

CHAPTER

08

MODULE PRODUCT SYSTEM (MPS)

Introduction	229
Module Production System (MPS)	232
Distribution station (FMPS-D)	233
Testing station (FMPS-T)	234
Processing station (FMPS-P)	235
Handling station (FMPS-H)	236
Buffer station (FMPS-B)	237
Robot station (FMPS-R)	238
Sorting and storing station (FMPS-S)	239
Pressing station (FMPS-PR)	240
AS/RS station (FMPS-AS/RS)	241
Various combinations of MPS stations	242

Module Production System (MPS)

01 Distribution station

02 Testing station

03 Processing station

04 Handling station

05 Buffer station

06 Robot station

07 Sorting and storing station

08 Pressing station

09 AS/RS station

Module Production System (MPS)



08

Introduction

- Developed for actual training of production technology and automation systems.
- Provides theoretical practice as well as practical application of system design, building, commissioning, and operation.
- Composed of various modules for easy operation, assembly, and maintenance.
- Provides overall knowledge of pneumatics, electro-pneumatics, control engineering, sensors, and electronics for mechatronics.
- All parts and modules are detachable and can be reconfigured for maximum efficiency of training. The system encourages creative construction.
- All wiring and piping is safely protected, yet viewable for easy understanding.
- Each station is easy to add and change, and may constitute a variety of systems.

MPS

All parts are completely fixed and electrically wired.
Customer specifies a controller (e.g. PLC model).
Please refer to quotation and ask our sales partner before ordering.

COMBINATION OF STATIONS

- D + T + P
- D + T + S
- D + T + P + H
- D + T + P + H + B
- D + T + P + H + B + R
- D + T + P + H + B + R + S
- D + T + P + H + B + R + S + Pr + A

D

Distribution station (1)
Order number : 81424



D

Distribution station (2)
Order number : 81401



T

Testing station
Order number : 81402



P

Processing station
Order number : 81403



H

Handling station (1)
Order number : 81404



H

Handling station (2)
Order number : 81427



B

Buffer station (1)
Order number : 81428



B

Buffer station (2)
Order number : 81405



R

Robot station
Order number : 81409



S

Sorting and storing station
Order number : 81408



Pr

Pressing station
Order number : 81406



A

AS/RS
Order number : 81407



1. Distribution

Distribute work piece from the magazine

2. Testing

Test work piece and status of work piece with sensors

3. Processing

Process the work piece and test it on index table

4. Handling

Transfer the work piece with a rotary cylinder

5. Buffer

Buffer process for reducing dead time

6. Robot

Assemble and handle work piece with multi-axis robot

7. Sorting and storing

Storing in slide according to product information

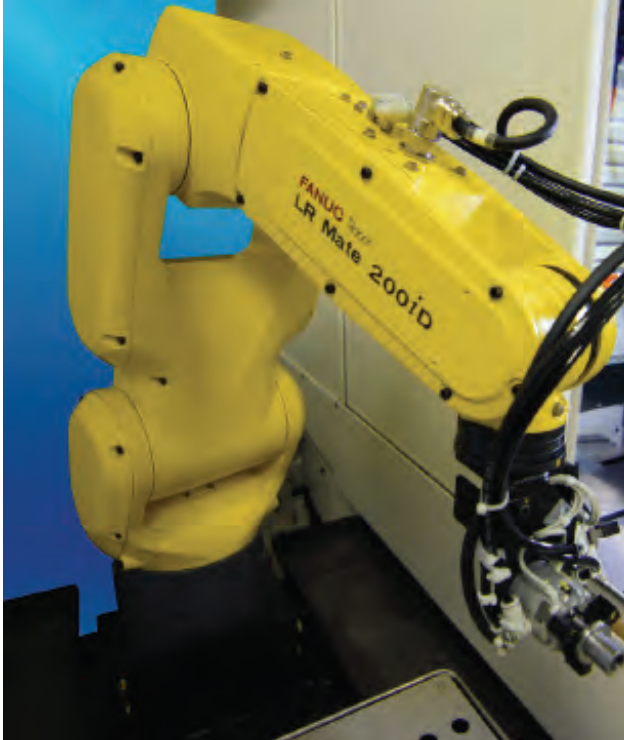
8. Pressing

Transfer the product to warehouse after punching and assembling a lid

9. AS/RS

Store the product into automatic warehouse

Module Production System (MPS)



Characteristics

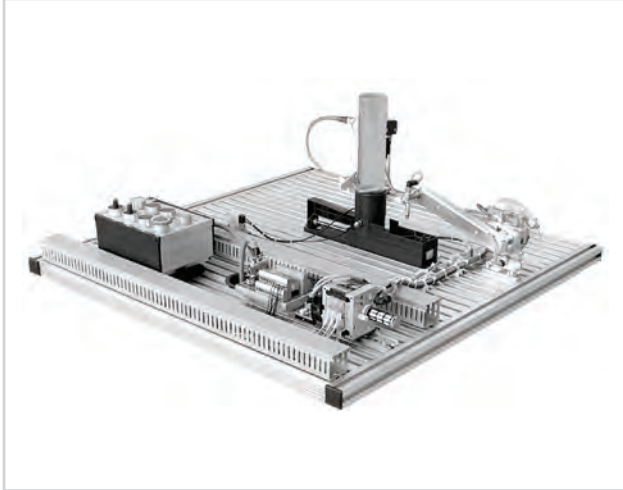
- Equipment
- Mechanical assembly and disassembly
- Trouble shooting of system.
- Preparation and analysis of pneumatic circuits
- Vacuum control technology
- Tubing and electrical wiring of the electro–pneumatic circuit
- Configuration and analysis of the electrical circuit
- Trouble shooting of an electric circuit
- Electrical interface configuration and understanding
- Configuration and understanding of the sensor
- Installation and utilization of the PLC
- Added application control the PLC basic programming and additional conditions
- Construction and use of monitoring systems
- Combined feature of each unit process module
- Selectable module combination by customer's order
- Various controller and any kind of PLCs adaptable
- It is possible to tailor–made solution



Training contents

- Understanding and application of mechanical element and pneumatics
- Assemble and disassemble of mechanical structure
- Systemic fault finding on a production system
- Drawing and analysis of pneumatics circuit
- Vacuum control technology
- Pneumatic circuit wiring and electric wiring
- Composition of electric circuit
- Fault finding and measure of electric circuit
- Understanding and composition of electrical interface
- Understanding and composition of sensors
- Installation and application of PLC
- Basic to advanced PLC
- Establish and application of monitoring system

Distribution station (FMPS-D) (1)



Order number : 81424

Distribution station (FMPS-D) (2)



Order number : 81401

Composition

- Magazine module for distribution of 3 kinds work piece
- Distribution with a pneumatic cylinder
- Material handling by vacuum and rotary cylinder

- Size : 750(W)×750(D)×1000(H)mm
- Weight : 67kg
- Input Power : AC 220V, 60Hz
- Output Power : DC 24V, 3A
- Operating pressure : 5 ~ 6 bar
- Interface : 1) Digital Input/Output (default)
2) Fieldbus : Profibus

Components

No.	Component	D1 Qty	D2 Qty
1	Working table	1	1
2	Service unit	1	1
3	Distribution module	1	1
4	Source material module	1	3
5	DC motor	0	1
6	Rotary cylinder	1	1
7	Vacuum valve	1	1
8	Pressure sensor	1	1
9	Solenoid valve block	1	1
10	I/O terminal	1	1
11	Control panel	1	1
12	Cable duct	1	1
13	Power supply	1	1
14	PLC unit	1	1
15	Signal transmission cable set	1	1

Testing station (FMPS-T)



Order number : 81402

Composition

- Material testing module with sensors
- Lift module with rodless cylinder
- Slide module for transfer
- Height measurement module
- Able to choose analog type for height measurement module
- Conveyor module

- Size : 750(W)×750(D)×1000(H)mm
- Weight : 65Kg
- Input Power : AC 220V, 60Hz
- Output Power : DC 24V, 3A
- Operating pressure : 5 ~ 6 bar
- Interface : 1) Digital Input/Output (default)
2) Fieldbus : Profibus

Components

No.	Component	Qty
1	Working table	1
2	Service unit	1
3	Sensor module	1
4	Lift module	1
5	Height measurement module	1
6	Cylinder transfer module	1
7	Inferior work piece ejecting slide	1
8	Work piece transferring slide	1

No.	Component	Qty
9	Conveyor transfer module	1
10	Solenoid valve block	1
11	I/O terminal	1
12	Control panel	1
13	Cable duct	1
14	Power supply	1
15	PLC unit	1
16	Signal transmission cable set	1

Processing station (FMPS-P)



Order number : 81403

Composition

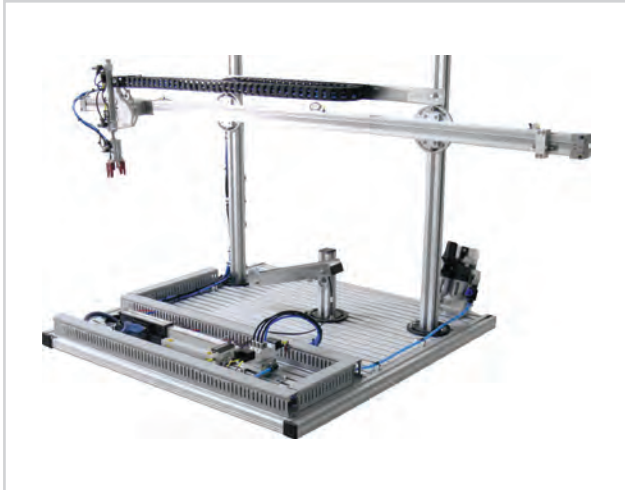
- Index table
 - Drilling, Clamping module
 - Hole process check module using cylinder
- Size : 750(W)×750(D)×1000(H)mm
 - Weight : 67Kg
 - Input power : AC 220V, 60Hz
 - Output power : DC 24V, 3A
 - Operating pressure : 5 ~ 6 bar
 - Interface : 1) Digital Input/Output (default)
2) Fieldbus : Profibus

Components

No.	Component	Qty
1	Working table	1
2	Service unit	1
3	Drill module	1
4	Test module	1
5	Clamp cylinder module	1
6	Index table geared motor	1
7	Pressure regulator	1
8	Index module	1
9	Relay module	1
10	Optical fiber sensor	4

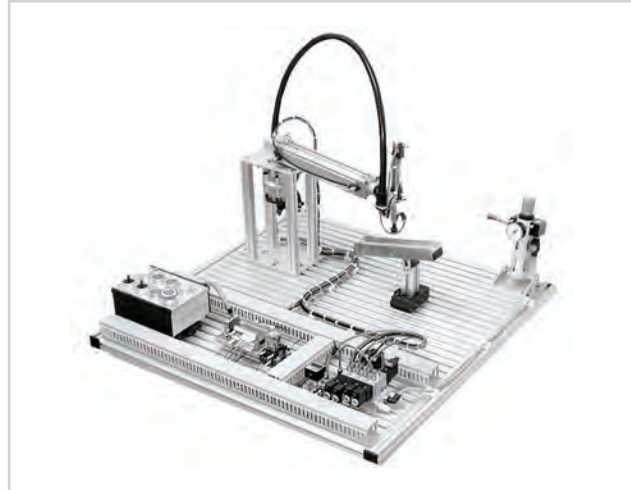
No.	Component	Qty
11	Optical cable	4
12	Proximity sensor	7
13	Solenoid valve block	1
14	I/O terminal	1
15	Control panel	1
16	Cable duct	1
17	Power supply	1
18	PLC unit	1
19	Signal transmission cable set	1

Handling station (FMPS-H) (1)



Order number : 81404

Handling station (FMPS-H) (2)



Order number : 81427

Composition

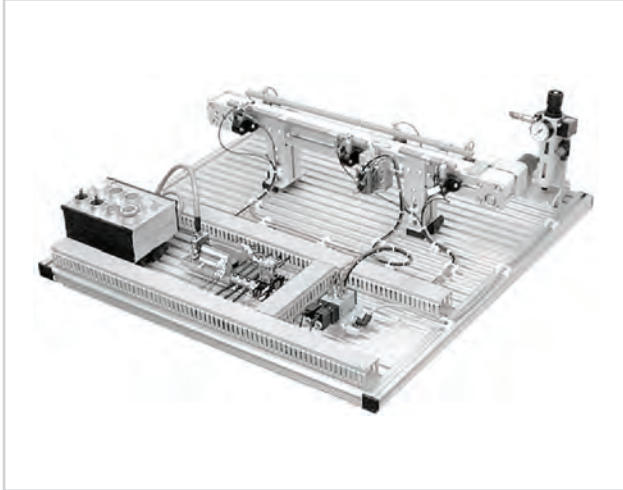
- Transfer the work piece using pneumatic gripper
- Faulty product is assorted by slide

- Size : 750(W)×750(D)×1000(H)mm
- Weight : 67Kg
- Input Power : AC 220V, 60Hz
- Output Power : DC 24V, 3A
- Operating pressure : 5 ~ 6 bar
- Interface : 1) Digital Input/Output (default)
2) Fieldbus : Profibus

Components

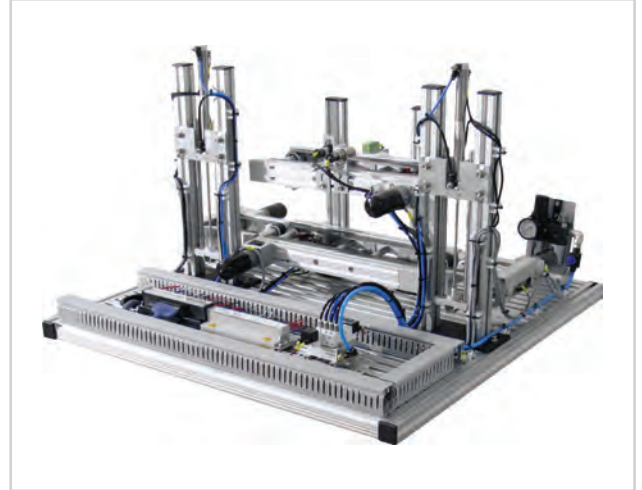
No.	Component	H1 Qty	H2 Qty
1	Working table	1	1
2	Service unit	1	1
3	Rodless transfer cylinder	1	0
4	Rotary PTP module	0	1
5	Z axis cylinder	1	1
6	Pneumatic gripper	1	1
7	Slider module	1	1
8	Solenoid valve block	1	1
9	I/O terminal	1	1
10	Control panel	1	1
11	Cable duct	1	1
12	Power supply	1	1
13	PLC unit	1	1
14	Signal transmission cable set	1	1

Buffer station (FMPS-B) (1)



Order number : 81428

Buffer station (FMPS-B) (2)



Order number : 81405

Composition

- Conveyor transfer module using DC geared motor
- Stopper module
- Optical fiber sensor module

- Size : 750(W)×750(D)×1000(H)mm
- Weight : 73Kg
- Input Power : AC 220V, 60Hz
- Output Power : DC 24V, 3A
- Operating pressure : 5 ~ 6 bar
- Interface : 1) Digital Input/Output (default)
2) Fieldbus : Profibus

Components

No.	Component	B1 Qty	B2 Qty
1	Working table	1	1
2	Service unit	1	1
3	Belt conveyor module	1	4
4	Lift cylinder	0	2
5	Optical sensor	2	1
6	Capacitive sensor	0	1
7	Stopper cylinder	1	2
8	Inductive sensor	0	3
9	Relay module	1	1
10	Solenoid valve block	1	1
11	I/O terminal	1	1
12	Control panel	1	1
13	Cable duct	1	1
14	Power supply	1	1
15	PLC unit	1	1
16	Signal transmission cable set	1	1

Robot station (FMPS-R)



Order number : 81409

Composition

- 5-axis robot
- Pneumatic gripper module : according to work piece, gripper can be replaced as vacuum module
- Distribution module
- Assembly module

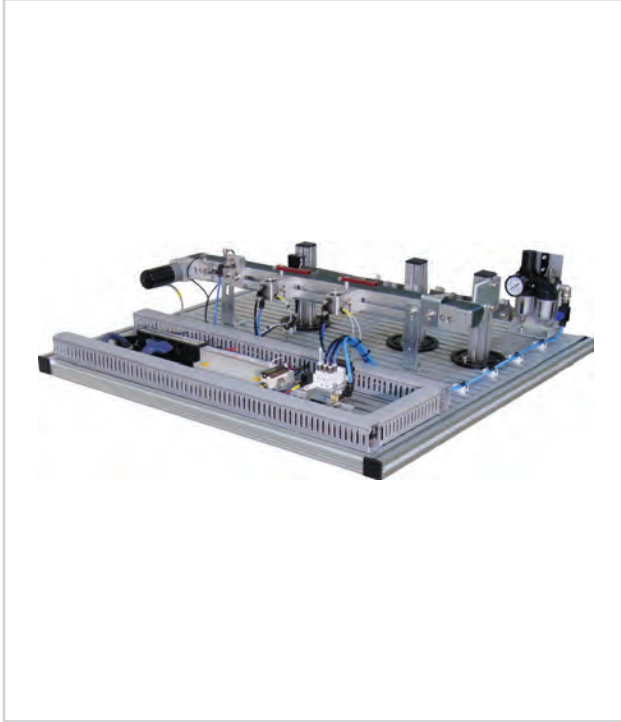
- Size : 750(W)×750(D)×1000(H)mm
- Weight : 73Kg
- Input Power : AC 220V, 60Hz
- Output Power : DC 24V, 3A
- Operating pressure : 5 ~ 6 bar
- Interface : 1) Digital Input/Output (default)
2) Fieldbus : Profibus

Components

No.	Component	Qty
1	Working table	1
2	Service unit	1
3	Test sensor module	1
4	5-axis robot	1
5	Optical sensor	1
6	Pneumatic gripper module	1
7	Inferior work piece ejecting slide	1
8	Work piece transfer slide	1

No.	Component	Qty
9	Solenoid valve block	1
10	I/O terminal	1
11	Control panel	1
12	Cable duct	1
13	Power supply	1
14	PLC unit	1
15	Signal transmission cable set	1

Sorting and storing station (FMPS-S)



Order number : 81408

Composition

- Conveyor transfer module
- Slider module for storing work pieces
- Switching cylinder module

- Size : 750(W)×750(D)×1000(H)mm
- Weight : 65Kg
- Input Power : AC 220V, 60Hz
- Output Power : DC 24V, 3A
- Operating pressure : 5 ~ 6 bar
- Interface : 1) Digital Input/Output (default)
2) Fieldbus : Profibus

Components

No.	Component	Qty
1	Working table	1
2	Service unit	1
3	Belt conveyor module	1
4	Sorting and storing slide	3
5	Ejecting cylinder	2
6	Optical fiber sensor	1
7	Stopper cylinder module	1
8	Proximity sensor	4

No.	Component	Qty
9	Retro-reflective optical sensor	1
10	Solenoid valve block	1
11	I/O terminal	1
12	Control panel	1
13	Cable duct	1
14	Power supply	1
15	PLC unit	1
16	Signal transmission cable set	1

Pressing station (FMPS-PR)



Order number : 81406

Composition

- Cylinder cap distribution module
- Press module
- Hydro-Converter module

- Size : 750(W)×750(D)×1000(H)mm
- Weight : 65Kg
- Input power : AC 220V, 60Hz
- Output power : DC 24V, 3A
- Operating pressure : 5 ~ 6 bar
- Interface : 1) Digital Input/Output (default)
2) Fieldbus : Profibus

Components

No.	Component	Qty
1	Working table	1
2	Service unit	1
3	Cap distribution module	1
4	Extracting module	1
5	Press module	1
6	Hydro-converter module	1
7	Optical fiber sensor	2
8	Proximity sensor	6

No.	Component	Qty
9	Solenoid valve block	1
10	I/O terminal	1
11	Control panel	1
12	Cable duct	1
13	Power supply	1
14	PLC unit	1
15	Signal transmission cable set	1

AS/RS station (FMPS-AS/RS)



Order number : 81407

Composition

- Conveyor transfer module
- Slider module for work piece storing
- Switching cylinder module

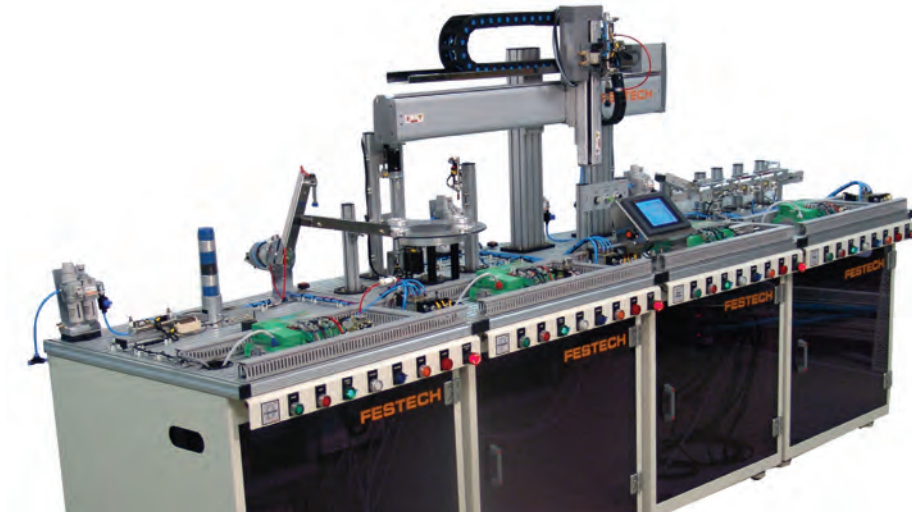
- Size : 750(W)×750(D)×1000(H)mm
- Weight : 73Kg
- Input power : AC 220V, 60Hz
- Output power : DC 24V, 3A
- Operating pressure : 5 ~ 6 bar
- Interface : 1) Digital Input/Output (default)
2) Fieldbus : Profibus

Components

No.	Component	Qty
1	Working table	1
2	Service unit	1
3	Spindle module with DC geared motor	2
4	Double-acting cylinder	1
5	2-axis motor control unit	1
6	Storing rack	1
7	Safety limit switch	5
8	Proximity sensor	9

No.	Component	Qty
9	Capacitive sensor	1
10	Solenoid valve block	1
11	I/O terminal	1
12	Control panel	1
13	Cable duct	1
14	Power supply	1
15	PLC unit	1
16	Signal transmission cable set	1

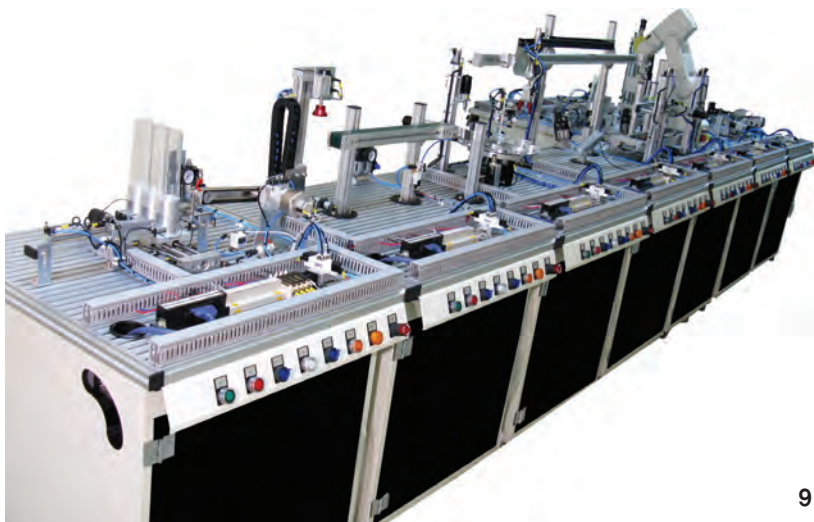
Various combinations of MPS stations



4 Station : D / P / R / S



5 Station : D / T / P / R / S



9 Station : D / T / P / H / B / R / S / Pr / A

Memo

