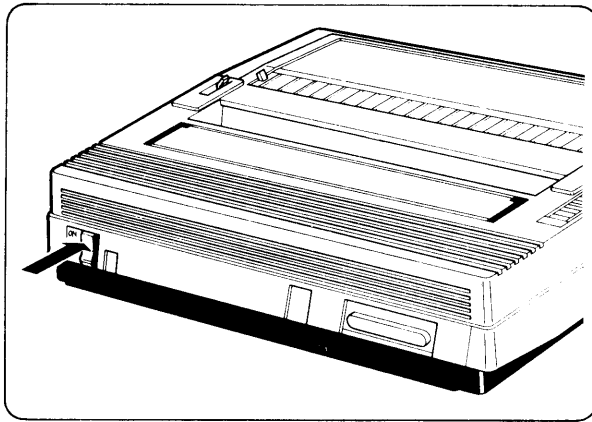


SECOND PART

Connection to the Commodore C 64/128

PRINTER SWITCH-ON

Switch the printer on pressing the main ON/OFF switch on the part marked with "ON".



*Fig. 6-1
Switch in the ON
Position*

INITIALISATION

When the printer is turned on, the ON indicator light on the console lights up.

The printer performs the autodiagnosics (described in Chapter 5 "Diagnostics") and places the print head on the first column (physical left margin).

The "**Default Settings**", that is to say the settings selected during the latest programming procedure (see the chapter "Programming the machine settings), are stored. If the operator has not performed the programming procedure yet, the default factory settings, listed in the following paragraph, are stored instead.

If the paper is loaded, the printer is ready (ON LINE) to receive data from the connected host computer.



The printer is delivered preset for connection to the Commodore C 64/128, through the serial interface.

DEFAULT SETTINGS

The printer default settings (factory-set) for connection to Commodore C 64/128 are listed below.

The settings marked with an asterisk indicate that user selections are not significant and that default values will always be selected. The unmarked settings can be modified by the user following the procedure described in Chapter 7.

- Printer emulated = IBM Graphics Printer
- Commodore mode character set = USA/UK
- IBM PC mode (or compatible) character set = International 1
- Control codes address selection = Both addresses are dedicated to the Commodore mode
- Double pass print = monodirectional
- Character definition = Draft (normal)
- Horizontal spacing (print pitch) = 1/10" (2.54 mm)
- DLL for special character generation = enabled
- Automatic LF * = enabled (LF + CR)
- Automatic CR * = enabled (CR = CR + LF)
- Out of paper indicator = enabled
- Vertical spacing * = 1/6"
- Slashed zero = disabled
- DC1/DC3 dialogue procedure * = disabled
- Form length = 12" (304.8 mm)
- Bottom of form (BOF) = 0
- Bidirectional BIM printing = disabled
- Proportional character spacing = disabled
- Character length * = 8 bits

**Programming the
Printer Settings**

The printer settings can be modified by the user by confirming or refusing via console a series of parameters that are printed when the SET-UP mode is accessed.

OPERATING PROCEDURE

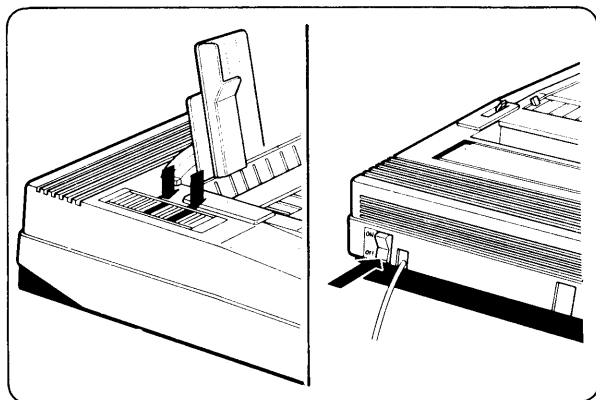
With the printer turned off (main ON/OFF switch in the OFF position), manually insert a sheet of paper on the printer (as described in Chapter 3 "Printer installation"). The sheet must be at least 210 mm wide and 290 mm long.



If the Sprocket device is installed, it must be removed before the programming procedure is performed.

Turn the printer on holding down simultaneously the **LINE FEED** and **FORM FEED** keys. The printer will be set in the programming mode (SET UP mode).

*Fig. 7-1
Accessing the
Programming Mode
(SET UP)*



In this mode, the possible programming parameters will be automatically printed, one at a time; at each alternative the operator will respond pressing the **LINE FEED** key (= "YES") to confirm the proposed parameter, or the **FORM FEED** key (= "NO") to refuse it.



Never turn the printer off during the programming phase. If the printer is turned off accidentally or if a power failure occurs, the performed portion of the programming procedure will be cleared and replaced by the default settings (see "Default settings" in Chapter 6).

The programming procedure can be stopped at any time pressing the **LOCAL** key; it can also be completely cleared or confirmed by refusing or by confirming the last proposed parameter. At this point the printer automatically exits the SET UP mode and is ready to receive data from the host computer.

EXAMPLE OF PRINTER PROGRAMMING

The operating procedure is better explained showing an example of programming for Commodore C 64/128 connection.

TO CONFIRM PRESS LF, TO CHANGE PRESS FF, TO END PRESS LOCAL

INTERFACE
SERIAL COMMODORE

PRINTER EMULATED IN PARALLEL AND SERIAL COMMODORE
IBM G. P. EPSON FX 80 PROPRINTER

CHARACTER SET IN PARALLEL MODE
INTERNATIONAL 1

CHARACTER SET IN COMMODORE MODE
USA/UK DENMARK SWEDEN GERMANY FRANCE ITALY SWITZERLAND SPAIN USA/UK

OPEN MODE
5 COMMODORE COMMANDS 4 COMMODORE COMMANDS
4 P . C . COMMANDS 5 COMMODORE COMMANDS

WOULD YOU LIKE TO STORE THESE PARAMETERS ?
YES

CHANGES EXECUTED

Fig. 7-2

Example of Programming for Connection to a Commodore C 64/128

The meaning of the messages shown in Figure 7-2 is as follows:

TO CONFIRM PRESS LF, TO CHANGE PRESS FF, TO END PRESS LOCAL

Press the LINE FEED switch to confirm, press the FORM FEED switch to refuse and press the LOCAL switch to end the programming phase.

INTERFACE = Interface type selection

PRINTER EMULATED IN PARALLEL AND SERIAL COMMODORE

Selection of printer to be emulated.

CHARACTER SET IN PARALLEL MODE

PC IBM (or compatible) printable character set.

CHARACTER SET IN COMMODORE MODE

Commodore printable character set.

WOULD YOU LIKE TO STORE THESE PARAMETERS?

Self-explanatory.

CHANGES EXECUTED

Self-explanatory.

To obtain the preceding example, perform the following:

Insert the paper and access the SET UP procedure as explained above. The following message is printed:

TO CONFIRM PRESS LF, TO CHANGE PRESS FF, TO END PRESS LOCAL

INTERFACE SERIAL COMMODORE

Press the LINE FEED switch to confirm the proposed alternative: **SERIAL COMMODORE**.

A new message is printed:

PRINTER EMULATED IN PARALLEL AND SERIAL COMMODORE IBM G.P.

Press the LINE FEED switch to confirm the proposed **IBM GRAPHICS PRINTER**.

A new message is printed:

CHARACTER SET IN PARALLEL MODE INTERNATIONAL 1

Press the FORM FEED switch. The proposed **INTERNATIONAL 1** is refused and the last line of the message is changed as follows:

INTERNATIONAL 1 INTERNATIONAL 2

Press the FORM FEED switch. The proposed **INTERNATIONAL 2** is refused and the last line of the message is changed as follows:

INTERNATIONAL 1 INTERNATIONAL 2 SPAIN

Press the LINE FEED switch to confirm the proposed **SPAIN** that selects the "SPAIN" printable character set.

A new message is printed:

CHARACTER SET IN COMMODORE MODE USA/UK

As no more changes are to be applied to the SET UP parameters, stop the programming phase pressing the LOCAL switch. The following message is printed:

WOULD YOU LIKE TO STORE THESE PARAMETERS? YES

Press the LINE FEED switch to confirm the proposed **YES** that validates the selected settings:

- 1. INTERFACE: SERIAL COMMODORE**
- 2. PRINTER EMULATED: IBM G.P.**
- 3. CHARACTER SET: SPAIN**

A new message is printed:

CHANGES EXECUTED

and the printer will automatically exit the SET UP phase.

Clearing the Settings

To clear completely the above settings, after the message:

WOULD YOU LIKE TO STORE THESE PARAMETERS?

YES

the operator should have pressed the FORM FEED switch; the last line would have become:

YES

NO

At this point, pressing the LINE FEED switch, the selected alternative would have been **NO**, and the printer would have generated the following message:

NO CHANGES EXECUTED

and with the indication “NO PARAMETERS STORED” the printer would have exited the SET UP phase.

AVAILABLE PARAMETER SETTINGS

The possible settings, shown in the following figure, are related to the Commodore C 64/128 connection.

TO CONFIRM PRESS LF, TO CHANGE PRESS FF, TO END PRESS LOCAL

INTERFACE

SERIAL COMMODORE PARALLEL

PRINTER EMULATED IN PARALLEL AND SERIAL COMMODORE

IBM G. P. EPSON FX 80 PROPRINTER

CHARACTER SET IN PARALLEL MODE

INTERNATIONAL 1 INTERNATIONAL 2 SPAIN PORTUGAL GREECE
ISRAEL INTERNATIONAL 1

CHARACTER SET IN COMMODORE MODE

USA/UK DENMARK SWEDEN GERMANY FRANCE ITALY SWITZERLAND SPAIN USA/UK
DENMARK

OPEN MODE

5 COMMODORE COMMANDS 4 COMMODORE COMMANDS
4 P. C. COMMANDS 5 COMMODORE COMMANDS

AUTOMATIC SHEET FEEDER

NO YES

DOUBLE STRIKE PRINTING

MONODIRECTIONAL BIDIRECTIONAL

CHARACTER RESOLUTION

DRAFT N.L.Q.

CHARACTER SPACING

10 12 15 17.1 20 24 10

ENABLE D.L.L.

YES 2.5K BYTE L.B NO 5.5K BYTE L.B

LINE FEED *

LF=LF+CR LF = LF LF=LF+CR

CARRIAGE RETURN *

CR = CR CR=CR+LF CR = CR

PAPER END DETECTION

YES NO

LINE SPACING *

1/6 7/72 1/8 1/6

SLASHED ZERO

NO YES

DC1/DC3 PROCEDURE *

NO YES

FORM LENGTH

12 11 10 9 8 7 6 5

SKIP OVER PERFORATION (BOF)

0 1/3 1/2 2/3 1 2 0

BIDIRECTIONAL B.I.M.

NO YES

PROPORTIONAL SPACING

NO YES

CHARACTER LENGTH *

8 BITS 7 BITS

WOULD YOU LIKE TO STORE THESE PARAMETERS ?

YES NO

NO CHANGES EXECUTED

Fig. 7-3 Commodore C 64/128 Settings

When the SET UP phase is accessed, the printer generates a set of English messages, that have the following meanings:

TO CONFIRM PRESS LF, TO CHANGE PRESS FF, TO END PRESS LOCAL

Press the LINE FEED switch to confirm, press the FORM FEED switch to refuse and press the LOCAL switch to end the programming phase.

INTERFACE = Interface type selection:

- For the Commodore C 64/128 connection, the interface to be selected is "Serial Commodore".

PRINTER EMULATED IN PARALLEL AND SERIAL COMMODORE

Selection of printer to be emulated.

- An IBM PC (or compatible) command set can be used even through the Serial Commodore interface. In this case, the printers that can be emulated with IBM/EPSON firmware are the following three: EPSON FX 80 , IBM "Graphics Printer" and IBM "Proprinter".

As for the Commodore command set, only one is available and is fixed.

CHARACTER SET IN PARALLEL MODE

PC IBM (or compatible) printable character set:

- The emulated IBM character sets are the following six: International 1, International 2, Spain, Portugal, Greece and Israel.
- The emulated EPSON character sets are the following: USA, France, Germany/United Kingdom, Denmark/Sweden, Italy, Spain.

CHARACTER SET IN COMMODORE MODE

Commodore printable character set:

- USA/UK, Denmark/Sweden, Germany/France, Italy, Switzerland, Spain.

OPEN MODE

Address selection for Commodore or IBM PC (or compatible) commands through serial cable:

5 Commodore Commands

4 Commodore Commands

4 PC Commands

5 Commodore Commands

- 5 = Commodore 4 = Commodore
Both addresses (4 and 5) are dedicated to the Commodore mode. This selection must be performed when the application program uses channel 4 or channel 5 indifferently to issue the Commodore commands.
- 5 = Commodore 4 = PC
With this selection scheme, the commands sent through address 5 are interpreted as Commodore commands, while the commands sent through address 4 are interpreted as commands of a PC IBM or compatible set (IBM Graphics Printer, IBM Proprinter and Epson FX 80).

DOUBLE STRIKE PRINTING

Self-explanatory.

- MONODIRECTIONAL
- BIDIRECTIONAL

CHARACTER RESOLUTION

Self-explanatory.

- DRAFT = Normal resolution.
- N.L.Q. = High definition.

CHARACTER SPACING

Print pitch (number of characters per inch):

- Selectable print pitches are: 10, 12, 15, 17.1, 20, 24.

ENABLE D.L.L.

Down Line Loading enabling (special characters generated by users):

- Yes 2.5K Byte L.B = D.L.L. enabled and print buffer capacity reduced to 2.5K Byte.
- No 5.5K Byte L.B = D.L.L. disabled and print buffer full capacity equal to 5.5K Byte.

LINE FEED

Printer behaviour when receiving the LF command:

- LF = LF + CR Automatic carriage return at LF command reception.
- LF = LF No carriage return after the LF command.

CARRIAGE RETURN

Printer behaviour when receiving the CR command:

- CR = CR + LF Carriage return and line feed when receiving the CR command. This setting is fixed and cannot be changed by the user.

PAPER END DETECTION

Self-explanatory.

- This selection can be enabled (YES) or disabled (NO); in the latter case, the complete sheet can be printed down to the last line, but special care must be applied to avoid printing on the printer platen.

LINE SPACING

Vertical spacing (line feed length, in inches):

- The 1/6" (4.23 mm) spacing is always assumed as a default value, even if the user has selected a different value. If the printer is operating in BIM Graphics Mode, the vertical spacing will always assume a value of 7/72".

SLASHED ZERO

Self-explanatory. Options available (YES) or (NO).

DC1/DC3 PROCEDURE

DC1/DC3 dialogue:

- NO = DC1/DC3 dialogue disabled; this setting is fixed and cannot be changed by the user.

FORM LENGTH

Self-explanatory:

- The following form lengths are selectable: 5, 6, 7, 8, 9, 10, 11 and 12.

SKIP OVER PERFORATION (BOF)

Bottom of form (in inches):

- The following widths are selectable for the bottom of form: 0. 1/3, 1/2, 2/3, 1 and 2 inches.

BIDIRECTIONAL B.I.M.

Bidirectional Graphics Printing:

- It can be enabled (YES) or disabled (NO); in the latter case the monodirectional graphics printing is enabled.

PROPORTIONAL SPACING

Proportional print pitch:

- It can be enabled (YES) or disabled (NO).

CHARACTER LENGTH

Data bit number issued to the printer:

- 8 bits; this value is fixed and cannot be changed by the user.

WOULD YOU LIKE TO STORE THESE PARAMETERS?

Self-explanatory.

CHANGES EXECUTED

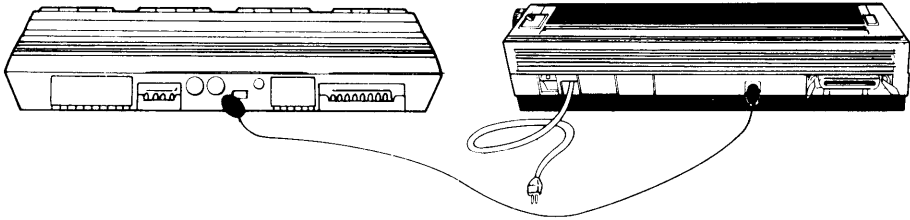
Self-explanatory.

**Connection of the
Interface Cable**

The connection of the printer to the Commodore C 64/128 is performed through the Commodore serial interface.

To directly connect the interface cable, to the host computer, insert the 6-pin DIN male connector in the 6-pin DIN female connector located on the printer.

*Fig. 8-1
Direct Connection
to Host Computer*



If several devices (for instance, a disk drive) are to be connected to the host computer, the disk drive is to be connected to the host computer in the first place; then connect the printer to the disk drive, as shown in the following figure. For proper operation, the printer must always be the last connected device.

Fig. 8-2
Multiple
Connection

