UNIVERSAL SERIAL BUS (USB)

The Universal Serial Bus (USB) interface is a Plug-In Interface Module that can be installed by the user. It requires a driver (shipped with each printer that has the interface installed) that must be loaded onto the PC and configured to support USB peripherals using Windows 2000 or above. Details for loading the USB driver are contained in the USB Interface Manual that is shipped with each printer with a USB Optional interface installed. Up to 127 devices may be connected to a USB port using powered hubs.

ATTENTION: This Interface type Is not compatible with Windows 98 or Windows Me.

SPECIFICATIONS	
Printer Connector	USB Type B Plug
Cable	10 feet (3 m) maximum
Host	Windows 2000 or above with USB Port
Power Supply	BUS Power through cable
Power Consumption	+5 V at 80 ma

LOCAL AREA NETWORK (LAN) ETHERNET

A Local Area Network (LAN) interface is an optional Plug-In Interface Module that can be installed by the user. It requires a driver shipped with each printer that has the interface installed. The driver that must be loaded onto the host computer and configured to run one of the supported network protocols using a 10Base-T or 100Base-TX LAN connection. Details for loading the LAN driver are contained in the LAN Interface Manual that is shipped with each printer with a LAN Optional interface installed.

SPECIFICATIONS	
Connector	RJ-45 Receptacle
Cable	10/100BaseT Category 5
Cable Length	100 meters or less
Power Supply	Powered from printer
Protocol	Status3 return Protocol for Driver (cyclic response mode) Protocol for Driver (ENQ response mode) Status5 return
IP Address	0.0.0.0 to 255.255.255.255
Subnet Mask	0.0.0.0 to 255.255.255.255
Gateway Address	0.0.0.0 to 255.255.255.255

DIPSWITCH SETTINGS	
SWITCH	**SETTING**
1	Reserved (setup prohibited).
2	LAN board EEPROM initialization (configuration).
3	Print configuration details on a label.
4	Print a self-diagmosis of the board onto a label.

SOFTWARE SPECIFICATIONS	
Corresponding Protocol	TCP/IP
Network Layer	ARP, RARP, IP, ICMP
Session Layer	TCP, UDP
Application Layer	LPD, FTP, TELNET, BOOTP, DHCP
NOTE: Print data can be sent by LPR and FTP of TCP/IP and dedicated socket protocol. Printer status is obtainable by dedicated socket protocol.	
NOTE: In the TCP/IP protocol enviroment, LPD and FTP are provided for printing; TELNET for variable setup; ARP, RARP, and BOOTP/DHCP for address setup.	
LPD protocol complies with RFC1179 and handles the list of logical printer name as queue name such as lp, sjis, euc. In addition, a banner page can be printed by a proper setup. *When sending the job by LPR, the transmission order of data file/control file within the job will not affect print operation. In addition, if the banner page is specified, it will be added to each data file. Job deletion by LPR is not available.*	
FTP protocol complies with RFC959 and handles the list of logical printer name as a transfer directory. File transfer to this directory executes print operation. It is possible to specify ASCII(A), Binary(I) and TENEX(L8) as transfer mode - although the mode difference is dependent on the client. A banner page may be printed with a proper setup.	
TELNET Complies with RFC854. This operation consists of interactive menu form and enables change and reference of internal setup, and to display status. To change the setup, enter "root" user and password at the time of login. Default of root pasword is set as null (linefeed only).	

ACCESSORY (EXT) CONNECTOR PIN ASSIGNMENTS			
DB-9	**14 PIN**	**DIRECTION**	**SIGNAL DEFINITION**
1	**13**	To Host	Vcc +/- 5V
2	**10**	To Host	Ribbon Near End - Goes high when the amount of ribbon on the supply spindle is approximately 46 feet (14m). The output will be low when the ribbon is completely out.
3	**4**	To Host	Error - Goes low when the printer detects an error condition.
4	**7**	To Printer	Reprint - Prints a duplicate of the last label of a print job when this signal is received.
5	**5**	To Printer	Print Start - Prins a single label when this pin is pulled to ground. This signal must be enabled to function by placing dipswitch DSW3-5 to the OFF position.
6	**6**	To Host	End Print - Is used to drive an applicator or other external device requiring synchronization with the print cycle. Four types of output signals may be chosen by using dipswitches DSW3-6 and DSW3-7.
7	**1**	To Host	Label Out - Goes low (0V) when a label error exists.
8	**3**	To Host	Ribbon Out - Goes low (0V) when ribbon supply is out.
9	**2**	Reference	Signal Ground.
	8	To Printer	Isolated Power Source - for signal input.
	9	To Host	Mode 1: High voltage on LCD is selected = online, print job waiting. Mode 2: High voltage on LCD is selected = online. Goes low (0V) when offline.
	11		Reserved.
	12	To Host	+24V +/- 10% @ 2A - Power for external devices.
	14		Frame Ground
NOTE: *The signals on pins 1, 3, 4, 6, 9, and 10 each have an open collector output. These pins normally measure +.07V maximum when a true condition exists. If a false condition ocurrs, the voltage will drop to 0V. To achieve a signal level of +5V, you must add a 330 ohm, 1/4 watt, pull-up resistor between the open collector output pin and Vcc (pin 13) as illustrated. This will provide a signal level of +5V for a true condition and 0V when a false condition exists. The maximum voltage that can be applied to these pins is +50V and the maximum current they can sink is 500 milliamps.*			

ACCESSORIES INSTALLATION

This chapter covers printer accessory installation procedures that are operator allowed.

INTERFACE INSTALLATION

The diagram below displays the physical installation of interface hardware. Refer to the Configuration unit of this manual for instructions on printer setup for the interface type chosen.

1. Switch off the printer and disconnect power supply cord.
2. Route interface cable (1, Figure 3-7) from host computer to interface board (2).
3. Insert interface board (2) into printer (4) and secure using two screws (3).
4. Connect interface cable (1).

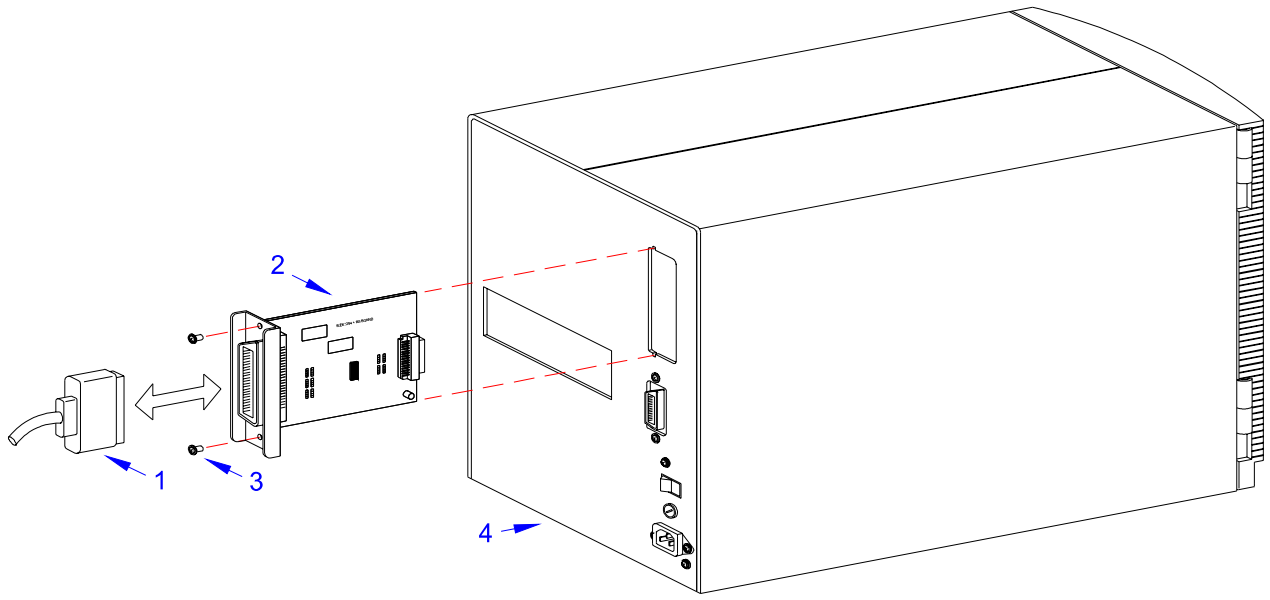

Figure 3-9, Interface Installation