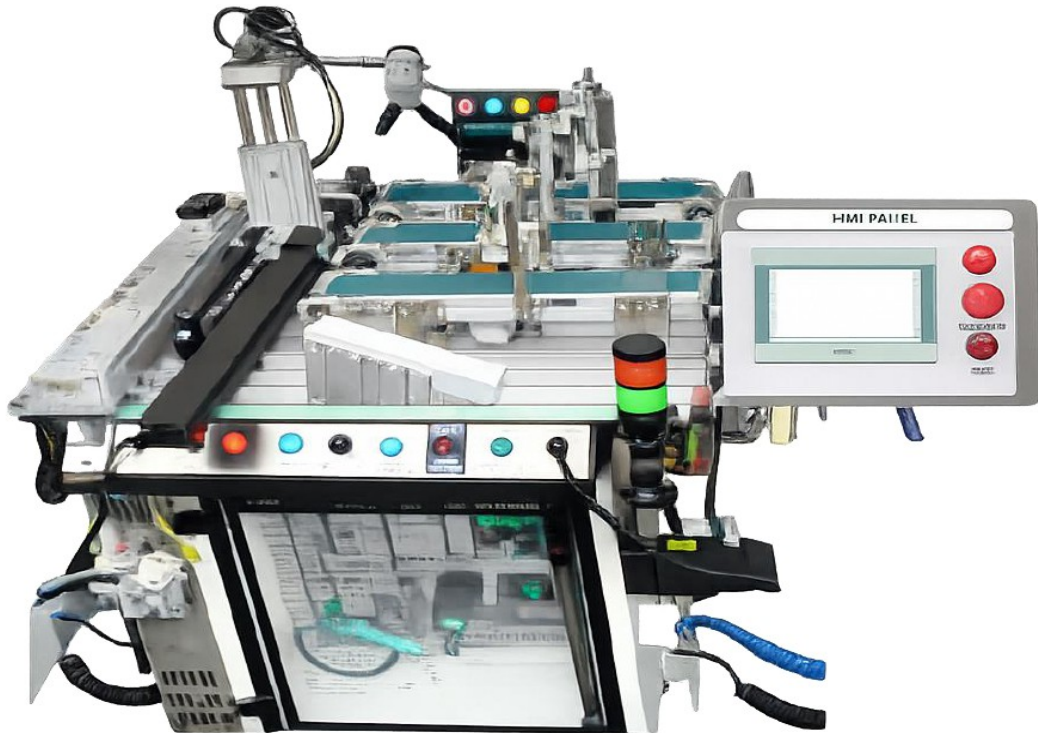


ASSEMBLY & TRANSFER PROCESS STATION



**PHOTO: Assembly & Transfer Process Station
(image for reference only, actual product may differ)**

SYSTEM OVERVIEW

The **Assembly & Transfer Process Station** is an advanced smart-factory training system designed to simulate automated product assembly and transfer operations used in real industrial environments. The system is engineered for robustness, operational stability, and suitability for educational and skill-development applications.

The station integrates servo-based transfer mechanisms, pneumatic actuators, vacuum handling, PLC-based control, SCADA visualization, and IoT-based convergence technologies. All functional elements are managed through an integrated control architecture capable of storing, monitoring, and analyzing process data.

Dedicated software enables equipment layout configuration, control design, production simulation, and real-time operational monitoring within a unified package. The system supports mobile-based monitoring and provides real-time status confirmation via a large LED display interface.

For safety and reliability, the equipment is fully enclosed within a protective housing, with structured routing of electrical wiring and pneumatic hoses through ducts and cable chains. All supplied components are brand-new and unused.

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.



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TECHNICAL SPECIFICATIONS

Sl. No.	Item Name	Technical Specifications	Qty
1	Actuator Unit for Product Transfer	AC 200–230 V, 50/60 Hz servo; PWM control; pulse input 1 Mpps; speed ratio 1:2000; torque ± 8 V; ≥ 50 W, 3000 rpm motor; speed 250 mm/s; stroke ≥ 725 mm; lower/home/upper limit sensors.	1 ea
2	Product Gripper	Opening ≈ 10 mm; pressure 0.3–0.7 MPa; 2 flow controls; 2 magnetic sensors (NO, LED, 12–27 V).	1 ea
3	Gripper Up/Down Cylinder	Bore ≥ 20 mm; stroke ≥ 50 mm; pressure 1.0 MPa; 2 flow controls; 2 magnetic sensors (12–27 V).	1 ea
4	Lower Case Transfer Cylinder	Bore ≥ 16 mm; stroke ≥ 300 mm; guided; pressure 0.7 MPa; support table; magnetic sensors.	1 ea
5	Upper Case Supply Section	$\varnothing 16$ mm supply cylinder; optical sensor 10–30 V (50 mm); vacuum pick-up cylinder ≥ 16 mm stroke ≥ 20 mm; rotary cylinder ≥ 22 mm, 0–190°; vacuum generator with pads.	1 set
6	Pneumatic Press Cylinder	Double-acting press cylinder with magnetic sensors (12–27 V).	1 ea
7	Pneumatic/Hydraulic Learning Module	3D simulation with flow mapping; ≥ 44 pneumatic, ≥ 50 hydraulic, ≥ 11 sensor, ≥ 10 electrical modules; wiring & ladder execution; USB license.	1 ea
8	Solenoid Valves	5/2 single (2), 5/2 double (2), 3/2 NC (1); pressure 0.05–1.0 MPa; flow 700 L/min; 24 VDC; LED, surge protection, manual override.	5 ea
9	Air Preparation Unit	FRL with gauge & hand valve; proof 1.5 MPa; operating 0–1.0 MPa; set 0.05–0.85 MPa; flow 800 L/min; 10 μ m filtration.	1 ea
10	PLC Control System	Mitsubishi MELSEC compatible; 100–240 VAC; 5/24 VDC outputs; 5-slot base; ladder/SFC/ST; USB & Ethernet; 30k steps; 4096 I/O; positioning unit 4 Mpps (1 axis).	1 set
11	GOT HMI	8.4" TFT LCD, 640×480, resistive touch; RS232/422/485, Ethernet, USB, SD; AC 100–240 V.	1 ea
12	Control Section	Power switch, Auto/Manual, push buttons, emergency stop, pilot lamps, buzzer.	1 set
13	IP Camera	2 MP CMOS; 3.8 mm lens; H.264/MJPEG; 1920×1080; RJ45; PoE.	1 ea
14	Station Enclosure	800×810×1500 mm aluminum frame; safety cover; double doors; lockable casters; tower light; SMPS ≥ 24 VDC 2 A.	1 ea
15	Vision Camera	1/3" CMOS; 6.2/8 mm lens; 640×480 & 800×600; LED ring light; OPC UA/EtherNet-IP/PROFINET/Modbus TCP; IP65; 24 VDC, 48 W max.	1 ea
16	Vision Software	No-code interface; OCR/edge/blob/pattern tools; math & runtime configuration.	1 set

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RANGE OF EXPERIMENTS

- Servo-based product transfer and positioning
- Pneumatic gripper handling and vacuum pick operations
- Automated assembly and press operations
- PLC-based motion and sequence control
- SCADA-based monitoring and control
- Vision-based product verification
- IoT-based manufacturing optimization
- Pneumatic and hydraulic internal flow visualization
- Servo positioning and trajectory control
- Integrated safety and emergency control logic

FEATURES

- Integrated smart-factory assembly and transfer station
- Servo-driven linear actuator with precise positioning
- Vacuum and rotary handling mechanisms
- PLC, SCADA, and IoT-based unified control system
- 3D learning module with internal flow visualization
- Industrial vision inspection capability
- Fully enclosed safety housing with structured cable routing
- Real-time monitoring via large LED interface
- Mobile device compatible monitoring
- Suitable for Industry 4.0 and advanced automation education

SERVICES REQUIRED

- Standard **230 V AC** power supply
- Proper earthing/grounding required

➤ **Note: All specifications are subject to revision without notice. Depicted images are for reference only and may not represent the actual product.**

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