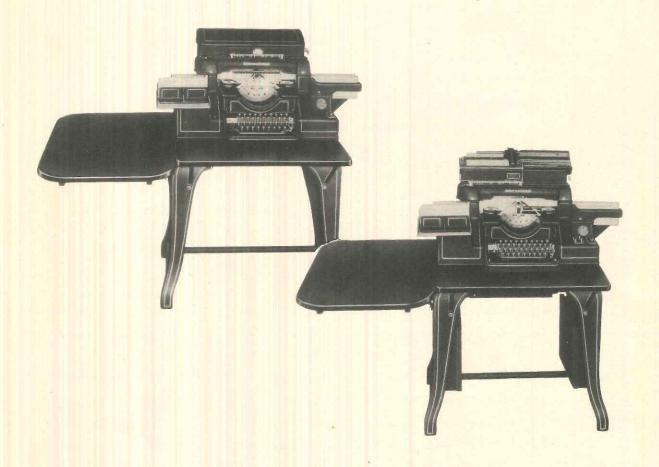
ALPHABETIC PRINTING PUNCHES

TYPE 32 — TYPE 33



INTERNATIONAL BUSINESS MACHINES CORPORATION
TABULATING MACHINE DIVISION

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Type 32 Alphabetic Printing Punch

lating cards in both punched and printed form. section. The depression of a key causes the machine to punch the card and simultaneously causes a type bar to print the corresponding letter or figure at the top of the card above the column punched. The machine operates in an entirely automatic manner, the operator merely depressing the keys as though typewriting—and with the same speed.

KEYBOARD

The machine is equipped with one keyboard which serves for both alphabetic and numerical operation. The alphabet keys are arranged in standard typewriter order. The keyboard diagram shows the positions of the various keys, the functions of most of which are self-explanatory. There are several special keys, however, whose functions are described as follows:

The "11" and "12" keys, located at the lower right of the keyboard, are used for punching and printing individual X and R positions.

The "colon, semi-colon" key, directly to the right of the letter L key, is a dummy key provided merely to complete the standard typewriter keyboard positions. It performs no function other than to facilitate touch system operation.

The "eject" key, located at the lower right of tirely automatic. the keyboard, provides for the ejection of a card

The Alphabetic Printing Punch is designed to at any time and from any desired position. The record alphabetic and numerical data in tabu- function of this key is described further in a later

> The "space bar," which extends across the lower section of the keyboard, causes the card carriage to advance a single column for each depression.

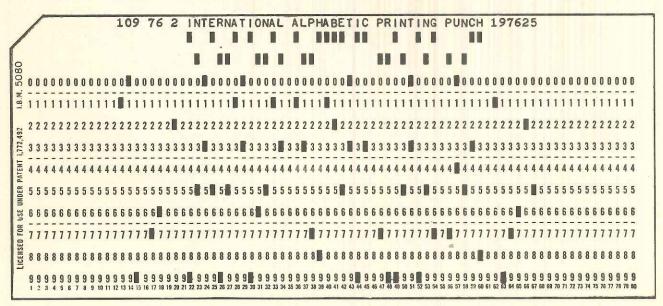
> The entire keyboard assembly is like that of a typewriter, each successive row of keys being higher than the preceding row. The action of all keys is extremely light since every movement is power driven, the keys serving merely to engage the operating mechanisms.

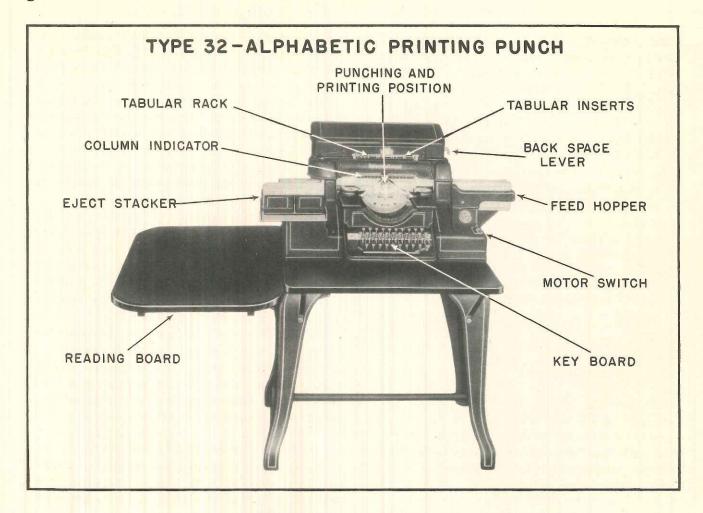
FEEDING AND EJECTING

The method of feeding and ejecting cards in the alphabetic printing punch is entirely different from that used in other punching equipment.

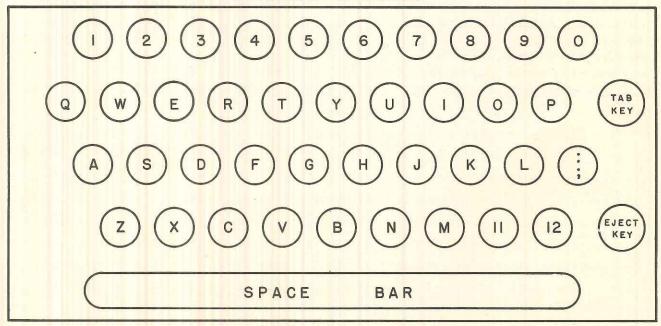
Blank cards are placed in a feed hopper (capacity 600 cards) which is located at the back of the machine to the right of the operator. The hopper is like that on a tabulator, the cards being inserted in an upright position and pressure exerted on them by a pressure plate. Each card is fed into punching position by a knife feed, which takes the card from the pack by sliding it horizontally to the left, the card remaining in an upright position. The feeding operation is en-

Upon completion of the desired punching, the





KEYBOARD DIAGRAM



key must be used to eject the card regardless of whether the card is completely or partially The ejecting mechanism causes the card to advance to a stacker whose operation may be described as being opposite to that of the feed hopper. The stacker (capacity 650 cards) is located in front of the machine to the left of is an automatic operation.

Throughout the feeding, punching and ejecting operations, the card remains in an upright position. The following diagram illustrates the card positions and course of travel through the machine.

PUNCHING AND PRINTING

The depression of a key causes a clutch to engage a constantly running drive shaft. This engagement causes the proper punches to cut the card and simultaneously causes the proper type bar to print.

In punching alphabetic characters, the depression of a single key causes two holes to be punched simultaneously in the card. In numerical punching, only one hole is punched. In both cases, the proper interpretation of the punching is printed at the top of the card.

SKIPPING

The machine is equipped with a skipping mechanism similar in operation to the tabular skip on standard typewriters. A tabular rack, located at the top of the machine, contains 80 slots, one for key depressions per second, a speed well above each column of a card. Tabular inserts are placed that required by the fastest operators.

card is ejected by depressing the eject key. This in the proper column slots to govern column skips. For example, if it is necessary to skip from any preceding column to column 25, a tabular insert is placed in the "24" notch. At any time the tabular key is depressed previous to this column, the machine will skip to column 25, except that no more than 12 columns may be skipped at one time. Several inserts must be used for longer the operator. The ejection and stacking of cards skips. All skipping is governed by the action of the tab key and the positions of the tabular inserts, no automatic skipping being possible.

> The tabular inserts have, on one side, a slightly raised flange which, when inserted uppermost in the tabular rack, causes a bell to ring when the card carriage reaches the selected column position. Any number of inserts may be placed in this manner to cause the bell to ring at predetermined column positions of the card.

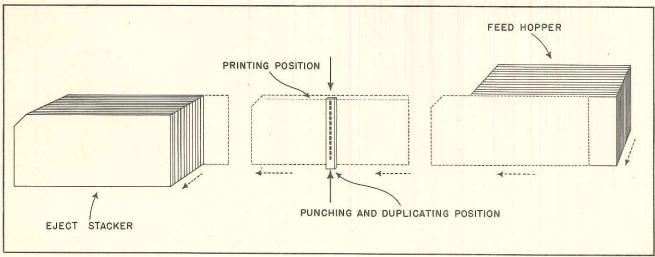
> The skipping mechanism on the alphabetic printing punch provides complete flexibility in skipping arrangements. The tabular rack is conveniently located, easily operated and positive in action, all of which features greatly enhance the efficiency of punching operations.

MOTOR SWITCH

The machine is equipped with only one switch, the motor switch, which is used to start and stop the driving motor. This switch must be ON during operation of the machine.

SPEED

The machine may be operated at a speed of 16



CURRENT

The machine is designed to operate on either alternating or direct current at 110 or 220 volts. The driving motor is supplied for operation on the current and voltage specified for the particular installation.

The power consumption is 5 amperes for start- illustrated in the operating diagram. ing and 1 ampere for running loads.

GENERAL

The machine is mounted on a base the same size

it may be operated conveniently from a seated position. Ample leg room is provided.

A large waste receptacle is located directly beneath the machine. This may be removed easily for emptying.

A reading board of ample size is provided as

Two power outlets are furnished to permit multiple coupling of machines for current supply.

Careful consideration has been given to both as that of the numerical Motor Drive Duplicating design and finish in order to insure the general Punch. The height of the machine is such that attractiveness of the Alphabetic Printing Punch.

Type 33 Alphabetic Duplicating Printing Punch

basically the same as the Alphabetic Printing number stamped on its left side, the six legs being Punch, and performs all of the functions of which numbered from one to six, as shown under the that machine is capable. In addition, it is Operating Diagram. equipped with a Master Card Unit, for automatic machine can be arranged to skip, space, duplicate actually six instead of three. and eject automatically as required.

MASTER CARD UNIT

pearance and in operation to the corresponding page). unit of the numerical duplicating key punches.

TABULAR RACK

The Tabular Rack, and the Tabular Inserts used with it, perform a very important function. Together with the Control Switches, they permit automatic control of all operations which can be pre-determined, in any sequence or in any combination which may be required.

in appearance to that on the Alphabetic Printing Punch, or that on any typewriter. It is provided with 80 slots, in which Tabular Inserts may be placed, corresponding to the 80 columns of the tabulating card (see last page).

TABULAR INSERTS

The Tabular Inserts automatically determine the action of the machine at or beyond the Tabular Rack column positions in which they may be placed.

furnished with the machine, each of which is capable of controlling either of two different operations. In this manner any one of six operations can be pre-determined for any column position. (These do not include automatic ringing of a bell in pre-determined positions, which is a feature of the non-duplicating punch only.)

The operation which is controlled by any insert depends upon which "leg" of that insert is turned uppermost when it is placed in the rack.

The Alphabetic Duplicating Printing Punch is operation controlled by each leg is identified by a

For convenience in the description of their use, duplication of data punched in master cards, and these inserts are hereinafter referred to as Inwith a Tabular Rack, by means of which the serts No. "1 to 6", inclusive, as if there were

Tab Start Insert (No. 1)—This insert, when placed in the rack with the "1" leg uppermost, causes the card carriage to tabulate (skip) auto-The Master Card Unit is located at the top of matically to the 80th or any intervening column. the machine, at an angle which is convenient for It must be placed in the column position following the handling of master cards and for reading the last position punched, or, in other words, in them while in place. This unit is similar in ap- the first column position to be skipped (see last

> Any columns may be skipped manually by depression of the Tab Key or Space Bar on the keyboard.

Duplication from a master card is automatically prevented in those column positions which may be skipped either by a Tab Start Insert or by depression of the Tab Key.

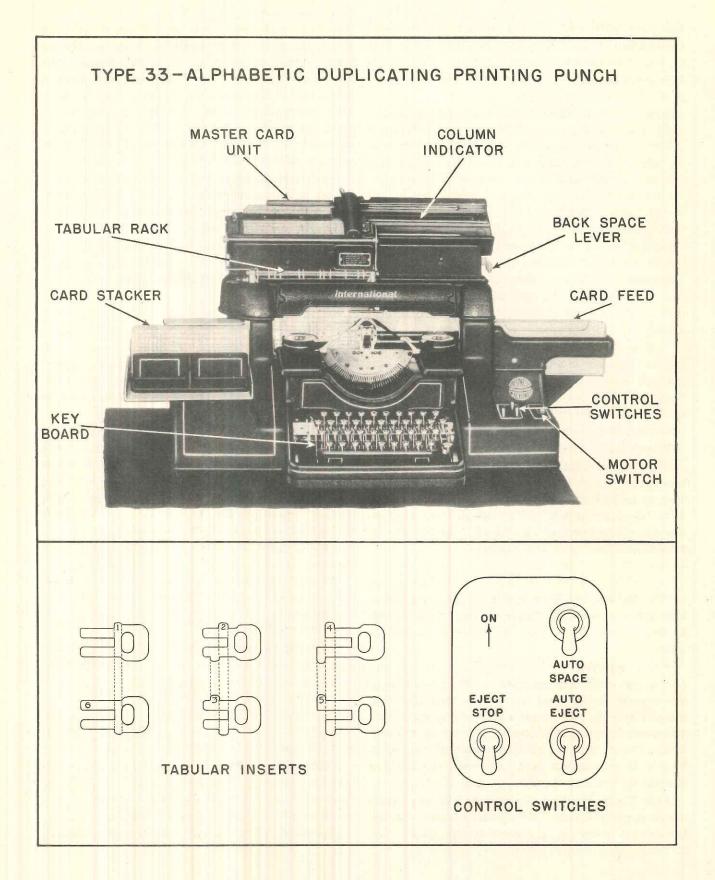
Tab Stop Insert (No. 6)—This insert, when placed in the rack with the "6" leg uppermost, The Tabular Rack on this machine is similar stops any skip which may have been started either automatically by a Tab Start Insert or manually by depression of the Tab Key. This stop insert must be placed in the last column position to be skipped or, in other words, in the column position preceding that in which punching is to be resumed.

> Duplication will be resumed after a skip has been stopped by a stop insert, if the master card is punched in the corresponding column, or if the Auto Space Switch is on.

Single Space Insert (No. 3)—This insert, when Three different kinds of Tabular Inserts are placed in the rack with the "3" leg uppermost, causes the card carriage to space over one column automatically. It must be placed in the column position which is to be skipped. Its use is necessary because Tab Start and Stop Inserts cannot both be placed in the same slot.

> Duplicating Cutout Insert (No. 4)—All information punched in a master card is normally duplicated in the detail cards, no Tabular Insert being required to start duplicating.

The Duplicating Cutout Insert, when placed in



the rack with the "4" leg uppermost, prevents duplication from that column position to the 80th or any intervening column position. This insert must be placed in the first column position which is not to be duplicated.

This insert need be used only when card columns which are punched in the master card must be key-punched differently in the detail cards, or to prevent automatic spacing over unpunched columns in the master card when the Auto Space Switch is ON. When columns which are punched in the master card are to be skipped in the detail cards, Tab Start and Stop, or Single Space Inserts are used, and automatically prevent duplication while the card carriage is in motion.

Duplicating Restart Insert (No. 5)—This insert, when placed in the rack with the "5" leg uppermost, causes the punch to "restart" (resume) duplicating from the master card.

Unlike the Tab Stop Insert, the Duplicating Restart Insert must be placed in the column position in which punching (duplication) is to be resumed. Duplicating Cutout and Restart Inserts may therefore be placed in adjacent slots to prevent duplication of any single column.

Eject Insert (No. 2)—This insert, when placed in the rack with the "2" leg uppermost, causes the card carriage to skip to the 80th column position and eject the card automatically, unless the Eject Stop Switch is ON, in which case ejection will not take place. The Eject Insert must be placed in the first column position which is to be skipped for ejection.

A card may be ejected manually at any time by depression of the Eject Key. Manual ejection is not prevented when the Eject Stop Switch is ON.

CONTROL SWITCHES

The power switch and three Control Switches are located on the right side of the machine. The control switches play an important role in the automatic operation of the punch, as mentioned in the description of the Tabular Inserts. Following is a complete description of the function of each of these switches.

Auto Space Switch—This switch is used only when duplicating from a master card. When turned on, it causes the card carriage to space automatically over all columns which are un-

punched in the master card. When detail cards are to be punched manually in some of the columns which are unpunched in the master card, automatic spacing over those columns must be prevented. This may be accomplished by using Duplicating Cutout and Restart Inserts, to prevent automatic spacing in certain columns; or by turning the Auto Space Switch Off, which will prevent automatic spacing in all columns.

Auto Eject Switch—This switch, when turned ON, causes automatic ejection of a card after its 80th column has been punched, unless the Eject Stop Switch is also ON.

Automatic ejection before the 80th column has been punched can be accomplished by using an Eject Insert, and is possible only when the Eject Stop Switch is OFF.

Eject Stop Switch—The Eject Stop Switch is turned on to prevent automatic ejection when it is necessary to change the master card in the master card unit. After the new master card is in place, the detail card just punched is ejected either by turning the Eject Stop Switch OFF or by depression of the Eject Key.

This switch need not be used to prevent automatic ejection which would be caused by the Auto Eject Switch, because the same result can be accomplished by turning the latter switch OFF. However, the Eject Stop Switch must be used to prevent automatic ejection which would be caused by an Eject Insert. It is therefore desirable to use the Eject Stop Switch habitually whenever it is necessary to prevent automatic ejection.

KEYBOARD

The keyboard of this machine is the same as that of the non-duplicating punch. A Back Space Lever is provided, located at the right of the Tabular Rack, as shown in the Operating Diagram.

The Tab Key, when depressed, causes the card carriage to skip to the column position following that in which a Tab Stop Insert is placed, or to the 80th column if no Tab Stop Insert intervenes.

The Eject Key, when depressed, causes the card carriage to skip to the 80th column, regardless of any Tabular Inserts intervening; and causes ejection of the card just punched, regardless of the positions of the Control Switches.

	MASTER CARD
2 2 2 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	
	333 33333333333333333333333333333333333
	44 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
,	DETAIL CARD
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3 3 3 3 3 3 3 3 3	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
444444444	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
5555555555	555555555555555555555555555555555555555
6666666666	
11111111111	1
8 8 8 8 8 8 8 8	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
9999999999	3 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
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