⬙ TATUNG
Einstein

COLOUR MICRO COMPUTER
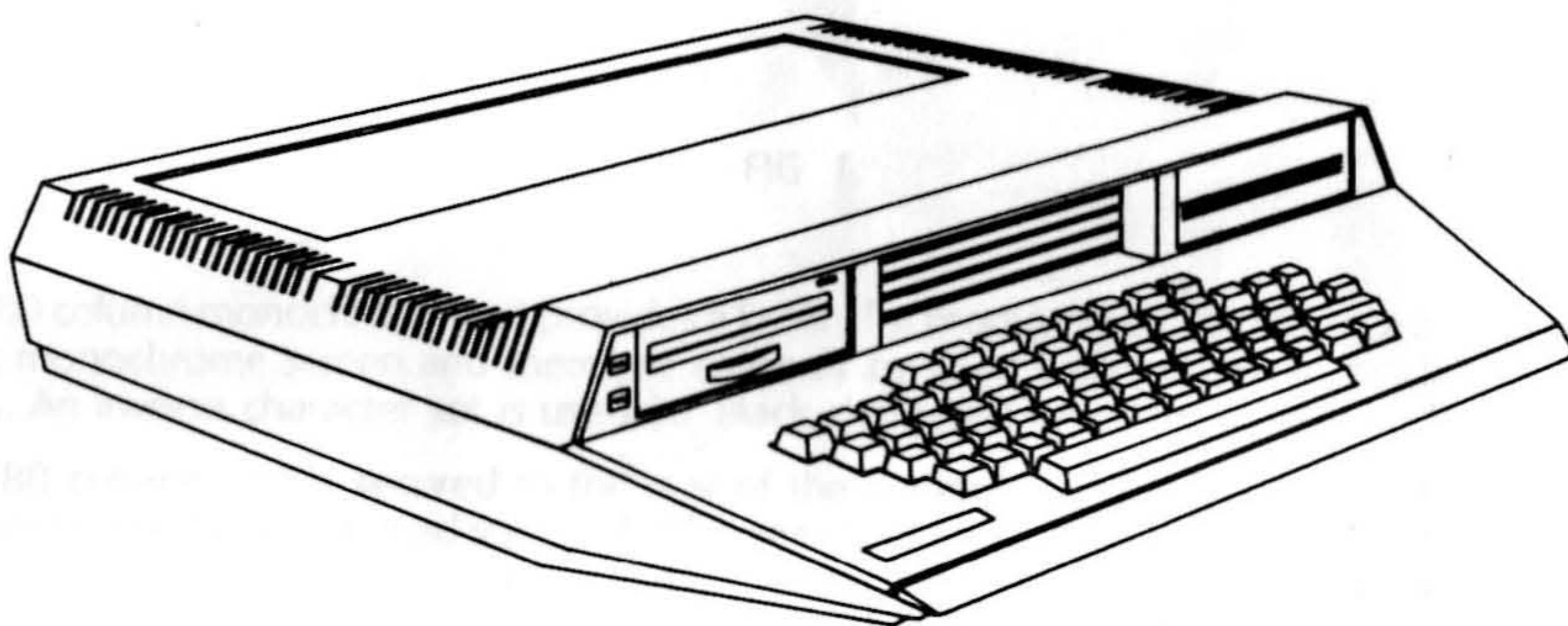
TK02   80 COLUMN MONOCHROME UNIT INSTRUCTIONS

80 COLUMN MONOCHROME UNIT

HOLES FOR MOUNTING SCREWS

TO PIPE CONNECTOR

CONNECTED TO TATUNG PIPE ON COMPUTER

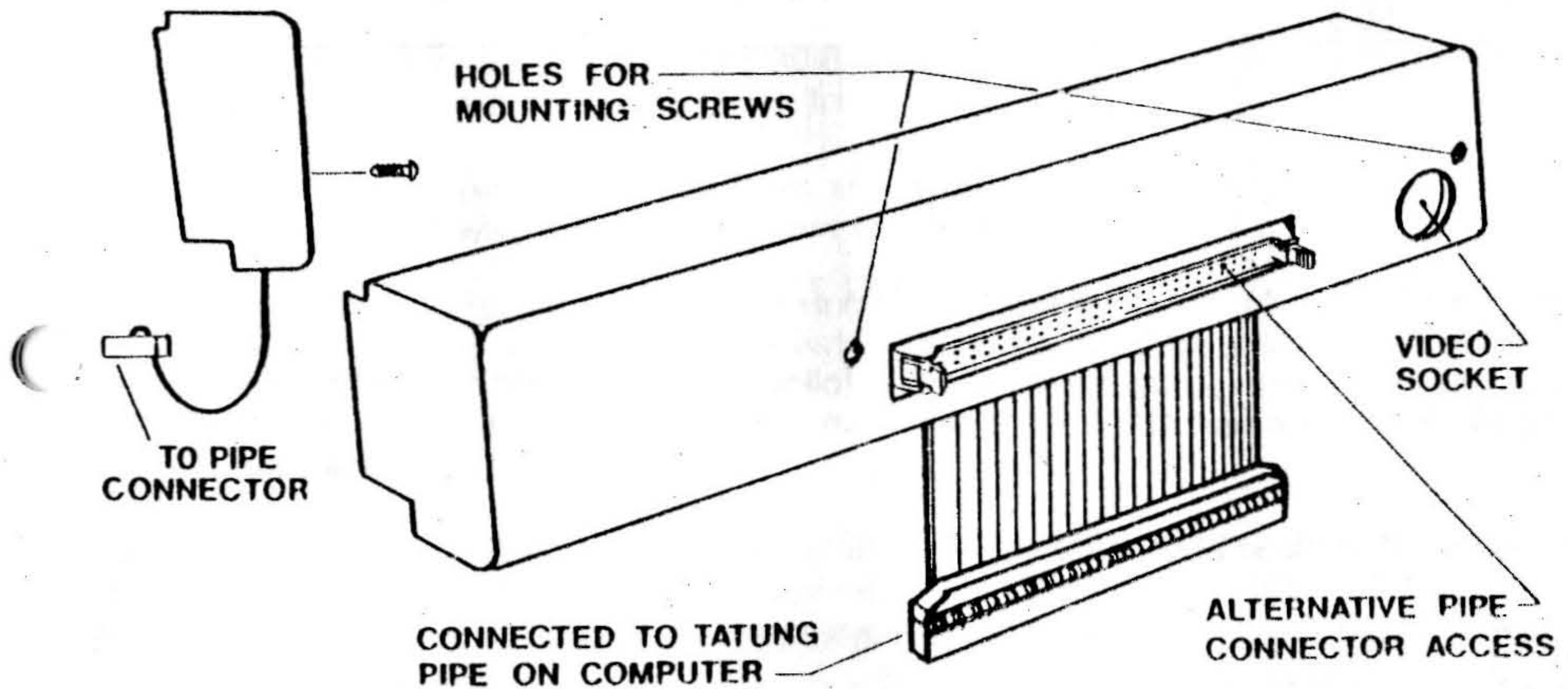**VIDEO SOCKET**

ALTERNATIVE PIPE CONNECTOR ACCESS

FIG. 1.

The 80 column monochrome unit provides a facility for producing an 80 column x 24 row display, on a monochrome screen and therefore can only be used with suitable monochrome display units. An inverse character set is used (ie. Black characters on white background).

The 80 column unit is secured to the rear of the computer and attached to the Tatung Pipe connector via the ribbon lead supplied. All power and data is then transferred via this connector and lead to the 80 column unit. Access to the Tatung Pipe for other uses is maintained by means of a 60 way IDC connector provided at the rear of the 80 column unit cover.

There are three separate function selections available on the 80 column unit which rely on the physical positioning of mini-shunt link connectors located, as shown in Fig. 2, on the printed circuit board assembly.
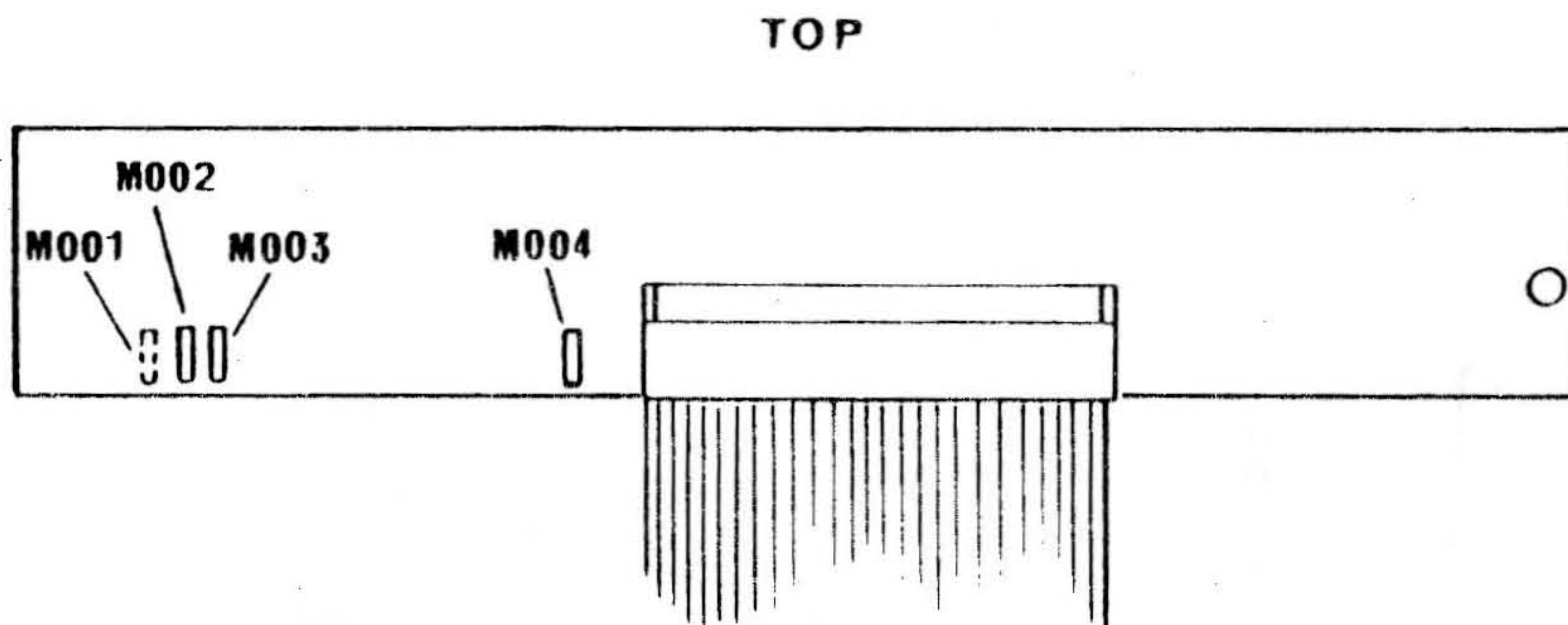
FIG. 2.

These selections are described in detail in the following sections and should be made prior to fixing the 80 column unit to the computer.

T.V. STANDARD SELECTION (M002)

Two TV standards options are provided by the 80 column monochrome unit, these being 625 lines at 50Hz field or 525 lines at 60Hz field.

Selection of the desired standard (625 or 525) is determined by the positioning of internal links located on the printed circuit board assembly. The 80 column unit is supplied ready set for 625 lines, but can be changed as described in the following procedure.

Selection of Link Positions

Remove the printed circuit board assembly from the 80 column unit cover and refer to Fig. 2, to locate the required link connector M002. Fig. 3 shows the respective positions of the link itself.

Link position for 625 line selction is shown in solid outline.
Link position for 525 line selection is shown in chain dotted outline.

TOP OF BOARD

Link Positions

625 lines - solid outline
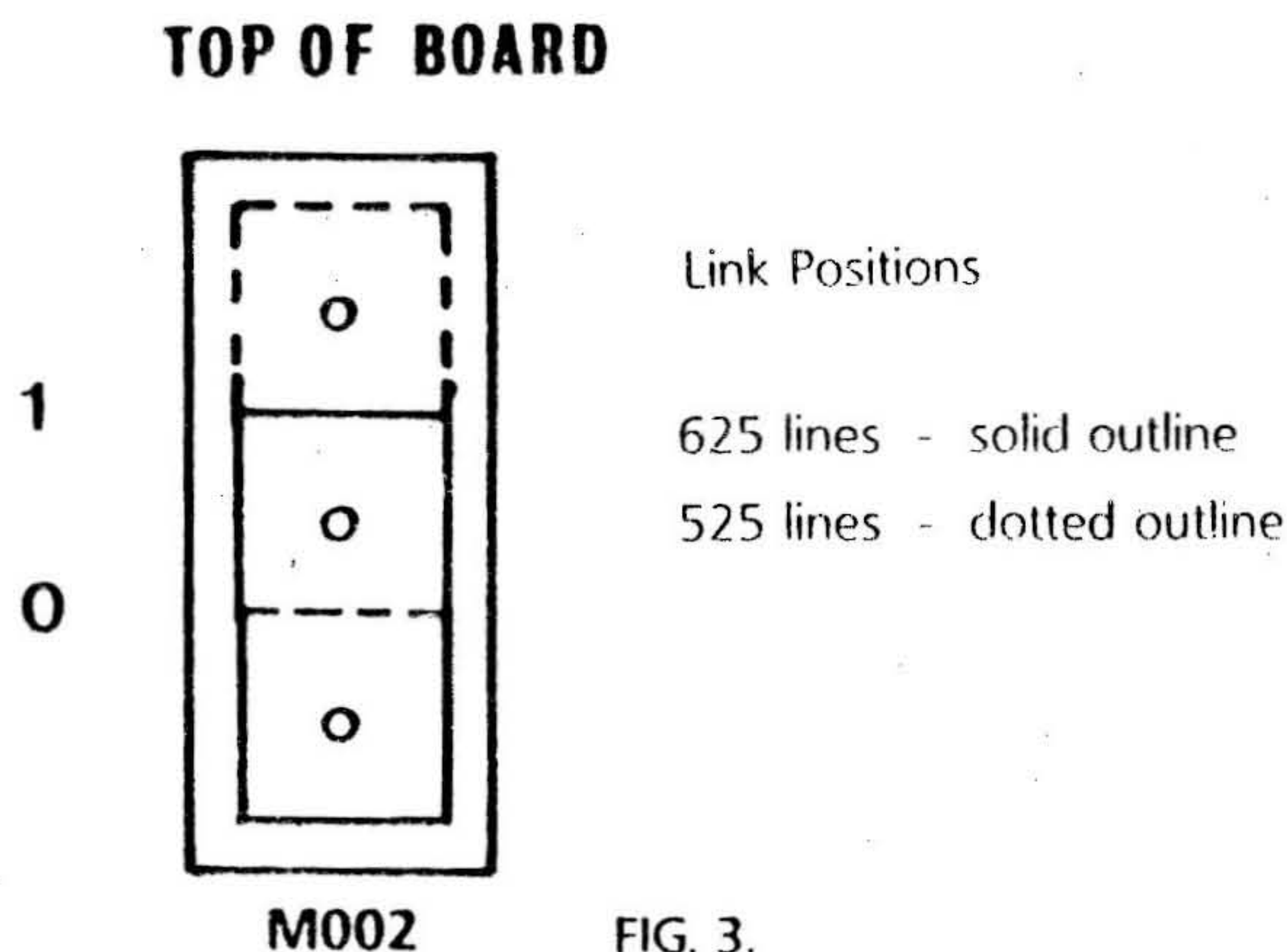525 lines - dotted outline

M002   FIG. 3.

To change from one format to the other, carefully slide the link upwards off the vertical location pins and replace it in the alternative position as indicated in Fig. 3.

Finally re-position the printed circuit board assembly in the 80 column unit cover.

DISPLAY STATUS SELECTION (M003)

An option of two display status conditions at power-up is provided by the 80 column monochrome unit. These conditions are as follows:-

a) The Einstein computer will perform as normal directing output to the colour display regardless of whether the 80 column unit is connected or not.

b) When the 80 column monochrome unit is fitted, output to the colour display is disabled and all output is automatically directed to the 80 column display on a monochrome unit.

   The computer will remain in either mode until redirected by the keyboard (or active program).

Selection of the desired display status ('a' or 'b' above) is determined by the positioning of internal links located on the printed circuit board assembly. The 80 column unit is supplied ready set to the status outlined in 'a' above (i.e. Einstein performs as normal) but can be changed as described in the following procedure.

Selection of Link Positions

Remove the printed circuit board assembly from the 80 column unit cover and refer to Fig. 2, to locate the required link connectors M003. Fig. 4 shows the respective positions of the link itself.

Link position for Einstein to perform as normal is shown in solid outline.

Link position to disable normal output to colour display and invoke automatic output to 80 column unit, when fitted is shown in chain dotted outline.
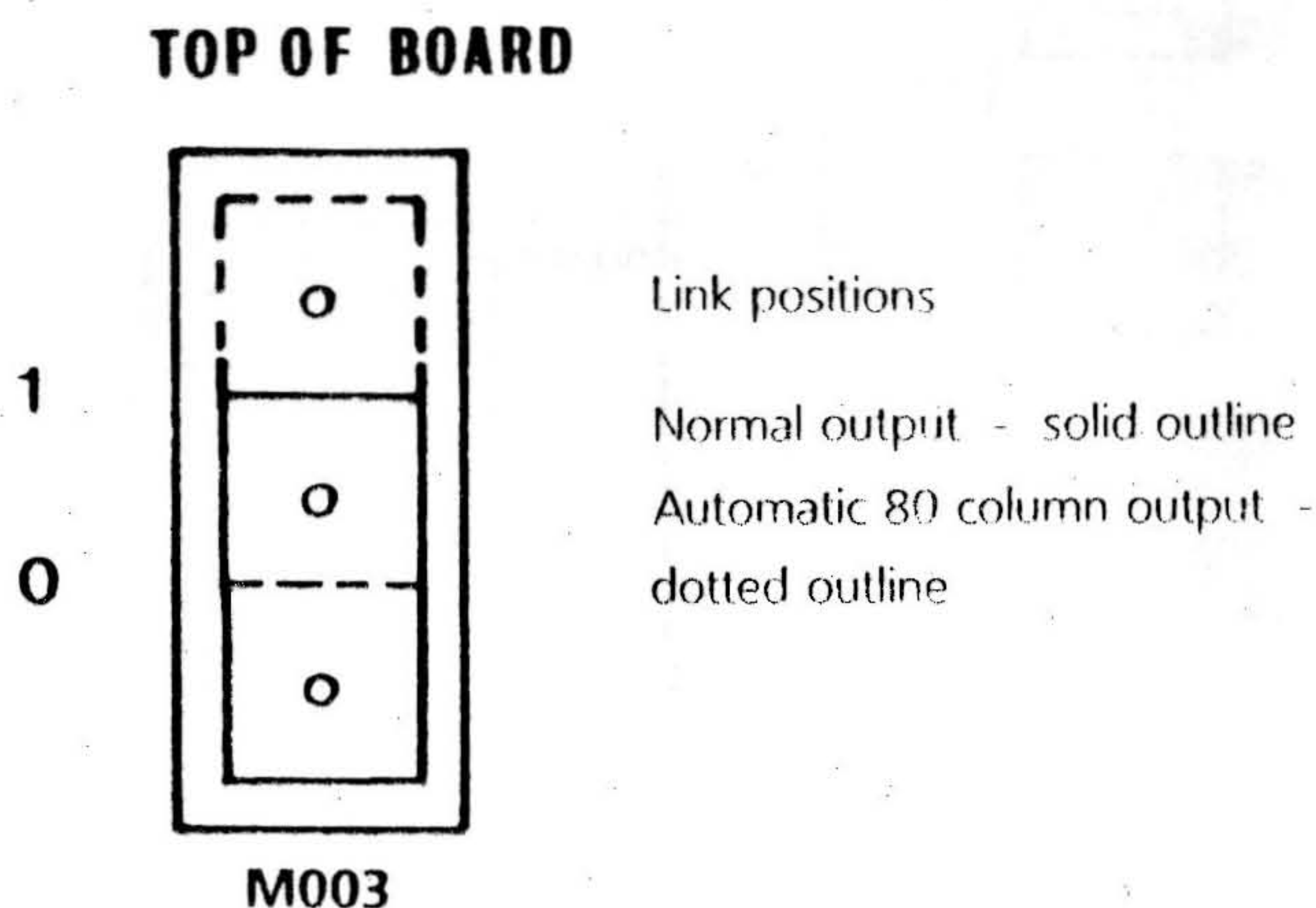
TOP OF BOARD

Link positions

Normal output - solid outline

Automatic 80 column output - dotted outline

M003

FIG. 4.

To change from one format to the other, carefully slide the link upwards off the vertical location pins and replace it in the required alternative position as indicated in Fig. 4.

Finally re-position the printed circuit board assembly in the 80 column unit cover.

CHARACTER SET SELECTION (M004)

An option of two character sets is provided by the 80 column monochrome unit. These are as follows:-

a) modified character set for standard 80 column use.

b) Normal Einstein character set including graphics.

The modified character set involves changes to the keyboard characters high-lighted in Fig. 5.
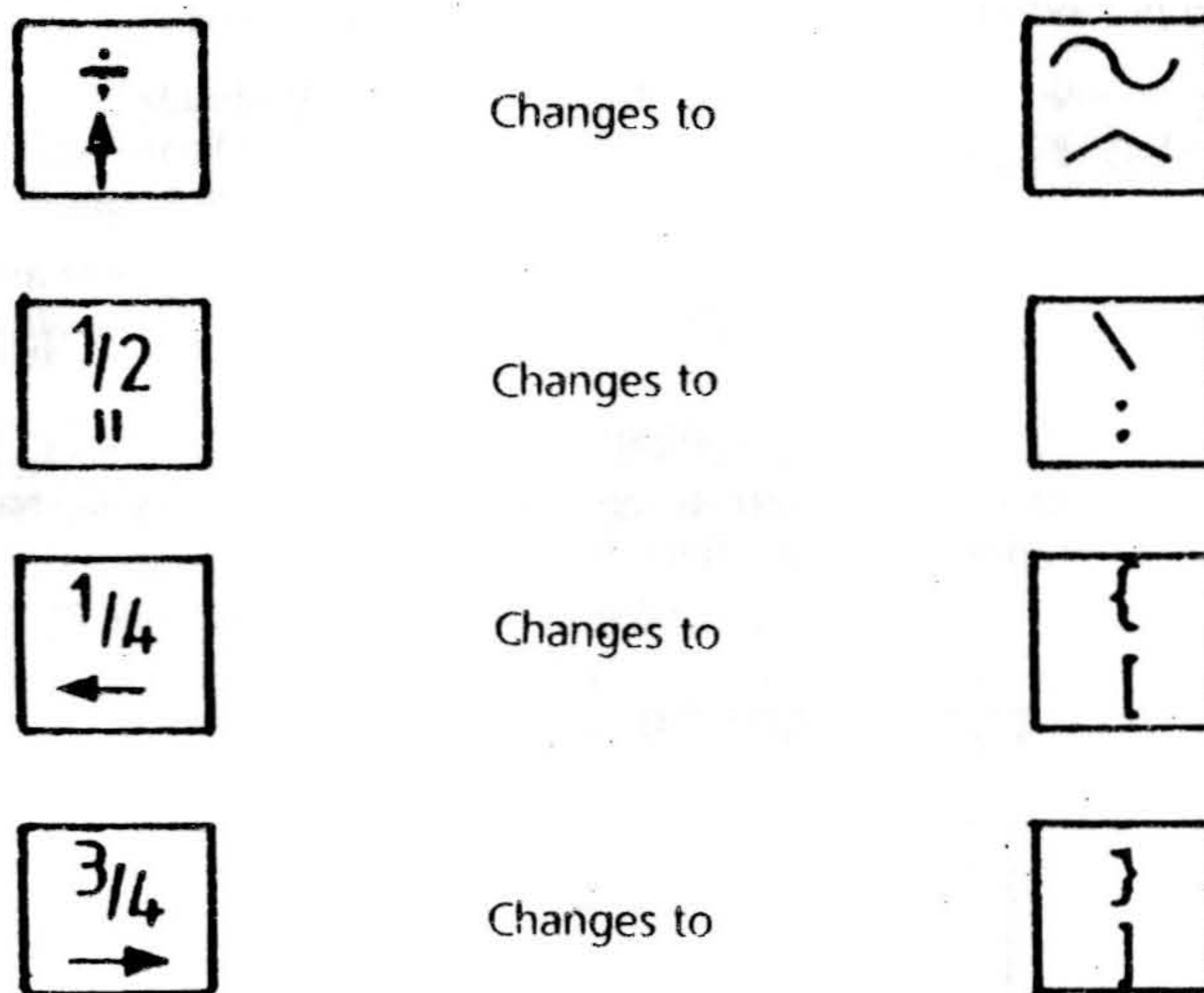
FIG. 5.

The full modified character set is given in the table in Fig. 6.

MODIFIED ASCII CHARACTER SET
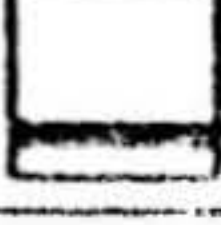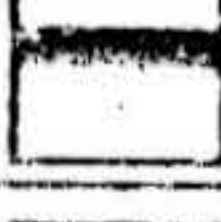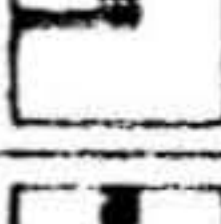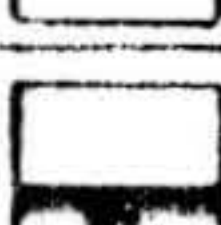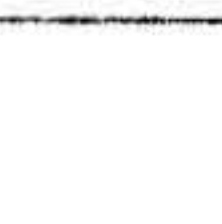
HEX VALUE	2	3	4	5	6	7	8	9
0	SP	0	@	P	£	p		
1	!	1	A	Q	a	q		
2	"	2	B	R	b	r		
3	#	3	C	S	c	s		
4	$	4	D	T	d	t		
5	%	5	E	U	e	u		
6	&	6	F	V	f	v		
7	'	7	G	W	g	ẇ		
8	(	8	H	X	h	x		
9	)	9	I	Y	i	y		
A	*	:	J	Z	j	z		
B	+	;	K	[	k	{		
C	,	<	L	\	l	|		
D	-	=	M	]	m	}		
E	.	>	N	^	n	~		
F	/	?	O	_	o	▪		

FIG. 6.

The 80 column monochrome unit is supplied with the modified character set selected but can be changed to give the normal Einstein characters as described in the following procedure.

Selection of Link Positions

Remove the printed circuit board assembly from the 80 column unit cover and refer to Fig. 2 to locate the required link connector M004. Fig. 7 shows the respective positions of the link itself.

Link position for modified character set is shown in solid outline.

Link position for normal Einstein characters is shown in chain dotted outline.
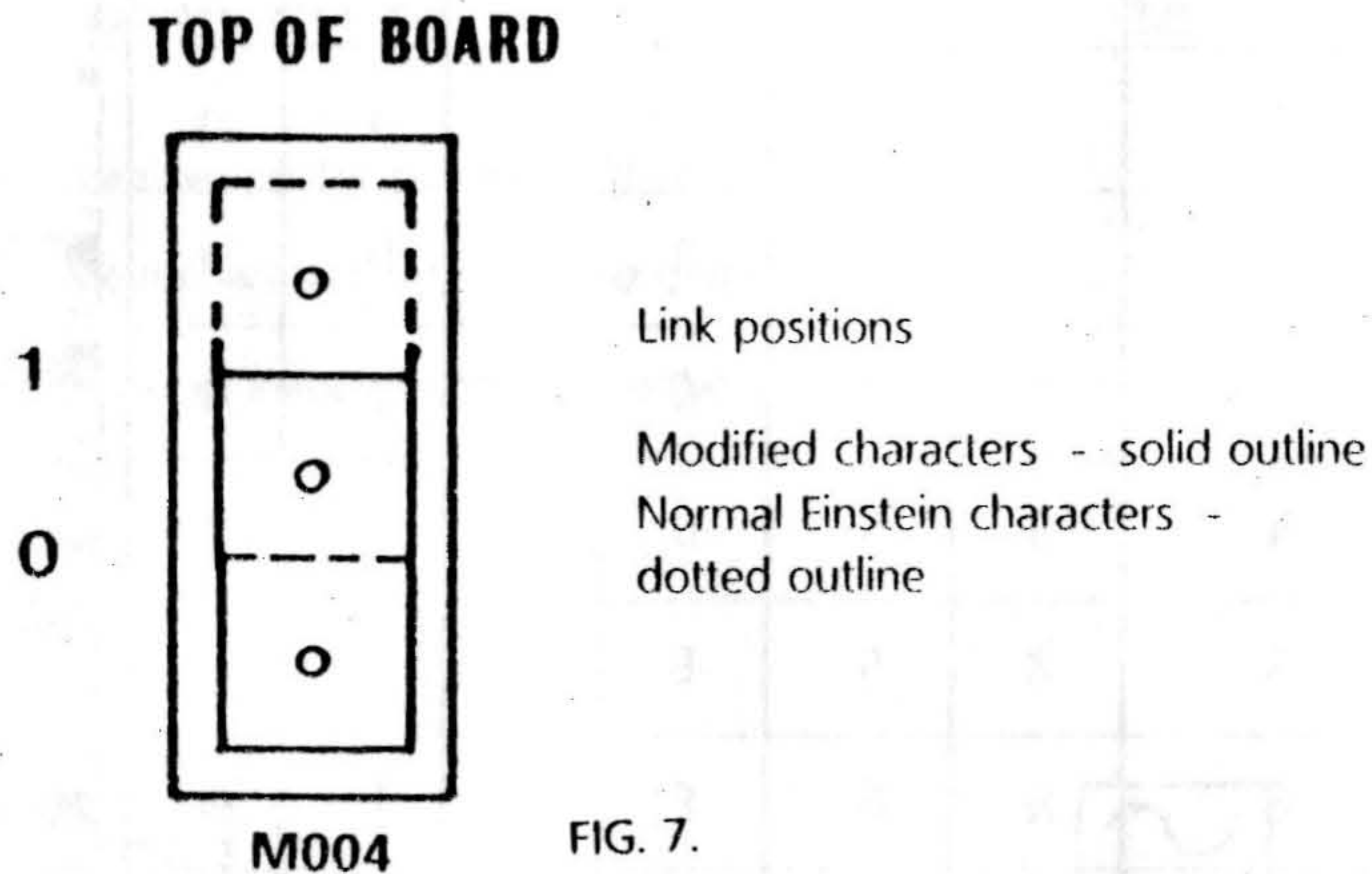
TOP OF BOARD

Link positions

Modified characters - solid outline
Normal Einstein characters -
dotted outline

M004   FIG. 7.

To change from one format to the other, carefully slide the link upwards off the vertical location pins and replace it in the alternative position as indicated in Fig. 7.

Finally re-position the printed circuit board assembly in the 80 column unit cover.

FITTING THE UNIT TO THE COMPUTER

The 80 column monochrome unit is fitted to the rear of the computer as follows:-

1.   Remove the two retaining screws located in the rear face of the computer cover.

RETAINING SCREWS

FIG. 8.

2. Ensure that the two plastic pillars are inserted in the large holes on the non-component side of the printed board and align the mounting holes of the 80 column unit with the retaining screw holes in the computer cover.

FIG. 9.

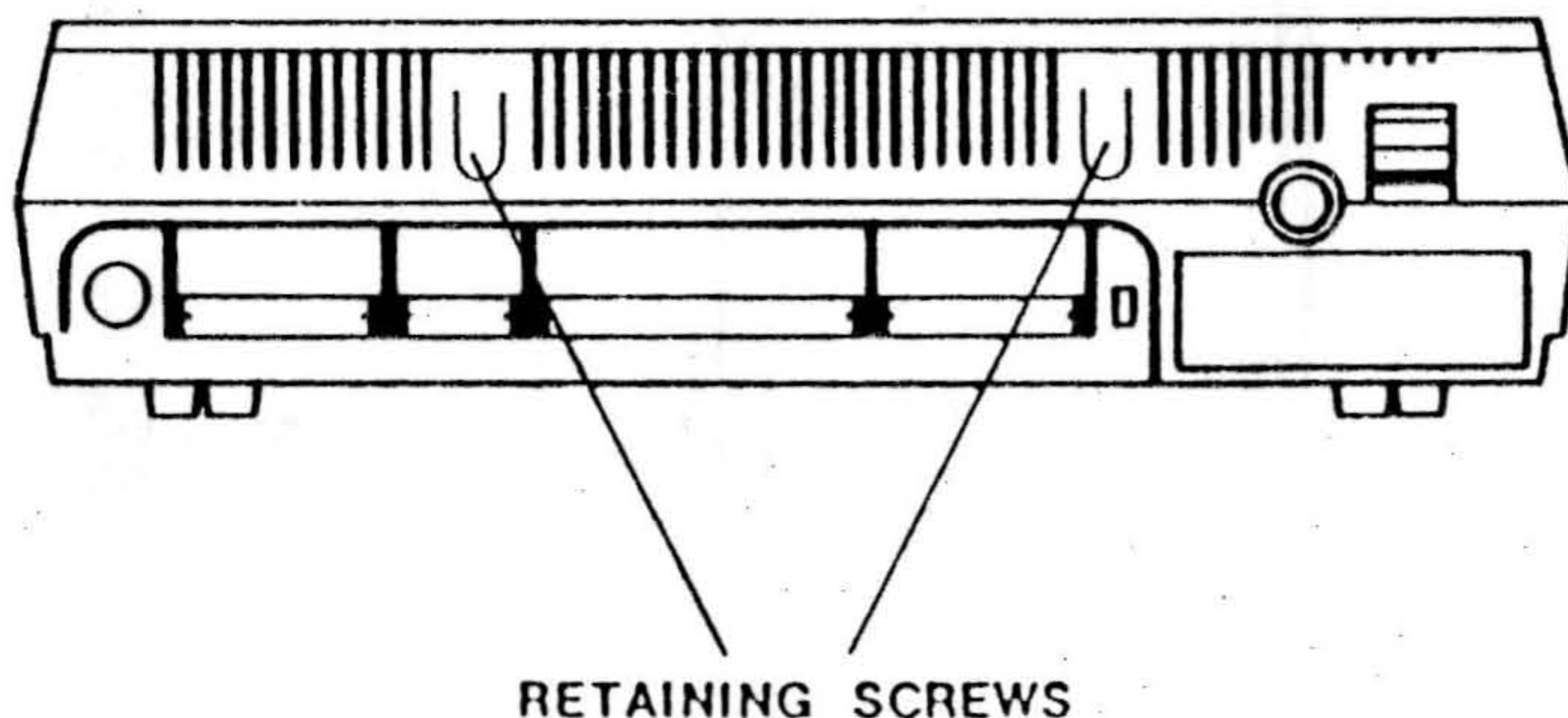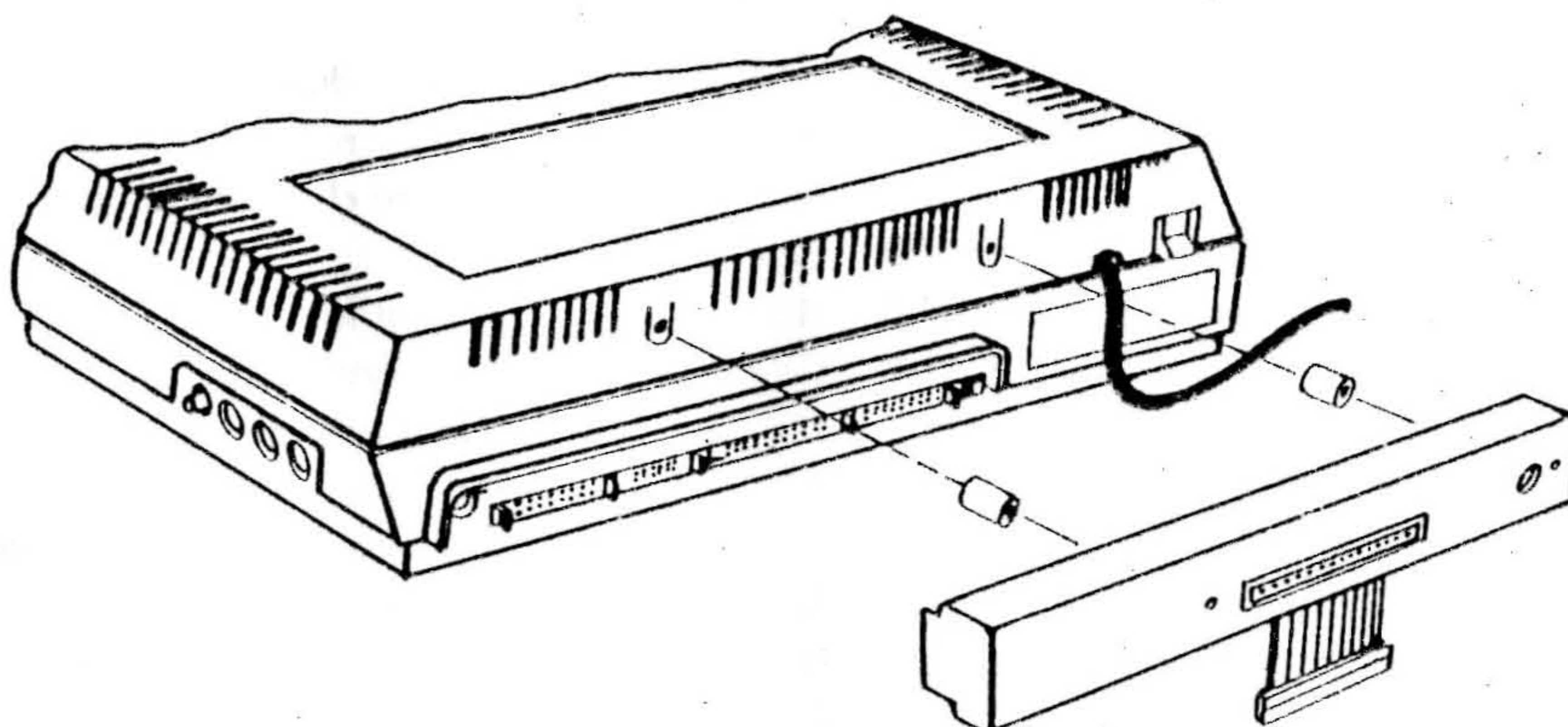Pass the two longer mounting screws (supplied with the 80 column unit) through the mounting holes of the unit to locate in the retaining screw holes of the computer cover.

Gently tighten the screws to secure the 80 column unit to the rear of the computer.

WARNING: *Damage may be caused to the unit if the mounting screws are over-tightened.*

3. Connect the ribbon lead from the 80 column unit to the Tatung Pipe connector of the computer.

4. Finally connect a suitable monochrome display unit to the video socket of the 80 column unit. The lead required for this must have a PHONO connector for fixing to the 80 column unit and a suitable connector at the other end for fitting to the particular monochrome display unit being used.

USING THE 80 COLUMN MONOCHROME UNIT

The 80 column unit is designed to operate with a MOS ROM version later than 1.1. Check the version of the machine by operating the reset switch with no disc in the machine. If required a new ROM can be fitted or supplied by your dealer.

If the unit is fitted such that the Einstein computer continues to function as normal then the 80 column unit must be initially accessed by use of a control code from the keyboard. CTRL - P is used to enable the 80 column unit and all subsequent output will then be directed to the 80 column monochrome display.

Once the 80 column display has been selected, the Einstein computer will program all MOS and DOS functions as normal. The 80 column unit will respond to the following control codes:-

HEX VALUE	CONTROL CODE	FUNCTION
01	CTRL - A	Screen dump
04	CTRL - D	Cursor right
06	CTRL - F	Delete character at cursor
07	CTRL - G	Beep
08	CTRL - H	Cursor left
09	CTRL - I	Horizontal tab
0A	CTRL - J	Cursor down
0B	CTRL - K	Cursor up
0C	CTRL - L	Cursor home & clear screen
0D	CTRL - M	Carriage return
0E	CTRL - N	Clear screen 40 column
0F	CTRL - O	Clear screen 32 column
10	CTRL - P	Clear screen 80 column
11	CTRL - Q	Cursor on
12	CTRL - R	Printer on
13	CTRL - S	Printer off
14	CTRL - T	Cursor off
15	CTRL - U	Delete to end of line
16	CTRL - V	Delete to end of screen
17	CTRL - W	Select inverse/normal video
18	CTRL - X	Delete whole line
19	CTRL - Y	Delete to left
1A	CTRL - Z	Insert
1B	CTRL -	Escape
1E	CTRL -	Cursor home