28 KEYBOARD SEND-RECEIVE AND RECEIVE-ONLY

TYPING REPERFORATOR SETS (KTR AND ROTR)

DESCRIPTION

1. GENERAL

1.01 The 28 Keyboard Send-Receive Typing Reperforator Set (KTR) is an electro-mechanical apparatus that provides terminal facilities for exchanging messages over appropriate transmission facilities including telegraph lines, telephone networks, and radio channels. An operator sends the messages by typing them on a keyboard which translates the data to a serial start-stop (teletypewriter) code. The originating KTR set records the transmission on communications-type tape in the form of code hole perforations and printed characters. The distant stations record the transmission on tape, page-width copy paper, or continuous business forms, determined by the facilities of the station. The sets operate at various speeds up to 100 words per minute.

1.02 The 28 Receive-Only Typing Reperforator Sets (ROTR) are similar to KTR Sets, but have no keyboard sending facilities. They are used in applications that require only the reception of messages on tape.

2. VARIATIONS

2.01 The Sets are available in several configurations to meet varying installation and operational requirements:

(a) Table Model Sets - These cover-enclosed KTR and ROTR Sets rest on any flat surface or a table, which contains space for additional equipment (Figs. 1, 3, 4, and 5).

(b) Miniaturized Set - Similar to the other table model ROTR Sets, but equipped with a close-fitting cover (Figs. 5 and 6).

(c) Multiple ROTR Sets - Provide the facilities of three ROTR sets in a single mounting. They are used, for example, in the Receiving and Monitor Groups of the Universal Torn Tape System (Figs. 7 and 8).

3. COMPONENTS

3.01 The component complement of the Sets may vary from one installation to another, depending upon the operational requirements. In general, a KTR Set consists of a typing reperforator unit, a keyboard base, a motor unit, an electrical service unit, and an enclosure. The receive-only base replaces the keyboard in Receive Only Sets; and in the Multiple Sets, it accommodates three typing reperforator units.

TYPING
REPERFORATOR
UNIT

COPYHOLDER

CHARACTER
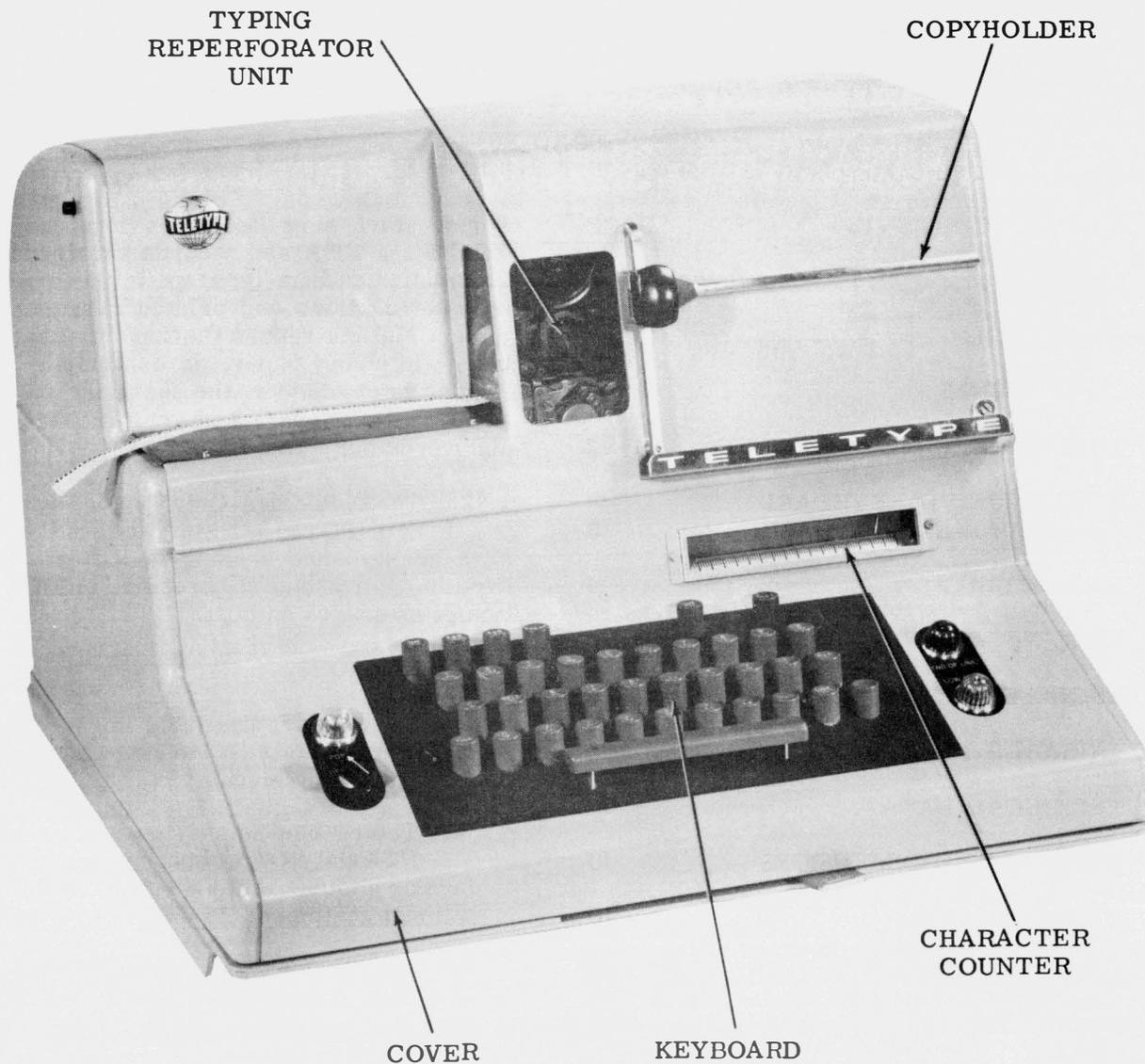COUNTER

COVER   KEYBOARD

Figure 1 - 28 Keyboard Send-Receive Typing Reperforator Set

A complete description of these components will be found in the appropriate section for a particular component.

3.02   In KTR Sets, the motor unit and typing reperforator unit are mounted on the base portion of the keyboard (Fig. 2). The motor unit supplies rotary motion through a gear set to the typing reperforator unit and the keyboard. Gear sets may be interchanged to obtain various operating speeds up to 100 words per minute. The transfer of rotary motion from the motor unit to the typing reperforator unit in Receive-Only Sets is achieved through interchangeable gear sets or, in certain Sets, by an optional, variable speed drive mechanism (Fig. 6). In the Multiple ROTR Sets, the typing reperforator units may operate at a common, or at independently varied speeds.

DRIVING GEARS   MOTOR UNIT
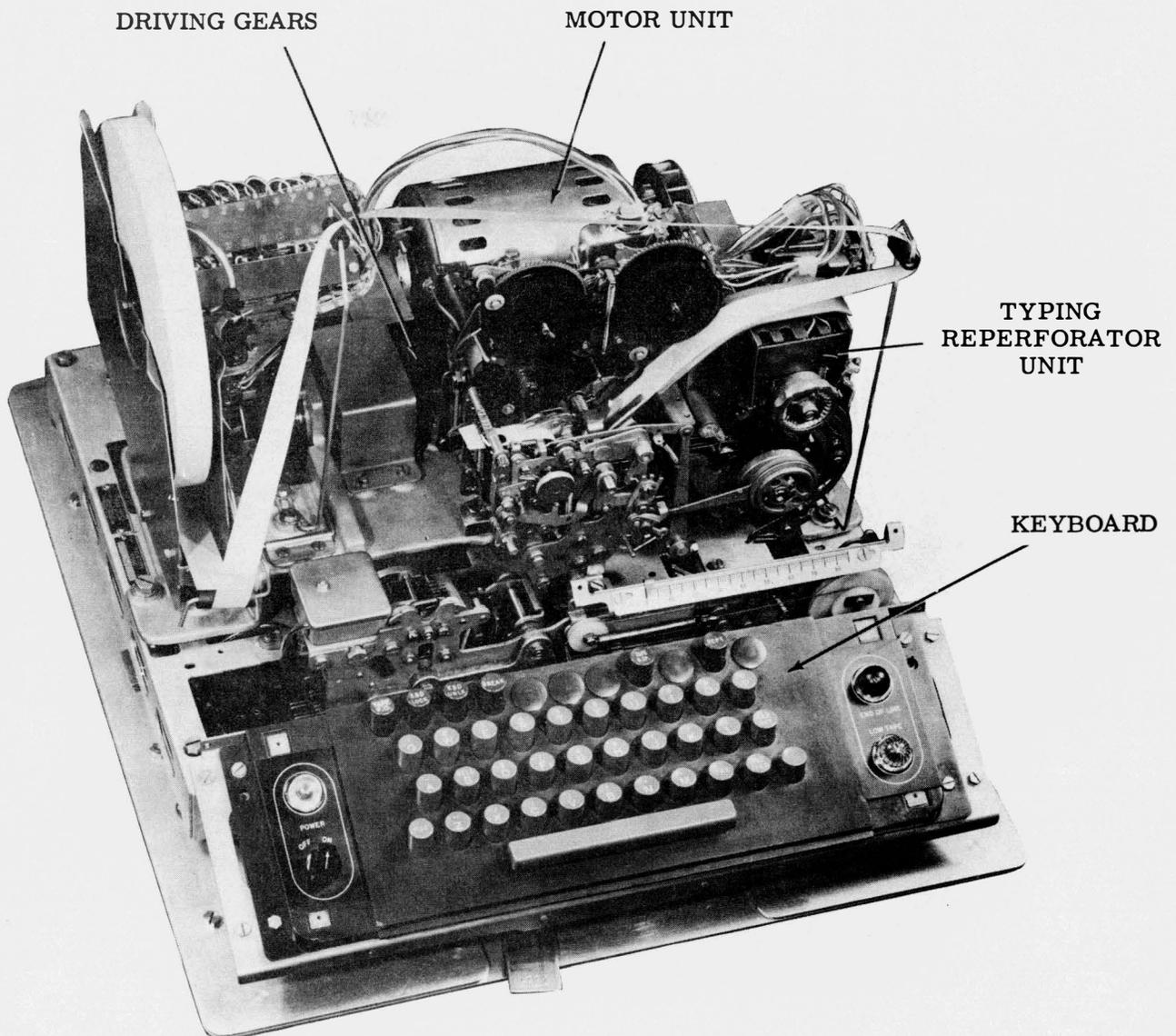
TYPING
REPERFORATOR
UNIT

KEYBOARD

Figure 2 - 28 Keyboard Send-Receive Typing Reperforator Set (Cover Removed)

TYPING REPERFORATOR UNIT (Fig. 2)

3.03   The typing reperforator unit contains the
mechanisms necessary for translating
electrical input signals into mechanical motions
that perforate code holes and print the equiva-
lent messages on tape. The unit may be equipped
to provide either fully-perforated or partially-
perforated (chadless) operation. A function box
is included to provide special functions such as
unshift on space and signal bell.

SEND-RECEIVE KEYBOARD AND RECEIVE-
ONLY BASE (Figs. 2, 4, 6 and 7)

3.04   Both the send-receive keyboard and the
receive-only base provide mounting fa-
cilities for the typing reperforator unit, motor,
drive gears, and various mechanism required
for control of the set. Unlike the receive-only
base, the send-receive keyboard is equipped
with mechanisms for generating and transmitting
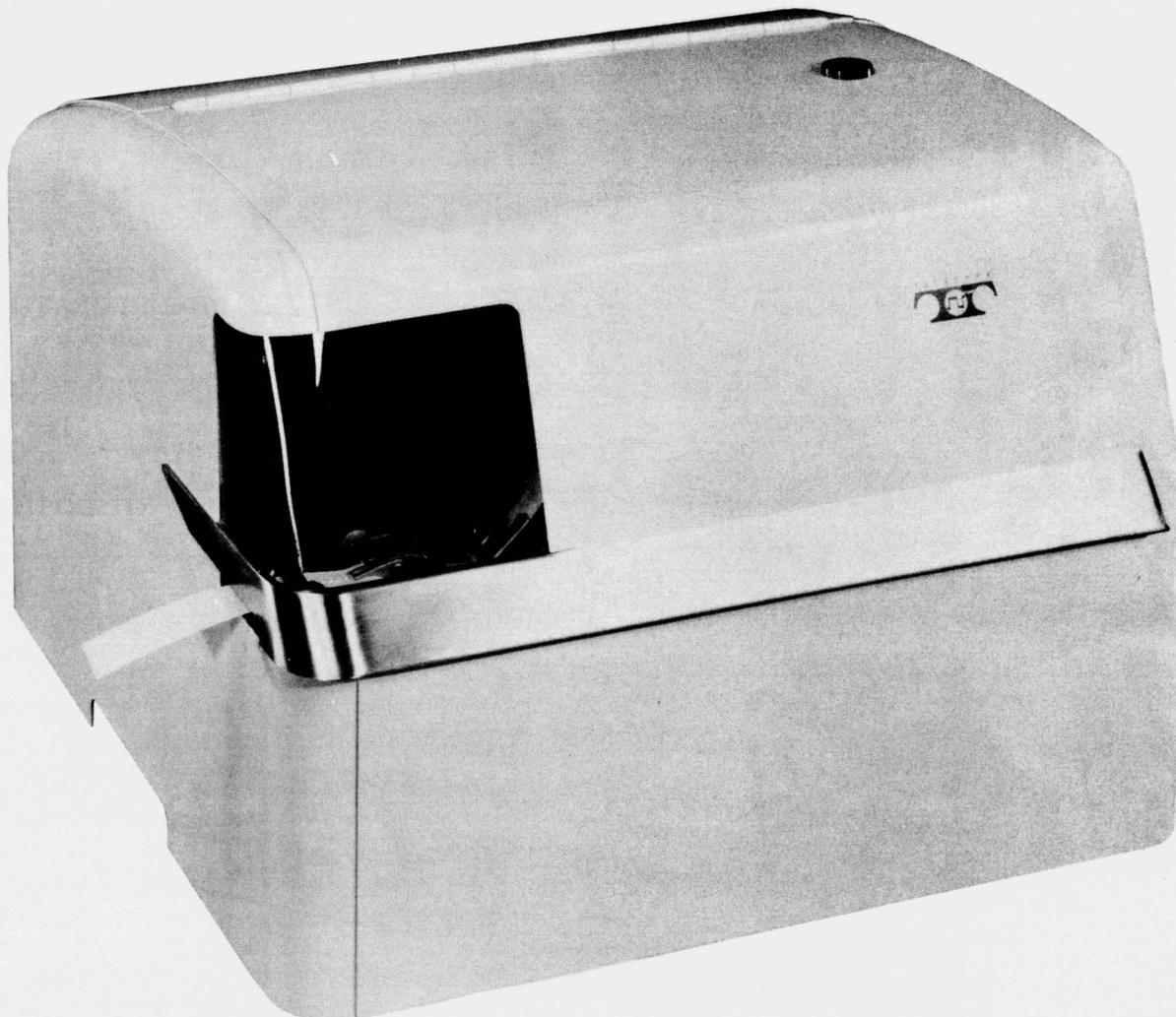a teletypewriter signal.

Figure 3 - 28 Receive-Only Typing Reperforator Set

MOTOR UNITS (Fig. 2)

3.05 The motor units that provide mechanical motion for KTR and ROTR sets are of two basic types: ac synchronous and ac/dc series governed. The ac synchronous motor is used when the power source is regulated; the ac/dc series governed motor operates from either regulated or unregulated power. The latter is required where only unregulated power is available. The units operate at the same speed and, to accommodate varying load requirements, they are available in standard and heavy-duty horsepower ratings.

ELECTRICAL SERVICE UNIT (Fig. 4)

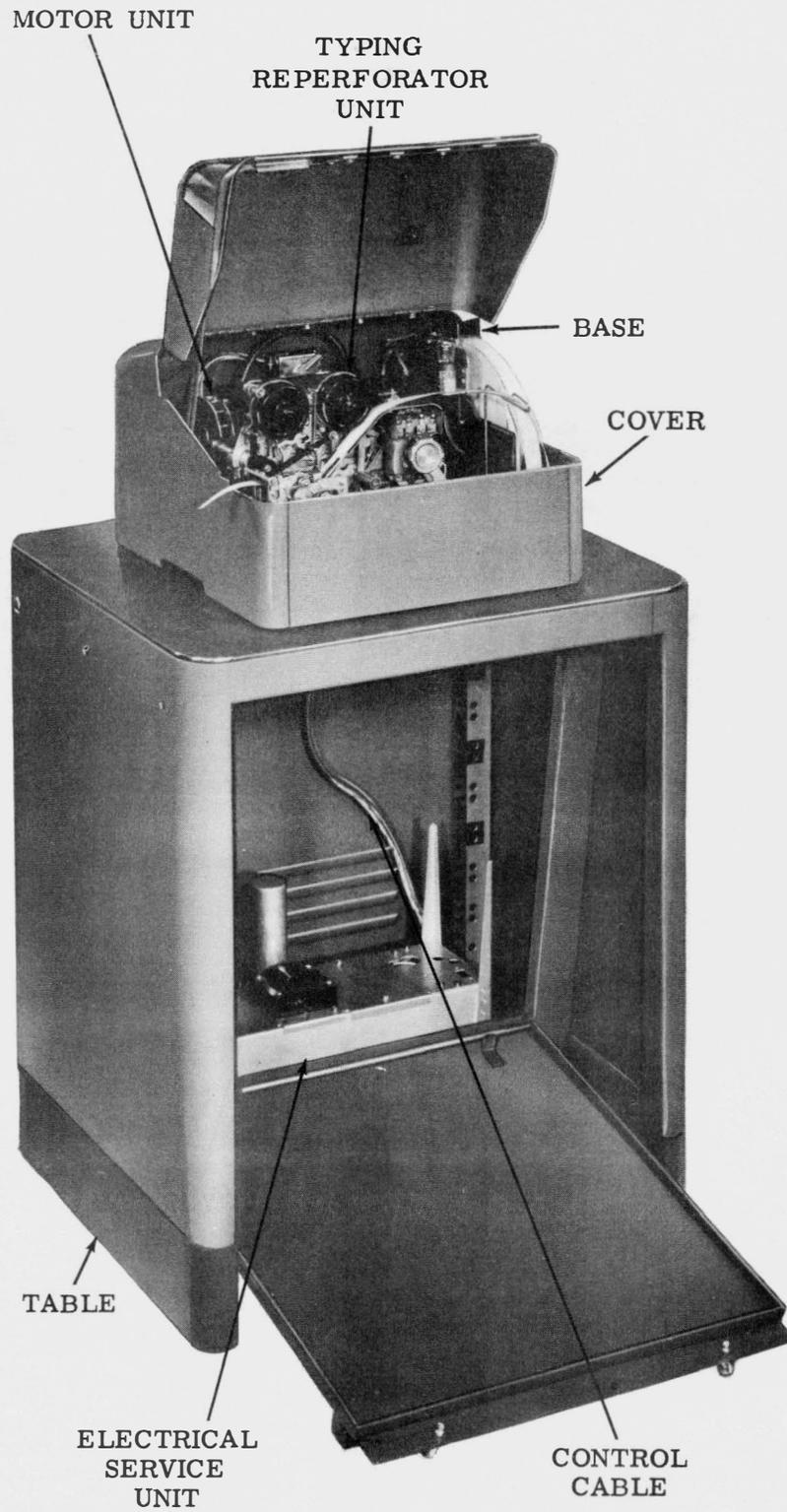3.06 The electrical service unit serves as the area of concentration for the wiring of

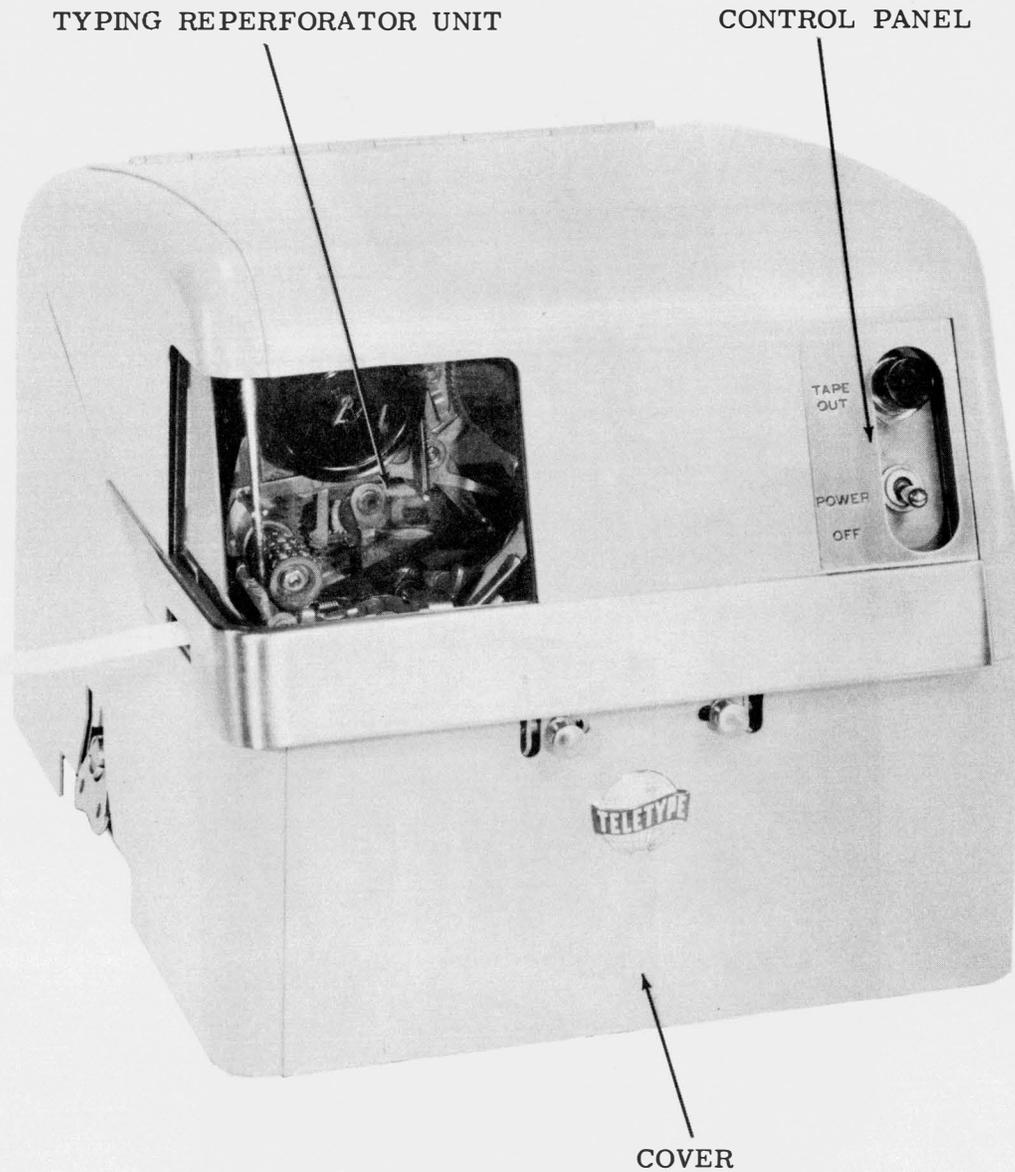Figure 4 - 28 Receive-Only Typing Reperforator Set and Reperforator Table

TYPING REPERFORATOR UNIT   CONTROL PANEL

COVER

Figure 5 - 28 Miniaturized Receive-Only Typing Reperforator Set

KTR and ROTR sets, and provides mounting fa-
cilities for various electrical assemblies and
components. It may include such optional as-
semblies as a line (polar) relay, line shunt re-
lay, rectifier, motor control mechanism, and
selector magnet driver. The set's main power
switch, convenience outlet and fuse, terminal
blocks, and interconnecting cables may also be
included.

ENCLOSURES

3.07   The components of KTR and ROTR Sets
        may be housed in the following enclo-
sures: The keyboard send-receive typing re-
perforator set cover, the receive-only reperfo-
rator set cover, the receive-only miniaturized
typing reperforator set cover, and the multiple
reperforator set cabinets. In addition, tables are
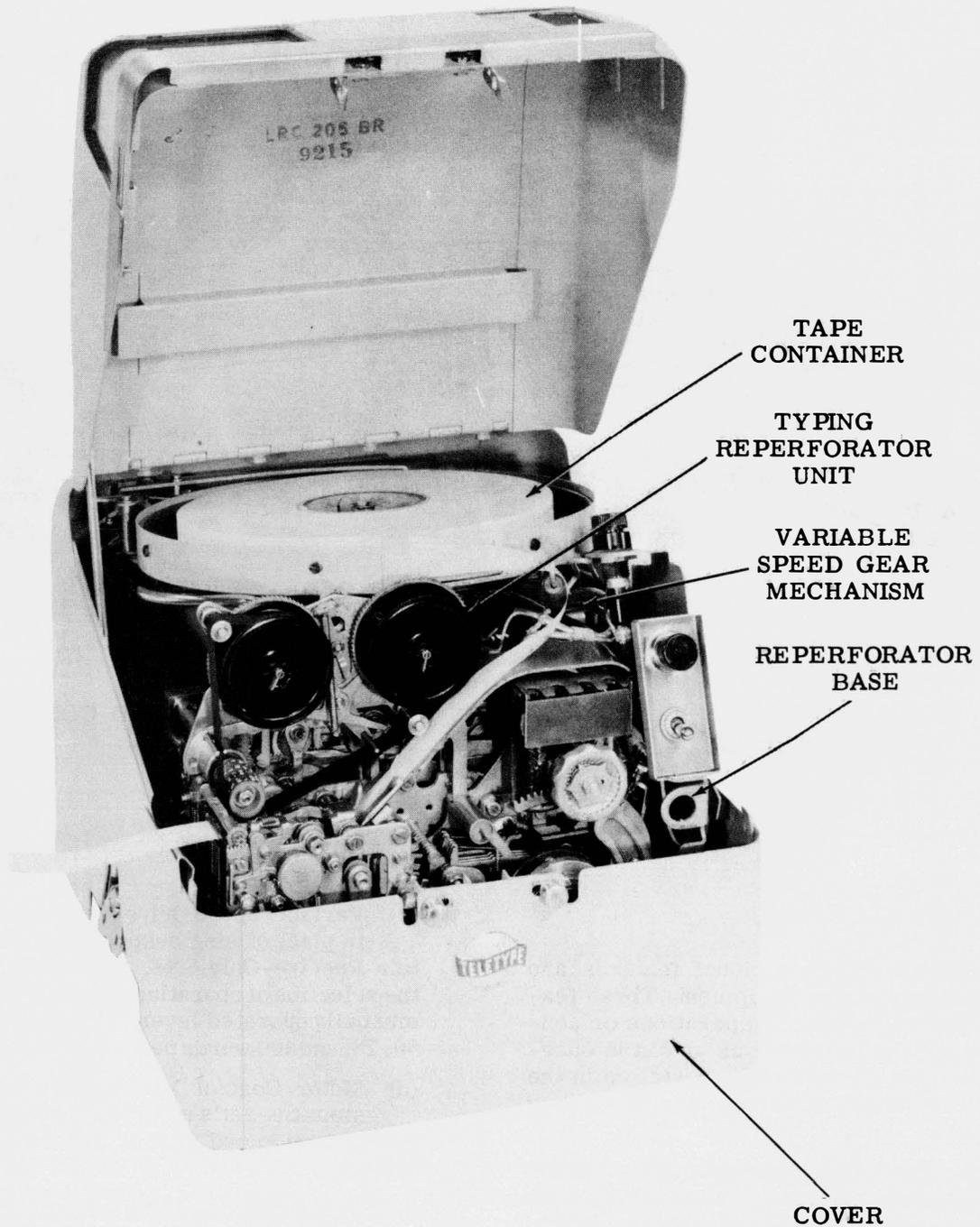available for supporting the cover-enclosed sets.

Figure 6 - 28 Miniaturized Receive-Only Typing Reperforator Set (Cover Open)
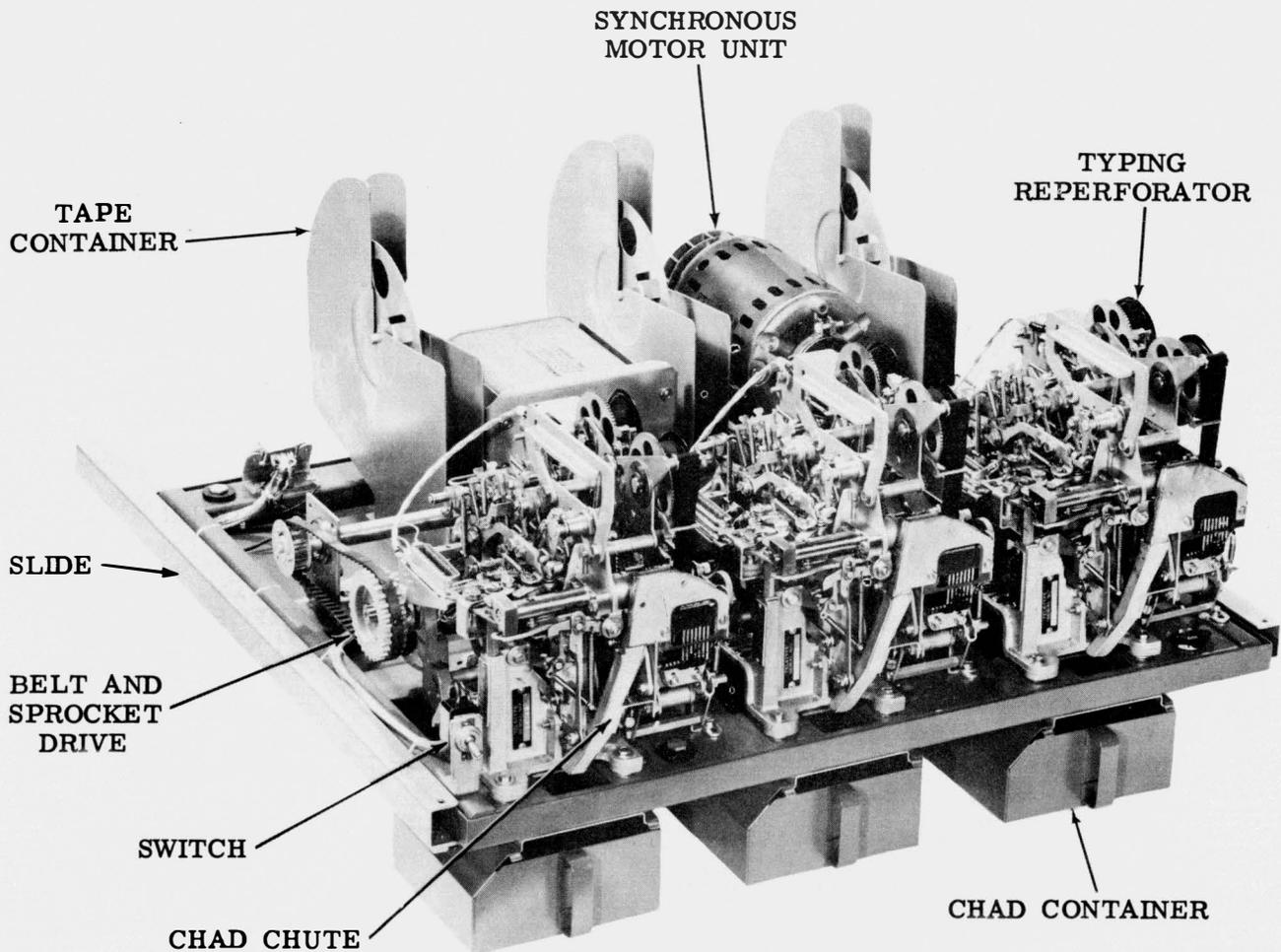
SYNCHRONOUS
MOTOR UNIT

TYPING
REPERFORATOR

TAPE
CONTAINER

SLIDE

BELT AND
SPROCKET
DRIVE

SWITCH

CHAD CHUTE

CHAD CONTAINER

Figure 7 - 28 Multiple Typing Reperforator Set

4. VARIABLE FEATURES

4.01 A wide variety of optional features are available with the equipment. These features, which provide special operations or control facilities, or which serve as an aid in operation, are in most cases readily installed in the field. Some of these features are described briefly below.

(a) Tape Feed Out Mechanisms - These mechanisms operate automatically or manually to step-out a length of blank or letters perforated tape for convenience in tape handling. Feed out may be interfering or non-interfering.

(b) Back Space Mechanisms - Operated manually or with power-drive, the mechanism retracts tape back through the punch block to allow erroneously perforated data to be obliterated by replacement with the letters code combination.

(c) Variable Speed Drive Mechanisms - Used in place of single-speed gear sets on certain Receive-Only Sets, this feature permits the selection of operating speeds by means of a manually operated lever. Typically, speeds of 60, 75, and 100 words per minute are available.

(d) Motor Control Mechanisms - Starts or stops the set's motor in response to predetermined signal line or separate line conditions.

(e) Contact Mechanisms - A number of electrical contacts are available to provide control of external equipment or for other special applications. These include code reading, timing and letters-figures contact mechanisms.

(f) Accessories - Various accessories are available to facilitate tape processing and handling including tape bins, chad chutes, low tape and tape out alarms, and tape winders.
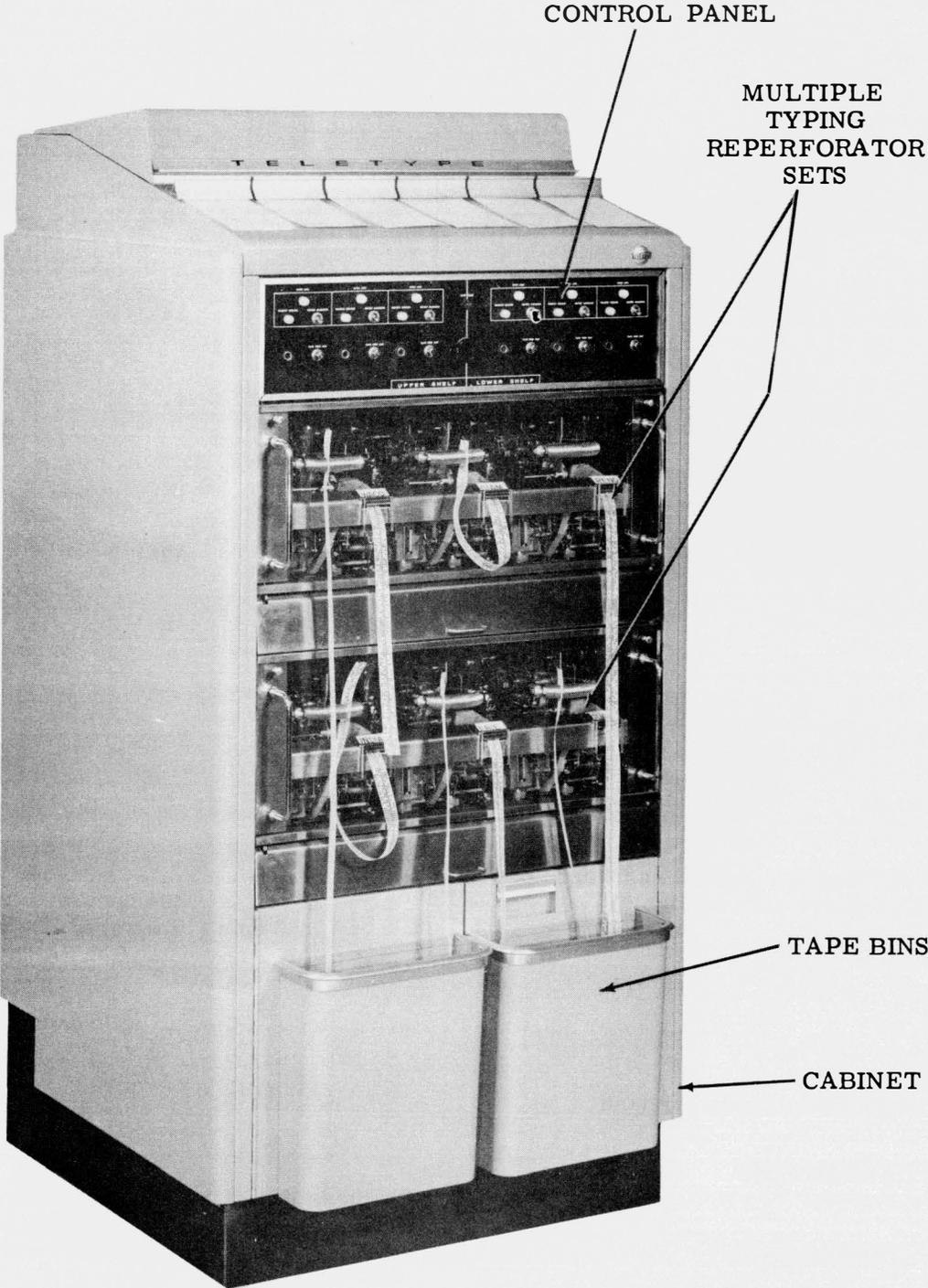
CONTROL PANEL

MULTIPLE
TYPING
REPERFORATOR
SETS

TAPE BINS

CABINET

Figure 8 - Typical 28 Multiple Reperforator Set Cabinet

5. TECHNICAL DATA

WEIGHTS AND DIMENSIONS

SET	APPROX. DIMENSIONS (INCHES)			APPROX. WEIGHT (POUNDS)
	Height	Width	Depth	
Keyboard Send-Receive Typing Reperforator Set	13-3/4	17	18-3/4	119
Receive-Only Typing Reperforator Set	9-1/2	13	14-1/2	48
Receive-Only Miniaturized Typing Reperforator Set	9-1/4	10	12	40
Typical 28 Multiple Reperforator Set Cabinet (Includes Multiple Typing Reperforator Sets)	57-1/2	25-1/2	32-1/2	270
Table	35	20-1/2	18-1/2	50

SIGNALING CODE . . . . Sequential five-unit start-stop

LINE CURRENT . . . . 0.020 or 0.060 ampere

SPEED (operations per minute and words per minute) . . . . 368 opm (60 wpm),
   (Other speeds are also available)   404 opm (67 wpm or 50 baud),
                                                      460 opm (75 wpm) or 600 opm (100 wpm)

TAPE
   Type . . . . Standard communications
   Width . . . . 11/16 inch
   Code perforations . . . . Chadless or fully perforated
   Characters or feed holes per inch 10

PRINTED CHARACTERS
   Height . . . . Chadless, 0.120 inch; fully perforated, 0.100 inch
   Width . . . . Chadless, 0.075 inch; fully perforated, 0.046 inch
   Location of printing . . . . Along upper edge of chadless perforated tape;
                                                      between feed holes on fully perforated tape

POWER REQUIREMENTS . . . . 115 volts ac, single-phase,
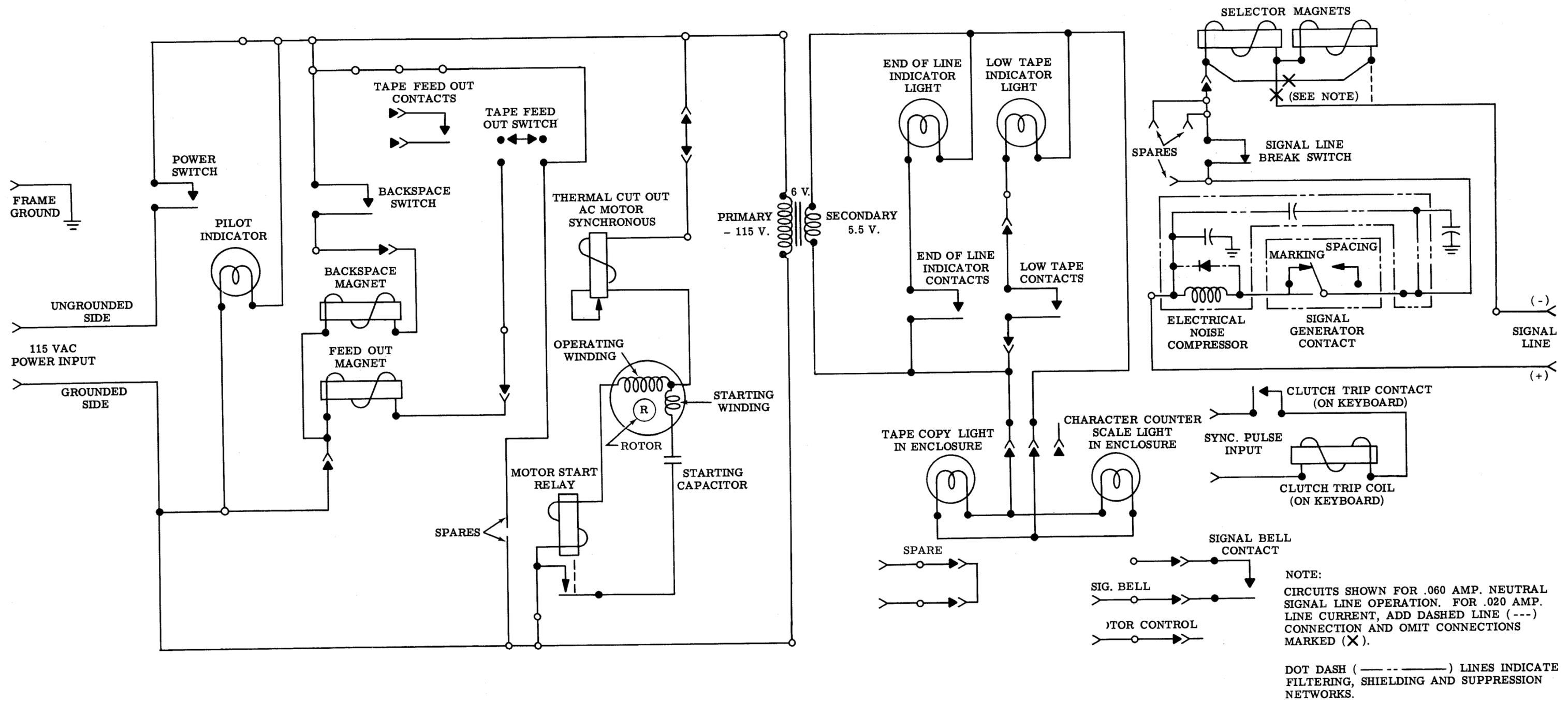   60 cycles

Figure 9 - Typical 28 Typing Reperforator Set Schematic Diagram

NOTE:
CIRCUITS SHOWN FOR .060 AMP. NEUTRAL SIGNAL LINE OPERATION. FOR .020 AMP. LINE CURRENT, ADD DASHED LINE (---) CONNECTION AND OMIT CONNECTIONS MARKED (X).

DOT DASH (—— ·· ——) LINES INDICATE FILTERING, SHIELDING AND SUPPRESSION NETWORKS.