

# 272-T01

## MECHATRONICS ENGINEERING TECHNOLOGY

NAME: \_\_\_\_\_

START DATE: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

COMPLETION DATE: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

**TASK:** T01 Pneumatic Systems

**PERFORMANCE OBJECTIVE:** After completing the pneumatic training system the student will build a pneumatic circuit from a diagram and it will function with 100% accuracy.

**ENABLING OBJECTIVE:** Complete Q01-Q24

**TOOLS REQUIRED:** Instructor theory lesson

**SAFETY FACTORS:** Complete Q01-Q02 and observe all school/classroom safety rules at all times

### ACADEMIC ANCHORS:

M11.A.1.1.2 Express numbers using scientific notation

M11.A.2.1.1 Solve problems operations with rational numbers using rates and percentages

R11.A.1.3.5 Demonstrate after reading understanding of non-fiction text

R11.A.2.1.2 Identify meaning of content specific words used in text

### CAREER & WORK ANCHORS:

13.2.11.E Demonstrate essential workplace skills.

### PERFORMANCE CHECKLIST:

STUDENT CHECK	TASK TO BE COMPLETED	TEACHER SIGN OFF
_____	1. Identify academic anchors and complete learning guide AA01	_____
_____	2. View instructor theory lesson and info sheets	_____
_____	3. Complete training program on pneumatic trainer	_____
_____	3. Complete training program on pneumatic trainer	_____
_____	4. Review your notes and memorize symbols and components	_____
_____	5. Get quiz from instructor	_____





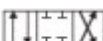



### PERFORMANCE LEVEL:

MASTERY      SATISFACTORY      FAMILIARIZATION      INSTRUCTED/CANNOT PERFORM



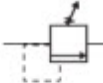
BUCKS COUNTY TECHNICAL SCHOOL – May 4, 2021

\_\_\_\_\_  
INSTRUCTOR'S SIGNATURE



### Directional Control Valve Symbols

	2-position, 2-way, 2 ported
	2-position, 3-way, 3 ported
	2-position, 4-way, 4 ported
	2-position, 4-way, 5 ported
	3-position, 4-way, 4 ported Closed Center
	3-position, 4-way, 5 ported Closed Center
	3-position, 4-way, 5 ported Pressure Center
	3-position, 4-way, 5 ported Open Center

### Simple Pneumatic Valves

	Check Valve
	Flow Control
	Relief Valve

### Lines














	Main Line
	Pilot Line











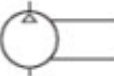
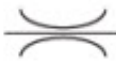
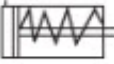

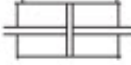

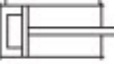


	Lines Crossing
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	Lines Joined
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	Lines Joined
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### Actuator Symbols

	Manual
	Push Button
	Lever
	Foot Operated
	Mechanical
	Spring
	Detent
	Solenoid
	Internal Pilot
	External Pilot
	Pilot Solenoid with Manual Override
	Lever Operated, Spring Return
	

	Accumulator		Direction of Flow
	Air Dryer		Exhaust Line or Control Line
	Air Motor (One Direction Flow)		Filter
	Air Motor (Two Direction Flow)		Filter (Automatic Drain)
	Check Valve (Spring Loaded)		Filter (Manual Drain)
	Compressor		Fixed Restriction
	Cylinder (Spring Return)		Air Motor (Two Direction Flow)
	Cylinder Double Acting (Double Rod)		Lubricator
	Cylinder Double Acting (Single fixed cushion)		
	Cylinder Double Acting (Two adjustable cushions)		
	Differential Pressure		

## GRADING RUBRIC

	Instructed/Cannot 0 points	Familiarization 1 point	Satisfactory 2 points	Mastery 3 points
Safety	Student rarely follows industry standard safety rules	Student needs to be frequently reminded to follow industry standard safety rules	Follows all industry standard safety rules, but required one reminder.	Student always follows all industry standard safety rules
Task	Student is unable to complete task	Student requires frequent assistance to complete task, and/or is familiar with some parts of the task	Student requires very little assistance to complete task, or has only completed task once or twice, but completed it satisfactorily with little to no assistance	Student can perform task with no assistance and has completed the task many times with no errors.

Mastery = 6 points

Satisfactory = 4-5 points

Familiarization = 2-3 points

Instructed cannot perform = <2 points