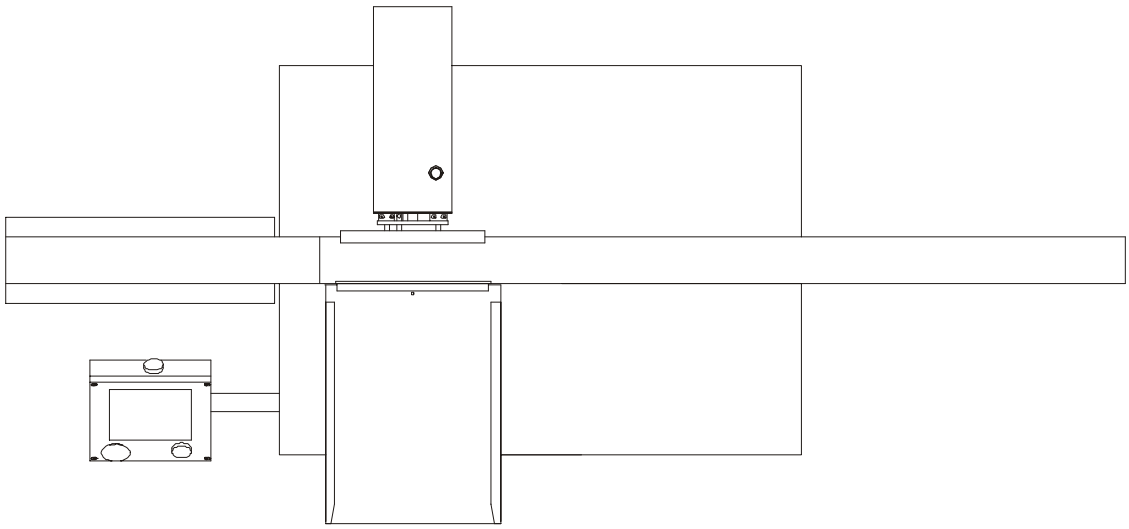
PennTech - TL-100 Trayloader

The PennTech single trayloader is designed for low to medium output, aseptic and non-aseptic applications. The TL-100 is controlled by a Programmable Logic Controller (PLC) and will handle plastic and glass vials with speeds of up to 200 vials per minute (depending on vial diameter and tray size). It is designed to handle trays up to 610 mm (24”) wide (open end) and up to 610 mm (24”) deep. Tray materials can be metal, cardboard, corrugated plastic, or rigid plastic.

The (tool free) changeover procedure of the TL-100 is quick and easy. Changeover should never take more than two minutes. To change vial size, simply change the pusher bar and associated change parts. Then, select a setting on the control panel and the actuator(s) automatically go to their pre-programmed starting position for that vial size.



Functioning

The TL-100 has one loading platform. Once the tray is full, the operator replaces it with an empty one and the machine will immediately resume loading the tray. The process is seamless; there is no additional work to be done or buttons to be depressed by the operator. Once a tray is full, the loading process stops and a yellow light indicates that the tray can be replaced.

Ease of Operation

Through the control panel, the operator can select the vial that will be processed. The PLC will now instruct the stepper motor(s) as how to position the actuator(s). The setting of the actuator(s) is specific to the selected vial size; it is always in the optimum position.

In addition, through the PLC the stepper motor(s) is instructed as how fast and how far the actuator(s) has to move. For small unstable plastic vials the actuator speed is less than for 100 ml glass vials. Under PLC control, the actuator stroke for each vial size is exactly what it should be, not more, not less. In other words, without operator involvement, the machine is automatically optimized for each vial.

Versatility

The TL-100 can be ordered in the standard left to right execution or in the right to left execution (without additional cost). Different tray sizes can be handled by the machine through change parts as well as different tray materials. Glass and plastic vials can be processed from 1-500 ml. Vials are seamlessly loaded in a nested pattern.

Safety

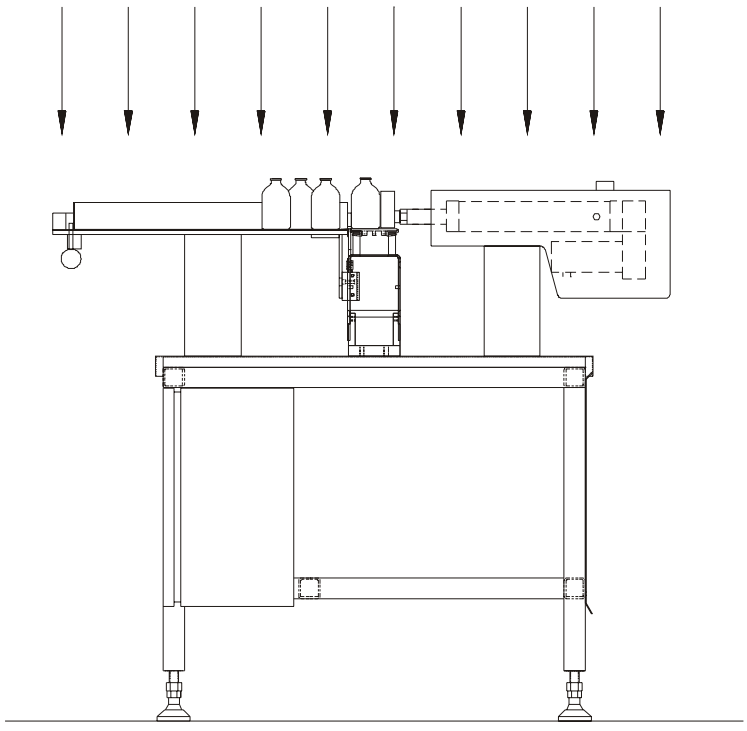
The machine is designed with safety in mind. Actuators are stepper motor controlled and come equipped with (programmable) encoders automatically halting production in the event of an obstruction.

Aseptic Operation

There are no overhead parts that interfere with vertical unidirectional airflow. (see drawing) The machine frame is approximately 20 cm (8 inches) below the work surface to minimize the vertical airflow disturbance at the work surface. A special raised track conveyor (3 1/4" Rexnord 880) is used to aid the cleaning process.

Also for cleaning purposes the tray bed and conveyor are mounted on columns, away from the machine frame. The machine is constructed from AISI-304 stainless steel, including frame, and AISI-316L where required.

VERTICAL UNIDIRECTIONAL AIRFLOW



Specifications

MACHINE FRAME:	- AISI-304 stainless steel
DIMENSIONS:	- length: 1067 mm (42 inches) - width: 864 mm (34 inches) - height to working surface: 851-978 mm (33 1/2 - 38 1/2") - height overall: working surface plus 76 mm
CONTROL PANEL:	- Allen Bradley PanelView 550 or optional 1000
PLC:	- Allen Bradley SLC-5/04 or optional 5/05
TRAY SIZES:	- customer's choice (up to 610 x 610 mm or 24 x 24 inches)
ACTUATORS:	- High speed ball screw - Fully programmable stepper motor w/encoder
PANELS AND COVER:	- AISI-304 stainless steel
ELECTRICAL PANEL IN MACHINE FRAME:	- Nema 4X, AISI-304 stainless steel
CONVEYOR:	- AISI-316L stainless steel
CONVEYOR TRACK:	- 3.5 inch Delrin Rexnord 820 (raised track)
CONVEYOR LENGTH:	- 2134 mm (84 inches)
CONVEYOR MOTOR:	- 1/3hp DC adjustable speed
UTILITY REQUIREMENT:	- 115 volt single phase
WEIGHT:	- Approximately 200 kg (440 lbs.)

Documentation

The TL-100 comes with a complete set of documentation.

Included are:

- Standard Operation Procedures (SOP)

- Maintenance Procedures

- Recommended spare parts

- AutoCad drawings for all wear and tear parts and change parts (hard copy and compact disk)

- Three dimensional assembly drawings

- Detailed parts lists with OEM part numbers

- PLC ladder diagrams

- OEM documentation and manuals

- Process and material certifications