Appendix II - UPG_BUF Serial Line Interface

II.1 Introduction

The UPG_BUF option is required for those stepper installations with an optional Integrated Alignment System (IAS). The IAS communicates with the UPG_STEP Upgrade Kit through a parallel data link to the QBUS-PIO interface board in the desktop PC, and a serial data connection to one of the PC's COM ports. Since the desktop PC runs at much higher speeds than the original PDP-11 controller, it is necessary to buffer the serial communication link to the IAS.

II.2 Contents

The UPG_BUF kit comes with the following components:

•   serial line buffer unit
•   RJ45-to-DB9F adapter
•   6VDC AC adapter
•   2 metre length of standard CAT5 RJ45 ethernet cable (straight through)

II.3 Installation

The installation of the UPG_BUF kit involves the following steps (see Figure II.1):

❏   Plug one end of the RJ45 CAT5 cable into the RJ45-to-DB9F adapter
❏   Plug the DB9F end of the adapter into a 9-pin serial port connector of the PC
❏   Plug the remaining free end of the CAT5 cable into the serial buffer unit
❏   Plug the DB25 connector of the serial buffer into the serial port of the IAS
❏   Plug the 6VDC adapter into the power supply input of the serial buffer unit
❏   Plug the 6VDC adapter into any convenient AC power outlet

II.4 Operation

Once installed, no further user intervention is required. The small indicator light on the serial buffer unit will be on when the unit is powered up, and will flash intermittently to indicate the movement of serial data through the unit.
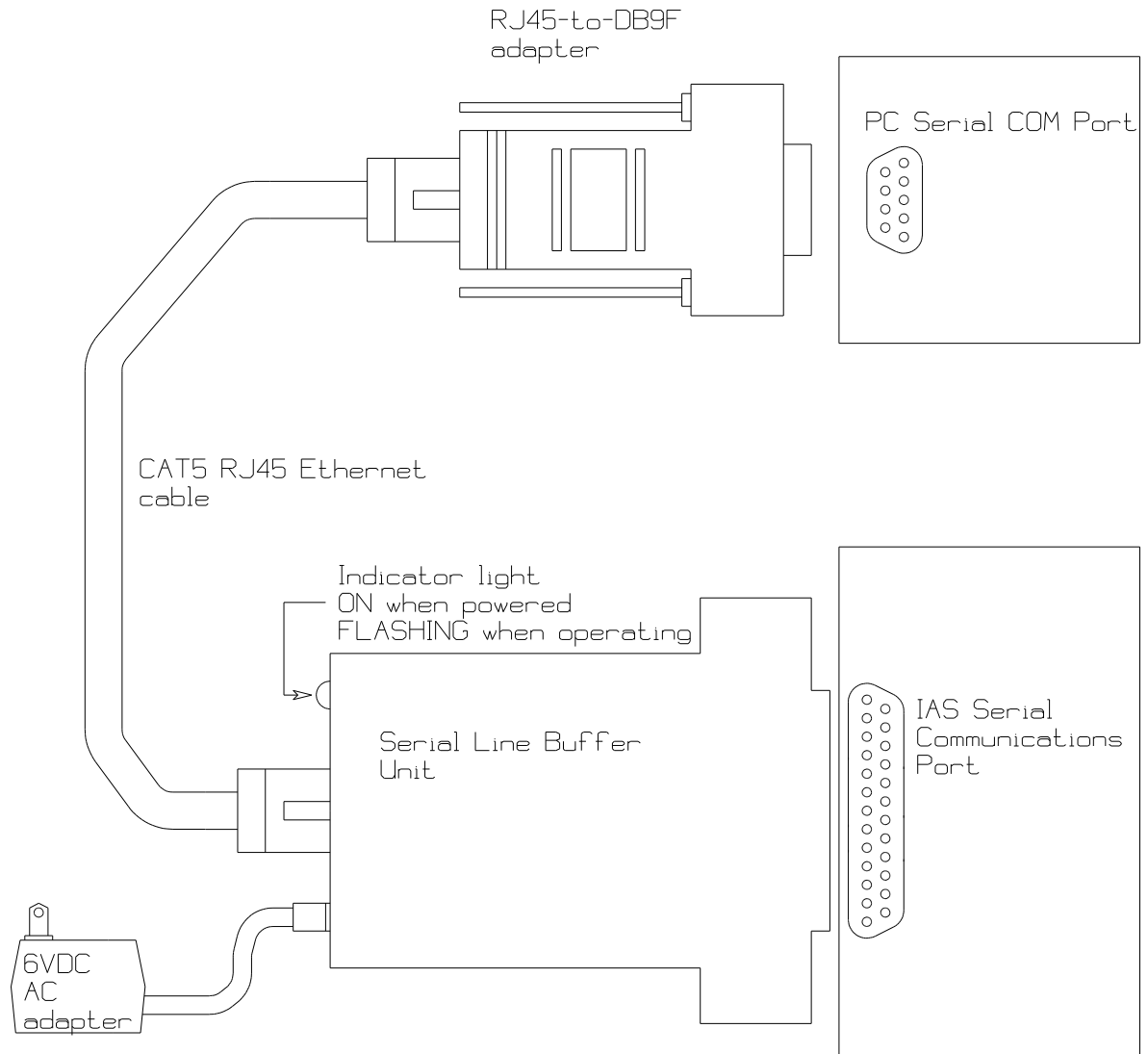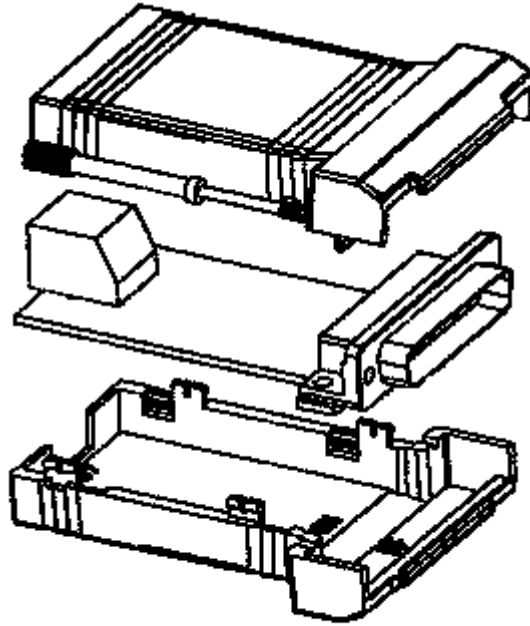
RJ45-to-DB9F
adapter

PC Serial COM Port

CAT5 RJ45 Ethernet
cable

Indicator light
ON when powered
FLASHING when operating

Serial Line Buffer
Unit

IAS Serial
Communications
Port

6VDC
AC
adapter

Figure II.1 : UPG_BUF Installation

Figure II.2 : Serial Buffer Unit (exploded view)

RJ45 Pin	DB9F Pin	Internal Wire Colour
1	1	blue
2	2	orange
3	3	black
4	4	red
5	5	green
6	6	yellow
7	7	brown
8	8	white
	9	NC

Figure II.3 : RJ45-to-DB9 Adapter Connections