MODEL 33 ASR, KSR, AND RO

OPTIONAL FEATURES

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CONTENTS

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1. GENERAL

1.01 This section provides information on optional features for the Model 33 ASR, KSR, and RO Sets. The information includes a description of the option and necessary references to adjustments, lubrication, and disassembly and reassembly. Parts and installation are not included but reference is made to the appropriate component section and installation specification.

1.02 Copies of the sections and specifications referred to in this section may be obtained from Teletype Corporation. Every modification kit comes from the factory with the necessary installation specification.

2. OPTIONAL FEATURES

A. 180801 Universal Function Lever

2.01 The 180801 universal function lever has no marking or spacing tines removed. This allows the customer to optionally remove tines and code the function lever to respond to "nonstandard" code combinations, or replace damaged function levers. Necessary contact assemblies must be ordered separately. See the function box mechanism in Section 574-122-800TC.

2.02 The 180801 universal function lever is to be installed only in the numbered slots of the function casting, such as 4, 5, 6, etc. Do not install the universal function lever in the lettered slots of the function casting, such as B, C, D, E, F, etc.

2.03 The tines on the universal function lever are easily broken off with long-nose pliers.

2.04 The tines of the 180801 function lever are numbered from right to left in (Figure 1) as follows: PS, 1, 2, 3, 4, 5, 7, 6, 8.

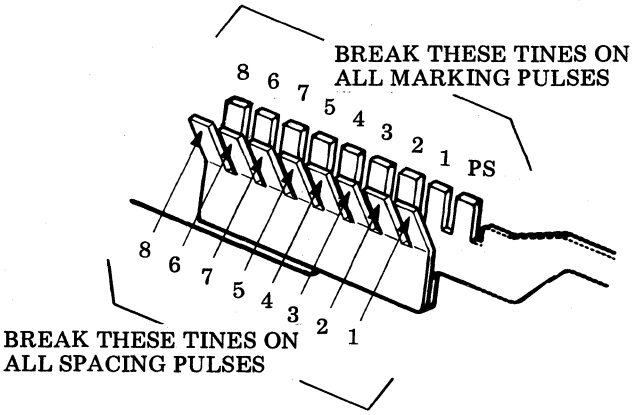

Figure 1 - 180801 Universal Function Lever

2.05 There are two rows of tines on the universal function lever. The straight row of tines corresponds to the marking pulses of a given code combination; the slanted row of tines corresponds to the spacing pulses of a given code combination.

2.06 Break both the marking and spacing no. 8 tines on units without parity. On units with parity do not break off the marking and spacing no. 8 tines. Break the PS (Print Suppression) tines when printing is desired.

2.07 Instructions for coding the universal function lever are in Section 574-122-700TC. Specification 50370S has both the coding and installation into unit information.

B. 182056 Modification Kit — Provides Model 33 Typing Units With 12 Characters-Per-Inch Spacing

2.08 The 182056 modification kit converts the Model 33 typing unit from the standard 10 characters to 12 characters-per-inch horizontal spacing (Figure 2).

2.09 Typing units modified with the 182056 modification kit offer a choice of 83, 86, or 89 characters per line.

2.10 Parts ordering information is in Section 574-122-800TC. Installation, lubrication, and adjusting procedures are in Specification 50448S. Section 574-122-700TC is required for standard adjustments.

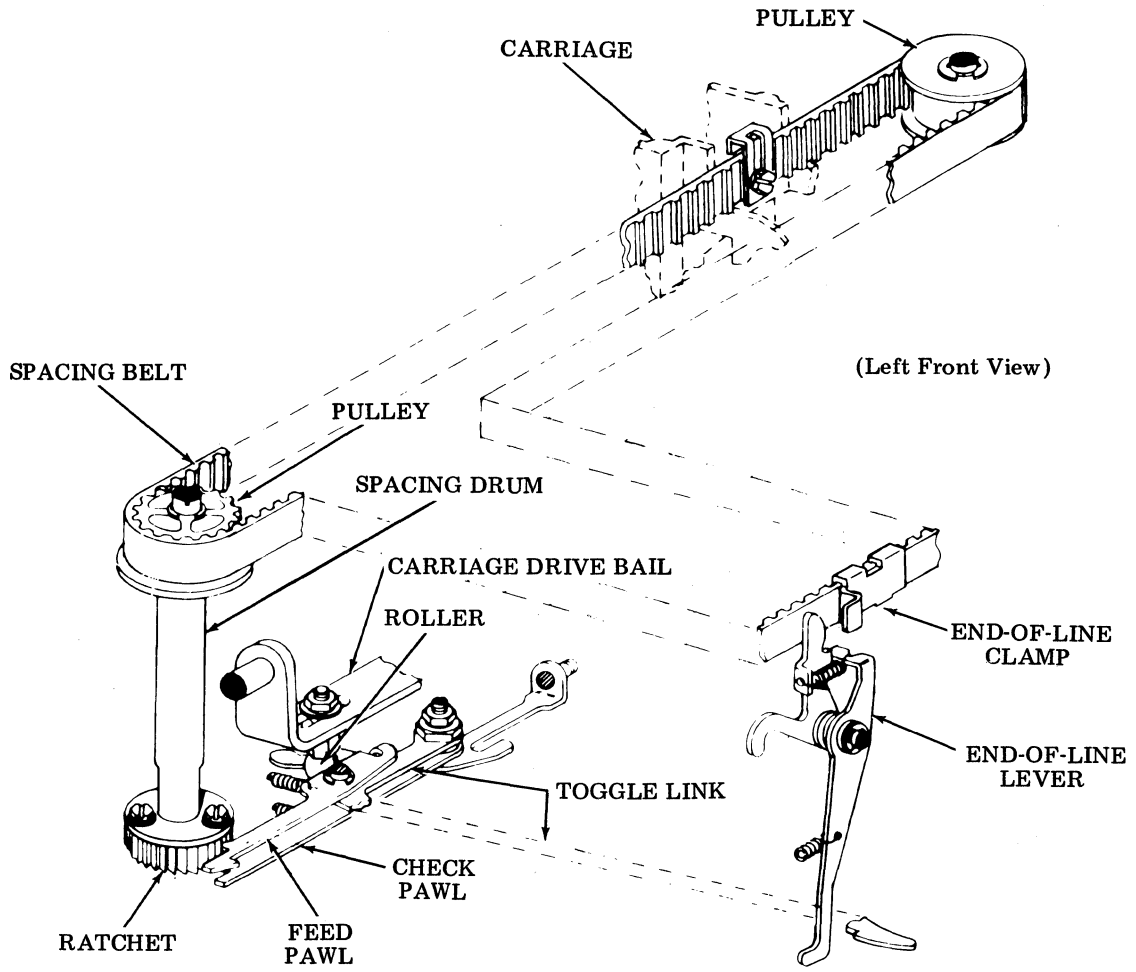

Figure 2 - 182056 Modification Kit for 12 Character-Per-Inch Spacing

C. 183859 Modification Kit — Equips Model 33 Cabinet With a Paper Supply Bin and Accumulation Shelf

2.11 The 183859 modification kit will accumulate forms 8-1/2 inches wide varying in length from 6 to 12 inches. Forms are stored in the bin. They feed from inside the bin, under the shelf, under the plate, and under the platen mechanism. (See Figure 3.) Printed forms are accumulated on the 183857 shelf.

2.12 The vertical loading capacity of the bin is approximately 14 inches. The width of the bin is 10 inches.

2.13 In order to accommodate the various lengths of forms, the 184159 bracket may be positioned at various points on the 183857 shelf (Figure 3). Operator assistance may be required so the forms accumulate properly.

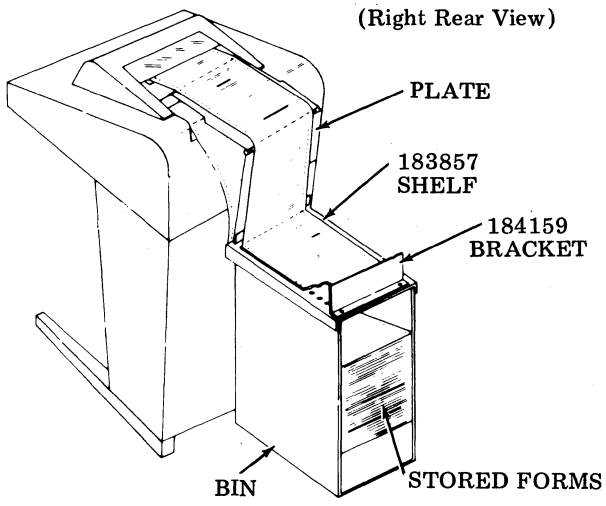

Figure 3 - 183859 Modification Kit to Provide Model 33 Cabinet With a Paper Supply Bin and Accumulation Shelf

Improperly released forms, or forms that have been kept in the platen mechanism for some time will not position themselves neatly on the shelf.

2.14 The bin and accumulating shelf are positioned at the rear of the set, as close as possible to the rear panel.

2.15 Specification 50433S has the installation and adjusting information. Parts information is in Section 574-126-800TC.

D. 183877 Through 183883 Modification Kit — To Equip Sprocket Feed Typing Unit With Form Out for Various Lengths of Forms

2.16 Various form lengths can be accommodated on the sprocket feed typing units by changing the cam lobes, the spur gear, and the gear w/gear on the form-out mechanism (Figure 4). In addition to the cam lobes and gears, the 183877 through 183883 kits include two washers and one screw.

2.17 The modification kits and the form lengths they will handle are shown in the following chart. The chart also shows how many cam lobes are included in each kit with the resulting length of form out when these cam lobes are installed.

Modification Kit	No. of Cam Lobes Used		
	1	2	3
	Form Length (In Inches)		
183877	11	5-1/2	3-2/3
183878	9	4-1/2	3
183879	7	3-1/2	2-1/3
183880	8	4	2-2/3
183881	8-1/2	Not Used	2-5/6
183882	10	5	3-1/3
183883	6	Not Used	Not Used

2.18 Parts ordering information for the kits is in Section 574-122-800TC.

2.19 Installation, adjusting, and lubrication procedures are in Specification 50410S. For related adjustments, refer to Section 574-122-700TC.

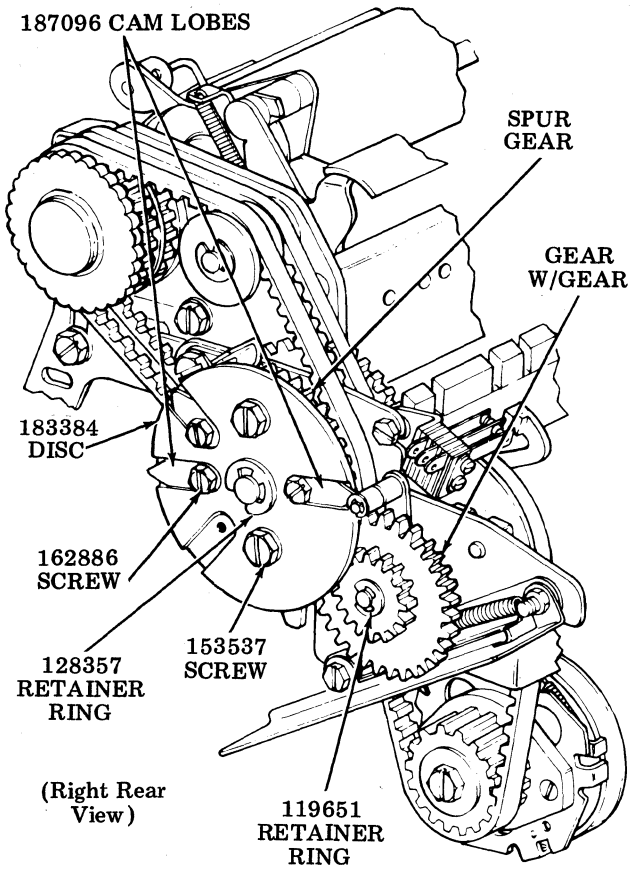

Figure 4 - 183877 Through 183883 Modification Kits for Various Lengths of Form Out

E. 183986 A Through D Modification Kit — To Provide Print-Nonprint on ASR Typing Sets

2.20 The 183986 print-nonprint modification kit cannot be installed if the set is equipped with the 182290, 182291, and 183128 modification kits. These kits provide Automatic Reader Control, Originate Automatic Transmitter Start (OATS) and Remote Transmitter Call In (RTCI).

2.21 The 183986 print-nonprint modification kit may be installed on any ASR catalog set. Part of the installation procedures for these sets will include some modification of the call control unit panels to accommodate the toggle switch associated with the kit.

2.22 If the kit is to be installed on sets which have a dial in the call control unit, a specific kit must be ordered. The various print-nonprint kits are:

183986A — Call control units with rotary dial
183986B — Call control units with TOUCH-TONE* dial
183986C — Call control units with TOUCH-TONE and card dial
183986D — Call control units with rotary and card dial

2.23 The print-nonprint modification allows the set to send or receive data without producing page copy. With the print-nonprint mechanism turned on, data may be transmitted from the keyboard or the reader without page copy. Data may be received and punched in tape without page copy. In the local mode, punched tape may be prepared without page copy.

2.24 The print-nonprint modification consists basically of a solenoid which operates a nonprint codebar (Figure 5). A toggle switch and an indicator lamp activate the mechanism. When turned on, the solenoid energizes moving the nonprint codebar to the right. In this position, the nonprint codebar blocks all the function levers from rising during the function cycle except the print suppression function lever. The print suppression function lever rises every cycle to suppress printing.

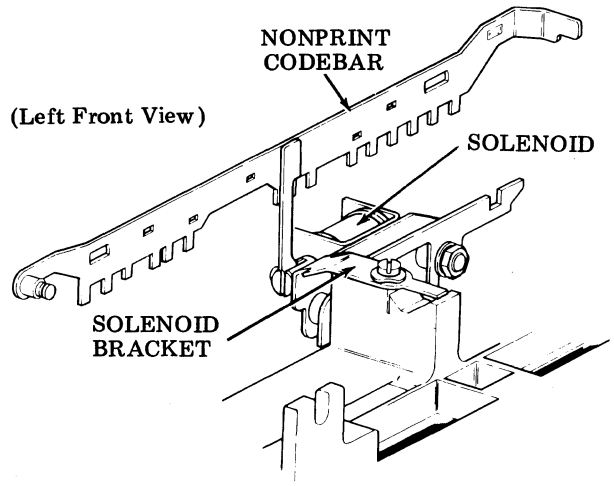

Figure 5 - 183986 A Through D Solenoid Operated Print-Nonprint Kits

2.25 Operation of the 183986 modification kit affects operation of the optional 185703 interlock mechanism. The 185703 interlock mechanism locks the automatic punch in the "on" mode and prevents it from being turned off electrically. Once turned on, the punch must be turned off manually. Further details on the 185703 punch interlock option are included in this section. (See 2G.)

2.26 The 185703 punch interlock utilizes the position of the print-nonprint codebar to lock the punch in the "on" mode. Thus, the punch interlock operates only when the printer is in the nonprint mode. In the print mode (ie, print-nonprint mechanism not operating) the punch interlock does not operate.

2.27 Installation, adjusting, and lubrication procedures and parts ordering information are in Specification 50460S.

F. 184157 Modification Kit — To Equip Friction Feed Typing Unit to Provide Automatic Line Feed When Carriage Return Key is Depressed

2.28 The 184157 modification kit is applicable only to friction feed typing units. The printer will automatically line feed when the carriage return key is depressed. Note that line feeding will vary depending upon the end-of-line sequence used. If the end-of-line sequence is carriage return/line feed, the set will double line feed because of the line feed function associated with the carriage return. If the end-of-line sequence is carriage return, carriage return/line feed, the set will triple line feed.

2.29 Operation of the line feed mechanism relies upon the operation of the carriage return function lever. The blocking lever included in the kit is carried upward to engage the line feed drive link when the carriage return function lever rises upward during the first part of the cycle (Figure 6). During the middle portion of the cycle, both the carriage return function pawl and the line feed drive link are driven downward to effect carriage return and line feed.

2.30 Parts identification for this kit is included in Section 574-122-800TC.

2.31 Two adjustments are necessary with the 184157 modification: Line Feed Drive Arm Clearance — F (PLA-5) and Line Feed Upstop Bracket Position — F (PLA-6). For these and related adjustments, see 574-122-700TC.

2.32 If it becomes necessary to disassemble the kit, reverse the installation procedures given in Specification 50413S. The kit should be lubricated per Section 574-122-701TC.

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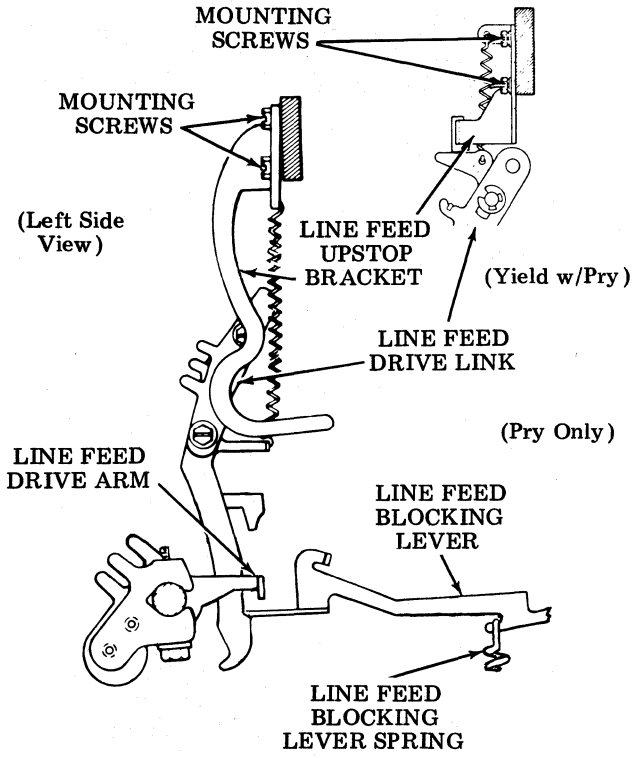


Figure 6 - 184157 Kit for Automatic Line Feed or Carriage Return

G. 185703 Modification Kit — To Add Punch Interlock to an ASR Set Equipped With Automatic Punch and the 183986 Print-Nonprint Modification Kit

2.33 The function of the 185703 kit is to lock the punch in the "on" mode and prevent it from being automatically turned off. This modification requires that the set is equipped with an automatic punch and the 183986 print-nonprint modification. The punch interlock feature is particularly useful in transmission involving foreign or computer data. When receiving such data, the punch could be prematurely turned off by a code combination resembling the ASCII (American National Standard Code for Information Interchange) DC4 code. (See Figure 7.)

2.34 There are no operator controls associated with this kit. The punch interlock operates in conjunction with the print-nonprint kit.

2.35 Operation of the interlock mechanism is briefly as follows: When the print-nonprint mechanism is turned on, the nonprint codebar is pulled to the right. An extension on the nonprint codebar moves a bellcrank upward, which in turn pivots the latch bail counterclockwise. The counterclockwise motion of the latch bail releases the on-off bail and prevents it from latching up, thus keeping the punch in the "on" mode.

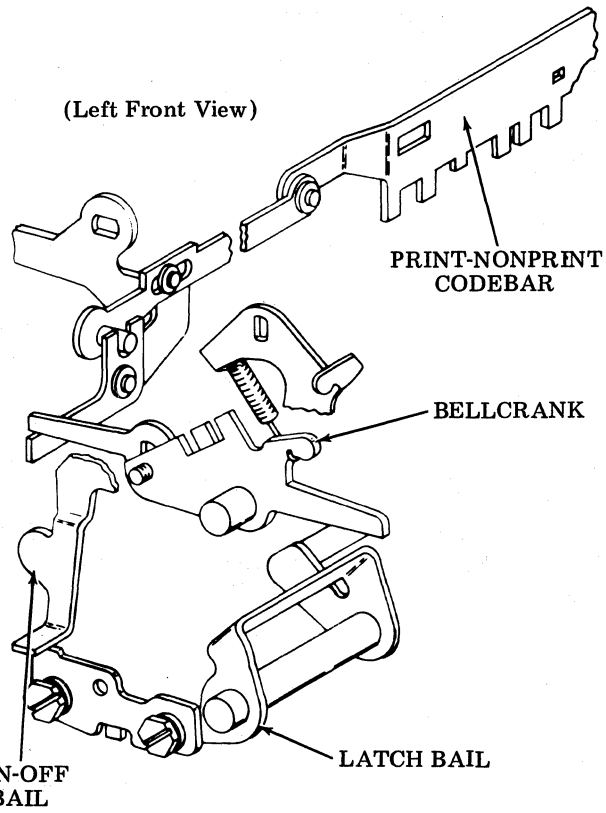


Figure 7 - 185703 Punch Interlock Mechanism

2.36 If the punch is off when the nonprint mechanism is activated, the latch bail unlatches the on-off bail and prevents it from being relatched either by the manual OFF pushbutton or automatically.

2.37 If the punch is on when the nonprint mechanism is activated, the latch bail is already unlatched and is prevented from relatching. The punch may be momentarily turned off by depressing the OFF pushbutton. The punch will turn on again when the pushbutton is released.

2.38 When the nonprint mechanism is turned off, the punch remains on until turned off either by depression of the OFF pushbutton or automatically.

2.39 Adjustments and spring tension peculiar to the 185703 modification kit are shown in Figures 8 and 9.

2.40 Lubricate all sliding surfaces, pivot points, and spring ends with a drop of KS7470 oil.

2.41 Installation instructions for the kit are in Specification 50473S. Should it become necessary to remove the kit, reverse the installation procedure in Specification 50473S packed with the kit.

LEVER AND LATCH BAIL GAP

To Check
Typing unit in stop condition.
Print-nonprint solenoid energized.

Requirement
Min 0.015 inch --- Max 0.030 inch between on-off bail and latch bail.

To Adjust
Remove interlock spring.
Loosen screw.
Position lever.
Tighten screw and reinstall spring.

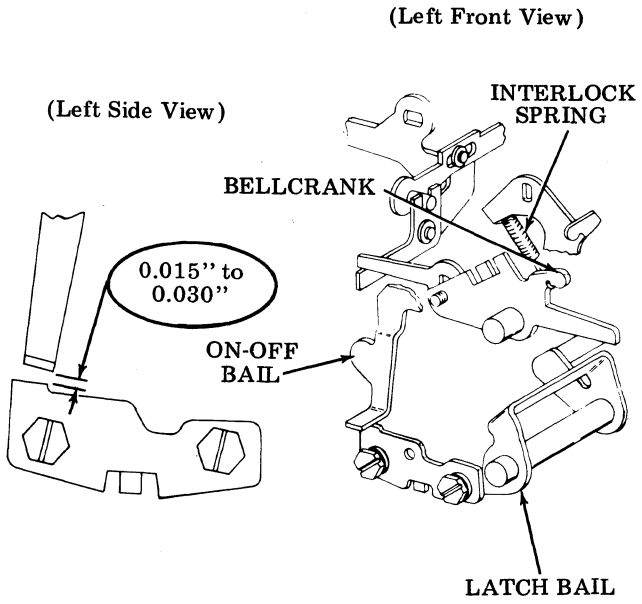


Figure 8 - Lever and Latch Bail Gap Adjustment (185703 Modification Kit)

PUNCH INTERLOCK SPRING

To Check
Energize the print-nonprint solenoid.

Requirement
Min 4 oz --- Max 6 oz
to pull spring to installed length.

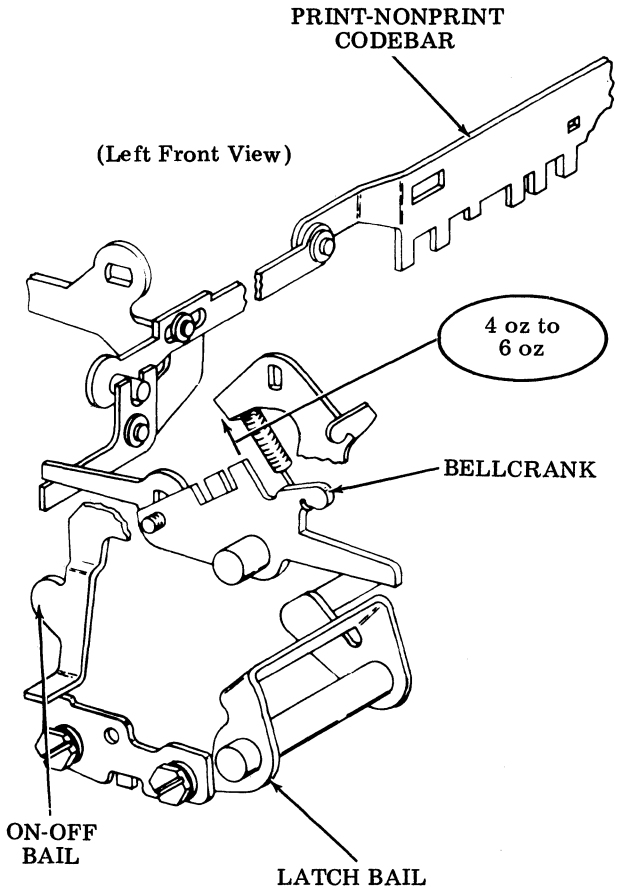


Figure 9 - Punch Interlock Spring (185703 Modification Kit)

H. 185705 Modification Kit — To Provide a Tape Guide for Folded Tape on ASR Sets

2.42 The 185705 modification kit provides a tape guide when using folded tape on the punch of a Model 33 ASR Set. This kit prevents tape from buckling upward or downward when using folded tape. The customer must provide external tape handling facilities.

2.43 Adjustment and lubrication procedures are in Figure 10. Parts ordering information is in Section 574-125-800TC.

2.44 Installation instructions are in Specification 50438S. Reverse the instructions in the specification for removal of the kit.

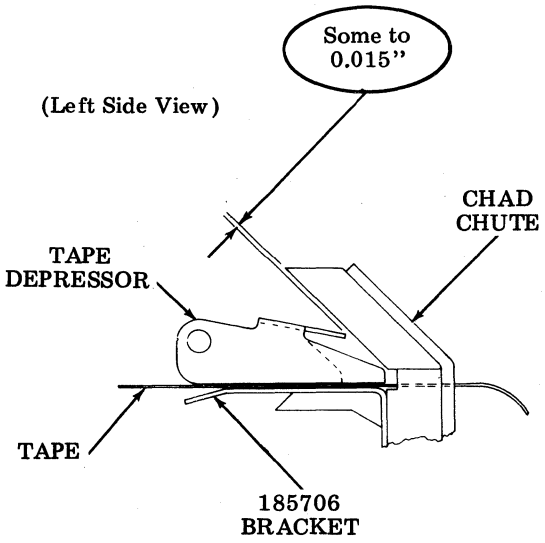
TAPE DEPRESSOR GAP

To Check

Loosen 151152 screw. Press 185706 bracket down so it rests on top surface of punch block casting. Tighten 151152 screw. Place a piece of tape through punch, as shown. Apply light finger pressure downward to the tape depressor.

Requirement

Min some --- Max 0.015 inch between tab of tape depressor and underside of chad chute.



To Adjust

Pivot the tab on the side of tape depressor up or down, as required.

Note: After doing this adjustment check the TEN CHARACTERS PER INCH adjustment (see Section 574-125-700TC).

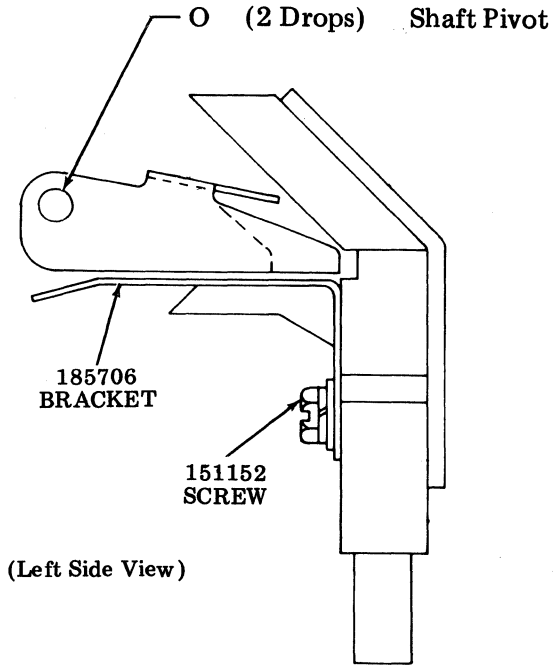


Figure 10 - 185705 Tape Guide Kit

I. 185983 Modification Kit — To Equip Model 33 Friction Feed Typing Units With Carriage Return on Line Feed

2.45 The 185983 modification kit will cause the typing unit to line feed and return the carriage to the left margin whenever the line feed code is received. The line feed code may be generated from the local line feed key or come from a distant station. The kit saves generating the carriage return code after line feed and may be activated at any character position.

2.46 In operation, the modified unit performs the standard line feed function, only, the line feed lever now activates the carriage return and line feed functions simultaneously (see Figure 11).

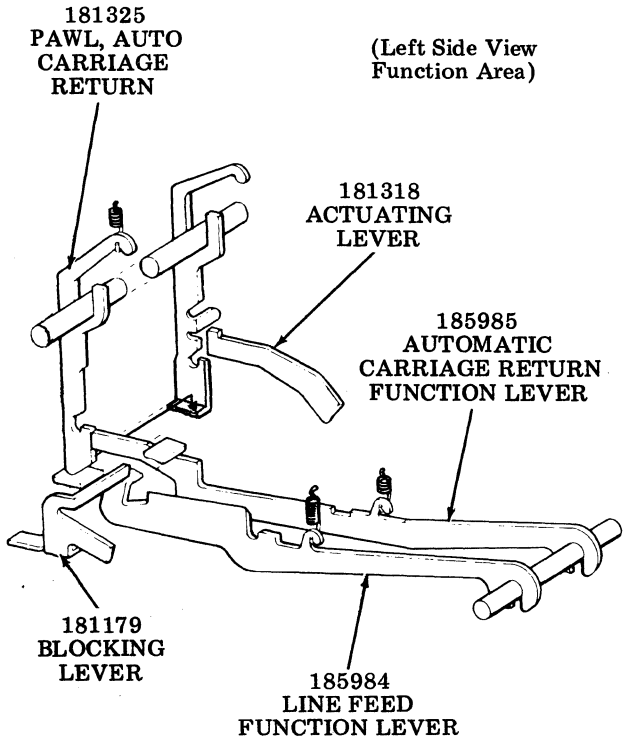


Figure 11 - 185983 Modification Kit to Provide Carriage Return on Line Feed

2.47 Instructions for installing the 185983 kit are included in Specification 50495S. Reverse the instructions in the specification for removal of the kit. Parts information for the kit is also in the specification. Adjustment of the line feed drive arm and line feed upstop is required after installation of the kit. Refer to Section 574-122-700TC. The lubrication interval of the kit is the same as the typing unit. Refer to the appropriate section.

Note: Typing units equipped with the 185983 kit cannot have the automatic carriage return/line feed feature.

J. 186136 Modification Kit — To Operate Model 33 Private Line Sets With DATA-PHONE and Private Line Data Sets

2.48 The 186136 modification kit provides a means for the interconnection of Model 33 Terminals and data sets which conform to the EIA Standard RS-232-C (Electronic Industries Association). The terminals to be modified must have the answer-back feature and a UCC6 Call Control Unit (or equivalent).

2.49 A terminal modified with the 186136 kit accepts current-no current data and control signals from the teletypewriter and converts them into suitable polar signals for use by the data set. In addition, it accepts polar data and control signals from the data set and converts them into current-no current signals for use by the teletypewriter.

2.50 This kit permits the terminal to operate in either the manual or automatic-answer mode. The kit is intended for use with Bell System 103A, E, and F Data Sets, or equivalent.

2.51 The 198420 modification is similar to the 186136 kit. The basic difference between the kits is that the 198420 kit does not have the possibility of automatic answer.

2.52 The 312418 data set coupler is the basic unit of the modification kit (Figure 12). This basic unit has the power supply, printed circuit board, and a housing. Additionally there is a relay assembly that includes a motor control relay and line local relay, a cable assembly, and some mounting hardware.

2.53 Wiring information for the 186136 kit is in 7454WD, 7455WD, and 8021WD. Parts information and the instructions for installing the kit are in Specification 50630S.

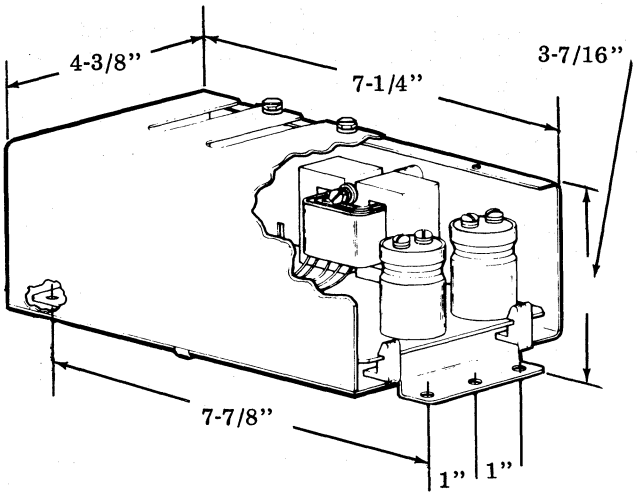


Figure 12 - 312418 Data Set Coupler (Part of 186136 Kit)

K. 186185 Modification Kit — To Convert Model 33 Sprocket Feed Typing Unit Form-Feed Rate From Six Lines Per Main Shaft Rotation to Three Lines

2.54 The 186185 modification kit is applicable only to sprocket feed typing units. A typing unit equipped with the 186185 kit has a form-feed rate of three lines per main shaft rotation instead of the standard Model 33 six lines per main shaft rotation. A modified typing unit may be used in a systems network having three lines per main shaft rotation.

2.55 Operation of the modified form-feed mechanism is the same as described in Section 574-122-100TC except that the 6-stop clutch is replaced with a 3-stop clutch and an appropriate pair of gears is replaced in the sprocket feed mechanism (Figures 13 and 14).

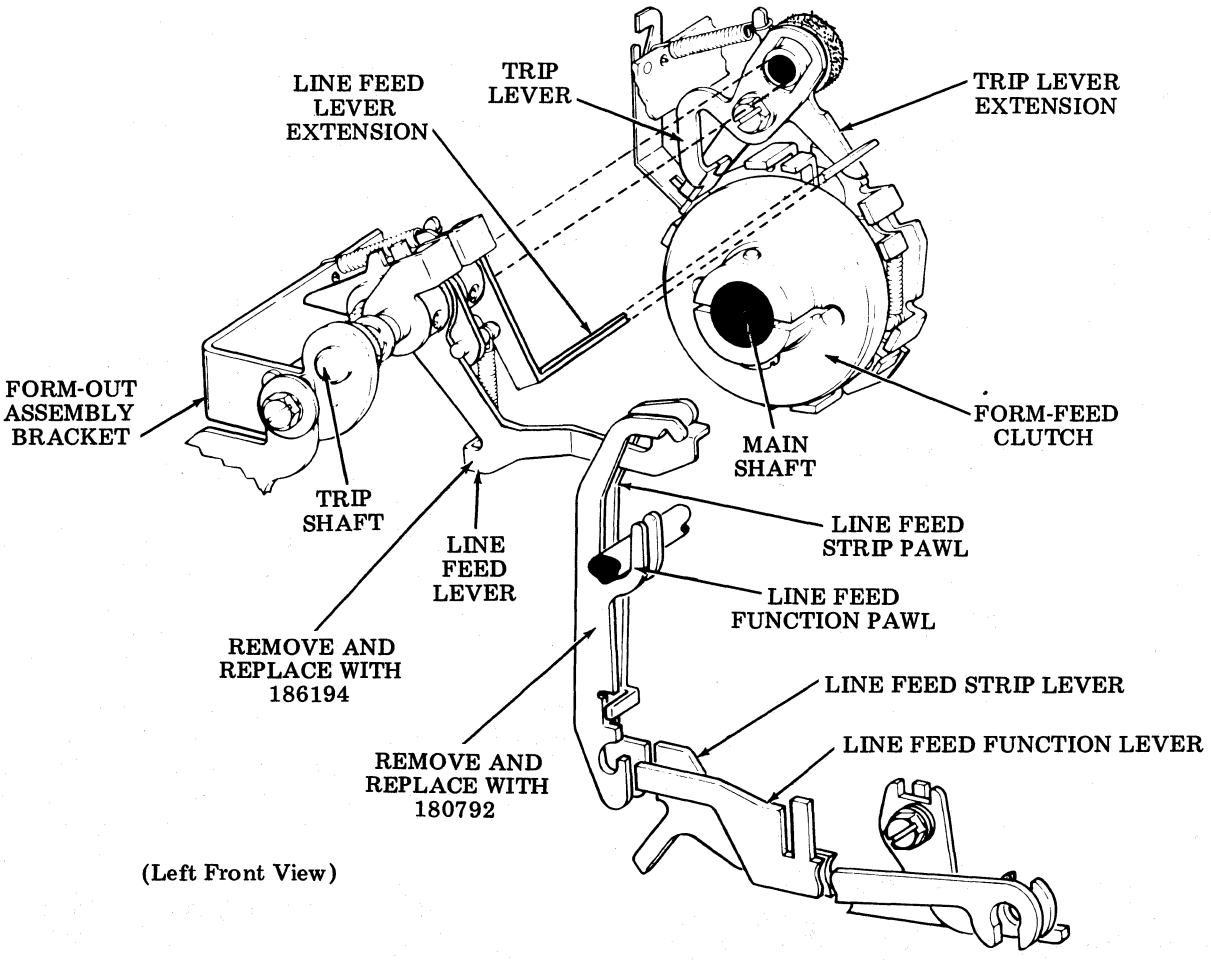


Figure 13 - Form-Feed Mechanism (Sprocket Feed) (186136 Modification Kit)

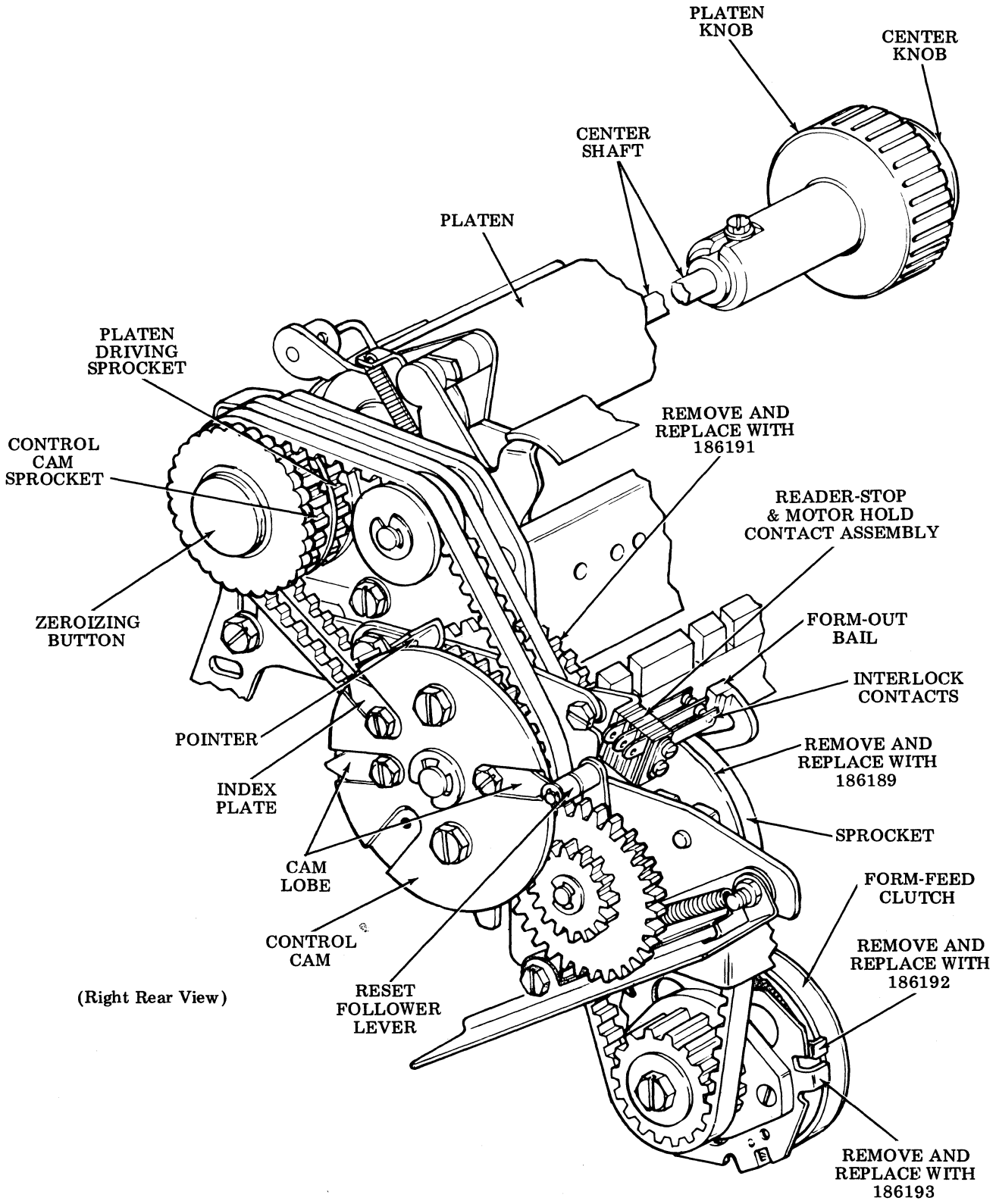


Figure 14 - Platen Drive Mechanism (Sprocket Feed) (186136 Modification Kit)

2.56 Parts information and installation instructions are in Specification 50656S. This kit is not included in Section 574-122-800TC; however, the standard form-feed mechanism is shown.

Note: Do not make the Armature Bracket Position or Line Feed Pawl Stripping — S adjustments given in Section 574-122-700TC on units modified with this kit.

2.57 The following adjustments, given in Section 574-122-700TC, are to be made after installation of the kit:

Gear Backlash
Belt Tension
Brush Holder Gap
Shaft Left Bearing Gap
Trip Shaft Position
Clutch Shoe Lever Gap
Brush Holder Position
Left Bearing Position
Selector Cam Endplay
Function Clutch Position
Function Clutch Endplay
Codebar Clutch Endplay
Clutch Shoe Lever Gap — S
Trip Shaft Endplay — S
Line Feed Lever Line-Up and Endplay — S
Form-Out Lever Overtravel — S
Cam Lobe Position — S
Driven Gear Line-Up
Codebar Clutch Trip Lever Line-Up
Trip Shaft Latch Lever Endplay
Codebar Clutch Trip Lever Engagement
Function Clutch Trip Lever Engagement
Codebar and Function Clutch Shoe Lever Gaps
Shoe Lever Gap and Trip Lever Engagement
Rocker Shaft Position and Endplay
Bearing Alignment
Main Shaft Rotation
Cam Zero Position — S
Reset Follower Lever Reset Position — S
Trip Lever Engagement — Form-Out — S
Form-Out Lever-Reset Clearance — S
Trip Lever Engagement — Line Feed — S
Trip Lever Upstop Position — S
Line Feed Selection — S

Note: Make the Line Feed Selection — S adjustment, only, use the following requirements in place of those given in Section 574-122-700TC:

0.145 inch to 0.160 inch for single line feed,
0.010 inch to 0.090 inch for double line feed.

2.58 Lubricate the typing unit main shaft, distributor shaft area, and form-out mechanism as given in Section 574-122-701TC.

2.59 If it becomes necessary to disassemble the kit, reverse the installation procedure given in the Specification 50656S packed with the kit.

L. 186226 Modification Kit — To Provide Model 33 Set With Mobility

2.60 The 186226 modification kit provides a set of casters for a Model 33 Set when it is necessary that the set be easily moved between operating locations (Figure 15).

2.61 This kit may be installed on any standard Model 33 Set using only a screwdriver and wrench; the kit does not require any cabinet workover, and retains about the normal keyboard height.

2.62 There is a brake on the two front casters of the kit for use during unit operation. (See Figure 15.)

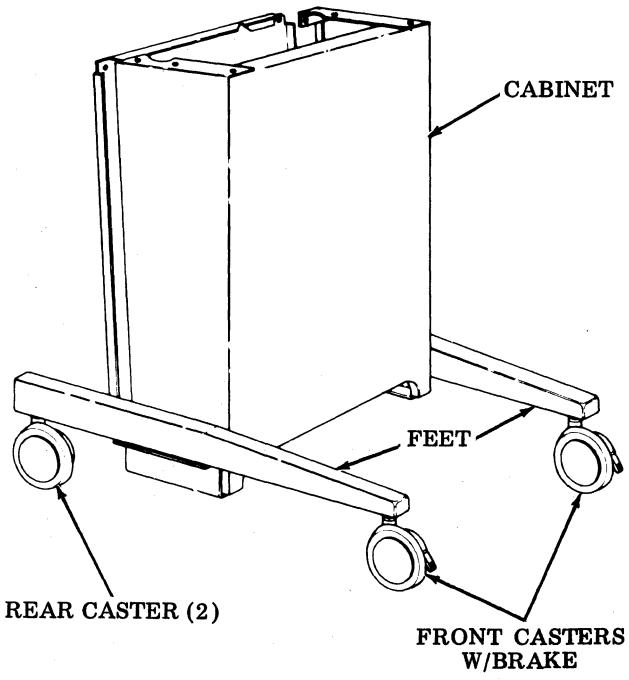


Figure 15 - 186226 Modification to Provide Mobility

2.63 There are no adjustments required after installation of the kit. During installation of the kit, make certain the 186238 foot fits closely against the side of the cabinet (see Section 574-126-800TC). This modification requires no lubrication.

2.64 Specification 50626S has the installation instructions for the kit and if it should become necessary to remove the kit, reverse the installation procedures.

M. 186241 Modification Kit — To Convert Model 33 Private Line ASR Sets to Automatic Reader Control

2.65 The 186241 modification kit converts the Model 33 Private Line ASR Sets to Automatic Reader Control. The automatic control features allow the tape reader to be stopped or started either manually or automatically, locally, or from a distant station.

2.66 There are four control positions on the tape reader with the 186241 kit installed. The positions are explained in 2.67 through 2.70. (See Figure 16.)

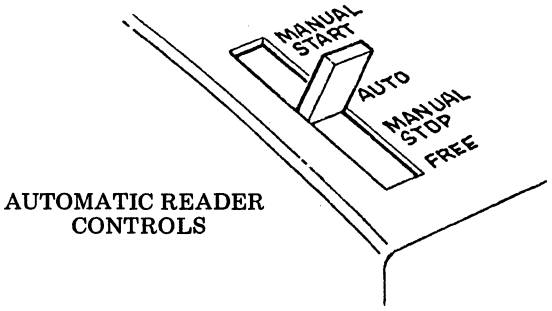


Figure 16 - 186241 Kit Controls

2.67 In the automatic mode the spring biased handle is normally in the automatic position (AUTO) and automatic operation occurs. The reader responds to ASCII control codes as follows:

DC1 or X-ON — Automatically turns reader on.
DC3 or X-OFF — Automatically turns reader off.
ENQ or WRU — Stops reader and calls in remote answer-back. If DC1 is received at the end of the answer-back transmission, the interrupted reader will automatically restart.

2.68 To activate the reader without receiving the signal code DC1 (MANUAL START), the handle is moved to the MANUAL START position. The reader will then operate, with switch returning to AUTO position when released.

2.69 To manually stop the reader, the handle is moved to the MANUAL STOP position. Handle will return to AUTO when released.

2.70 The FREE position allows the tape to be moved manually, for repositioning. The switch must be returned manually from the FREE position to AUTO.

2.71 When preparing a tape, any control function, except information separators, should be followed by two delete characters (may also be "rubout").

2.72 Description and operation of a tape reader with automatic control is given in Section 574-124-100TC.

2.73 There are no adjustments or lubrications peculiar to the 186241 kit. The tape reader adjustments in Section 574-124-700TC should be made after installation of the kit. The newly installed function levers of the kit should be lubricated in accordance with Section 574-124-701TC.

2.74 This modification consists mainly of the installation of function levers, pawls, and a switch in the typing unit function area; a circuit card in the call control unit; a contact block assembly in the reader; and a new reader cover.

2.75 Instructions for installing the 186241 kit are in Specification 50634S; in case it becomes necessary to remove the kit, reverse the installation procedures.

N. 186776 Modification Kit — To Provide a Handle for Model 33 Typing Unit

2.76 The 186776 modification kit provides a handle that attaches to the left-rear corner of the typing unit casting to assist in the installation or removal of the unit only (Figure 17).

2.77 With the carriage to the left, the right side of the carriage rail may be used as a lifting point.

Note: Take care not to distort the belt.

2.78 Installation information is in Specification 50714S. Reverse the installation instructions to remove the kit.

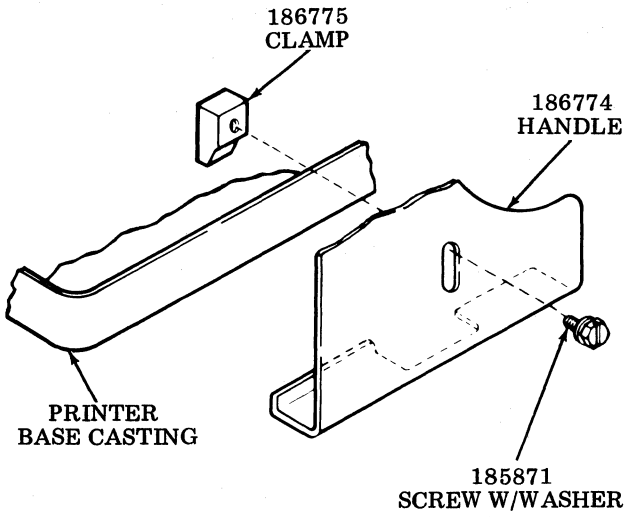


Figure 17 - 186776 Handle Modification Kit

O. 187125 Modification Kit — To Provide 48 V AC 24 V DC Magnet Controlled Answer-Back Trip Mechanism for Model 33 Typing Unit

2.79 The 187125 modification kit provides a magnetic answer-back trip coil for "standardized" Model 33 KSR or ASR Sets that did not come from the factory so equipped. The customer must provide a means of energizing the coil. (See Figure 18.)

2.80 The dc coil requires external arc suppression. Since coil drop-out time is not critical, a diode is recommended.

2.81 In order to provide reliable operation of the mechanism, the operating voltage should not vary more than ±10 percent from the nominal specified, and the minimum duration of the operating pulse should be 30 milliseconds. A mechanical latch-interlock system allows the answer-back mechanism to reset at the end of answer-back transmission even though the

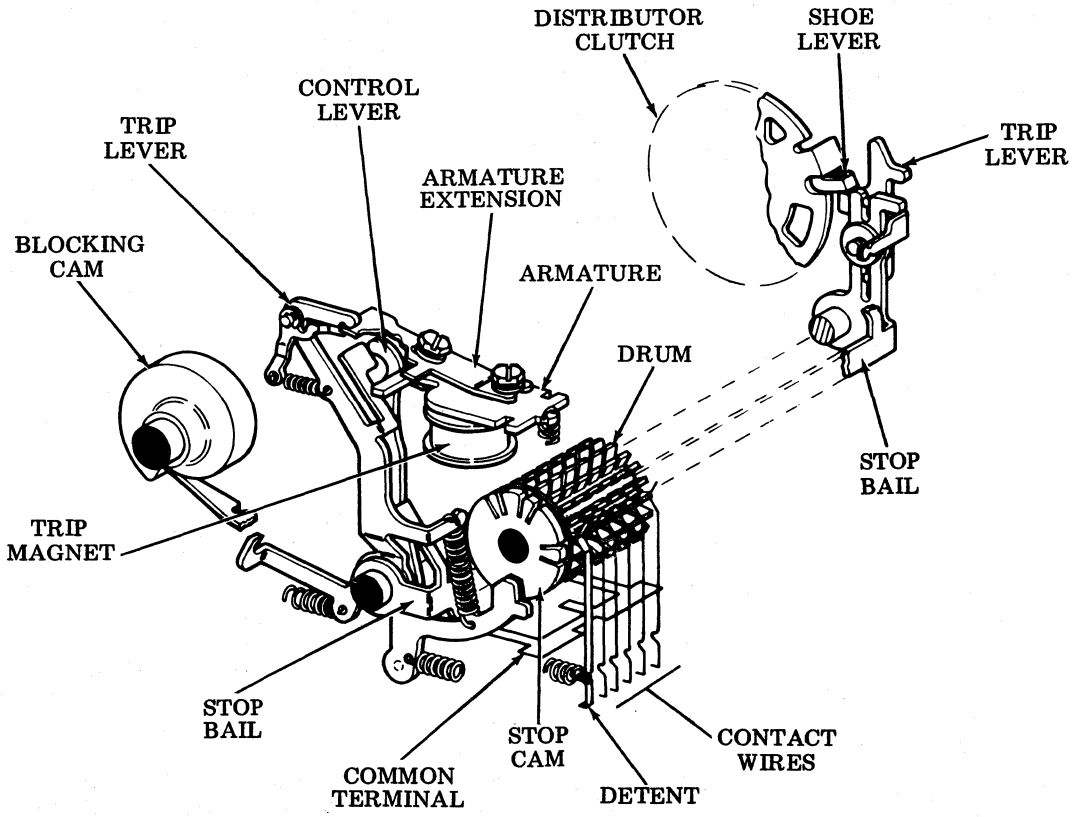


Figure 18 - 187125 Answer-Back Trip Modification Kit

magnet armature remains attracted, therefore, there is no maximum pulse length requirement. However, the coil must be de-energized before retripping the mechanism.

2.82 Specification 50746S contains part information, installation instructions, adjustments, and lubrication procedure. Reverse installation instructions for removal of the kit.

P. 194822 Directory Holder for Model 33 KSR and ASR Cabinets

2.83 The 194822 directory holder provides convenient storage for directories and like materials on KSR and ASR cabinets.

2.84 The holder attaches to the right side of the cabinet by removing backing from a double-sided adhesive tape and pressing into position. See Figure 19 and refer to Specification 50602S.

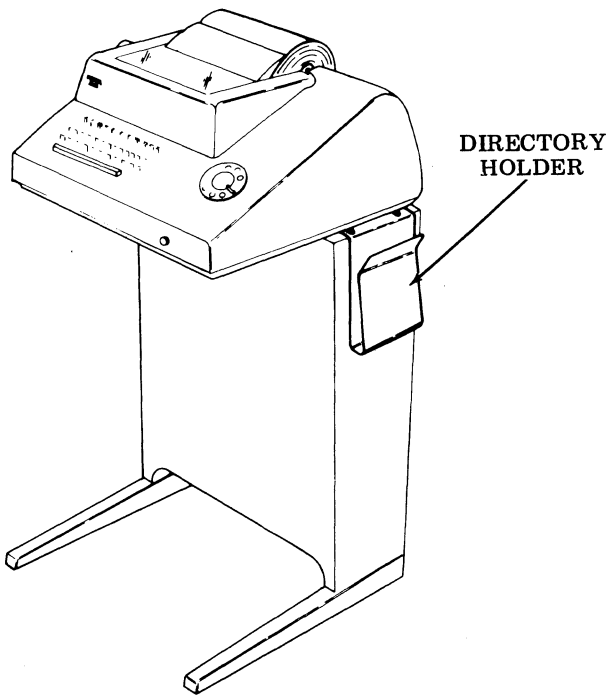


Figure 19 - Cabinet With 194822 Directory Holder

Q. 198420 Modification Kit — To Connect TELETYPE Terminal Apparatus to 103 Series Data Sets, or Equivalent

2.85 The 198420 modification kit provides facilities for the interconnection of TELETYPE terminal equipment and data sets which conform to the standard of the Electronics Industries Association. In accordance with these standards, all data and control leads of the data set carry bi-polar voltage signals. See Figure 20 for a pictorial view of a typical installation.

2.86 The 198420 kit accepts current-no current data and control signals from the teletypewriter and converts them into suitable bi-polar signals for use by the data set. In addition, it accepts polar data and control signals from the data set and converts them into current-no current signals for use by the teletypewriter.

2.87 The 198420 kit provides for the manual answer mode of operation. The basic unit in the kit is the 312418 data set coupler (see Figure 12). There are also two connectors and some terminals in the 198420 kit. The principle difference between the 198420 kit and the 186136 kit described in 2J. of this section is that the 186136 kit has both manual and automatic answering mode while 198420 kit provides only the manual answer mode.

2.88 It is recommended that signal generators equipped with gold-plated contacts be used in conjunction with this coupler. Although the circuit is designed to accommodate a relatively high voltage drop in the BA circuit, tests have shown that tungsten contacts can exhibit complete nonconductivity under some operating conditions.

2.89 The 198420 kit is for use with Bell System 103 A, B, C, E, and F Data Sets, or their equivalent. All should have the EIA interface. A power cord is provided to connect ac power to the coupler.

2.90 Wiring information for the 198420 kit is in Wiring Diagram 6468WD. Instructions for installing the 198420 kit are in Specification 50248S. The installation of the kit is mainly electrical, a simple cable must be made up, and the cabling terminates in an EIA standard 25-pin connector. Should it be necessary to remove the kit, reverse the instructions in Specification 50248S and 6468WD.

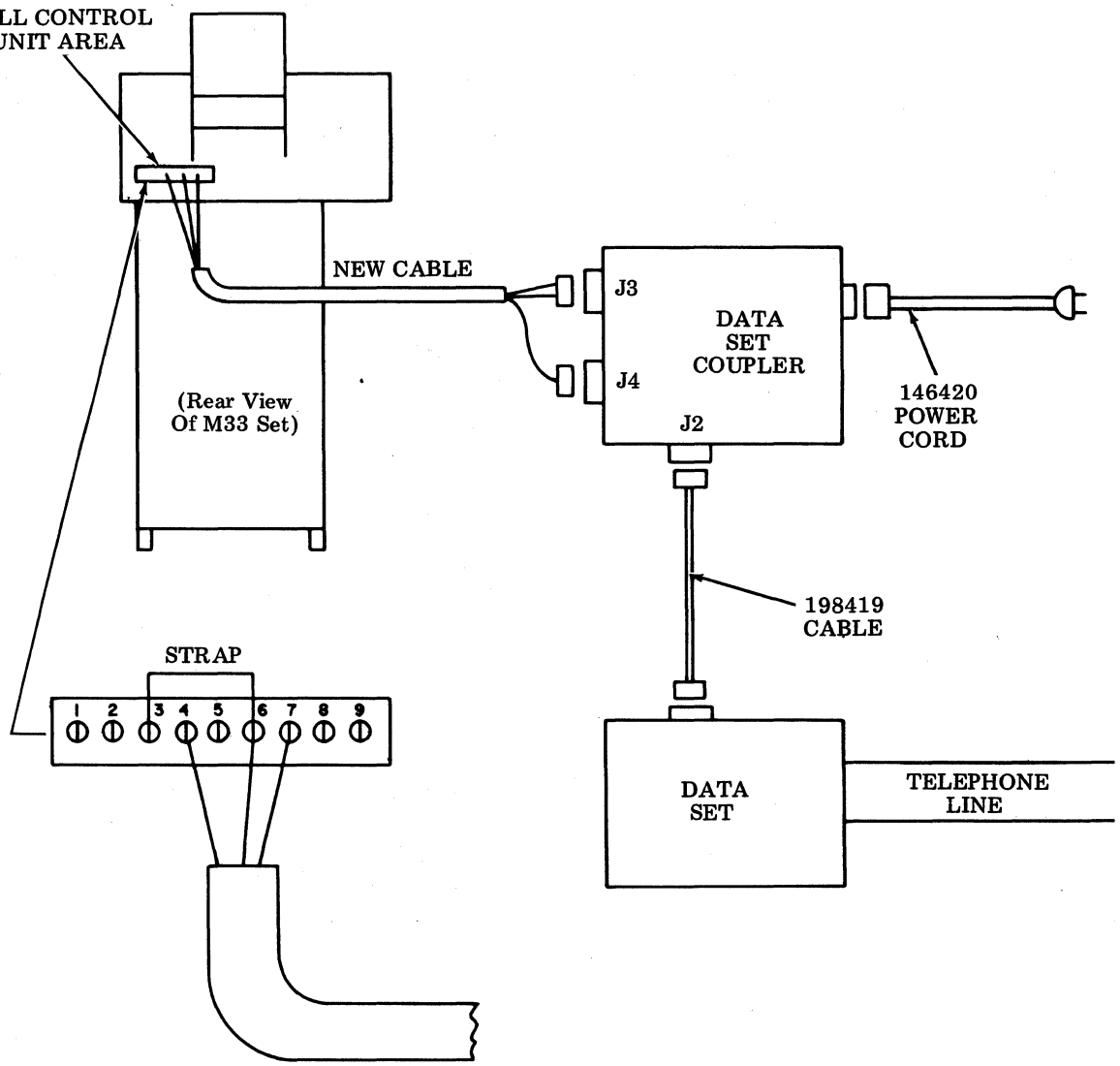


Figure 20 - Pictorial View of Installation of Kit 198420

R. 199931 Modification Kit — To Provide Model 33 ASR Sets With an Intermediate Tape Storage Bin

2.91 The 199931 modification kit provides an intermediate tape storage bin holding approximately 100 feet of perforated tape between the tape punch and the tape reader on the left side of a Model 33 ASR Set. See Figure 21.

2.92 There is a chad container in the rear of the tape bin.

2.93 The tape storage bin kit comes assembled from the factory and mounts on the ASR set by an upper and lower guide which slide into position.

2.94 The start of a tape message is clamped in the reader under the tape lid. After feeding out about one foot of tape, make certain that the tape goes into the bin.

2.95 The tape is stuffed into the bin by the feeding action of the tape punch.

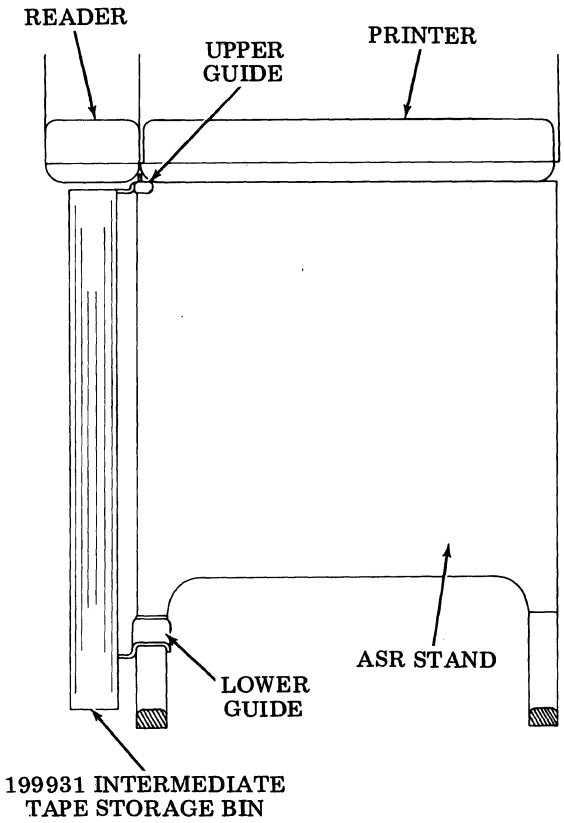


Figure 21 - 199931 Tape Storage Bin Modification

2.96 After the message is punched, it may be transmitted by starting the reader which will pull the tape out of the bin with the beginning of the message first.

2.97 The chad container at the upper rear of the tape storage bin should be emptied every time a new roll of tape is placed on the machine or any convenient time afterwards when the tape bin is empty.

2.98 Instructions for installing the 199931 kit are in Specification 50403S. Should it become necessary to remove the kit, reverse the installation procedure. Parts information is in Section 574-126-800TC.

S. 333521 AC Series Motor Assembly for Model 33 Sets

2.99 The 333521 motor assembly is for use in driving Model 33 Terminals where regulated 50/60 hertz alternating current is not available. If the frequency is not regulated when synchronous motors are used, speed variations occur which result in printing errors.

2.100 The 333521 motor assembly does not provide radio frequency suppression filter or shielding.

2.101 The 183991 motor, of the motor assembly, is a 1/12 horse power single phase 115 volt ±10 percent ac series type intended to operate at 3600 rpm using a speed regulator. The motor has ball bearings. The input current of the motor assembly is as follows:

	60 Hertz	50 Hertz
Starting Input	2.2 ampere	2.5 ampere
Running Input (full load)	1.0 ampere	1.1 ampere

2.102 This motor assembly uses a governor with a centrifugal switch, and if the speed exceeds 3600 rpm, contacts open until the motor slows (Figure 22). There is a stroboscopic target to assist in adjusting the speed to 3600 rpm.

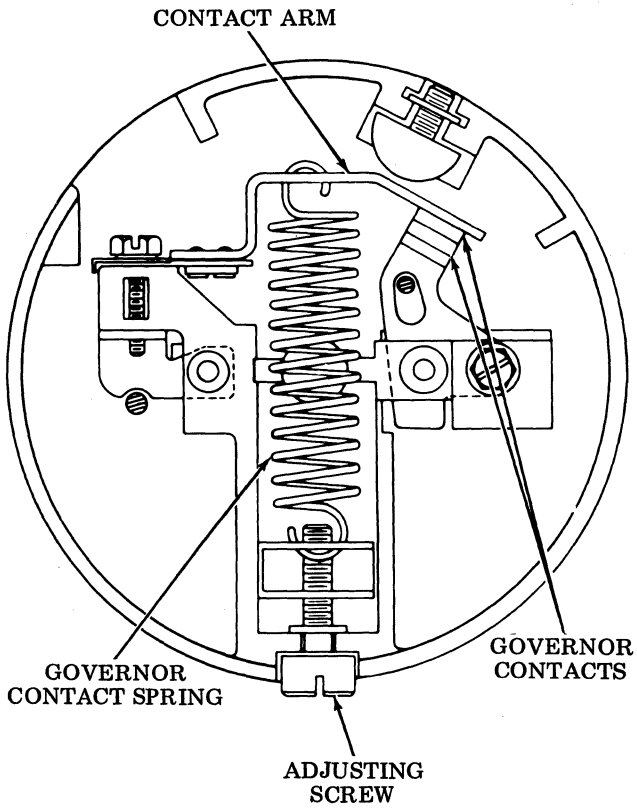


Figure 22 - 333521 Motor Assembly Governor

2.103 The description and principles of operation of a series governed motor are in Section 570-220-100TC.

2.104 Adjustments required for the motor assembly are in Section 570-220-701TC. Lubrication procedures for the motor assembly are in Section 574-220-702TC.

2.105 The installation and wiring information for the 333521 motor assembly is in Specification 50702S. Each assembly comes from the factory with a specification. The specification also contains parts information.

T. 343691EW Modification Kit — To Provide a Shelf for Attendant Set on Model 33 KSR or ASR Set

2.106 The 343691EW modification kit will mount a telephone or other attendant set such as a Bell System 103G or 113A Data Set or an 804A Data Auxiliary Set, or equivalent, on Model 33 KSR or ASR Sets (Figure 23).

2.107 Instructions for installing and removing the 343691EW kit are in Specification 50768S. Parts information for the kit is in Section 574-126-800TC and Specification 50768S.

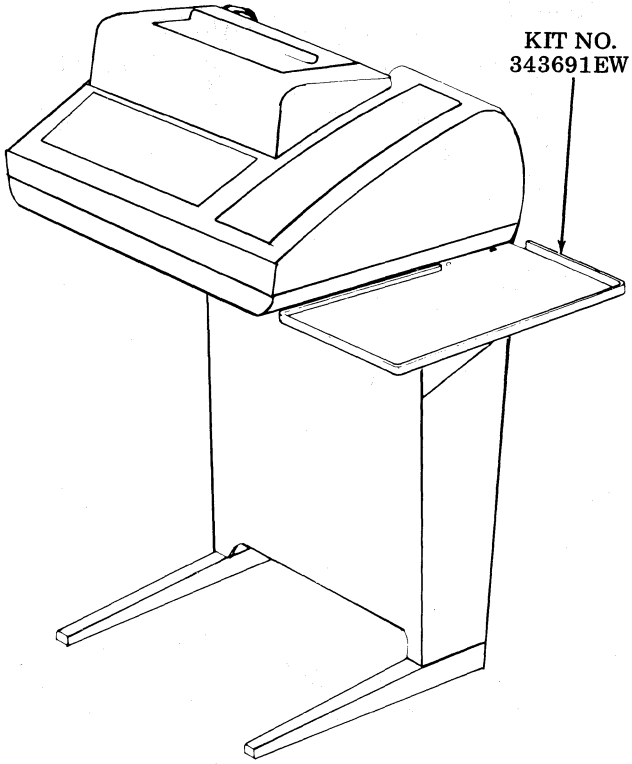


Figure 23 - 343691EW Modification Kit Mounted on a Model 33 KSR or ASR Set