Using the Push Button

Reset You may reset the buffer by holding the pushbutton in until the LED begins flashing rapidly (which typically takes about 1 second). Releasing the pushbutton at this point will clear the buffer. Any data still present in the buffer when it is reset will be lost.

Copy/Repeat When the buffer is in its normal operating mode, tapping the pusbutton twice in a row will cause the buffer to begin re-printing the entire contents of its memory. If you plan to use this feature it is wise to reset the buffer before sending it the data you would like to have repeated, so that you get only the data you just sent. You may perform this operation repeatedly to get several copies.

Bypass To place the unit in bypass mode, hold the pushbutton in until the LED turns solid red (5 seconds or more typically). In bypass mode, the unit is not buffering data, it simply passes the data on to the output device. This mode is occassionally useful for diagnosing communications problems.

Diagnostic Message To have the unit perform its internal diagnostic routines and print these results, you should tap the pushbutton momentarily once after power-up or reset (while the LED is blinking rapidly). The message will be a simple ASCII text format, so it will not appear correctly on a plotter or Postscript printer.

Serial Ports & Cabling

Serial Input The input port uses a DB25 female connector and is wired as a DTE port (like most serial printers). To connect this port to a PC serial port, use a standard serial printer cable (also called a null-modem cable).

Pin	Signal	Direction	State
2	Transmit Data	output	
3	Receive Data	input	
4	RTS	output	always high
7	Signal Ground		
20	DTR	output	see below

Data Flow Control DTR is deasserted (negative voltage) when the buffer is within 1 kByte of being full. An XOFF character is also sent at this time. Once space becomes available in the buffer for more incoming data, DTR is asserted (positive voltage) and an XON character is sent.

XON = Hex 11 OR Hex 91
XOFF = Hex 13 OR Hex 93

LED Indicators

In its normal operating mode, the LED blinks every 3 seconds. The number of blinks during this cycle corresponds to the amount of memory being consumed by data held in the buffer. Each blink equals roughly 1/8 th of the total space available. Thus on a 2 MB buffer, three blinks would mean that up to 3/8ths of the buffer (corresponding to 0.75 MB of data) was occupied. Eight blinks means that the buffer is full or nearly full.

When operating in bypass mode, the LED will be on steadily, blinking off once every 3 seconds. When the buffer first powers up, the LED will be blinking rapidly for a few seconds, indicating that a diagnostic message may be printed by tapping the pushbutton.

Parallel Ports and Cabling

The parallel input port is wired as an exact complement to the parallel port of an IBM-PC. Thus, to connect a PC to the parallel input of the buffer, use a 25 pin male-to male straight through cable. Please note that cables which are intended to allow bi-directional data or file transfer between PC's (via Laplink, MS-DOS 6.0, etc.) are *NOT* wired straight-through and therefore will not work.

The parallel output port is wired and functions exactly as the parallel port on the PC. To interface to a printer, simply use a standard parallel printer cable

Serial Output The output port uses a DB-25 male connector wired as a DTE port. To connect this port to a serial printer, use a null-modem cable. Since this port is wired identically to those found on a PC, the safest cable to use is one recommended by the printer/plotter manufacturer for interfacing with a PC.

Pin	Signal	Direction	State
2	Transmit Data	output	
3	Receive Data	input	
4	RTS	output	see below
5	CTS	input	see below
6	DSR	input	see below
7	Signal Ground		
20	DTR	output	always high

Data Flow Control If either CTS or DSR is driven low (negative voltage), data ouput will be halted until both are returned high. Both CTS and DSR are internally biased to a high state if not connected. If an XOFF is received, data output will also be halted until an XON character is received.

A DIP Switch (**B-5** on the BF50 or **A-8** on the BF40) controls the RTS output signal. Using the default setting, *OFF*, RTS is always true (high). When set to *ON*, RTS is false only when the buffer is empty.

DIP Switch Settings *(BF20, BF40, & BF50)*

The factory default settings for any serial port on the buffer are 9600 baud, 8 data, no parity, and 1 stop bit. If you are connecting a serial device to the buffer that is using a different set of parameters than this, you will need to change the DIP Switch settings of the buffer. To do so, you must first open the unit and locate the DIP Switches (see page 6). DIP Switch B is present only on the BF50. Locate the appropriate baud rate and data format in the following two tables, and set the DIP Switches accordingly.

A-1	A-2	A-3	Baud Rate
OFF	OFF	OFF	300
ON	OFF	OFF	600
OFF	ON	OFF	1200
ON	ON	OFF	2400
OFF	OFF	ON	4800
ON	*OFF*	*ON*	*9600*
OFF	ON	ON	19200
ON	ON	ON	38400

BF20 input
BF40 output
BF50 input

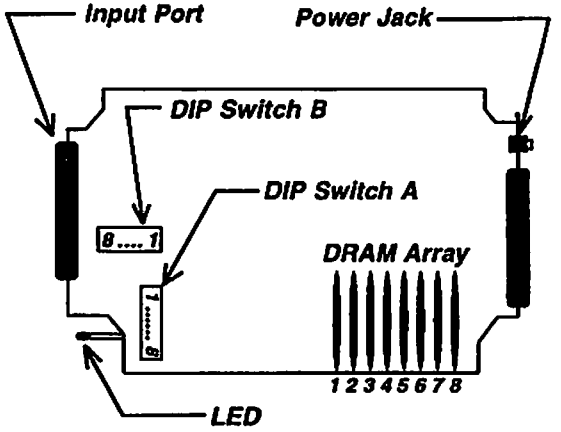
B-1	B-2	B-3	B-4	B-6
ON	OFF	OFF	OFF	OFF
OFF	ON	OFF	OFF	OFF
ON	OFF	OFF	OFF	ON
OFF	ON	OFF	OFF	ON
OFF	OFF	ON	OFF	OFF
OFF	*OFF*	*OFF*	*ON*	*OFF*
OFF	OFF	ON	OFF	ON
OFF	OFF	OFF	ON	ON

BF50 output only

Note : OPEN = OFF

Opening the Unit

To open the unit, you should first remove the four rubber feet on the bottom of the unit. Next use a Phillips screwdriver to remove the case screws. Gently seperate the two halves of the enclosure to expose the circuit board inside, which should look similar to the diagram on the right.



Memory Upgrades

Socketed DRAM locations are available as an option at the time of purchase on these buffers to allow easy field upgradability. With this option, you need merely add more or larger DRAM chips to the unit to increase its memory capacity. If your unit does not have socketed memory, it must be returned to the manufacturer or dealer for memory upgrades.

A-4	A-5	A-6
Not Supported		
OFF	OFF	OFF
ON	ON	OFF
OFF	ON	OFF
ON	OFF	OFF
Not Supported		
Not Supported		
OFF	*OFF*	*ON*
Not Supported		
Not Supported		
Not Supported		
Not Supported		
Not Supported		

BF20 input
BF40 output
BF50 input

Data	Parity	Stop
7	NONE	1
7	SPACE	1
7	EVEN	1
7	ODD	1
7	NONE	2
7	EVEN	2
7	ODD	2
8	*NONE*	*1*
8	EVEN	1
8	ODD	1
8	NONE	2
8	EVEN	2
8	ODD	2

B-7	B-8	A-7	A-8
OFF	ON	OFF	OFF
Not Supported			
OFF	ON	ON	ON
OFF	ON	OFF	ON
ON	ON	OFF	OFF
ON	ON	ON	ON
ON	ON	OFF	ON
OFF	*OFF*	*OFF*	*OFF*
OFF	OFF	ON	ON
OFF	OFF	OFF	ON
ON	OFF	OFF	OFF
ON	OFF	ON	ON
ON	OFF	OFF	ON

BF50 output only

Switch Numbering

Each DIP Switch has eight seperate positions numbered 1 through 8. The locations of DIP Switches A & B is shown on the following page.

Performance Specifications

Serial transfer rates are inherently limited by the baud rates employed. Parallel transfer rates are limited solely by the hardware (PC and buffer) involved. Since parallel is typically much faster than serial, it is sometimes wise to purchase a parallel to serial buffer to interface to a serial printer or plotter. This allows data to leave the computer faster (via the parallel port) and returns the PC to other tasks more quickly.

All serial ports on the buffer can transfer data at up to 38,400 baud; this is about 4,000 bytes (characters) per second. At 9600 baud (the standard baud rate used by MS-DOS based computers) a maximum data transfer rate of only 1000 bytes per second can be achieved.

The standard parallel input port can transfer data at rates of 10,000 bytes per second. The *Turbo* version can transfer data at much higher rates, in excess of 200,000 bytes per second. The parallel output from the buffer is capable of 10,000 bytes per second (*Turbo* up to 100,000 bytes per second).

Actual performance results can vary a great deal depending on the particular application program and computer involved. Serial baud rates under MS-DOS are generally limited to 9600 baud (1 kB/S), unless you have a special chip on your serial card or are using special software. The performance of the parallel port on a PC is directly proportional to the processor speed of the PC (a 486-based PC will typically generate data rates of 10 to 30 kB/S).

Contents

Getting Started 2
DIP Switch Settings 4
Opening the Unit 6
Memory Upgrades 6
Performance Specifications 7
Using the Push Button 8
LED Indicators 9
Parallel Ports & Cabling 9
Serial Ports & Cabling 10
FCC Advisory Statement 12
Limited Warranty 13

Technologic
SYSTEMS

Getting Started

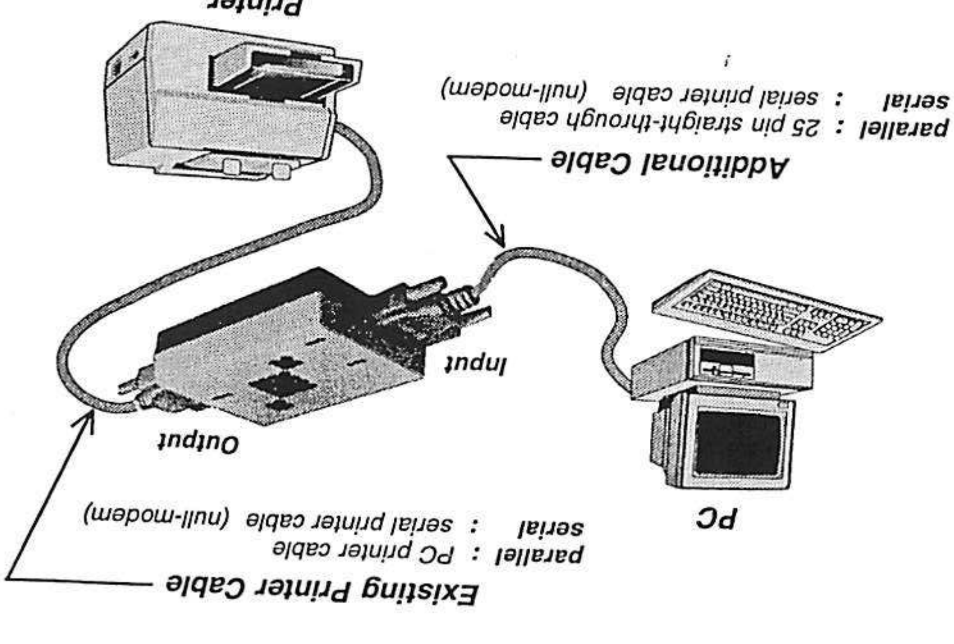
The shipping container should contain the following items:

1) BF Printer Buffer
2) Power Supply
3) User's Manual
4) Cables and/or Adapters (if purchased separately)

To hook up your new buffer:

1) *Serial Ports only* : set the DIP Switches inside the unit to match the baud rate and data formats of the computer and/or printer.
2) Turn off power to the computer and printer.
3) Remove the existing printer or plotter cable from the connector on the PC and plug it into the output port of the buffer.
4) Install a cable between the computer and the buffer input port.
5) Turn on power to both the PC and the printer.
6) Plug the power module into an electrical outlet and its power jack into the buffer. The LED on the buffer should be blinking.
7) You should now print or plot as you normally have in the past.

Model	Input Port	Output Port
BF20	Serial	Parallel
BF30	Parallel	Parallel
BF30 *Turbo*	Parallel	Parallel
BF40	Parallel	Serial
BF50	Serial	Serial



Typical Installation