

**STANSAAB**

# Alfaskop 3500 Data Terminal System

## Operator's Manual



## PREFACE

This publication presents the operational characteristics of the Alfaskop 3500 Data Terminal System when used in SAS applications. Its purpose is to help the operator understand the operation of the display unit/ /station and to provide general information about how to use the various controls. The data printer controls are described briefly and instructions for loading paper and ribbon replacement are presented.

Comments to this publication may be addressed to

Stansaab Elektronik AB  
Attention: Documentation Department  
Veddestavägen 13  
S-175 62 Järfälla, SWEDEN



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## Introduction

The user-oriented Alfaskop 3500 Data Terminal System provides rapid access to data bases. It operates under program control and consists of a number of display units and data printers connected to a control unit or, alternatively, a number of stand-alone display stations. The Alfaskop 3500 communicates with the computer system remotely via modems and the public telephone network.

Data can be entered into the system via a keyboard or an identification device. Instantaneous display of the input allows the user to verify the data before transmitting it to the computer. Transmission to the computer can be initiated by any of the above-mentioned input devices. Output messages from the computer may be updated, corrected or erased selectively by these input devices.

The keyboard contains a conventional alphanumeric keybank, a numeric keybank and special keys used for editing, program control and operational commands. After the user becomes familiar with these special keys, the terminal is as simple to use as a conventional typewriter.



*Fig. 1. Alfaskop 3500 in operation*







## CONTROLS AND INDICATORS

Display Unit 3510 and Display Station 3550 are provided with the following controls

- Power on/off switch
- Brightness control for regulating display brightness
- Contrast control used to regulate the difference in brightness when two different brightness levels are used
- Audible alarm volume control
- Click volume control (located under the keyboard) for regulating the volume of the clicking sound that acknowledges keyed entries
- Station reset switch used to reinitiate the display station logic (3550 only)

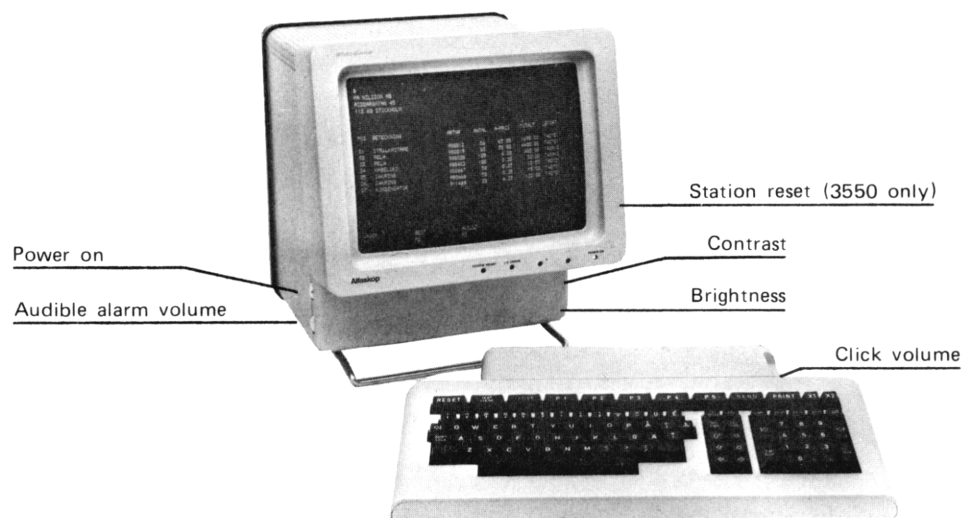


Fig. 3. Display unit/station controls

An indicator panel located at the bottom of the front of the display unit/station informs the operator of the terminal's status. From the left this panel contains the following indicator lamps

- |                |                                                                     |
|----------------|---------------------------------------------------------------------|
| • System ready | Indicates readiness for traffic with the computer                   |
| • I/O error    | Indicates an error in an external unit (a data printer for example) |
| • Alarm        | Indicates alarm to the keyboard (see page 11)                       |
| • Spare lamp   | Not used                                                            |
| • Power on     | Indicates that power is switched on to the terminal                 |

In addition to the indicator panel lamps there are three indicator lamps on the keyboard, namely

- |               |                                                                                                 |
|---------------|-------------------------------------------------------------------------------------------------|
| • USM request | Mounted in the USM key. Indicates that the computer has an unsolicited message for the operator |
|---------------|-------------------------------------------------------------------------------------------------|



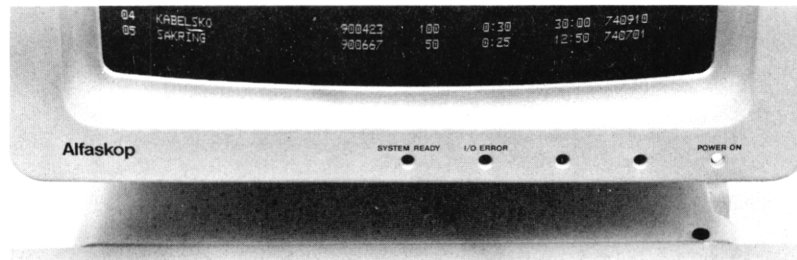


Fig. 4. Display unit/station indicators

- Insert mode  
Mounted in the INS MODE key. Indicates that this key has been depressed, i.e. that the display unit is operating in the insert mode
- ID  
Mounted at the top cover of the identification device. Used only when the identification device option is included and in such case it indicates that the ID card has been read correctly

## SCREEN PRESENTATION

Data stored in the buffer is presented on the screen in the form of alphanumerical characters and special control characters. The alphanumerical characters include letters, numerals and special characters in accordance with the keyboard layout. The special control characters that can be displayed are

- Cursor ■
- Start of message character ⌈
- Start of protected field [
- End of protected field ]

The Alfaskop 3500 can utilize computer-stored forms. The forms are constructed by means of special control characters that bracket protected guide texts. The desired form can be displayed at the request of the operator.

The protected fields of a form are bracketed by two characters: start of protected field [ and end of protected field ]. Text between these characters or between [ and the end of the line cannot be changed by the operator and is thus protected against accidental erasing. A protected field always starts and ends on the same line.

When a 17-line format is used, the last line, separated by a format line, is protected and can only be used for computer outputs.

## Special Control Characters

- Cursor ■  
The cursor indicates the position on the screen where the next character is placed when data is entered from the keyboard.

Start of Message  $\ulcorner$

The  $\ulcorner$  character marks the beginning of the data to be transmitted to the computer, or the local data printer. Transmission starts from the last  $\ulcorner$  character preceding the cursor and ends at the cursor position. If there is no  $\ulcorner$  character on the screen, transmission starts at the first position on the first line.

The  $\ulcorner$  character can be placed on the screen either by the computer or by the operator using the ST key on the keyboard.

Start of protected field [

The [ character indicates the beginning of a protected, computer-generated, text field. The field is protected against keyboard entries. The protected field ends either with the ] character or, if this character is missing, the last position of the line. A protected field cannot extend beyond the end of a line.

End of protected field ]

The ] character indicates the end of a protected, computer-generated, text field.

## KEYBOARD 3540

The keyboard is connected via a cable and can thus be located either adjacent to the CRT unit or at a distance of up to one metre. To inform the operator that input functions are being carried out correctly, each character that is entered is acknowledged by a clicking sound. The sound volume can be regulated by a control located at the bottom of the keyboard.

Functionally, the keyboard keys can be subdivided as follows

- Data entry keys for
  - Letters, numerals and special characters
- Edit keys for
  - Cursor control
  - Tabulation
  - New line
  - Erasing
  - Insertion or deletion of data
  - Start of message indication
- Function keys for
  - Display reset
  - Reception of unsolicited message
  - Initiation of hard copy printing
  - Initiation of data transmission
- Program keys
- Numeric keybank



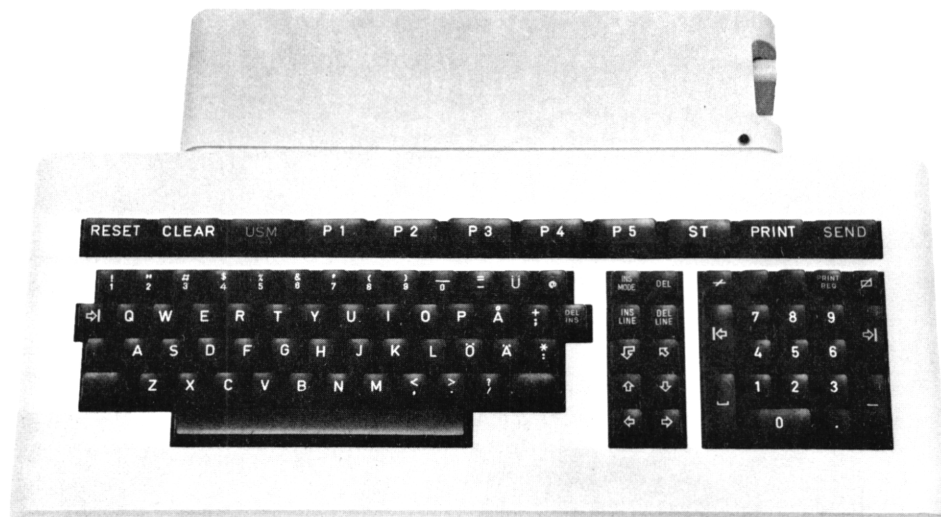


Fig. 5. Keyboard layout, Swedish version

### Data Entry Keys

The data entry keys (large keybank at left) are used to enter alphanumeric characters and special characters. Their functions are tabulated below.

#### Shift



The shift key enables the operator to select special characters on the upper half of double character keys or provide the shift function for edit and program keys.

#### Double character keys



The lower character on the key is displayed when the shift key is up and the upper character when the shift key is depressed. The character is displayed at the cursor position after which the cursor is moved forward to the next position.

#### Single character keys



Causes the character to be displayed at the cursor position and moves the cursor forward to the next position. When lower-case letters are included (selectable function), these can be entered by depressing the letter keys while the shift key is depressed.

#### Space



The keyboard is provided with two space keys, one in the alphanumeric keybank and the other in the numeric keybank. Both functions are identical. When one of the keys is depressed the cursor will move one position to the right and any character located at the cursor's original position will be erased – thus leaving a blank space.

**Underline/0**

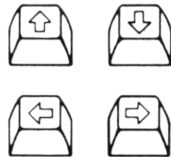
When the shift key is up this key enters the numeric character 0 (zero). When the shift key is depressed this key provides underlining or flashing of succeeding characters until a space or the end of the line is reached. The cursor is moved one position forward to the next character position.

**Edit Keys**

The edit keys carry out keyboard editing functions. These keys and their functions are tabulated below.

**Start**

When this key is depressed the start of message character is entered at the cursor position and the cursor is moved forward to the next position.

**Cursor control**

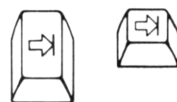
Moves the cursor one character position in the direction indicated by the arrow on the key. The cursor is moved repeatedly as long as the key is kept depressed.

**New line**

Moves the cursor to the first position on the next line. If already on the bottom line, the cursor wraps around to the first position on the first line. If the first position on the line contains a [ character, automatic tabulation will be performed.

**Home**

Moves the cursor to the first position on the first line. If this position contains a [ character, automatic tabulation will be performed.

**Tab**

Moves the cursor to the first position to the right of the next ] or invisible-tab-set character. If there is no such character on the screen, the cursor will not move. If this key is kept depressed, the operation is automatically repeated.

**Back tab**

Moves the cursor to the first position to the right of the previous ] or invisible-tab-set character. If no such character is found, the cursor will not move. If this key is kept depressed, the operation is automatically repeated.

**Insert mode**

When this key is depressed, the terminal goes into the insert mode, as indicated by a lamp in the key. Any alphanumeric character that is then entered into an unprotected field will cause the following functions



- The character at the cursor position and all characters to the right of the cursor within the same line or within an unprotected field will move one position to the right. The character at the end of the line or the unprotected field is deleted.
- The entered keyboard character is displayed at the original cursor position
- The cursor is moved one position to the right

Insert mode operations can only be carried out in unprotected fields.

The normal mode is restored by re-depressing the Insert mode key, whereupon the lamp in the key will go out.

#### Delete character



Erases the character at the cursor position and moves subsequent characters on the same line one position to the left. When protected fields are used, this function can only be performed within an unprotected field and, consequently, only characters in the same field will be moved to the left. The last position of the line or the unprotected field becomes a space.

#### Insert/Delete in display



When the shift key is up (Ins), this key moves the character occupying the cursor position and all subsequent characters on the screen one position to the right. A space is inserted at the cursor position and the character at the last position on the screen is lost.

When the shift key is depressed (Del), this key erases the character at the cursor position and moves all subsequent characters on the screen one position to the left. A space character is inserted at the last position on the screen.

None of the operations can be carried out if a [ character is present on the screen after the cursor. In such a case an alarm is issued to the operator.

#### Erase line



Erases all characters from the cursor position and to the last position on the line. When protected fields are used, this function can only be performed within an unprotected field, and consequently the erase operation is delimited to the actual field.

#### Erase screen



Erases all text from the cursor position and to the last position on the screen. When protected fields are used, only the unprotected fields are erased.

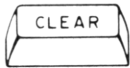
#### Insert line



Moves the line on which the cursor is positioned and all following lines down one line, thus providing a blank line at the cursor position. The content of the last line is lost. No insert line operation is carried out if a [ character is present on the line on which the cursor is located or on any line below. In such a case an alarm is issued to the operator.

**Delete line**

Deletes the line at the cursor position and moves all following lines up one line, thus providing a blank bottom line. No delete line operation is carried out if a [ character is present on the line on which the cursor is located or on any line below. In such a case an alarm is issued to the operator.

**Clear**

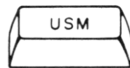
Erases all text from the cursor position to the end of the screen, including protected fields and the 17th line.

**Function Keys**

The function keys operate independently of the shift key position. The following function keys are provided

**Send**

This key initiates transmission to the computer. Transmission includes all data from the last [ character preceding the cursor position to the cursor or, if there is no [ character before the cursor, data from the first position on the first line to the cursor. When the Send key is depressed, the keyboard is locked and the cursor glows steadily and when transmission is completed the keyboard is unlocked and the cursor starts flashing. If a 17-line display format is used, this operation also erases the 17th line. An initiated but not yet executed transmission can be inhibited using the Reset key.

**Unsolicited message**

When the computer has an unsolicited message to send to the display unit/station, the lamp in this key starts flashing and the alarm sounds. Depressing this key turns off the lamp and alarm and indicates to the computer that the display unit/station is ready to receive the message.

**Print**

This key is used to initiate printout of data between the last [ character preceding the cursor position and the cursor. If there is no [ character before the cursor, printout starts from the first position on the first line.

If the data printer is busy carrying out a printout request from another terminal or from the computer, the keyboard is locked during this printout. The keyboard can be unlocked by depressing the Reset key, if the operator does not want to wait until the printer is ready. Consequently, no printout will be performed.

**Print request**

This key is used to initiate printout via the communication computer. When this key is depressed, data extending from the last [ character preceding the cursor position to the cursor or, if there is no [ character before the cursor, data extending from the first position on the first line to the cursor is transmitted to the computer.

**Reset**

This key inhibits initiated, but not yet executed, data transmission and printout requests. When this key is depressed, the keyboard will be unlocked if the data transmission or the printout has not been started. This key has no function while a command is being executed.

## Program Keys

The upper row of the keyboard contains five program keys P1 – P5. When a program key is depressed, a special code sequence is transmitted to the computer as a Text message. The five program keys can generate ten code sequences by using the shift key. The significance of each program key is under computer control and can be displayed on the bottom line of the screen.

## 10-key Numeric Keybank

To enable the operator to enter numeric information more easily, a separate 10-key numeric keybank is provided. When numeric keys 0 through 9 are depressed, digits 0 through 9 are entered.

## Keys Operable in Protected Fields

When the cursor is positioned within a protected field it is not possible for the operator to change the displayed text. The keys that are operable within a protected field are

- Tabulation keys
- Cursor control keys
- Program keys
- Clear key
- Reset key

## Keyboard Locking

The keyboard on the display unit/station is locked on the following occasions

- Until transmission is completed when Send, USM, Print request or a Program key has been depressed. An initiated, but not yet executed, transmission can be inhibited by the Reset key, thus unlocking the keyboard.
- Until data is transferred to the printer adapter when the Print key is depressed. The operator can inhibit a requested printout and thereby unlock the keyboard by using the Reset key, provided that data transfer has not started.
- During reception of a message from the computer

Keyboard locking is indicated by a steadily-glowing cursor. If the operator tries to use a locked keyboard, an audible alarm is issued.



### Audible Alarm

An audible alarm signal of approximately 0.5 second's duration is issued

- As an end-of-line warning when a character is entered into character position 65
- When a character is entered into character position 80
- In response to a special alarm order (BEL) from the computer
- When a USM message is to be sent from the computer
- When an attempt is made to use a locked keyboard (with the exception of the Reset and Shift keys)
- When the keyboard is used while the cursor is within a protected field (with the exception of the keys operable in protected fields, see above)

The alarm signal can be turned off by means of the audible alarm volume control. The alarm signal is also indicated by an alarm lamp (the third lamp from the left) on the front of the CRT unit.

### IDENTIFICATION DEVICE 3541

Identification Device 3541 is an optical reader that reads punched cards. It can be connected to Display Unit 3510 and Display Station 3550. It is mounted on the keyboard.

The card is inserted into the identification device manually, and when the card has been read correctly the lamp on the keyboard lights. The card characters are sent to the display screen in the same way as characters from the keyboard. The same functions as those generated via a keyboard can thus be generated by means of the card. When the card is removed from the identification device a selectable keyboard character is automatically generated.



Fig. 6. Identification Device 3541

## Data Printer

### GENERAL

The data printer prints out information appearing on the display screen or data obtained from the data processing system. There are two basic versions of the data printer, the 3571, which operates at a speed of 30 characters per second and the 3572, which operates at a speed of 120 characters per second.

The data printer is connected to a printer adapter in the display station or in the control unit. In cluster configurations, the data printer may be used by several display units which are connected to the same control unit as the printer adapter.

The printout operations called for from a specific display unit are always performed by the same data printer, but one printer may be used by up to eight display units. A paper sensing device is fitted to the data printer. If the paper has run out or the power is off, the I/O error lamp on the display unit/station lights and further printing is inhibited.

To obtain a hard copy of the screen content, the operator can execute local printout by depressing the Print key on the keyboard. This printout may comprise all the displayed text or any part of it. In the latter case the operator has to indicate the start and end of the text to be printed out before execution. A  $\sqcap$  character, entered by depressing the ST key, indicates the start position while the cursor indicates the stop position. When there is no  $\sqcap$  character on the screen, printout starts at the first position on the first line and continues to the cursor position. While data is being printed out, the operator may use the display unit/station for new transactions.

The operator can also initiate a printout operation by depressing the Print request key on the keyboard. The text to be printed out is determined in the same way as for local printout, but in this case the computer system takes over the printout queuing so that the display unit keyboard is un-



Fig. 7. Data Printer 3571

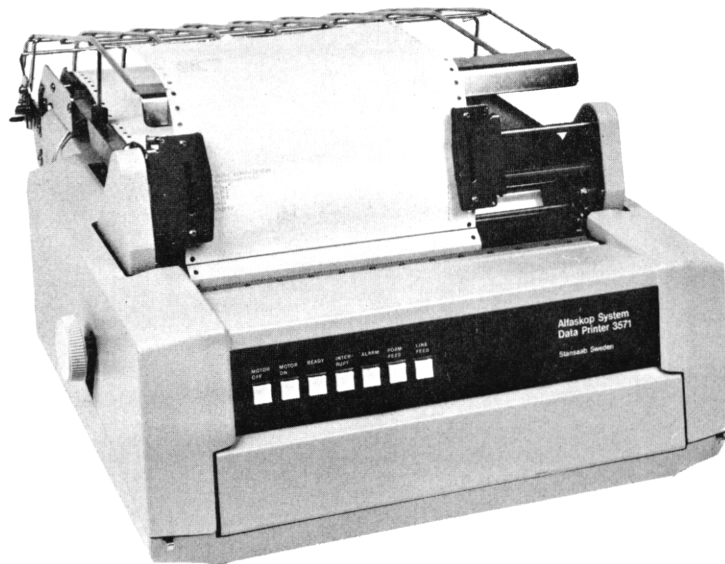


Fig. 8. Data Printer 3572

locked directly and independently of other printout requests. When the data printer then becomes available, the text is printed out.

### CHARACTERISTICS

|                      |            |                                                       |
|----------------------|------------|-------------------------------------------------------|
| Printing speed,      | 3571:      | 30 ch/s                                               |
|                      | 3572:      | 120 ch/s                                              |
| Characters per line, | 3571:      | 80                                                    |
|                      | 3572:      | 80 or 120                                             |
| Horizontal spacing:  |            | 10 characters per inch                                |
| Vertical spacing:    |            | 3 or 6 lines per inch                                 |
| Paper feed:          | 3571       | Friction                                              |
|                      | 3572       | Tractor                                               |
| Paper format:        | Min. width | 77 mm                                                 |
|                      | Max. width | 325 mm                                                |
| Paper copies:        |            | Top copy plus 5 on 50 g/m <sup>2</sup> printing paper |
| Character set:       |            | 94 printable characters                               |

The following options, useable only for computer printouts, are available for each data printer

- Form Feed and Vertical Tabulation 3581. Used for vertical tabulation on pre-printed forms. The form feed feature allows indexing on the top of the next form.
- Horizontal Tabulation 3582. Tabs can be set at every print position on the print line to provide flexible formatting of the output data.



## OPERATOR CONTROLS

- On/Off                      The On/Off switch is located at the left side at the rear of the data printer

The following pushbuttons are located on the front of the data printer

- Motor off                      The lamp in this pushbutton is lighted when the motor is stopped
- Motor on                      The lamp in this pushbutton is lighted when the motor is running. The operator can start the motor by depressing the pushbutton so that manual form feed or line feed operations can be carried out.
- Ready                      This lamp indicates that the data printer is ready to start a printout operation
- Interrupt                      This lamp is lighted when an erroneous character is received. Depressing the pushbutton will reset the interrupt circuits.
- Alarm                      This lamp indicates an alarm condition within the data printer, e.g. paper exhausted
- Form feed                      When optional unit 3581 is included, paper form feed is carried out when this pushbutton is depressed
- Line feed                      Line feed (without carriage return) is carried out as long as this pushbutton is depressed

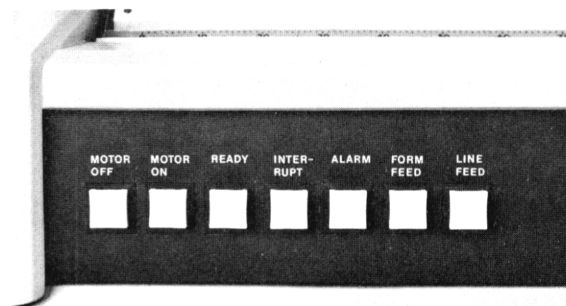


Fig. 9. Data printer operator controls

## LOADING PAPER INTO MODEL 3571

To load paper into Data Printer 3571, proceed as follows (the circled numbers refer to the corresponding numbers in Fig. 10)

- Release swivel clamps ① and remove the paper rack

- Place a wide roll of paper on paper shaft (1)
- Depress paper-out lever (2) and feed the paper from the bottom of the roll over paper guide pans (3), over paper dancer bar (4) and under platen (5)
- Push in platen knob (6) and rotate to advance the paper
- Release paper friction lever (7) and align the left edge of the paper with the red line on paper shield (9)
- Move paper friction lever to the engaged position (8)

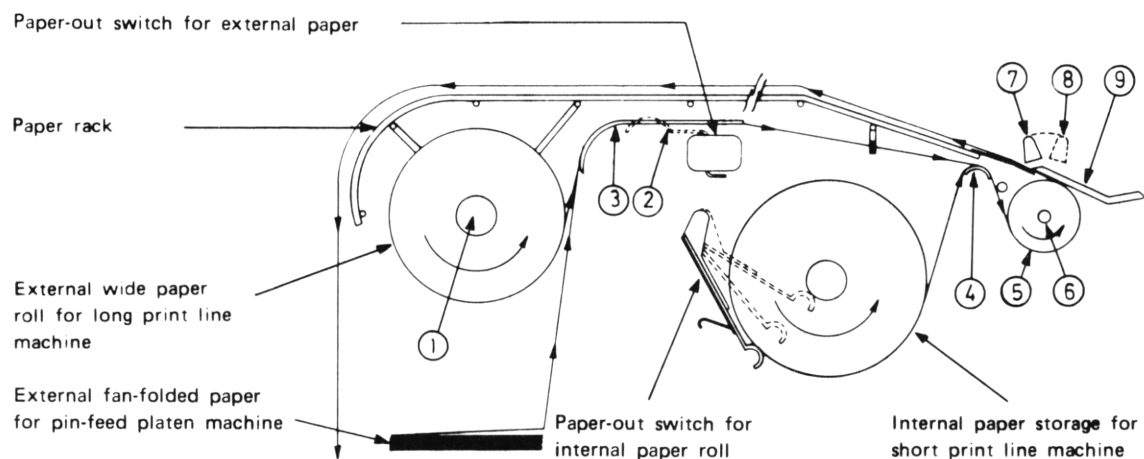


Fig. 10. Loading paper into Data Printer 3571

## LOADING PAPER INTO MODEL 3572

To load paper into Data Printer 3572, proceed as follows (the circled numbers refer to the corresponding numbers in Fig. 11)

- Place the paper in the paper supply container. Depress paper-out lever (1) and feed the paper over paper pan (2). If multiple-copy sets are used, the string side of the carbon paper must face up as the paper is fed over the paper pan. Adjust the paper pan to the width of the paper, allowing 1.5 to 3 mm clearance on each side.
- Slide the paper behind and underneath platen (3). When using thick multiple-copy sets, it may be necessary to push the platen knob in and turn the platen manually to help get the paper around the platen.
- Adjust the two tractors on form tractor assembly (4) by loosening the two knurled knobs (one behind each tractor). Slide the tractors horizontally to align them for the paper width being used. Secure the tractors by tightening the two knurled knobs.

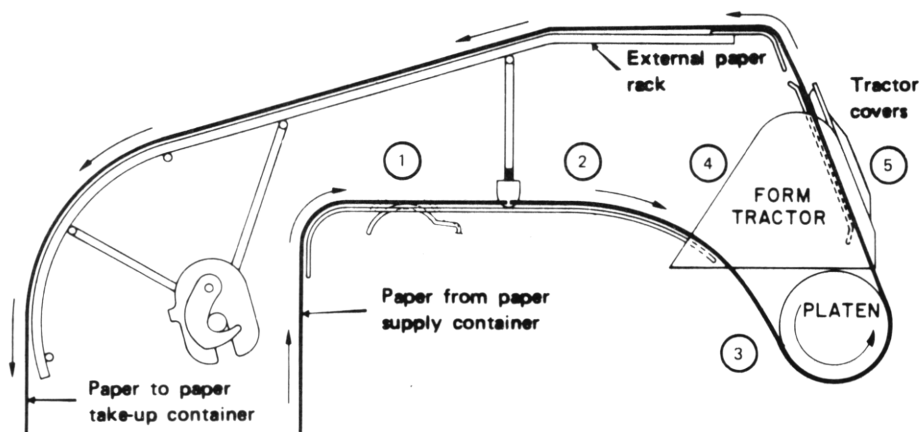


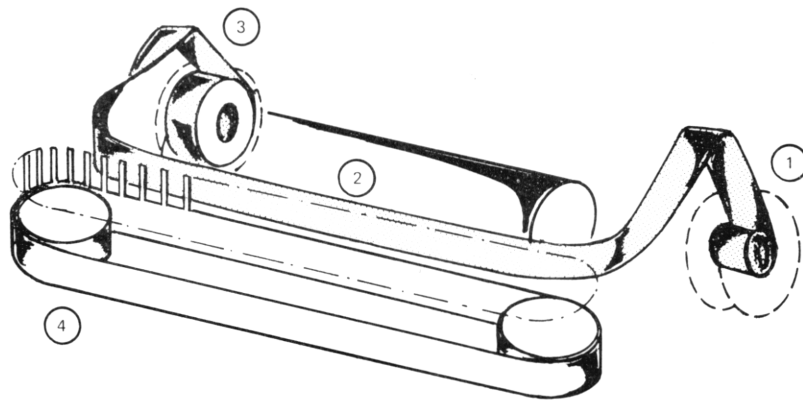
Fig. 11. Loading paper into Data Printer 3572

- Open tractor covers (5) and fit the holes in the edges of the paper over the tractor pins
- Close the tractor covers and rotate the platen by hand until the paper covers the top of the external paper rack

## RIBBON REPLACEMENT

To replace a ribbon, proceed as follows. The circled numbers refer to the corresponding numbers in Fig. 12. See also the decal beneath the top cover of the data printer.

- The new spool can be loaded at either side of the data printer
- Remove the old ribbon
- Hook the ribbon on the empty spool, align the slot in the spool with the sensor on the hub and slide the spool onto the hub. Wrap approximately three turns of ribbon onto the spool. Note that the ribbon must wind onto the rear of spool (1).
- Position the ribbon behind type fingers (2), align the slot in the full spool with the sensor on the other hub and slide the spool onto the hub. Note that the ribbon must unwind from the rear of spool (3).
- Rotate one of the spools to take up the slack in the ribbon. Note that only one spool can be turned manually. Do not use force!
- Rotate print belt (4) a few revolutions anti-clockwise by hand to make sure that the ribbon is not wrapped around any of the type fingers and is winding onto the rear of spool (1) and unwinding from the rear of spool (3).

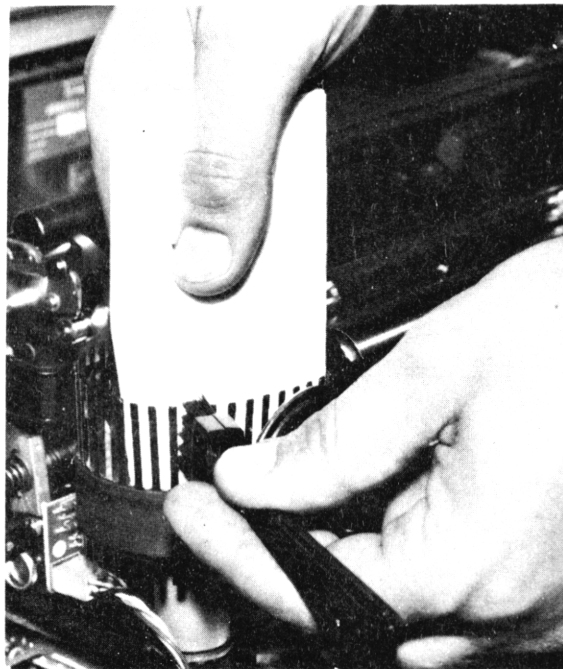


*Fig. 12. Ribbon replacement*

Printing takes place in the upper part of the ribbon. To utilize the lower part, remove both spools with ribbon, reverse their positions and replace them.

### **CLEANING THE PRINT FINGERS**

Type faces on the print fingers should be cleaned if any dirt has accumulated in the depressions. Use a sponge and a type cleaning brush. Brush gently up and down. See Fig. 13.



*Fig. 13. Cleaning the print fingers*



## Control Unit

### GENERAL

Control units are used in cluster configurations, i.e. in installations where more than one display terminal or more than one data printer are to be connected to the same communication channel. All electronics that control communication, input/output presentation, etc. are contained within the control unit which serves a number of display units and data printers.

### CONTROLS AND INDICATORS

The control unit contains a number of controls and indicators. However, since the control unit remains in operation 24 hours a day, there is normally no need for the operator to use these controls. In any case, the operator shall not touch any of the controls other than those listed below.

- Mains on/off switch Turns power to control unit on and off
- Mains on indicator This lamp is lighted when power is switched on to the control unit
- Activity indicators One such lamp is provided in the control logic and also in each control module, and it lights while the communication adapter is operating

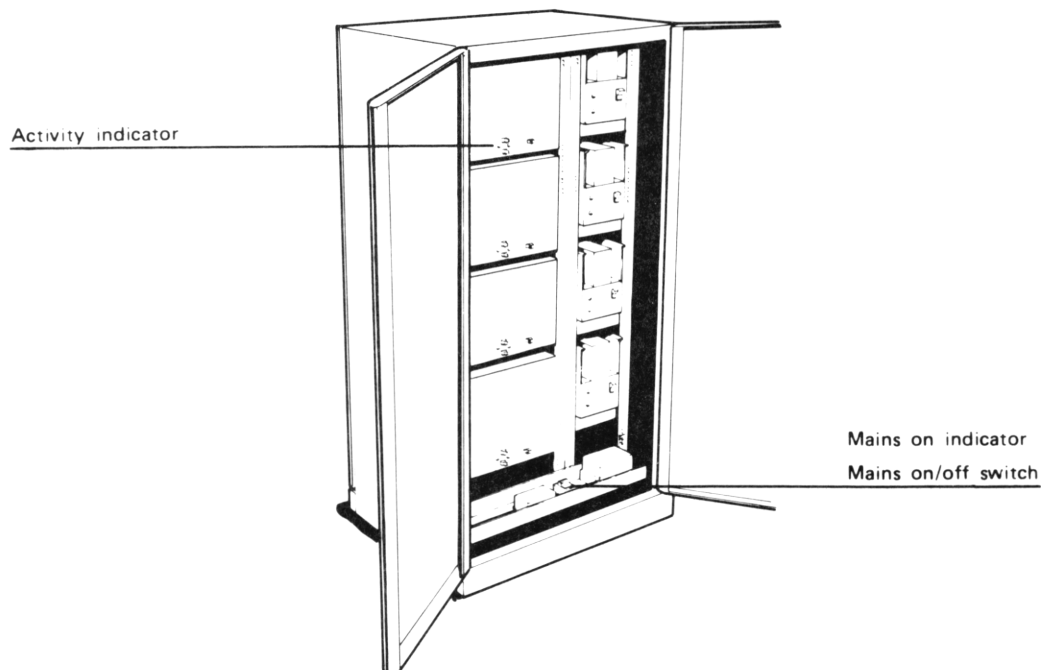


Fig. 14. Control unit controls and indicators