

MMS - MODEL – SMPST – 101

CADMECH MODULAR PRODUCTION SYSTEM TRAINER IS DESIGNED TO UNDERSTAND THE CONCEPTS OF INDUSTRIAL 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.

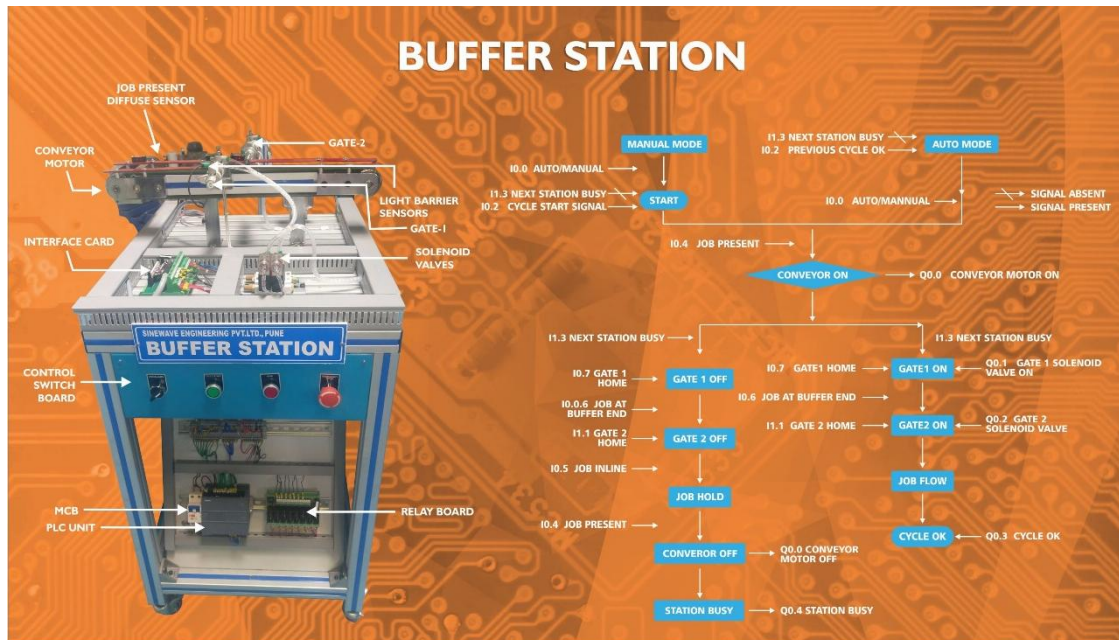
SMPST -101 offers professional skills training to suit the world of industry using Standardized industrial components.

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.



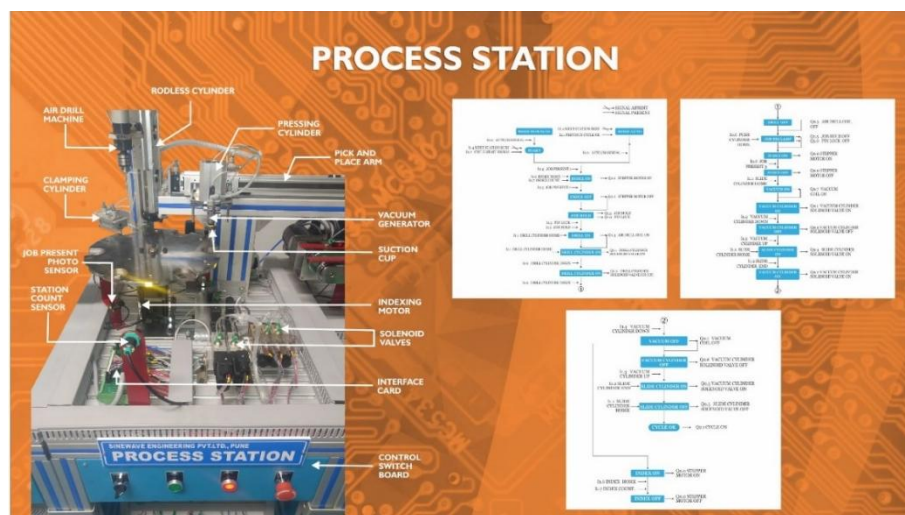
3. BUFFER STATION :

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.



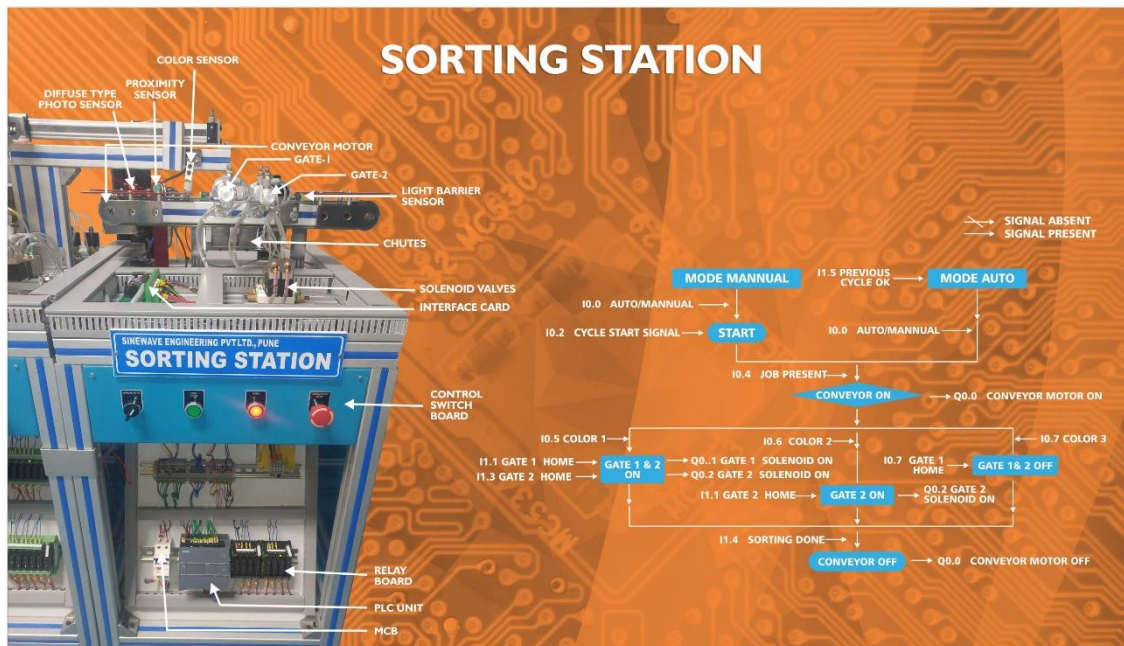
4. PROCESS STATION :

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.



Sr. No.	Specification of item Manufactured & offered by (M/S CAD MECH)
	Modular Manufacturing Setup Make - CAD MECH Model-SMPST-101
	ADVANCED MODULAR MANUFACTURING SYSTEM
	GENERAL SPECIFICATIONS: 1. The mechatronics system kit will be of sleek design and portable one with castor wheels 2. The mechatronics system will be provided with standard Aluminium based mounting board (modular type) so as to make the mounting of components easier 3. The mechatronics system with facility interconnecting with different upstream and downstream stations through IO communication and Profinet 4. All the products provided with suitable one touch fittings. 5. All the components used with reputed make 6. Operation & maintenance manual will be supplied – 1 set hard copy with the equipment Demonstratable Objectives: 1. Reconfigurable system to demonstrate Mechanics, Pneumatics, Vacuum, Electrical drives, Sensors, PLC controls and Communication interfaces independently. 2. Setup with Linear and Rotary Pneumatic actuators, and its interfaces 3. Integration of Pneumatic & Electrical systems possible 4. A range of sensors available for demonstratable applications will supplied 5. Demonstration Material handling techniques like conveyor, linear or rotary pick and place provided 6. Possible independent PLC programming using Ladder Logic given 7. Fault diagnosis techniques with a given set of fault available SCOPE OF SUPPLY: 1. Feeder Station - 1no 2. Buffer Station - 1no 3. Process Station - 1no 4. Sorting Station - 1no 5. PLC Software And Accessories - 1 Set 6. Assembly Templates - 1 Set 7. Technical Documents - 1 Set 8. Work Piece set - 1 Set 9. Pneumatics animation software - 1 License (Perpetual) Function The Modular Manufacturing System should comprise of 4 different stations such as 1. Feeder feed the work pieces to buffer station 2. Buffer Maintain a buffer stock of up to 5 work pieces allow one by one to process station based on the demand from the process station 3. Process perform drilling operation and further transfers the work pieces to Sorting Station 4. Sorting segregate the work pieces based on the material type and color and make available for Logistic
1	1.Feeder station Technical Specifications

Size Max. 54 x 64 x 135 mm
 Installation Vertical
 Ambient temperature 60°C Max.
 Medium Filtered Compressed air
 Operating Pressure range (Bar) 6-8 bar
 Operating Voltage +/-10% 230V AC, 50HZ
 Sensors and actuator operating voltage 24V, DC
 Material of construction Aluminum, mild steel, Plastic. etc.

The Station consists of the following major parts

- Filter Regulator and Lubricator module
- Valve module
- Profile Table work bench
- Dispensing module
- Rotary Pick and Place module
- I/O Interface Module
- PLC control
- Control Console

Functional Description:

- Will separate the jobs stacked in magazine tube with the help of pneumatic cylinder
- Will transfer the job through 180 degrees using a rotary actuator with an arm and suction cup
- Provisions will be made for detecting the availability of jobs with optical sensors.
- Networking and signaling the subsequent station for further processing will be done by establishing I/O communication between the PLC's of subsequent stations

Scope of supply

1. Horizontal Aluminium profile table: **(Make-CADMECH)**

- a. (L x W x H) – Max. 540 x 640 x 900 mm
- b. Grid spacing (From slot to slot) – 40 mm Minimum
- c. Profile groove width – 8 mm minimum
- d. Leveling casters for quick setting and smooth movement -1

2. I/O Interface module: **(Make-BOOST Electronics)**

- a. 25 Pin D-Sub connector interface board for interfacing valves and actuators
- b. 25 Pin D-Sub cable for transferring the I/O to the terminals which in turn are to be connected to PLC

3. Valve Manifold: **(Make-Pneumax/Mindman/SMC)**

- a) Grid spacing Between 19 – 20 mm
- b) Mountable valve port size 1/8"
- c) Will be provided with Conical silencers for reducing the dB level of exhausted air
- d) 5/2 Double solenoid pilot operated valve:

Material- Extruded aluminium with anodized

Finish

Size – 1/8 "

Design – Spool type

Pressure range – 2 – 10 bar

Flow rate – Min. 450 l / min

Manual override- Resetting

Fitted with 1/8" flow control valve for varying the flow 1

4. Filter Regulator Combination with Lubricator (FRL Unit) with pressure gauge and start up valve: : **(Make-Pneumax/Mindman/SMC)**

- a) Port size -1/4 inch
- b) Flow rate – 500 to 525 l/min
- c) Maximum supply pressure – 10 bar

- d) Operating pressure - 6 to 8 bar
- e) Filtering element grade – Min. 40 μ m
- f) Minimum operating flow – Min. 10 l/min
- g) Filter Bowl capacity – Min. 9 ml
- h) Lubricator Bowl capacity – Min. 20 ml
- i) Connection for tube 8 dia input and 8 dia output
- j) Mounting – Socket head cap screw with M6 hammer head nut

5. Stack Magazine module:

a) Comprising of Miniature cylinder of dia Min. 25 mm and stroke Min. 80 mm : **(Make-Pneumax/Mindman/SMC)**

b) Magnetic sensor for position sensing : **(Make-Pneumax/Mindman/SMC)**

c) Light barrier Module : : **(Make-Baumer/Sick/P and F/LUEZE)**

Type : Infra -red

Sensing range: 2m

Supply Voltage and Current: 10 to 30V DC (10% max. ripple) @ 20

mA max current, Switch output: PNP, normally open/normally

Output Protection: Protected against false pulse on closed contact

power- up, short-circuit protected 1

6. Rotary Pick & Place Module :

a) Cylinder rotation angle (rotary cylinder fitted with shock absorbers), 180 degrees (freely selectable)

(Make-Pneumax/Mindman/SMC)

b) Compact guided cylinder Min. dia 40 mm, Stroke - 50 mm **(Make-Pneumax/Mindman/SMC)**

c) Vacuum gripper module capable of handling Min. 100 gm **(Make-Pneumax/Mindman/SMC)**

d) Magnetic sensor for position sensing

(Make-Pneumax/Mindman/SMC)

7. Vacuum Ejector Module : **(Make-Pneumax/Mindman/SMC)**

a) Integrated energy saving function

b) Brightly-lit display screen or LED bar display

c) Automatic blow off function

d) Vacuum Ejector module shall capable of handling 100gm

8.

Control console: **(Make-CADMECH)**

a) Cycle start push button –Green with illuminated

b) Auto /Manual selector switch -Black

c) Home position push button –Red with illuminated

d) Emergency button -Red 1

9. Cable duct and accessories: **(Make-SG/Phonix/Connectwell)**

a) Wire duct size 45x25

b) Fastening screws

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10. PLC control panel with S7 1200 PLC CPU 1215 (or better): **(Make-Siemens/Delta/Allen Bradley)**

d) Power supply: Input voltage: 230/115 V AC (47 – 63 Hz), Output voltage: 24 V DC ,short-circuit-proof
Output current: Maximum 3A

e) Miniature circuit breaker DC voltage with max.5A current rating

f) Digital inputs-14,Digital outputs 10, Analog inputs 2Ethernet interface 1 x TCP/IP, 10 Mbit/s

g) Terminal blocks

h) 25pin D-sub I/O data cable length 1.5 m, wire used 0.25 mm²

i) Cable ducts

	j) Power Connection cable: 3pin plug with length of 1.3m 11. Technical documents for Feeder Station: Will contain complete technical details of the station according to DIN ISO 1219 standard. It will include Pneumatic circuit, Electrical circuit, IO list, Functional description etc., 1
4	2. BUFFER STATION TECHNICAL SPECIFICATIONS Model MMS03 Size (in cm) Max. 54 x 64 x 110 cm Installation Vertical Ambient temperature 60°C Max. Medium Filtered Compressed air Operating Pressure range (Bar) 6-8 bar Operating Voltage +/-10% 230V AC, 50HZ Sensors and actuator operating voltage 24V, DC Material of construction Aluminum, mild steel, Plastic. etc. Buffer Station consists of the following • Filter Regulator and Lubricator module • Profile Table work bench • Conveyor module • I/O Interface Module • Valve module • PLC control • Control Console Functional Description • Will buffer up to 5 jobs • Will be controlled by a separator using upstream and downstream light barriers sensors • Retro reflective sensor will be used to detect the job and track the nos. of jobs buffered • Will wait for the signal from the downstream station Scope of Supply 1. Horizontal Aluminium profile table: (Make-CADMECH) (L x W x H) - Max. 540 x 640 x 900 mm - Grid spacing (From slot to slot) – Max. 40 mm - Profile groove width – Max. 8 mm - Leveling casters for quick setting and smooth movement -1 2. I/O Interface module: (Make-Boost Electronics) 25 Pin D-Sub connector interface board for interfacing valves and actuators 25 Pin D-Sub cable for transferring the I/O to the terminals which in turn are to be connected to PLC -1 3. Valve Manifold: (Make-Pneumax/Mindman/SMC) - Grid spacing – Min. 19 mm - Mountable valve port size 1/8" - Provided with Conical silencers for reducing the dB level of exhausted air 5/2 Double solenoid pilot operated valve: • Material- Extruded aluminium with anodized Finish • Size – 1/8" • Design – Spool type • Pressure range – 2 – 10 bar • Flow rate – Min. 450 l / min

- Manual override- Resetting
- Fitted with 1/8" flow control valve for varying the flow -1

4.Filter Regulator Combination with Lubricator (FRL Unit) with pressure gauge and start up valve: (Make-Pneumax/Mindman/SMC)

- a) Port size -1/4 inch
- b) Flow rate – Min. 500 l/min
- c) Maximum supply pressure – 10 bar
- d) Operating pressure- 6 to 8 bar
- e) Filtering element grade – 40 µm
- f) Minimum operating flow – Min. 10 l/min
- g) Filter Bowl capacity – Min. 9 ml
- h) Lubricator Bowl capacity – Min. 20 ml
- i) Connection for tube 8 Dia input and 8 Dia output
- j) Mounting – Socket head cap screw with M6 hammer head nut -1

5.Conveyor Module: (Make-CADMECH)

- a) Flat belt conveyor with overall length of 500 – 550 mm Approximately
- b) Conveyor to be driven by 24V DC motor of reputed make
- c) Conveyor to be provided with electronic drive unit for regulating the speed, reversing the direction and other function
- d) Separator Module: Comprising of 2 pneumatic cylinders of Min. Dia 25 mm and stroke 25 mm **(Make-Pneumax/Mindman/SMC)**

e) Retro reflective -Photo electric sensor (Upstream): **(Make-Baumer/Sick/P and F/LUEZE)**

- Type: Infrared
- Sensing range: Min. 2 m
- Supply Voltage and Current: 10 to 30V DC (10% max. ripple) @20mA max current
- Switch output: PNP, normally open/normally closed contact
- Output Protection: Protected against false pulse on power-up, short circuit protected

a. Thru beam -Photo electric sensor (Downstream):

- Type: Infrared
- Sensing range: Min. 2 m
- Supply Voltage and Current: 10 to 30V DC (10% max. ripple) @ 20 mA max current
- Switch output: PNP, normally open/normally closed contact
- Output Protection: Protected against false pulse on power-up, short-circuit protected.

b. Diffuse Sensor - Photo electric: **(Make-Baumer/Sick/P and F/LUEZE)**

- Type: Infrared
- Sensing range: Min. 15 mm
- Supply Voltage and Current: 10 to 30V DC (10% max. ripple) @ 20 mA max current
- Switch output: PNP, normally open/normally closed contact
- Output Protection: Protected against false pulse on power-up, short-circuit protected

6.Control console: (Make-CADMECH)

- a) Cycle start push button – Green with illumination
- b) Auto /Manual selector switch -Black
- c) Home position push button – Red with illumination
- d) Emergency button -Red

7.Cable duct and accessories: (Make-SG/Phonix/Connectwell)

- a. Wire duct size 45x25
- b. Fastening screws

8. PLC control panel with S7 1200 PLC (Or better): (Make-Simens/Delta/Allen/Bradely)

- a) Power supply: Input voltage :230/115 V AC (47 – 63 Hz), Output voltage: 24 V DC, short-circuit-proof
Output current: Maximum 3A
- b) Miniature circuit breaker DC voltage with max.5A current rating
- c) Digital inputs-14,Digital outputs 10, Analog inputs 2Ethernet interface 1 x TCP/IP, 10 Mbit/s
- d) Terminal blocks
- e) 25pin D-sub I/O data cable length 1.5 m, wire used 0.25 mm²
- f) Cable ducts
- g) Power Connection cable:3pin plug with length of 1.3m

5 PROCESS STATION TECHNICAL SPECIFICATIONS

Model MMS04

Size (in cm) Max. 54 x 64 x 145 cm Installation Vertical

Ambient temperature 60°C Max. Medium Filtered Compressed air Operating Pressure range (Bar) 6-8 bar

Operating Voltage +/-10% 230V AC, 50HZ

Sensors and actuator operating voltage 24V, DC

Material of construction Aluminum, mild steel, Plastic. etc.

The Process Station consists of the following

- Filter Regulator and Lubricator module
- Profile Table work bench
- Pick and Place module
- Rotary Indexing table module
- Drilling module
- I/O Interface Module
- Valve module
- PLC control
- Control Console

FUNCTIONAL DESCRIPTION

- Will be capable of processing machining operations like drilling/grinding/polishing using pneumatically driven indexing table and pneumatically driven drilling machine
- Will have six processing locations on the indexing table.
- Will have a pneumatic linear drive module to move the drill unit up and down.
- Will be provided with Pick and place module to transfer the job the next station.

Scope of Supply

1.Horizontal Aluminium profile table: (Make-CADMECH)

- a. (L x W x H) – Max. 540 x 640 x 900 mm
- b. Grid spacing (From slot to slot) – Max. 40 mm
- c. Profile groove width – Max. 8 mm
- d. Leveling casters for quick setting and smooth movement -1

2.I/O Interface module: (Make-Boost Electronics)

- a. 25 Pin D-Sub connector interface board for interfacing valves and actuators
- b. 25 Pin D-Sub cable for transferring the I/O to the terminals which in turn are to be connected to PLC -1

3.Valve Manifold: (Make-Pneumax/Mindman/SMC)

- a. Grid spacing – Min. 19 mm
- b. Mountable valve port size 1/8"
- c. Provided with Conical silencers for reducing the dB level of exhausted air
- d. 5/2 Double solenoid pilot operated valve:
 - Material- Extruded aluminium with anodized Finish
 - Size – 1/8"
 - Design – Spool type
 - Pressure range – 2 – 10 bar
 - Flow rate – Min. 450 l / min
 - Manual override- Resetting
 - Fitted with 1/8" flow control valve for varying the flow -1

4.Filter Regulator Combination with Lubricator (FRL Unit) with pressure gauge and start up valve: (Make-Pneumax/Mindman/SMC)

- a. Port size -1/4 inch
- b. Flow rate – Min. 500 l/min
- c. Maximum supply pressure – 10 bar
- d. Operating pressure- 6 - 8 bar
- e. Filtering element grade – 40 µm
- f. Minimum operating flow – 12 l/min
- g. Filter Bowl capacity – Min. 9 ml
- h. Lubricator Bowl capacity – Min. 20 ml
- i. Connection for tube 8 Dia input and 8 Dia output
- j. Mounting – Socket head cap screw with M6 hammer head nut -1

5.Rotary indexing table module: (Make-Cad-Mech)

- a. Pneumatically driven rotary indexing table capable of handling load up to Min. 50kg
- b. Indexing table to be driven by cylinder of Ø 40 x 75 mm
- c. Indexing angle 60 degrees
- d. Indexing plate diameter - 320 mm
- e. Diffuse Sensor: **(Make-Baumer/Sick/P and F/LUEZE)**
 - Type: Infrared
 - Sensing range: 15mm
 - Supply Voltage and Current: 10 to 30V DC (10% max. ripple) @ 20 mA max current
 - Switch output: PNP, normally open/normally closed contact
 - Output Protection: Protected against false pulse on power-up, short-circuit protected -1

6.Drilling Module: (Make-APT Pneumatics)

- a. Drilling machine to be mounted on pneumatic linear drive of stroke Max. 100 mm
- b. Pneumatic drilling machine: Min. No-load Speed: 3000 rpm, Weight: 1.25 Kg -1

7.Pick and Place module Pneumax/Mindman/SMC)

- a. Rod less cylinder – Min. Dia 25 mm x 250 mm stroke
- b. Aluminium profile pillar – Min. 75 x 75 mm
- c. Rod less cylinder mounting profile - Min. 40 x 40
- d. Twin rod cylinder- Min. 15 mm stroke length
- e. Vacuum gripper with suction pad -1

8.Control console: (Make-CADMECH)

- a. Cycle start push button –Green with illuminated.
- b. Auto /Manual selector switch -Black
- c. Home position push button –Red with illuminated.
- d. Emergency button -Red -1

9.Cable duct and accessories:

- a. Wire duct size 45x25
- b. Fastening screws -1

10.PLC control panel with S7 1200 PLC (Or better): (Make-Simens/Delta/Allen/Bradely)

- a. Power supply: Input voltage :230/115 V AC (47 – 63 Hz), Output voltage: 24 V DC, short-circuit-proof
Output current: Maximum 3A
- b. Miniature circuit breaker DC voltage with max.5A current rating
- c. Digital inputs-14, Digital outputs 10, Analog inputs 2Ethernet interface 1 x TCP/IP, 10 Mbit/s
- d. Terminal blocks
- e. 25pin D-sub I/O data cable length 1.5 m, wire used 0.25 mm²
- f. Power Connection cable:3pin plug with length of 1.3m

1

**6 SORTING STATION
TECHNICAL SPECIFICATIONS**

Model MMS05

Size Max. 54 x 64 x 125 cm

Installation Vertical

Ambient temperature 60°C Max.

Medium Filtered Compressed air

Operating Pressure range (Bar) 6-8 bar

Operating Voltage +/-10% 230V AC, 50HZ

Sensors and actuator operating voltage 24V, DC

Material of construction Aluminum, mild steel, Plastic. etc.

The Sorting Station consists of the following

- Filter Regulator and Lubricator module
- Profile Table work bench
- Sorting Conveyor module
- I/O Interface Module
- Valve module
- PLC control
- Control Console

FUNCTIONAL DESCRIPTION

- Will have 3 slides to sort the different materials and color of jobs
- Sensors will sense the presence of jobs and start the conveyor
- Control the diversion of material in the appropriate slide.
- The pneumatically actuated sorting arrangement will extend to intercept the work pieces into the appropriate slides.

Scope of Supply

1.Horizontal Aluminium profile table: (MAKE-CADMECH)

- (L x W x H) – Max. 540 x 640 x 900 mm
- Grid spacing (From slot to slot) – Max. 40 mm
- Profile groove width – Max. 8 mm
- Leveling casters for quick setting and smooth movement -1

I/O Interface module: (MAKE-BOOST Electronics)

- 25 Pin D-Sub connector interface board for interfacing valves and actuators
- 25 Pin D-Sub cable for transferring the I/O to the terminals which in turn are to be connected to PLC

Valve Manifold: (MAKE-Pneumax/Mindman/SMC)

- Grid spacing – Min. 17 mm
- Mountable valve port size 1/8"
- Provided with Conical silencers for reducing the dB level of exhausted air
- 5/2 Double solenoid pilot operated valve:
 - Material- Extruded aluminium with anodized Finish
 - Size – 1/8"
 - Design – Spool type
 - Pressure range – 2 – 10 bar
 - Flow rate – Min. 450 l / min
 - Manual override- Resetting
 - Fitted with 1/8" flow control valve for varying the flow

4.Filter Regulator Combination with Lubricator (FRL Unit) with pressure gauge and start up valve: (MAKE-Pneumax/Mindman/SMC)

- Port size -1/4 inch
- Flow rate – Min. 500 l/min
- Maximum supply pressure – 10 bar
- Operating pressure- 6 to 8 bar
- Filtering element grade – 40 µm
- Minimum operating flow – Min. 10 l/min
- Filter Bowl capacity – Min. 7 ml
- Lubricator Bowl capacity – Min. 20 ml
- Connection for tube 8 Dia input and 8 Dia output
- Mounting – Socket head cap screw with M6 hammer head nut

Sorting Conveyor Module:

- Flat belt conveyor with overall length of Max. 500 mm (Make-CADMECH)
 - Conveyor to be driven by 24V DC motor of reputed make
 - Conveyor to be provided with electronic drive unit for regulating the speed, reversing the direction and other functions
- Comprising of 2 pneumatic cylinders of Min. Dia 25 mm and stroke Min. 40 mm

5.Sorting slides for collecting the work piece on appropriate slides (Make- Cad-Mech)

c. Color Sensor: (Baumer/Sick/P and F/LUEZE)

- Sensing range: Min. 15 mm
- Supply Voltage and Current: 10 to 30V DC (10% max. ripple)
- Switch output: PNP, normally open/normally closed contact
- Output Protection: Protected against false pulse on power-up, short-circuit protected
- Output rating: 100 mA

d. Proximity sensor:

- Type - Cylindrical inductive type
- Supply voltage -12 – 24V DC
- Sensing range – Min. 8 mm

e. Diffuse Sensor:

- Type: Infrared
- Sensing range: 15mm
- Supply Voltage and Current: 10 to 30V DC (10% max. ripple) @ 20 mA max current
- Switch output: PNP, normally open/normally closed contact
- e) Output Protection: Protected against false pulse on power-up, short-circuit protected

6.Control console: (Make-CADMECH)

- Cycle start push button –Green with illuminated
- Auto /Manual selector switch -Black
- Home position push button –Red with illuminated
- Emergency button -Red

7.Cable duct and accessories: (Make-SG/Phonix/Connetwell etc.)

- Wire duct size 45x25
- Fastening screws

8.PLC control panel with S7 1200 PLC (or better): (Make-Siemens/Delta/Allen Bradley)

- Power supply: Input voltage :230/115 V AC (47 – 63 Hz), Output voltage: 24 V DC, short-circuit-proof
Output current: Maximum 3A
- Miniature circuit breaker DC voltage with max.5A current rating
- Digital inputs-14, Digital outputs 10, Analog inputs 2Ethernet interface 1 x TCP/IP, 10 Mbit/s
- Terminal blocks
- 25pin D-sub I/O data cable length 1.5 m, wire used 0.25 mm²
- Cable ducts
- Power Connection cable:3pin plug with length of 1.3m

5 PLC SOFTWARE AND ACCESSORIES (Make-Siemens/Delta)

- PLC software will be supplied with floating license
- PLC Software and Programming cable should be compatible with PLC used in the above stations for programming and real time communication
- Programming software will support various programming languages like ST, FBD, Ladder. etc.,
- Ethernet cable will be supplied with the length of 5mtr for connecting PLC to PC for programming and other communications

Scope of supply

- 1.PLC programming cable for connecting to PC -1
- 2.PLC Programming software (Siemens TIA Portal) -1

6. Assembly Templates – 1 Set (Make- CAD-MECH)

Will contain assembly templates required for the assembly of respective station and combination. It will

	be made up of plain anodized Aluminium sheet with with handle
	7. Technical Document Main technical document will contain the details for the assembly of all the five stations in different combination functions. It will include positional sketch and installation procedure etc.
	8. WORK PIECE SET Work piece will contain 18 or more work pieces, with diameter of 39.5 mm and 25mm height in each material made up of Aluminum, Delrin and Hylum, respectively. Technical Specifications Aluminum Work Piece -1set (6nos) Delrin Work Piece -1set (6nos) Hylum Work Piece -1set (6nos)

Basic Pneumatic Text Book