

THE WESTERN UNION TELEGRAPH COMPANY  
RESEARCH AND ENGINEERING DEPARTMENT

ENGINEERING CATALOG  
92-D  
Superseding  
92-C  
OCTOBER 20, 1961

MODEL 28 TELEPRINTER  
CATALOG OF PARTS

This catalog lists additional parts and changes to parts used on the Model 28 Teleprinter. This catalog consists of Teletype Bulletin 1149-B and drawings of parts and sets of parts used on the teleprinter.

Keyboard layouts, a universal function bar coding chart and descriptions of accessories to the Model 28 Teleprinter are included.

ENGINEERING BULLETIN:

5349 Gears

SPECIFICATIONS REFERRED TO:

11753 Model 28 TPR Installation  
12505 Stunt Box and Interconnecting Cords

TELETYPE BULLETIN INCLUDED:

1149-B Model 28 Page Printer Set - Parts

DRAWINGS INCLUDED:

171773-A-1 Keyboard Layout - WU Type A Keyboard  
171774-A-1 Keyboard Layout - WU Type C Keyboard  
171775-B-1 Keyboard Layout - WU Weather Keyboard  
171987-E-7 Coding Chart - Universal Function Bar 153440  
174316-D-8 General Features of Component Units  
174700-C-1 Function Mechanism - Set of Parts 211905  
174701-C-1 Function Mechanism - Set of Parts 211906  
Space Suppression.  
174702-D-1 Function Mechanism - Set of Parts 211907 -  
Blocking, Latch-Unlatch  
174703-D-1 Function Mechanism - Set of Parts 211908 -  
Blocking, Latch-Unlatch, Space Suppression  
174704-D-1 Function Mechanism - Set of Parts 211909 -  
Latch-Release

DRAWINGS INCLUDED: (Cont'd.)

174705-C-1	Function Mechanism - Set of Parts 211910 - Space Suppression, Release
174706-B-1	Function Mechanism - Set of Parts 211911 - Latch-Release
174707-D-1	Function Mechanism - Set of Parts 211912 - Latch-Release, Function Pawl Spans 2 Slots
174708-D-1	Function Mechanism - Set of Parts 211913 - Latch-Release, Function Pawl Spans 3 Slots
174709-D-1	Function Mechanism - Set of Parts 211914 - Latch-Release, Function Pawl Spans 4 Slots
174710-C-1	Code Bar Shift Mechanism - Set of Parts 211915 - Shift-Unshift, Unshift on Space
174711-B-1	Code Bar Shift Mechanism - Set of Parts 211916 - Using Single Function Slide 153795 (1 Slot)
174712-A-1	Code Bar Shift Mechanism - Set of Parts 211917 - Using Multiple Function Slide 154642 (2 Slots)
174713-B-1	Code Bar Shift Mechanism - Set of Parts 211918 - Using Multiple Function Slide 154639 (4 Slots)
174714-C-1	Function Mechanism - Set of Parts 211920 - Space Suppression, Release with Stud As- sembly
174715-B-1	Code Bar Shift Mechanism - Set of Parts 154750 - Using Multiple Function Slide 157164 (2 Slots)
174716-D-1	Function Mechanism - Set of Parts 211919 - Blocking, Latch-Unlatch, modified Function Lever
174717-D-1	Function Mechanism - Set of Parts 211921 - Latch-Unlatch
174718-E-1	Function Mechanism - Set of Parts 211922 - Blocking, Latch-Unlatch, Modified Function Lever
174719-C-1	Function Mechanism - Set of Parts 211923 - Self Blocking, Blocking Release & Latch- Unlatch, Space Suppression
174720-A-1	Set of Parts 211901 - Basic Contact and Block Assembly for one "Make" Contact
174721-A-1	Set of Parts 211902 - Basic Contact and Block Assembly for one "Break" Contact
174722-A-1	Set of Parts 154751 and Set of Parts 154752

DRAWINGS INCLUDED: (Cont'd.)

174723-A-1	Set of Parts 211903 - R.H. Block and Contact Assembly with one "Break" Contact
174724-A-1	Set of Parts 211904 - L.H. Block and Contact Assembly with one "Break" Contact
176050-A-7	Typebox Code Chart 211930
177657-B-1	Auxiliary Connector - Set of Parts 212254
177830-C-1	Function Mechanism - Set of Parts 211924 - Release
177831-B-1	Function Mechanism - Set of Parts 211925 - Release with Stud Assembly
177832-B-1	Function Mechanism - Set of Parts 211926 - Latch-Release, Special Function Pawl
177833-A-1	Function Mechanism - Set of Parts 211927 - Special Function Pawl
177834-A-1	Function Mechanism - Set of Parts 211928 - Blocking, Latch-Release
177835-A-1	Function Mechanism - Set of Parts 211929 - Function Pawl Spans 2 Slots
177836-A-1	Function Mechanism - Set of Parts 212240 - Function Pawl Spans 3 Slots
177837-A-1	Function Mechanism - Set of Parts 212241 - Function Pawl Spans 4 Slots
177838-B-1	Function Mechanism - Set of Parts 212242 - Basic Contact Assembly
177839-B-1	Function Mechanism - Set of Parts 212243 - Basic Contact Assembly
179919-A-2	Vertical Tabulation - Basic Set of Parts 212130
182426-B-2	Set of Parts 212099 - Answer Back - Keyboard Assembly
184615-B-2	Gear and Disc - Vertical Tabulation - Sets of Parts 212135 and 212141
184695-B-1	Sets of Parts 212244 and 212245 - Contact Assemblies
184957-C-2	Set of Parts 212246 - R.H. Contact Block with one "Break" Contact
184958-B-2	Set of Parts 212247 - L.H. Contact Block with one "Break" Contact
188037-A-3	Set of Parts 212411 - Local Page Feed Out
188191-A-1	Function Mechanism - Set of Parts 212248 - Special Function Pawl 212110
188252-B-1	Function Mechanism - Set of Parts 212249 - Function Lever with Spring Plate
188323-A-1	Function Mechanism - Set of Parts 212250

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DRAWINGS INCLUDED: (Cont'd.)

188324-B-2	Set of Parts 212420 - Automatic Paper Feed Out
190152-A-1	Function Mechanism - Set of Parts 212251 - Space Suppression, Release, Special Pawl
190555-A-2	Typebox Keyboard and Typewheel Standard Arrangements
190800-B-2	SOP 212436 - Keyboard Switch - Assem. & B/M
191316-C-3	Keyboard Probe Contacts & Bell Crank Etc. - Assem. & Mounting
191631-A-3	SOP 212259 - Keyboard Probe Pulse Contacts - Installation
196256-A-2	SOP 212725 - Line Feed Actuator - Assem.
196257-A-2	Line Feed Relay Control Box 212749 - Assem.
196258-A-1	Switch Box 212750 Assem.
197264-B-2	SOP 162013 - Code Bar Shift Mechanism (Thin Type - 1 Slot)
197265-B-2	SOP 162012 - Code Bar Shift Mechanism (Thin Type - 2 Slots)
197294-A-1	Function Mechanism - SOP 212737 Space Suppression, Release, Function Pawl Spans 2 Slots
197576-A-1	Function Mechanism - SOP 212751 - Latch-Unlatch, Space Suppression
197593-A-1	Function Mechanism - SOP 212752 - Advances Operating Time, Modified Function Lever
197667-A-1	Function Mechanism - SOP 212761 - Latch Release, Function Pawl Spans 2 Slots, Function Lever Spans 2 Slots
197670-B-2	SOP 212762 - Code Bar Shift Mechanism (Thin Type - 3 Slot)
197749-B-2	SOP 212765 - Code Bar Shift Mechanism (Thin Type - 5 Slots)
197940-A-1	Function Mechanism - SOP 212769
207140-A-1	Function Lever 211528 (152121 modified)
207197-A-1	Contact Block 211646 (152733 modified)
207198-A-1	Contact Block 211647 (152733 modified)
207200-B-1	Function Lever 157207 (152121 modified)
207524-A-1	Function Bar Coding Tool 211652
207686-C-1	SOP 212111 - B/M
207696-B-1	Contact Plate 212107 (157892 Modified or 172597 Modified)
207697-C-1	Contact Block 212108 (157884 Modified or 172597 Modified)
207698-B-1	Contact Block 212109 (157884 Modified or 172597 Modified)
207704-B-1	SOP 212440 - Low Paper Lamp (Sprocket Feed TPR.)
207706-B-1	SOP 212259 - Keyboard Probe Pulse Contacts B/M

DRAWINGS INCLUDED: (Cont'd.)

207708-A-1	SOP 212648 - Keyboard Probe Contacts - B/M
207709-B-2½	SOP 212650 - Keyboard Lock & Contact Assemblies B/M
207710-A-2	Keyboard Lock Magnet Assembly 212647
207722-A-2	Gage for Function Pawls 902420 - Assembly
207725-A-1	Designation Plate 212665 (Cont Trans - One Char.)
207726-B-1	Contact Plate 212668 (157892 Modified or 172595 Modified)
207732-A-1	SOP 212722 - Remote Line Feed Control Mechanism - B/M
207735-A-1	SOP 212725 - Line Feed Actuator B/M
219596-B-1	Designation Plate 900854 (Normal)
227746-A-1	Designation Plate 901335 (Call Busy)
227770-B-1	Designation Plate 901336 (Monitor)
228204-D-2	Emblem Plate 901230
229457-C-3	Anti-Static Paper Guide 9440-A
234246-D-2	Set of Parts 212125 - Auxiliary Contact Block
234252-D-3	Assembly - Sets of Parts 212111 and 212117
234264-B-1	Assembly - Set of Parts 212112
234494-A-1	Function Lever 212129 (152642 modified)
237088-A-1	Designation Plate 901981 (Alarm RLS)
238281-B-2	Function Lever Stop 212746
238284-A-2½	Line Feed Relay Control Box 212749 - B/M
238285-A-1	Projector Switch Box 212750 - B/M
238286-A-2	Platen 150718
238287-A-2	Platen 153752
238292-B-1	Function Lever Disabling Clip 212764
238293-A-1	Suppression Code Bar Stop 212770
241160-C-2½	SOP 212432 - Line Feed Detector B/M
241161-A-1	Designation Plate 212637 (Print-Suppression)
241701-B-1	SOP 212641 - Three Character Sequential Page Feed-Cut - B/M
241841-A-1	Designation Plate 212720 (Motor-Stop)
241842-B-1	Designation Plate 212721 (XTR - Start)
248178-A-2½	SOP 212646 - Low Paper Lamp (F.F. TPRS.)
248353-A-1	Designation Plate 212735 (Suppression)
248757-A-1	Designation Plate 212766 (MSG. Ack.)
248758-A-1	Designation Plate 902999 (MSG. CONN)
248772-A-1	Function Lever 212753 (152642 Modified)
248778-A-1	Function Lever 212767 (152642 Modified)
248803-A-1	Designation Plate 212755 (By-Pass)
248804-A-1	Designation Plate 212756 (Send Copy)
248805-A-1	Designation Plate 212757 (By-Pass-On)

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DRAWINGS INCLUDED: (Cont'd.)

248808-A-1	Armature Clip 212763
307141-A-1	Function Mechanism - SOP 213102 - Latch Release, Function Lever Spans 2 Slots
307142-A-1	Function Mechanism - SOP 213103 - Lever Top Cut Off, Release
307143-A-1	Function Mechanism - SOP 213101
307158-A-1	SOP 213104 - Convert Type (A) Keyboard to Type (C)
307159-A-1	SOP 213105 - Convert Type (C) Keyboard to Type (A)
307160-A-1	SOP 213106 - Convert (A) Type Box to (C)
307161-A-1	SOP 213107 - Convert Type (C) Type Box to Type (A)
307175-A-1	213109 - Lables for Keyboard Conversion
307278-A-1	Function Mechanism - SOP 213227
307420-A-1	SOP 213226 - Code Bar Shift Mechanism (Thin Type - 3 Slots)
307883-A-1	Function Mechanism - SOP 213160
307884-A-1	Function Lever 213161 (152641 Modified)

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ACCESSORY PARTS

- 1 Answer Back Mechanism. (1 character)
  1. S and R Teleprinters
    - a. Set of Parts 212099 - Answer Back Mechanism
    - b. Equipment Shelf 9285.2
    - c. For Accessory Parts and Installation Information see Specifications 11667
  2. RO Teleprinters
    - a. See Paragraph 15 on Multiple Wire Distributors
- 2 Answer Back Mechanism. (multiple character)
  1. S and R Teleprinters
    - a. Set of Parts 172945 - Answer Back Mechanism
    - b. For Installation Information see TT Specifications 50006
  2. S and R or RO Teleprinters
    - a. See Paragraph 15 on multiple wire distributors.
- 3 Anti-Static Paper Guides.
  1. 9440-A (for Friction Feed Teleprinters only) see Specifications 11753 for Installation Instructions
  2. Ionotron T-35-A (use prohibited)
- 4 Accessory Equipment Shelves. These shelves mount in floor type Model 28 Consoles on Equipment Mounting Rack, Set of Parts 159373. Mounting screws are not provided with the equipment shelves nor with the racks. Speed Nuts No. 12-24 are provided with the equipment mounting racks. Four Screws 695 (12-24 X 3/4" RHMS) must be ordered separately for each shelf.

1. Transmitting Shelf 8582-A - This is used for Class "C" Operation when a Model 28 Teleprinter is equipped with Wiring Cabinet 9100.
  - \*2. Equipment Shelf 9285-A - This is used for small integrated data processing systems. Provides mounting facilities for two Type 202 Polar Relays, two Type 5191 Signal Relays and contains a rectifier, fuse, jacks, resistors, spark killers, etc., as part of this shelf.
  - \*3. Equipment Shelf 9285.1-A - The framework of this is the same as that of the 9285-A Shelf. This shelf provides facilities for mounting one signal relay and contains a rectifier, fuse, jacks, resistors, spark killers, etc., as part of this shelf.
  - \*4. Equipment Shelf 9285.2-A - The framework of this is the same as that of the 9285-A Shelf. This shelf provides a rectifier, fuse and power switch.
  5. Equipment Shelf 10458.1-A - This shelf provides wiring facilities for two line relays, two signal relays, one motor control unit, one time delay relay, one D.C. buzzer, and an isolated power supply.
- 5 Auxiliary or Probe Contacts. Operates during transmission of 3rd pulse of every character transmitted from the keyboard.
1. Set of Parts 212112 (See Specifications 11705 for Installation and Operation)
  2. Set of Parts 212648 (Used as part of 212650) (See Specifications 11974 for Installation and Adjustment)
- 6 Auxiliary Terminal Block. Mounts on either side of M-28 Consoles.
1. Set of Parts 212125 (terminals 41 - 80, right side, or 81 - 120, left side)
  2. See Specifications 11753 for Installation Instructions
- 7 Cord Box 8373-A.
1. Used for Work Table Testing of Model 28 Teleprinters (see Specifications 11048)

\*These Equipment Shelves are superseded by Equipment Shelf 10458.1-A



8 Emblem Plate 901230.

1. For mounting on front copy holder of console cover  
(see Drawing 228204 for mounting hardware)

9 Horizontal Tabulation (for 60, 75, 100 WPM).

1. For LP6 and LP9 Typing Units use:

- a. Set of Parts 154781 consisting of:
  - (1) Horizontal Tab. Parts 152903
  - (2) Horizontal Tab. XTR. Control Parts 154780  
("Break" CTX. only)
  - (3) Note: When transfer contacts are required for  
Horizontal Tab control then order 164476 modi-  
fication Kit.

2. For LP26 and LP38 Typing Units use:

- a. Set of Parts 157535 consisting of:
  - (1) Horizontal Tab. Parts 157526
  - (2) Horizontal Tab. XTR. Control Parts 154780  
("Break" CTX. only)
  - (3) Note: When transfer contacts are required for  
Horizontal Tab control then order 164476 modi-  
fication Kit.

3. Installation Specifications: T.T. 5864-S.

4. Note: The 152903 and 157526 Sets of Parts provide a  
function bar and keylever assembly coded for tab  
on "UC.G". If the horizontal tabulation function  
is desired on any other character, order a  
universal function bar and code it as desired.  
An appropriate keylever assembly must also be  
ordered separately.

10 Jack Box 8559-A.

1. Designed to mount in Electrical Service Unit LESU/198.  
See Drawings 184624 and 184626 of Specifications 11753  
for installation and wiring respectively.
2. Note: This has been included for record purposes only  
since on all new installations the 9100 wiring  
cabinet is used.

11 Keyboard Contacts. Can be installed under any existing keylever and under any special function keylever that may be installed in the empty keylever positions of the 4th row of the keyboard for addition of specific locally operated functions.

A. Mark II (older type - i.e. LK4)

1. Set of Parts 212111 - Basic Parts (includes only one micro-switch contact assembly)
2. Set of Parts 212117 - Micro-Switch Contact Assembly (to be ordered for each additional contact assembly required)
3. When special functions are to be installed in empty keylever positions of 4th row:

Order a Blank Keylever Assembly 160899 for each position and engrave as desired.

B. Mark III (Newer Type - i.e. LK12)

1. Set of Parts 212436 (includes one micro-switch assembly)
2. For each set of Parts 212436 requested it is necessary to order one engraved designation plate as required for each special function: For available Designation plates see Drawing 190800-1.

C. See Installation and Operation Specifications 11703

12 Keyboard Lock Mechanism.

1. Set of Parts 152350 - Add to LP6RX/AS166 Typing Units when keyboard lock is to be accomplished from a remote location. This set of parts is provided with later model typing units. (see T.T. Bulletin 1149)
2. Set of Parts 152350 must be actuated by function mechanisms located in Slots 35 and 36 of the stunt box. Function mechanisms must be ordered separately.

13 Latch Lever Release Bail Shafts.

<u>Part No.</u>	<u>Slots Spanned</u>
153318	28
153838	5
154666	15
154667	13

<u>Part No.</u>	<u>Slots Spanned</u>
154668	9
154669	26
155071	7
155072	18
155073	23
155074	32
155075	34
212145	37

NOTE: Two Retaining Rings 119649 are required to fasten shaft to Function Mechanisms similar to 211910.

14 Motor Control.

1. With LESU8/198 use:

- a. Motor Control Unit 8571-A for A.C. Operation
- b. Motor Control Unit 8571.1-A for D.C. Operation
- c. Note: This has been included for record purposes only since on all new installations the 9100 wiring cabinet is used.

2. With Wiring Cabinet 9100 use:

Motor Control Unit 9087-A for A.C. Operation  
Motor Control Unit 9087.1-A for A.C. Operation

3. NOTE: Accessory parts are required to operate all motor control units. For parts information, installation and operation, see Specifications 11273.

15 Multiple Wire Distributors (LD). These may be used to provide a single character answer back on receiving only teleprinters. They are also used in a multiple character answer back system for sending and receiving or receiving only teleprinters. When used in conjunction with a Rotary Switch and Associated Circuitry.

1. Types:

LD-1 (old unit) used for 60 and 75 WPM operation  
LD-2 (old unit) used for 100 WPM operation  
LD-9 (new unit) used for 60, 75 and 100 WPM operation in Model 28 Send-Receive Page Printers and Receiving Only Set. Mod. Kit 164994 is included in LD-9 and consists of gear set, terminal blocks and connecting cord.

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LD-10 (new unit) used for 60, 75 and 100 WPM operation in Model 28 Sequential Selector. Mod. Kit 164995 is included in LD10 and consists of gear set, terminal blocks and connecting cord.

2. Accessory Parts Required:

a. For LD-1 and LD-2

Cable with Connector 157156  
Auxiliary "C" Terminal Block, Set of Parts 212125;  
Drawing 234246  
Modification Kit 153921 (for re-locating keyboard connector "F"). T.T. Specifications 5757-S

b. For LD-9

None

c. For LD-10

None

16 Off-Line Stunt Shift Control When Used With Page Feed-Out Mech.

1. Set of Parts 211645 - (Required for modification of Set of Parts 152345 when used with Page Feed-Cut or Vertical Tabulation Mechanisms). (see Specifications 10912)

2. Set of Parts 152345 Solenoid Mechanism (see T.T. Bulletin 1149)

3. Installation Specifications: T.T. 5823-S.

17 Page Feed-Out Mechanisms.

1. Sprocket Feed Teleprinters (Multi-Copy Paper or Forms)

a. Set of Parts 153907 consisting of:  
(1) Page Feed Out Parts 152302 (Basic Parts)  
(2) Page Feed Out XTR. Control Parts  
152303

b. Gear and Disc Sets (selection of proper set depends upon page or form length as listed below:)

<u>Page or Form Length (In Inches)</u>	<u>Gear &amp; Disc Set</u>
7- $\frac{1}{2}$ , 15	153927
3- $\frac{1}{2}$ , 7, 14	153928

<u>Page or Form Length (In Inches)</u>	<u>Gear &amp; Disc Set</u>
6- $\frac{1}{2}$ , 13	153929
3, 6, 12	153930
5- $\frac{1}{2}$ , 11	153931
5, 10	153932
9- $\frac{1}{2}$	153933
4- $\frac{1}{2}$ , 9	153934
8- $\frac{1}{2}$	153935
2, 4, 8	153936
3- $\frac{2}{3}$ , 7- $\frac{1}{3}$ , 14- $\frac{2}{3}$	161140
3- $\frac{1}{4}$ , 6- $\frac{1}{2}$ , 13	161141

2. Friction Feed Teleprinters (not recommended for Multi-Copy Paper due to slippage problems)
  - a. Set of Parts 155764 consisting of:
    - (1) Basic Page Feed Cut Parts 155763
    - (2) Page Feed Out XTR. Control Parts 152303
  - b. Gear and Disc Sets (selection of proper set depends upon page or form length as listed below:)

<u>Page or Form Length (In Inches)</u>	<u>Gear &amp; Disc Set</u>
5- $\frac{1}{2}$ , 11	155765
2, 4, 8	161767

3. Installation Specifications covering 153907 and 155764 Sets of Parts: T.T. 5751-S.
4. Templates 153811 and 153812 are required for modifying typing units that are not provided with two required holes as designated in Specifications 5751-S.
5. NOTE: The 152302 and 155763 Sets of Parts provide a function bar and keylever assembly coded for page feed out on "SC. UC. Z". If the page feed out function is desired on any other character, order a universal function bar and code it as desired. An appropriate keylever assembly must also be ordered separately.

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18 Fan Fold Paper Handling Parts.

1. Fan-Fold Friction Feed Paper - (single copy)
  - a. Set of Parts 154798 - Prevents paper jams by fully supporting the paper.
    - (1) Paper supply box and form accumulating shelf 152345AB may be ordered if desired
    - (2) Rear Paper Guide, Set of Parts 153926, is not required for the console since these parts are included in Set of Parts 154798.
  - b. Installation Specifications: T.T. 5913-S.

19 D.C. Resistor Assembly 9312-A.

1. Used for D.C. Operation of Teleprinter with LMU4 Motor Unit, see Drawings 184624 and 184627, Specifications 11753, for installation and wiring information. This unit replaces rectifier in LESU8/198.
2. Note: This has been included for record purposes only since on all new installations the 9100 wiring cabinet is used.

20 Rectifier 8494-A.

1. Designed to mount on Electrical Service Unit LESU8/198. Maximum load 150 milliamperes at 105-110 volts D.C.
2. See Drawings 184624, Specifications 11753 for installation information and Specifications 11273 for wiring information.
3. Note: This has been included for record purposes only since on all new installations the 9100 wiring cabinet is used.

21 Radio Frequency Filter.

1. Set of Parts 151988 for AC power
  - a. Wire per T.T. Drawing WD2927
2. Set of Parts 154651 for Signal Line
  - a. Wire per T.T. Drawing WD2927

22 Send-Receive-Break Mechanisms.

1. See Specifications 11592 for installations of Send-Receive-Break Mechanisms.

23 Spacing Mechanism Modification.

1. Set of Parts 154792 converts M-28 Typing Unit from standard 10-character per inch spacing to 12-character per inch.
2. Installation Specifications: T.T. 5872-S.
3. "Elite" Gothic type pallet arrangements are used with 12-character per inch spacing.

24 Stunt Box and Adapter Cords. (See Specifications 12505)

1. Stunt Box Cords

<u>Cord No.</u>	<u>No. of Conductors</u>	<u>Drawing</u>	<u>Remarks</u>
9297	12	184639	Plugs into Wiring Cabinet 9100
9297.1	12	241253	Plugs into Wiring Cabinet 9100 (Recommended for future use)
9800	40	241080	Mates with Adapter Cord 9801
9865	20	241090	Mates with Adapter Cord 9866
9865.1	20	248096	Mates with Adapter Cord 9866.1

2. Adapter Cords

9298	12	184835	Mates with Stunt Box Cord 9297. Used only when LESU8/198 is used. For Typical application see Specs. 11545
9801*	40	241081	Is mate of Stunt Box Cord 9800
9866*	20	241091	Is mate of Stunt Box Cord 9865
9866.1	20	248097	Is mate of Stunt Box Cord 9865.1

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\*These cords must be used with an Auxiliary "C" Block Assembly 212125 in order to provide console terminations for stunt box contacts.

- 25 Transmitting Shelf 8582-A and Transmitting Panel 9102-A.
1. For using Model 28 Teleprinter on circuits utilizing Class "C" operation
  2. Transmitting Shelf 8582-A - Used with WC 9100  
Transmitting Panel 9102-A - Used with LESU8/198  
(Old Unit - For Record Purpose only)
  3. See Specifications 11753 for installation information
- 26 Type Box Alignment Mechanism.
1. Set of Parts 152502 - provides a means of adjusting type box to eliminate unequal character impression top to bottom on old typing units.  
(see T.T. Bulletin 1149)
- 27 Type Box Code Chart 211930. (Pocket sized celluloid card)
- 28 Type Pallets and Keylever Assemblies.
1. Complete listing in Teletype Bulletin 1164, Section 6
  2. Engineering Bulletin 5300 lists keylever arrangements and type pallet arrangements for various private wire customers.
- 29 Tools, Special.
- 150988 Handwheel (for manually rotating main shaft)
  - 152292 Armature Clip
  - 151304 Screw Holder with blades
  - 151959 Spring Hook (#12 Crochet Needle)
  - 159358 Set of Tools (Posts for up-ending typing unit)
  - 125779 Socket Wrench (7/16" Hex.)
  - 211652 Coding Tool (Function bar)
- 30 Vertical Tabulation & Vertical Tab with Page Feed Cut (Recommended for Sprocket Feed Teleprinter only).
- A. Vertical Tabulation (Western Union Version)
    1. Vertical Tabulation Parts 212130 (Basic Parts)
    2. Gear and Disc Sets:



<u>Form Length In Inches</u>	<u>Gear and Disc Set Part Number</u>
5- $\frac{1}{2}$ , 11	212135
3, 5, 7- $\frac{1}{2}$ , 15	212141

3. Transmitter control for vertical tabulation -  
Set of Parts 152303
4. Installation and Operation Specifications 11725
5. Notes:
  - a. Typing Unit must be equipped for standard six LF per inch.
  - b. Six tab Stop Plates 212140 are provided. Order separately when additional tab stops are required.

B. Vertical Tabulation with Page Feed Out

1. T.T. Mod. Kit 154770 consisting of:
  - a. 154771 Mod. Kit - Provides Basic Parts for Vertical Tab. with Page Feed Out. (For LF 11 and UP)
  - \*b. 157530 Mod. Kit - Provides Stunt Box Parts for UC.Z selection
  - \*c. 176569 Mod. Kit - Provides Stunt Box Parts for UC J selection
  - d. Miscellaneous Parts provided:
    - (1) 157948 Keylever F.C.Z
    - (2) 158447 Keylever F.O.J
    - (3) 160576 Stripper Slide
    - (4) 160577 Stripper with Stud
    - (5) 162728 Line Feed Slide
    - (6) 162729 Bar
    - (7) 163535 Mod. Kit - Provides Parts for XTR. Control

\*Either of these Kits can be replaced with Set of Parts 211906.

2. Gear and Disk Sets (one must be ordered)
  - a. Typing Unit must be equipped for standard six LF per inch.

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- b. This is used with Mod. Kit 154770 and provides the parts (gear and disk) that vary with the various lengths of forms.

<u>Form Length Inches</u>	<u>Mod. Kit</u>
8, 4, 2	154760
8- $\frac{1}{2}$	154761
9, 4- $\frac{1}{2}$	154762
9- $\frac{1}{2}$	154763
10, 5	154764
11, 5- $\frac{1}{2}$	154765
12, 6, 3	154766
13, 6- $\frac{1}{2}$	154767
14, 7, 3- $\frac{1}{2}$	154768
7- $\frac{1}{2}$ , 15	154769
**4- $\frac{1}{4}$	176617

\*\*This gear and Disk Set can only be used on ~~type~~ specially equipped for 4LF per inch. Mod. Kit 154742 per T.T. spec. 5954 is used for this conversion.

3. For Transmitter Control:

- a. Mod. Kit 163535 (part of Mod. Kit 154770) provides the clutch control contact for stopping an associated Transmitter Distributor while a form is being advanced, for Vertical Tab. or Page feed out.

b. Additional Parts:

When a Transmitter Distributor LXD. is used, it must be equipped with a Mod. Kit 156773 (FIGS or LTRS reading mechanism) and the associated Teleprinter must be equipped with Mod. Kit 163518 (or W.U. sets of parts 212243 and 212244 coded for the tab function). These kits are used when only one "Throw-away" character is inserted after the tabulation code combination. If two "Throw - away" characters can be used, there is no need for any of these kits.

- c. As an alternative method to accomplish the "single throw-away character" feature. The mechanisms in (3b) are not required, instead advance contact mechanisms may be installed in stunt box for vertical tab. function and Page Feed out function. Order the following:

2	S.C.P. 212243	Dwg. 188191
1	S.C.P. 212242	Dwg. 177838
1	S.O.P. 212244	Dwg. 184695

31 Low Paper Lamo.

1. Set of Parts 212440; B/M Dwg. 207704-1
2. Only for Fan-Fold Paper Container and Form Accumulating Shelf 152349AB
3. For installation see Drawing 184837, Specifications 11753

32 Numerical List of Added Parts.

<u>Part No.</u>	<u>Name of Part</u>	<u>Dwg. Specs. or Par. No.</u>
653-C	Screw, 3-48 X 3/16" Fil. H.M.S.	188324
695	Screw, 12-24 X 3/4" R.H.M.S.	188037
1269	Screw, 6-40 X 1/2" Fil. H.M.S.	234246
5191	Relay, Signal	188037
10349	Washer, #3 Lock Shakeproof	188324
10476	Nut, 5-40 Hex. S.	188037
12139	Nut, 4-40 Hex. S.	228204
13058	Nut, 3-48 Hex. S.	188037
13073	Nut, 5-40 Hex. S.	182426
13106	Nut, 4-40 Hex. S.	182426
13405	Screw, 4-40 X 1/4" F.H.M.S.	228204
20924	Washer, #5 Steel	182426
22592	Nut, 5-40 Hex. S.	188324
27263	Screw, 5-40 X 7/16" Hex. H.M.S.	190171
75249	Bushing	234264
125779	Wrench, 7/16" Hex. Socket	Par. 29
135783	Contact Assembly	234264
150718	Platen	238286
150988	Handwheel	Par. 29
151984	Holder, Screw with blades	Par. 29
151959	Hook, Spring (#12 Crochet)	Par. 29
151988	Set of Parts, R.F. Filter	Par. 21
152292	Clip, Armature	Par. 29
152659	Lever, Function	174703
153139	Box, RJ Type	174316
153440	Universal Function Bar-Coding Chart	171987
153508	Box, RS Type	174316
153752	Platen	238287
153811	Template	Par. 17
153812	Template	Par. 17
153838	Shaft, Release Bail	Par. 13
153921	Modification Kit	Par. 15
154642	Slide, Shift	174712
154651	Set Of Parts, R F. Filter	Par. 21

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Numerical List of Added Parts (Cont'd.)

<u>Part No.</u>	<u>Name of Part</u>	<u>Dwg. Specs. or Par. No.</u>
154666	Shaft, Release Bail	Par. 13
154667	Shaft, Release Bail	Par. 13
154668	Shaft, Release Bail	Par. 13
154692	Clip, Function Pawl	171742 See TT 1149
154750	Set of Parts - Code Bar Shift Mechanism	174715
154792	Set of Parts, Spacing Mechanism	Par. 23
154798	Set of Parts, Superfold Friction Feed Paper Handling	Par. 18
155071	Shaft, Release Bail	Par. 13
155072	Shaft, Release Bail	Par. 13
155074	Shaft, Release Bail	Par. 13
155075	Shaft, Release Bail	Par. 13
155705	Box, XD Type	174316
155706	Box, XE Type	174316
155710	Box, XJ Type	174316
155763	Set of Parts - Friction Feed	Par. 17
155764	Set of Parts - Page Feed Out	Par. 17
155765	Set, Gear and Disc	Par. 17
157526	Set of Parts - Horizontal Tabulation	Par. 9
157535	Set of Parts - Horizontal Tabulation	Par. 9
157892	Plate, Contact	177838, 177839 & 184957
159358	Tools, Set of	Par. 29
159373	Set of Parts, Mounting Rack	Par. 4 & 188037
160889	Keylever Assembly, Blank	Par. 11
160999	Box, XP Type	174316
162012	Set of Parts - Code Bar, Shift Mechanism (Thin Type - 2 Slots)	197265
162013	Set of Parts - Code Bar, Shift Mechanism (Thin Type - 1 Slot)	197264
162056	Box, XZ Type	174316
203785	Spring, Tension	190171
208344	Screw, Shoulder	184615
208483	Screw, 6-40 X 1/8" Socket Set	182426
208833	Washer	188037
209476	Washer, Lock	179919
211528	Lever, Function (152121 modified)	174716 & 207140
211641	Pawl, Function	174708 & 177836
211642	Pawl, Function	174709 & 177837

Numerical List of Added Parts (Cont'd.)

<u>Part No.</u>	<u>Name of Part</u>	<u>Dwg. Specs. or Par. No.</u>
211645	Set of Parts - Modifies Off Line Stunt Shift Control	Par. 16 Specs. 10912
211646	Block, Contact (152733 modified)	174724 & 207197
211647	Block, Contact (152733 modified)	174723 & 207198
211651	Switch, Micro (Part of 212440)	Par. 11
211652	Tool, Function Bar Coding	20752 <sup>11</sup>
211653	Set of Parts - Send-Receive-Break Mechanism - Xtr. Control	Par. 23 Specs. 11592
*211901	Set of Parts - Basic for one "Make" Contact	174720
*211902	Set of Parts - Basic for one "Break" Contact	174721
*211903	Set of Parts - Special R.H. Block	174723
*211904	Set of Parts - Special L.H. Block	174724
211905	Set of Parts - Function Mechanism	174700
211906	Set of Parts - Function Mechanism	174701
211907	Set of Parts - Function Mechanism	174702
211908	Set of Parts - Function Mechanism	174703
211909	Set of Parts - Function Mechanism	174704
211910	Set of Parts - Function Mechanism	174705
211911	Set of Parts - Function Mechanism	174706
211912	Set of Parts - Function Mechanism	174707
211913	Set of Parts - Function Mechanism	174708
211914	Set of Parts - Function Mechanism	174709
211915	Set of Parts - Code Bar Shift Mechanism	174710
211916	Set of Parts - Code Bar Shift Mechanism	174711
211917	Set of Parts - Code Bar Shift Mechanism	174712
211918	Set of Parts - Code Bar Shift Mechanism	174713
211919	Set of Parts - Function Mechanism	174716
211920	Set of Parts - Function Mechanism	174714
211921	Set of Parts - Function Mechanism	174717
211922	Set of Parts - Function Mechanism	174718
211923	Set of Parts - Function Mechanism	174719
211924	Set of Parts - Function Mechanism	177830
211925	Set of Parts - Function Mechanism	177831
211926	Set of Parts - Function Mechanism	177832
211927	Set of Parts - Function Mechanism	177833
211928	Set of Parts - Function Mechanism	177834
211929	Set of Parts - Function Mechanism	177835

Obsolescent

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Numerical List of Added Parts (Cont'd.)

<u>Part No.</u>	<u>Name of Part</u>	<u>Dwg. Specs. or Par. No.</u>
211930	Chart, Type Box Code	176050
212024	Lever	182426
212028	Collar	182426
212033	Insulator	234252
212099	Set of Parts, Answer Back	182426 Specs. 11667
212100	Shaft	182426
212101	Bracket, Right	182426
212102	Bracket, Left	182426
212103	Solenoid, Rotary	182426
212107	Plate, Contact (157892 modified)	184958 & 207696
212108	Block, Contact (157884 modified)	184958 & 207697
212109	Block, Contact (157884 modified)	184957 & 207698
212110	Pawl, Function	188191
212111	Set of Parts - Auxiliary Switch	234252 & 207686 Specs. 11703
212112	Set of Parts - Auxiliary Contact	234264 Specs. 11705
212113	Actuator	234252
212114	Post	234252
212115	Slide	234252
212116	Bar	234252
212117	Set of Parts, Switch Assembly	234252
212118	Bracket, Contact	234264
212125	Set of Parts, Auxiliary Console Block	234246, Par 6
212126	Insulator	234246
212128	Bracket	234246
212129	Lever, Function	234494 & 188323
212130	Set of Parts, Basic for Vert. Tab.	179919
212131	Screw, Special	179919
212132	Bushing	179919
212133	Nut	179919
212134	Gear, Spur	179919
212135	Set of Parts, Gear and Disk, 11" Vertical Tab.	184615
212136	Disk (for 212135)	184615
212137	Spring	184615
212138	Handwheel	184615

Numerical List of Added Parts (Cont'd.)

<u>Part No.</u>	<u>Name of Part</u>	<u>Dwg. Specs. or Par. No.</u>
212139	Spring, Extension (for 212135)	184615
212140	Plate	184615
212141	Set of Parts, Gear and Disk, 15" Vertical Tab.	184615
212142	Disk (for 212141)	184615
212143	Spring, Extension (for 212141)	184615
212144	Sleeve	184615
212145	Shaft, Rls. Bail (Spans 37 Slots)	Par. 13
212146	Plate, Name (CONSOLE 9450.1-B)	Par. 13
212147	Plate, Name (CONSOLE 9450-B)	not shown
212240	Set of Parts - Function Mechanism	177836
212241	Set of Parts - Function Mechanism	177837
212242	Contact Assembly, Basic (Replaces 211901)	177838
212243	Contact Assembly, Basic (Replaces 211902)	177839
212244	Set of Parts - Make Contact Assembly (Replaces 154751)	184695
212245	Set of Parts - Break Contact Assembly (Replaces 154752)	184695
212246	Set of Parts - R.H. Contact Block - 1 Break (Replaces 211903)	184957
212247	Set of Parts - L.H. Contact Block - 1 Break (Replaces 211904)	184958
212248	Set of Parts - Function Mechanism	188191
212249	Set of Parts - Function Mechanism	188252
212250	Set of Parts - Function Mechanism	190171 & 188323
212251	Set of Parts - Function Mechanism	190152
212254	Set of Parts, -Auxiliary Connector	177657
212255	Switch, Micro	234252
212259	Set of Parts - Keyboard Probe Pulse Contacts	207706 & 191631 Specs. 11972
212411	Set of Parts, Local Page Feedout	188037 Specs. 11778
212412	Lever	188037
212413	Stud	188037
212414	Plate, Designation	188037
212415	Bracket, Mounting	188037
212416	Solenoid	188037
212417	Switch, Push Button	188037
212418	Washer, #5 Lock - Shakeproof	188037 & 188324

Numerical List of Added Parts (Cont'd.)

<u>Part No.</u>	<u>Name of Part</u>	<u>Dwg. Specs. or Par. No.</u>
*212419	Set of Parts, Line Feed Detector Friction Feed	Specs. 11840
212420	Set of Parts, Automatic Paper Feed Out	188324 Specs. 11841
212421	Bracket, Mounting	188324
212422	Lever	188324
212425	Solenoid, Rotary	188324
212431	Bracket, Mounting (Part of 212440)	Par. 31
212432	Set of Parts - Line Feed Detector Sprocket Feed	241160 Specs. 11843
212436	Set of Parts - Keyboard Switch	190800 Specs. 11703
212440	Set of Parts - Low Paper Lamp	Par. 31 Specs. 11753
212637	Designation Plate (Print Suppress.)	241161
212641	Set of Parts - Three Character Sequential Page Feed Out	241701 Specs. 13036
212646	Set of Parts - Low Paper Lamp	248178 Specs. 13112
212647	Keyboard Lock Magnet (Part of Set of Parts 212650)	207710 Specs. 11918
212648	Set of Parts - Keyboard Probe Contacts (Part of Set of Parts 212650)	191316 & 20778 Specs. 11918
212650	Set of Parts - Keyboard Lock and Contact Assemblies (Combination of Set of Parts 212647 & 212648)	207709 Specs. 11918
212665	Designation Plate (Cont. Trans. - One Character	207725
212668	Contact Plate (157892 Modified)	207726
212720	Designation Plate (Motor-Stop)	241841
212722	Set of Parts - Remote Line Feed Control Mechanism	207732 Specs. 13169
212725	Set of Parts - Line Feed Actuator	B/M 207735 Specs. 13169
212730	Set of Parts - Combination of 212749 & 212750	B/M 207732 Specs. 13169
212735	Designation Plate (Supp.)	248353
212737	Set of Parts - Function Mechanism	197294
212746	Function Lever Stop	238381
212749	Line Feed Relay Control Box	196257 Specs. 13169

\*Obsolete 174043



Numerical List of Added Parts (Cont'd.)

<u>Part No.</u>	<u>Name of Part</u>	<u>Dwg. Specs. or Par. No.</u>
212750	Switch Box	196258 Specs. 13169
212751	Set of Parts - Function Mechanism	197576
212752	Set of Parts - Function Mechanism	197593
212753	Function Lever 152642 Modified	248772
212755	Designation Plate (By-Pass)	248803
212756	Designation Plate (Send Copy)	248804
212757	Designation Plate (By-Pass-On)	248805
212761	Set of Parts - Function Mechanism	197667
212762	Set of Parts - Code Bar Shift Mechanism	197670
212763	Armature Clip	248808
212764	Function Lever Disabling Clip	238292
212765	Set of Parts - Code Bar Shift Mechanism	197749
212766	Designation Plate (MSG. ACK.)	248757
212767	Function Lever (152642 Modified)	248778
212769	Set of Parts - Function Mechanism	197940
212770	Suppression Code Bar Stop	238293
213101	Set of Parts - Function Mechanism	307143
213102	Set of Parts - Function Mechanism	307141
213103	Set of Parts - Function Mechanism	307142
213104	Set of Parts - Convert Type A Keyboard to Type C	307158
213105	Set of Parts - Convert Type C Keyboard to Type A	307159
213106	Set of Parts - Convert Type A Type Box to Type C	307160
213107	Set of Parts - Convert Type C Type Box to Type A	307161
213109	Labels for Keyboard Conversion	307175
213160	Set of Parts - Function Mechanism	307883
213161	Function Lever (152641 Modified)	307884
213226	Set of Parts - Code Bar Shift Mechanism (Thin Type - 3 Slots)	307420
213227	Set of Parts - Function Mechanism	307278
900524	Screw, 5-40 x 1/8" Socket Set	234252
900854	Designation Plate (Normal)	219596
901230	Plate, Emblem	228204
901335	Designation Plate (Call Busy)	227746
901336	Designation Plate (Monitor)	227770
901981	Designation Plate (Alarm RLS.)	237088
902420	Gage	207722
902999	Designation Plate (MSG. CONN.)	248758