

BELL SYSTEM PRACTICES
Teletypewriter Stations

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AT&T Co Standard

20 TELETYPEWRITER APPARATUS

LIST OF UNITS AND INDEX OF INSTALLATION AND MAINTENANCE INFORMATION

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1. GENERAL

1.01 This section lists the units, with code and part numbers, and indexes the installation and maintenance information for the six-unit code, 20 teletypewriter apparatus used with teletypesetter service for the press associations.

1.02 This section is reissued to:

- (1) List information on sets of parts which provide auxiliary features.

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- (2) List the cords, plugs, relays and rectifiers used with the 20 type apparatus.
- (3) List information on the typing unit having contacts to control an associated reperforator.
- (4) List information on the transmitter distributor having the rubout deleting feature.
- (5) Incorporate the Addendum, Issue 1.
- (6) Rearrange the material for more convenient reference. The changes are too extensive to be indicated by marginal arrows.

1.03 The sixth element added to the five-unit code is designated zero. It is transmitted after the other five, just before the stop element. It actuates the zero sword and the number six vane on the typing unit.

1.04 The apparatus listed herein is for 53- and 66-speed teletypesetter service for press associations, particularly the Associated Press, the United Press and the International News Service. For magazine publishing work, because of the complexity of the services, the requirements must be determined for each individual service.

1.05 In teletypesetter service, items of copy are reproduced as perforated tape by means of a teletypesetter perforator. The material represented by this perforated tape can then be sent over the circuit to the newspaper offices by a transmitter distributor. An associated teletypewriter at the sending station may be used to provide home copy. The material coming into the newspaper office will be received by a reperforator which duplicates the original tape, and sometimes by an associated page teletypewriter. Then a tape perforated with such of the material as is desired, is fed into an operating unit attached to the linecasting machine where it will be set automatically in type. The perforated tape is prepared so that the lines of this cast type will be fully justified. The operating units attached to the linecasting machines are owned by the customer.

1.06 The combinations of 20 teletypewriter apparatus with the standard teletypesetter perforator in bureau or newspaper offices are determined by the customer's requirements from the following list:

- Teletypesetter Perforator
- 20 Sending and Receiving (KSR) or Receiving Only (RO) Teletypewriter.
- 20 Transmitter-Distributor (XD)
- 20 Reperforator (RPE)

2. APPARATUS DESCRIPTION

2.01 20 Receiving Only (RO) Teletypewriter

(a) Operating Features

- (1) The typing unit uses 6-inch paper centrally located on the platen. It feeds 6.7 lines per inch, prints 11.7 characters per inch, and has a printing line of 56 characters (with the 57th partly overlapping the 56th). Where it is desired to print 10 characters per inch with a printing line of 48 characters (with the 49th partly overlapping the 48th) the parts listed in paragraph 2.07 will be required.
- (2) The typing unit is provided with a magnet-operated ribbon shift to provide printing in two colors, red or black.
- (3) The typing unit has a pulling-magnet selector.
- (4) The typing unit has six associated pressure-rollers and the standard paper chute. Where a single pressure-roller is desired, see the set of parts listed in paragraph 2.07.

(b) Component Parts

Base BB32

Cover BPC200AD

Cover Front Plate TP115704AD

Rectifier KS-5663-L7

Relay 255A

Typing Unit BP172/347

BP176/347 (With contacts to control an associated reperforator. This typing unit is furnished only when specified)

See paragraph 2.07 for auxiliary features and paragraph 2.06 for pallets.

(c) Mounting

(1) Table

XRT200AD

(2) Table Accessories

Electrical Service Unit TP117852 or TP126287 (The TP126287 is the same as the TP117852 except that the power components are not wired) Panel TP106974AD

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(d) Power, Motors and Gears

Power (120 volts)	Motor Unit	Gear Set No.	
		53-speed	66-speed
ac regulated	15D or M	TP87370	TP106955
ac non-regulated	15A or C	TP123719	TP121979
dc	15B	TP123719	TP121979

(e) Cords

M2DG cord 2-1/2 feet long E/W Hubbell 7092 Cap

M4K cord 2-1/2 feet long

M2CN cord 3 feet long E/W 347A plug

M2CN cord 3 feet long E/W 347B plug when the teletypewriter is used with a transmitter-distributor.

D3AY cord 5-1/2 feet long

KS-7993 power cord 10 feet long or KS-15143-18-GA3-conductor 10-foot cord E/W 9750 Hubbell Cap when a protective ground is required.

(f) Wiring Arrangement

See the BSPs indexed in paragraph 5.01 (b)

2.02 20 Send and Receive (KSR) Teletypewriter**(a) Operating Features**

The same as the 20 RO teletypewriter. See paragraph 2.01 (a).

(b) Component Parts

In addition to those components furnished with the 20 RO teletypewriter, paragraph 2.01 (b), the 20 KSR teletypewriter is furnished with the following:

BK5PA Keyboard (See paragraph 2.06 and Fig. 2 for keytops and pallets)

Copyholder TP115700AD

Cover Front Plate TP115706AD instead of Cover Front Plate TP115704AD

(c) Mounting

The table and its accessories are the same as those provided for the 20 RO teletypewriter, paragraph 2.01 (c), except for the following:

Baffle Plate TP106977AD instead of Panel TP106974AD

(d) Power, Motors and Gears

The same as the 20 RO teletypewriter. See paragraph 2.01 (d).

(e) **Cords**

The same as the 20 RO teletypewriter. See paragraph 2.01 (e).

(f) **Wiring Arrangement**

See the BSPs indexed in paragraph 5.01 (b).

2.03 **Teletypesetter Perforator (TPE200) and 20 Transmitter-Distributor (XD207 and XD222) on XT201AD Table**

(a) **Operating Features**

- (1) The perforator has an advanced tape-feed-hole punch pin.
- (2) The perforator uses 7/8-inch-wide tape.
- (3) The transmitter-distributor has a tight-tape stop switch.

(b) **Component Parts**

The perforator is provided with a motor cord for connection to the table outlet. A rectifier is not required.

(c) **Mounting**

(1) **Table**

XT201AD (The circuit label for this table is Teletype Corporation Drawing WD-1863. This table is equipped with the necessary fuse mountings and other electrical fittings, a transmitter-distributor mounting plate and a removable rear cover.

(2) **Table Accessories**

Shelf TP115759AD

Tape Winder TP115739AD

Unwind Reel TP91819

} see the BSPs indexed in paragraphs 5.01 (a) and 5.01 (c)

(d) **Power, Motors and Gears**

- (1) **Teletypesetter Perforator** (See paragraph 2.06 and Fig. 1 for keytops)

Power (120 volts)

Code

60 cycle ac

TPE200ADBL/NB8R

dc

TPE200ADBG/NB8R

The coded units include motors and gears.

(2) **20 Transmitter-Distributor**

<u>Power (120 volts)</u>	<u>Code</u>	
	<u>53-speed</u>	<u>66-speed</u>
ac regulated	XD207AD/BB	XD207AD/JS
ac non-regulated	XD207AD/KV	XD207AD/KP
dc	XD207AD/KX	XD207AD/KW

The transmitter-distributor equipped with the rub-out deleting feature (see paragraph 2.07) is coded XD222AD/ instead of XD207AD/. Add suffix letters as for the XD207AD/ to indicate the speed and power supply desired. The coded units include motors and gears.

(e) **Cords**

M3AY cord 2-1/2 feet long E/W Hubbell 7055 Cap KS-7993 power cord 10 feet long or KS-15143-18-GA3-conductor 10-foot cord E/W 9750 Hubbell Cap when a protective ground is required.

(f) **Wiring Arrangement**

See the BSPs indexed in paragraphs 5.01 (a) and 5.01 (c)

2.04 **20 Transmitter-Distributor (XD207 and XD222) alone on XRT200AD Table**(a) **Operating Features**

The same as those indicated for the transmitter-distributor in paragraph 2.03 (a).

(b) **Component Parts**

The coded units include the components.

(c) **Mounting**(1) **Table**

XRT200AD (See the BSPs indexed in paragraph 5.01 (c) for table drilling)

(2) **Table Accessories**

Electrical Service Unit TP117852 or TP126287 (The TP126287 is the same as the TP117852 except that the power components are not wired.

14C Mounting Plate

Panel TP106974AD

Unwind Reel TP91819 (See the BSPs indexed in paragraph 5.01 (c))

(d) **Power, Motors and Gears**

The same as those indicated for the transmitter-distributor in paragraph 2.03 (d) (2)

(e) **Cords**

KS-7993 power cord 10 feet long or KS-15143-18-GA3-conductor 10-foot cord E/W 9750 Hubbell Cap when a protective ground is required.

(f) **Wiring Arrangement**

See the BSPs indexed in paragraph 5.01 (c)

2.05 **20 Reperforator**

(a) **Operating Features**

(1) The reperforator has an advanced tape-feed-hole punch pin.

(2) The reperforator has a pulling-magnet selector.

(3) The reperforator uses 7/8-inch-wide tape.

(b) **Component Parts**

KS-5663-L7 Rectifier (As required)

Relay 255A

RPE21 Reperforator Unit

RPEC200AD Cover

(c) **Mounting**

(1) **Table**

XRT200AD

(2) **Table Accessories**

Electrical Service Unit TP117852 or TP126287 (The TP126287 is the same as the TP117852 except that the power components are not wired.)

Panel TP106974AD

Shelf TP115817AD

Tape Winder TP115739AD

(d) **Power, Motors and Gears**

Power (120 volts)	Motor Unit	Gear Set No.	
		53-speed	66-speed
ac regulated	15D or M	TP88031	TP106955
ac non-regulated	15A or C	TP123713	TP123500
dc	15B	TP123713	TP123500

(e) **Cords**

M2DG cord 2-1/2 feet long E/W Hubbell 7092 Cap

M4K cord 2-1/2 feet long

M2CN cord 3 feet long E/W 347A plug

D3AY 5-1/2 feet long

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KS-7993 power cord 10 feet long or KS-15143-18-GA3-conductor 10-foot cord E/W 9750 Hubbell Cap when a protective ground is required.

(f) **Wiring Arrangement**

See the BSPs indexed in paragraph 5.01 (d)

2.06 **Keytops and Pallets**

- (1) The keyboard arrangements provided for the press association services are as follows:

	<u>Keyboard</u>	<u>Fig</u>	<u>No of Keys</u>	<u>Type</u>	<u>Note</u>
Perforator	NB	1	60	Fraction	1
Teletypewriter	PA	2	49	Fraction	2

Note 1: A bag which is tied to the keyboard contains a bezel, two celluloid discs, an AP over hyphen character disc and an INS over hyphen character disc. These keytop character discs are for use when required instead of the UP over hyphen keytop provided on keylever 54.

Note 2: AP and INS character discs are provided under the UP character disc on the keytop for keylever 47.

- (2) Pallets: Type arrangement 347 is associated with the PA keyboard on the 20 teletypewriter. Installed on the typebar operated by key 47 is a pallet with UP over hyphen. In an attached bag, AP over hyphen and INS over hyphen pallets are provided. Care must be taken to provide the proper keytop and pallet for the service involved.

2.07 **Auxiliary Features and Test Tape**

- (1) The following are the auxiliary features used with the 20 type apparatus.

<u>Parts</u>	<u>Description</u>	<u>Reference</u>
Upper spacing gear TP74192	Parts required to make the teletypewriter print 10 characters per inch, with 48 characters per line (49th overlaps 48th)	Teletype Corp. bulletin 1037B.
Spacing rack TP74366		
Lockwasher TP4852		
TP113695	Set of parts to provide contacts on a 20 teletypewriter to cut on an auxiliary reperforator on a BLANK signal and cut it off on a BELL signal.	Teletype Corp. specification 5685S.

TP113717 Set of parts to modify Teletype Corp. a 20 transmitter-distributor to prevent the transmission of signals from rubout selections in the tape. specification 5718S.

TP115790 Set of parts to convert Teletype Corp. a 15 or 20 teletypewriter to a single-pressure roller from the six associated pressure-roller type. specification 5692S.

(2) Test Tape

TP126791 A tape containing a test sentence and other signal patterns for testing the operation of 20 typing units and reperforators.

Caution: Tapes produced by a reperforator being tested with the test tape must not be introduced into the teletypesetter operating unit, since, if certain errors have been punched in the tape, a line shorter than the justified line length will be cast. This may cause hot lead to be sprayed from the linecasting machine endangering personnel in the area. Therefore, these reperforated test tapes should be destroyed or immediately removed.

3. SPARE PARTS

3.01 Packages of spare parts are available for the 20 type units as outlined below. The component parts for the sets are itemized in the Teletype Corporation check lists.

<u>20 Type Apparatus</u>	<u>Spare Set of Parts</u>	<u>Check List Number</u>
Standard Teletypesetter Perforator	TP91678	91678
Transmitter-Distributor	TP81110	81110
Reperforator	TP81064	81064
Typing Unit	TP113627	113627
Teletypewriter Base	TP113503	113503
Teletypewriter Motor Unit	TP113556	113556

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4. SYMBOLS USED IN EQUIPMENT CODES

4.01 The following are the symbols with their meanings as applied to teletypesetter service.

AD	Suffix, denoting dark-brown-wrinkle finish
BB	(1) Suffix, denoting synchronous motor and gears for 53-speed trans.-distributor
	or
	(2) Code letters for 15 and 20 teletypewriter base
BG	Suffix, denoting dc motor unit for perforator
BK	Code letters for 15 and 20 keyboards
BL	Suffix, denoting 60-cycle synchronous motor for perforator
BP	Code letters for 15 and 20 typing units
BPC	Code letters for 15-teletypewriter cover
JS	Suffix, denoting synchronous motor and gears for 66-speed trans.-distributor
KP	Suffix, denoting series motor and gears for 66-speed trans.-distributor
KSR	Keyboard sending and receiving (for teletypewriter)
KV	Suffix, denoting series motor and gears for 53-speed trans.-distributor
KW	Suffix, denoting dc motor and gears for 66-speed trans.-distributor
KX	Suffix, denoting dc motor and gears for 53-speed trans.-distributor
R	Suffix, which refers to selector-bar arrangement on the perforator
RO	Receiving-only (for teletypewriter)
RPE	Code letters for the reperforator
RPEC	Code letters for the reperforator cover
TP	Prefix, denoting Teletype Corp. part number
TPE	Code letters for teletypesetter perforator
TTY	Teletypewriter
XD	Code letters for the transmitter-distributor
8	Refers to counting codelever arrangement on perforator

5. REFERENCE TO BELL SYSTEM PRACTICES AND TELETYPESETTER CORPORATION BULLETINS

5.01 The following lists the BSPs applicable to the 20 type apparatus and the Teletypesetter Perforator, and the Teletypesetter Corporation bulletins applicable to the perforator.

(a) **Teletypesetter Perforator**

(1) **BSPs**

P30.656 (Perforator and 20XD on XT201 Table) Station Assembly—19A Teletypewriter Table—(Mount the tape winder, TP115739AD, and the unwind reel, TP91819, as per plan SA6.25.)

P90.026 Details For Equipping XT201 Table with Fixed Mounting for Tape Take-off Reel and Guard for Tight-Tape Arm.

P90.801 Circuit Arrangement for Automatic Transmission-Perforator and 20 Transmitter-Distributor on XT201 Table and 20 KSR TTY on XRT200 Table

(2) **Teletypesetter Corporation Bulletins**

Bulletin No. 3—Description of the Keyboard Tape Perforator

Bulletin No. 5—Adjustments of Keyboard Tape Perforator

Bulletin No. 50—Parts—Keyboard Tape Perforator Teletype Corporation Drawing WD-1446-A,—

Wiring Diagram—Keyboard Tape Perforator

Perforator Operator's Training Reference Manual

(b) **20 Teletypewriter**

(1) **BSPs**

P30.021 Selecting Codes
P30.412 15 TTY Internal Wiring Variations (M2.17 for polar operation)

P31.106 Electrical Service Unit
P32.001 Selector Mechanism—Requirements and Procedures

P36.301 Wiring—15-type (Fig. 17 for internal wiring)

P36.541 Maintenance Inspections and Tests (15-type)

P36.601 and P36.601.1 Lubrication (15-type)

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P36.610	Typing Unit—Requirements and Procedures (15-type)
P36.620	Keyboard—Requirements and Procedures (15-type)
P39.301	Wiring
P39.601	Lubrication
P39.610	Typing Unit—Requirements and Procedures
P39.620	Keyboard—Requirements and Procedures
P90.026	Details for Equipping XT201 Table with Fixed Mounting for Tape Take-Off Reel and Guard for Tight-Tape Arm
P90.801	Arrangement for Transmission—20 KSR on XRT200 Table
P96.060	External Break Circuit—Slow-Release-Relay Circuit

(c) **20 Transmitter-Distributor**

(1) **BSPs**

P30.656	(Perforator and 20XD on XT201 Table)	Station Assembly—19A TTY Table (Plan SA6.25 for mounting the tape winder TP115739AD and the unwind reel TP91819.)
P31.106		Electrical Service Unit
P35.331		Wiring (14-type)
P35.542		Maintenance Inspections and Tests (14-type)
P35.602		Lubrication (14-type)
P35.631		Requirements and Procedures (14-type)
P39.301		Wiring
P39.631		Requirements and Procedures

P90.026	Details for Equipping XT201 Table with Fixed Mounting for Tape Take-Off Reel and Guard for Tight-Tape Arm
P90.315	14 and 20 Transmitter-Distributor On XRT200 Table-Drilling and Circuit
P90.801	Circuit Arrangement for Automatic Transmission—Perforator and 20 Transmitter-Distributor on XT201 Table and 20 KSR TTY on XRT200 Table

(d) 20 Reperforator

(1) BSPs

P30.411	14 TTY-Internal Wiring Variations (M5.03 for polar operation)
P31.106 P32.001	Electrical Service Unit Selector Mechanism—Requirements and Procedures
P35.332	Wiring (14-type) (Fig. 1)
P35.603	Lubrication (14-type)
P35.650	Requirements and Procedures (14-type)
P39.301	Wiring
P39.550	Maintenance Inspections and Tests
P39.650	Requirements and Procedures

(e) Radio Interference Filters

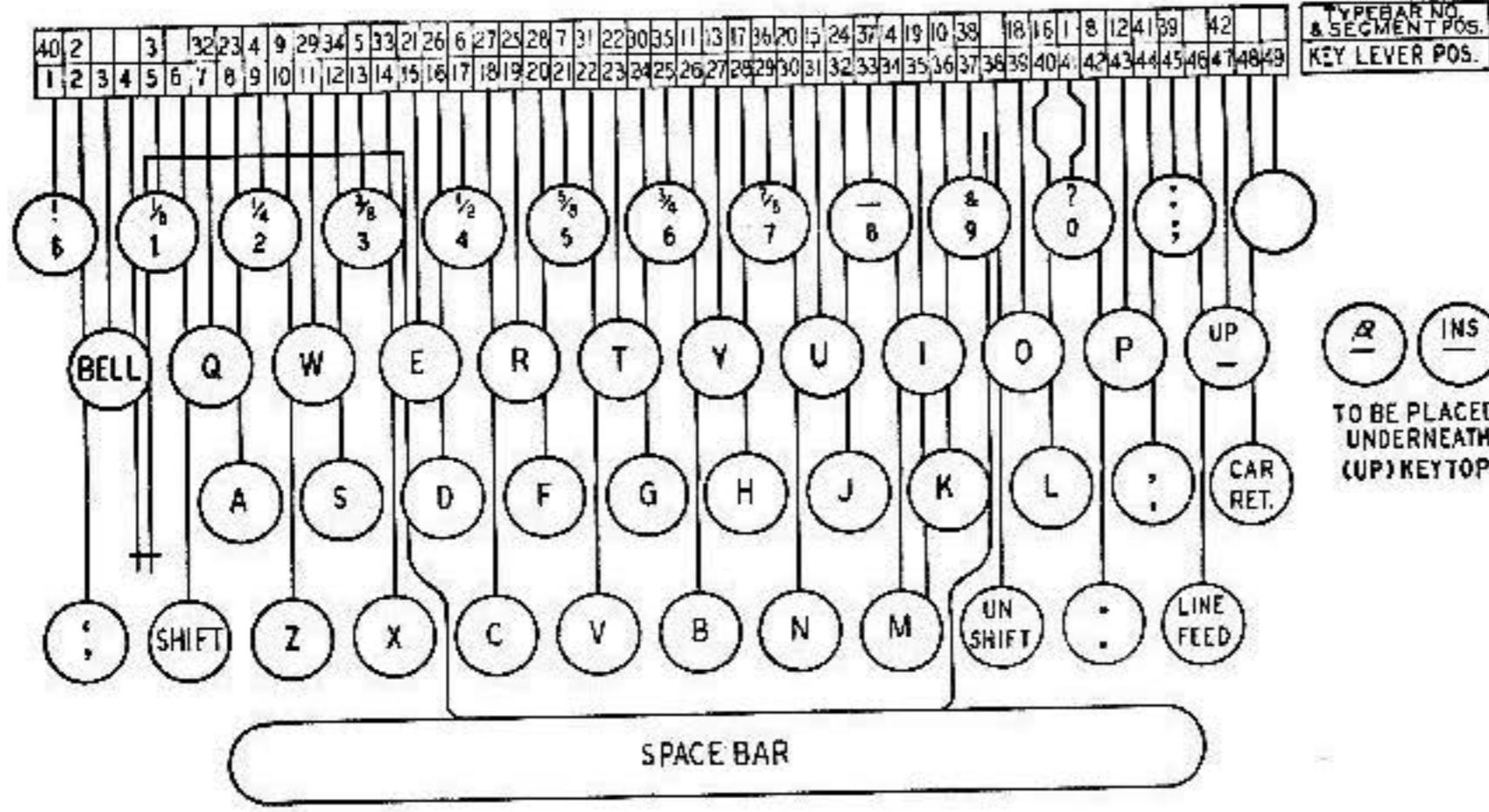
(1) BSPs

P31.320	List of Available Radio Induction Suppression Filters
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(f) Stationery and Ribbons

(1) BSPs

P30.022	Information On Stationery For Use With TTY
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20 TELETYPEWRITER KEYBOARD
 FOR
 PRESS ASSOCIATION
 TELETYPESETTER SERVICE
 KEYPAD ARRANGEMENT PA
 FIG. 2