INTRODUCTION

This manual provides detailed information about your Model 42 Telex Teleprinter. It includes information on connections, power turn on, and off-line operation such as all the keyboard, punch and reader controls and indicators, explanation of options, option programming and some trouble analysis. This manual is supplemental to the Introductory How to Operate manual.

The Introductory How to Operate, Manual 517, provides information on how to perform the basic communication functions of the teleprinter. The procedures in that manual are presented in an easy to follow, step by step format and should be performed by the new operator as an introduction to the teleprinter.

For infrequent use, a Simplified Reference Guide, Manual 572 is provided for both new or experienced operators.

Your 42 Teleprinter Keyboard Send Receive (KSR) or Automatic Send Receive (ASR) Terminal for Telex application is compatible with domestic and international Telex systems.

The ASR Teleprinter provides character-at-a-time keyboard-printer send-receive operation and has the capability of preparing punched paper tape off-line, for later transmission on-line from the paper tape reader. In the on-line mode, the punch along with the printer can copy all received data. The punch and reader can also be controlled on-line by character sequences.

Transmission speeds are 45, 50, 56, 75, 100, 200 or 225 baud. Different speeds can be optioned by the attendant to match the remote station. Transmitted alphabetic characters will print as upper case characters and received alphabetic characters will print as slightly larger upper case characters.

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TELEPRINTER SUPPLIES AND MAINTENANCE .......... 41

TELETYPE CORPORATION PRODUCT, SERVICE AND EDUCATIONAL SERVICES .... 42
The keyboard is used for dialing or call origination. Calls are answered automatically.

Operator training is recommended for the Telex Terminals in addition to instructions in this manual.

On the friction feed printer, messages up to 80 characters per line are printed on 8-1/2 inch wide roll type paper. The roll is held in a support attached to the rear of the teleprinter.

The Paper Tape (PT) Unit may be located up to 50 cable feet from the teleprinter.

The chad resulting from punching approximately one-half roll of randomly punched tape will fill the small chad collection box.

The ribbon is part of a cartridge that can be readily replaced with the cover open. Replacement ribbon cartridges should be obtained from Teletype Corporation.

Refer to the TELEPRINTER SUPPLIES AND MAINTENANCE section of this manual for paper, ribbon, and paper tape (ASR) replacement information.

* Make sure ac power cord, cord to any external communications device, and cord to PT Unit are connected as shown before turning on power.

* Turn on power to teleprinter by depressing upper half of ON/OFF switch.
PT Unit

- Make sure ac power cord and cable to KSR Teletypewriter Auxiliary Port are connected as shown before turning on power.

To 42 Teletypewriter

- Turn on power to PT Unit by depressing upper half of ON/OFF switch.

- Power should normally be left on for automatic punch and reader operation on sets so equipped.
- The ASR arrangement will revert to normal KSR operation when the PT Unit power is turned off or the cable is disconnected.
- Telephone calls in the Data mode may be disconnected if power to the PT Unit is turned on or off.

Each time power is turned on, the motor starts. It continues to run for a minimum of 30 seconds if no data is sent or received during that interval.

KEYBOARD CONTROLS AND INDICATORS DESCRIPTION

This section describes the purpose and operation of all controls and indicators on the 43 Telex KSR and ASR (KP) set. Most of the operating controls are across the top of the keyboard.

Keyboard Arrangement

1. Numeric Character — Depressing key generates the numeric associated with the key. If in the Alpha mode, the controller will precede the numeric character with a figures shift. If on-line, figures and character will be sent.

2. Alpha Character — Depressing key generates the alpha character associated with the key. If in the Figures mode, the controller will precede the alpha character with a letters shift. If on-line, letters and character will be sent.

3. Returns printer carriage to the left margin of the current line unless otherwise optioned (< KEY>). Character is sent on-line. Pressing this key will cause the contents of the tape buffer to be punched followed by the reader loading the tape buffer with the next line of data (stopping on a carriage return character) if in the Tape Buffer mode.
KEYBOARD CONTROLS AND INDICATORS DESCRIPTION

4. **BLANK** (LTRS) — Generates 5-level code for letters. Character is used to precede alpha characters to Alpha mode, Character is sent on-line. Can be used for reboot if punching on paper tape (ASR).

5. **SPACE** (FIGS) — Generates 5-level code for figures. Character is used to precede numeric characters to shift remote device to Numeric mode. Character is sent on-line.

6. **Advances paper one line for each depression depending on option. Two options effect this key, (≠ KEY?) and DOUBLE LINE FEED. This character is sent on-line.**

7. **SHIFT BLANK** — Generates 5-level code for blank. Can be used to prepare a leader on punched tape (ASR). Character is sent on-line, does not print, but is stored in memory.

8. **REPT** — This key provides the attendant the ability to cause any key on the keyboard, to repeat by holding the REPT key and the desired key depressed at the same time.

13. **START** Depressing initiates a request to dial. Lamp flashes until a proceed signal is received from exchange. Lamp lights continuously while proceed signal is received for pulse dialing. If ON-LINE key turns on, wait for the “GO AHEAD” message before Character dialing.

14. **ON-LINE** Indicates that the terminal is on-line. In pulse dialing systems this lamp remains OFF until the remote connection has been made. In Character dialing systems this lamp will turn ON before the “GO AHEAD” message is printed. In Private Line systems, this lamp remains ON. This lamp will flash while a request for disconnect is being sent. If the CALL ALARM key is latched down, this lamp will flash while the alarm is being sounded. Pressing the ON-LINE key silences the alarm and turns the lamp ON continuously. If the remote break-in option is selected, this lamp along with the ALARM lamp will flash when a remote break-in is detected. Pressing the key turns the lamp ON continuously and turns the ALARM lamp OFF.

15. **Press to disconnect call or to abort a request for a line. ON-LINE lamp will flash while a call disconnect is being requested. Lamp flashes when in the Prepare Options mode. Press to exit Prepare Options mode, if the changes made are not to be used (AUTO 2 and AUTO 3, will maintain their changes).**

16. **LOCAL** Press to enable the Local Preparation mode. Lamp will light. Keyboard, reader, printer and punch will be enabled for local use. Press again to clear the mode. If the machine is in the Local mode when a call is answered, the LOCAL PREP lamp flashes to indicate “seizure” has occurred. The printer will feed out several LF’s and will then copy all incoming traffic. Several letter characters are punched if the punch is active. The keyboard and reader will be disabled. Seizure is cleared by pressing the LOCAL PREP key.

17. **ALARM** Lamp lights due to an alarm condition (ie, low tape, printer self-test, low paper or KP cover open). Clearing alarm conditions turns the lamp OFF. The alarm conditions prevents auto answer (if the low paper and low tape options are set), but will not prevent call initiation.
18. **TAP}$^*$ ALARM ON-OFF  

When this key is down, all data for the punch is placed into a one-line buffer where it can be corrected before it is released to the punch. Entry of a carriage return, line feed, blank, figures or letters shift (from the keyboard) causes the buffer to be emptied to the punch. Entry of a bell character into the buffer requires the print bell option be enabled unless the buffer is empty. Entry of a bell character into an empty buffer when the print bell option is disabled outputs the bell directly to the punch.

19. **LINE}$^*$ PUNCH ON-OFF  

When the key is latched in the DOWN position the punch will be allowed to copy an incoming call. If the terminal is seized by the incoming call, the punch will be sent 24 letter characters, followed by the data received from the line. If the call is dropped while the terminal is still seized, an additional feed out of 24 letter characters will be sent to the punch. When this key is latched in the UP position the punch will be kept off all the time the terminal is on-line.

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21. **CTRL** REVER <  

Pressing these keys will cause the contents of the buffer to be printed out up to the current position of the print head. The print head will point to the next position to be entered in this buffer.

22. **CTRL** 1  

Pressing these keys will cause the contents of the tape buffer to be punched, carriage return and line feed will be punched, and the reader will be prevented from loading the next line of data. This allows the addition of one line of characters when editing a previously prepared tape. Pressing this key with an empty tape buffer causes a CR/LF to be sent to the punch.

23. **CTRL** C  

Pressing these keys causes the buffer to be cleared, the printer to carriage return and line feed, the reader will be prevented from loading the next line of data. This allows the changing of one line of characters when editing a previously prepared tape.

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Case in the DOWN position an incoming call will cause a timed call alarm to be generated until the user silences it by pressing the ON-LINE key (or the LOCAL/P&P key if the terminal was seized). Also the external call alarm output (pin 19 of the main EIA connector) will be activated. Dropping the call does not silence the alarm.

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When preparing the message using the on-line tape buffer, pressing these keys causes the printer to line feed once and backspace the print head so that the silver line on the print head points to the first character to be corrected. Pressing the backspace additional times backs up the print head without any additional line feeds. When the print head reaches the left boundary, pressing backspace will cause the bell to ring.

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Pressing these keys causes the buffer to be cleared and causes the printer to carriage return and line feed.

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The strip betwecn the number row and the control row. Pressing these keys changes the sense of all the shift flags in the machine. This can be used while on-line to attempt to read incoming garble due to a missed shift code or can be used to read a tape with a missing shift code.

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This is shown as an up arrow and a down arrow on the strip between the number row and the control row. Pressing these keys will cause the set to dial the last number called.

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These keys can be used for automatic dialing or automatic message generator depending how they are optioned. AUTO 2 and 3 can be coded for up to 63 characters but these characters will be lost if power is turned OFF. AUTO 4 through 9 can be coded for up to 19 characters and are stored in memory. AUTO 9 can be used for message numbering and referred to from the message reader option. Also the last character may point to another AUTO string.
PT Unit indicator when lit indicates power is applied to the PT Unit.

Punch Controls and Indicator

- **OFF**
  - Operation of the OFF position stops the punch if it is operating. Any data received while the switch is off will not be punched. Punch will not respond to punch ON sequence.
  - Operation. No code holes are punched. More than ten successive operations are not recommended. Cannot be operated with punch in AUTO position.
  - Indicator: The tape may be damaged and/or data lost if the switch is operated to backspace while data is being received and punched.

- **FEED**
  - Operation to the FEED position causes the punch mechanism to continuously perforate only the sprocket hole and to advance the blank tape as long as the switch is held operated. This operation may be used to prepare "leaders" for separating messages in the tape, or for initiating tape feed when a new supply of tape is entered into the punch. Cannot be operated with punch in AUTO position.
  - Operation. No code holes are punched. More than ten successive operations are not recommended. Cannot be operated with punch in AUTO position.
  - Indicator: The tape may be damaged and/or data lost if the switch is operated to backspace while data is being received and punched.

- **BACKSPACE**
  - Operation to the BACKSPACE position causes the tape to be reverse feed one space position for each operation. No code holes are punched. More than ten successive operations are not recommended. Cannot be operated with punch in AUTO position.
  - Indicator: The tape may be damaged and/or data lost if the switch is operated to backspace while data is being received and punched.
Reader Controls and Indicator

ON
Operation to the ON position causes the reader to continuously step and sense tape (provided tape has been properly placed in reader). When running, the reader will stop wherever and as long as a tight or tangled tape condition occurs, and will restart upon correction of the condition. It will stop completely if the tape lid is opened or the tape runs out or fails to advance. To restart, see Note below.

Note: Operate switch to the OFF position before opening tape lid to correct condition, and open the reader tape lid while transmission is temporarily interrupted may cause loss of characters so the tape should be backed up and restarted at the beginning, the tape lid should be closed and switch operated to the ON position.

AUTO
In the AUTO position, the reader will automatically start upon receipt of the reader On sequence option (SSSS is default value). In the term On-Line mode, the reader will start on receipt of the reader ON sequence received from the line or from the keyboard.

If the KP is in the Local Prep mode the keyboard can start the reader (reader ON sequence). The reader will transmit locally.

When running, the reader will stop on a tight tape or tangled tape condition and will restart upon removal of the condition. The reader will stop upon sensing the reader OFF sequence option (AAAA is default value) in its tape. Up to six additional characters may be read after the reader OFF sequence, therefore six blank characters should be placed on the tape following the reader stop code. If a WRU character is encountered in the tape in the On-Line mode, the reader will stop. Six blank characters should be placed after a WRU character in the tape. The reader will also stop when tape runs out or tape lid is opened. If tape lid is opened while reader is running, loss of characters may occur.

OFF
Operation to the OFF position stops the reader if it is operating, and prevents further response to control signals. Restarting is possible in the middle of a message, without loss of data, if the reader gate is not opened.

* SKIP
With the reader control switch OFF operation to the SKIP position causes the tape to advance one character space, but the character will not be transmitted.

* STEP
With the reader control switch OFF operation to the STEP position causes the reader feed mechanism to advance one character space, and if tape is present and has moved, causes the transmission of the character in the gate locally or on-line. No action will occur if the reader gate is open, no tape is present in the gate, or tight or tangled tape is present. If tape is in the gate but does not move, due to torn-feed holes or improper insertion, the feed mechanism will operate once, but no character will be transmitted.

The reader indicator is lit steadily whenever the reader is conditioned to read tape.

* ON/AUTO/OFF switch in ON position and with tape being sensed.

* ON/AUTO/OFF switch in AUTO position and after receipt of reader ON sequence but before sensing the reader OFF sequence in the tape.

Indicator blinks on and off when:

* ON/AUTO/OFF switch is in the ON position, and the tape gate is opened, the tape becomes tight or tangled, runs out, or fails to advance.

* ON/AUTO/OFF switch is in the AUTO position, after receipt of reader ON sequence but before sensing the reader OFF sequence in the tape and the tape gate is opened, the tape becomes tight or tangled, runs out, or fails to advance.
Paper Tape Controls

**READER TAPE SENSING ARM**
(Provides detection of the tight-tape or tangled-tape condition.)

**LOW TAPE ARM**
(Provides detection of the low-tape condition (within 25 feet of being exhausted).)

**READER TAPE SENSING PIN**
(Provides detection of the tape-out or open-tape-lid condition.)

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**Auxiliary Controls**

**REAR OF UNIT**

- **PTL OUTDOOR NORMAL SWITCH** — Must be in NORMAL position.
- **CTS SWITCH** — Must be in 30 position.

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**Tape Preparation**

**Keyboard Entry**

- Non-Buffered

1. Depress [key to turn lamp ON.
2. Depress [key if the DOWN position (must be UP).
3. Load paper and paper tape.
4. Turn ON punch.
5. Depress [ and [ keys simultaneously for a letters leader in the tape.
6. Keyboard the message.
7. If an error is made, manually depress the backspace switch on the punch the number of times required, so the tape can be over punched.
8. Depress [ and [ key for letters to over punch the message in the tape. Continue keyboarding the message.
9. When finished verify the tape by placing it in the tape reader and send to the printer.

- Buffered

1. Depress [key to turn lamp ON.
2. Depress [key to latch in the DOWN position.
3. Turn ON punch.
4. Hold the repeat [key down and depress the LTRS [key for a leader on the tape.
5. Type in the message, checking each line before entering a carriage return. (The contents of the one line buffer is not punched on the tape until a carriage return, line feed, or nonprinting character is entered).
6. If an error is made, hold the [key down and depress the [key to line feed and backspace to the mistake. (This is a destructive backspace function). Retype the remainder of the line. The print head marker will point to the character being changed.
Keyboard Entry

- Non-Buffered
  1. Depress key to turn lamp ON.
  2. Depress key if the DOWN position (must be UP).
  3. Load paper and paper tape.
  4. Turn ON punch.
  5. Depress and keys simultaneously for a letters leader in the tape.
  6. Keyboard the message.
  7. If an error is made, manually depress the backspace switch on the punch the number of times required, so the tape can be over punched.
  8. Depress key for letters to over punch the message in the tape. Continue keyboarding the message.
  9. When finished verify the tape by placing it in the tape reader and send to the printer.

- Buffered
  1. Depress key to turn lamp ON.
  2. Depress key to latch in the DOWN position.
  3. Turn ON punch.
  4. Hold the repeat key down and depress the LTRS key for a leader on the tape.
  5. Type in the message, checking each line before entering a carriage return. (The contents of the one line buffer is not punched on the tape until a carriage return, line feed, or nonprinting character is entered).
  6. If an error is made, hold the keys down and depress the key to line feed and backspace to the mistake. (This is a destructive backspace function). Retype the remainder of the line. The print head marker will point to the character being changed.

Reader Entry

- Non-Buffered
  1. Depress key to turn lamp ON.
  2. Depress key if in the DOWN position (must be UP).
  3. Place tape in reader.
  4. Turn punch ON.
  5. Stop reader just before area to be deleted.
  7. Press Skip for each character to be deleted.
  8. Repeat until tape is fully duplicated.

- To delete from a tape:
  1. Depress key to turn lamp ON.
  2. Depress key if in the DOWN position (must be UP).
  3. Place tape in reader.
  4. Turn punch ON.
  5. Turn reader ON.
  6. Stop reader just before insert point by depressing reader switch OFF.
  7. Single step to the last character before insert by depressing Step switch.
  8. Keyboard inserted data.
  9. Repeat until tape is fully duplicated.
Reader Entry (Contd)

To edit a previously prepared tape using buffer (for advanced users).

1. Depress key to turn lamp ON.
2. Depress key to latch in the DOWN position.
3. Place the tape in the reader.
4. Turn reader ON, the first line of data will print out.
5. Turn punch ON.

6. If the line of data is alright, depress key.

This key should be programmed for CR as its first character in the (< KEY?) option to transfer to the punch. The next line of data will automatically be sent from the reader to the printer and buffer. Blank characters and extra letter and figure characters not at the beginning of a line will be stripped away. If they are necessary, they must be reinserted. Lines with a line feed only do not allow for one line editing. Reading a tape which contains bell characters does not ring the sets bell in this mode.

If the entire line is to be removed, depress and key simultaneously to clear the buffer. The reader will automatically read the next line to the printer and buffer.

8. If the line is to be changed, hold the key down and depress the key to line feed and backspace to the first incorrect character and retyping it and the rest of the line. Depress key to punch the line. The reader will automatically read the next line to the printer and buffer.

9. If one or more lines of data is to be inputted to the tape, depress and keys simultaneously. The line of data in the buffer will be punched and the reader will stay off so that data can be entered into the buffer from the keyboard. When all the inputing is complete, depress key to punch the data. The reader will automatically read the next line to the printer and buffer.

10. If the entire line is to be changed, depress and keys simultaneously. The line of data in the buffer will be cleared and a new line can be typed in. Depress the keys when the line is completed which sends the buffer to the punch. The reader will automatically read the next line to the printer and buffer.
Loading Prepared Tape in Reader

To place prepared message tape in the tape reader for transmission, proceed as follows:

1. Open tape gate by lifting up on right side.
2. Hold tape so pointed end faces you and two larger punch holes are to be left of small feed holes.
3. Place tape so that feed holes are over teeth of feed wheel, and so the series of letters or the first character of message is over sensing window.

Note: It is possible to insert the tape upside down and wrong end out. This would cause a completely garbled message.

4. Align tape and close gate. Make certain that tape is free to feed into gate without tangling. If tape is tight, transmission will not be possible.

Installing Paper Tape

When the tape is low, the punch indicator will flash and the paper tape will change color.

1. Operate left punch control switch to OFF position.
2. Tear off old tape (if present) at entrance to punch.
3. Feed out tape in punch (if present) by operating and holding right punch control switch to feed position.

1. Lift used roll out of supply roll holder. Remove but do not discard tape roller from core of old roll.
2. Insert tape roller in new roll of tape and place roll in holder that tape feeds from top of roll toward the front of set.
3. Insert tape under and around the rear stationary roller, over the extended tape tensioning arm, and around the forward stationary roller.
4. Open the punch cover and feed the paper tape through the punch. Check to make sure the tape is straight and between the guides. Close the cover.
A plastic chad container is located under and to the left of the punch. It catches the chad (paper particles) punched out of the tape as the message tape is prepared.

Periodically, remove the chad container by pulling the top of the container to the left and lifting up. Empty out the chad and replace the container. The tabs on the bottom of the container fit into the slots of the cabinet.

The signal bell sounds when characters are entered seven characters before and at the right margin.

The next printing location of the print head and the position for setting left- and right-hand margins is indicated by the print head marker at the print indicator scale. The print head moves back when printing resumes after one second delay. When back spacing (making a correction to the buffer) it points to the character being changed.
ANSWER-BACK

The answer-back feature is a user programmable option. When entered, a message of up to 31 characters can be sent manually or automatically.

The answer-back may be sent automatically in response to receipt of the WRU character.

The answer-back can be generated manually by depressing △

• If the terminal is on-line the answer-back is transmitted on-line and prints locally.
• If the < key is on, the answer-back will print locally.

INSTALLING RIBBON

1. Center print head and open cover. ALARM lamp lights.
2. Place new ribbon around the outside of rollers.
3. Pull print head locking lever back (towards keyboard) as far as it will go.
4. Using thumb, push locking lever toward platen until it snaps into place.
5. Close cover.
6. Place ribbon cartridge on the right-hand bracket and allow magnet to pull cartridge down into place. Make sure it's down.
7. Pull on cartridge to the right and pass ribbon between print head and rollers (see Routing Diagram below).
8. Remove and discard cartridge with used ribbon by grasping and lifting the cartridge. This applies only when changing a ribbon.
9. Position print head against ribbon. With thumb on top of the print head, push the print head toward the platen, then move locking handle fully to the rear.

Note: Make sure ribbon is fully seated on all four rollers before closing cover.

Routing Diagram
INSTALLING PAPER (Friction Feed)

- Install paper as shown after removing the unused paper from the printer. It is not necessary to turn off power or open the cover when replacing the paper but to avoid loss of data, paper should be replaced after the remote terminal stops sending.

1. To remove unused paper or to straighten paper, pull forward on the paper release.
2. Push back on the paper release to enable paper feeding.
3. Insert paper spindle into paper roll.
4. Adapters (if present) on new paper rolls, should be removed. The adapter can be used to cut and remove the outer layer of paper.
5. Depress to reset if ALARM lamp on the operator console does not turn off.
7. Lift paper guide and continue pushing paper down until paper engages the pressure roller. Advance paper using platen knob or line feed from keyboard. Feed paper under the paper guide then lower the paper guide.

OPTIONS

Prepare Options Mode:

1. Take the terminal off-line and out of the Tape Buffer mode by depressing the \[ \text{STOP} \] key and the \[ \text{UP} \] key if in the DOWN position.
2. Depress the \[ \text{(} \] key while holding down the \[ \text{CTRL} \] key down to put the terminal into prep options.
3. Depressing the \[ \text{N} \] key while holding down the \[ \text{CTRL} \] key (NEXT) advances to the next option.
4. Depressing the \[ \text{U} \] key while holding down the \[ \text{CTRL} \] key (UP) returns to the previous option.
5. Depressing the \[ \text{ } \] key while holding down the \[ \text{CTRL} \] key returns to the beginning of the list.
6. The editing features of the tape buffer are available for preparing options (REVIEW, BACKSPACE, CLEAR).
7. The option can be changed by simply typing in the new value for the option. (Error messages help you if any mistakes are made.)
8. Load the options by depressing the \[ \text{ } \] key while holding down the \[ \text{CTRL} \] key. (Depressing the \[ \text{STOP} \] key will abort the Options mode without changing the options that are stored in the nonvolatile memory. AUTO 2 and AUTO 3 will be updated.)
**Auto String Chaining**

The last character of an auto string may be a pointer to another auto string which will cause the 2nd auto string to be printed, i.e., depressing the key for the first auto string will cause the first string and the second one to be printed. The pointer will not be printed. More than two auto strings may be chained. An auto string may only call another auto string whose number is greater than the calling auto string's number. Procedure to chain auto string:

1. Enter prep options.
2. Type desired text for auto string. Save on character space.

**Option Descriptions**

**AUTO 9 (Message Numbering)**

AUTO 9 can be used for message numbering. When AUTO 9 is activated, the first number in the string is incremented before the string is printed or transmitted. The number can be up to five digits in length. Any nonnumeric character in the string after the first numeral indicates the end of the message number. Numerals later in the string are not affected.

When the message number is four digits or less, it will reset to one on the next increment when each of the digits reaches nine. For five digit numbers, this reset operation occurs after the number reaches 65530. Throughout the message numbering operations, the number retains the same number of digits it was initialized to with leading zeros used whenever necessary.

To initialize the message number, enter a numeral anywhere within AUTO 9 in the Prep Options mode using leading zeros when necessary to set the number of digits. Any of the other strings can be chained to AUTO 9 to provide a variable format. Only the first number in AUTO 9 will be incremented.

If AUTO 9 has no number in it or if the first number is greater than five digits in length, no number incrementing is performed.

Press `CM` key and number of the desired auto string at the same time. The printer will print "number backspace one", (eg, 2,3). This is a visual pointer to the auto string which will be "chained" to the auto string just entered.

Proceed to the auto string selected above and type in desired text. This auto string may also be "chained" to another, whose auto string number is higher.

Load prep options.

**Send Header Sequence**

When a character sequence is entered for this option, the terminal will stop the reader and transmit the message header (if that option is enabled) and then restart the reader, if this sequence was transmitted on-line.

**Message Header**

This option has three accepted values (8 or 9 or 0). An entry of 8 or 9 enables the option and specifies the auto string sent when the auto header sequence has been transmitted on-line. The main application of this option is to send the message number format. To allow for variable message number formats, AUTO 8 chained to AUTO 9 or AUTO 9 alone can be used for message numbering. Therefore both these strings can be used as the message header. If AUTO 8 is enabled for this option and AUTO 9 is chained to AUTO 8, both strings will be sent.

A fixed message can be configured by setting the option to 8 and not using the message number feature of AUTO 9.

Setting this option to "0", disables the option.
Option Descriptions (Contd)

< KEY?

Specifies a character or character sequence that is generated when the oversize key with the carriage return symbol is depressed. One, two or three characters may be specified for this key. The two or three character sequence will be generated in the same order as specified.

= KEY?

Specifies the single character which is generated when the key with the line feed symbol is depressed.

HZTAB

The printer will tab the number of spaces coded in this option starting at the left boundary setting and are evenly spaced across the page to the last stop before the right boundary setting.

Double Line Feed

A "Y" response enables the printer to generate two line feed characters for every single line feed character that is to be printed.

Print Bell Symbol

When "Y", the bell symbol will be printed for the "Bell" code. When "N", the bell sounds but the symbol is not printed.

Receive Only

When the option is "Y", the terminal can only be used on-line to receive messages. The terminal will auto answer if all criteria are met. It is not able to initiate calls.

Reader Pacing

When "Y", the terminal will permit external control of the R/T when on-line.

Remote Break In

When "Y", enabled, all received characters are compared to transmitted characters from the reader. If 15 characters do not agree, the reader is disabled, and the ON-LINE and ALARM lamps are flashed. Pressing the ON-LINE key reenables the reader.

Send Bell

When "Y", enabled, on-line transmission is not printed locally. All received characters are printed. This option permits full duplex operation on-line with the terminal. The S/R distinction option should be set to "N" (no) for correct paper copy of the received message in full duplex operation.

Automatic CR/LF

When "Y", enabled, a carriage return and line feed is automatically generated at the right margin on all locally generated characters. This option is not functional during an answer-back message.

Auto Disconnect Sequence

When a character sequence is entered for this option, the terminal will request a disconnect after this sequence is transmitted on-line.

Punch, Reader, ON-OFF Sequence

When a four character sequence is entered for these options, the reader and punch will be controlled ON-OFF whenever these codes sequences are transmitted or received and the punch and/or reader is in the AUTO mode.

Speed

The printer can be optioned to operate at the following baud rates - 45, 50, 56, 75, 100, 200 or 225. The upspeed rate is always 200 baud.

Upspeed Sequence

This is a character sequence option of up to four characters. The option is enabled when any sequence is entered in the option list. When on-line, if the sequence is detected by the terminal from either a remote or local source (but no combination of the two), the terminal will switch to 200 baud.

Downspeed

This is a character sequence option of up to four characters. The option is enabled when any sequence is entered in the option list. When on-line, if the sequence is detected by the terminal from either a remote or local source (but no combination of the two), the terminal will switch to the baud rate specified in the speed option of the option list.
Option Descriptions (Contd)

Left Boundary
The option value is the number of nonprint columns to the left of each line. This number is independent of margin settings and is the number used when margins are cleared. Maximum value allowed is 79. The value for the left boundary must be less than the right boundary.

Right Boundary
The option value is the print column which is the right limit for printing. Maximum value allowed is 80.

Break On Out Of Service
When “Y”, the terminal will send continuous break (open loop) on the line when it is in an out of service condition. Out of service is defined as a condition when the terminal is in the Prep Option mode.

Low Paper
When “Y”, a low paper condition will prevent answering calls. This option does not affect the ALARM lamp operation by low paper.

Low Tape
When “Y”, a low tape condition on an associated paper tape set with the punch on will cause the same alarm condition as low paper.

S/R Distinction
When “Y”, the sending printing will be slightly smaller than the receive printing. When “N” both send and receive printing will be the same size.

Connect Delay
The decimal value up to 9999 for time in milliseconds that the transmitter is disabled after a valid connect. Default value is 1700 (1.7 seconds).

Disconnect Delay
The decimal value up to 9999 for time in milliseconds for the minimum break (space hold) that defines a disconnect. The minimum value allowed is 150 ms. Default value is 1000 (1 second).

Busy Pulse Width
The decimal value up to 999 for the maximum on time of DR in milliseconds to be recognized as a busy signal. Default value is 300. If the busy pulse is longer than 999 ms, the busy signal will not be generated.

Send Back Timer
The decimal value up to 9999 for the time in milliseconds SD will go spacing on a send break signal. Default value is 3000 (3 seconds).

PRVT Line
When “Y”, the terminal does not respond to a connect or disconnect on the line. The user depresses the START key on power up to put the terminal on-line. To access the Local modes of operation, the user depresses the STOP key to put the terminal off-line. (The SD and DTR leads remain in the idle on-line state). Now the user can access the Local modes in the usual fashion by depressing the LOCAL PREP key. After finishing local preparation, the user depresses the START key to place the terminal back on-line.

Depressing the START key sends the terminal directly to the connect state bypassing the usual dialing states. With this option enabled, transmission of the auto disconnect sequence updates the message header and character meter instead of disconnecting the line. It is also updated when the terminal is taken off-line by depresses the STOP key or going into prep options. Note also for proper private line operation, the send break option should be set to zero so no break on the line occurs by going into the Local modes by depressing the STOP key.
Option Descriptions (Contd)

Protocol

Any one of six protocols can be used. The most commonly used and default value is one. This is a system requirement.

1 — Neutral Loop
2 — RCA Neutral Loop
3 — Modem or Polar Line
4 — RCA Modem or Polar Line
5 — Peoples Republic of China
6 — Cable and Wireless

Answer-Back

A character sequence of up to 31 characters may be specified and must contain all the LTRs And FIGs shift codes along with CR and LF. A sample format is as follows:

A character sequence of up to 31 characters may be specified and must contain all the LTRs And FIGs shift codes along with CR and LF. A sample format is as follows:

```
S <= ABCDEFGXYS12345S <=
```

When

- `A` = Space
- `S` = LTRs Shift
- `O` = FIGs Shift
- `<` = Carriage return
- `=` = Line Feed

ABC.. = Subscriber Name

123.. = Call Number of Subscriber

XY = Telex Network Identification Code

Character Meter

This meter prints out a number at the end of the options list. It is a read only value and cannot be changed. The number indicates how many print cycles the machine has completed. The meter will return to zero every 327.68 million characters.

User Programmable Option Table

<table>
<thead>
<tr>
<th>PROMPT</th>
<th>PRINTED</th>
<th>DEFAULT</th>
<th>X-VALUE</th>
<th>CODES</th>
<th>CHECKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 2</td>
<td>None</td>
<td>AUTO 2</td>
<td>AUTO 2</td>
<td>Code for CTRL 2 Key</td>
<td>Up to 63 Characters</td>
</tr>
<tr>
<td>AUTO 3</td>
<td>None</td>
<td>AUTO 3</td>
<td>AUTO 4</td>
<td>Code for CTRL 3 Key</td>
<td>Up to 63 Characters</td>
</tr>
<tr>
<td>AUTO 4</td>
<td>AUTO 4</td>
<td>AUTO 4</td>
<td>AUTO 5</td>
<td>Code for CTRL 4 Key</td>
<td>Up to 19 Characters</td>
</tr>
<tr>
<td>AUTO 5</td>
<td>AUTO 5</td>
<td>AUTO 5</td>
<td>AUTO 5</td>
<td>Code for CTRL 5 Key</td>
<td>Up to 19 Characters</td>
</tr>
<tr>
<td>AUTO 6</td>
<td>AUTO 6</td>
<td>AUTO 6</td>
<td>AUTO 7</td>
<td>Code for CTRL 6 Key</td>
<td>Up to 19 Characters</td>
</tr>
<tr>
<td>AUTO 7</td>
<td>AUTO 7</td>
<td>AUTO 7</td>
<td>AUTO 8</td>
<td>Code for CTRL 7 Key</td>
<td>Up to 19 Characters</td>
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<tr>
<td>AUTO 8</td>
<td>AUTO 8</td>
<td>AUTO 8</td>
<td>AUTO 8</td>
<td>Code for CTRL 8 Key</td>
<td>Up to 19 Characters</td>
</tr>
<tr>
<td>AUTO 9</td>
<td>AUTO 9</td>
<td>AUTO 9</td>
<td>AUTO 9</td>
<td>Code for CTRL 9 Key</td>
<td>Up to 19 Characters</td>
</tr>
<tr>
<td>NONE</td>
<td>0</td>
<td>NONE</td>
<td>0</td>
<td>Can be Used for Message Numbering.</td>
<td>8, 9 or 0</td>
</tr>
<tr>
<td>&lt; KEY?</td>
<td>CR</td>
<td>CR</td>
<td>CR</td>
<td>Codes for Return Key</td>
<td>1, 2 or 3 Characters</td>
</tr>
<tr>
<td>= KEY?</td>
<td>LF</td>
<td>LF</td>
<td>LF</td>
<td>Codes for Line Feed Key</td>
<td>1 nonprinting Character</td>
</tr>
<tr>
<td>HZTAB</td>
<td>10</td>
<td>HZTAB</td>
<td>10</td>
<td>Horizontal Tab Spacing</td>
<td>2 Numerals</td>
</tr>
<tr>
<td>NONE</td>
<td>N</td>
<td>NONE</td>
<td>N</td>
<td>Double Line Feed</td>
<td>Y/N</td>
</tr>
</tbody>
</table>

Can be Used for Message Numbering.

Message Header - will SEND AUTO 8, AUTO 9 or nothing (if 0)

1 through 00000 will be Incremented (First Set of Digits Only)
## Installer Programmable Option Table (Contd)

<table>
<thead>
<tr>
<th>PROMPT</th>
<th>PRINTED DEFAULT</th>
<th>Option</th>
<th>ENTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>NONE</td>
<td>FFFF</td>
<td>Punch OFF Sequence</td>
<td>Up to 4 Characters</td>
</tr>
<tr>
<td>NONE</td>
<td>AAAA</td>
<td>Reader OFF Sequence</td>
<td>Up to 4 Characters</td>
</tr>
<tr>
<td>NONE</td>
<td>CCCC</td>
<td>Punch ON Sequence</td>
<td>Up to 4 Characters</td>
</tr>
<tr>
<td>NONE</td>
<td>SSSS</td>
<td>Reader ON Sequence</td>
<td>Up to 4 Characters</td>
</tr>
<tr>
<td>NONE</td>
<td>Not Enabled</td>
<td>Upspeed Sequence</td>
<td>Up to 4 Characters</td>
</tr>
<tr>
<td>NONE</td>
<td>Not Enabled</td>
<td>Downspeed Sequence</td>
<td>Up to 4 Characters</td>
</tr>
<tr>
<td>NONE</td>
<td>1700</td>
<td>Connect Delay (1.7 seconds)</td>
<td>4 Numerals (0 to 9999)</td>
</tr>
<tr>
<td>NONE</td>
<td>1000</td>
<td>Disconnect Delay (1.0 seconds)</td>
<td>4 Numerals (150 to 9999)</td>
</tr>
<tr>
<td>NONE</td>
<td>300</td>
<td>Busy Pulse Width (0.30 seconds)</td>
<td>3 Numerals (0 to 999)</td>
</tr>
<tr>
<td>NONE</td>
<td>3000</td>
<td>Send Break Timer (3.0 seconds)</td>
<td>4 Numerals (0 to 9999)</td>
</tr>
<tr>
<td>NONE</td>
<td>1</td>
<td>Protocol</td>
<td>1, 2, 3, 4, 5 or 6</td>
</tr>
<tr>
<td>NONE</td>
<td>⊆</td>
<td>Answer-Back</td>
<td>Up to 31 Characters</td>
</tr>
<tr>
<td>NONE</td>
<td>⊆</td>
<td>Character Meter (Not an option - Just indicates how many print cycles has been completed).</td>
<td></td>
</tr>
</tbody>
</table>
### Customer Installed Options Chart

#### KEYBOARD PROGRAMMABLE OPTIONS

<table>
<thead>
<tr>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
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<tbody>
<tr>
<td>Auto</td>
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<td>Auto</td>
<td>Auto</td>
<td>Auto</td>
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<td>Auto</td>
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<tr>
<td>Fender Length</td>
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<td>Fender Length</td>
<td>Fender Length</td>
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<td>Speed</td>
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<td>Speed</td>
<td>Speed</td>
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<td>Speed</td>
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<tr>
<td>Left Bound</td>
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<td>Left Bound</td>
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<td>Right Bound</td>
<td>Right Bound</td>
<td>Right Bound</td>
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</tr>
<tr>
<td>Break on Out of Service</td>
<td>Break on Out of Service</td>
<td>Break on Out of Service</td>
<td>Break on Out of Service</td>
<td>Break on Out of Service</td>
<td>Break on Out of Service</td>
<td>Break on Out of Service</td>
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<tr>
<td>Line Length</td>
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<tr>
<td>Low Follower</td>
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<td>Print Bias</td>
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<td>Print Bias</td>
<td>Print Bias</td>
<td>Print Bias</td>
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### KEYPAD PROGRAMMABLE OPTIONS (CONT'D)

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Receive Only</td>
<td>Receive Only</td>
<td>Receive Only</td>
<td>Receive Only</td>
<td>Receive Only</td>
<td>Receive Only</td>
<td>Receive Only</td>
<td>Receive Only</td>
</tr>
<tr>
<td>Reader Select</td>
<td>Reader Select</td>
<td>Reader Select</td>
<td>Reader Select</td>
<td>Reader Select</td>
<td>Reader Select</td>
<td>Reader Select</td>
<td>Reader Select</td>
</tr>
<tr>
<td>Send Blind</td>
<td>Send Blind</td>
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<td>Send Blind</td>
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<td>Send Blind</td>
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<tr>
<td>Send Header</td>
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<td>Send Header</td>
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<tr>
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<tr>
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<td>Punch Off</td>
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<td>Punch Off</td>
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</tr>
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<td>Reader Off</td>
<td>Reader Off</td>
<td>Reader Off</td>
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<td>Downspeed</td>
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<tr>
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<td>Connect Delay</td>
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<tr>
<td>Disconnect Delay</td>
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<td>Disconnect Delay</td>
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<tr>
<td>Busy Pulse Width</td>
<td>Busy Pulse Width</td>
<td>Busy Pulse Width</td>
<td>Busy Pulse Width</td>
<td>Busy Pulse Width</td>
<td>Busy Pulse Width</td>
<td>Busy Pulse Width</td>
<td>Busy Pulse Width</td>
</tr>
<tr>
<td>Send Break Time</td>
<td>Send Break Time</td>
<td>Send Break Time</td>
<td>Send Break Time</td>
<td>Send Break Time</td>
<td>Send Break Time</td>
<td>Send Break Time</td>
<td>Send Break Time</td>
</tr>
<tr>
<td>Answer-back</td>
<td>Answer-back</td>
<td>Answer-back</td>
<td>Answer-back</td>
<td>Answer-back</td>
<td>Answer-back</td>
<td>Answer-back</td>
<td>Answer-back</td>
</tr>
</tbody>
</table>

### WHEN TROUBLE OCCURS

Trouble that is encountered with the terminal should be reported as locally specified. A number to be called in case of trouble should be obtained from the installer.

If it can be determined that the trouble is in the remote equipment, the attendant at the location in trouble should follow local procedures for that area.

Before reporting a trouble, the attendant or local supervisor should:

- **First**
  - Check the following:
  - Make sure that all ac power cords are properly seated in power outlets.
  - Is the KD power switch turned on?
  - Is the PT Unit power switch turned on?
  - Are attendants experiencing the same trouble on other terminals?

- **Second**
  - Answer each one of the following questions. Any "No" response to a question can indicate a source of trouble within the terminal.
  - Are any control indicators on (power available, cords plugged in an cover closed)?

- **Third**
  - Report any "No" responses to the questions when making a trouble call.

Is red lamp on at teleprinter power supply?

The red lamp can be seen through air vent slot (6th slot from left) of the teleprinter bustle.

- Can any characters be locally generated from the keyboard to the printer?
- Can any control indicators be made to light?
- Can data be sent from keyboard and reader?
- Can data be received, printed, and punched?
Tape Punch Troubles

If tape punch does not operate properly, check for the following conditions:

- Is the chad box completely filled so that chad cannot leave chad chute?
- Is tape piled up and jammed at tape punch exit?
- Is tape feeding properly into punch guides without getting jammed at entry point?
- Is tape routed properly through tape supply rollers?
- Has the roller been left out of the tape supply roll causing roll to drag or bind?

Tape Reader Troubles

If tape reader does not operate properly, check for the following conditions:

- Is tape properly threaded into reader according to instructions?
- Is tape tangled or snagged preventing free entry into reader?
- Is tape torn, wrinkled, or of incorrect width?
- Report as local trouble in tape reader.

Ribbon

The ribbon cartridges provided by Teletype Corporation utilize ribbon material chosen for its physical stability and nonabrasive inks which have a lubricating quality. The use of ribbon cartridges without these required properties may reduce print head performance and life in addition to shorter ribbon life.

The ribbon cartridge should be replaced whenever the ribbon becomes frayed or print density becomes light. Ribbons obtained from Teletype Corporation should produce 5 million legible printed characters.

A package of six ribbon cartridges (Part No. 430484) can be ordered from Teletype Corporation, using the order form furnished with each teleprinter.

Friction Feed Paper

Paper for the 42 friction feed teleprinter should be standard 8-1/2 inches wide, single-ply, furnished in 5 inch maximum diameter rolls with a 1 inch diameter spindle hole.

Paper Tape

Paper tape for the PT set must be 11/16 inch wide oiled paper furnished in 8 inch maximum diameter rolls with two inch diameter spindle hole.

This .004 inch thick, 50 pound basic paper may be obtained from suppliers listed below or other suppliers:

Eastern Specialties Co.
287 Northfield Road
P O Box 181
Northfield, Illinois 60093
Cat. No. 14001
312-446-8780

Moore Business Forms
36 S. Wabash Ave.
Chicago, Illinois 60603
Cat. No. 60016
312-346-4214
Teletype Corporation Product Service and Education Services.

On the following page is a list of Teletype Corporation Product Service locations which provide maintenance service and repair on all Teletype Corporation products. For more information call toll free (US 800-323-4226) (IL 800-942-4193) 7:00 A.M. – 4:00 P.M. CST.

In addition, Teletype Corporation provides Custom Technical Training at its headquarters at 5555 W. Touhy Avenue, Skokie, IL in the northwest suburban area of Chicago. The training covers the installation, maintenance and repair of all Teletype Corporation products. Arrangements can also be made for training to be conducted at customer-selected field sites.

For information about class schedules, enrollment, tuition, on-site training or any special training needs, please contact:

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alachua</td>
<td>2330 NAMOUR CIRCLE, SUITE 1113, GAINESWOOD, AL 32609</td>
<td>(352) 473-8888</td>
</tr>
<tr>
<td>Mobile</td>
<td>3201 INTERNATIONAL DR., SUITE B, MOBILE, AL 36609</td>
<td>(251) 694-9891</td>
</tr>
<tr>
<td>Phoenix</td>
<td>2113 S. 4TH STREET, SUITE 104, TEMPE, AZ 85281</td>
<td>(602) 923-6419</td>
</tr>
<tr>
<td>Tucson</td>
<td>3015 N. FORMER BLVD, TUCSON, AZ 85705</td>
<td>(520) 562-4036</td>
</tr>
<tr>
<td>Little Rock</td>
<td>7001 INTERSTATE 30, SUITE A, LITTLE ROCK, AR 72209</td>
<td>(501) 562-4036</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>9455 SHELDA, CITY OF COMMERCE, CA 90040</td>
<td>(818) 255-4566</td>
</tr>
<tr>
<td>Oakland</td>
<td>7305 EDGELAND SUITE C, OAKLAND, CA 94621</td>
<td>(510) 562-4036</td>
</tr>
<tr>
<td>Orange County</td>
<td>11552 KNOTT, SUITE 9, GARDEN GROVE, CA 92441</td>
<td>(714) 891-2526</td>
</tr>
<tr>
<td>Sacramento</td>
<td>4221 NORTHGATE BLVD, NO. 4, SACRAMENTO, CA 95834</td>
<td>(916) 254-1932</td>
</tr>
<tr>
<td>San Diego</td>
<td>7283 ENGINEER RD, SUITE B, SAN DIEGO, CA 92131</td>
<td>(714) 942-2637</td>
</tr>
<tr>
<td>Santa Clara</td>
<td>3236 KIFER RD, SANTA CLARA, CA 95050</td>
<td>(408) 255-4051</td>
</tr>
<tr>
<td>Ventura County</td>
<td>2600 LAVENDER COURT, SUITE 1, NEWPORT PARK, CA 92658</td>
<td>(310) 481-8995</td>
</tr>
<tr>
<td>Colorado Springs</td>
<td>906 GARDEN OF THE GODS RD, SUITE B, COLORADO SPRINGS, CO 80907</td>
<td>(719) 490-0158</td>
</tr>
<tr>
<td>Denver</td>
<td>7100 BROADWAY, BUILD ONE, DENVER, CO 80221</td>
<td>(303) 429-9556</td>
</tr>
<tr>
<td>Hartford</td>
<td>445 GOVERNORS HWY, SOUTH WINDSOR, CT 06074</td>
<td>(860) 569-9910</td>
</tr>
<tr>
<td>Lorton, VA</td>
<td>6072 TELEGRAPH RD, LORTON, VA 22079</td>
<td>(703) 790-7597</td>
</tr>
<tr>
<td>Florida</td>
<td>6845 N.W. 20TH AVE, FT. LAUDERDALE, FL 33309</td>
<td>(954) 219-1170</td>
</tr>
<tr>
<td>Miami</td>
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<td>(305) 252-3333</td>
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<td>(208) 343-8929</td>
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<td>(708) 860-5670</td>
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<td>(708) 527-1397</td>
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<td>(317) 265-4566</td>
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<td>(515) 275-8444</td>
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<td>(913) 983-3370</td>
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<td>(515) 426-4312</td>
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<td>(612) 636-7194</td>
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<td>(573) 796-1166</td>
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<td>131 FLANDERS RD, P.O. BOX 566, WESTBOROUGH, MA 01581</td>
<td>(508) 366-8981</td>
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<td>12916 CAMPBELL RD, LIVONIA, MI 48150</td>
<td>(734) 626-5366</td>
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<td>(269) 344-1944</td>
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<td>3070 S. PENNYSYLVANIA AVE., LANSING, MI 48910</td>
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<td>(662) 923-1273</td>
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<td>11706 WESTLINE INDUSTRIAL DR. ST. LOUIS, MO 63141</td>
<td>(314) 567-5670</td>
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<td>Omaha</td>
<td>13415 BROADSTREET, OMAHA, NE 68114</td>
<td>(402) 333-9566</td>
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<td>Reno</td>
<td>23 ELEN CARRAN CIRCLE, SPARKS, NV 89431</td>
<td>(775) 363-8224</td>
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<td>90 CLINTON ROAD, FAIRFIELD, NJ 07006</td>
<td>(201) 575-8240</td>
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<tr>
<td>Edison</td>
<td>1234 ROUTE 1, EDISON, NJ 08818</td>
<td>(201) 575-8240</td>
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