

MACHINE METHODS OF ACCOUNTING

FACTS TO KNOW ABOUT SORTERS

The following questions and answers have been compiled to present the comparative features of each of the types of sorting equipment, as well as some general information concerning the operation of each of the devices.

1. *What Is the Purpose of the Sorter?*
To arrange cards according to numerical sequence or other predetermined groupings.
2. *On What Type of Current Does the Sorter Operate? What Voltage?*
Sorters operate on Direct Current only—110 or 220 volts. The drive mechanism, however, may be operated by an AC motor.
3. *What is the Type of Card Feeding?*
Horizontal sorters have a continuous horizontal feed.
4. *What Is the Speed Per Minute?*
Horizontal sorters operate at a speed of 400 and 225 cards a minute for Model 1 and Model 2 respectively.
5. *How Are the Punched Holes Sensed?*
By means of a brush contact with a brass roll through the punched hole.
6. *How Many Card Pockets Has the Machine?*
The horizontal sorters have 13 pockets—one pocket for each of the twelve punching positions in each column of the card, and one pocket for unpunched cards.
7. *Is the Sorter Equipped With Automatic Pocket Stops?*
All horizontal sorters are so equipped.
8. *How Can One Check the Sorting?*
By holding the sorted cards up to the light and sighting through the punched holes.
9. *Are All Sorting Machines Equipped for Selective Sorting?*
The horizontal sorters are equipped for selective sorting.
10. *If It Is Desired to Select Only the Cards Punched "6" in a Given Column and Retain the Remaining Cards in Their Original Sequence, How Are the Selector Switches Set? Into What Pocket Do the Unselected Cards Fall?*
The small selector switch corresponding to the "6" position remains at the outer position; all others are pushed toward the center.
The unselected cards fall into the "R" pocket.
11. *How Would You Sort a Four Column Field to Place the Cards in Numerical Sequence? (3,000 cards)*
The cards must be run through the sorter four times—beginning with the units column and following with the tens, hundreds, and thousands columns in succession.
12. *A Report, Involving 100,000 Cards to Be Sorted in a Five Column Field, Is Desired as Soon as Possible. How Would You Sort the Cards?*
Break the block of cards down into ten groups which can be conveniently handled, by sorting the first column at the left, (ten thousands column) and then sort each group as described in the previous question.
13. *Three Thousand Cards Are Punched as Follows:*

| | |
|-------------------|---------------|
| Employee Number | Columns 17-20 |
| Department Number | Columns 21-22 |
| Order Number | Columns 23-27 |
| Part Number | Columns 28-32 |
| Operation Number | Columns 33-34 |

Five Tabulations Are Desired as Follows:

 - a. Employee Number.
 - b. Part Number Subdivided by Operation Number.
 - c. Operation Number Subdivided by Employee Number.
 - d. Department Number Subdivided by Order Number.
 - e. Order Number Subdivided by Part Number.

In What Sequence Should These Reports Be Made in Order to Reduce Sorting to a Minimum?

| Order | Sort By |
|-------|---------------|
| (a) | Employee No. |
| (c) | Operation No. |
| (b) | Dept. No. |
| (e) | Order No. |
| (d) | Part No. |

14. *Two Thousand Cards Are Punched as Follows:*

| | |
|----------|---------------|
| Customer | Columns 18-19 |
| Town | Columns 20-22 |
| State | Columns 23-24 |

What Column Sequence Should the Sorting Follow in Order to Obtain a Tabulation of Each State Subdivided by Town and Each Town Subdivided by Customer?

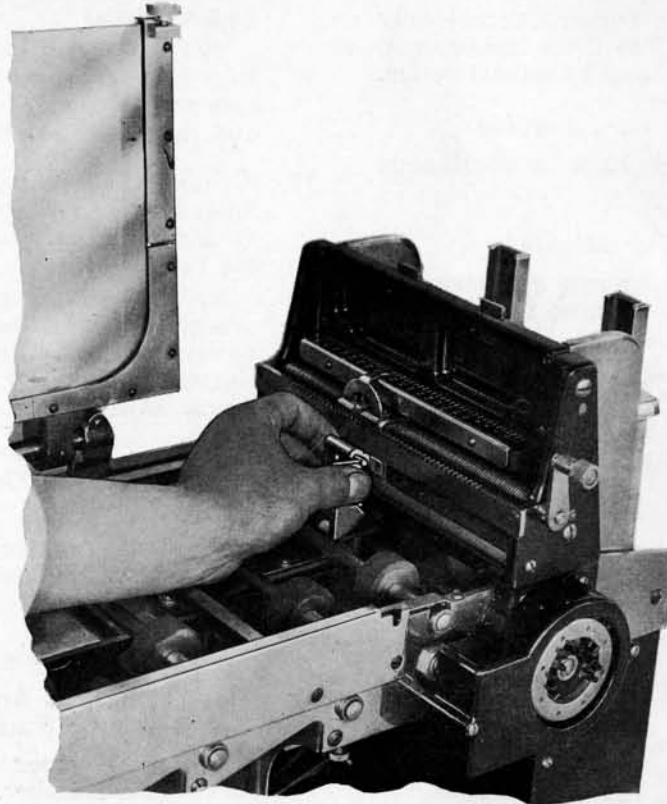
19, 18, 22, 21, 20, 24, 23.

15. *How Should a Damaged Sorting Brush Be Replaced?*

To insert a new card brush, raise the

brush just makes contact through the punched hole. When contact is made the end of the nine chute blade should overlap the edge of the card $1/64''$ to $1/32''$ maximum. There must not be less than $1/64''$ overlap of the chute blade on the card when turning the machine by hand.

Moving the brush so that the strands project further from the holder will cause it to make contact later, so that the card travels a greater distance underneath the nine blade before contact is made. Drawing the brush strands up into the brush holder will cause the brush to make con-



Removing Brush-Holder

brush column change operating handle one-half turn until it is directly opposite from its normal position.

This has raised the brush holder from the brass contact roll. The brush holder locating lever can now be raised to the position shown and the brush holder assembly removed. Next loosen the brush retaining screw and pull out the defective brush.

After inserting a new brush it must be timed in the following manner: Feed a card punched "8" by hand until the card

tact earlier giving less overlap of the blade on the card when contact is made. Be very careful to time the brush correctly.

When replacing the brush holder, do not lower the handle and allow the brush to touch the contact roll until the brush holder is clamped in place.

16. *How Are Jammed Cards Removed?*

When cards become jammed in the chute blades, they should be removed very carefully to prevent damage to these blades. First, turn off the power. Then raise the

glass top and carefully remove the cards. It is best to remove the card brush holder when doing this to prevent damaging the card brush. See that all cards are removed before again resuming operation.

17. *What Purposes Are Served by the Fuses?*

The machine is protected with 6 ampere main line cartridge fuses. If these fuses are blown the machine will not operate in any way. The individual circuits are protected with small glass fuses. If the machine will run, but the cards go into the R box, it probably indicates that the 1 ampere glass fuse on the left, facing the relay cabinet, is blown or broken. If the motor fuse on the right, facing the cabinet, is blown or broken the machine will not run. Always replace fuses with the proper capacity. Both the fuses and the fuse block are marked to indicate the proper fuse capacity. All fuses are located in the relay cabinet under the right end of the machine.

18. *What Precautions Should Be Observed by the Operator?*

1. Don't leave the power turned on when the machine is not in use. This wastes electrical energy and causes unnecessary heating of the coils.

2. Don't fail to cover the feeding mechanism when the machine is not in use. This is to keep out dust, dirt and other foreign substances. A dust proof cover suitable for this purpose will be supplied by this company.

3. Don't forget that this machine must be cleaned and oiled regularly, but when cleaning be very careful not to disturb wires, springs, the brush or the brush holder, etc.

4. Don't call a Customer Serviceman until you have made certain that the trouble is not due to blown or broken fuses, selector switches set wrong, start or stop keys stuck down, improper brush timing, brush not set to proper column, etc.

5. Don't use a sorting needle with a sharp point, as it may pierce the cards. Use only a sorting needle such as supplied by this company.

6. Don't pull out damaged cards carelessly. If the machine tears cards, be careful when removing the damaged cards not to injure the ends of the blued steel chute blades.

7. Don't be careless about operating this machine.

8. Don't attempt to do any work on the machine such as removing jammed cards and changing fuses without first turning off the power.

19. *What Is the Purpose of the Multiple Column Selecting Device?*

To separate all cards punched with a predetermined number or group of consecutive numbers from a file of cards without in any way disturbing the sequence of the remainder of the cards in the pack.

20. *What Is the Maximum Number of Digits in a Number That May Be Selected by the Multiple Column Selecting Device?*

Six.

21. *How Would You Proceed to Select Cards Punched "125," "126," and "128"?*

1. Set switches 5, 6, and 8 in the units column.

2. Set the "2" switch in the tens column.

3. Set the "1" switch in the hundred column.

4. Make sure all other number switches are OFF.

5. Turn on the three control switches corresponding to the columns set.

6. Replace the regular brush holder by the multiple brush assembly.

7. Turn on the switches on top of the device.

8. Close the cover door.

9. Set the knurled knob on the rear to ON.

22. *What Is the Purpose of the Card Matching Device?*

To select matched cards from a group of cards by means of contrasting corner cuts.

23. *What Arrangement of the Cards Is Necessary for the Functioning of the Card Matching Device?*

The cards must first be sorted so that the detail cards (corner-cut cards) for each code number precede the master card (square-corner card) for that group.

24. *Will the Card Matching Device Match More Than One Detail Card With a Master Card? If So, Under What Conditions?*

Yes, provided all the detail cards are corner-cut cards, and only one master or square-corner card appears in the group.

25. *What Is the Purpose of the Counting Sorter (Non Printing)?*
To simultaneously classify and count punched tabulating cards.
26. *At What Speed Does This Machine Operate Per Minute?*
Four hundred cards per minute.
27. *How Many Counters Has It?*
Fifteen.
28. *How Many Counting Wheels in Each Counter?*
Five.
29. *Which Counters Clear in Unison and Which Clear Separately?*
All except the grand total counter can be cleared in one operation or by throwing in a clutch all counters may be cleared together.

DIMENSIONS AND WEIGHTS OF SORTERS

| Type | Dimensions in Inches | | | Weight in Pounds | |
|------------------------------|----------------------|-------|--------|------------------|----------|
| | Length | Width | Height | Packed | Unpacked |
| Horizontal Sorter Type 80 | 61 | 16 | 45 | 670 | 425 |
| Counting Sorter Type 75 | 61 | 22½ | 48 | 848 | 585 |