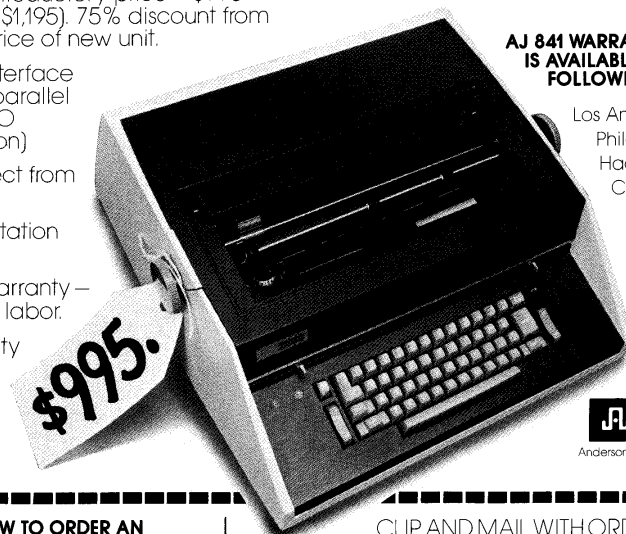


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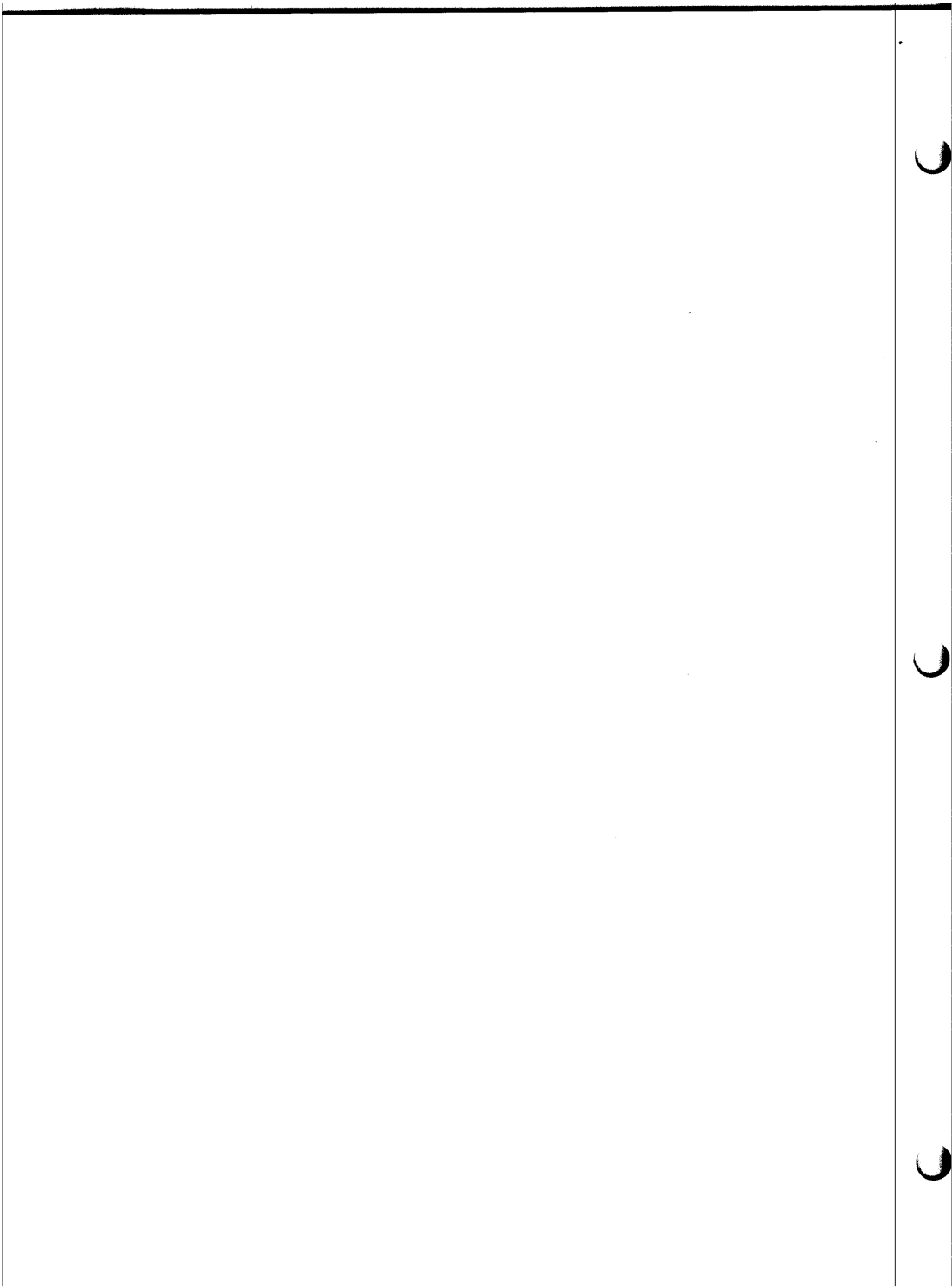
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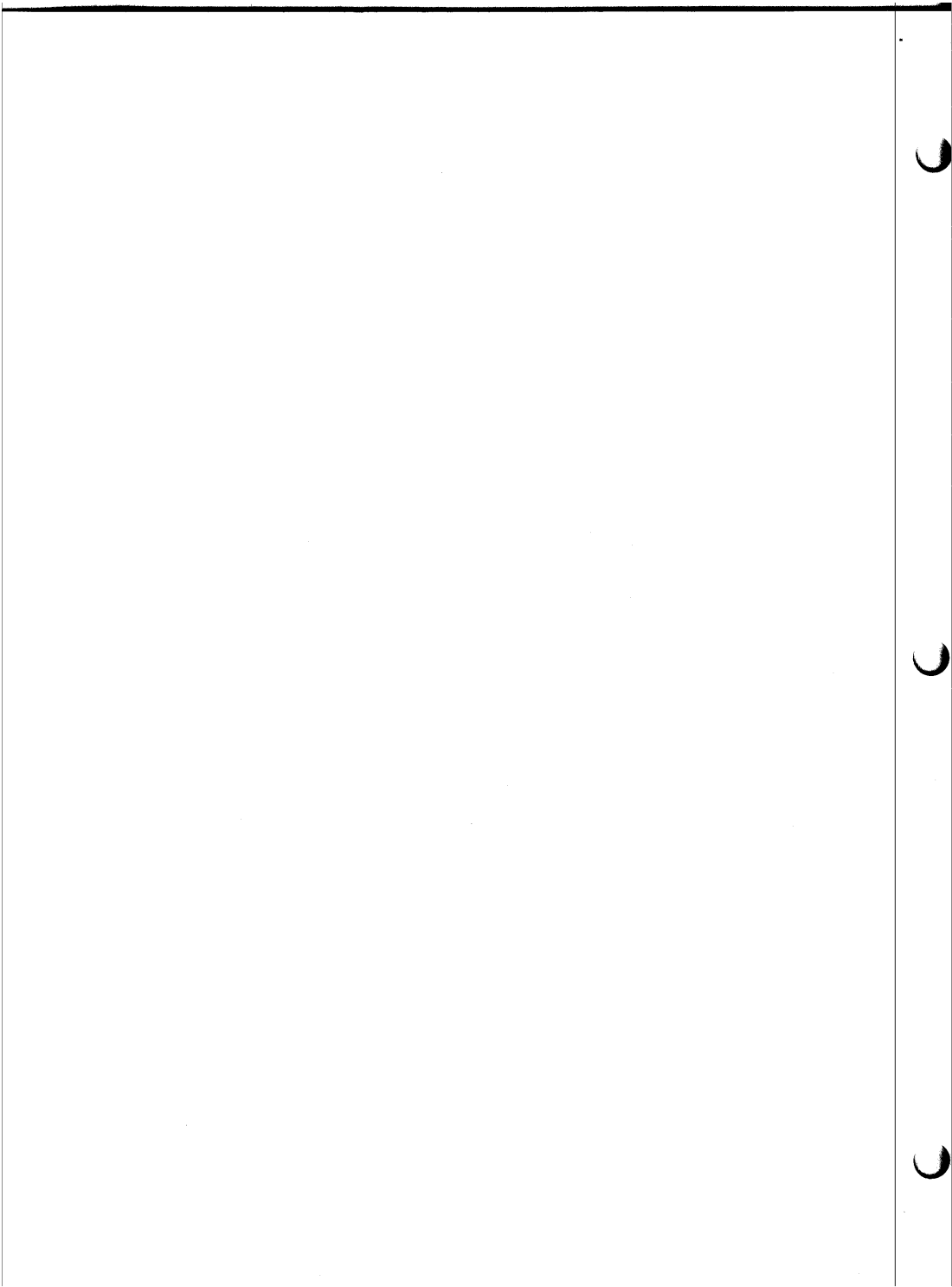


**ANDERSON
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**AJ 841
COMPUTER TERMINAL
OPERATOR'S MANUAL**

96-14924-010

OCTOBER, 1977



**AJ841 SELECTRONIC TERMINAL
OPERATORS MANUAL
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SECTION 1.0 INSTALLATION

1.1 INTRODUCTION

CONGRATULATIONS—you have an AJ 841!

We would like to help you in using this terminal most effectively. If one of our salesmen is there to teach you, this manual will serve as a handy reference. If, however, you are on your own, you will find this manual very helpful in learning to operate the terminal which is, in fact, nothing but a typewriter adapted for communication to the computer. We chose the well-known IBM Selectric typewriter as the basic component of the terminal.

IF YOU DO NOT KNOW THE IBM SELECTRIC TYPEWRITER, and are beginning to use the AJ Selectronic Terminal, you will be pleasantly surprised at the fast keyboard action of this terminal, and the simplicity of its layout. The AJ Selectronic Terminal uses the IBM Selectric mechanism—a ruggedized version—and offers many features which improve performance, versatility, convenience of use, and serviceability. Many of these features are not visible from the outside and can be appreciated only by technically oriented persons. However, because they are there, we expect you to become one of our many satisfied customers.

IF YOU ARE FAMILIAR WITH THE IBM SELECTRIC TYPEWRITER, then you will find yourself at home using the AJ 841 because it looks and feels like your typewriter. The touch is the same so that you will be able to type quickly and accurately on this terminal. Even if you type in bursts on-line to the computer, the AJ 841 will be able to follow and send out the content of your message to the computer just as you see it typed on the paper. There is a maximum speed at which the terminal transmits or receives from the computer.

This Operator Manual explains the various parts of the terminal and their use with the computer.

Keyboard No. of Keys 47 No. of Codes Generated 128 ASCII Typamatic Keys Space, backspace underscore & hyphen	Printer Print Speed 14.9 characters/second No. of Printable Characters 88 max (full upper and lower case) Line Length 130 characters Number of Copies original plus 5 Paper Width up to 14.8" Ribbon Type standard Selectric cartridge type, carbon or cloth Platen friction feed (same as typewriter)								
Control Switches Power On/Off Local/On Line Attention/Control Key Upper Case Alpha Lock — entered or left by depressing attn key & toggling the case shift.	Interface <table border="1" data-bbox="824 1423 1279 1495"> <thead> <tr> <th></th> <th>Code</th> <th>Mode</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>Parallel</td> <td>ASCII 7 level no parity</td> <td>Half duplex</td> <td>parallel port ("3P + S" type)</td> </tr> </tbody> </table> Baud Rate: 120 nominal Test Mode: Local and on-line		Code	Mode	Type	Parallel	ASCII 7 level no parity	Half duplex	parallel port ("3P + S" type)
	Code	Mode	Type						
Parallel	ASCII 7 level no parity	Half duplex	parallel port ("3P + S" type)						
Physical Size 21" wide, 8" high 21" deep Weight 65 pounds Power 115VAC±10%, 60 Hz±2 Hz at 2 amp Ambient Temperature 40° to 100° F Carriage Size 15"									

Table 1-1. Specifications

1.2 KEYBOARD—CODE FORMAT

Your AJ 841 may come with either an EBCD or CORRESPONDENCE Code keyboard (See Figure 1-1). Both have the same upper and lower case alpha-numeric characters. However, other symbols vary both in type and location on the keyboard.

In both cases the AJ 841 translates Selectric tilt and rotate codes into ASCII when sending and vice versa when receiving data. The communications format is **7 bit ASCII sent in PARALLEL**.

Characters from the AJ 841 are transmitted at a keyboard rate of up to 14.9 characters per second. Characters are accepted at the printer at a maximum of 14.9 CPS.

1.3 INTERFACE REQUIREMENTS

The link between the AJ 841 and your computer is a 25 conductor flat ribbon cable. It is connected as illustrated in Figure 1-2.

Interface pin assignments are listed in Table 1-2. Table 1-3 briefly describes the output of or input to each pin.

Data from the computer to the AJ 841 is transmitted on 8 lines. A strobe (computer I/O white signal) loads these 8 lines into the AJ 841 Processor Port. The AJ 841 acknowledges with an 'A RDY' signal. This is the status bit that the computer looks at to see if the terminal is ready for another character.

Data from the AJ 841 Processor to the computer also uses 8 lines. The Processor sends a strobe when this data is good. Since the AJ 841 sends at keyboard rate it does not look for acknowledgment.

1.4 CODE CONVERSION

To aid you in understanding the keyboard and various code conversions several figures and tables are provided as follows:

Table 1-4. Correspondence—ASCII Code Conversion from AJ 841 to Computer.

Table 1-5. ASCII—Correspondence Code Conversion Table from Computer to AJ 841 Terminal.

Table 1-6. EBCD—ASCII Code Conversion from AJ 841 to Computer.

Table 1-7. ASCII—EBCD Conversion Table from Computer to AJ 841 Terminal.

1.5 ASCII CONTROL CODES

It should be noted that although the AJ 841 can send the complete range of control codes to the computer, the AJ 841 will respond **only** to the following 5 control codes.

BS	08	BACKSPACE
HT	09	HORIZONTAL TAB
LF	0A	LINE FEED
VT	0B	VERTICAL TAB
CR	0D	CARRIAGE RETURN

1.6 TIMING

Timing of signals from the computer to the AJ 841 is typical output port time of an 8080 or Z80 microprocessor. The AJ 841's processor uses a Z80 PIO port for I/O to the computer.

Timing is illustrated in Figure 1-3. Reference should be made to Tables 1-2 and 1-3 for complimentary data.

DIFFERENT VERSIONS OF THE AJ 841

Two basic keyboard arrangements are available. They are based on the two different code structures each using a specific typesphere.

Basic Terminal Configurations

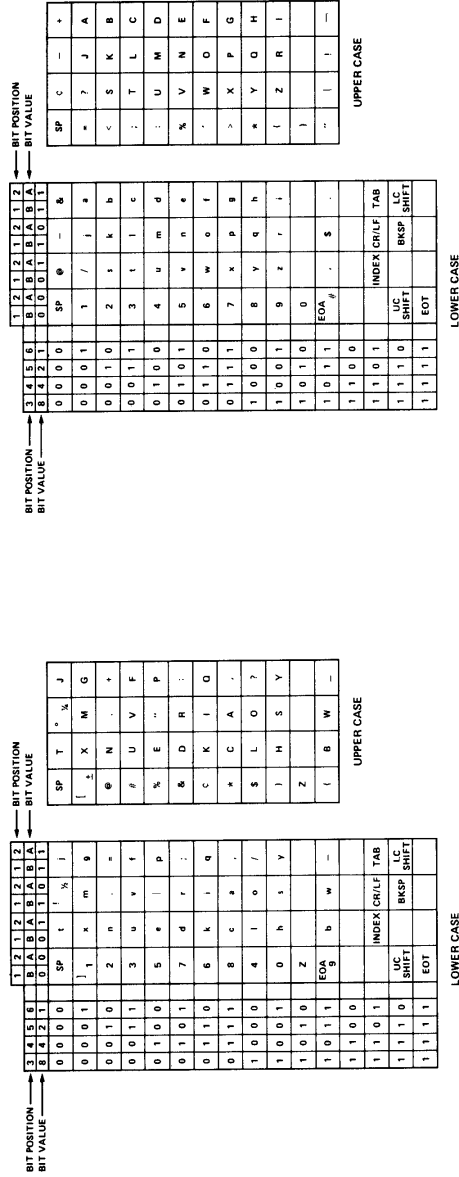
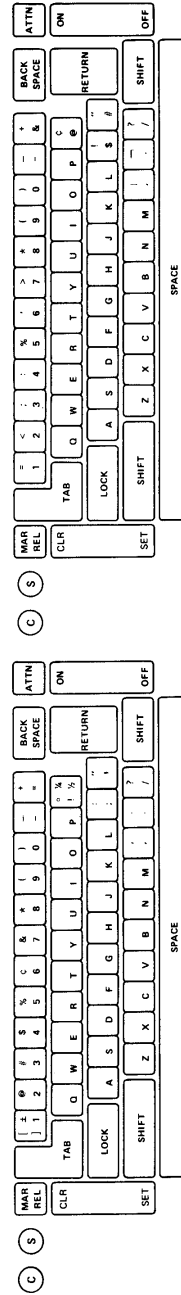
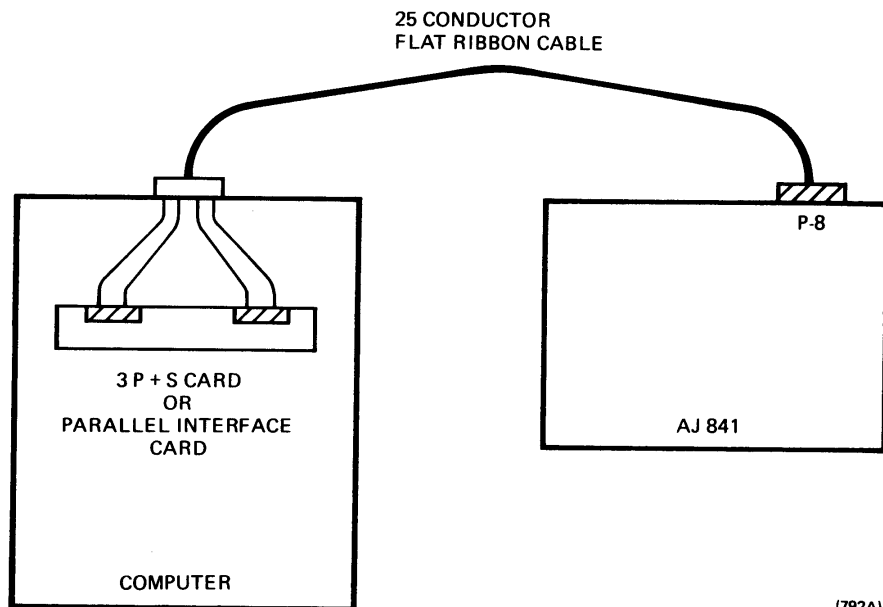


Figure 1-1. EBCD and Correspondence Keyboards



Correspondence Code In this keyboard configuration the keytops are arranged as they appear on a standard office (Selectric Typewriter) Selectric typewriter.

EBCD Code The EBCD keyboard arrangement is similar to the correspondence keyboard but offers the user symbols more suited to scientific applications.



(792A)

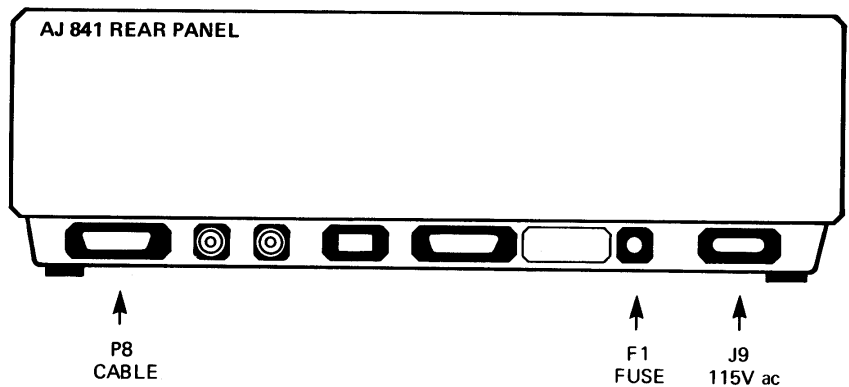


Figure 1-2. Cable Connections

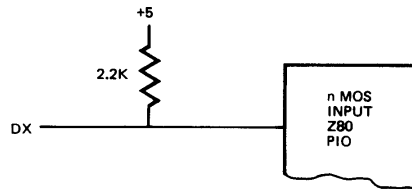
PIN NO.	DESCRIPTION	SIGNAL
1	<u>From the computer to the AJ841</u>	DX 0 1 2 3 4 5 6 7
2	2.2K line termination resistors on AJ841 end	
3		
4	Positive True	
5		
6		
7		
8		
9	Positive going strobe from the computer to the AJ841; loads the 841's input port. NOTE 2	DXSTRB
10	ACKNOWLEDGE SIGNAL. It is high when the AJ841 can accept a new character. When low the computer should not send another character. NOTE 3	DXACK
11	<u>From the AJ841 to the computer</u>	DY 0 1 2 3 4 5 6 7
12	Signals are driven by 81LS95	
13		
14	Positive True	
15		
16		
17		
18		
19	Low going pulse of 1.4 us duration from AJ841 to the computer signifying that data is good. NOTE 5	DYSTRB
20	Not used by the AJ841	DYACK
21	_____	GND
22	_____	GND
23	_____	GND
24	Opposite polarity of DYSTRB above	DYSTRB-OP
25	_____ Spare _____	

The polarity of Pin 9 and 10 may be reversed by moving jumpers on the I/O board as follows:

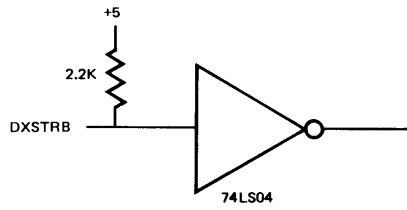
J8 - 17 Move jumper from P to R
J8 - 19 Move jumper from S to T

Table 1-2. Interface Pin Assignments

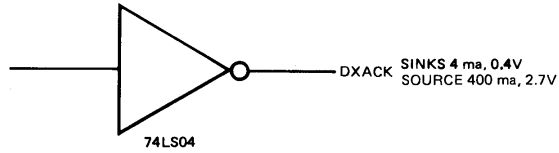
- ① DX 0 - 7 HAVE 2.2K RESISTOR PULLUP TERMINATIONS



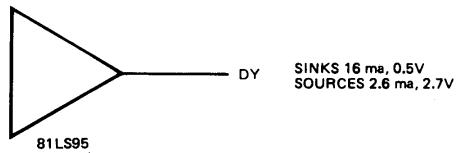
- ② DXSTRB HAS 2.2K RESISTOR INTO LOW POWER TTL



- ③ DXACK IS LOW POWER TTL OUTPUT



- ④ DY 0 - 7 IS OUTPUT OF OCTAL BUFFER 81LS95



- ⑤ DYSTRB IS OUTPUT OF 74121 TTL

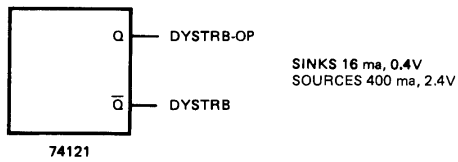
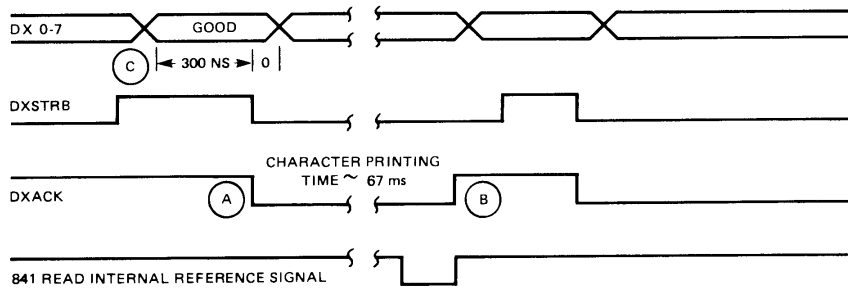


Table 1-3. Pin Inputs — Outputs

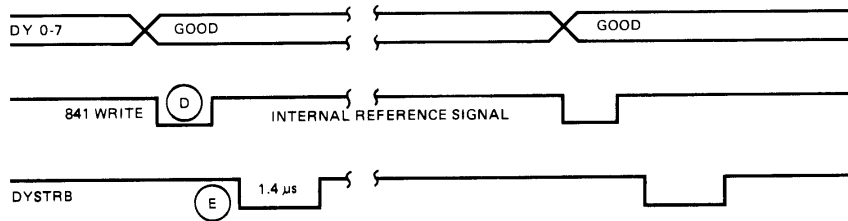
(794A)

DATA FROM COMPUTER TO AJ 841



- (A) DXACK GOES LOW AT END OF DXSTRB.
- (B) DXACK GOES HIGH WHEN THE 841 PROCESSOR READS THE PORT (Z80-PIO). THE 841 SIGNAL IS INTERNAL AND IS SHOWN FOR REFERENCE ONLY.
- (C) DATA SET-UP TIME IS 300 NANO SECONDS. HOLD TIME IS ZERO. TIMING FOR DX 0 - 7 AND DXSTRB IS TYPICAL OF AN 8080 OUTPUT PORT.

DATA FROM AJ 841 TO COMPUTER



- (D) INTERNAL WRITE SIGNAL USED TO LOAD PORT. FOR REFERENCE ONLY.
- (E) DYSTRB IS A LOAD SIGNAL TO THE COMPUTER. DY 0 - 7 IS GOOD WHEN THE 1.4 μs SIGNAL IS PULSED.

(793A)

Figure 1-3. Timing Diagram

NOTES:

LOWER CASE			UPPER CASE			"ATTN" KEY DEPRESSED	
Corr. Keyboard	ASCII Code	ASCII Sent	Corr. Keyboard	ASCII Code	ASCII Sent	Upper Case Code	Lower Case Sent
1	31	1	±	60	`	1F	US
2	32	2	@	40	@	1E	RS
3	33	3	#	23	#	1D	GS
4	34	4	\$	24	\$	1C	FS
5	35	5	%	25	%	5E	^
6	36	6	¢	5C	\	7F	DEL
7	37	7	&	26	&	7F	DEL
8	38	8	*	2A	*	1B	ESC
9	39	9	(	28	(	5B	|
0	30	0	)	29	)	5D	|
-	2D	-	—	5F	(Underline)	3C	<
=	3D	=	+	2B	+	3E	>
q	71	q	Q	51	Q	11	DC1
w	77	w	W	57	W	17	ETB
e	65	e	E	45	E	05	ENQ
r	72	r	R	52	R	12	DC2
t	74	t	T	54	T	14	DC4
y	79	y	Y	59	Y	19	EM
u	75	u	U	55	U	15	NAK
i	69	i	I	49	I	09	HT
o	6F	o	O	4F	O	0F	SI
p	70	p	P	50	P	10	DLE
!	21	!	°	7E	~	7F	DEL *
a	61	a	A	41	A	01	SOH
s	73	s	S	53	S	13	DC3
d	64	d	D	44	D	04	EOT
f	66	f	F	46	F	06	ACK
g	67	g	G	47	G	07	BEL
h	68	h	H	48	H	08	BS
j	6A	j	J	4A	J	0A	LF
k	6B	k	K	4B	K	0B	VT
l	6C	l	L	4C	L	0C	FF
;	3B	;	:	3A	:	7D	}
,	27	,	"	22	"	7B	{
z	7A	z	Z	5A	Z	1A	SUB
x	78	x	X	58	X	18	CAN
c	63	c	C	43	C	03	ETX
v	76	v	V	56	V	16	SYN
b	62	b	B	42	B	02	STX
n	6E	n	N	4E	N	0E	SO
m	6D	m	M	4D	M	0D	CR
,	2C	,	,	2C	,	7F	DEL
.	2E	.	.	2E	.	7F	DEL
/	2F	/	?	3F	?	7C	|
SPACE	20	SPACE	SPACE	20	SPACE	00	NUL

When "ATTN" Key is depressed to send a control code nothing is printed.

*Initiates diagnostic sequence. Do not use as delete code.

Table 1-4. Correspondence—ASCII Code Conversion—From AJ 841 to Computer.

ASCII CODE RECEIVED	CORRES. CODE	ASCII CODE RECEIVED	CORRES. CODE	ASCII CODE RECEIVED	CORRES. CODE
SP 20	SPACE	@ 40	@	` 60	±
! 21	!	A 41	A	a 61	a
" 22	"	B 42	B	b 62	b
# 23	#	C 43	C	c 63	c
\$ 24	\$	D 44	D	d 64	d
% 25	%	E 45	E	e 65	e
& 26	&	F 46	F	f 66	f
' 27	'	G 47	G	g 67	g
(28	(	H 48	H	h 68	h
) 29	)	I 49	I	i 69	i
* 2A	*	J 4A	J	j 6A	j
+ 2B	+	K 4B	K	k 6B	k
, 2C	,	L 4C	L	l 6C	l
- 2D	-	M 4D	M	m 6D	m
. 2E	.	N 4E	N	n 6E	n
/ 2F	/	O 4F	O	o 6F	o
0 30	0	P 50	P	p 7D	p
1 31	1	Q 51	Q	q 71	q
2 32	2	R 52	R	r 72	r
3 33	3	S 53	S	s 73	s
4 34	4	T 54	T	t 74	t
5 35	5	U 55	U	u 75	u
6 36	6	V 56	V	v 76	v
7 37	7	W 57	W	w 77	w
8 38	8	X 58	X	x 78	x
9 39	9	Y 59	Y	y 79	y
: 3A	:	Z 5A	Z	z 7A	z
; 3B	;	[5B	(	{ 7B	(
< 3C	SPACE	\ 5C	φ	| 7C	SPACE
= 3D	=	] 5D	)	} 7D)
> 3E	SPACE	^ 5E	SPACE	~ 7E	°
? 3F	?	_ 5F	— (Underline)	DEL 7F	DEL

Table 1-5 ASCII—Correspondence Code Conversion Table. Computer to AJ 841 Terminal.

LOWER CASE			UPPER CASE			"ATTN" KEY DEPRESSED	
EBCD Keyboard	ASCII Code	ASCII Sent	EBCD Keyboard	ASCII Code	ASCII Sent	Upper ASCII Code	Lower ASCII Sent
1	31	1	=	3D	=	1F	US
2	32	2	<	3C	<	1E	RS
3	33	3	;	3B	;	1D	GS
4	34	4	:	3A	:	1C	FS
5	35	5	%	25	%	5E	^
6	36	6	'	27	'	60	`
7	37	7	>	3E	>	7F	DEL *
8	38	8	*	2A	*	1B	ESC
9	39	9	(	28	(	5B	{
0	30	0	)	29	)	5D	|
-	2D	-	_	5F	_	7F	DEL
&	26	&	+	2B	+	7F	DEL
q	71	q	Q	51	Q	11	DC1
w	77	w	W	57	W	17	ETB
e	25	e	E	45	E	05	ENQ
r	72	r	R	52	R	12	DC2
t	74	t	T	54	T	14	DC4
y	79	y	Y	59	Y	19	EM
u	75	u	U	55	U	15	NAK
i	69	i	I	49	I	09	HT
o	6F	o	O	4F	O	0F	SI
p	70	p	P	5D	P	10	DLE
@	40	@	φ	5C	\	7F	DEL
a	61	a	A	41	A	01	SOH
s	73	s	S	53	S	13	DC3
d	64	d	D	44	D	04	EOT
f	66	f	F	46	F	06	ACK
g	67	g	G	47	G	07	BEL
h	68	h	H	48	H	08	BS
j	6A	j	J	4A	J	0A	LF
k	6B	k	K	4B	K	0B	VT
l	6C	l	L	4C	L	0C	FF
\$	24	\$	!	21	!	7D	}
#	23	#	"	22	"	7B	{
z	7A	z	Z	5A	Z	1A	SUB
x	78	x	X	58	X	18	CAN
c	63	c	C	43	C	03	ETX
v	76	v	V	56	V	16	SYN
b	62	b	B	42	B	02	STX
n	6E	n	N	4E	N	0E	SO
m	6D	m	M	4D	M	0D	CR
,	2C	,	|	7C	|	7F	DEL
.	2E	.	~	7E	~	7F	DEL
/	2F	/	?	3F	?	7F	DEL
SPACE	20	SP	SPACE	20	SP	00	NUL

When "ATTN" Key is depressed to send a control code nothing is printed.

*Initiates diagnostic routine. Do not use as delete code.

Table 1-6. EBCD-ASCII Code Conversion—from AJ 841 to Computer.

ASCII CODE RECEIVED	EBCD CHAR.	ASCII CODE RECEIVED	EBCD CHAR.	ASCII CODE RECEIVED	EBCD CHAR.
SP 20	SPACE	@ 40	@	` 60	'
! 21	!	A 41	A	a 61	a
" 22	"	B 42	B	b 62	b
# 23	#	C 43	C	c 63	c
\$ 24	\$	D 44	D	d 64	d
% 25	%	E 45	E	e 65	e
& 26	&	F 46	F	f 66	f
' 27	'	G 47	G	g 67	g
(28	(	H 48	H	h 68	h
) 29	)	I 49	I	i 69	i
* 2A	*	J 4A	J	j 6A	j
+ 2B	+	K 4A	K	k 6B	k
, 2C	,	L 4C	L	l 6C	l
- 2D	-	M 4D	M	m 6D	m
. 2E	.	N 4E	N	n 6E	n
/ 2F	/	O 4F	O	o 6F	o
0 30	0	P 50	P	p 70	p
1 31	1	Q 51	Q	q 71	q
2 32	2	R 52	R	r 72	r
3 33	3	S 53	S	s 73	s
4 34	4	T 54	T	t 74	t
5 35	5	U 55	U	u 75	u
6 36	6	V 56	V	v 76	v
7 37	7	W 57	W	w 77	w
8 38	8	X 58	X	x 78	x
9 39	9	Y 59	Y	y 79	y
: 3A	:	Z 5A	Z	z 7A	z
; 3B	;	[5B	(	{ 7B	(
< 3C	<	\ 5C	φ	| 7C	|
= 3D	=	] 5D	)	} 7D)
> 3E	>	^ 5E	SP	~ 7E	␣
? 3F	?	_ 5F	— (Underline)	DEL 7F	DEL

Table 1-7. ASCII—EBCD Conversion Table. Computer to AJ 841 Terminal.

SECTION 2.0 OPERATION

2.1 INTRODUCTION

The simplicity of present-day operating systems essentially requires that the operator learn only the operations and sequences to his computer system. This manual describes the functions of the terminal and its interaction with the computer in general rather than with a specific system.

2.2 OPERATING MODES

There are 2 modes of operation: Communicate and Local. The mode is determined by the position of the Com/Local switch located on the front-left side of the terminal.

2.2.1 Local Mode. The 841 in this mode is disconnected from the communications electronics and functions as a standard typewriter. If communication was previously established with a computer, switching to local mode does not break the communication link. This facility can be useful in some instances; i.e., typing information not pertinent to the computer.

2.2.2 Communicate Mode. The AJ 841 may be placed on-line with the computer system by switching to the Communicate mode. The manner in which this connection is established varies and will depend on the system. Instructions will be given to the operator by the Computer Operating Systems Manual.

2.3 START UP PROCEDURE

1. Load operating system into the computer.
2. Hit reset switch on the computer.
3. Put the AJ 841 Com/Local switch in Com position.
4. Press Run switch on the computer.
5. Put the AJ 841 in upper case alpha mode.
6. Type in command and press carriage return; the computer responds to the command and then waits for the next command. This interchange is described in the operating system manual of the computer.

2.4 KEYBOARD CONTROLS

The following describes the features and controls available on the AJ 841. Figures 2 and 3 should be used for reference.

2.4.1 Status Indicators/Controls

Communication Mode. When the green communications mode indicator is lit on the 841, it is in communications mode. It indicates that characters entered from the keyboard are being sent down the line to the computer.

Upper Case Alpha. When the blue upper case alpha indicator is lit, alpha characters are sent in upper case ASCII regardless of the shift key. The printed characters, however, will depend on the shift key. This feature is necessary because the typical computer system works with a teletype which has no lower case. Hence computer systems usually do not recognize lower case characters for commands.

Depress ATTN (control) key and strike the shift key to get into upper case alpha mode. This same procedure gets the 841 out of upper case alpha mode. In other words, the 841 alternately toggles into and out of the mode.

2.4.2 Power Switch (ON-OFF). This rocker type switch is labeled ON and OFF and controls the electrical power for the terminal. When the ON function is depressed, the red area on the lower portion of the switch is exposed.

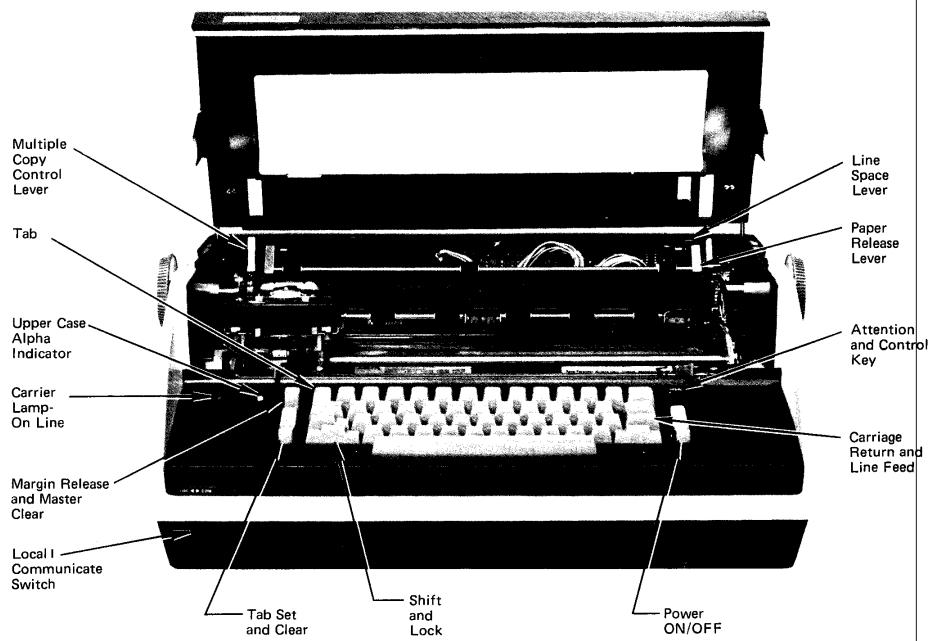


Figure 2-1. AJ 841 Front View #1

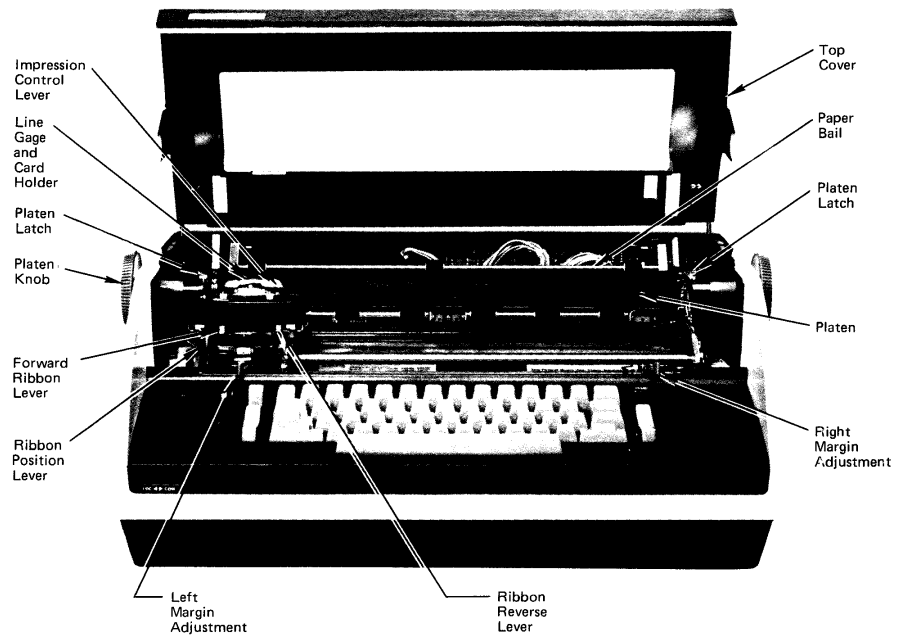


Figure 2-2. AJ 841 Front View #2

2.4.3 Tab Set and Clear. This switch is a momentary rocker type switch which is utilized to SET and CLEAR individual tabs. The following is the procedure used to clear all tab stops:

1. Move the carrier to the right margin.
2. Depress and hold down the CLR portion of the tab control.
3. Depress the RETURN key.

The following is the procedure used to set the tab stops:

1. With the space bar, position the typesphere to the desired location.
2. Press the SET portion of the tab control.

2.4.4 Tab. Depressing this key causes the carrier to move to the right and stop at the next tab position.

2.4.5 Margin Release. Depressing this key causes the release of both the right and left margins. To move the carrier to the left of the left hand margin: Use the backspace key while holding the MAR key depressed. To type beyond the right margin: Depress the MAR key before or when the right margin is reached.

Note: The Margin Release also clears the AJ 841's processor in the event of a power failure.

2.4.6 Shift and Shift Lock. Depressing the shift key causes the print element to print upper case letters and symbols. The keyboard may be locked in upper case mode by depressing the shift lock key. The shift lock is released by momentarily depressing either shift key.

2.4.7 Carriage Return. Momentarily depressing this key causes the carrier to move to the left margin and the carriage to space the paper. The paper spacing is dependent on the setting of the line space lever.

Note: When transmitting on-line to a computer with the shift lock engaged, a CR will automatically shift the keyboard to lower case.

The 841 is programmed to ignore the first linefeed immediately after carriage return. This is because selectric mechanism automatically linefeeds on receipt of CR. If the code received is LF then CR, the effect is 2 linefeeds and a CR. If the order is CR then LF, the effect is carriage return (CR) and one LF (linefeed).

2.4.8 Control Key (ATTN Key). The ATTN key is used as a control key. When another key is struck while ATTN is depressed the ASCII control code corresponding to the struck key is sent to the computer and nothing is printed on the AJ 841.

2.5 PAPER AND RIBBON CONTROLS

2.5.1 Line Space Lever. Single or double spacing of the typed lines can be selected by a two position lever.

2.5.2 Paper Release Lever. Moving the lever forward releases the pressure on the paper to allow repositioning or paper removal.

2.5.3 Multiple Copy Control Lever. When multiple copies are required, it is necessary to allow for the thickness of the paper. A five-position lever helps the operator to adjust the platen so that copies don't become smudged.

2.5.4 Platen Knobs. Rotating either of these knobs causes the platen to move the paper in a forward or reverse direction. Pressing the left platen knob toward the terminal allows the platen to be freely rotated for initial registration of forms.

2.5.5 Paper Bail. This mechanism holds the paper against the platen. To insert paper move the bail forward by one of the tabs located on the end of the bail. There are 3 rollers on the bails which may be repositioned for maximum paper control.

2.5.6 Paper Guide. The paper guide is located on the left rear side of the platen. It is adjustable and aids in aligning various paper sizes, with reference to the left margin.

2.5.7 Line Gauge and Card Holder. Immediately in front of the typesphere is a scribed plastic element which is used to align the paper both horizontally and vertically. The guide is also used to hold in place small cards for typing.

2.5.8 Ribbon Reverse Lever. This lever allows the operator to manually reverse the ribbon direction before the ribbon reaches the end position. The ribbon will automatically reverse when either end of the ribbon is reached.

2.5.9 Ribbon Position Lever. This lever provides positioning of a colored ribbon to three discrete positions. The fourth position is used to cut stencils. This lever can extend the usefulness of single color ribbons by periodically repositioning the lever, this allows the previously used portions to be reinked.

2.5.10 Ribbon Change Lever. The ribbon guides are lifted by moving this lever permitting easy removal of the ribbon and cartridge. This lever is located below and to the right of the center of the ribbon cartridge.

2.5.11 Impression Control Lever. This red lever is located to the right of the print element and controls the amount of force the print element exerts on the paper. Stencils for example require a light force while multiple copies require a heavy impact. To change the setting, push the lever to the right and slide the lever to position 1 for light impression or to position 5 for maximum impact. Normally a setting on position 3 is satisfactory for most work.

2.6 TYPAMATIC

This feature allows repetitive action of certain keys when additional pressure is applied. These keys are: Space, Backspace, and Hyphen/Underscore.

2.7 TYPESPHERE REPLACEMENT

The design of the print element allows quick removal and replacement.

To replace a typesphere:

1. Place the machine in lower case by depressing the shift key.
2. Turn the power off.
3. Lift up the spring lever on top of the typesphere.
4. Lift the typesphere off of the typesphere post.
5. Lift the spring lever of the new sphere.
6. Insert the new typesphere with the white arrow facing toward the platen.
7. Press the spring lever down. The typesphere is now ready for printing.

2.8 RIBBON REPLACEMENT

The cartridge holding the ribbon allows for both a clean and fast way of changing ribbons.

To change a ribbon:

1. Position the carrier to the center of the platen.
2. Turn the power OFF and lift the cover.
3. Raise the ribbon guide by moving the ribbon change lever to the right.
4. Lift the ribbon cartridge straight up, taking care to ease the ribbon out of the guides.

5. Unwrap the new ribbon and rewind any excess ribbon with a pencil inserted in a cartridge hole and rotate in the direction of the arrow.
6. Position the new cartridge with the ribbon facing the platen.
7. Guide the ribbon through the ribbon guide slots.
8. Place the cartridge in the posts and gently press in place.
9. Any excess ribbon can be taken up by turning a cartridge post in the direction of the arrow.
10. Move the ribbon change lever to the left. This action will cause the ribbon guide to move into typing position.

SECTION 3.0 SERVICE INFORMATION

3.1 INTRODUCTION

The AJ 841 Terminal is a quality product and has been carefully inspected before it left the factory. After shipment to our local service office, it has been reinspected to make sure no small detail was forgotten. We expect it to give you years of satisfactory service provided you give it the required maintenance through our factory-trained service organization.

3.2 WARRANTY

In the event some defective part has escaped our attention we are extending to you a 30 day warranty. During this period we shall replace without charge to you any part that proves to be defective. Many problems with new equipment are caused because the operator is not completely familiar with the unit. We expect this and all of our people are happy to work with you until you are comfortable with the equipment.

3.3 REPAIR SERVICE

After your warranty expires, we want you to continue with the same type of service that you received for the first 30 days. We have a staff of highly trained service representatives located in major cities throughout the nation.

AJ 841 warranty and service is available in the following cities:

LOS ANGELES	CINCINNATI
PHILADELPHIA	DETROIT
HACKENSACK	DALLAS
COLUMBUS	HOUSTON
CLEVELAND	ATLANTA
SAN JOSE	CHICAGO
BOSTON	NEW YORK
WASHINGTON, D.C.	

Service is provided on a per call basis. Rates may be obtained from the Field Service Office where you picked up your AJ 841.

3.4 DOCUMENTATION

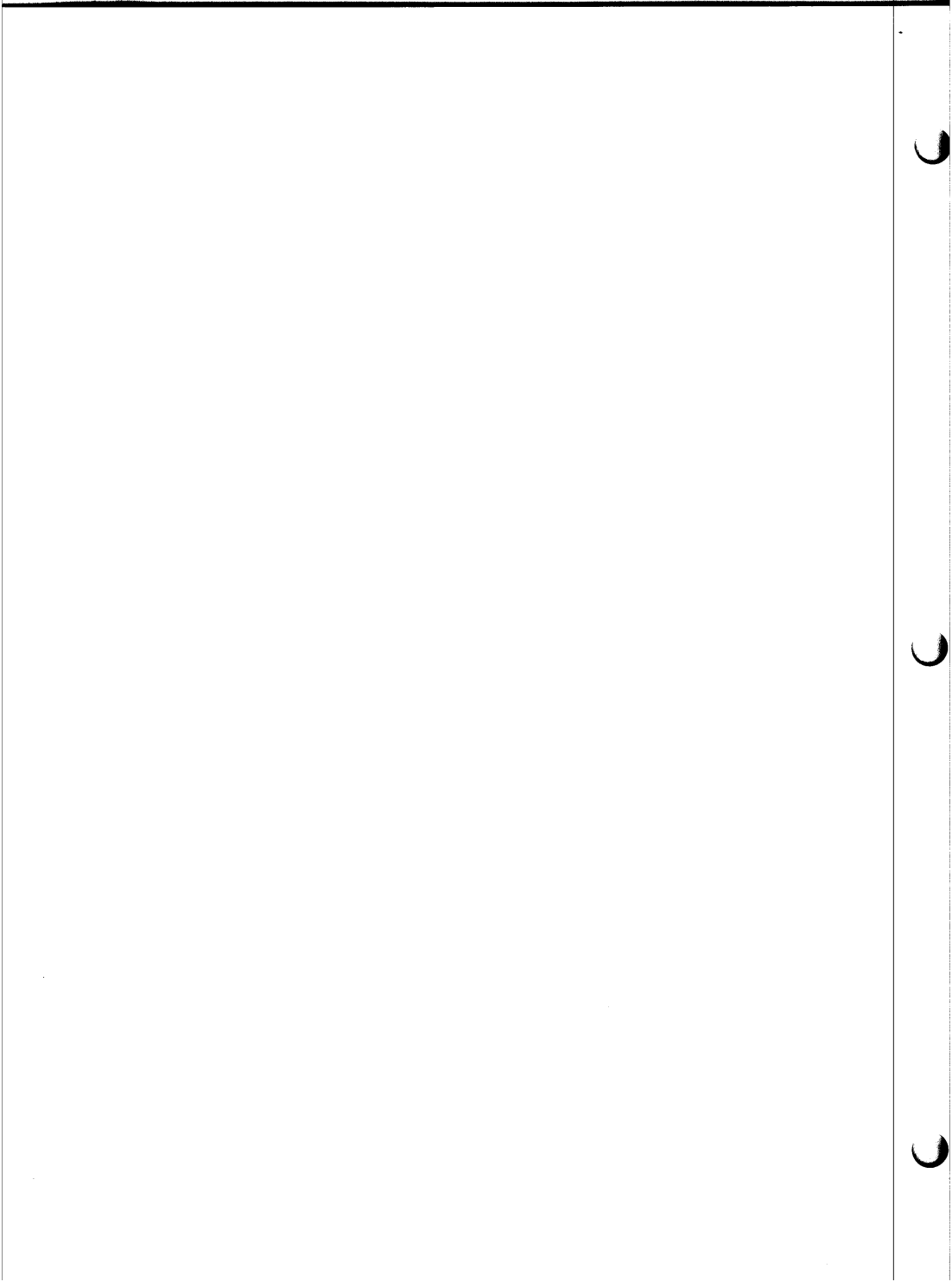
A complete service manual may be purchased from the service office where you picked up your AJ 841 terminal.

3.5 IBM SELECTRIC MECHANISM

The IBM selectric mechanism in the AJ 841 terminal may — at the user's discretion — be adjusted or repaired by any qualified business machine shop.

NOTE

For warranty and repair service the user must return the AJ 841 to an AJ service center in one of the above cities.



SECTION 4.0 SELF TEST PROGRAM

4.1 INTRODUCTION

The AJ 841 includes an internal program which permits testing of the terminal as a stand-alone unit plus testing of the interface circuitry.

No additional equipment is required for testing in the local mode. However, to test interface circuitry a jumper as illustrated in Table 4-1 is required.

4.2 LOCAL MODE TEST

Enter this test mode by setting upper case alpha, then a CONTROL — on EBCD machines or a CONTROL on correspondence machines.

The complete character set will print out continuously until the machine is reset by pressing the MARGIN RELEASE. If all characters are printed correctly the AJ 841 is working properly.

4.3 ON LINE TEST MODE

Install jumpers between interface pins as illustrated in Table 4-1. Set line/local switch to line.

Enter this test mode in the same manner as the local test. The complete character set will print out continuously until the machine is reset by pressing the MARGIN RELEASE.

If a fault in the interface circuitry exists the machine will automatically halt and the blue and green indicator lights will go out.

PIN NO.	TO	PIN NO.
1	BIT 0	11
2	BIT 1	12
3	BIT 2	13
4	BIT 3	14
5	BIT 4	15
6	BIT 5	16
7	BIT 6	17
8	BIT 7	18
9	STRB	24

Table 4-1. Jumper Connections for Self Test

