

2-AXIS SERVO MOTOR CONTROL SYSTEM

POWER

INPUT

START
[X0.6]

AUTO JOG ON
[X0.F]

STOP
[X0.7]

RESET
[X0.8]

EMG.

X-AXIS

- LIMIT_X+ [X0.0]
- LIMIT_X- [X0.1]
- ORG_X [X0.4]

Y-AXIS

- LIMIT_Y+ [X0.2]
- LIMIT_Y- [X0.3]
- ORG_Y [X0.5]

X- [X1.1] ← X+ [X1.0]

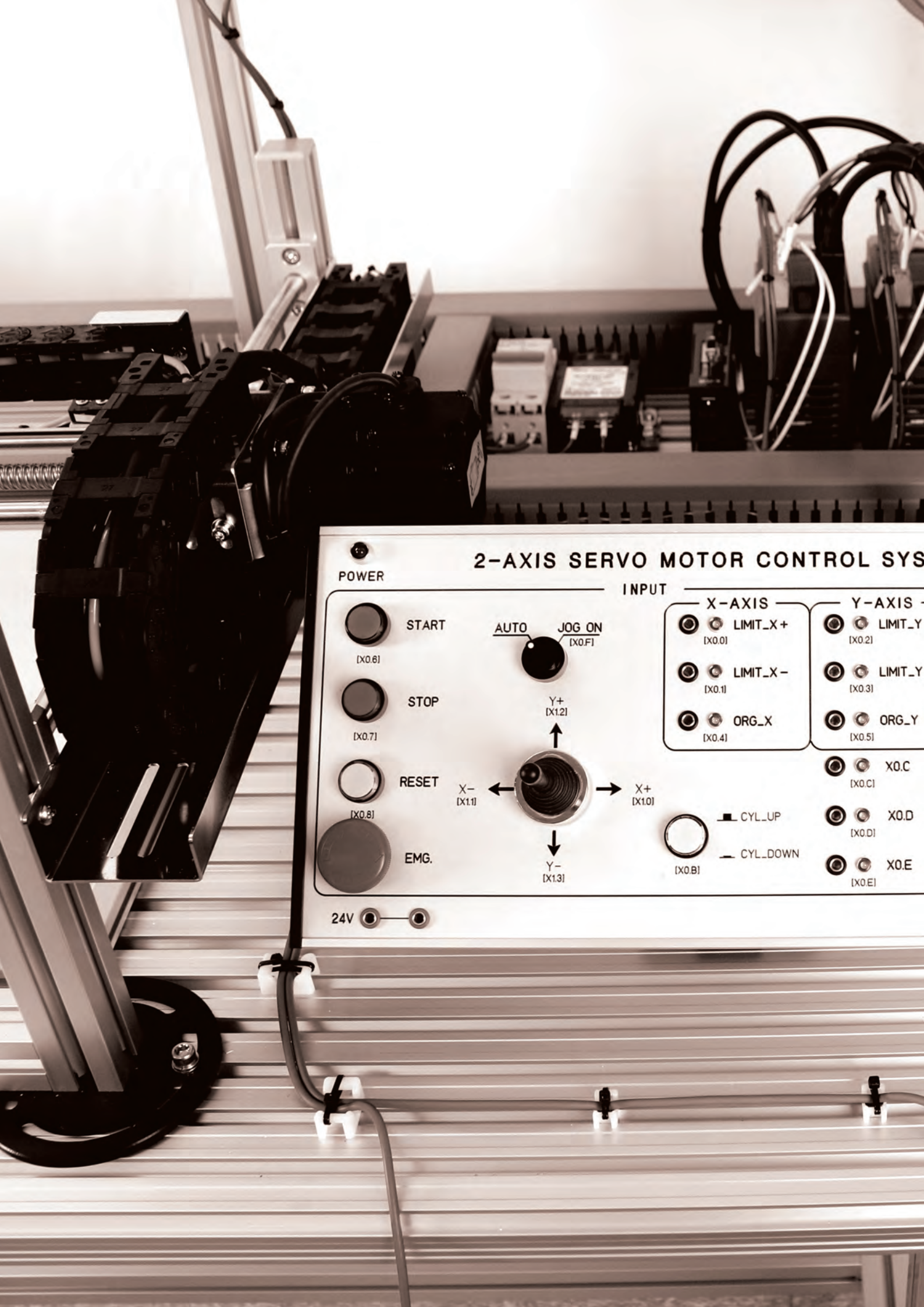
Y+ [X1.2] ↑ Y- [X1.3] ↓

- X0.C [X0.C]
- X0.D [X0.D]
- X0.E [X0.E]

CYL_UP [X0.B]

CYL_DOWN [X0.B]

24V





CHAPTER

06

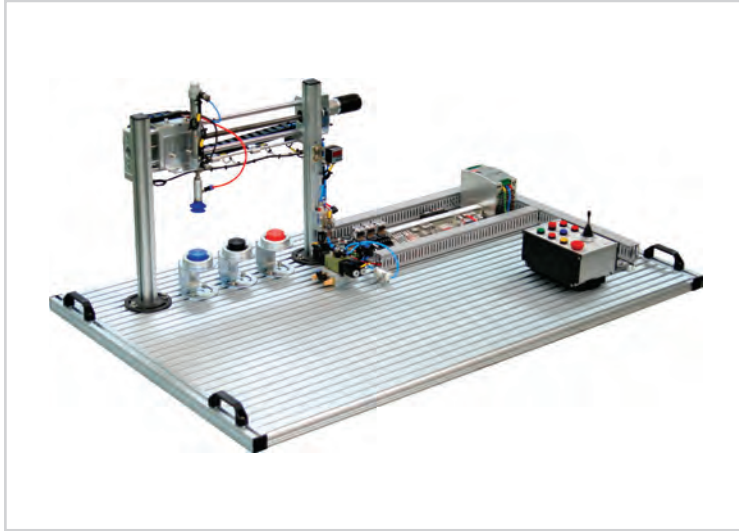
MOTOR TRAINER

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MOTOR TRAINER

- 01 Position control trainer – 1 axis
- 02 Position control trainer – 2 axes
- 03 Servo motor trainer 1
- 04 Servo motor trainer 2
- 05 Stepping motor trainer – 1 axis
- 06 Stepping motor trainer – 2 axes
- 07 Inverter trainer
- 08 Inverter trainer 2 dual motor
- 09 MOV(Motor Operated Valve Actuator) trainer

Position control trainer – 1 axis (FATK-PCT 1)



Order number : 24008

Features

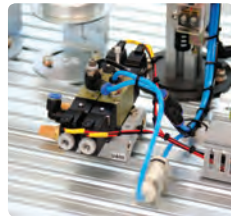
- Simple structure and function
- Position control with DC geared motor
- Structure and principle of spindle drive
- Automatic storage system
- Customizing for users
- Manual operation is possible

Training contents

- Composition of automation system
- Basic electro-pneumatics control
- Fault finding in automation system
- Understanding of automatic storage system
- Spindle drive motor control



Spindle drive and frame



Relay and solenoid valve control part



Joystick operating console

Specification

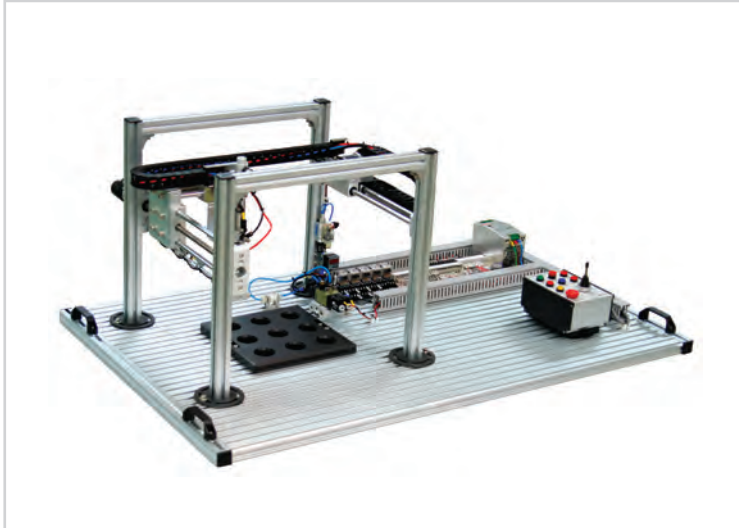
- Size : 1200(w)×750(d)×540(h) mm
- Weight : 23kg
- Operating pressure : 4 ~ 6 bar
- Power : AC 220V, DC24V
- X-axis : DC geared motor drive
- Z-axis : Double-acting cylinder & vacuum suction module
- PLC IO : 18DI / 12DO

Component

No.	Component	Qty.
1	Profile structure	1
2	Double-acting cylinder (cushion/flow control attached)	1
3	Spindle drive	1
4	Cableveyor	1
5	Geared motor	1
6	5/2-WAY single solenoid valve	1
7	Pneumatic suction module	1
8	Vacuum generator	1

No.	Component	Qty.
9	Proximity sensor	3
10	Operating console module	1
11	Relay module	4
12	Power supply	1
13	Electrical relay	2
14	Work piece	3
15	PLC unit	

Position control trainer – 2 axes (FATK-PCT 2)



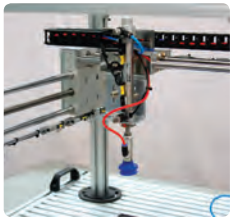
Order number : 23018

Features

- Position control with spindle drive
- Motor CW/CCW
- Position control of motor with proximity sensor
- Using stable aluminum profile
- Customizing for users

Training contents

- Composition of suction system
- Structure of 2 axes controller
- Training of position control system
- Motor CW/CCW electric diagram
- Principle, characteristic and usage of sensors



Spindle drive and frame



Digital vacuum switch



Joystick operating console

Specification

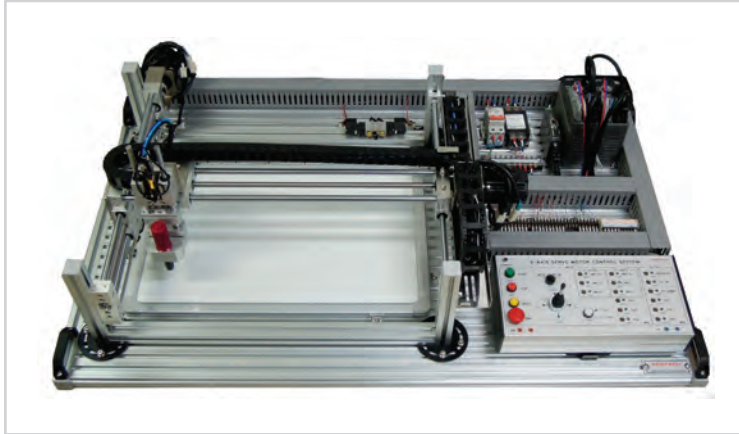
- Size : 1200(w)×750(d)×540(h) mm
- Weight : 27kg
- Operating pressure : 4 ~ 6 bar
- Power : AC 220V, DC24V
- X, Y-axis : DC geared motor drive
- Z-axis : Double-acting cylinder & Vacuum suction module
- PLC IO : 21DI / 13DO

Component

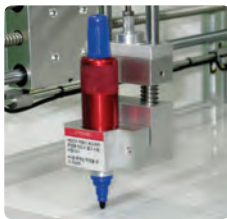
No.	Component	Qty.
1	Spindle drive	2
2	Profile structure	1
3	Cable veyor	2
4	Double-acting cylinder	1
5	Pneumatic suction module	1
6	Vacuum generator	1
7	Pressure sensor	1
8	Proximity sensor	8

No.	Component	Qty.
9	Limit switch	4
10	Operating console module	1
11	Relay module	4
12	DC geared motor	2
13	Solenoid valve	2
14	Work piece (blue, yellow, red)	9
15	Work piece & pallet	1
16	PLC unit	

Servo motor trainer 1 (FATK-MCT110)



Order number : 24001



Marking pen module



PLC & Drives



Servo motor

Features

- Free movement in narrow space with 2 axes
- Adaptable by PLC or controller type
- Customizing for users
- Generate interest by drawing

Training contents

- Position/speed/torque control operation
- Absolute/relative coordinate positioning
- Sequential positioning
- Designated sequential position control maximum
- 31 points
- Original function
- Jog mode

Specification

- Size : 1200(w)×750(d)×450(h) mm
- Weight : 60kg
- Operating pressure : 4 ~ 6 bar
- Power : AC 220V, DC24V
- X, Y-axis : AC Servo motor, 100W, 3000rpm
- Z-axis : Double-acting cylinder & Marking pen
- MCU 2 axes controller

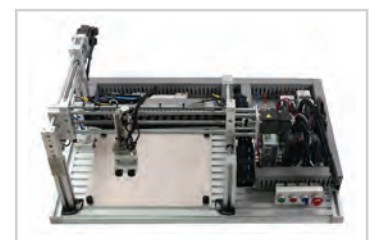
Component

No.	Component	Qty.
1	Servo motor	2
2	Linear spindle drive	2
3	Safety limit switch	4
4	Magnet proximity switch	2
5	Pneumatic cylinder	1
6	5/2-way solenoid valve	1
7	Marking clamping device	1
8	Servo motor controller	1
9	Push button : DC24V (1a 1b)	2
10	Emergency switch : DC24V (1a 1b)	1

No.	Component	Qty.
11	Profile structure	1
12	Proximity sensor	2
13	Limit switch	4
14	Operating console module	1
15	Rail for moving	1
16	Magnetic board	1
17	DC24V power supply (included)	1
18	Cable veyor	2
19	PLC controller (Optional)	
20	Touch panel (Optional)	

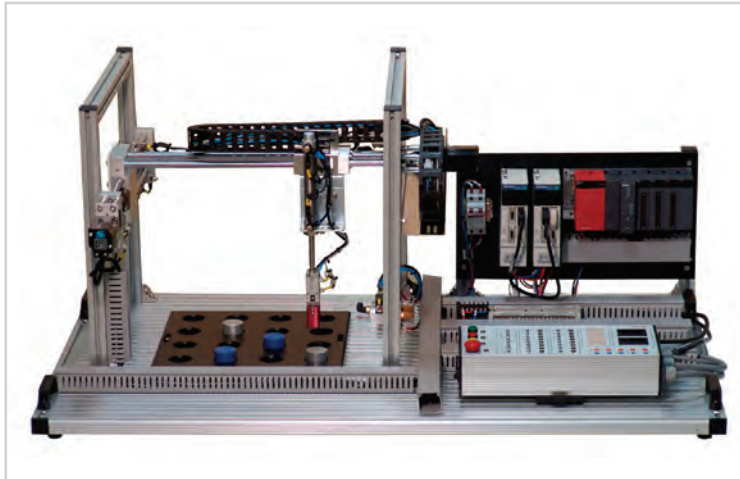
Servo motor trainer 1 compact type (FATK-MCT110-MINI)

- Compact type
- Size : 750(w) x 500(d) x 330(h) mm



Order number : 24017

Servo motor trainer 2 (FATK-MCT120)



Order number : 24009



Marking pen module



Operating console



Servo drive

Features

- Free movement in narrow space with 2 axes
- Adaptable by PLC or controller type
- Open structure for practical training
- Concept of pneumatic cylinder and solenoid

Training contents

- Position/speed/torque control operation
- Absolute/relative coordinate positioning
- Sequential positioning
- Designated sequential position control maximum
- Original function
- Jog mode

Specification

- Size : 1200(w)×750(d)×540(h)
- Weight : 48kg
- Operating pressure : 4 ~ 6 bar
- Power : AC 220V, DC24V
- X, Y-axis : AC Servo motor, 100W, 3000rpm
- 2 axes servo drive
- Z-axis : Double-acting cylinder & gripper module
- PLC & position control module
- PLC IO : 16DI / 16DO / 2axes position control module

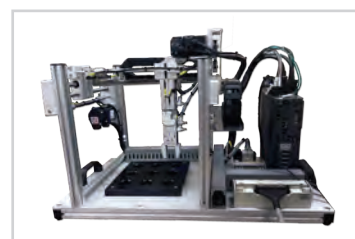
Component

No.	Component	Qty.
1	Servo motor	2
2	Linear spindle drive	2
3	Safety limit switch	4
4	Magnet proximity switch	3
5	Pneumatic cylinder	1
6	Pneumatic gripper	1
7	5/2-WAY solenoid valve	2
8	Work piece pallet	1
9	Control console	1
10	DC24V power supply (included)	1

No.	Component	Qty.
11	Servo drive	2
12	Aluminum profile panel	1
13	PLC unit	1
14	Position control module	1
15	Work piece	8
16	Proximity sensor	2
17	Operating console module	1
18	PLC controller	
19	Touch panel (Optional)	

Servo motor trainer 2 compact type (FATK-MCT120-MINI)

- Compact type
- Size : 580(w) x300(d) x 370(h) mm



Order number : 24016

Stepping motor trainer – 1 axis (FSPM-110)



Order number : 24002

Features

- Position/speed control
- CW/CCW control
- Open structure for practical training
- Date entry using software package on PC
- Absolute method, relative method possible
- Original function
- JOG mod

Training contents

- Principle of Stepping Motor
- Position control by configuration pulse number
- Training with driving pulse
- Position control by positioning
- Positioning sequence control
- 1 axis control and 2 axes control training



Stepping motor drive



Motion controller



Control module

Specification

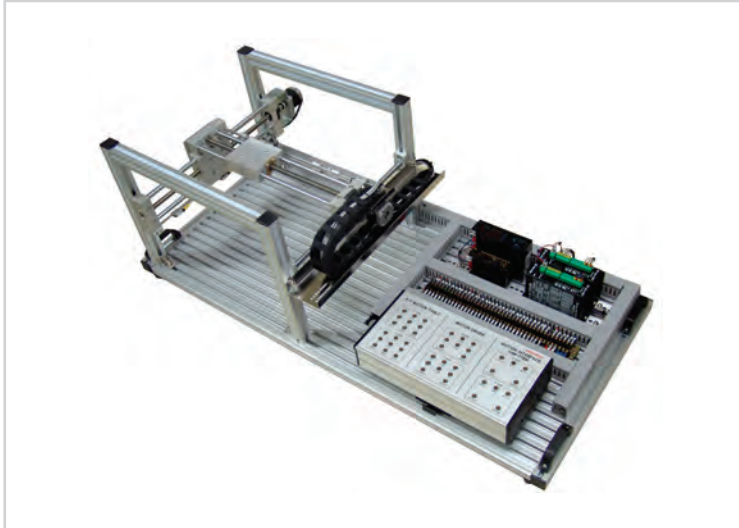
- Size : 750(w)×500(d)×130(h) mm
- Weight : 25kg
- Operating pressure : 4 ~ 6 bar
- Power : AC 220V, DC24V
- 1 axis : Step motor
- Motion controller : 1 axis
- Step motor drive
- Switch lamp module
- Encoder module (A, B, Z) : Linear drive

Component

No.	Component	Qty.
1	Stepping motor	1
2	Stepping drive module	1
3	Spindle drive (encoder, limit, Original)	1
4	Safety limit switch	2

No.	Component	Qty.
5	Magnet proximity switch	1
6	MCU controller module	1
7	Switch & module	1
8	DC24V power supply	1

Stepping motor trainer – 2 axes (FSPM-120)



Order number : 24010

Features

- Using actual parts which are used in industrial field
- Position/speed control
- CW/CCW control
- Absolute method, relative method possible
- Open structure for practical training
- Original function
- JOG mode
- Linear interpolation/Circular interpolation method

Training contents

- Principle of Stepping Motor
- Position control by configuration pulse number
- Training with driving pulse
- Table positioning with set up of pulse number
- Positioning sequence control
- 2axes control training

Specification

- Power : AC 220V, DC24V
- 2 axes Step motor
- 2 axes Step motor controller
- Step motor drive : 2ea



Stepping motor



Motor drive



IO module

Component

No.	Component	Qty.
1	Stepping motor	2
2	Stepping drive module	2
3	Spindle drive	2
4	Safety limit switch	4

No.	Component	Qty.
5	Magnet proximity switch	2
6	MCU controller module	1
7	IO module	1
8	DC24V Power supply	1

Inverter trainer (FIVT-110)



Order number : 24007

Features

- Motor speed and direction control with an industrial inverter
- Inverter setting training with a motor load regulator
- Multi step speed and timing configuration
- PID control function
- Multi functional input and output
- Communication terminal

Training contents

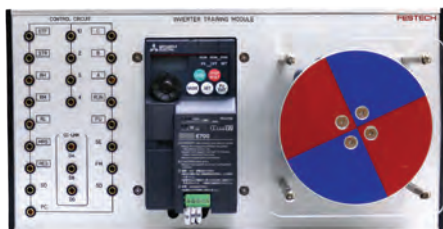
- Principle of an inverter
- Structure and principle of AC motor
- Usage of an inverter
- Starting and control method of 3-phase induction motor
- Remote control with PLC

Component

No.	Component	Qty.
1	Inverter	1
2	Motor (1/4 HPS, AC 220V)	1
3	Motor drive panel	1
4	Load test nob	1
5	Toggle switches for external signal	8
6	Speed control VR	1
7	Remote/Local selector switch	1

No.	Component	Qty.
8	Communication connector	1
9	Ampere meter	1
10	Voltage meter	1
11	Output signal meter	1
12	Aluminum case	1
13	Overload protector	1
14	Input/output signal LED	8

Inverter trainer module



Order number : 24019



Order number : 24011

Inverter trainer 2 dual motor (FIVT-130)



Order number : 24018

Features

- Motor speed and direction control with an industrial inverter
- Inverter setting training with a motor load belt type
- Multi step speed and timing configuration
- PID control function
- Belt load tension unit
- Load cell analog signal terminal
- Communication socket terminal
- Multi functional input and output

Training contents

- Principle of an inverter
- Structure and principle of AC motors
- Usage of an inverter
- Starting and control method of 3-phase induction motor
- Remote control with PLC

Component

No.	Component	Qty.
1	Motor (1/4 HPS, AC220V, 3-phase)	2
2	Inverter	2
3	Main control panel with MC	1
4	Motor drive panel	2
5	Tension signal panel	1

No.	Component	Qty.
6	Belt load measuring unit	1
7	Belt tension adjustable base unit	2
8	Bearing unit	2
9	Communication socket	1
10	Safety cover	2

MOV(Motor Operated Valve Actuator) Trainer (FMOV-110)



Order number : 24012

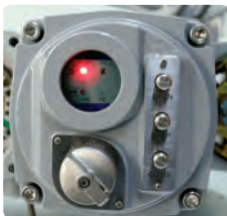
Features

MOV(Motor Operated Valve actuator) is an equipment to control flow quantity in the pipe. Flow quantity is depends on open rate of gate. It helps to understand principle of motor operated.

MOV is mainly used in petrochemical plant and water treatment system at industrial

Training contents

- Basic electrical skill
- Usage and function training of MOV
- Local manual and remote operation of MOV
- Digital IO condition check and analog figure measurement
- MOV installation and test
- Troubleshooting and maintenance
- Adjustable limit switch position
- Adjustable torque



Local controller



Valve OPEN/CLOSE



Control panel

Specification

- Size : 750(L)×750(W)×1250(H) mm
- Weight : 88Kg
- Power : AC220V, 60Hz
- Motor : 0,2(Kw)
- Motor speed : 60rpm
- Motor torque : 3,7Kgf·m (setting torque: 1,0Kgf·m)
- Operation : 4 ~ 20mA(Tolerance ±0,02)
- Condition monitoring by indicator
- Direct mounting (Thrust unit type)
- Local manual control and remote control
- Easy movement with castor