

American Institute of Organ Builders

Practice Examination, Mechanical

*Please note that for credit to be issued, mathematical questions must show equations and work.

1. Sketch a first-class lever and give one example of how it is used in the organ.

2. Using the formula on the right, what is the force in grams required to unseat a slider pallet?

a. Force = _____

Area of Pallet (X) 1 Gram (X) Wind Pressure/2

Pallet L = 800 mm
Pallet W = 20 mm
Wind Pressure = 60 mm

3. What size blower would be used for an instrument of 12 ranks, playing pressure equals 5" WP? _____

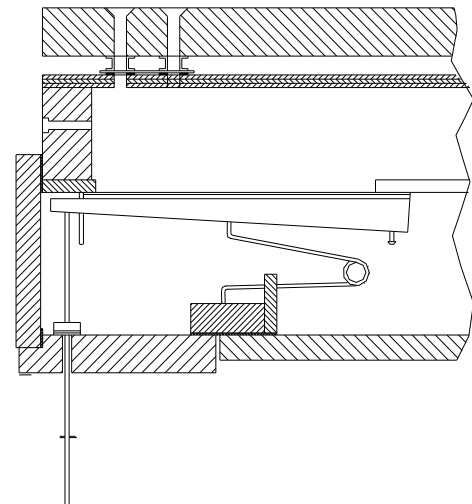
a. What would the appropriate blower be for an instrument of 8 ranks (16-8-8-8-4-4-III Flues, 8 Reed), playing pressure 3", at 10,000 ft. altitude? _____

4. A manual key has a full length of 500 mm, and a pivot point placed 330 mm from the front of the key. If the front of the key travels 10 mm, how far does the tail travel? _____

5. What is the recommended weight of touch for a manual keyboard? _____

6. On the diagram to the right, label the following:

- a. Style of chest: _____
- b. Slider seal
- c. Pallet
- d. Spring
- e. Bung
- f. Pulldown wire
- g. Pallet slot
- h. Channel
- i. Table
- j. Toeboard



7. Which North American organbuilder is known for the Universal Windchest? _____

8. Is there a difference in the terminology of Duplex and Unit?

a. If so, why?

9. Sketch and describe a pressure drop tremolo.

10. Aliphatic Resin is a classification for what? And what is its accepted use in organbuilding?

a. Material: _____

b. Use: _____

11. A key action whereas the key mechanically relieves a pallet which in turn exhausts a pneumatic primary at the chest is known as what type of action? _____

12. Sketch a simple tracker action that uses two squares.

13. A console with 75 electric stop controls will require a rectifier of what size? _____

14. What is the voltage drop across an 18-gauge wire running 75 ft? _____

15. How much weight needs to be on a 24" x 36" reservoir to achieve 100 mm WP, if the top weighs 10 lbs? _____

16. If a 24" x 36" reservoir is producing 4" wind pressure with 30 lbs of weight on the top, how much additional weight is required to make raise the pressure to 4-3/4" WP? _____

17. Sketch one style of wind chest not explored on this exam, list one builder known to have used the mechanism with regularity, discuss merits and detriments of the design.