



BK660 HP Upgrade Manual

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1.1 BK660 HP Upgrade Base Specifications

1.1.1 Product handling

Item	Specification	Specification
Minimum	3.0" X 5.0"	76 mm X 127 mm
Maximum	16.0" x 17.0"	405 mm X 432 mm
Thickness	Single Sheet to 1 1/8"	Up to 28 mm

1.1.2 Physical

Item	Specification	Specification
Overall Length	69.0"	1752 mm
BK660 HP Overall Height	66.0"	1676 mm
Tabletop Height	35.5" to 37.0"	901 mm to 940 mm
Overall Width	40.0"	1016 mm
Console Length	24.92"	633 mm
Console Width	23.11"	587 mm
Console Height	49.74"	1264 mm
Weight	900 lbs	409 kg

1.1.3 Production rate

Item	Specification	Specification
Belt Speed	0 to 600 ft/min	0 to 3.05 m/s
Cycle Speed	0 to 30,000 pph	
Cycle Pitch	3.0" to 17.0"	76 to 432 mm
Conveyor Speed	0 to 26.0 in/s	0 to 0.7 m/s

1.1.4 Electrical requirements

Item	Specification
Line Voltage	220 ± 15% VAC
Line Current	15 Amps
Power	3.3 KVA
Base Motors	1/2 H.P., 180 VDC @ 2.8A
Feeder Pump	3/4 H.P., 220 VAC @ 5.9A 1.8 CFM @ 20Hg
Transport Blower	1/8 H.P., 220 VAC @ 1.1A 27 CFM @ 0" H ₂ O
Conveyor Interface	1/8 H.P., 90 VDC @ 1.3A DC Controller

1.1.5 Operator controls

ltem	Specification
Circuit-Breaker Switch	Main, Pump
Machine Pushbuttons	Start, Stop, Run/Jog
Conveyor Selector	On/Off/Auto
Potentiometers	Gap, Production, Conveyor
Counter	6-digit resetable

1.1.6 System connectors

Item	Specification	
Conveyor	7 pin, 23-7 receptacle	Amp #206227-1
Inline Remote	37 pin, 23-37 receptacle	Amp #206306-1
Feeder	14 pin, 17-14 receptacle	Amp #206043-1
Main Power	3 pin, 220 VAC @ 20A NEMA L6-20P	Hubbell #2321CN
Controller Power North American models	3 pin, 115 VAC @ 15A NEMA #5-15P	Hubbell #5266CCN

1.2 HP Printhead Specifications

1.2.1 HP Specifications

Item	Specification	Note
Vertical Resolution	600 DPI	2 X HP51645A ink cartridges
Horizontal Resolution	150, 200, 300, 400, 600 DPI	Software-selected
Ink Supply	Ink cartridge (42 ml) Bulk ink system (370 ml)	HP51645A, 1/2" vertical coverage C8119A, 1/2" vertical coverage
Ink Type	Pigmented, water based	
Printhead Type	Thermal ink-jet	
Firing Frequency	13 KHz	
Print swath – Vertical	1" (25.4 mm)	2 X HP51645A ink cartridges
Maximum Printhead Support	3	3" vertical print coverage

1.2.2 HP Production Rates - Horizontal Resolution Specification

Item	150 DPI	200 DPI	300 DPI	400 DPI	600 DPI
Production Speeds ¹	25,000	21,000	14,000	10,600	7,100
Surface speeds (in/s)	87 ips	65 ips	43 ips	33 ips	22 ips
	(2.2 m/s)	(1.7 m/s)	(1.1 m/s)	(0.9 m/s)	(0.6 m/s)
Print swath-Horizontal	20"	20"	20"	15"	10"
	(508 mm)	(508 mm)	(508 mm)	(381 mm)	(254 mm)

 $^1\textsc{Based}$ on a no.10 envelope with a 1.5" material gap. Speeds may vary by up to 10%

1.2.3 Controller Specifications

Item	Specification
Environment	Windows 95/98
Imaging software	Compose '98
Fonts	True type – 4 to 32 point size
Graphics	Bitmapped
Functions	Setup, diagnostics, layout, job management
Production reports	Daily, job and machine production, Crystal reports
Record control	Re-print, re-cue, search
Address recovery	Infinite-Any record within the database
Operator display	Active display of records
Auxiliary controls	Stacker/Diverter operation

1.2.4 Computer Upgrade Specifications

Item	Specification
Processor Type	Intel Pentium 233 MHz (minimum) upgradeable to Intel Celeron 366 MHz.
Memory	64 MB RAM

1.3 Upgrade Drawing



Table 1: BK660 3" HP Upgrade

Item	Description	Reference
1	Existing BK660 Base Assembly	
2	Existing Rear Table	
3	Existing Feeder Bridge	
4	Existing Printhead Bridge	
5	Controller Console Assembly – Upgrade	Page A - 4
6	Monitor – Upgrade	
7	HP Reservoir Container Assembly – Upgrade	Page A - 8
8	Printhead Bridge V2 – Upgrade	Page A - 11
9	HP Printhead Assembly (BK602-HC-U) - Upgrade	Page A – 13
10	HP Reversed Printhead Assembly (BK602-HR-U)- Upgrade	Page A – 15
11	HP Printhead Assembly (BK602-HC-U)- Upgrade	Page A – 13
12	Transport Drive Roller Assembly– Upgrade	Page A – 19



Table 2 : BK660 3" HP Upgrade System Dimensions and Interface Specifications

Symbol	Description	Dimens	sions
0.W.	Overall Width	41.66"	1058 mm
0.L.	Overall Length	69.00"	1752 mm
O.H.	Overall Height	66.00"	1676 mm
W.B.	Overall Base Width	30.00"	762 mm
W.L.	Inkwell Extension	9.00"	229 mm
X1	Leveling Foot Length	58.68"	1490 mm
Y1	Tabletop Height	35.5" to 37"	901 mm to 940 mm
Y2	Rear Table Height	38.00"	965 mm
Y3	Controller Height	50.12"	1273 mm
Z1	Leveling Foot Width	26.00"	660 mm
Z2	Tabletop Width	30.50"	775 mm
JB3	Auxiliary Feeder Connector	14 pin CPC Receptacle	female (AMP P/N 206043-1)
JB4	Inline Connector	37 pin CPC Receptacle	male (AMP P/N 206306-1)
JB5	Conveyor Connector	7 pin CPC Receptacle	female (AMP P/N 206227-1)
JP1	Base Power Connector	Twist-Lock Plug, 20A, 250V	(HUBBELL P/N. 2321CN)
JP2	Controller Power Connector	Straight Blade Plug, 15A, 125V	(HUBBELL P/N 5266CN)

1.4 Items Included in the Upgrade Kit

Table 3 :	1" and 2	" Upgrade	Kits
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Item	Part Number	Qty	Description	Reference
1	325605	1	Right Tabletop	
2	615140	10	Lashing Tie	
3	615141	10	Lashing Tie	
4	800900	1	Kimwipes	
5	800901	1	Alain Key Set (Imperial)	
6	800962	1	User's Guide, Compose Software v. 3.0	
7	9100188	1	Shaft Encoder Assembly	
8	9100191	2	Vacuum Transport Belt, (1" x 96,250") w/holes	
9	9100192	2	Transport Belt (1" x 96,250")	
10	9100289	5	HP Bulk link System	
11	9100305	1	Compose 98 CD	
12	9100322	1	Outfeed Roller Cover	
13	9100840	1	Manual, BK660 Upgrade Kit	
14	UBKSCPK	1	Upgrade Screw Pack	
15	615300	1	Auxiliary Card Bracket	
16	9100194	1	Data Path Card	
17	9100217A	1	Transport Drive Roller Assembly	Page A -15
18	9100275A	1	HP Reservoir Container Assembly	Page A -3
19	BK602-HC-U	N	Printhead, Hewlett Packard	Page A-9
20	9100118A	1	Printhead Slide Mount Assembly (Bearing) (not included	Page A -13
			in BOM. Has to be ordered separately)	

N=1 for a 1" system upgrade and 2 for a 2" system upgrade

Table 4: 3" Upgrade Kit

Item	Part Number	Qty	Description	Reference
1	325605	1	Right Tabletop	
2	615140	10	Lashing Tie	
3	615141	10	Lashing Tie	
4	800900	1	Kimwipes	
5	800901	1	Alain Key Set (Imperial)	
6	800962	1	User's Guide, Compose Software v. 3.0	
7	9100188	1	Shaft Encoder Assembly	
8	9100191	2	Vacuum Transport Belt, (1" x 96,250") w/holes	
9	9100192	2	Transport Belt (1" x 96,250")	
10	9100289	5	HP Bulk link System	
11	9100305	1	Compose 98 CD	
12	9100322	1	Outfeed Roller Cover	
13	9100840	1	Manual, BK660 Upgrade Kit	
14	UBKSCPK	1	Upgrade Screw Pack	
15	615300	1	Auxiliary Card Bracket	
16	9100194	1	Data Path Card	
17	9100217A	1	Transport Drive Roller Assembly	Page A -15
18	9100275A	1	HP Reservoir Container Assembly	Page A -3
19	BK602-HC-U	2	Printhead, Hewlett Packard	Page A-9
20	BK602-HR-U	1	Printhead, Hewlett Packard, Reverse	Page A -11
21	9100225A	1	Printhead Bridge Assembly, Dual Rail (3") (not included in BOM. Has to be ordered separately)	Page A -7
22	9100118A	1	Printhead Slide Mount Assembly (Bearing) (not included	Page A -13
			in BOM. Has to be ordered separately)	I
23	9100118A	1	Printhead Slide Mount Assembly (Extrusion) (not included	Page A -14
			in BOM. Has to be ordered separately)	l

Chapter

Upgrade Installation Instructions

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2.1 Required Installation Tools

To complete the BK 460 HP Upgrade, the following tools are needed:

- Set of Imperial hex keys.
- 1/8" T handle hex key.
- Philips head screwdriver.
- Flat head screwdriver.
- Side cutter.
- 3 mm hex key.
- 2.5 mm hex key.
- No.10 drill (Ø 0.1935) (optional for 3" system upgrade)
- No.7 drill (Ø 0.201) (optional for 3" system upgrade)
- 1/4-20 tap (optional for 3" system upgrade)

2.2 Tear Down

The printheads, printhead bridges, rear table assembly, side guides and outfeed rollers, must be removed from the tabletop in order to replace the existing right tabletop with the one provided. The skidbar assembly does not have to be removed from the tabletop, remove just the screws. Please follow the procedure below to complete this operation.

Necessary tools

- Side cutter.
- 5/32" hex key.
- 1/8" hex key.
- 3/16" hex key.
- 1/16" hex key.
- 3 mm hex key.
- Philips head screwdriver
- Flat head screwdriver

2.2.1. To Remove the Priming Pump

- 1. Use a 1/8" hex key and remove the four BHCS 10-32 UNF X 1/4" screws mounting the bottom inkwell cover on the inkwell container supports and detach the cover.
- 2. Detach the vacuum tube from the priming pump assembly located underneath the inkwell container.
- 3. Remove the two PHMS screws mounting the priming plug connector on the communications plate.
- 4. Use a 1/8 hex key to remove the four BHCS screws mounting the communications plate on the rear top cover, disconnect all the cables from the communications plate and remove the four BHCS screws mounting the rear top cover on the base.
- 5. Cut all the lashing ties and open all cable clamps in order to release the priming pump power cable.
- 6. Use a 1/8" hex key and remove the four BHCS 10-32 UNF X 1/4" screws mounting the priming pump assembly underneath the inkwell container. Remove the priming pump assembly. See page A-31 of the BK600/BK640 manual.

2.2.2. To Detach the Printheads and Ink Reservoirs

- 1. Install the ship caps to prevent ink from leaking.
- 2. Detach the blue ribbon cable and the printbar cables from the printhead.
- 3. Disconnect the viton tubing from the ink reservoirs located inside the inkwell container. The tubing can be disconnected at the quick disconnect luer fittings. Install luer caps provided in the kit, (P/N 800855, 800856) to prevent ink leakage.
- 4. Use a 1/16" hex key and remove the two FHCS 4-40 UNC X 1/4" screws mounting the igus chain mounting bracket on the printhead bridge.
- 5. Use a 3 mm hex key and unscrew the four SHCS, M4 X 10 screws mounting the twin printbar mounting plate on the linear bearing and remove the printhead. See BK640/BK660 manual, page A-53. Mount the screws back on the linear bearing. Same screws will be used to mount the new rail attachment block provided.
- 6. Repeat above operations for the second printhead, where applicable.
- Use a 1/8" hex key and remove the three BHCS 10-32 UNF X 1/4" screws mounting the L-shaped rear inkwell door on the inkwell cabinet and remove the door. See page A-56 of the BK600/BK640 manual, item #26.
- 8. Use a Philips head screw driver to remove the PHMS 6-32 screws mounting the ink reservoirs inside the inkwell. Detach the ink reservoirs.
- 9. Remove the inkwell plates located inside the inkwell container by removing the side guide knobs. (optional)

2.2.3. To Remove the Printhead Bridge

- 1. Disconnect the photoeye cable from the photoeye connector on printbridge #1.
- 2. Use a 5/32" hex key to unscrew the four BHCS 1/4-20 UNC X 3/4" screws mounting the printhead bridge on the tabletop and remove the printhead bridge.
- 3. Repeat the step 2 above for the second printbridge (where applicable).

2.2.4. To Remove Right Tabletop

- 1. Use a 1/8" hex key and remove the seven BHCS 10-32 UNF X 1/4" screws mounting the outfeed roller cover. Remove the cover. See page A-4 of BK600/BK640 manual, item #22. A new cover is included in the upgrade kit, P/N 9100322.
- 2. Remove the four FHCS 10-32 UNF X 3/4" screws mounting the outfeed roller shaft assembly on the tabletop and detach the assembly. See page A-21 of BK600/BK640 manual Tabletop assembly, item #1.
- 3. Remove the two SHCS 1/4-20 UNC X 1 1/2" screws mounting the rear tabletop assembly on the tabletop and detach the assembly. See page A-24 of BK600/BK640 manual Rear tabletop assembly, item #6.
- 4. Remove the material side guides from tabletop by removing the side guide knobs.
- 5. Detach the left and right bridge covers by removing the four BHCS 6-32 UNC X 1/4", two for each cover. See page A-21 of BK600/BK640 manual Tabletop assembly, items #9 and #10.
- 6. Use a 1/8" hex key to remove the four BHCS 10-32 X 1/4" screws mounting the instrument panel on the base in order to access the screws mounting the feeder bridge assembly on the tabletop. See page A-4 of BK600/BK640 manual, item #4.
- 7. Use a 1/8" T handle hex key to loosen the SHSS 1/4-20 UNC X 3/16" screw locking the hand wheel on the hand wheel support block, and remove the hand wheel.

NOTE: On some of the first released BK660 models, there is no hand wheel mount installed and the set screw locking the hand wheel assembly on the shaft is mounted at the end of the hand wheel shaft. The instrument panel assembly must be detached from the instrument panel in order to access the set screw and release the hand wheel. See page A-56 of BK660/BK640 manual, item #25.

- 8. Use a 3/16" hex key to detach the two BHCS 1/4-20 UNC X 3/4" screws mounting the feeder bridge assembly (right bridge frame) on the tabletop. The feeder bridge does not have to be removed from the tabletop. See page A-6 of BK600/BK640 manual, item #7.
- 9. Cut the tie mount securing the shaft encoder cable on the right tabletop. A tie-wrap mount, P/N 615102, provided in the upgrade screw kit, must be installed on the new right tabletop provided, P/N 325605 by inserting a BHCS 10-32 UNC X 1/4" screw. See *Figure 2* on page 2-7 below.
- 10. Detach the five FHCS 10-32 UNF X 1/4" screws mounting the right tabletop to the supports and remove the tabletop. See page A-21, BK640/BK660 manual.

2.2.5. Left Tabletop Alterations (Only if a 3" System is Being Installed)

The ribbon cable mount for the 2^{nd} bridge must be relocated to prevent interference with the version 2 bridge provided. Please follow the following instructions and reference *Figure 1* below for an illustration.

- 1. Detach the ribbon cable mount near the 2nd printhead bridge by removing the two FHCS 10-32 X 3/4'' screws from underneath the tabletop. The rear top cover should be removed to facilitate this operation. See page A-4 of the BK660/BK640 manual, item #11.
- 2. Shift the Ribbon Cable Mount downstream one hole spacing such that the first hole on the mount aligns itself with the second hole on the table.
- 3. Install and fasten one of the previously removed screws (FHCS 10-32 X 3/4") back into through the hole and into the ribbon cable mount. A 1/8" hex key should be used for this operation.



Figure 1: *Relocating the Ribbon Cable Mount*

2.2.6. To Remove the Vacuum Belt Tabletop

- 1. Remove the vacuum hose from the blower. Leave clamp on blower as it will be required on reassembly. See page A-40 of BK640/BK660 manual, item #5.
- 2. Remove the six BHCS 10-32 UNC X 5/8" screws mounting the vacuum tabletop to the right and left tabletops.
- 3. Detach the timing belt on the outfeed end of the tabletop.
- 4. Disconnect the shaft encoder cable from the shaft encoder connector. The connector might be tucked inside the end of the base.
- 5. Remove vacuum belt tabletop. The vacuum hose has to be pulled through the hole in the upper pan located on top of the machine's vacuum chamber. See page A-4 of BK640/BK660 manual, item #5.

2.2.7. To Replace the Shaft Encoder Assembly, Transport Drive Roller Assembly, and Belts

- Use a 1/8" hex key and remove the four FHCS 10-32 UNF X 3/4" screws mounting the existing transport belt drive block (P/N 330603) on the transport belt tabletop. See page A-19 of BK600/ BK640 manual, item #25.
- 2. Remove the existing belts.
- 3. Mount the transport drive roller assembly provided (P/N 9100217A). Use four FHCS 10-32 UNF X 3/4" screws and a 1/8" hex key to mount the assembly on the transport belt tabletop. See page A –15 of this manual, **Figure A-10**.
- 4. Mount the new belts provided in the kit, two vacuum transport belts w/holes, P/N 9100191 and two transport belts, P/N 9100192.
- 5. Insert the encoder shaft from the new encoder (P/N 9100188A) in the driveshaft hole and tighten the SHSS, 10-32 UNF X 3/16" screw. Match the flat on the encoder shaft with the set screw. See page A –15 of this manual, **Figure A-10**.
- 6. Slide the vacuum tabletop between the right and left tabletops and insert the vacuum hose through the hole in the upper pan, into the vacuum chamber.
- 7. Reattach the vacuum hose to the blower and tighten the hose clamp. Use a flat screwdriver for this operation.
- 8. Use a 1/8 hex key to reattach the six BHCS 10-32 UNC X 5/8". Let them loose, as the belts must be tensioned first.

2.3 Attaching the Assemblies

Necessary tools

- 1/8" hex key.
- 5/32" hex key.
- 5/64" hex key.
- 3/16" hex key.
- 1/8" T handle hex key.
- 3 mm hex key.
- Philips head screwdriver
- Flat head screwdriver
- Knife

2.3.1. To Attach the Right Tabletop

- 1. Attach the right tabletop provided by inserting five FHCS 10-32 UNF X 3/4" screws.
- 2. Use a BHCS 10-32 UNC X 1/4" screw to mount the tie-wrap mount provided (P/N 615102) on the bottom face of the right tabletop. See *Figure 2* below.

Figure 2: Attaching the Tie Mount to the Right Tabletop



2.3.2. To Re-attach the Vacuum Belt Tabletop

- 1. Slide the vacuum belt tabletop between the right and left tabletops and insert the vacuum hose through the hole in the upper pan, into the vacuum chamber.
- 2. Reattach the vacuum hose to the blower and use a flat screwdriver to tighten the hose clamp.
- 3. Use a 1/8 hex key to reattach the six BHCS 10-32 UNC X 5/8". Leave the screws loose as the timing belt must be tensioned first.
- 4. Reattach the timing belt to the pulley mounted at the end of the driveshaft.
- 5. Tension the belts by pulling the vacuum tabletop towards the outfeed end of the base and tighten the six BHCS 10-32 UNC X 5/8" screws. Use a 1/8" hex key.
- 6. Connect the shaft encoder cable to the shaft encoder connector. The connector may be tacked inside the base.
- 7. Place the mouse on the right tabletop, route the cable through the cutout on the base and connect it to the motherboard. Use lashing ties to secure the mouse cable so that it does not interfere with moving base parts.
- 8. Insert a lashing tie provided in the tie mount attached on bottom face of the right tabletop, see *Figure 2* above, and secure both mouse and shaft encoder cables.

2.3.3. To Re-attach the Assemblies on the Tabletop

- 1. Reattach the four FHCS 10-32 UNF X 3/4" screws mounting the outfeed roller shaft assembly on the tabletop. Use a 1/8" hex key.
- 2. Use a 1/8" hex key and insert seven BHCS 10-32 UNC X 1/4" screws to mount the new outfeed roller cover provided. The new cover is bigger than the removed one.
- 3. Reattach the feeder bridge assembly on the tabletop by reinserting the two BHCS 1/4-20 UNC X 3/4" screws. Use a 5/32" hex key.
- 4. Reattach the two feeder bridge covers by reinserting the four BHCS 6-32 UNC X1/4", two for each cover. Use a 5/64" hex key.
- 5. Place the instrument panel in place and reattach the hand wheel by tightening the SHSS1/4-20 UNC X 3/16" screw on the hand wheel support block. Use a 1/8" T handle hex hey.
- 6. Use a 1/8" hex key to reattach the four BHCS 10-32 UNF X 1/4" screws mounting the front panel on the base.
- 7. Use a 3/16" hex key to reattach the rear table assembly on the tabletop by reinserting the two SHCS 1/4-20 UNC X 1 1/2" screws.

- 8. Reattach the material side guides on the tabletop inserting the side guide knobs.
- 9. Install the first printhead bridge on the tabletop by inserting the four BHCS 1/4-20 UNC X 3/4" screws.
- 10. Connect the photoeye to the photoeye connector.
- 11. Install the second printhead bridge on the tabletop by inserting the four BHCS 1/4-20 UNC X 3/4" screws.

2.3.4. To install the Version 2 Bridge for 3rd HP Printhead (3" System only)

Whenever upgrading to a 3" system, a dual rail printbridge must replace the existing second printbridge. See *Figure 3* below. The distance between the bridges should be increased by 3.5" and the ribbon cable mount must be relocated. See *Figure 1* on page 2-2-5. Follow the procedure below to install the V2 printbridge.

- 1. Install the version 2 bridge downstream one hole location from the original bridge such that the first mounting slot on the bridge mounting foot aligns with the second tapped hole on the tabletop as shown in *Figure 3*.
- 2. The second slot in the *rear* bridge mounting foot will align with the 1st tabletop hole from the relocated ribbon cable mount. If desired, this hole can be drilled (*no.7 drill*) and tapped 1/4-20 UNC to provide a 4th fixing point for the re-located bridge.
- 3. Insert the four BHCS 1/4-20 UNC X 3/4" screws. A 5/32" hex key should be used.





2.3.5. To Install the HP Printheads

A) Printhead Installation using the existing printhead bridges

1. Mount the rail attachment block provided, on the existing linear bearing. Use a 3mm hex key and four SHCS M4X10 screws as shown in *Figure 4* below. Get M4X10 screws from screw pack.

Figure 4 : Mounting the Rail attachment block on the existing linear bearing



2. Use a 3/16" hex key and two SHCS 1/4-20 UNC X 3/4" screws to attach the HP Printhead on the rail attachment block, as shown in *Figure 5* below.

Figure 5 : Attaching the HP printhead on the rail attachment block



B) Printhead Installation using the V2 printhead bridge.

Whenever an existing system is upgraded to a 3" system, or when the existing machine has only one printhead bridge installed, a V2 printhead bridge is provided. The V2 printhead bridge can have only a rail or one rail on each sides (dual rail printbridge). Please follow the procedure below to install the printheads on the V2 printhead bridge:

1. Mount the printhead on the slide mount attached to the printbridge rail and use a 3/16 hex key to tighten the two SHCS 1/4-20 UNC X 3/8" screws. See **Figure 6** below.





2. Mount the "reversed" printhead on the left slide mount attached to the second printbridge rail and use a 3/16" hex key to tighten the two SHCS 1/4-20 X ³/₄" screws. See **Figure 7** below.

Figure 7 : Mounting the HP Printhead Reverse (P/N BK602-HR-1)(3" systems only)



For any other details, please refer to Printhead Bridge V2.0 User's Guide which comes with the new bridge (see printhead installation on page 25). The position of the three printheads and the printbridges is shown in **Figure 8** and the dual rail printhead bridge in below.

Figure 8 : BK660 - 3" HP Upgraded system.



Figure 9 : Version 2 "dual rail" printbridge (P/N 9100225A)



2.4 Upgrading the Existing Computer

To function properly, the HP printheads require at least a Pentium 233 MHz processor and 64 Mb RAM. To upgrade the computer to the minimum required configuration, follow the procedure below.

2.4.1. To Upgrade the Computer

- 1. Remove the PHMS 6-32 UNF X 1/4" screw mounting auxiliary card bracket on computer cage and detach Jet driver board from the motherboard.
- 2. Remove the PHMS 6-32 UNF X 1/4" screw mounting auxiliary card bracket on the computer cage and detach Jet memory/interface board from the motherboard. **Please remember to keep for rebate.**
- 3. Note the make and model of the motherboard.
- 4. Detach existing RAM memory modules and place them into a static bag.
- 5. Disconnect the processor fan connector, detach the fan clamp and remove the processor fan. Pull the lever sideways away from the socket then upwards to a 90-degree angle Detach the processor from the motherboard. See the motherboard manual that was shipped with the machine for details.
- 6. Install the two 32 MB RAM memory bars provided.
- Insert the Pentium II 233 MHz CPU provided with the correct orientation. Use the notched corner of the CPU as a guide. No force is required to insert the CPU. Close the socket lever. See the motherboard manual for details. Appendix B has layouts of all motherboard models installed on BK660 Trident systems.
- 8. Reattach the processor fan and the fan power connector.
- 9. Set the CPU external clock and BUS frequency ratio jumpers according to the processor speed and motherboard manufacturer specifications. See Appendix B Figure 8-11 for details.

NOTE: Please refer to the motherboard user's manual to set the CPU external clock and BUS frequency ratio jumpers according to the speed of the Intel Pentium 233 MHz. CPU provided in the upgrade kit. Appendix B lists a few motherboard layouts and the correct position of the jumpers. If missing the manual, or the motherboard is not shown in Appendix B, please contact the factory with the make and model of the motherboard.

- 10. Turn ON the controller. Verify the processor speed is 233 MHz., memory test is OK and the amount of RAM memory installed is correct, 64 MB.
- 11. Turn OFF the controller.

12. Install the datapath card provided on the leftmost PCI slot (#4) on the motherboard. See **Figure 10** for an illustration of the Datapath card. Use a PHMS 6-32 X 1/4" screw to mount the datapath auxiliary bracket on the computer cage. Check that the HP lock chip and the head support chips are installed. Ensure that there is one head support chip for each printhead installed.

NOTE: If there is no head support chip installed, the HP head will not function.

Figure 10 : Datapath Card



13. Connect the HP printhead data cables on the new datapath card as shown in **Figure 17** on page 2-2-26, and route them through the cable slot on the base frame and the cable clamps attached to the left tabletop.

2.4.2. CMOS Settings

To enter the CMOS setup, turn the controller ON and press DEL during memory test.

The new Data Path card contains no jumpers for the configuration of its interrupts but relies on the BIOS to assign one. For the assignment to work properly, the interrupt number must be set in the BIOS PNP and PCI setup screen. This screen allows the assignment of a particular interrupt to a particular PCI slot. Assuming the PCI slot used for the Data Path card is the leftmost slot, then set the PNP and PCI setup screen as follows:

PNP OS Installed:	NO
Slot 1(Right) IRQ:	Auto
Slot 2 IRQ:	Auto
Slot 3 IRQ:	Auto
Slot 4 (Left) IRQ:	10

Check on the right side of this screen, that the USB IRQ is set to Disable

There will be four IRQ's that have been assigned to an ISA slot, since there are no longer any driver boards please set the ISA slot as follows:

IRQ 3 Used by ISA:	NO/ICU
IRQ 4 Used by ISA:	NO/ICU
IRQ 5 Used by ISA:	NO/ICU
IRQ 7 Used by ISA:	NO/ICU
IRQ 9 Used by ISA:	NO/ICU
IRQ 10 Used by ISA:	NO/ICU
IRQ 11 Used by ISA:	NO/ICU
IRQ 12 Used by ISA:	NO/ICU
IRQ 14 Used by ISA:	NO/ICU
IRQ 15 Used by ISA:	NO/ICU
ISA MEM Block Base:	NO/ICU

When Windows 95/98 boots up it will say that it has found new hardware (PCI Multimedia Audio device). Click on next to continue. This is datapath card being recognized. No driver is requested for datapath card.

2.4.3. Windows 98 Universal Serial Bus Controller Setup

The settings below were assigned at factory.

1. Click on the *START* button and click *Control Panel*. The Control Panel Window will appear as seen below.



2. Double click on the *System* icon. Click on *Device Manager* tab, and scroll down to the *Universal serial bus controller* and expand that tree by clicking on the plus (+). The screen that should appear is depicted below.

System Properties ? 🗙
General Device Manager Hardware Profiles Performance
• View devices by type • View devices by connection
Display adapters
E S Floppy disk controllers
🗄 🖳 💭 Monitor
terno Mouse
🔁 🌉 Network adapters
Ports (COM & LPT)
SUSI controllers
E Universal serial bus controller
Intel 82371AB PCI to USB Universal Host Controller
USB Root Hub
P <u>r</u> operties Re <u>f</u> resh R <u>e</u> move Pri <u>n</u> t
OK Cancel

3. Click on *Intel PCI to USA Universal Serial Bus Controller* and then click the *Properties* button. The following screen should appear.

Intel 82371AB PCI to USB Universal Host Controller Pr.	. ? ×
General Driver Resources	
Intel 82371AB PCI to USB Universal Host Controller	,
Device type: Universal serial bus controller Manufacturer: Intel Hardware version: 001 - Device status	
This device is working properly.	
Device usage Disable in this hardware profile Exists in all hardware profiles	
OK Ca	incel

4. Ensure that the *Disable in this hardware profile* check box is checked and *Exists in all hardware profiles* check box is not checked.

2.5 Installing the HP Reservoir Container Assembly

The HP reservoir container assembly must be mounted on the two existing inkwell supports, on the same four screws mounting the inkwell container. For safety reasons, the existing four screws must be replaced with the longer BHCS 10-32 UNF X 1" screws provided in the screw kit. See **Figure 11** below for an illustration. The HP bulk ink systems provided are to be mounted inside the reservoir container. The HP power supply assembly, generating the 28 VDC required by HP printhead, is located on the bottom surface of the reservoir.

2.5.1. Replacing the Inkwell Mounting Screws.

For simplicity, replace the screws one by one. Use a 1/8" hex key. In order to slide the HP Reservoir Container Assembly do not tighten the new installed screws completely.

Figure 11 : Mounting longer screws to the inkwell supports



2.5.2. To Install the HP Reservoir Container Assembly

- 1. Loosen the four screws BHCS 10-32 X 1" mounting the inkwell cabinet on inkwell supports enough to be able to slide the reservoir assembly. **Be careful not to loosen the screws too much or inkwell may fall.**
- 2. Mount the HP Reservoir Container Assembly as shown in **Figure 12** below. Use the **upper** cutouts to mount the reservoir.

- 3. Route the 120 VAC HP power supply cord (gray), through the cable cutout in the base and than plug it to the 120 VAC surge suppressor located within the BK660 electrical box. Route the 5 VDC power cable (black and red wires) through the same cable cutout in the base and connect it to a spare connector of the computer's power supply.
- 4. Connect the HP Printhead power cables (one for each printhead installed) to the HP power supply as shown in **Figure 13** below.
- 5. Once all cables are connected, the reservoir rear cover can be attached as shown in **Figure 12** below. To attach the reservoir rear cover, use 5 screws BHCS 10-32 UNF X 1/4" and a 1/8" hex key.

NOTE: The controller power connector must be disconnected from the receptacle located qt the rear of the machine and routed through the cutout in the rear cover. See **Figure 12** below.

Figure 12: Mounting the HP reservoir container and the reservoir rear cover



Figure 13 : *HP Power Supply cables*



6. Route the HP printhead power cables (connected to the 28 V HP power supply) and data cables (connected to the datapath card) through the left tabletop cable clamps. Once the printbridges and the printheads are in place, adjust the length of the data and power cables, close the cable clamps, than put some electrical tape around the cables, four inches apart. See **Figure 14** below.

Figure 14 : Printhead cables



2.6 HP Printhead Settings

For the HP printhead to function correctly, the DIP switches on the HP Interface Board must be set according to the firing order of the HP printhead. Also, the HP printhead must be leveled in order to rich high speeds and good print quality.

Note: Always power OFF the controller before modifying the DIP switch settings otherwise you can damage the PEN driver boards or the HP interface Board.

2.6.1. To Set HP Printhead DIP Switches

- 1. Use a 5/64" hex key to remove the BHCS 6-32 X 1/4" screw attaching the access panel to the HP printhead cover. Remove the access panel of the HP printhead.
- 2. Ensure the DIP switches on the HP Interface board are set as shown in **Table 1** and **Figure 15** below.

Table 1 : Setting The DIP Switches on HP Interface Board

Printhead No.	DIP Switch #1	DIP Switch #2	DIP Switch #3	DIP Switch #4	DIP Switch #5	DIP Switch #6	DIP Switch #7	DIP Switch #8
1	OPEN							
2	CLOSE	OPEN						
3	OPEN	CLOSE	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN

Figure 15 : HP Interface Board DIP Switches



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2.6.2. To connect the HP Printheads

1. Connect printhead #1, #2 and #3 HP data and power cables to their appropriate head connection. See **Figure 16** below.

Figure 16 : Connecting power and data cables to the HP printhead



Note: Always turn OFF the controller before disconnecting the printhead data or power cables from the printhead, otherwise you can damage the PEN driver boards or the HP interface Board.

2. Attach the existing I/O ribbon cable to the I/O connector on the Datapath card. See Figure 17 below.

Figure 17 : Attaching the cables to the Datapath Card (P/N 9100194)



2.6.3. To Level the Printheads

Level the printheads by tightening or loosening the three SHCS 1/4-20 leveling screws mounted on the printhead slide block. See **Figure 18** below. The two SHCS screws 14-20 UNC-3/8'' mounting the printhead on the slide mount should be loosened before adjusting the leveling screws. The two set screws mounted in the printbridge mounting feet can be also adjusted to level the printheads.

For a detailed procedure, see Printhead Bridge V 2.0 User's Guide.

Figure 18 : Printhead Slide Block Leveling Screws



Note: A properly leveled head significantly increases the print quality.

Appendix A

This section provides exploded views and part lists for the BK660 Upgrade assemblies provided in the kit.

Figure A1:	BK660 Upgrade Assembly	A-1
Table A1:	BK660 Upgrade Assembly	A-1
FIGURE A2:	HP Reservoir Container Assembly (P/N 9100275A)	A-1
Table A2:	HP Reservoir Container Assembly (P/N 9100275A)	A-2
Figure A3:	HP 28 VDC Power Supply Bracket Assembly (P/N 9100279A)	A-3
Table A3:	HP 28 VDC Power Supply Bracket Assembly (P/N 9100279A)	A-3
Figure A4:	Printhead Bridge Assembly (80/20)	A-4
Table A4	Printhead Bridge Assembly (80/20)	A-5
Figure A5:	Printhead Bridge Assembly, 3", Dual Rail (P/N 9100225A)	A-6
Table A5:	Printhead Bridge Assembly, 3", Dual Rail (P/N 9100225A)	A-7
Figure A6:	HP Printhead Assembly (BK602-HC-U)	A-8
Table A6:	HP Printhead Assembly (BK602-HC-U)	A-9
Figure A7:	HP Printhead Assembly Reverse (BK602-HR-U) (3" system)	A-10
Table A7:	HP Printhead Assembly Reverse, (BK602-HR-1) (3"system)	A-11
Figure A8:	Printhead Slide Mount Assembly (Bearing) (P/N 9100118A)	A-12
Table A8:	Printhead Slide Mount Assembly (Bearing) (P/N 9100118A)	A-12
Figure A9:	Printhead Slide Mount Assembly (Extrusion) (P/N 9100224A)	A-13
Table A9:	Printhead Slide Mount Assembly (Extrusion) (P/N 9100224A)	A-13
Figure A10:	Transport Drive Roller Assembly (P/N 9100217A)	A-14
Table A10:	Transport Drive Roller Assembly (P/N 9100217A)	A-14





Table A1:	BK660	Upgrade Assembly	
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ltem	Part Number	Quantity	Description	Reference
1	9100183A	1	Controller Console Assembly (existing One)	
2	711600	1	Inkwell container (Existing one)	
3	404570	4	Screw, BHCS 10-32 UNC X 1"	
4	9100275A	1	HP Reservoir Container Assembly	
5	9100280	1	Inkwell Support (Cover, included in 9100275A)	
6	404510	5	Screw, BHCS 10-32 UNC X 1/4"	



Figure A2: HP Reservoir Container Assembly (P/N 9100275A)

 Table A2: HP Reservoir Container Assembly (P/N 9100275A)

Item	Part Number	Quantity	Description	Reference
1	9100277A	1	HP Reservoir Container	
2	9100276	1	HP Reservoir Top Cover	
3	9100278	1	HP Reservoir Side Cover, Right	
4	9100482	1	HP Reservoir Side Cover, Left	
5	9100279A	1	HP Power Supply Bracket Assembly	
6	438171	2	Thumbscrew, 10-32 UNF X 3/8"	
7	404510	6	Screw, BHCS, 10-32 UNF x 1/4"	



Figure A3: HP 28 VDC Power Supply Bracket Assembly (P/N 9100279A)

 Table A3:
 HP 28 VDC Power Supply Bracket Assembly (P/N 9100279A)

Item	Part Number	Quantity	Description	Reference
1	9100279	1	HP Connector Bracket	
2	9100282	4	Connector, Neutrik, 3 pin	
3	9100281	1	Power Supply, 28V	
4	9100290	1	Power Supply Cover	
5	404510	1	Screw, BHCS, 10-32 UNF 1/4"	
6	401010	1	Screw, FHCS, 4-40 UNC 1/4"	
7	9100285	1	Panel Mount Fuse Holder	
8	9100286	1	Fuse, 3AG-2A, MDL	
9	614008A	1	5 VDC Power Cable	

Figure A4: Printhead Bridge Assembly (80/20)





Item	Part Number	Quantity	Description	Reference
1	100309	4	Height Adjustment Pin	
2	131020	2	Collar 3/8" I.D.0 UNC x 1/4"	
3	330314	2	Bridge Mounting Foot"	
4	402510	6	Screw, BHCS, 6-32 UNC x 1/4"	
5	404520	6	Screw, BHCS, 10-32 UNF x 3/8"	
6	404807	7	Screw, SHSS, 10-32 UNF x 3/16"	
7	405520	6	Screw, BHCS, ¼-20 UNC x 3/8"	
8	405810	2	Screw, SHSS, ¼-20 UNC x 1/4"	
9	438311	1	Bridge Handwheel	
10	505384	4	Flange Bushing, 3/8" ID x 1/2" OD x 1/2" LG	
11	706601	1	Igus Chain Support	
12	9100223	1	Bridge Extrusion Rail	
13	9100225	1	Printhead Bridge Body	
14	9100226	2	Adjustable Mount	
15	9100227	1	Height Adjustment Screw	
16	9100360	2	Push In Fastner for 10 SERIES (Endcap)	
17	9100361	2	T-Nut, ¼-20 Triple	
18	9100362	2	Pulley, 15LF050 x 3/8" DIA	
19	9100363	1	Secondary Height Adjustment Screw	
20	9100365	1	Printhead Bridge Belt, 510L050	

Figure A5: Printhead Bridge Assembly, 3", Dual Rail (P/N 9100225A)



ltem	Part Number	Qty	Description
1	100309	4	Height Adjustment Pin
2	131020	2	Collar, 3/8" ID
3	330314	2	Bridge Mounting Foot
4	402510	6	Screw, BHCS, 6-32 UNF x 1/4"
5	404520	6	Screw, BHCS, 10-32 UNF x 3/8"
6	404807	7	Screw, SHSS, 10-32 UNF x 3/16"
7	405520	12	Screw, BHCS, 1/4-20 UNC x 3/8"
8	405830	4	Screw, SHSS, 1/4-20 UNC x 1/2"
9	438311	1	Bridge Handwheel
10	505384	4	Flange Bushing, 3/8" ID x 1/2" OD x 1/2"
11	706601	1	Igus Chain Support
12	9100223	2	Bridge Extrusion Rail
13	9100225	1	Printhead Bridge Body
14	9100226	2	Adjustable Mount
15	9100227	1	Height Adjustment Screw
16	9100360	4	Push in Fastener for 10 Series (Endcap)
17	9100361	4	T-Nut, 1/4-20 Triple
18	9100362	2	Pulley, 15LF050 x 3/8"
19	9100363	1	Secondary Height Adjustment Screw
20	9100365	1	Printhead Bridge Belt, 510L050

Table A5: Printhead Bridge Assembly,	3", Dual Rail (P/N 9100225A)
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Figure A6: HP Printhead Assembly (BK602-HC-U)



ltem	Part Number	Quantity	Description	Reference
1	206200	1	Release Lever	
2	401310	4	Screw, PHMS, 4-40 UNC x 1/4"	
3	402250	2	Screw, SHCS, 6-32 UNC x 3/4"	
4	402275	2	Screw, SHCS, 6-32 UNC x 1 1/4"	
5	402510	5	Screw, BHCS, 6-32 UNC x 1/4"	
6	402807	2	Screw, SHSS, 6-32 UNC x 3/16"	
7	402820	2	Screw, SHSS, 6-32 UNC x 3/8"	
8	402830	2	Screw, SHSS, 6-32 UNC x 1/2"	
9	403040	3	Screw, FHCS, 8-32 UNC x 5/8"	
10	403510	2	Screw, BHCS, 8-32 UNC x 1/4"	
11	404510	2	Screw, BHCS, 10-32 UNF x 1/4"	
12	436315	2	Dowel Pin, ¼" DIA. X 1 1/2"	
13	606323	1	Monitor Extension Cable, 6'	
14	9100116	1	Printhead Slide Block	
15	9100134	2	Dowel Pin, 5/16" DIA. x 3"	
16	9100141	1	Printhead Support Chip (Installed on Data Path card)	
17	9100157	4	Hex Spacer, 4-40 UNC x 1/2"	
18	9100161	1	HP Printhead Mount	
19	9100163	2	Printhead Spring	
20	9100220	1	HP Interface Board	
21	9100228	2	HP Pen Driver Board	
22	9100229	2	HP Printhead Latches	
23	9100249	1	Slider Block	
24	9100250	1	HP Lower Retainer Block	
25	9100251	1	HP Upper Retainer Block	
26	9100252	1	HP Printhead Cover	
27	9100253	1	Access Panel	
28	9100255	1	HP Printhead Shield	
29	9100256A	1	HP Parking Plate Assembly	
30	9100257	2	Dowel Pin, 2mm DIA x 25mm	
31	9100260	2	HP Ink Cartridge	
32	9100262A	1	HP Printhead Power Cable	
33	9100294	2	HP Flex Cable	

Table A6: HP Printhead Assembly (BK602-HC-U)

Figure A7: HP Printhead Assembly Reverse (BK602-HR-U) (3" system)



Item	Part Number	Quantity	Description	Reference
1	206200	1	Release Lever	
2	401310	4	Screw, PHMS, 4-40 UNC x 1/4"	
3	402020	4	Screw, FHCS, 6-32 UNC x 3/8"	
4	402250	2	Screw, SHCS, 6-32 UNC x 3/4"	
5	402275	2	Screw, SHCS, 6-32 UNC x 1 1/4"	
6	402510	5	Screw, BHCS, 6-32 UNC x 1/4"	
7	402520	2	Screw, BHCS, 6-32 UNC x 3/8"	
8	402807	2	Screw, SHSS, 6-32 UNC x 3/16"	
9	402820	2	Screw, SHSS, 6-32 UNC x 3/8"	
10	402830	2	Screw, SHSS, 6-32 UNC x 1/2"	
11	403050	2	Screw, FHCS, 8-32 UNC x 3/4"	
12	403510	2	Screw, BHCS, 8-32 UNC x 1/4"	
13	404510	2	Screw, BHCS, 10-32 UNF x 1/4"	
14	404520	2	Screw, BHCS, 10-32 UNF x 3/8"	
15	405250	2	Screw, SHCS, ¼-20 UNC x 3/4"	
16	436315	2	Dowel Pin, ¼" DIA. X 1 1/2"	
17	606323	1	Monitor Extension Cable, 6'	
18	9100116	1	Printhead Slide Block	
19	9100134	2	Dowel Pin, 5/16" DIA. x 3"	
20	9100141	1	Printhead Support Chip	
21	9100157	4	Hex Spacer, 4-40 UNC x 1/2"	
22	9100161	1	HP Printhead Mount	
23	9100163	2	Printhead Spring	
24	9100220	1	HP Interface Board	
25	9100221	3	Printhead Mount Upper Slide	
26	9100224	1	Printhead Slide Mount	
27	9100228	2	HP Pen Driver Board	
28	9100229	2	HP Printhead Latches	
29	9100250	1	HP Lower Retainer Block	
30	9100251	1	HP Upper Retainer Block	
31	9100252	1	HP Printhead Cover	
32	9100253	1	Access Panel	
33	9100255	1	HP Printhead Shield	
34	9100256A	1	HP Parking Plate Assembly	
35	9100257	2	Dowel Pin, 2mm DIA x 25mm	
36	9100260	2	HP Ink Cartridge	
37	9100262A	1	HP Printhead Power Cable	
38	9100294	2	HP Flex Cable	
39	9100439	1	Printhead Slide Locking Knob	
40	9100440	1	Brake Kit, 10 series	
41	9100468	2	Dowel Pin, 1/8" DIA. x 3/4"	
42	9100344	1	Reverse Printhead Plate (only on BK602-HR)	

Table A7: HP Printhead Assembly Reverse,	(BK602-HR-1) (3"system)
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Figure A8: Printhead Slide Mount Assembly (Bearing) (P/N 9100118A)

 Table A8: Printhead Slide Mount Assembly (Bearing) (P/N 9100118A)

ltem	Part Number	Quantity	Description	Reference
1	9100118	1	Rail Attachment Block	
2	414210	4	Screw, SHCS, M4 x 10	
3	405240	2	Screw, SHCS, 1/4-20 UNC x 5/8"	
4	706313	1	Twin Printhead Indicator	
5	404510	2	Screw, BHCS, 10-32 UNF x 1/4"	
6	404815	4	Screw, SHSS, 10-32 UNF x 5/16"	
7	438310	1	Locking Screw, 1/4-20 UNC x 1"	



Figure A9: Printhead Slide Mount Assembly (Extrusion) (P/N 9100224A)

 Table A9: Printhead Slide Mount Assembly (Extrusion) (P/N 9100224A)

Item	Part Number	Quantity	Description	Reference
1	9100224MEC	1	Printhead Slide Mount	
2	9100221	3	Printhead Mount Slide	
3	9100222	4	Shim Stock	
4	402020	4	Screw, FHCS, 6-32 UNC x 3/8"	
5	402030	2	Screw, FHCS, 6-32 UNC x 1/2"	
6	405250	1	Screw, SHCS, 1/4-20 UNC x 3/4"	
7	9100440	1	Brake Kit, 10 Series	
8	9100439	1	Printhead Slide Locking Knob	





Table A10:	Transport Drive	Roller Assembly (P/I	V 9100217A)
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ltem	Part Number	Quantity	Description	Reference
1	330603	1	Transport Belt Drive Block	
2	500055	2	Bearing, UBR204-12S, 3/4"I.D.	
3	9100217	1	Transport Driveshaft	
4	116309	1	Pulley, 18LBO75 X ¾" w/o shoulder	
5	436049	1	Spring Pin, 3/16" DIA X 1 7/8"	
6	106301	1	Vacuum Belt Drive Pulley	
7	106305	1	Twin Vacuum Belt Drive Pulley	
8	500055	4	Screw, SHCS M3	
9	405830	3	Screw, SHCS 1/4-20 UNF 1/2"	
10	9100188A	1	Shaft Encoder Assembly	
11	404807	1	Screw, SHCS, 10-32 UNF X 3/16"	
12	404050	4	Screw, FHCS, 10-32 UNF X 3/4"	

Appendix **B**

This section provides electrical schematics and drawings of the cables included in the BK660 HP upgrade kit. All cables included in the kit are listed in **Table B1** below. Some of them were installed in the factory being part of the upgrade assemblies.

Table B1:	BK660 HP Upgrade Coble List	B-2
Figure B1 <i>:</i>	Monitor extension cable (P/N 606323)	B-2
Figure B2:	HP Printhead power cable (P/N 9100262A)	B-2
Figure B3 <i>:</i>	5 VDC power cable (P/N 6140008)	B-3
Figure B4:	HP Power Supply Assembly Schematic	B-4
Figure B5:	Monitor extension cable (P/N 606323)	B-5
Table B2:	ASUS TX97Jumper setting	B-5
Figure B6:	ASUS TX-E Motherboard layout	B-6
Table B3:	ASUS TX97-E Jumper setting	B-6
Figure B7:	ASUS TXP4 Motherboard layout	B-6
Table B4:	ASUS TXP4 Jumper setting	B-7
Figure B8:	ASUS VX97 Motherboard layout	B-8
Table B5:	ASUS VX97 Jumper setting	B-8

Item	Part Number	Quantity	Description	Reference
1	606323	1*	HP Data cable	Figure B1
2	9100262A	1	HP Printhead power cable	Figure B2
3	614008	1	5 VDC Power cable (part of the HP power supply)	Figure B3

Table B1: BK660 HP Upgrade Coble List

* Quantity for 1" upgrade kit. For each extra HP printhead installed, an extra cable is supplied.

Figure B1: Monitor extension cable (P/N 606323)

The monitor extension cable should be connected to the video card at one end, and to the video cable that comes with the monitor at the other end, inside the inkwell cabinet. By disconnecting the power cable from the back of the monitor and the monitor cable from the monitor extension cable located inside the inkwell cabinet, the monitor can be easily removed from the console. The same cable is used to send the signal from the datapath card to the HP printhead. Connect one end to the datapath card and the other end to the appropriate HP printhead connector.

Figure B2: *HP Printhead power cable (P/N 9100262A)*



The cable supplies power from the 28VDC power supply, located underneath the HP Reservoir Assembly, to the printheads.

Figure B3: *5 VDC power cable (P/N 6140008)*

Connected inside the HP 28 VDC Power supply Connected to the computer power supply

The cable is part of the HP Power Supply Assembly. One end is connected inside the 28 VDC Power supply bracket. The other end has to be connected to a spare connector of the computer power supply.

Figure B4: HP Power Supply Assembly Schematic





Figure B5: ASUS TX97 Motherboard layout

 Table B2: ASUS TX97Jumper setting

CPU Model	Freq. MHz	Ratio	BUS F.	FS0	FS1	FS2	BF2	BF1	BF0
Pentium P55C	233	B-3.5x	66 MHz	[1-2]	[2-3]	[2-3]	[]	[1-2]	[1-2]



Figure B6: ASUS TX-E Motherboard layout

Table B3:	ASUS	ТХ97-Е	Jumper	setting
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CPU Model	Freq. MHz	Ratio	BUS F.	FS2	FS1	FS0	BF2	BF1	BF0
Pentium P55C	233	B-3.5x	66 MHz	[2-3]	[2-3]	[1-2]	[]	[1-2]	[1-2]

Figure B7: ASUS TXP4 Motherboard layout



Table B4: A	SUS TXP4	Jumper	setting
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CPU Model	Freq. MHz	Ratio	BUS F.	FS0	FS1	FS2	BF0	BF1	BF2
Pentium P55C	233	B-3.5x	66 MHz	[2-3]	[1-2]	[2-3]	[1-2]	[1-2]	[]





Table B5: ASUS VX97 Jumper setting

CPU Model	Freq. MHz	Ratio	BUS F.	FS2	FS1	FS0	BF1	BF0
Pentium P55C	233	B-3.5x	66 MHz	[2-3]	[1-2]	[2-3]	[1-2]	[1-2]