

MACHINE METHODS OF ACCOUNTING

FACTS TO KNOW ABOUT KEY PUNCHES

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

1. *Upon What Factors Does the Speed of Card Punching Depend?*

The speed of punching depends upon:

 - (a) The kind of machine used.
 - (b) The physical condition of the operator.
 - (c) The arrangement of the machines to provide the operators with proper light and favorable working conditions.
 - (d) The design of cards according to the sequence of the data to be punched.
 - (e) The clearness of the original writing on the documents.
 - (f) The amount of punching to be done by hand.
 - (g) The familiarity of the operator with original documents and routines.
 - (h) The kind of supervision.
 - (i) The amount of experience of the punch operator.
 - (j) The use of the touch system in operating the machine.
2. *On What Current Does the Punch Operate?*

All Electric Punches except the Alphabetic Printing Punch operate on 110 or 220 volts—direct current. The Alphabetic Printing Punch operates on either direct or alternating current—110 or 220 volts.
3. *What Columns May Be Seen at the Right When the Card Is Fully Inserted?*

On the Mechanical Key Punch, it is possible to see 19 columns of a 45-column card. On the Electric Key Punch, it is possible to see 8 columns of the 45. It is possible to see two-thirds more columns of an 80-column card than of a 45-column card. No columns are visible on those machines which have a magazine feed.
4. *How May Cards Be Fed Into the Duplicating and Motor Drive Punches?*

Cards may be fed automatically from the right or from the left by hand.
5. *How Many Cards Can Be Automatically Fed at One Time?*

Only one.
6. *How Many Cards Can Be Fed by Hand at One Time?*

One or two cards, depending upon the specified construction of the machine.
7. *What Are the Purposes of the Space Key?*

To advance the card one column position to the right without punching a hole; and also to permit double punching on the electrically operated numerical punches.
8. *What Is the Purpose of the Release Key?*

To release the card carriage so that the card may be removed.
9. *What Are the Purposes of the "X" Key?*

The "X" key on the several types of punches (Mechanical, Electric, and Motor Drive Types) is used:—

 - (a) To punch the 11th position on a card.
 - (b) When so arranged, to skip a field in which no information is to be punched.
10. *How Much Pressure Is Necessary to Actuate a Key?*

To actuate the Mechanical Key Punch requires a force of approximately $1\frac{1}{2}$ to $1\frac{3}{4}$ pounds. However, to actuate an Electric Key Punch requires only four ounces of force. The punches equipped with alphabetic keyboard require only two ounces to depress a key.
11. *Why Does It Require Less Effort to Operate an Electric Key Punch Than a Mechanical?*

In the case of the Mechanical Punch, the operator must do all the work; i.e., supply the necessary force actually to punch the hole in the card. In the Electric Punches, the operator merely closes a contact which causes the machine to punch the hole.

12. *What Kinds of Skip Bars May Be Used?*
X-skip bars and automatic skip bars on all new hand feed and motor-driven machines. X-skip bars only on old hand feed machines.
13. *How Many Columns Can Be Skipped at One Depression of the X-Key?*
Machines without a governor, six or eight; with a governor, as many as desired. Practically all newer machines are equipped with governors.
14. *Will the Duplicator Skip Fields Which Are Skipped on Master Cards?*
Types 12 and 16 Duplicators will not accomplish this unless a skip bar is used. The Alphabetic Duplicator will space over skipped fields one column at a time.
15. *Where Is the Predetermined Cut-Out Bar Attached?*
On the lower edge of the duplicator rack (or master card bed).
16. *What Is the Function of the Predetermined Cut-Out Bar?*
To prevent punching from certain punched fields of the master card and to resume duplicating at a predetermined point.
17. *Where Is the Card Carriage Stop Located and What Is Its Purpose?*
It is located directly behind and below the upper edge of the card bed on all Electric Key Punches. On the Mechanical, it is on the upper edge of the card base. It is used to stop the carriage at a predetermined point when inserting cards from the left.
18. *Is There a Cut-Out Stop on the Punch and What Is Its Purpose?*
There is a cut-out stop on all Duplicating Punches. Its purpose is to stop duplication from a fully punched master card at a predetermined point and prevent duplication in subsequent columns.
19. *Is There a Governor on the Punch and What Is Its Purpose?*
There is a governor on all electrically operated punches and it is used to control the speed of the carriage release to prevent damage to the machine.
20. *At How Many Angles May the Machine Be Adjusted by Use of the Feet?*
All portable Key Punches are equipped with feet which may be adjusted to one of two angles to suit the operator.
21. *How May More Than One Hole Be Punched in a Single Column, If Desired?*
More than one hole may be punched in a single column on electrically operated numerical punches by depressing the space key until the additional holes have been punched. On Mechanical Punches, two keys may be depressed simultaneously. On Alphabetic Punches, essential double punching for recording alphabetic characters is effected automatically by the depression of a single key.
22. *Approximately How Many Columns Can Be Duplicated a Second?*
Approximately ten to twelve columns may be duplicated a second.
23. *Will All Duplicating Punches Duplicate a Double-Punched Column or an Unpunched Column?*
Alphabetic Duplicating Punches are the only machines which will duplicate a double-punched column or an unpunched column.
24. *What Is the Master Card Rack?*
The master card rack is the rack or bed located at the top of the machine on which the cards to be duplicated are placed.
25. *What Should Always Be the Position of the Door of the Master Card Rack When the Master Card or Code Card Is Not Being Used? Why?*
The door of the master card rack should be raised when not in use in order that the circuit through the duplicating brushes be broken.
26. *What Means Are There of Stopping the Duplicating Mechanism at a Given Column, Other Than the Cut-Out Stop?*
The duplicating mechanism may be stopped at a given point by using a high skip bar; predetermined cut-out bar; raising the door of the master card rack; grasping the left finger lever of the carriage; use of mask cards; etc.
27. *How Should Cards Be Checked After Duplication?*
It is not necessary to check after duplication, but it is customary to sight the punched holes.
28. *How Is Back Spacing Effected?*
Back spacing is effected on all punches except the Alphabetic Printing Punch by manually pushing the carriage back one space. The latter punch, however, has a back space lever.

29. *What Is the Purpose of the Card Gauge and How Often Should It Be Used?*

The card gauge is used to see if the punching mechanism is properly aligned. It should be used every morning before punching is begun.

30. *How Are Jammed Cards Removed?*

On mechanical and electrical punches, use chute blade cleaner to remove fragments of damaged cards. Be careful not to damage the bed over which the card is fed.

On machines with magazine feed (other than printing punches) first remove the guide plate and move the carriage in half way. Then it is possible to reach in and pull the card out.

On printing punches, observe the following directions:

1. Turn off the motor switch.
2. Pull the card out very carefully so as not to bend any of the mechanism.
3. If the card is jammed between the die and stripper, remove it by using the thin spring steel tool provided.
4. Never use heavy tools to pry torn cards out of the machine as this may cause considerable damage.

31. *How Is the Ribbon on Printing Punches Replaced?*

1. Turn off the motor switch.
2. Remove the cover located just above the punching unit by pulling forward at both ends.
3. Remove the old ribbon.
4. Replace with new one, feeding it through the proper guides and around rollers.
5. Hook the free end of the ribbon to the empty spool.
6. Wind up some of the ribbon, being sure that the reversing button is between the guide and the spool.
7. Place cover back in position.

32. *What General Care Should the Operator of Punches Exercise?*

1. Don't leave the power on the machine when not in use.
2. Don't latch the master card door "down" except when duplicating. Leave "up" at all other times.
3. Don't leave margin stop in any place except its extreme right-hand position when feeding cards automatically.
4. Don't allow more card punchings to collect in receptacle than it will hold.
5. Don't operate automatic feeding mechanism without card weight on card in magazine feed.
6. Don't use heavy tools for prying out jammed cards as this may cause damage to the punching mechanism.
7. Don't attempt to change skip bar, replace fuses or remove a bad card without first turning the power "off."

33. *What Special Care Should Be Exercised by Operators of Printing Punches?*

1. Don't drop paper clips, pencils, pins, etc., into the type bars or operating mechanisms as damage will result.
2. Don't put more cards in feed hopper than can be inserted with one hand.
3. Don't use any other ribbon except the ones specified for best results.
4. Don't insert any object in rack to hinder return travel.
5. Don't return rack manually with the power off, as the return tape will be damaged.
6. Don't attempt to feed a second card into the machine if the first has not been removed.
7. Don't leave power on if machine fails to work properly.
8. Don't spill type cleaner into the operating mechanism when cleaning type. Don't use an excessive amount of cleaner, as it will run down the type bars.

DIMENSIONS AND WEIGHTS OF KEY PUNCHES

Type	Dimensions in Inches			Weight in Pounds	
	Length	Width	Height	Packed	Unpacked
Mechanical Type 1	17 $\frac{1}{4}$	5 $\frac{1}{2}$	4 $\frac{1}{2}$	17 $\frac{1}{4}$	12 $\frac{1}{2}$
Electric Type 11	19	7 $\frac{1}{2}$	5 $\frac{1}{2}$	35	25
Electric Duplicating Type 12	30	12	8	100	65
Motor Drive Type 15	53	26	34	235	125
Motor Drive Duplicating Type 16	53	26	36	255	140
Alphabetic Duplicating Type 31	39	28	37	310	190
Alphabetic Printing Type 34	48	23	41 $\frac{1}{2}$	424	260
Alphabetic Duplicating Printing Type 34	48	23	44	490	321