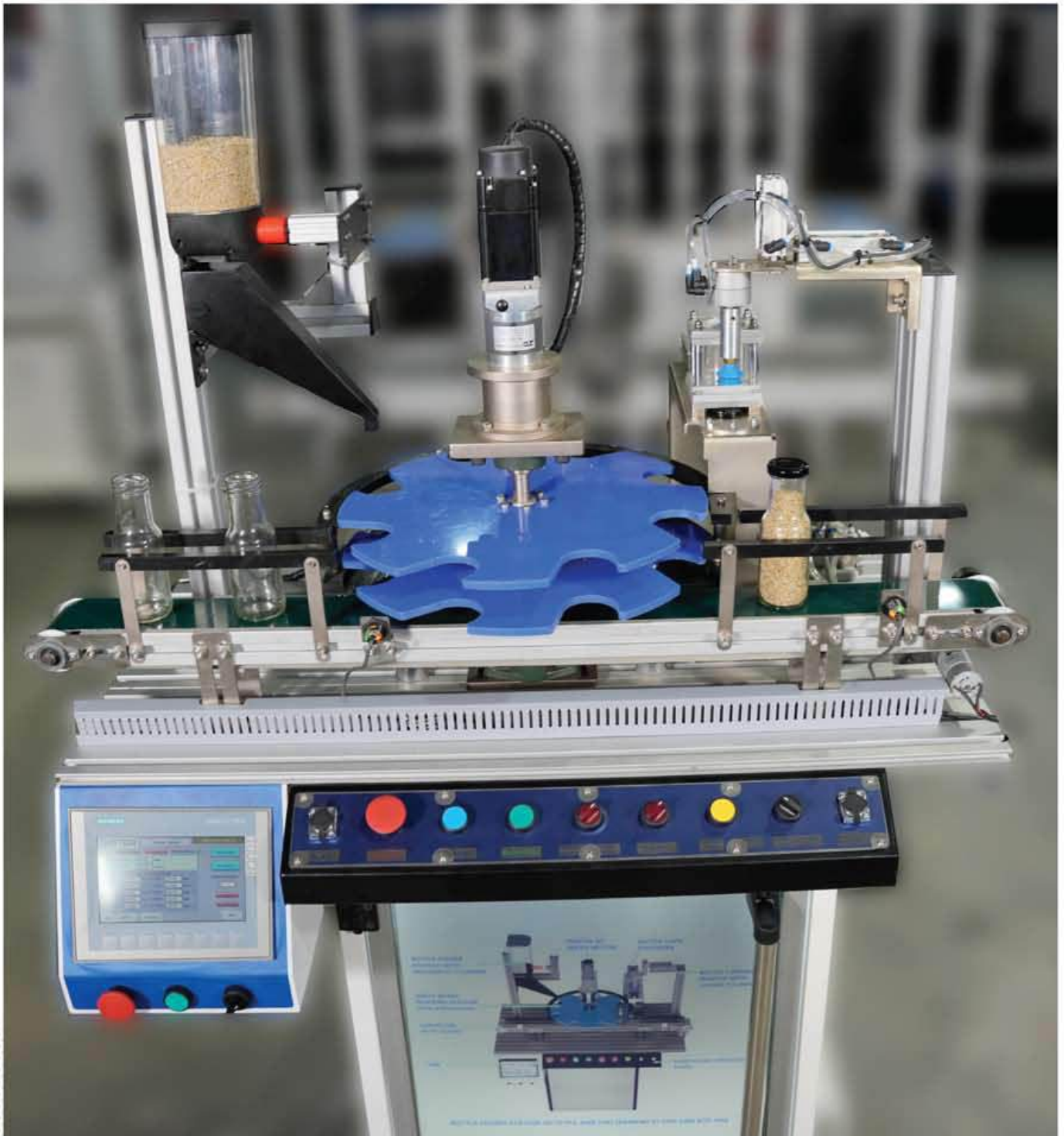


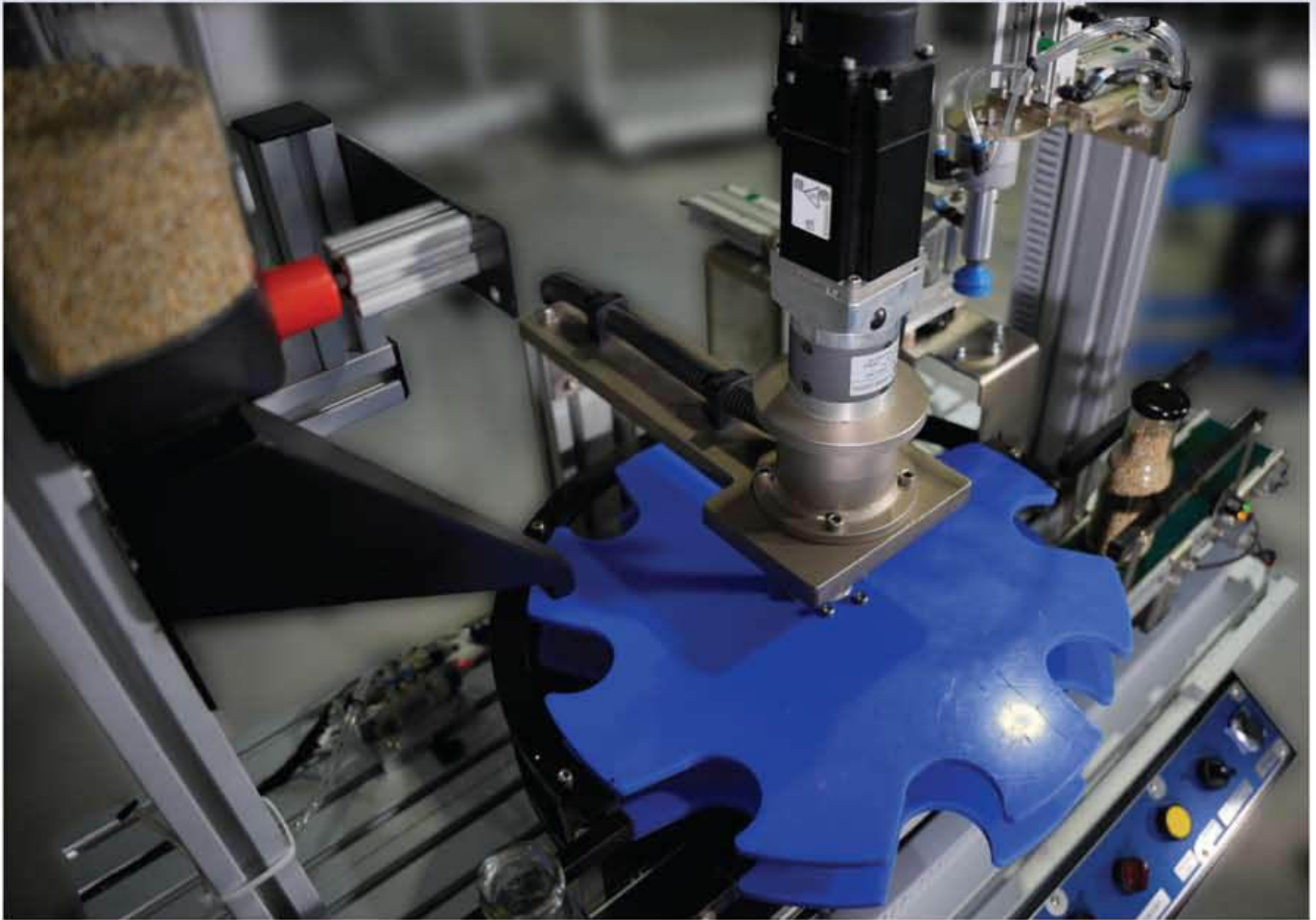
PLC AND HMI CONTROLLED AUTOMATED BOTTLE FILLING STATION



Hytech Didactic Bottle filling station is an individual mechatronics station operating on Siemens S7 1200 PLC and Siemens KTP 700 HMI.

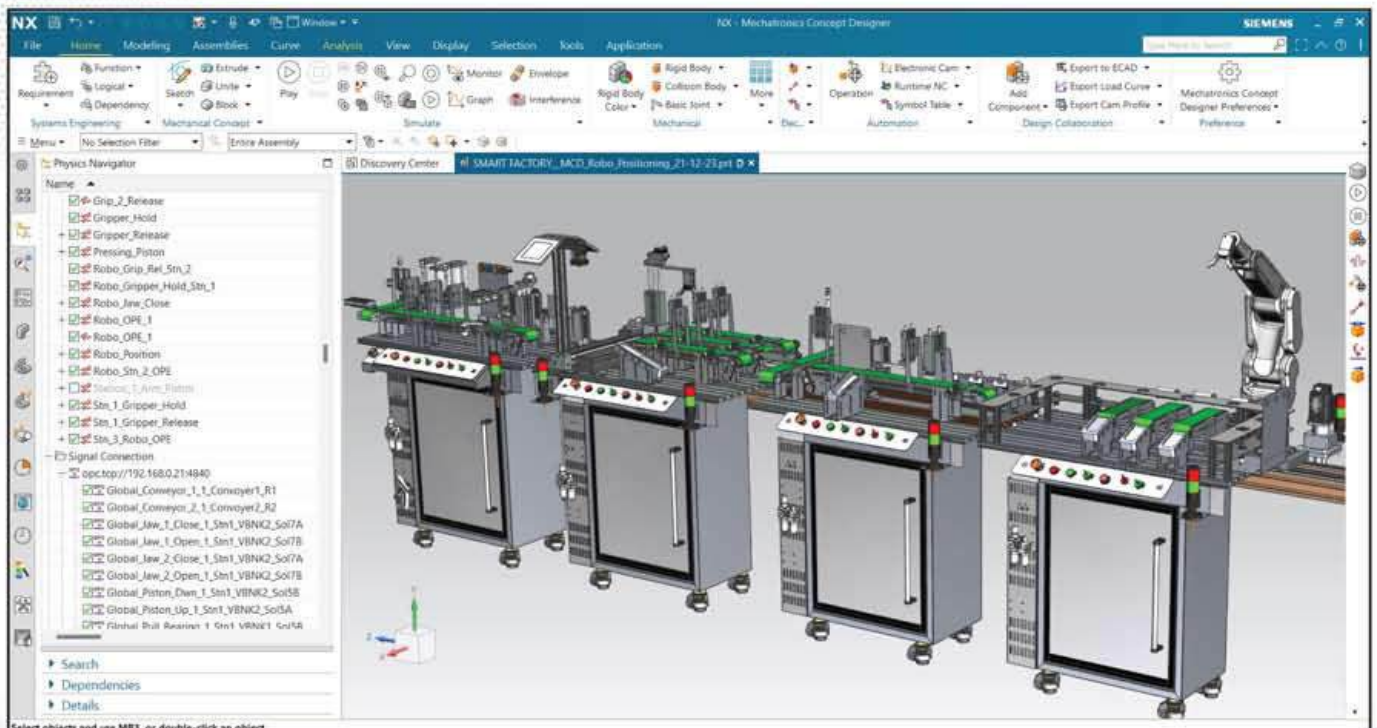
Actual bottle filling application as well as cap assembly is carried out on this station in integration with PLC, HMI, Digital AC Servo Motor and Pneumatically actuated systems.

User can control the complete station through IIOT based remote controlled operations.



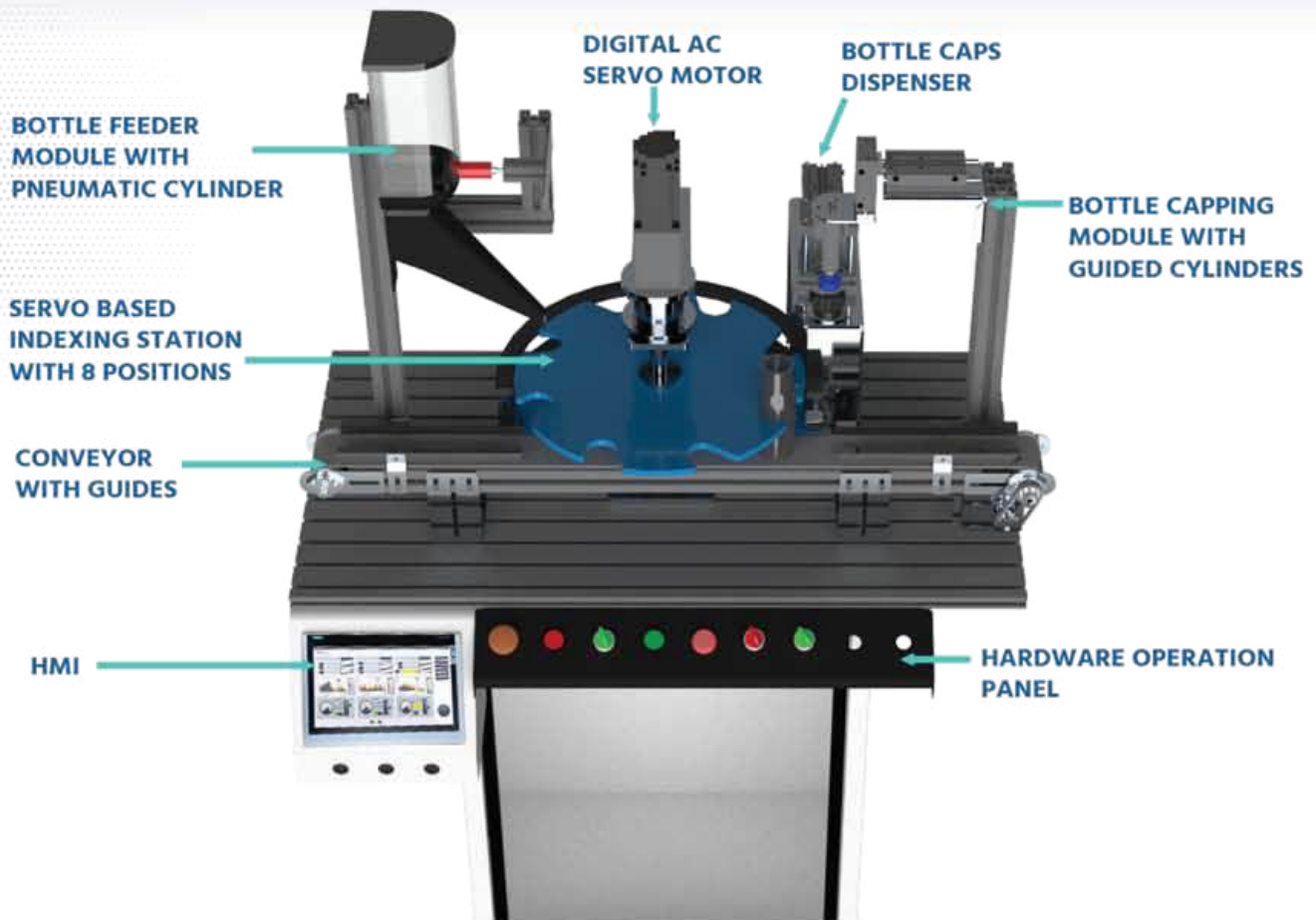
User is expected to carry out entire ladder programming to achieve desired results. Licensed Software for programming of PLC – HMI and Servo Motor are provided along with this system.

Bottle filling station is completely integrated with Siemens MCD – Mechatronics Concept Designer software which acts as a digital twin software with remote commissioning facility. IIOT with Siemens Nano box can also be integrated with this station.



Technical Specifications for PLC and HMI Controlled Automated Bottle Filling Station

Description	Specifications
Structure	Aluminum Profile based worksurface with minimum dimensions of 1000 x 540mm
	Panel in fabricated mild steel with 4 castor wheels
	Door latching switch for electrical panel
	Panel made in mild steel with minimum dimensions of 600mm x 400mm x 700mm (Ht) on which the aluminium work surface is mounted
Automation Control	Siemens S7 1200 PLC
	Siemens KTP 700 HMI
	Siemens TIA License for PLC and HMI Operations (Perpetual)
	5 Port Unmanaged Switch
	I/O Link based Master with minimum 8 Ports
	Smart Light for operation indication
	Valve bank with 6 Solenoid Valves (5/2 Double Acting Solenoid valves)
Feeding Mechanism	Bottle with filling and feeding arrangements
	Pneumatic double acting cylinder with flow controllers
Rotary Indexing Unit	Servo Motor (Digital AC Servo Motor with Servo Drive)
	8 Station indexing table
	Planetary Gear box
	Inductive proximity sensor (M18) for Indexing Table referencing
Conveyor	Conveyor with minimum width of 70mm and travel of 500mm
	2 Qty Photosensors for job detection
	DC Geared motor for conveyor actuation
Capping Mechanism	Pneumatic Guided Cylinder (Double Acting) for automated cap feeding
	2 Qty Guided Double Acting Pneumatic Cylinders
	Pneumatic Rotary Vane Motor
	Pneumatically Actuated Vacuum attachment



BOTTLE FILLING STATION WITH PLC AND HMI (SIEMENS S7 1200 AND KTP 700)

Operation Steps:

-
- Step 1: Bottle Is Fed Into The System From Conveyor
-
- Step 2: Bottle Goes Inside The Indexing Module
-
- Step 3: Indexing Module Indexes The Bottle Below Feeder Module
-
- Step 4: Feeder Module Is Actuated To Fill The Bottle
-
- Step 5: Indexing Module Indexes The Bottle To Capping Module
-
- Step 6: Cap Is Installed On The Bottle Automatically
-
- Step 7: Bottle Comes Out Of The System On The Conveyor
-

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