SINEWAVE MODULAR PRODUCTION SYSTEM TRAINER

MODEL – SMPST – 101

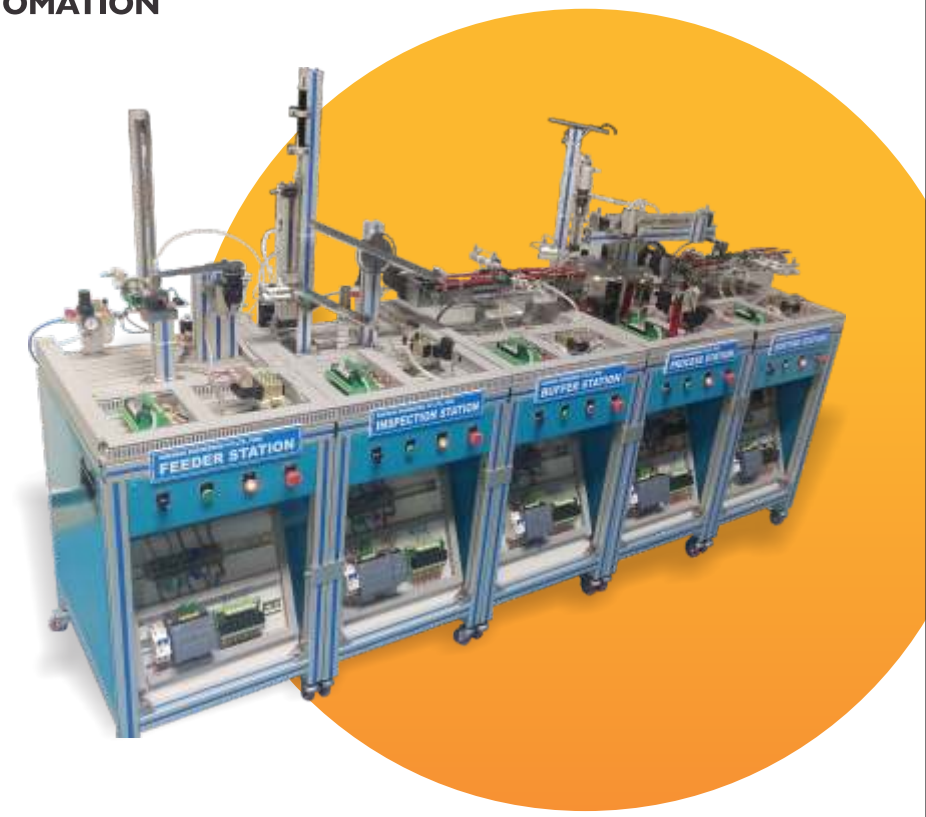
SINEWAVE MODULAR PRODUCTION SYSTEM TRAINER IS DESIGNED TO UNDERSTAND THE CONCEPTS OF INDUSTRAIL AUTOMATION

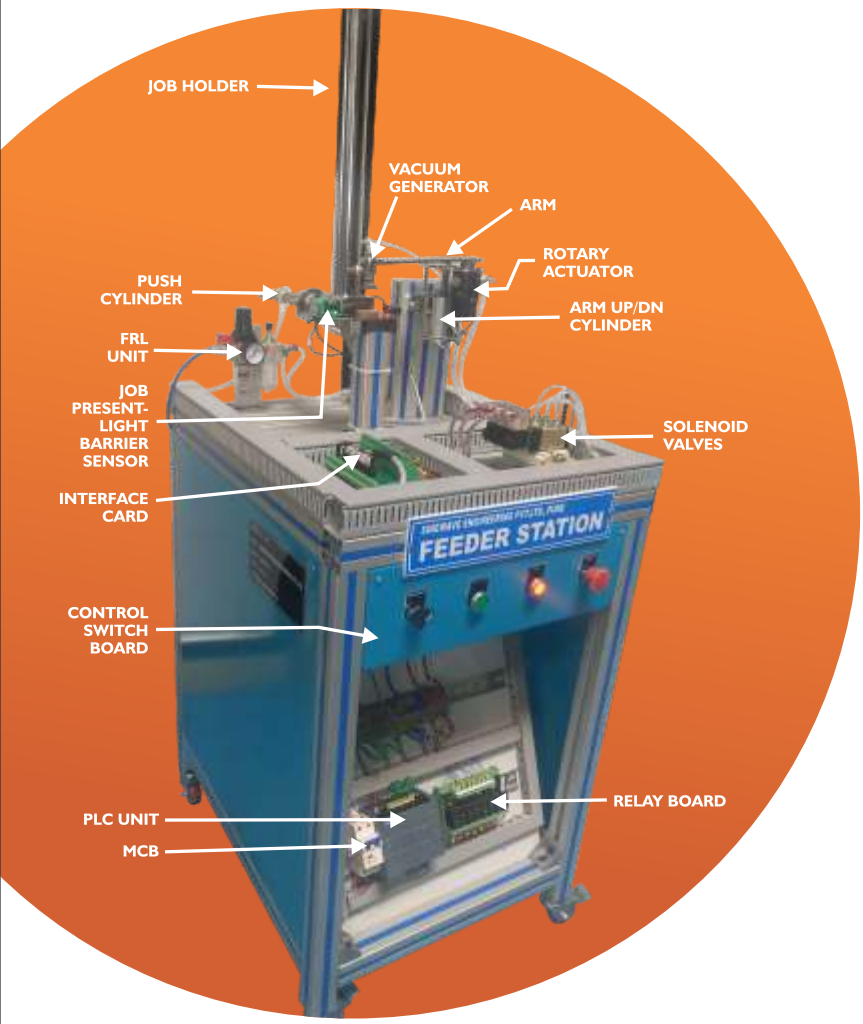
SMPST-101 is a flexible and compact MODULAR system which includes industrial automation technologies.

SMPST -101 comprises up to 5 independent stations with integrated control. This modular equipment features a higher number of stations in the same space, which means that more users will be able to work at the same time. Starting with an initial basic configuration station can be easily enhanced by adding workstations at later stages as per the need.

SMPST -101 offers professional skills training to suit the world of industry using Standardized industrial components.

The different stations such as Feeder Station, Inspection and Quality station, Buffer Station, Process Station and Sorting Station provide the system with greater flexibility, the stations adapt to a wide variety of assemblies, introducing variations in the materials, colors and part sizes.



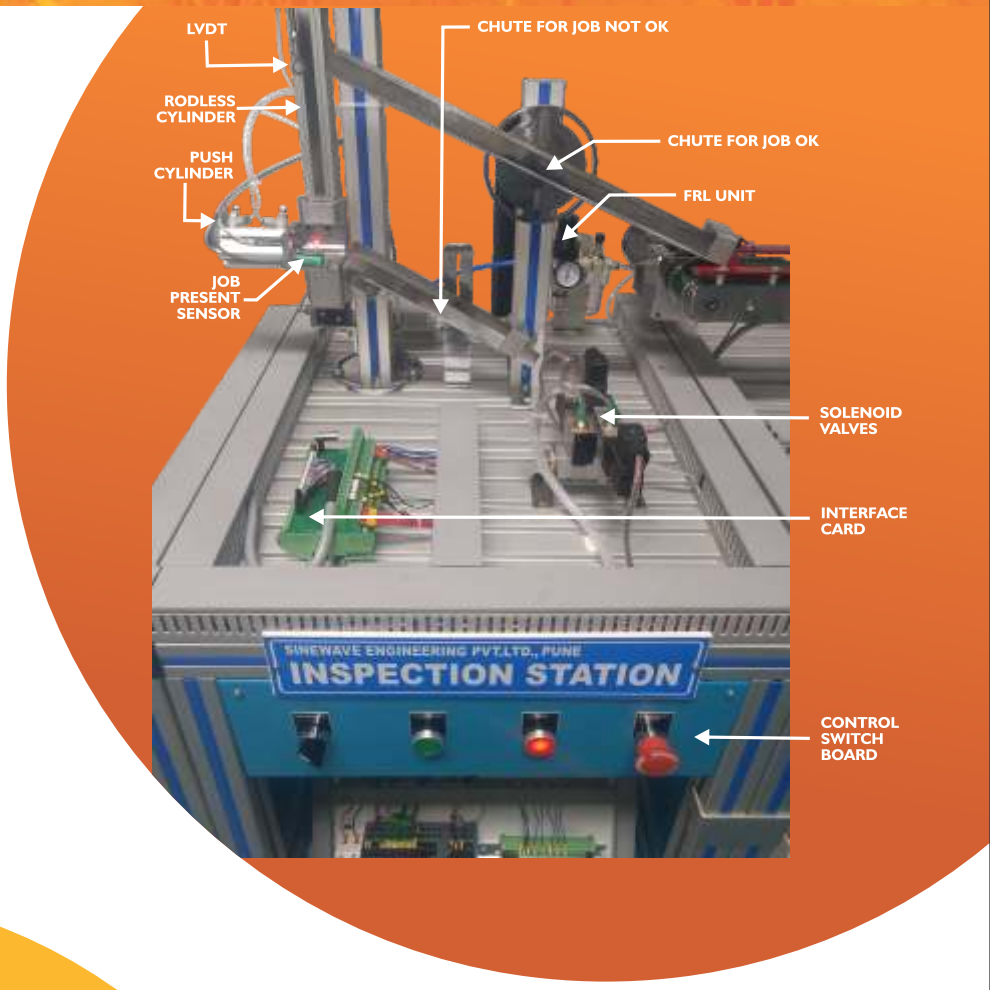


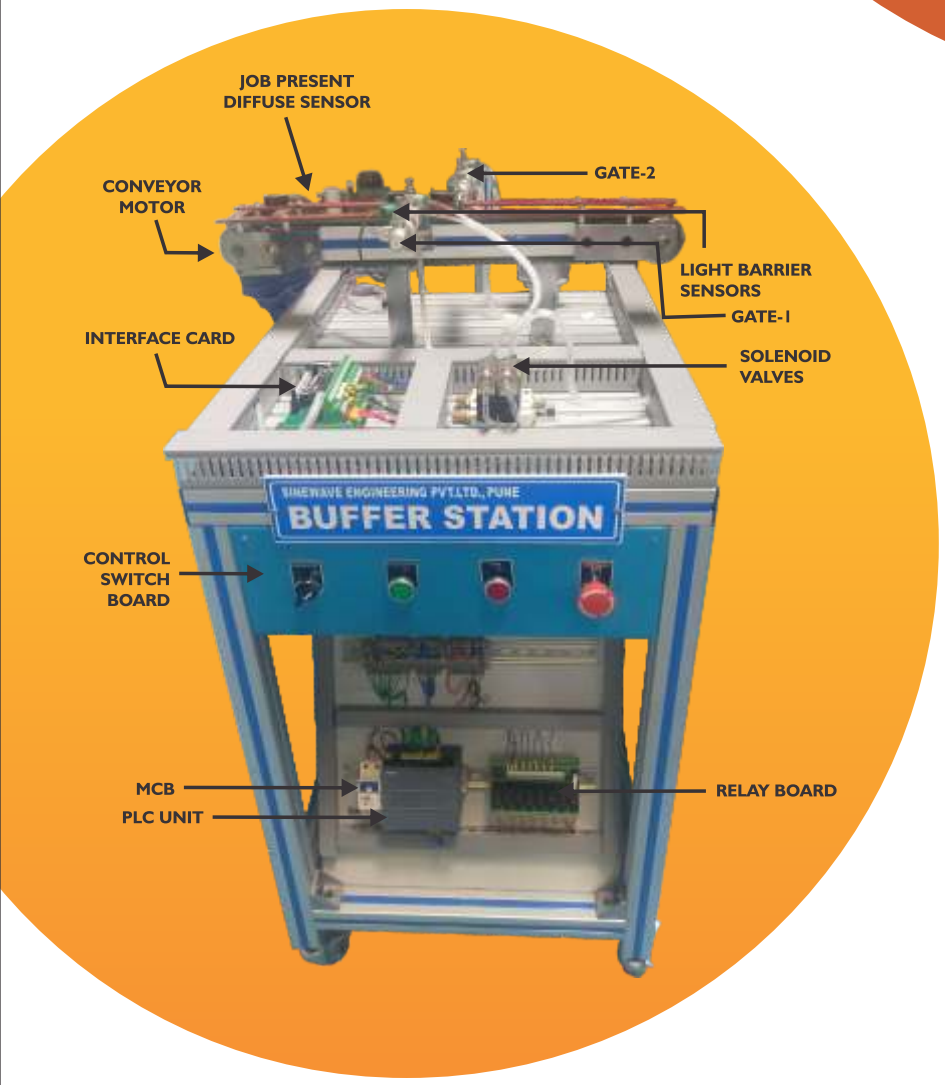
1. FEEDER STATION:

A gravity feeder houses the parts in a column. Each part is ejected by a pneumatic cylinder. The correct orientation of the part is verified using a cylinder with a plunger after verification, pneumatic cylinder moves the work-piece to the final position. Otherwise, a single acting cylinder removes the work -piece via the evacuation ramp. Further the work –piece is moved to Inspection Station.

2. INSPECTION STATION :

An Inspection Stations Measures the Height of the work- piece by measurement by Linear Variable Displacement Transducer. The correct dimension work –piece is processed further to Buffer Station and the wrong one is rejected.



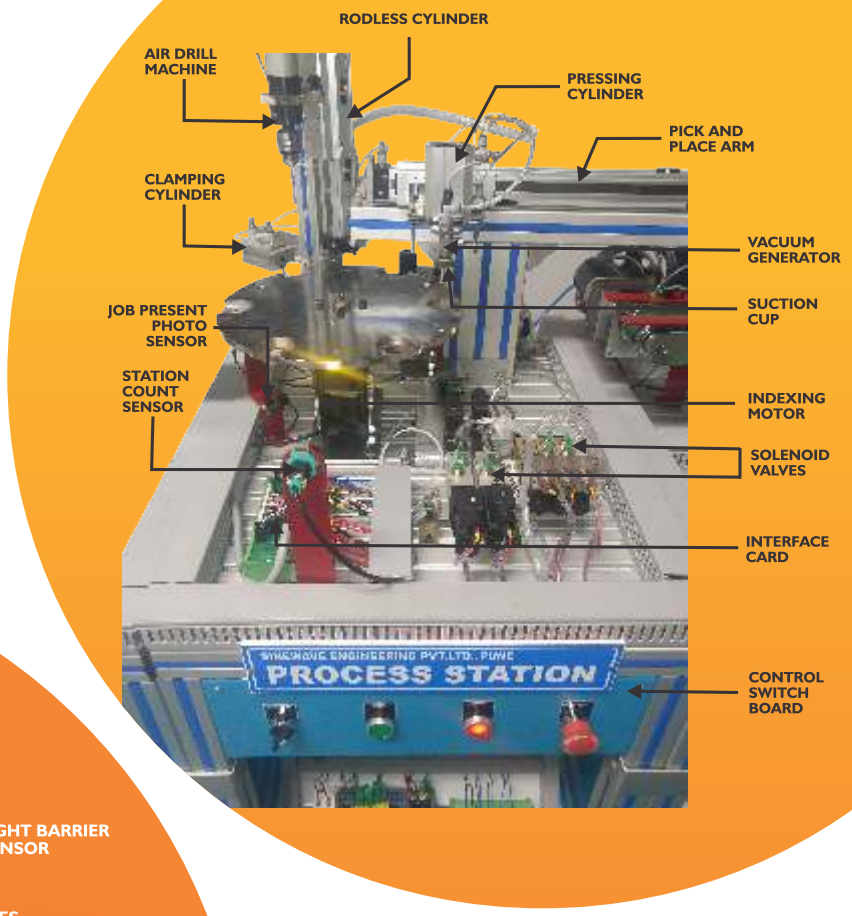


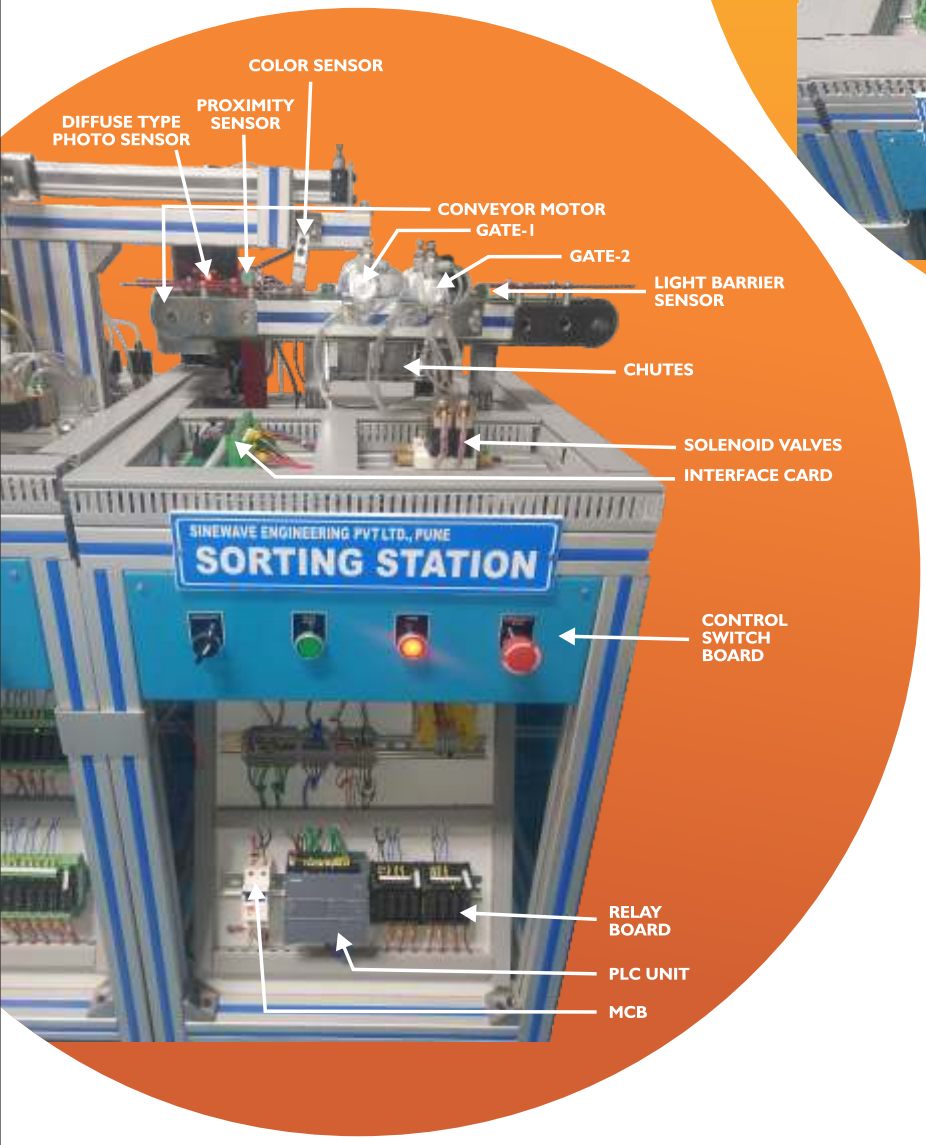
3. BUFFER STATION :

The Buffer station can buffer and separate up to five work-pieces. Diffuse sensors at the beginning of the conveyor detect the inserted work-pieces. Light barriers upstream and downstream of the separator control the process: If the transfer point is free, the separator passes on a work-piece. The separator is actuated by a short-stroke cylinder with a deflecting mechanism. The end positions of the short-stroke cylinder are detected by means of end-position sensors. The work –piece is transferred to Process Station.

4. PROCESS STATION :

In the Processing station, work-pieces are tested and processed on a rotary indexing table. The rotary indexing table is driven by a DC motor. The table is positioned by a relay circuit, with the position of the table being detected by an inductive sensor. On the rotary indexing table, the work-pieces are tested and drilled in two parallel processes. A solenoid probe with an inductive sensor checks that the work-pieces are inserted in the correct position. During drilling, the work-piece is clamped by a solenoid actuator. Finished work-pieces are passed on via the sorting gate to Sorting Station.





5. SORTING STATION :

This station sorts work-pieces onto three slides. Work-pieces placed on the start of the conveyor are detected by a diffuse sensor. A pneumatic stopper with integrated valve stops the work-piece before the sorting process. Sensors upstream of the stopper detect the work-piece features (black, red, metal). The cylindrical work-pieces are sorted onto the appropriate slides via electric deflectors. A retro-reflective sensor monitors the fill levels of the slides.

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