

Hypn10.xls Revision No: 10 Date: April 22, 2021

PNEUMATIC TRAINER KIT

MODEL: PNE10

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R Model: Sliding type component mounting. With storage facility G with table

BASIC PNEUMATIC TRAINER (PNE10A)

This trainer explains the physical principles of pneumatics apart from describing the basic components along with their constructions and functions. It can be upgraded to learn advanced theories and comparatively complicated circuits. Optionally, sliding arrangement for in-use component mounting can be provided along with component storage facility.

Areas of study

Fundamentals of pneumatics Safety aspects of pneumatics Study of symbols, schematic diagrams, standards and ratings Study of transmission and distribution of air Study of pneumatic memory and simple logic circuits Trouble shooting in simple pneumatic circuits Study of manual and stroke dependent controls Study of sequencing and pressure dependent controls Pressure measurement and control Flow measurement and control Study of pneumatic actuators Study of pneumatic fluid conditioning accessories

Study of an air compressor

ADVANCED PNEUMATIC TRAINER (PNE10B)

This trainer aims at helping the students to make complex pneumatic circuits using input and output signals. Complex valves and actuators can also be studied with the help of this trainer. Optionally, sliding arrangement for in-use component mounting can be provided along with component storage facility.

Areas of study:

In addition to the areas covered in basic trainer, following additional areas are covered

- Safety aspects with safety controls
- Use of sensors for creating control circuits
- Study of internally and externally pilot operated valves
- Study of sequence control using step diagrams
- Functions and use of advanced pneumatic valves and circuits
- Trouble shooting in complex pneumatic circuits

PLC OPERATED PNEUMATIC TRAINER (PNE10N)

Pneumatically driven devices can be regulated by electrical controls very efficiently. Due to this PLC operated pneumatics is widely used in all industries for a variety of applications. This combination of electrical and pneumatic control is very effective tool in automation. The PLC controlled pneumatic trainer emphasises this concept which is widely used in today's industry in the automation of machines and machining related process. Optionally, sliding arrangement for in-use component mounting can be provided along with component storage facility.

<u>Areas of study:</u>

Fundamentals of PLC

Study of PLC Ladder diagram programming Functions and use of various pneumatic

components Study of logic circuits using PLC controlled pneumatics

Study of control circuits with feedback

Monitoring and trouble shooting in PLC controlled pneumatic trainer and many more

* List of experiment may vary depending on model selected.

Some of the experiments are theoretical only.



COMPONENTS

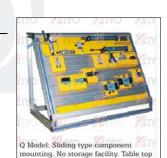
	BY		D
COMPONENT	<u>N</u>	A	B
3/2 way Directly Actuated Valve (with push button)		3	3
3/2 way Mushroom Button Operated Spring Return Valve		1	1
3/2 way Roller Lever Actuated Valve		3	4
5/2 way Valve with Selector Switch	1	1	1
5/2 way Solenoid Operated Spring Return Valve		-	1
5/2 way Double Solenoid Valve			1
5/2 way Pilot Operated Spring Return Valve		1	1
5/2 way Double pilot Valve (with manual override)		3	3
Manifold	1	1	1
Quick Exhaust Valve		1	1
One-Way Flow Control Adjustable Valve	1	2	4
Double acting cylinder	4	1	2
OR Function shuttle valve	1	1	1
Single Acting Cylinder	2	1	1
Electrical limit switch	2	-	-
Power Supply		-	1
I/O Card		-	1
Relay card		-	1
Pressure Gauge With T-Piece		2	2
Pressure Regulator With Gauge		1	1
NAND/NOR Elements Pilot Operated with Spring Return and Silencers		-	-
Memory Elements 5/2 Way Valves, Double Pilot Operated		-	-
Vacuum Suction Generator Operating On Venturi Principle		-	1
Service Unit with Filter Pressure Regulator, Gauge and Lubricator	1	1	1
T-Piece with Fittings for Tubing		1Set	
Tubing		1Set	
PLC	1	-	-
Proximit <mark>y Sens</mark> or/ Limit switch	2	×. –	3

N- PLC OPERATED PNEUMATIC TRAINER A - BASIC PNEUMATIC TRAINER B - ADVANCED PNEUMATIC TRAINER



OPTIONAL ADDITIONAL

- Silent air Compressor
- Computer
- Simulation Software
- Transparent components
- Cut away (sectioned) components
- Interface card to interface physical components with the software.



MODELS

PNE10-P: Component mounting fixed type. No storage facility. PNE10-Q: Sliding type component mounting. No storage facility. Table top model. PNE10-R: Sliding type component mounting. With storage facility & with table.

Model No.	Dimension	Weight
PNE10-P	800 (W) X 500 (B) X 1200 (H)	200 Kg
PNE10-Q	800 (W) X 600 (B) X 900 (H)	200 Kg
PNE10-R	800 (W) X 600 (B) X 1700 (H)	200 Kg



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Since research and development is an on-going activity, the specifications mentioned herein are subject to change without notice
Photographs are indicative only.