Quiz 1 MCT336L
100 Pts. 9/30/02

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Name

1. What are the components typically found in a hydraulic power unit? List each and briefly mention its function. Sketch the schematic.

2. The scissors lift on the back dock has two single acting cylinders. How did we know they were single acting? How do they work?

3. Show your calculations for the gpm on the scissors lift on the back dock during lowering. Show all work.

4. Sketch the symbol for a pressure relief valve below and list its characteristics. Explain where it is generally found in a circuit and why.

5. In lab #2, exercise 3, how long would it have taken to fully extend the shorter of the two cylinders if hooked up independently to the pump at 50% flow?

6. How does one measure/estimate the stroke for a cylinder that has no nameplate and is currently installed in a system and cannot be cycled? Explain.

7. Sketch the balanced piston and its spring from the pressure relief valve that you disassembled in Lab # 3 exercise 3. At what pressure does this spring shift? How does in compare to the chapter 10 picture? Explain any differences, if any.

8. In the Automation Studio software, what happens when you select "pilot" line instead of "pressure" line?

9. Determine the setting for the pressure reducer on the compacting cylinder branch for Lab 4 exercise 1. Show all work for this. Also, what was the total gpm required for the pump?

10. For a two palm button safety circuit, what is meant by "anti-tie down." In Lab 4 exercise 2, does the circuit have this feature? Explain why or why not.

11. Name this component, identify its features, and draw a schematic of it.

12. Name this item. Briefly mention its construction and purpose.

13. Name this component and draw a schematic.

14. Sketch the current arrangement in a standard schematic below.

15. Use Automation Studio to build a simple circuit. Make a system that will run a bi-directional motor in either direction. Be sure that the power unit never sees more than 800 psi. Any parameter not specified here, is open to your judgment. Capture both directions in a Word file and submit this on your disk with the filename of QUIZ1.Doc.