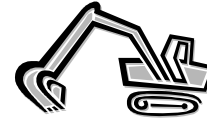


FLUID POWER



Name: _____	Rotation #: _____	Hour Code: _____	Date: _____
Name: _____			

LESSON 2

PART A: PRESSURE MEASUREMENT EXPERIMENT- Fill out the table below.

PSI Measured on the Trainer "Pressure Gage"	PSI Measured on the "Combination Gage"
20	
25	
30	
35	
40	

Are the pressures the same? If not, why is there a difference? _____

PART B: Pressure Measurements – Explain the experiment Part B to the instructor. Show negative and positive pressure. Explain what this means. **Instructor's Initials:** _____

LESSON 3 -Complete the experiment at the sink, and then answer the following questions.

Explain why the ping-pong ball floats: _____.

Explain what happened to the clay ball: _____.

Why does it sink? _____.

What happens to the clay "bowl" and explain why: _____.

_____.

LESSON 4- SURFACE TENSION EXPERIMENT. Get water and do experiment at the sink. Bonus points will be awarded for more than 10 or a new record of paper clips floating on the water. Show the teacher the paper clips floating and explain why this is possible. **Instructor's Initials:** _____

Environmental Impacts Response – on a separate sheet of paper, write a response to this question.

- How do the environmental impacts you just learned about affect you and your community?

LESSON 5- PASCAL'S LAW EXPERIMENT:

Explain PART A and PART B and how it relates to Pascal's Law: _____

LESSON 6

BOYLE'S LAW EXPERIMENT- Fill out the table below while doing the experiment.

Amount of PSI measured	Distance the Piston Traveled in inches

Explain Boyle's Law to the Instructor (also relate it to gas powered engine). **Instructor's Initials:** _____

LESSON 7-

Career Research

What career do your interests place you into the "Physical Technology" field?

Level 2 EXPERIMENTS in Fluid Power

(Upon completion of the Post Test (level 1) proceed to Level 2. The following experiments **must** be completed and explained to the instructor)

LESSON 6- PUMPS AND COMPRESSORS EXPERIMENT

Instructor's Initials: _____

LESSON 7

PRESSURE CONTROL VALVE EXPERIMENT- Show Relief/Sequence valve set to 25 psi to the teacher. Show what you did, then explain what this is like (example).

Instructor's Initials: _____

LESSON 8-ACTUATOR EXPERIMENT PART A and PART B

Part A: As you pushed on the Double Acting Cylinder, what happens to the Single Acting Cylinder:

_____.

Give an example of what this system is like: _____.

Part B: As you pulled on the Single Acting Cylinder and then push it in, what happens to the Double Acting Cylinder (hint, do this several times and watch):

_____.

Give an example of what this system is like: _____.

LESSON 9-FORCE MULTIPLICATION EXPERIMENT

Instructor's Initials: _____

LESSON 10-VOLUME RELATIONSHIPS EXPERIMENT

Instructor's Initials: _____

FLUID POWER “NOTES”

Be sure to take notes at this module!!!

Equipment- Ask instructor for specific equipment / materials needed in each lesson.

LESSON 1 Force, Area and Pressure

LESSON 2 PRESSURE MEASUREMENT EXPERIMENT

PART A: Do the experiment and fill out the worksheet chart.

PART B: Do the experiment and lesson signed off by instructor.

LESSON 3 BUOYANCY EXPERIMENT:

Read procedure, get supplies, and do experiment at the sink. Answer the worksheet questions.

LESSON 4- SURFACE TENSION EXPERIMENT: Read procedure, get supplies, and do experiment at the sink. Bonus points will be awarded for 10 or more clips floating and/or a new record of paper clips floating.

Show the instructor the clip(s) floating.

Complete the **Environmental Impacts** paragraph on a separated sheet of paper and staple to the back of the worksheet.

LESSON 5-PASCAL'S LAW EXPERIMENT:

Show & Explain PART A and PART B to the instructor.

LESSON 6 BOYLE'S LAW EXPERIMENT

Do the experiment and fill out the chart.

LESSON 7--Complete the lesson and Career Research, including the Post Test.

- **LEVEL 2 ASSIGNMENTS (LESSONS 6-10):** The experiment part of the following lessons must be completed and explained to the instructor to receive full credit at this module.

LESSON 6-PUMPS AND COMPRESSORS EXPERIMENT

Do the experiment and answer the worksheet questions.

LESSON 7- PRESSURE CONTROL VALVE EXPERIMENT

Fill out the answer to the worksheet questions.

LESSON 8-ACTUATOR EXPERIMENT PART A AND PART B

Fill out the answer to the worksheet questions.

LESSON 9-FORCE MULTIPLICATION EXPERIMENT

Fill out the answer to the worksheet questions.

LESSON 10-VOLUME RELATIONSHIPS EXPERIMENT PART A AND PART B

As you do the experiment, fill out the charts for Part A and B on the worksheet.