

Hyperion-DC User's Guide

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Buskro Ltd.

1738 Orangebrook Court, Unit #1

Pickering, ON, L1W 3G8

Canada

Tel.: (905) 839-6018

Fax: (905) 839-6023

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Manual History

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1.0	27-Feb-09	Manual Release	N/A

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1.1 Description

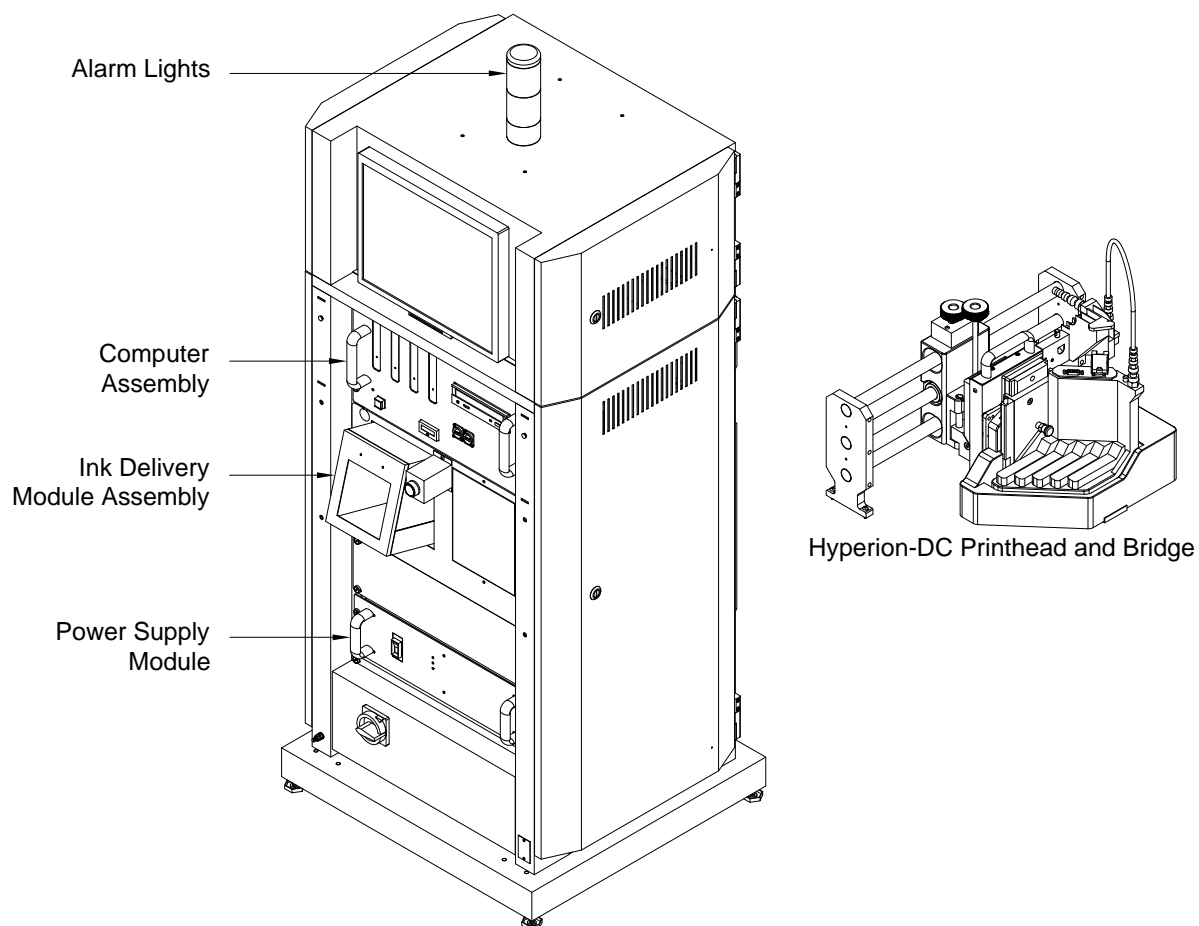
The Hyperion-DC printheads are based on Thermal Ink-Jet (TIJ) technology that utilizes multiple ink pens to provide a nominal print coverage of 4.25 inches (108 mm) per printhead. Up to four Hyperion-DC printheads can be stitched together to provide a maximum of 17 inches of print (432 mm) per controller.

The Hyperion-DC (Hyperion Direct Connect) replaces the original Buskro Hyperion system. The main difference is that the Imager Controllers have been replaced with a Buskro board known as the Hyperion System Bridge (HSB). This significantly reduces the required hardware. In the original Hyperion system, one Imager Controller was required for each printhead, and each Imager Controller was networked to the Buskro computer equipped with Compose IQ. In the Hyperion-DC system, two Imager Controllers are replaced with a single HSB board to provide greater reliability by having the Printheads connect directly to the Buskro computer. This also reduces physical space requirements to allow a single Buskro Hyperion-DC controller to support up to four printheads (as opposed to two with the original Hyperion).

In addition to improving reliability, the Hyperion-DC also has the advantage of utilizing Compose IQ features that were previously unavailable in the original Hyperion design. This includes combining Hyperion-DC printheads with other print technologies such as Atlas, Aurora, or Apollo-4C as well as accessing advanced features such as OCR, verification, or tracking applications. Hyperion-DC is also capable of gapless printing whereas the original Hyperion had a minimum Top Of Form (TOF) distance of five inches and a minimum image space of 0.5 inches. The speed at which the maintenance sequence is performed has also been improved.

1.2 Specifications

1.2.1 System Components



1.2.2 Dongle License

Table 1-1: Hyperion-DC Dongle License

No. of Printheads	Dongle License	Description
1	BKLI-MCIQ-3	Software License, Compose IQ, Master, 3 Channel
2	BKLI-MCIQ-6	Software License, Compose IQ, Master, 6 Channel
3	BKLI-MCIQ-9	Software License, Compose IQ, Master, 9 Channel
4	BKLI-MCIQ-12	Software License, Compose IQ, Master, 12 Channel

1.2.3 Printhead

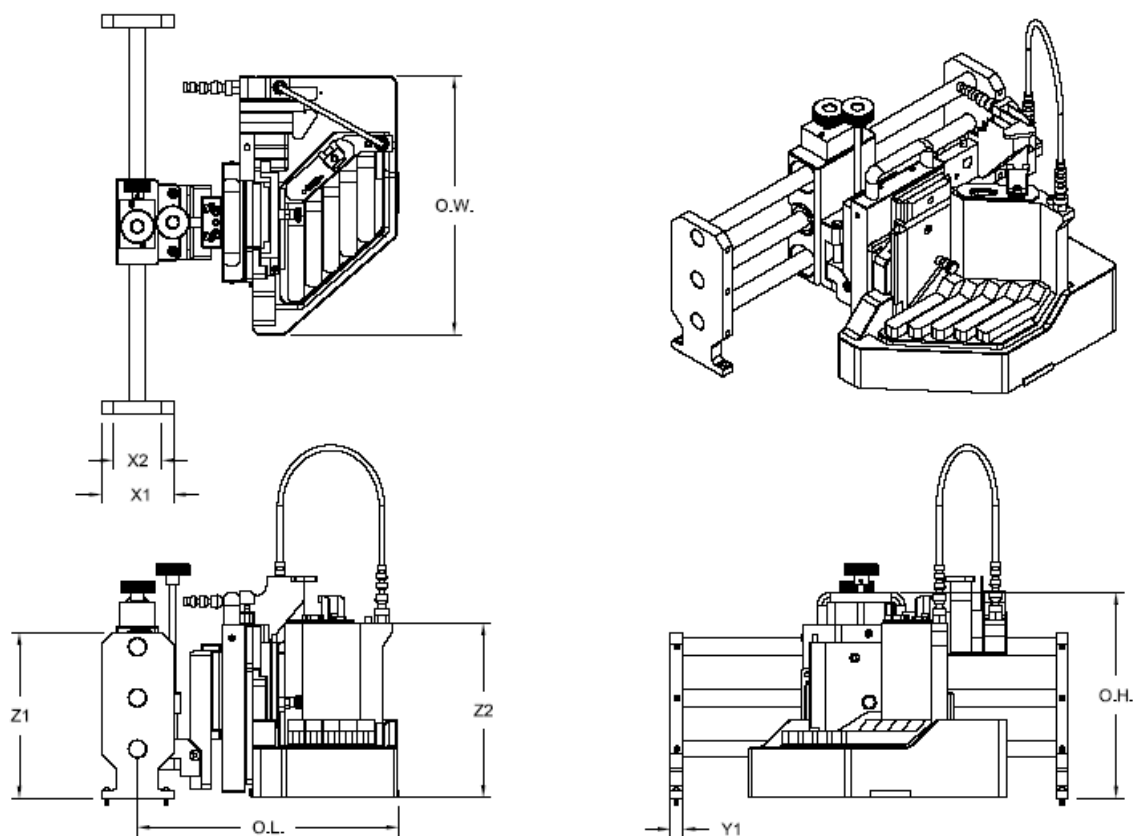


Table 1-2: Hyperion Printhead Dimensions

Symbol	Description	Dimensions	
O.W.	Overall Width	15.19"	386 mm
O.L.	Overall Length	15.39"	391 mm
O.H.	Overall Height	12.09"	307 mm
X1	Bridge Rail Mount Length	4.25"	108 mm
X2	Bridge Rail Mount Screw Spacing	2.90"	74 mm
Y1	Bridge Rail Mount Thickness	0.75"	20 mm
Z1	Bridge Rail Mount Height	9.75"	248 mm
Z2	Height to top of Printhead	10.27"	261 mm

Table 1-3: Printhead Specifications

Item	Specification	Note
Print swath – Vertical	4.25" (108 mm)	Nominal value
Vertical Resolution	600 DPI	
Horizontal Resolution	300, 400, 600 DPI or 330, 440, 660 DPI	Software-selected
Ink Supply	Bulk Ink System (775 mL)	Up to two Cartridges per supply
Ink Type	Pigmented, water based	
Printhead Type	Thermal ink-jet (TIJ)	

1.2.4 Consumables

 A black plastic printhead assembly with a white label that reads "Black Printhead".	Printhead Pen HP Black 4240 P/N 9104555
 A yellow plastic printhead cleaner with a grey handle and a label that reads "Black 4240 Pigment Printhead Cleaner".	Printhead Cleaner HP Black 4240 P/N 9104552
 A large, grey ink cartridge with a black label that reads "HP Black 4240 775 mL".	Ink Cartridge HP Black 4240, 775 mL P/N BKINK-HYPBK775
 A grey plastic printhead setup pen with a red label that reads "HEWLETT-PACKARD Setup Printhead" and includes a warning: "Do not remove this setup printhead before the printer has completed the priming procedure. (See Setup Guide, Chapter 4)".	Printhead Setup Pens P/N 9104554

2.1 Hyperion-DC

The Hyperion-DC printheads are based on Thermal Ink-Jet (TIJ) technology. Each printhead utilizes five replaceable ink pens to provide a nominal print coverage of 4.25 inches (108 mm). Up to four Hyperion-DC printheads can be stitched together to provide a maximum of 17 inches of print (432 mm) per controller. Some general features of the Hyperion-DC are:

1. Automatic maintenance station
2. Automatic switching between bulk ink supplies for uninterrupted operation
3. Individual height control for each printhead (for material up to 1.25" thick)
4. Software based internal head alignment for quick setup
5. Convenient access for maintenance and service.

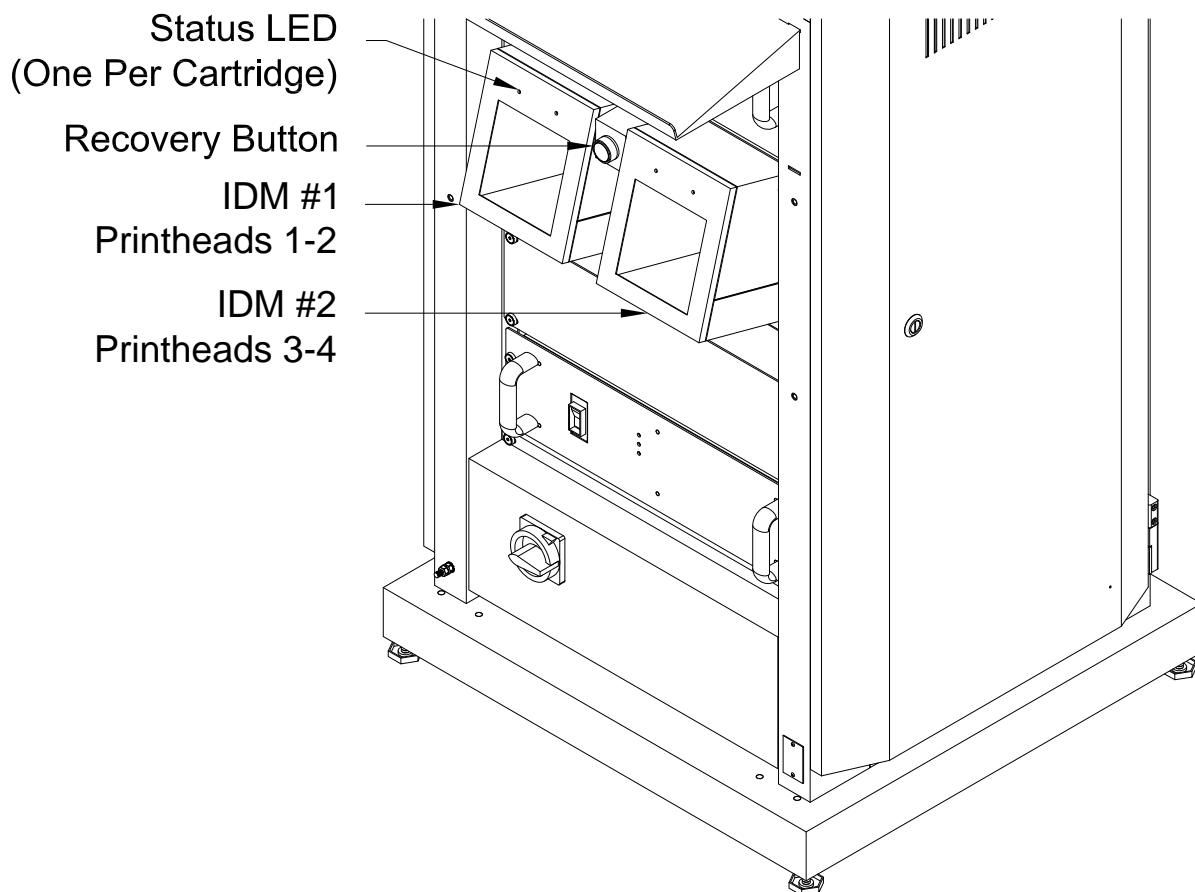
2.1.1 Ink Delivery Module

The Hyperion-DC Ink Delivery Module (IDM) supports up to two 775 mL bulk ink cartridges for one or two Hyperion-DC printheads. For three or four Hyperion-DC printheads, a second IDM is required. The bulk ink cartridges can be “hot-swapped” to allow the operator to change the empty cartridge while using the second full cartridge. This allows printing to continue without interruption while installing a new ink cartridge.

On the front of each IDM above each cartridge is a status LED. This indicates the various states of the inserted cartridge.

Table 2-1: IDM LED Meaning

Color	LED Meaning
None	No cartridge inserted or cartridge not detected
Red	Inserted cartridge is empty of ink
Yellow	Inserted cartridge is the inactive cartridge and will be used next
Green	Inserted cartridge is the active cartridge and is operating normally

Figure 2-1: Hyperion-DC IDM

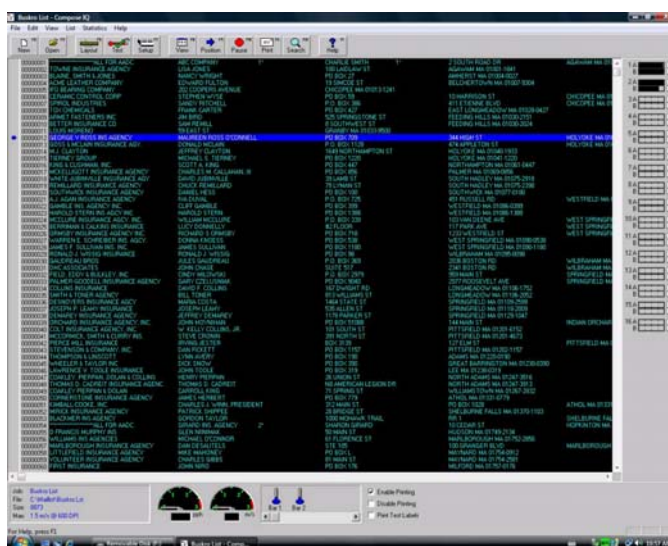
Note: Do not attempt to remove a bulk ink cartridge while it is being used. A cartridge is in use when the status LED is green and the printhead is in the print (down) position. When it is in use, the cartridge is pressurized and will expand, making it difficult to remove from the IDM. Never force a cartridge out of the IDM.

The bulk ink cartridge can be removed when the status LED is yellow or red or when the power is off. If the LED is green, it can only be removed if the Printheads are in the parked (up) position.

The Hyperion-DC printhead must be placed within 1m (39.37") below or 0.5 m (19.69") above the IDM for proper operation.

During the initial setup of the Hyperion system, the ink lines from the IDM must be primed properly. This procedure is described in Section 3.2.

To assist in monitoring the ink level in the cartridges, Compose displays the approximate ink level in the top right corner of the screen (two IDMs are shown):



2.1.2 Recovery Button

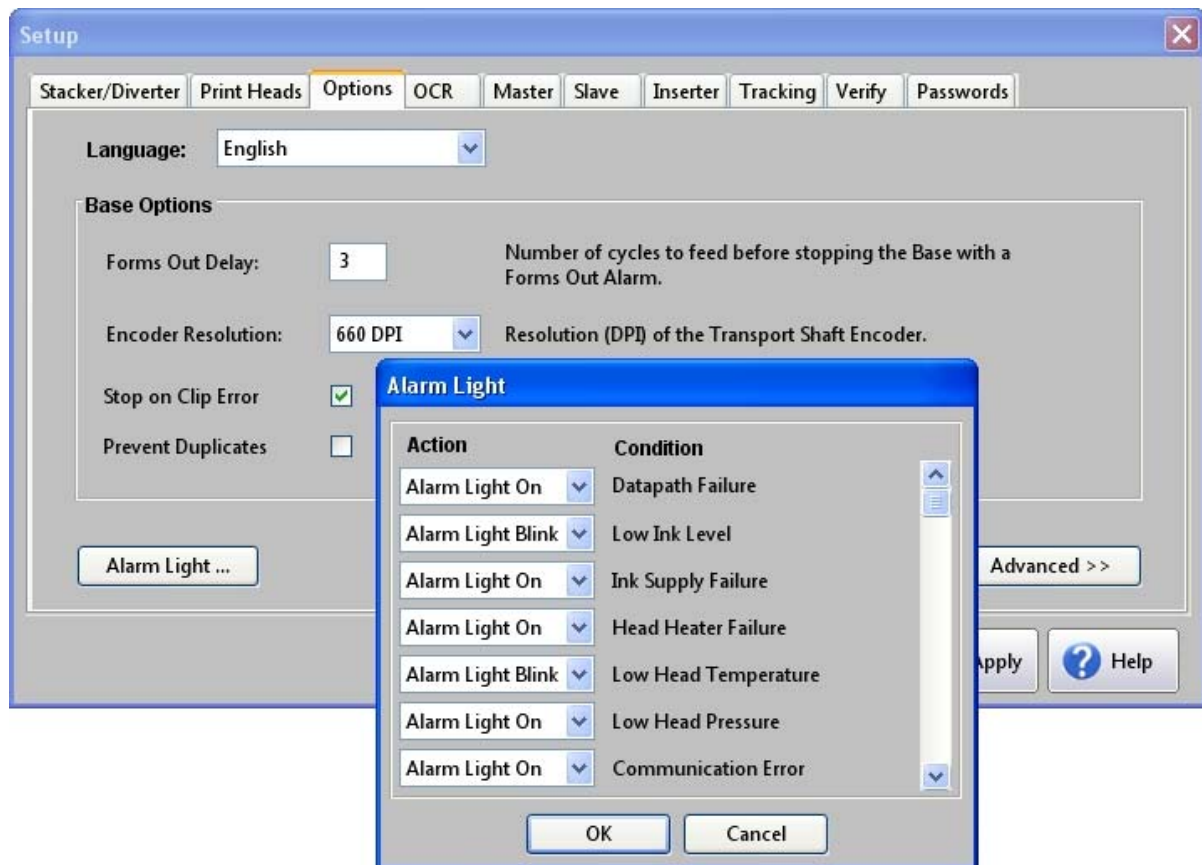
The recovery button is located between the Ink Delivery Modules (Figure 2-1). It is used to move the printhead into the printing position. It can only be used when Compose IQ is running. The recovery button is normally connected to the “Spare” input of the Field Connection Board (on the Buskro Computer) but can also be connected to “Photo 2” if set properly by a Buskro Technician. The printheads automatically move back into the parked position after a user selectable timeout without operation (Section 4.2.8).

Note: To use the “Spare” input for the Recovery button, set MprinterUnparkInput = 0 in the Compose4.ini file. To select “Photo 2”, set MprinterUnparkInput = 1. The Compose4.ini file should only be edited by a trained technician as improper changes to the .ini file can cause multiple problems.

2.1.3 Status Alarm Stack Lights

The status alarm lights are physically located on the top of the controller. It is used to display the current status of the system at a distance. It for example can be used to display error states. The meaning of the lights (e.g. solid or blinking) can be adjusted in Compose based on user preferences in the setup menu (Figure 2-2).

Figure 2-2: Alarm Light Setup



2.2 Mechanical Components

The Hyperion-DC printhead assembly consists of two basic elements: The printhead body (main housing for the electronics and the cartridges) and the mounting assembly (connects the printhead body to the bridge).

2.2.1 Adjustments

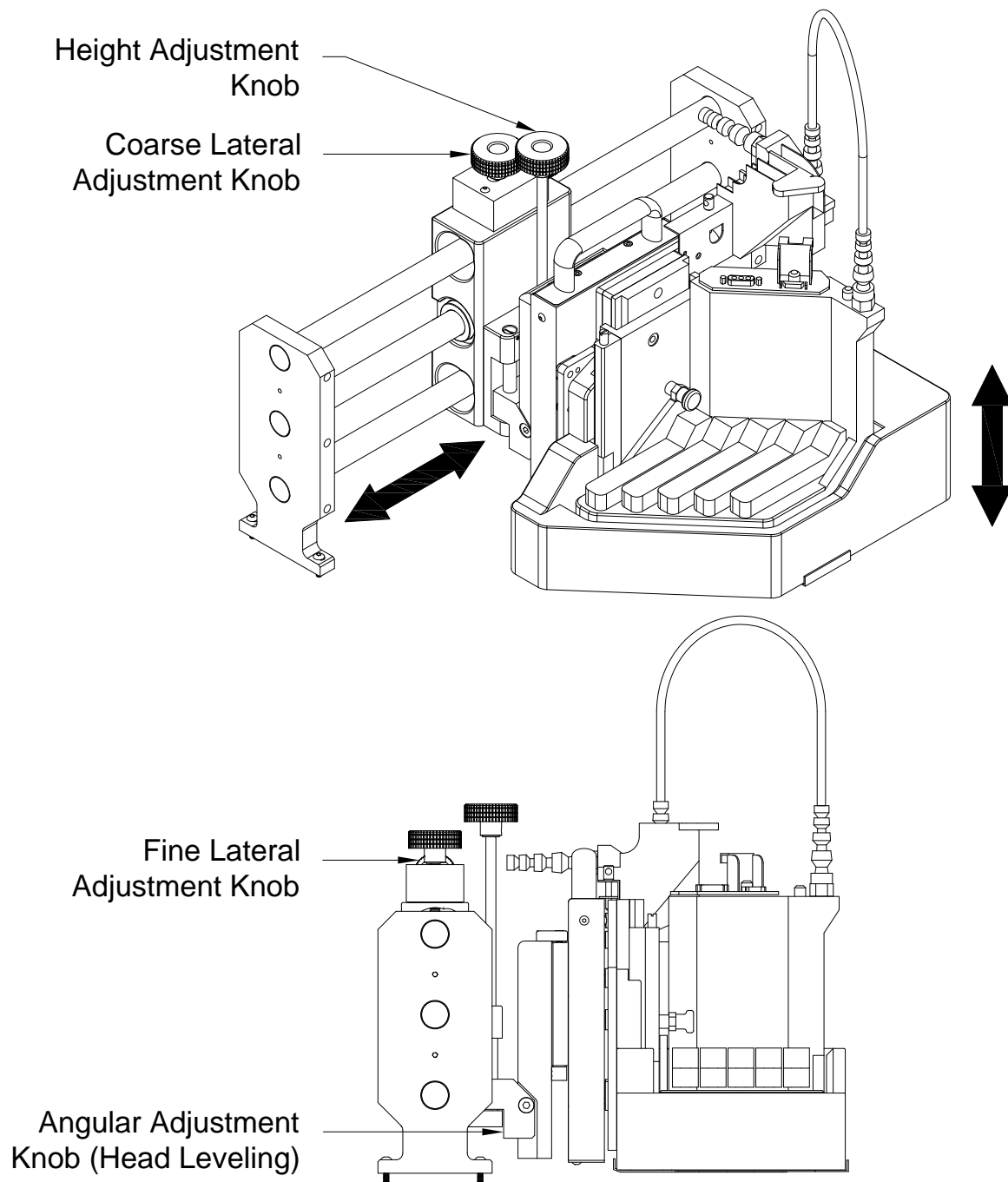
The Hyperion-DC printhead can be adjusted laterally, vertically, and angularly (Figure 2-3). Lateral adjustment (along the length of the bridge) is accomplished by turning the Coarse Lateral Adjustment Knob and sliding the printhead to the desired location. Once in position, the knob is tightened to lock the printhead in place. The Fine Lateral Adjustment Knob allows incremental movements on either side if more precision is required.

Height adjustment is achieved by turning the Height Adjustment Knob. A clockwise rotation raises the printhead while a counter-clockwise rotation lowers it. The adjustment provides the ability to accommodate material as thick as 1.25 inches and allows for fine adjustment to maximize the quality of print. This is done by lowering the printhead as close to the material as possible without interfering with product flow.

Note: Hyperion-DC printheads contain a crashplate that is lowered when the printhead is in the printing position, along with the print pens. Care should be taken to ensure that there is sufficient clearance between the material/transport tabletop and the printhead when adjusting the height.

Fine tuning of the distance between the printhead and the material should be conducted when the printhead is in the print position (after the Recovery button is pressed – Section 2.1.2).

Angular adjustment is also known as printhead leveling and is adjusted by turning the Head Leveling Screw. A clockwise rotation increases the tilt angle (T.A.) while a counter-clockwise rotation decreases it. The optimum results will be achieved when the printhead is parallel to the transport tabletop.

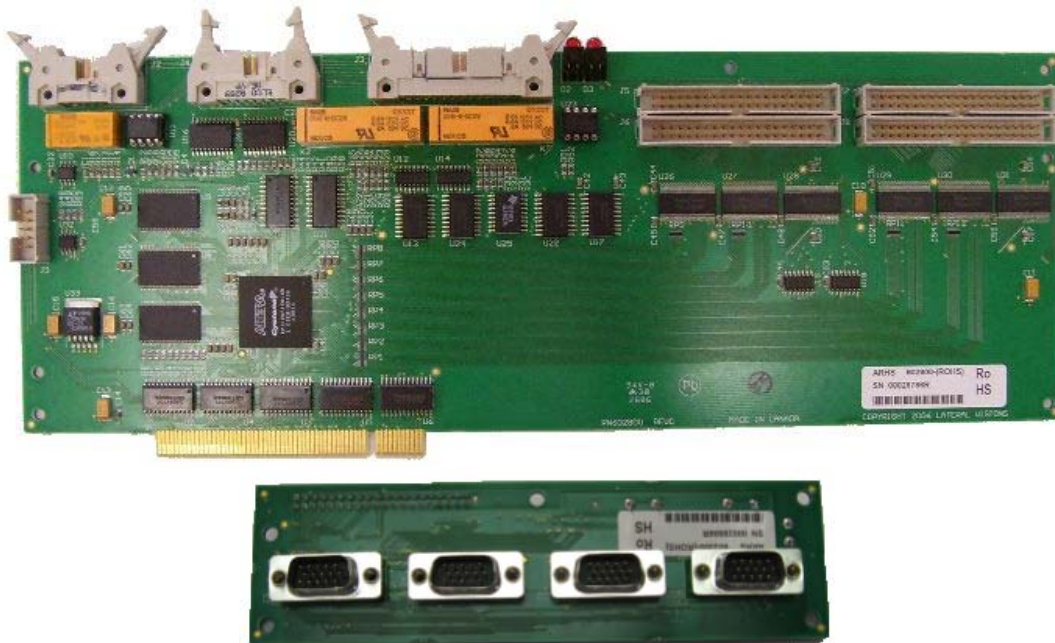
Figure 2-3: Hyperion-DC Printhead Adjustments

2.3 Image Accelerator Card

The Hyperion-DC system requires an Image Accelerator Card and at least Windows Vista. The Image Accelerator (Figure 2-4) card connects to the motherboard through the PCI Bus and performs the following functions:

- When a Buskro transport base is present, interfaces with the Base Interface board or Base control board to receive sensor inputs from the base.
- Where a Buskro transport base is present, interfaces with the Base Interface board or Base control board to control the base and conveyor.
- Provides a communication port for control and monitoring of the “life” support elements.
- Receives configuration information from Compose IQ.
- Transmits status information to Compose IQ, the inkjet control software.
- Controls printhead firing sequence.
- Transfers image data via the data ports.

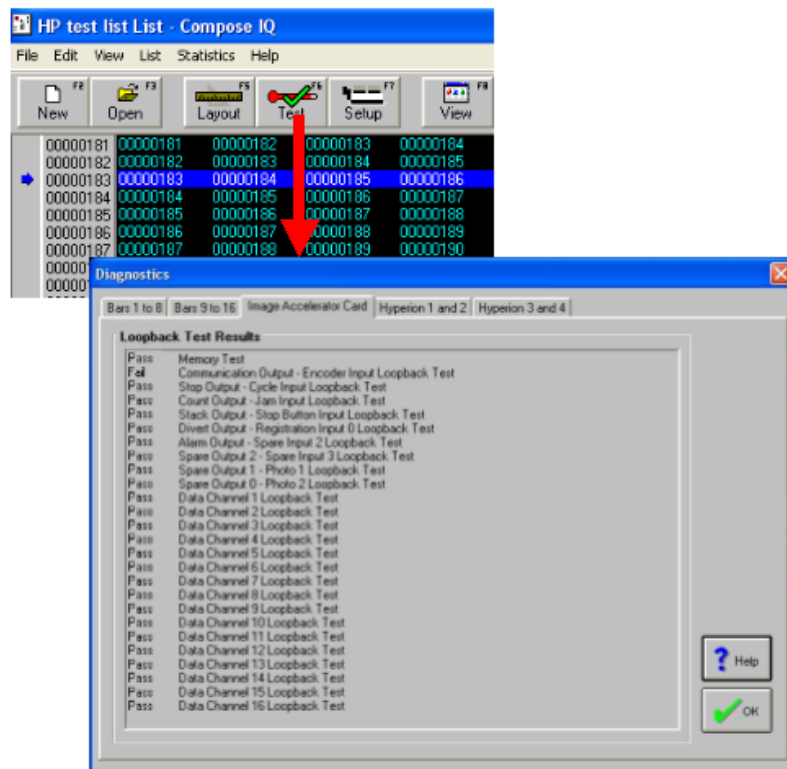
Figure 2-4: Image Accelerator Card with HeadIF Board



2.3.1 Image Accelerator Card Diagnostics

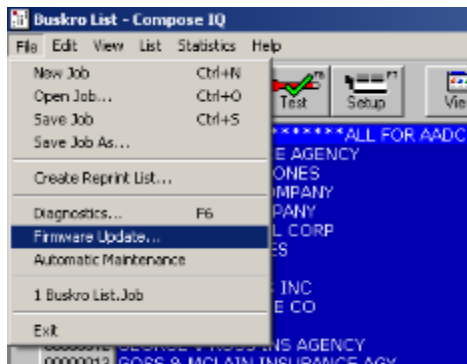
The Image Accelerator Card has the ability to diagnose itself to assist with troubleshooting. It is able to test its internal memory, all inputs and outputs, and all the data channels (print ports). This can be accessed through the Test / Diagnostics screen (Figure 2-5).

Figure 2-5: Image Accelerator Card Diagnostics



2.3.2 Image Accelerator Card Firmware Updates

With Buskro's new line of electronics (Image Accelerator Card, HP Interface Board II, and SSB CPU II), firmware updates can be made directly through Compose (Figure 2-6). This simplifies the upgrade process by eliminating the need to replace a hardware EPROM for each firmware change. Note that the Hyperion System Bridge firmware is updated separately in the Diagnostics screen (Section 2.4.1).

Figure 2-6: Firmware Update

The firmware update procedure is as follows:

1. Choose “**File**” then “**Firmware Update**”. The current firmware version is displayed in the dialog box. The “**Update**” button is only enabled for existent boards.
2. To update the Image Accelerator Card, press the “**Update**” button beside “**Accelerator FPGA**”. The update takes approximately 30 seconds to complete. The update progress is displayed in the progress bar.

Note: NEVER interrupt a Firmware update. If the update does not complete successfully, retry the update.

2.4 Hyperion System Bridge

The Hyperion System Bridge (HSB) is a board that interfaces the Hyperion-DC printheads and IDMs to the Image Accelerator Card and Buskro Computer. It is mounted inside the Buskro Computer assembly.

Figure 2-7: Hyperion System Bridge (HSB)



Note: To set the HSB to operate for Hyperion Heads 1 and 2, set position 1 on the DIP switch to OFF. To set the HSB to operate for Hyperion Heads 3 and 4, set position 1 on the DIP switch to ON.

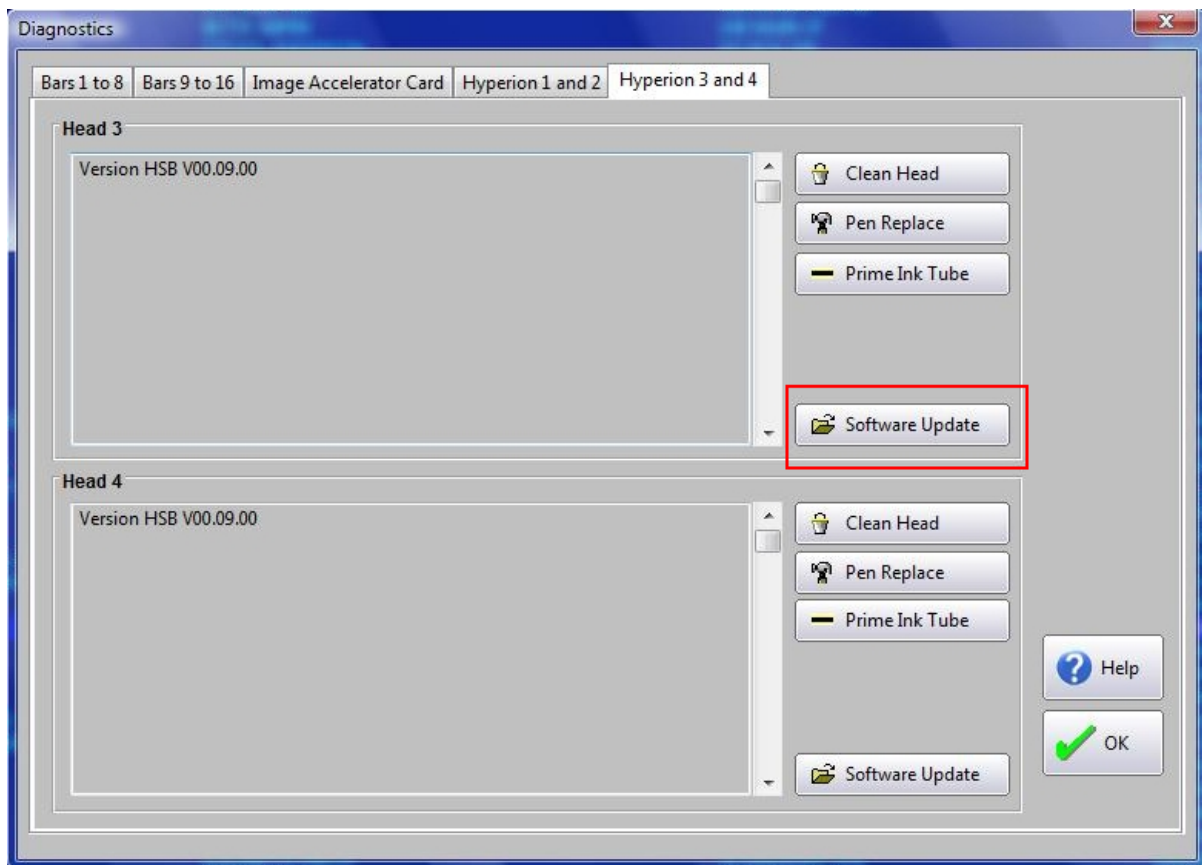
2.4.1 HSB Firmware Updates

On occasion, HSB firmware updates are made available with newer versions of Compose. In order to update the firmware (Figure 2-8):

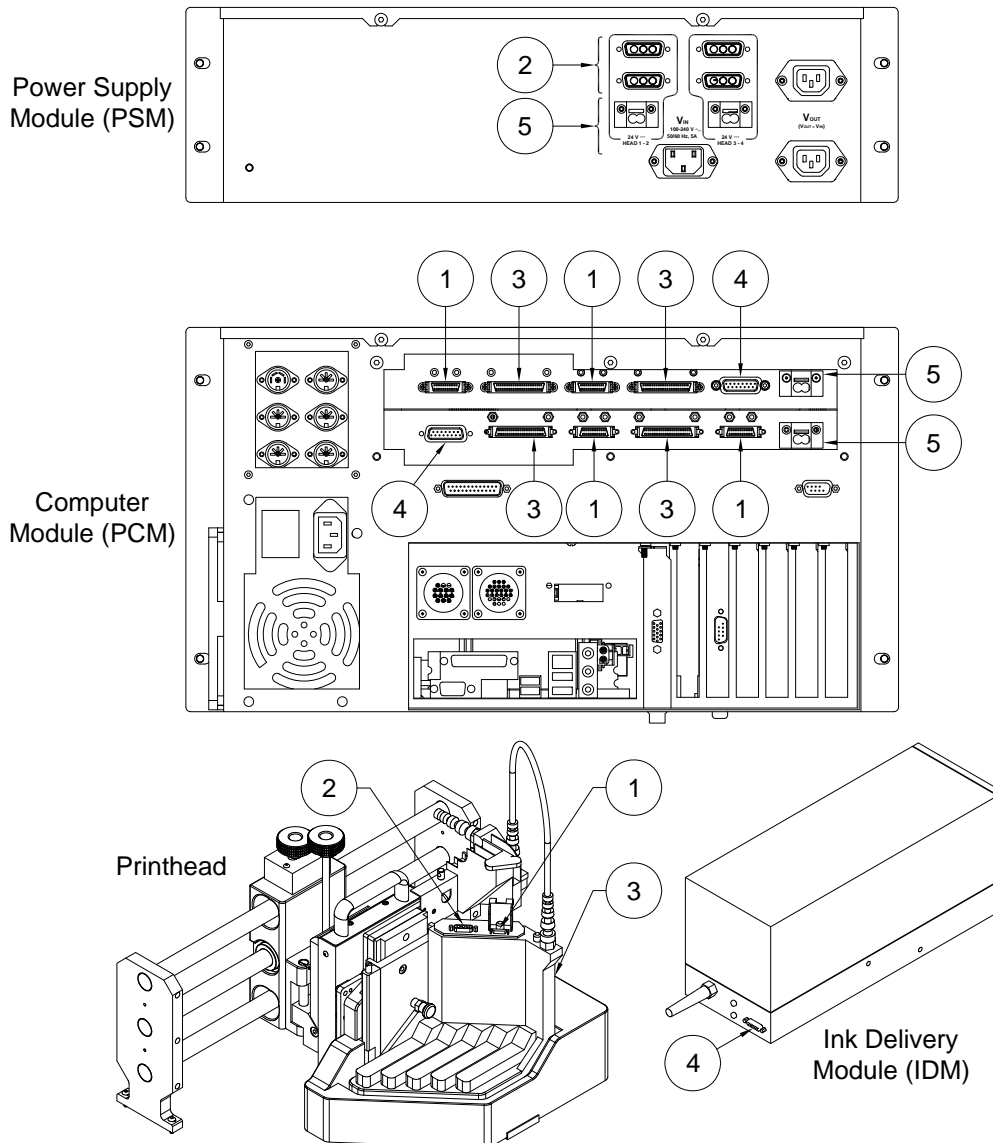
1. Press the “Test” (F6) button to enter the “Diagnostics” screen.
2. Select “Hyperion 1 and 2” Tab or “Hyperion 3 and 4” for the second HSB.
3. Press “Software Update”.

Note: The firmware update can take 20 to 30 minutes. Do not interrupt this process.

In systems with three or more Hyperion-DC printheads, there are two HSBs. Each board must be updated separately. This means the “Software Update” must be run for “Hyperion 1 and 2” as well as “Hyperion 3 and 4” separately. Once it is completed, the new HSB version should be displayed in the Diagnostics screen (Figure 2-8).

Figure 2-8: HSB Firmware Update

3.1 Hyperion-DC Cable Connections



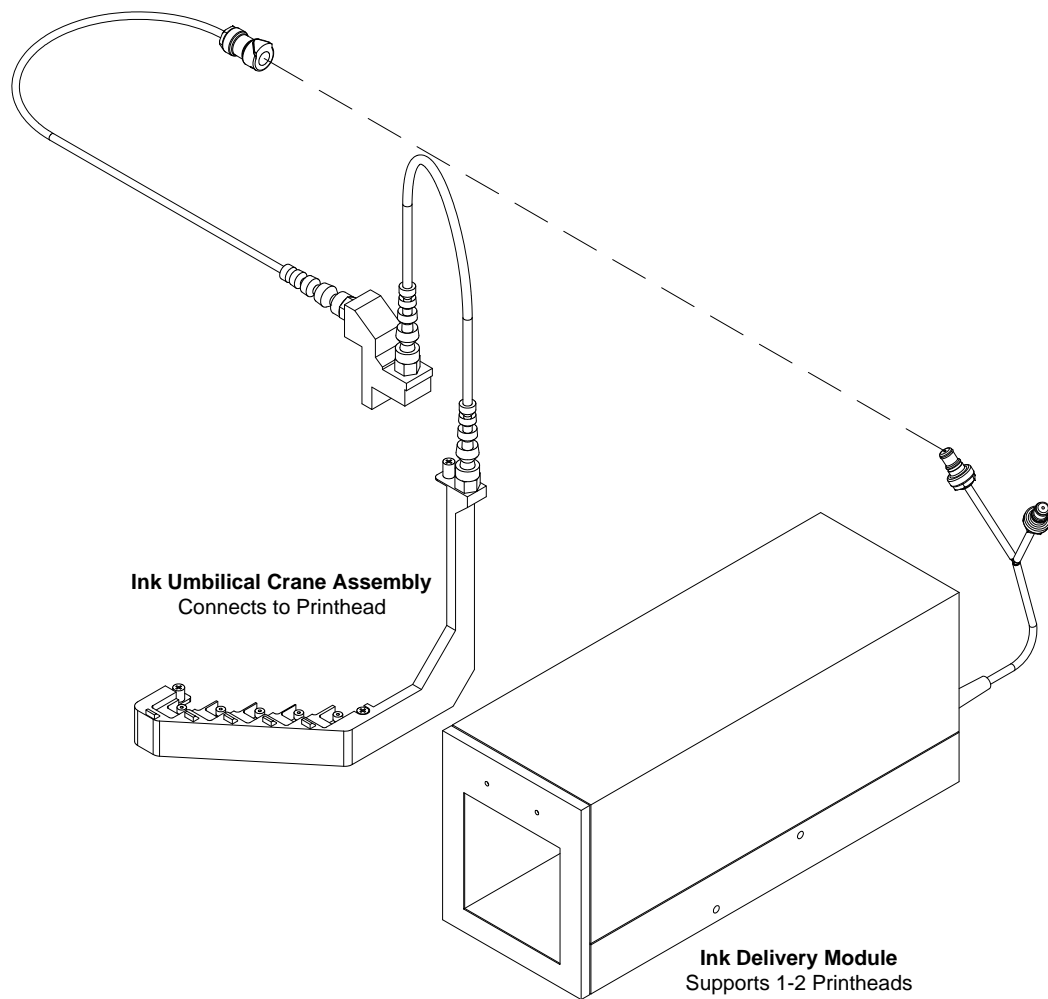
Item	Description	Cable P/N
1	Isolated Head Data Interface (1 per Printhead)	Part of 9104551A
2	Isolated Head Power Interface (1 per Printhead)	Part of 9104551A
3	Service Station Interface (1 per Printhead)	Part of 9104551A
4	Ink Delivery Module Interface (1 per IDM)	Part of 9104551A
5	HSB to Power Supply Module Cable (1 per HSB)	9104670A

Note: Never connect or disconnect cables with the power on or damage can occur. Ensure that the strain relief brackets (P/N 9105133 and 9105134) are attached to secure the Data and Service Station cables (Items 1 & 3) on both the Printhead and Computer ends.

3.2 Installing an Ink Line

Each Ink Delivery Module is capable of supporting one or two Hyperion-DC printheads. The Ink Umbilical Crane attaches to the Printhead while the ink line connects to the Ink Delivery Module. When first installed, the Ink Umbilical Crane is empty of ink. As a result, a priming process is required to fill the line with ink and remove excess air.

Figure 3-1: Ink Delivery Module and Ink Umbilical Crane



3.2.1 Ink Line Priming

The purpose of priming the ink line is to remove air from the tubing and fill the line with ink. It is a one-time process for each new Ink Umbilical Crane. This process is not required when the ink pens or cleaners are replaced. The process is as follows:

1. Turn off all power to the system (main power switch at the bottom of the controller).
2. Install new setup/startup pens (5 per printhead – P/N 9104554) into the printhead(s) with the empty Ink Umbilical Crane. **Ensure that the printhead LEDs are all off prior to inserting or removing pens from the printhead.** In the case where one of the two printheads connected to the Ink Delivery Module is already filled with ink (e.g. a previously installed printhead), setup pens are only required for the printhead with the empty ink line. Regular print pens can remain in the other printhead.
3. Install a non-empty Ink Cartridge into the Ink Delivery Module.
4. Load Compose and press the “Test” (F6) button to enter the “Diagnostics” screen.
5. To prime the ink line for the first or second Hyperion-DC printhead, select the “Hyperion 1 and 2” tab. To prime the ink line for the third or fourth Hyperion-DC printhead, select the “Hyperion 3 and 4” tab.
6. Press the “Prime Ink Tube” button and follow the instructions (Figure 3-2). Since the setup/startup pens were previously installed, press “Continue” when prompted to install startup pens. Although two printheads are attached to one IDM, this procedure is required separately for each printhead with a new Ink Umbilical Crane.
7. Close the latches after installing the setup pens. This ensures that the setup pen will not unseat during priming.
8. Observe the physical progress of the ink as it flows through the tube from the Ink Delivery Module to the printhead. Once ink flows through the tube to the printhead, wait approximately one minute before opening the latch. The ink should be visible in the window of the setup printheads (Figure 3-3). Ink should completely fill the window when the priming procedure is complete.
9. When prompted by Compose, replace the setup pens with print pens.

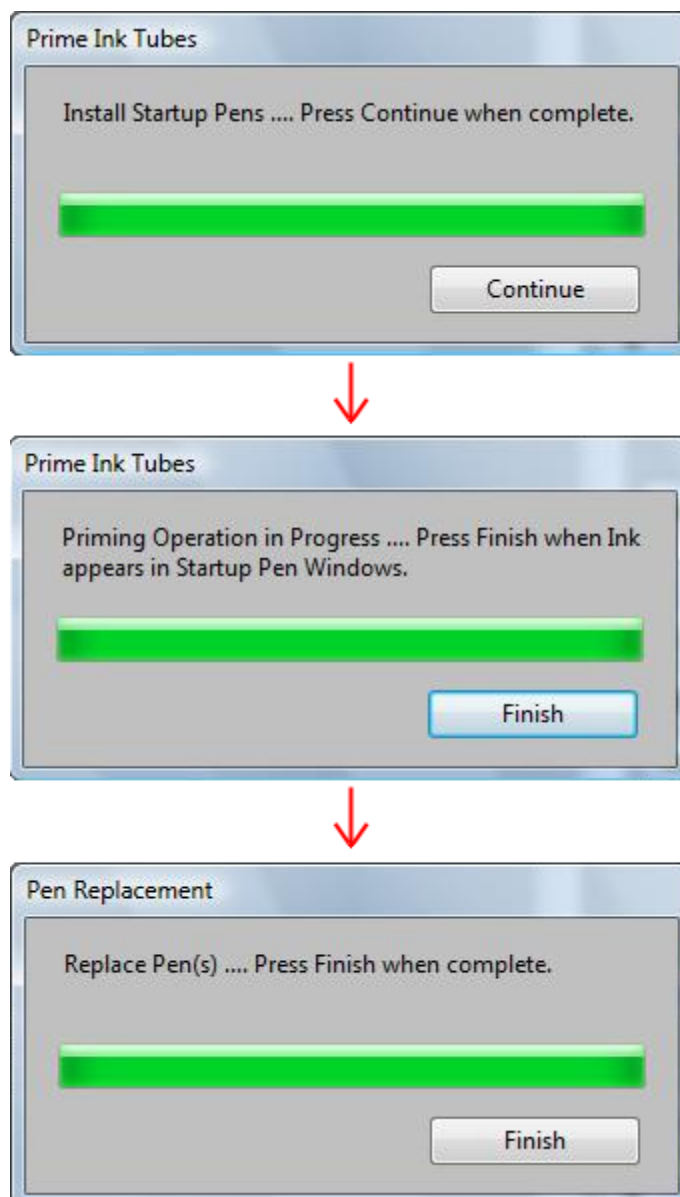
Note: Never add or remove pens (ink or setup) from a printhead with the power on. If this is done, it can cause damage to the pen or the printhead electronics. Only remove the pens when prompted to do so by Compose through the “Pen Replace” or “Prime Ink Tube” procedure. In this procedure, Compose will remove power and the LEDs above each pen will turn off.

If a printhead LED turns on while inserting a pen, stop immediately and turn off power to the system before removing or adding pens.

The “Prime Ink Tube” procedure must be run one printhead at a time. This is because of error checking and calibration that is performed on the printhead at the completion of the process.

The setup pens are designed to seal once ink fills the window. As a result, they can only be used once.

Inserting print pens in a printhead with an empty ink umbilical prior to priming will cause air to enter the pens which will lead to a shorter lifespan for the pen.

Figure 3-2: Setup / Startup Pen Procedure*Figure 3-3: Setup Pen Window*

3.3 Software Setup and Adjustment

3.3.1 Windows Vista Setup

All Hyperion systems require Windows Vista or higher. It is installed and configured at the factory. In order to install and configure Windows Vista, the following steps should be taken:

1. Acrobat Reader (V8.00 or higher) must be installed before UAC is disabled. The Acrobat Reader is included on the installation CD under D:\Acrobat.
2. Install Xentient Thumbnails software to get thumbnails of the Color Clipart WMF files. The Xentient Thumbnails software is included on the installation CD under D:\Xentient.
3. User Access Control (UAC) will prevent the Buskro RIP driver from operating. UAC must be disabled in the User Profiles Control Panel applet.
4. When UAC is disabled there is a bubble that appears that should be disabled in the Security Control Panel applet.
5. Leave the dongle OUT until Vista is installed, and Compose is installed. If the dongle is not recognized, make sure it is deleted if it appears as an Unknown Device in the Device Manager.
6. Set the power options so that the system does not hibernate, in the Power Options Control Panel applet (choose high performance). The Image Accelerator Card software is 'forgotten' if the system hibernates ... and the computer will need to be re-booted.
7. Set the Default Printer to Microsoft XPS Document Writer. This will cause Compose reports to be generated as XPS documents. XPS documents are Microsoft's competition to Adobe PDF. When the Compose report is saved as an XPS document, it can be viewed on any Computer with IE 7.0, or the free downloadable XPS viewer. An alternate approach would be to install a PDF writer on the Inkjet, and make it the default printer.

3.3.2 Compose IQ Setup

For more details including Printhead print adjustments, refer to Chapter 5.0.

4.1 General Maintenance

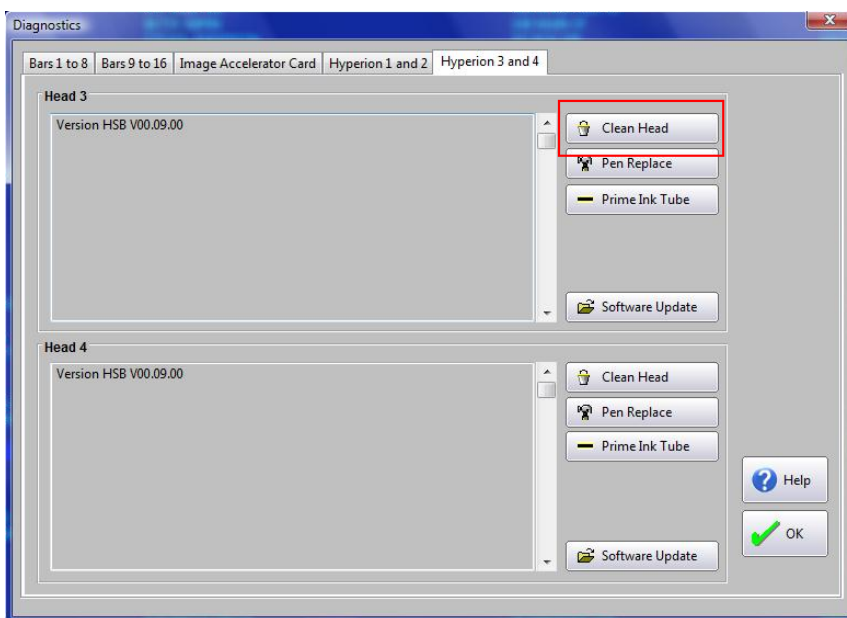
In order to obtain good print quality, the printheads must be properly maintained. During printing, ink and paper dust can build up on the printhead resulting in poor print quality. As a result, each ink pen must be properly cleaned. In general, each ink pen should be replaced after every 2.7L of ink that has gone through *each* ink pen.

4.2 Printhead Cleaning

4.2.1 Automatic Printhead Cleaning

The Hyperion-DC printhead comes equipped with an automatic service station that cleans the print pens with minimal user intervention. This process occurs automatically every time the printhead goes from the capped position to the printing position (e.g. pressing the recovery button). To force automatic servicing of a specific printhead, press the “Test” (F6) button to enter the “Diagnostics” screen, select “Hyperion 1 and 2” or “Hyperion 3 and 4” depending on which head needs to be cleaned, and press the “Clean Head” button for the corresponding Hyperion head.

Figure 4-1: Automatic Maintenance



Note: After an automatic cleaning, the printhead will be in the capped position. Press the “recovery” button to send the printhead into the printing position.

4.2.2 Manual Printhead Cleaning

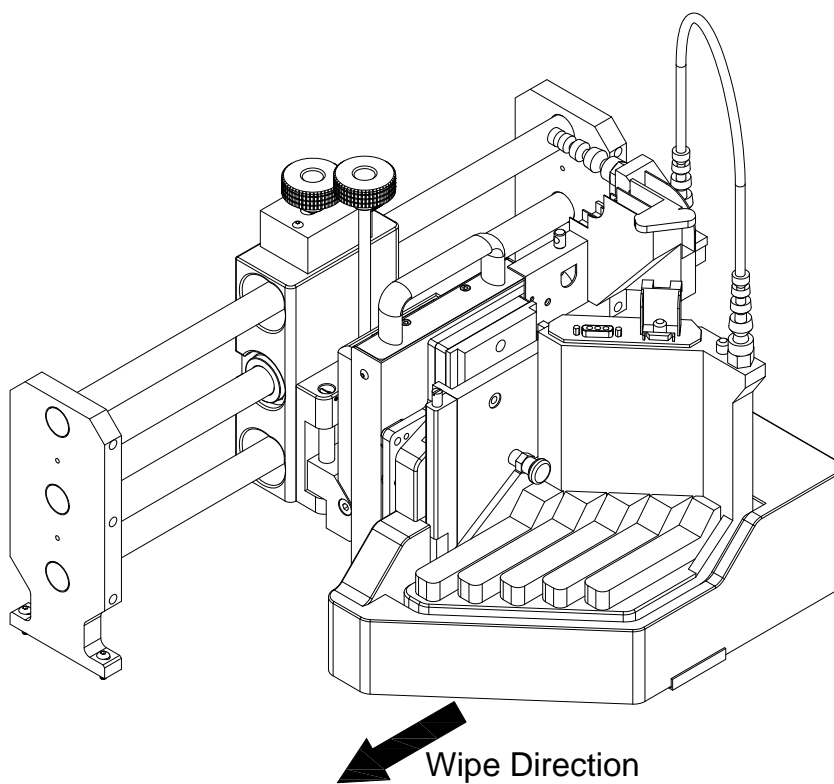
The general procedure for cleaning an ink pen is to wipe the printhead with a moist fibreless wipe. Only distilled or de-ionized water should be used to avoid mineral deposits from building up on the cartridge. When cleaning the printhead, the following must be considered:

1. Only use a soft, fibreless wipe with no chemical additives.
2. Wipe the cartridges in the direction of the nozzle rows (Figure 4-2).
3. Wipe the ink pens with the pens pointing down.
4. Do not apply heavy pressure while wiping. A gentle wipe is sufficient.

Note: Never shake, drop, or hit the ink cartridge. This can result in the formation of bubbles near the ink firing chambers that will result in poor print quality.

Never use industrial paper towels, toilet paper, or sponges to wipe the printhead. Only use soft, fibreless wipes. Wipes can be purchased through Buskro.

Figure 4-2: Wiping Head



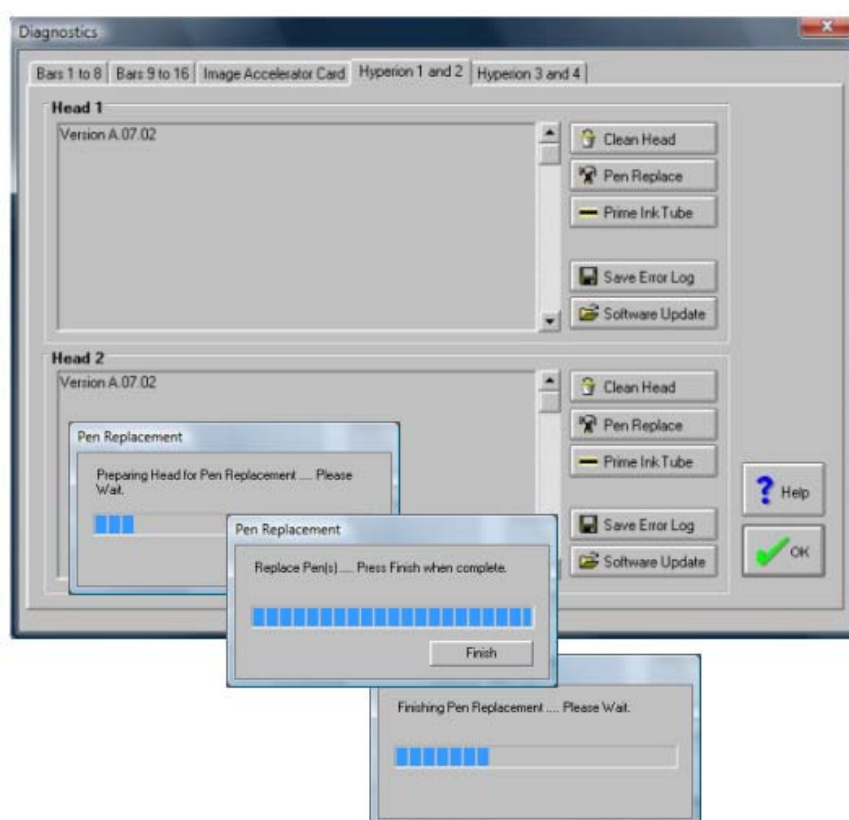
4.2.3 Interconnect Pad Cleaning

If needed, the interconnect pads on the pen can be cleaned with a fibreless wipe or Q-Tip moist with de-ionized water. However, it is important to ensure that the interconnect pad is dry before reinserting the pen back into the printhead (otherwise an electrical short may occur resulting in permanent damage).

4.2.4 Printhead Pen Replacement

To replace the printhead pens, use the “Pen Replace” feature in Compose IQ (found under the Hyperion tab of the “Test” or “Diagnostics” window) and follow the onscreen instructions.

Figure 4-3: Pen Replace



Note: NEVER swap the printhead pens while the Hyperion is powered on without using the “Pen Replace” button otherwise damage can occur to the printhead pen or the printhead electronics.

4.2.5 Cartridge Disposal and Clean-up

The ink cartridges can be disposed of in normal garbage. In the case of ink spills, soap and water is sufficient for cleaning. Lava brand soap is also known to be effective to remove ink from hands.

4.2.6 Service Station Maintenance

The print pen cleaner (installed below the print pens - Figure 4-4) used should be replaced whenever the associated print pen is replaced to ensure that the spittoon reservoir of the cleaner is not filled. Since there are no warnings provided when the spittoon is full, waste ink could potentially leak into the printhead itself. However, one could examine the PEG wick visually to determine if the spittoon is full.

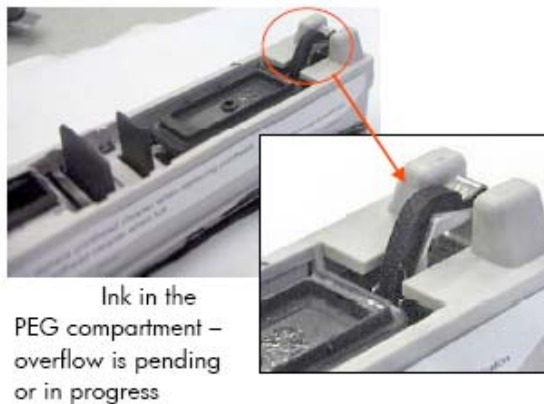
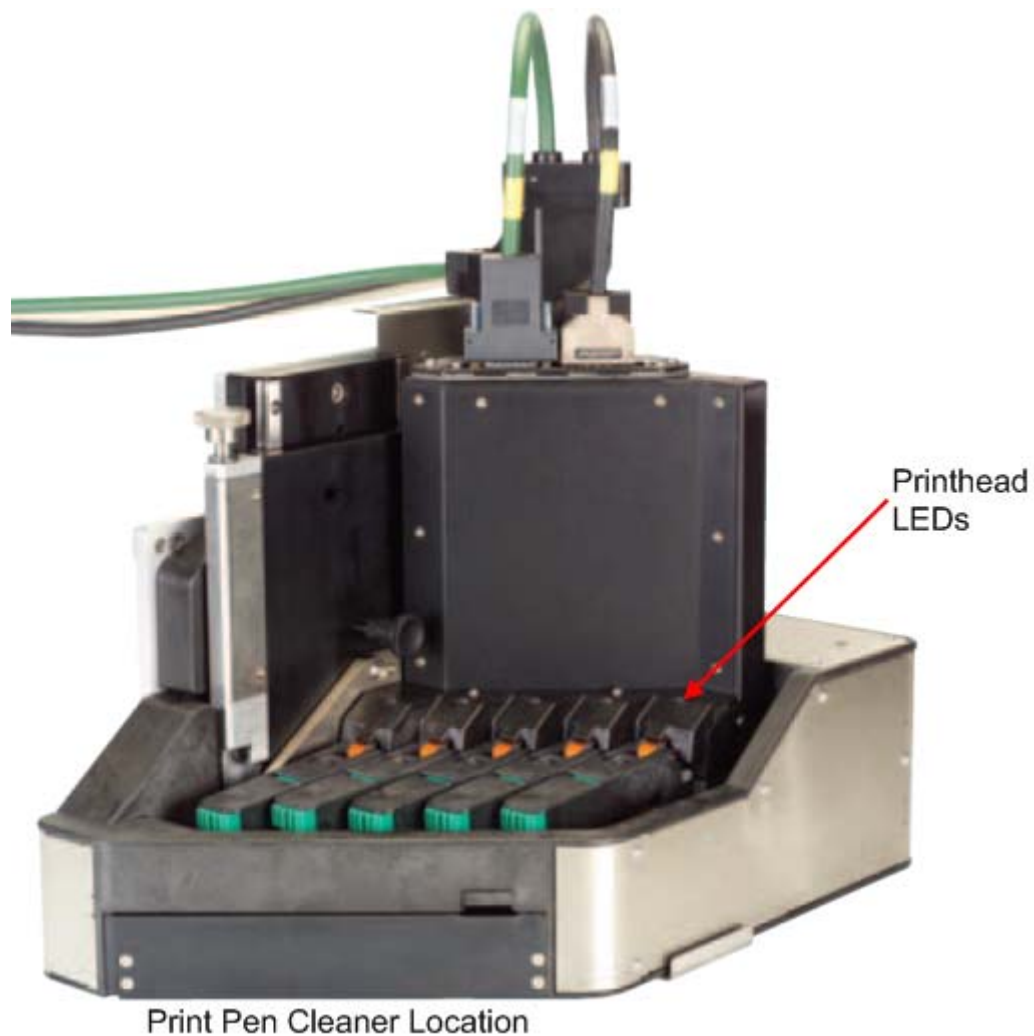


Figure 4-4: Hyperion-DC Printhead

4.2.7 Print Pen and Bulk Ink Storage

Operating Temperature	10°C to 30°C
Recommended Storage Temperature	10°C to 30°C
Operating Humidity	20 to 80% RH
Recommended Humidity	25 to 75% RH
Shelf Life (Install and use by date)	18 Months of storage while in original packaging
In Printer Life (Bulk Ink Cartridge)	30 Months after first installed if installed before the install by date

Note: Product Life dates are given as general information only and do not imply warranty.

For short-term storage (less than 2 days, 1 day if the environment is hot and dry), the pens can remain in the printhead. For long-term storage, remove the pens from the printhead and keep them in an area that is relatively free of dust and paper particles. In addition, the storage area should not be dry.

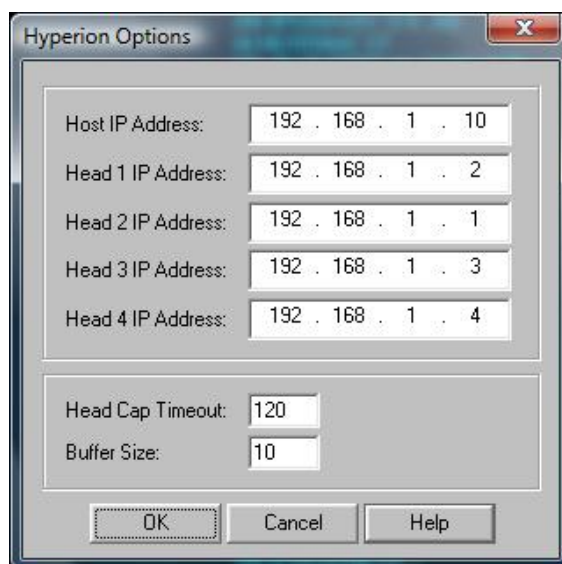
Note: One option for printhead pen storage is to place the cartridges in a Tupperware container with a damp sponge or towel to maintain humidity. This will help to prevent the printhead from drying out.

4.2.8 Hyperion-DC Timeout

The Hyperion-DC will timeout if it has not been printing for a specific amount of time. This is automated to assist in avoiding dry-out of the printhead pens which can result in lower print quality. When the Hyperion-DC times out, it will be placed in the capped position where printing is not possible. To return to the printing state, hit the “Recovery” button (Section 2.1.2).

To modify the Head Cap Timeout time, select “Hyperion Options...” in the “Edit” pull-down menu and adjust the value beside “Head Cap Timeout” (value in seconds). Note that all other Hyperion Options (e.g. IP addresses and the Buffer size) are related to the original Hyperion design and are not relevant to the Hyperion-DC.

Figure 4-5: Hyperion Options Dialog Box



5.1 Compose IQ

In general, Buskro print technologies are designed to work with a Buskro controller equipped with Compose IQ software. Compose IQ is a Windows® based application that controls all operational aspects of a Buskro inkjet system. This easy-to-use control software delivers powerful job setup, layout, production management, record control, diagnostics, and reporting. For more detailed information about Compose IQ, reference the help file included with the software. Only some of the basic functions are described in this manual.

5.1.1 Compose IQ Dongle

The Dongle is a serialized device that is installed in one of the USB ports of the controller. It acts as the license enabling mechanism for users with a Compose Version of 6 or later. It must have a valid dongle information file encrypted within it to become active. The correct dongle information file specific to the serial number of the physical dongle and to the print technology and Compose functionality purchased is required. The Dongle is field-programmable so that options may be added without swapping Dongles. The Dongle requires drivers that are loaded with Compose V6.03 or later. In the Compose Help system the *driver* installation procedure is listed.

Hyperion-DC requires the use of a Master license (BKLI-MCIQ-# where # refers to the number of channels used). Each Hyperion-DC printhead requires support for three channels. However, the Hyperion System Bridge uses one of the 40-Pin connections on the IA Card normally used with the HeadIF boards. As a result, each Hyperion-DC printhead utilizes four of the sixteen available data ports. The required dongle licenses for Hyperion-DC are shown in Table 1-1.

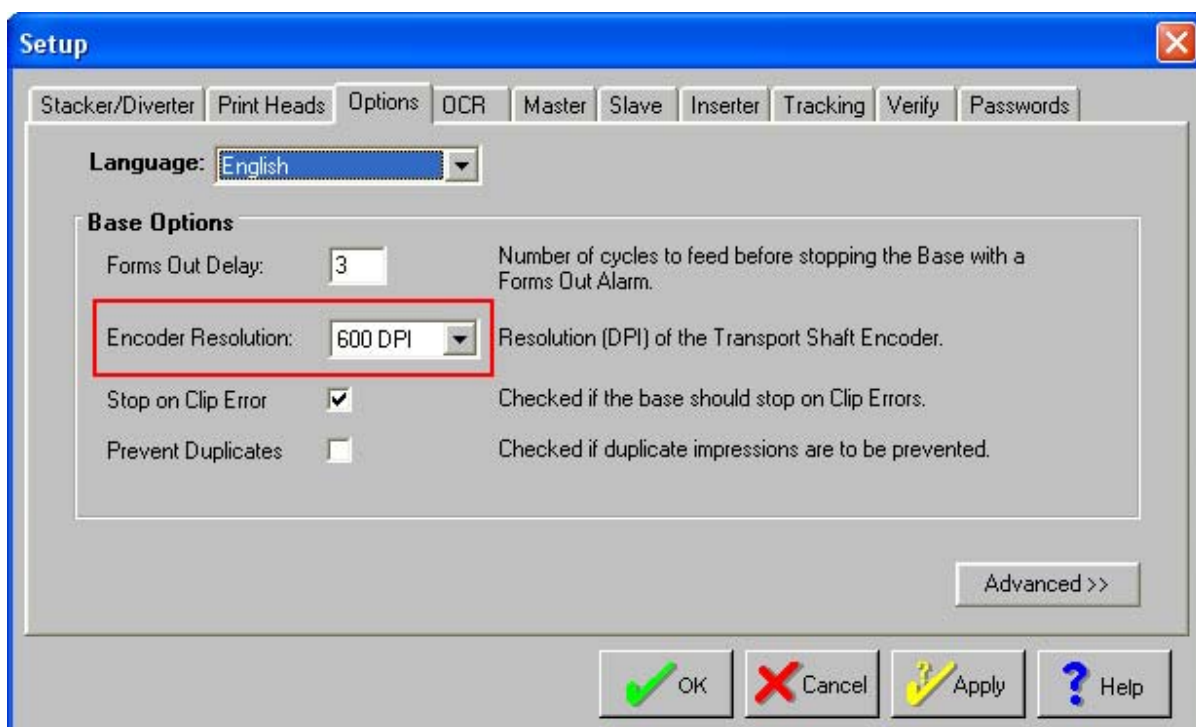
Note: The number at the end of the license (e.g. the “3” at the end of BKLI-MCIQ-3) refers to the required head or channel support. Each Hyperion-DC printhead requires 3, each Atlas or Aurora printhead requires 1, and Apollo / Apollo-4C do not count towards the total head count in the master license.

E.g. One Hyperion-DC + two Atlas 1250's would require a BKLI-MCIQ-5 with BKLI-OPT-CBO (Combo license Option) while one Hyperion-DC + one Apollo-4C would require BKLI-MCIQ-3 with BKLI-OPT-CBO and BKLI-OPT-COL (color).

5.1.2 Encoder Resolution

The Hyperion-DC printheads can operate with an encoder resolution of 600 or 660 DPI. In cases where a “perfectly square” barcode is desired (e.g. QR-Code and DataMatrix), 600 DPI will produce the best results. However, if Hyperion-DC is used in combination with another print technology, it will only work with Printheads capable of operating at 600 DPI (e.g. Apollo or Apollo-4C). In order to run the Hyperion-DC in combination with other standard printheads (e.g. Atlas or Aurora 1250, 2250, or 3250), the encoder resolution must be set to 660 DPI. In order to set the Encoder Resolution, select “Setup” (F7) → “Options” Tab and change the Encoder Resolution from the pull-down menu (Figure 5-1).

Figure 5-1: Changing the Encoder Resolution



Note: Different encoder wheel assemblies are required for 600 and 660 DPI encoder resolutions. For 600 DPI, use BK-ENC-600WE when the encoder wheel is riding on the belt or 9105600A when used with a BK71B.

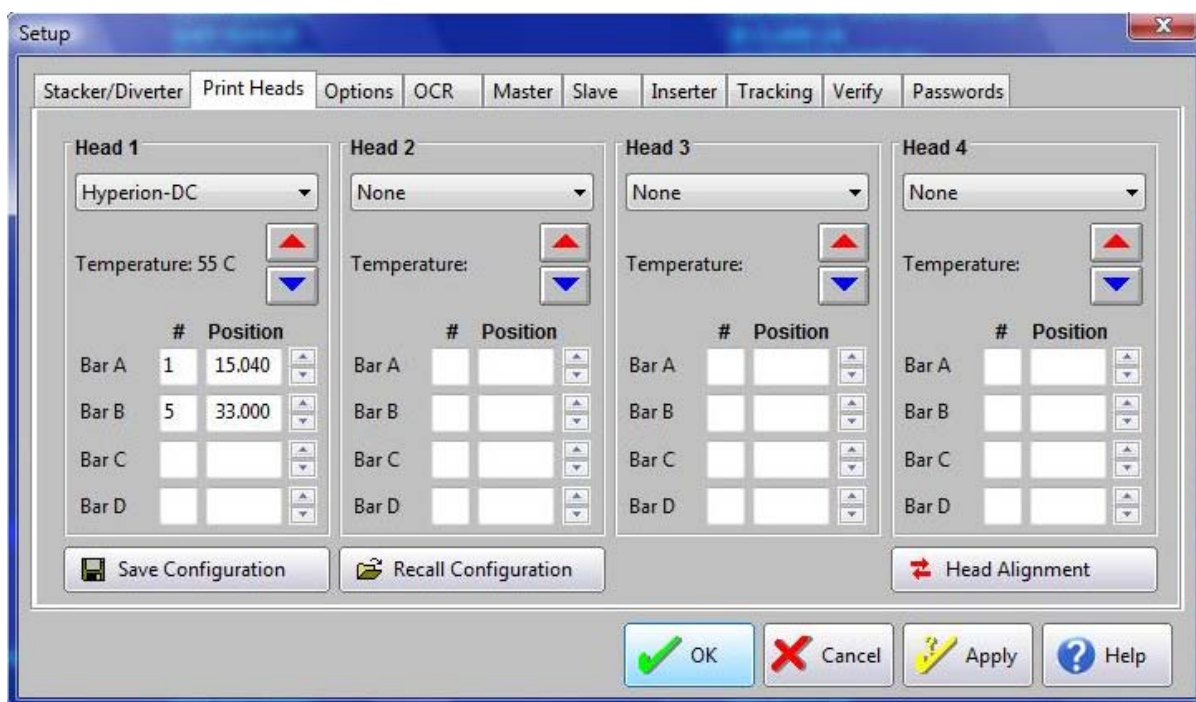
For 660 DPI, use BK-ENC-660WE when the encoder wheel is riding on the belt or 9103595A when used with a BK71B.

5.2 Printhead Print Adjustment

5.2.1 Printhead Drivers and Horizontal Position

In order to integrate the print technology with Compose, the proper printhead driver must be specified in the Setup menu as well as its relative distance from the photo sensor (Figure 5-2). By definition, the position of the printheads is the distance from the centre of the photocue sensor to the leading edge of the first print pen in the printhead. In order to select the driver, press “Setup” (F7) → “Print Heads” Tab and selecting “Hyperion-DC”. In order to set the photo sensor distance, enter the Printhead Number and Position.

Figure 5-2: Printhead Driver Setup



Note: Each Hyperion-DC printhead uses up four data ports on the Image Accelerator Card. As a result, the Hyperion-DC printheads must be set as 1, 5, 9, and 13. Non-Hyperion printheads added in combination cannot use ports already used by the Hyperion-DC. For example, if Hyperion-DC is set as Printhead 1, ports 1-4 are used. As a result, the next printhead must be assigned as Head 5.

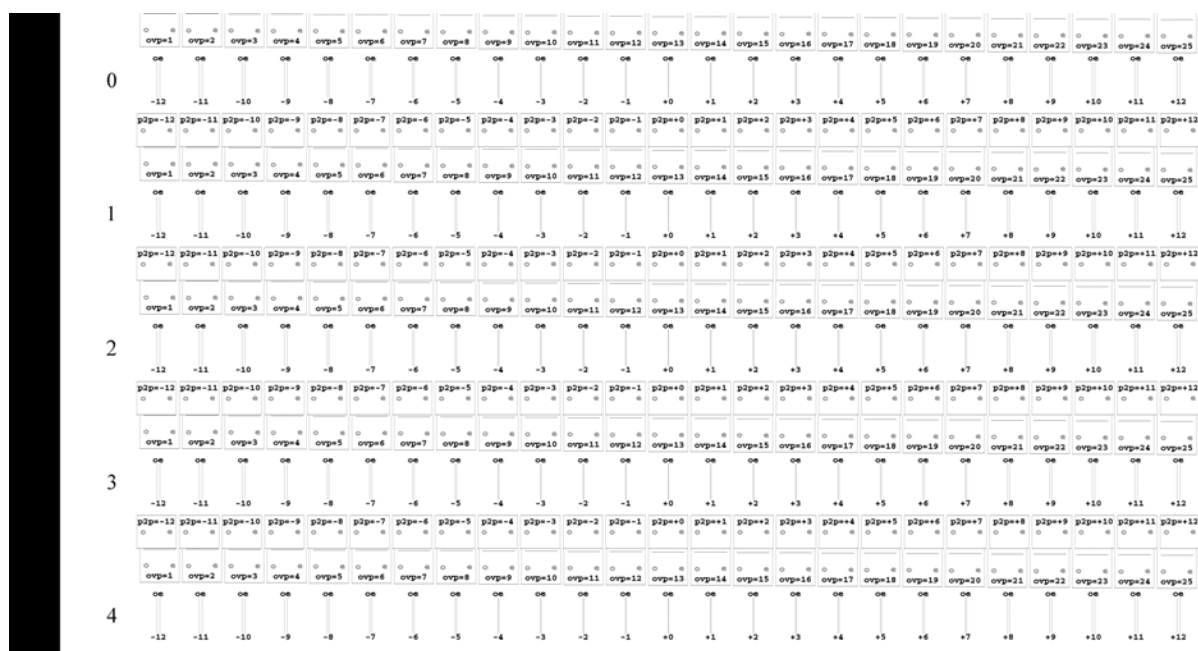
In a combo system, the Hyperion-DC printheads should always be the first printheads (starting as Head 1).

A Print Bar represents one printhead for the Hyperion-DC system

5.2.2 Printhead Adjustments

The Hyperion printheads allow three types of adjustment in order to achieve the best print quality – vertical overlap, horizontal offset, and odd/even adjustment. The adjustments are done by printing out a special internal plot (Figure 5-3) and inputting the corresponding values into Compose. To enter in the adjustment values in Compose, select Setup, Printheads, Head Alignment, and select the associated Hyperion printhead tab.

Figure 5-3: Print Setup Plot

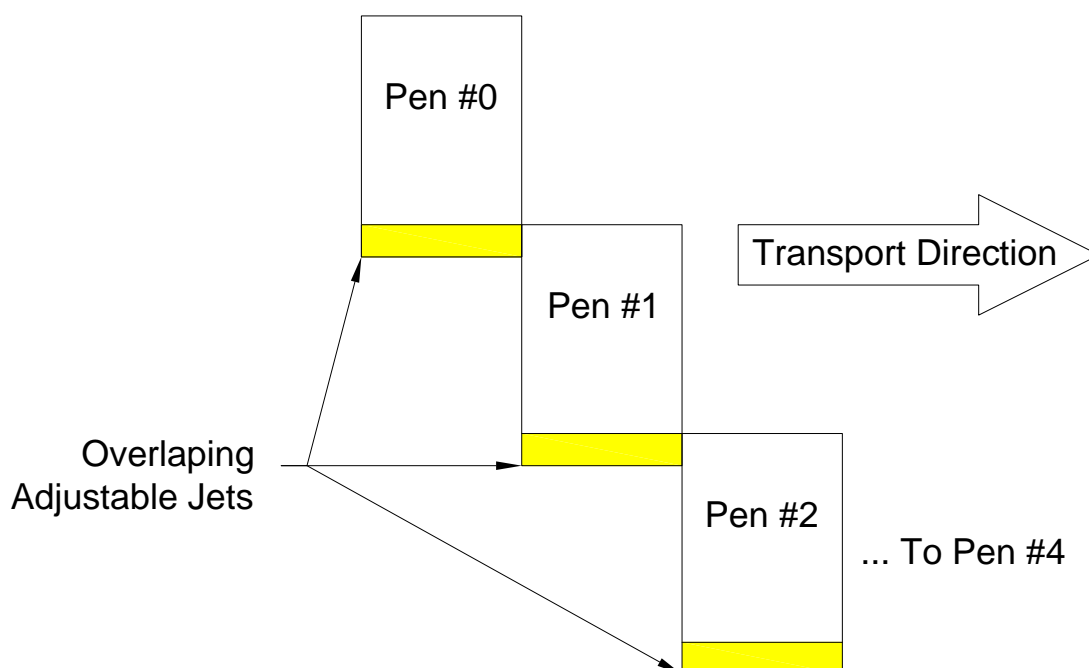


Note: The Printhead adjustments should be conducted using a print setup plot printed at 600 or 660 DPI. To change the horizontal DPI, press the “Layout” button (F5) and change the DPI at the bottom of the screen to either 600 or 660 DPI (the value will depend on the encoder resolution provided with the system – Section 5.1.2).

5.2.2.1 Vertical Overlap Adjustment

Printhead vertical overlap offset refers to the alignment that adjusts the rows. Each print pen in a Hyperion-DC printhead contains extra nozzles to accommodate any mechanical tolerances (Figure 5-4). These extra nozzles will overlap the print swath from each print pen and will need to be selectively turned off. This provides a software method of aligning each print pen without any mechanical adjustments.

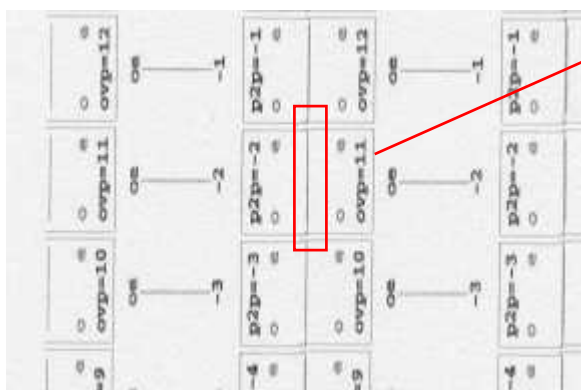
Figure 5-4: Pen Overlap



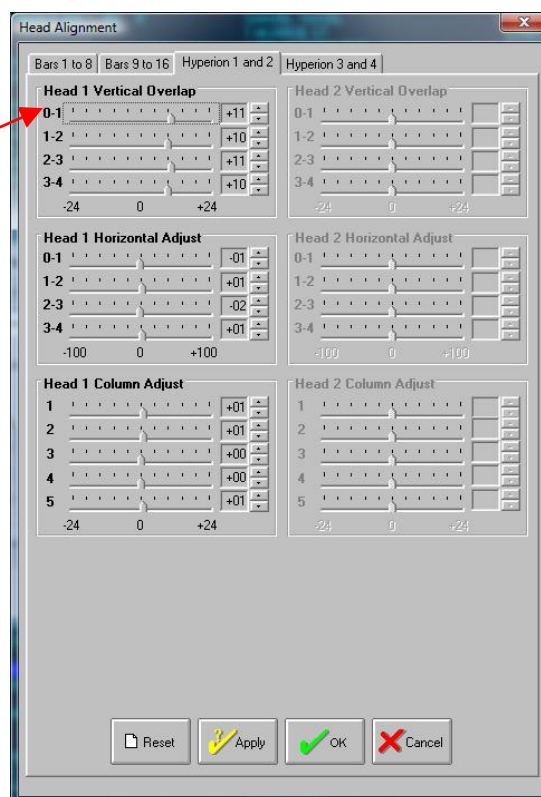
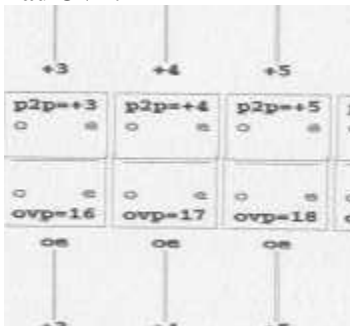
Note that the nominal print swath of a Hyperion-DC printhead is 4.25 inches. It will be greater or less by the aggregate of any pen-to-pen overlap adjustment less than or greater than 12 nozzles.

The value for the overlap alignment is determined by reading the pair of boxes on the printed plot. Each pair of boxes contains vertical overlapping or coinciding lines. The best parameter value of the overlap alignment would be the two lines that are in complete overlap. This would produce a single thin line. The value of “OVP” would be the corresponding value for the Printhead Vertical Offset (Vertical Overlap) in Compose. This “OVP” value is determined for each column of box pairs. In the example below, OVP = 11 is ideal between print pens 0 and 1.

Good OVP:



Bad OVP:



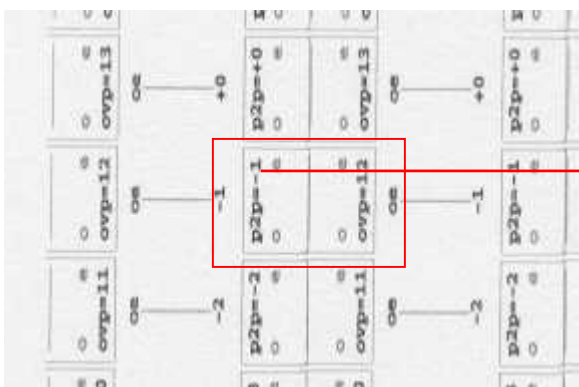
5.2.2.2 Horizontal Adjustment

Printhead horizontal alignment (printhead to printhead or p2p) refers to the alignment that adjusts the columns. Since each print pen is mechanically located at different positions, it is important for the pens to fire the nozzles at the correct time relative to each other.

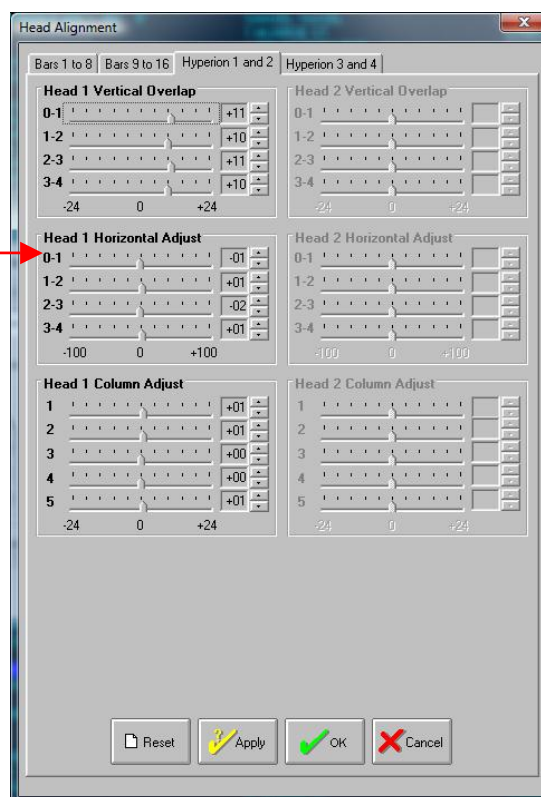
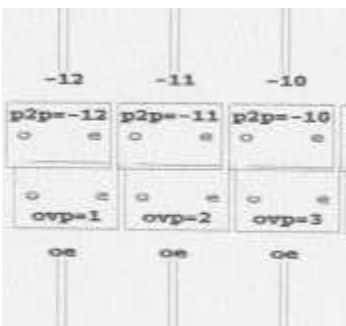
Otherwise, the final print will be misaligned.

The value for the horizontal alignment is determined by reading the pair of boxes on the printed plot that form a larger rectangle. For the best values, the rectangle should stand straight and have no visible seam between the pair of boxes. One printhead pen prints the upper half of the box and the other adjacent printhead pen prints the lower half. The idea is to find the two lines the look like one line. The value of “p2p” should be entered as the Printhead Horizontal Adjust. This should be done for each column of box pairs. In the example below, p2p=1 is ideal between print pens 0 and 1.

Good P2P:



Bad P2P:



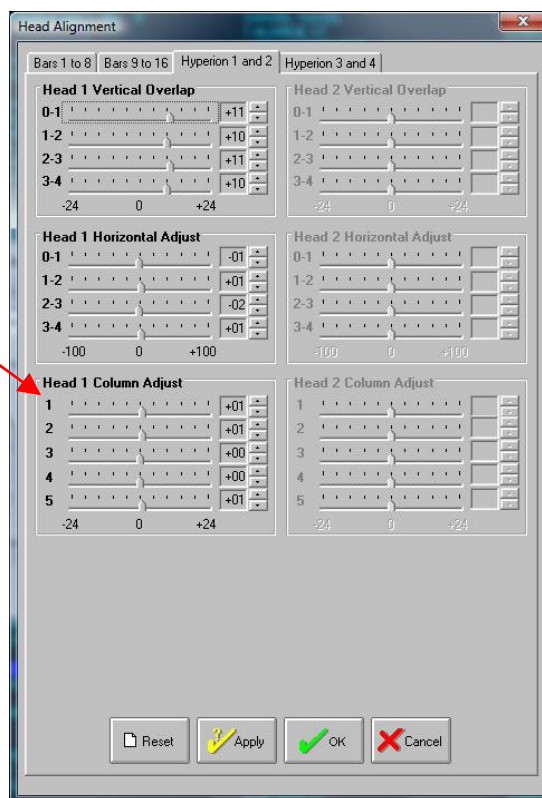
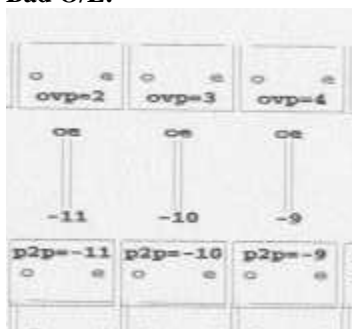
5.2.2.3 Odd/Even Nozzle Adjustment

Printhead column adjust refers to the odd-even alignment of a printhead. Each print pen has two columns of nozzles a certain distance away – they are referred to as odd and even. Much like the horizontal adjustment, each column must fire at the correct time relative to each other to form a perfect print.

The value for the odd-even alignment is determined by reading the odd-even (oe) lines. The best values are of the printed lines that look like a single line. Use the value of this line for the Printhead Column Adjust. This should be done for each column of “oe” lines. In the example below, oe=1 is ideal.



Bad O/E:









5.3 Compose IQ Alarm Codes

The alarm display box is located at the bottom of the Operator Screen in Compose (Figure 5-5). It dynamically updates to reflect the current alarm state. Note that there is a scroll bar that can be used to view greater than four alarm conditions. The Hyperion alarms are shown in Figure 5-6.





Figure 5-5: Alarm Display Box






Figure 5-6: Hyperion Alarms

	Normal Operation
	Printhead in the capped position
	Bulk Ink Low
	Bulk Ink Empty
	Mid-job service required
	No communication or error

6.1 Troubleshooting

Problem	Example	Action
No print.	Sheet is blank even after it has gone underneath the printhead.	<ul style="list-style-type: none"> • Confirm the Printhead is configured (Section 5.2.1) • Confirm there is data in the layout • Confirm Compose is set to "Enable printing" • Perform automatic maintenance (Section 4.2.1) or wipe the printhead (Section 4.2.2). • Install a new ink pen (Section 4.2.4).
Missing lines/streaks in text or graphics.	 <p> -Michael Harp Hewlett Packard -16399 West Bernardo Drive San Diego CA 92127-1899  </p>	<ul style="list-style-type: none"> • Perform automatic maintenance (Section 4.2.1) or wipe the printhead (Section 4.2.2). • Clean the interconnect pads. • Install a new ink pen (Section 4.2.4).
Ink streaks around text or image.	 <p> <u>quickly dominated the Brazil team.</u> controlled Brazil's Oscar Martinez. </p>	<ul style="list-style-type: none"> • Perform automatic maintenance (Section 4.2.1) or wipe the printhead (Section 4.2.2).
Unable to print at the maximum print speed (receive print sync error) or the Compose List does not show a record was completed.		<p>The maximum print speed can be affected by heavy layouts and the number of printheads. This can cause print sync errors or may not update the Compose List as completed even if the record was printed.</p> <ul style="list-style-type: none"> • Reduce horizontal DPI. • Reduce print speed. • Turn off unused printheads.

Problem	Example	Action
Print sync errors even at minimum speeds while printing multi-page PDFs (optional feature).		<p>The multi-page PDF/Postscript RIP function requires significant system resources.</p> <ul style="list-style-type: none">• If attached to a network, physically disconnect the network cable.• Disable 3rd party software that may be consuming system resources.
Printhead in the capped position		<ul style="list-style-type: none">• Press the Recovery Button (Section 2.1.2)
Mid-job Service Alarm		<ul style="list-style-type: none">• Manually activate the Service Station by hitting "Test" (F6) → Hyperion Tab → "Clean Head".

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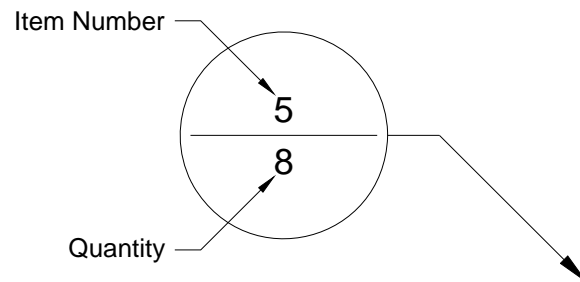
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Balloon Annotation and Parts Listing



Item	Part Number	Quantity	Description	Reference
1				
2				

The following is a description of how to interpret the information in this section:

Item:

This column indicates the item number used for each unique part in an assembly drawing. It is matched with the top number in the balloon pointing at the associated part.

Part Number:

This column represents the Buskro part number.

Quantity:

This represents the total number of a given part in an assembly. It is matched with the bottom number in the balloon pointing at the associated part.

Description:

This column contains a brief description of the part.

Reference:

This column indicates the page location for sub-assemblies.

Table A-1: BK1710YU – Controller, BK1710 Hyperion-DC

Item	Part Number	Quantity	Description	Reference
1	9101627	1	Buskro Serial Number Label	
2	9103217A	1	Cover Assembly, 3U	Page A-17
3	9103285A	1	Dongle Assembly	
4	9104511	2	Cord Set, 10A/250V, 2m, Harmonized IEC	
5	9104670A	1	Cable, HSB-PS Interconnect	
6	9104946A	1	Ink Delivery Module, Hyperion-DC, 2-CH	Page A-47
7	BK1710-FRM-Y	1	Frame, BK1710 Hyperion-DC	Page A-5
8	BK-MON-LCD17	1	Monitor, 17" LCD	
9	BK-PCM-16Y	1	Module, Computer, Hyperion-DC	Page A-6
10	BK-PSM-2Y	1	Power Supply Module, Hyperion-DC	Page A-7

Figure A-1: BK1710YU – Controller, BK1710 Hyperion-DC

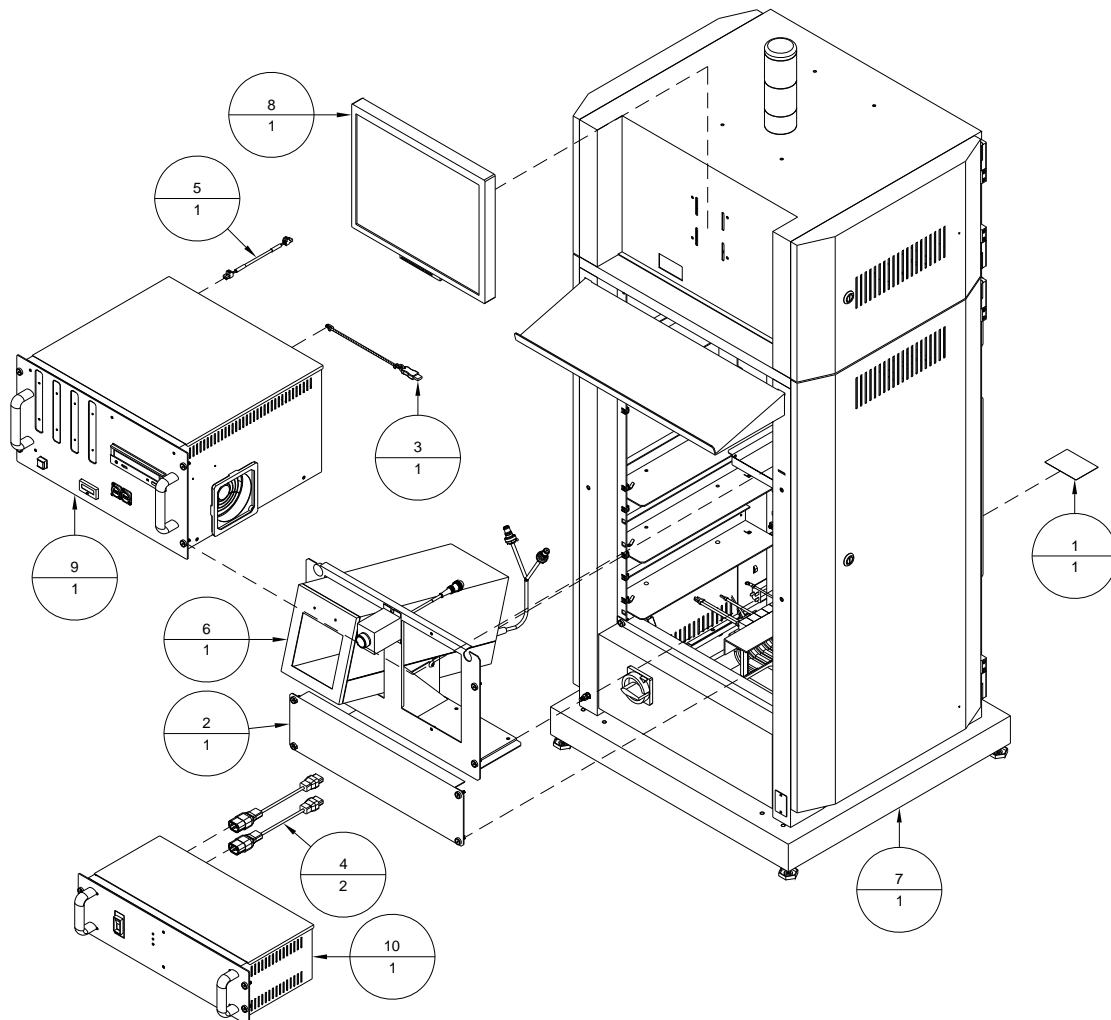


Table A-2: BK1720YU – Controller, BK1720 Hyperion-DC, Combo

Item	Part Number	Quantity	Description	Reference
1	9101627	1	Buskro Serial Number Label	
2	9103285A	1	Dongle Assembly	
3	9104511	2	Cord Set, 10A/250V, 2m, Harmonized IEC	
4	9104670A	1	Cable, HSB-PS Interconnect	
5	9104946A	1	Ink Delivery Module, Hyperion-DC, 2-CH	Page A-47
6	BK1720-FRM-Y	1	Frame, BK1720 Hyperion-DC	Page A-5
7	BK-MON-LCD17	1	Monitor, 17" LCD	
8	BK-PCM-16Y	1	Module, Computer, Hyperion-DC	Page A-6
9	BK-PSM-2Y	1	Power Supply Module, Hyperion-DC	Page A-7

Figure A-2: BK1720YU – Controller, BK1720 Hyperion-DC, Combo

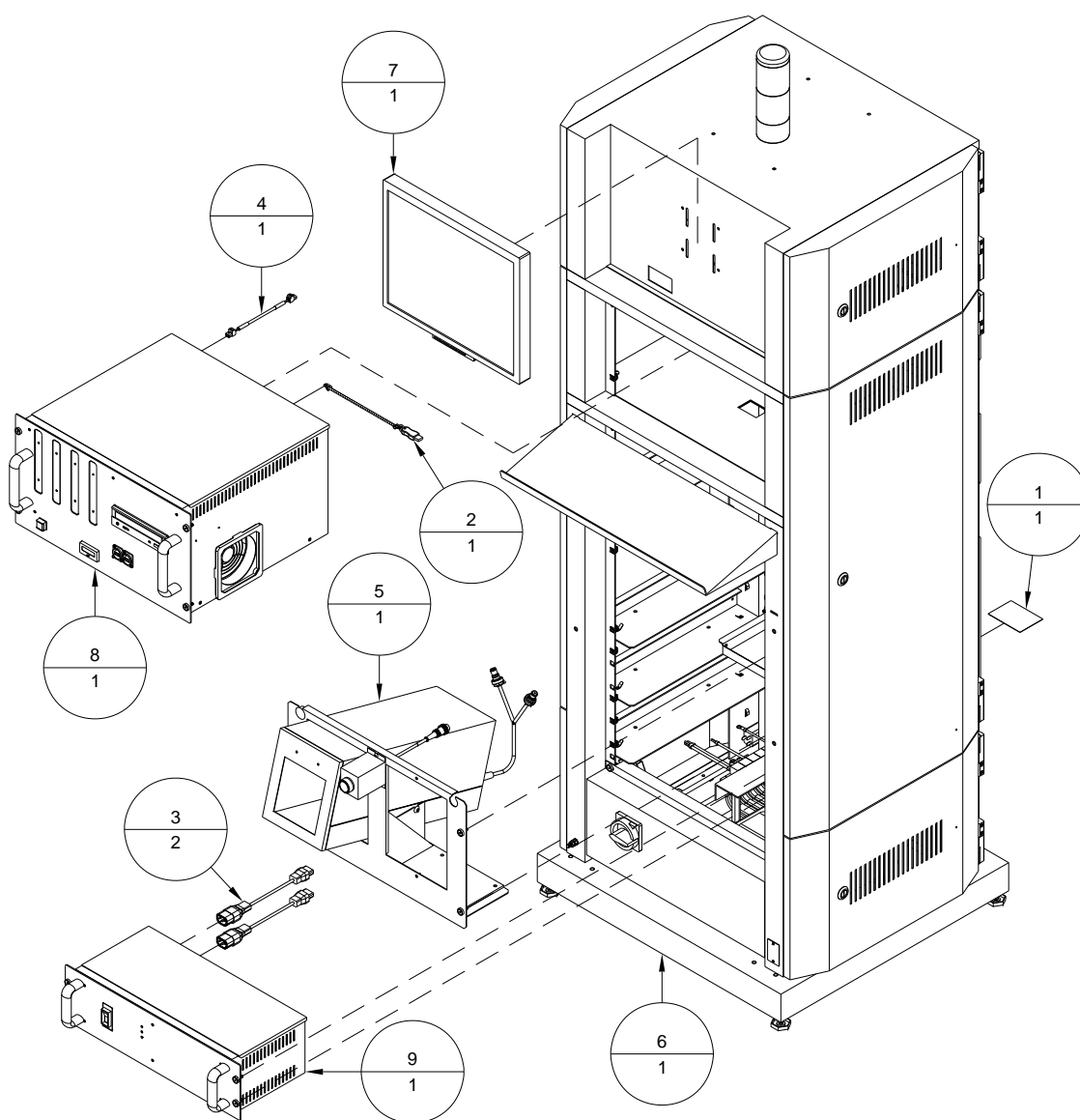


Table A-3: BK1710-FRM-Y – Frame, BK1710 Controller, Hyperion-DC

Item	Part Number	Quantity	Description	Reference
1	404320	4	Screw, PHMS, 10-32 UNF x 3/8"	
2	9103360A	1	Side Door Assembly, Left	Page A-20
3	9103407A	1	Controller Top Assembly	Page A-23
4	9103408A	1	Side Door Assembly, Right	Page A-24
5	9103447A	1	Terminal Block Assembly, Main	Page A-27
6	9103869A	2	Side Cover Assembly	Page A-30
7	9105009A	1	Spill Tray Assembly	Page A-50
8	BK-1700-TRAN	1	Transformer Assembly	Page A-11
9	BK17XX-FRM-Y	1	Frame, BK17XX Series, Hyperion-DC	Page A-5
10	BK-STKLHT-17XX	1	Stack Light Assembly, BK17XX	Page A-8

Figure A-3: BK1710-FRM-Y – Frame, BK1710 Controller, Hyperion-DC

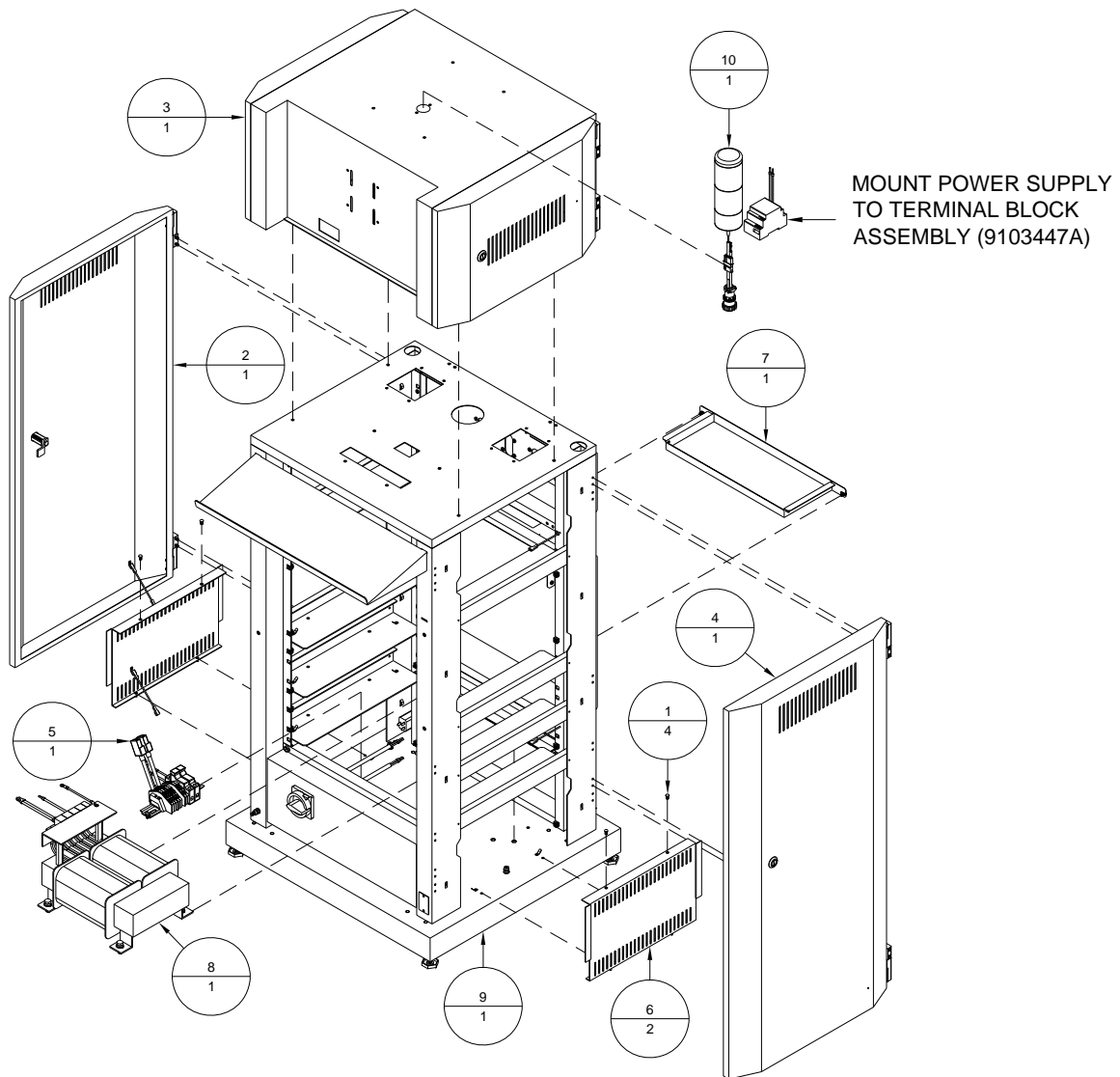
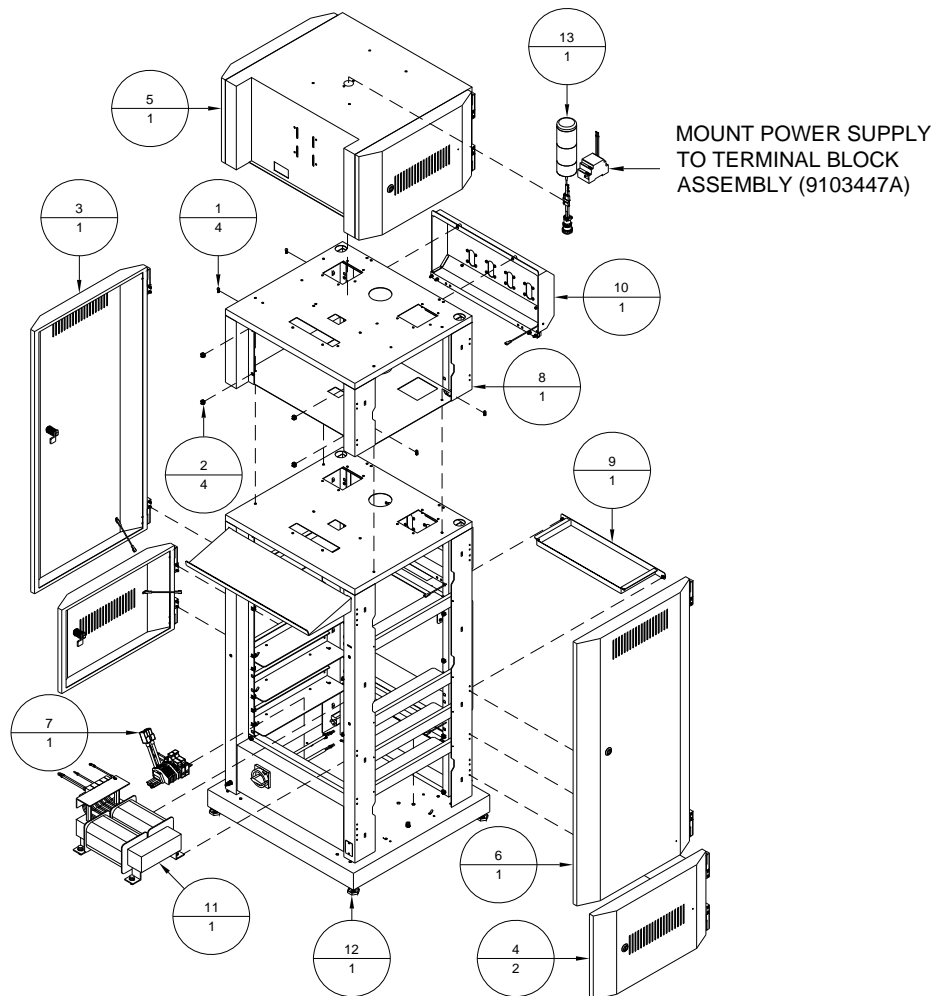


Table A-4: BK1720-FRM-Y – Frame, BK1720 Controller, Hyperion-DC

Item	Part Number	Quantity	Description	Reference
1	404530	4	Screw, BHCS, 10-32 UNF x ½"	
2	9103314	4	Nut, Cage, 10-32 UNF	
3	9103360A	1	Side Door Assembly, Left	Page A-20
4	9103362A	2	Side Door Assembly, Bottom	Page A-21
5	9103407A	1	Controller Top Assembly	Page A-23
6	9103408A	1	Side Door Assembly, Right	Page A-24
7	9103447A	1	Terminal Block Assembly, Main	Page A-27
8	9103861	1	Shelf, Add-on Subrack	
9	9105009A	1	Spill Tray Assembly	Page A-50
10	9105211A	1	Umbilical Bracket Assembly	Page A-51
11	BK-1700-TRAN	1	Transformer Assembly	Page A-11
12	BK17XX-FRM-Y	1	Frame, BK17XX Series, Hyperion-DC	Page A-5
13	BK-STKLHT-17XX	1	Stack Light Assembly, BK17XX	Page A-8

Figure A-4: BK1720-FRM-Y – Frame, BK1720 Controller, Hyperion-DC



NOTE: See diagram BK-STKLHT-17XX

Table A-5: BK17XX-FRM-Y – Frame, BK17XX Controller, Hyperion-DC

Item	Part Number	Quantity	Description	Reference
1	401330	4	Screw, PHMS, 4-40 UNC x ½"	
2	404050	4	Screw, FHCS, 10-32 UNF x ¾"	
3	405530	2	Screw, BHCS, ¼-20 UNC x ½"	
4	420010	10	Nut, ¼-20 UNC	
5	439007	5	Lockwasher, ¼" External Tooth	
6	439010	5	Lockwasher, ¼" ID	
7	9103103	1	Cover, IEC Receptacle	
8	9103216	1	Bracket, Cabinet Keyboard	
9	9103219A	4	Caster Wheel Assembly	Page A-18
10	9103225	4	Leveling Foot, 3/8-16 UNC	
11	9103314	34	Nut, Cage, 10-32 UNF	
12	9103315	4	Washer, Cup, 10-32 UNF Flat Head	
13	9103403A	1	Rear Guard Assembly	Page A-22
14	9103423A	1	Back Cover Support Assembly	Page A-26
15	9103584	1	Cabinet, 19" Subrack, Low Tower	
16	9103863A	1	Front Guard Assembly	Page A-29
17	9104632	1	Filter, RFI, EEJ Series	
18	9104954	1	Bracket, Tracking Mount, BK17XX	
19	9105211A	1	Umbilical Bracket Assembly	Page A-51
20	9105212A	1	Lower Cover Assembly	Page A-52

Figure A-5: BK17XX-FRM-Y – Frame, BK17XX Controller, Hyperion-DC

Note:

Use cage nut installation tool (p/n 9104441) to install the cage nuts (p/n 9103314). Also, apply medium grade threadlocker (such as Loctite 242) onto threads of the screws when mounting the controller modules in the controller frame.

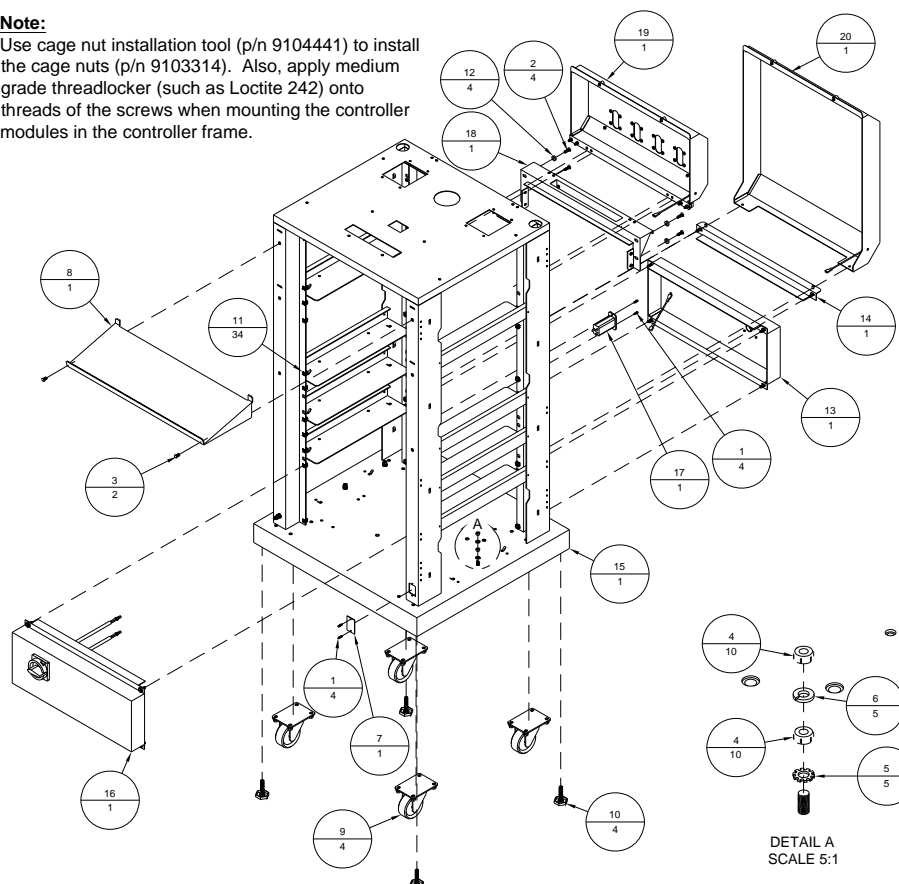


Table A-6: BK-PCM-16Y – Module, Computer, 16-Channel, Hyperion-DC

Item	Part Number	Quantity	Description	Reference
1	404520	3	Screw, BHCS, 10-32 UNF x 3/8"	
2	420004	8	Nut, 4-40 UNC	
3	420008	7	Nut, 10-32 UNF	
4	439004	8	Lockwasher, #4	
5	439009	6	Lockwasher, #10	
6	9104127	4	Bracket, Blocking 4-Channel	
7	9104130A	1	PC Module Assembly, Universal	Page A-32
8	9104131A	1	Faceplate Assembly, BK-PCM-16	Page A-34
9	9104135A	1	Image Accelerator Card Assembly	Page A-35
10	9104941A	1	Bracket Assembly, HSB 1-2, One Channel	Page A-42

Figure A-6: BK-PCM-16Y – Module, Computer, 16-Channel, Hyperion-DC

NOTE:

FOR 1-2 HYPERION PRINTHEADS, ADD 9104952.
 FOR 3-4 HYPERION PRINTHEADS, ADD 9104942A.

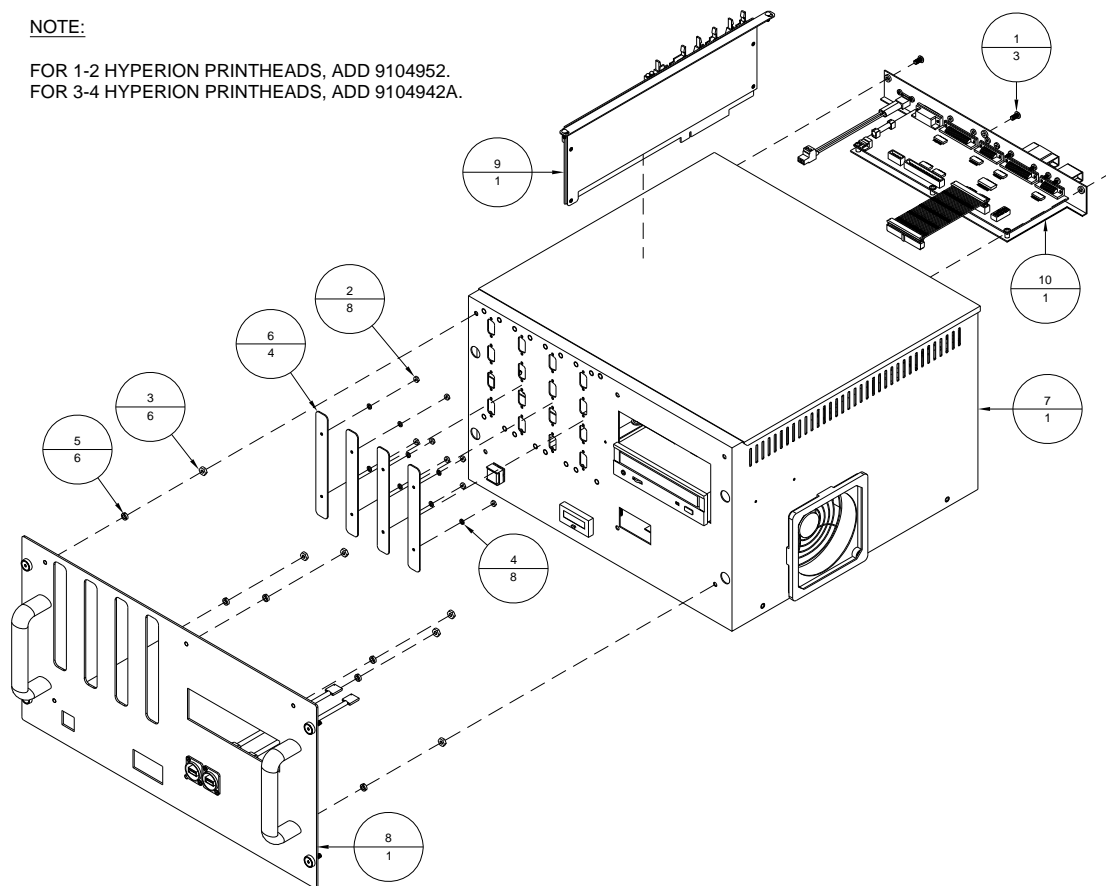


Table A-7: BK-PSM-2Y – Module, Power Supply, Hyperion-DC, 2-Channel

Item	Part Number	Quantity	Description	Reference
1	401310	2	Screw, PHMS, 4-40 UNC x ¼"	
2	401320	2	Screw, PHMS, 4-40 UNC x 3/8"	
3	420004	2	Nut, 4-40 UNC	
4	439004	2	Lockwasher, #4	
5	9104943A	1	Chassis Assembly, Hyperion PSM	Page A-44
6	9105206	1	Cover, Blind, 2-Channel	

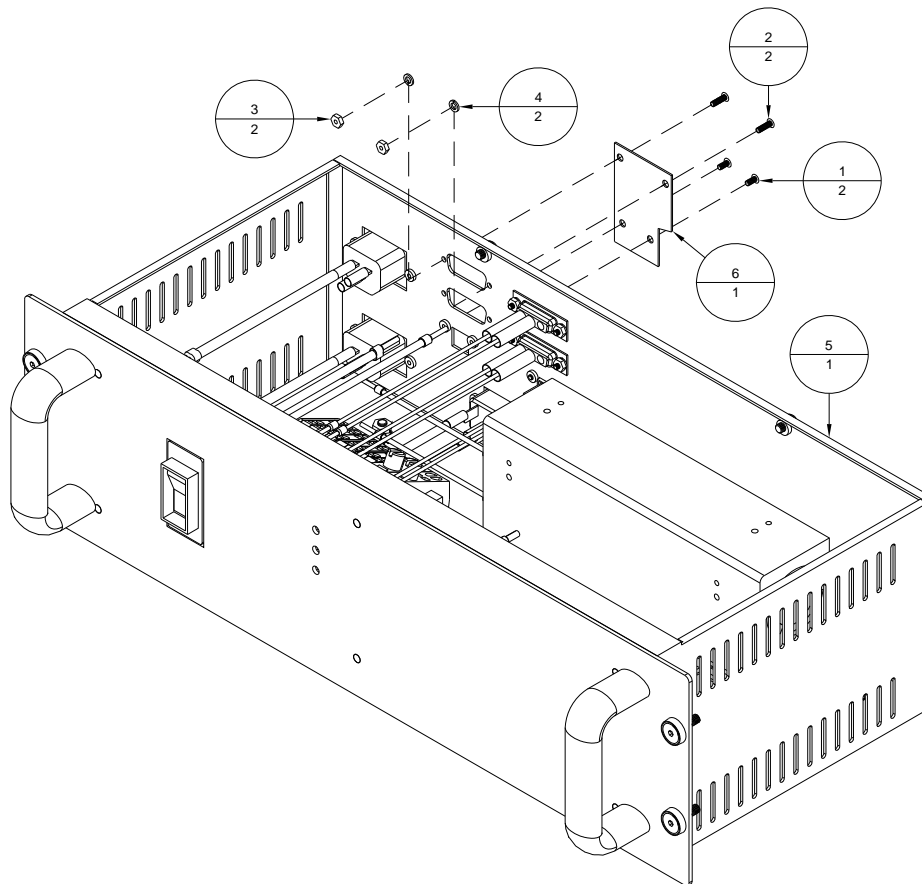
Figure A-7: BK-PSM-2Y – Module, Power Supply, Hyperion-DC, 2-Channel

Table A-8: BK-PSM-4Y – Module, Power Supply, Hyperion-DC, 4-Channel

Item	Part Number	Quantity	Description	Reference
1	401310	2	Screw, PHMS, 4-40 UNC x ¼"	
2	414310	2	Screw, PHMS, M4 x 10	
3	420004	4	Nut, 4-40 UNC	
4	420008	2	Nut, 10-32 UNF	
5	439004	4	Lockwasher, #4	
6	439005	2	Lockwasher, #8	
7	439008	1	Lockwasher, #10, External Tooth	
8	439009	1	Lockwasher, #10	
9	440006	2	Washer, #8, ½" OD x 0.05" Thick	
10	615322	4	Female Screwlock, 4-40 UNC	
11	9104557	4	Lockwasher, #4, External Tooth	
12	9104782A	1	Cable, PS-HSB	
13	9104939A	1	Power Supply Assembly, 24 VDC	Page A-41
14	9104943A	1	Chassis Assembly, Hyperion-DC PSM	Page A-44
15	9104950A	2	Cable, Hyperion-DC PSM IH Power	

Figure A-8: BK-PSM-4Y – Module, Power Supply, Hyperion-DC, 4-Channel

NOTE:

TO UPGRADE BK-PSM-2Y TO BK-PSM-4Y,
ORDER UBK-PSM-4Y.

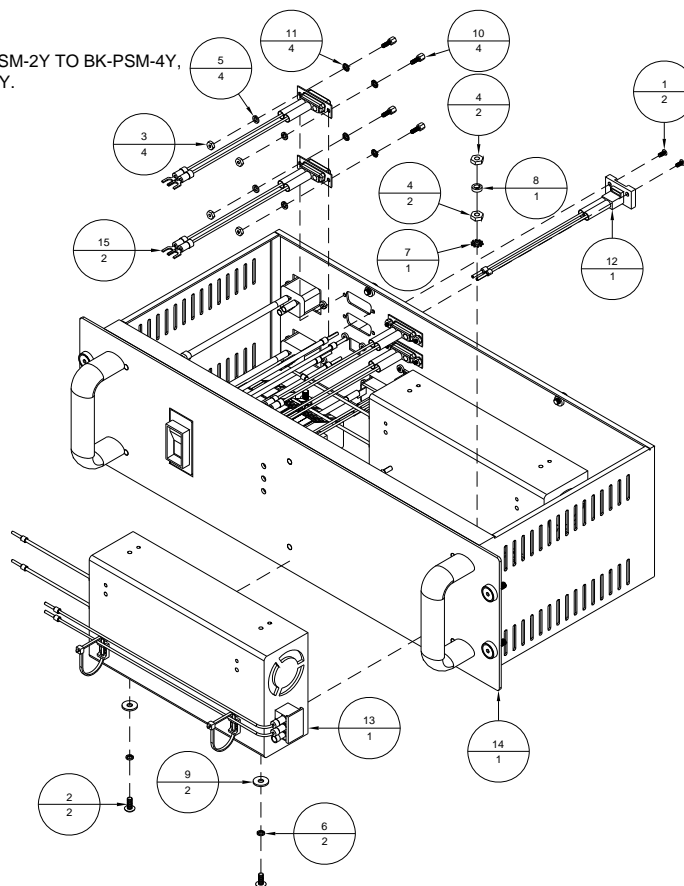


Table A-9: BK-STKLHT-17XX – Stack Light Assembly, BK17XX

Item	Part Number	Quantity	Description	Reference
1	606008	1	Wire, #14, White, 8" Lg.	
2	606010	1	Wire, #14, Black, 8" Lg.	
3	9103433	4	Ferrule, #14 AWG, Blue	
4	9103465	1	Power Supply, Switching, 12V	
5	9104567A	1	Stack Light Assembly, Amber, Green, 12V	Page A-40
6	9104643A	1	Cable, FCB Output, Stack Lights	

Figure A-9: BK-STKLHT-17XX – Stack Light Assembly, BK17XX

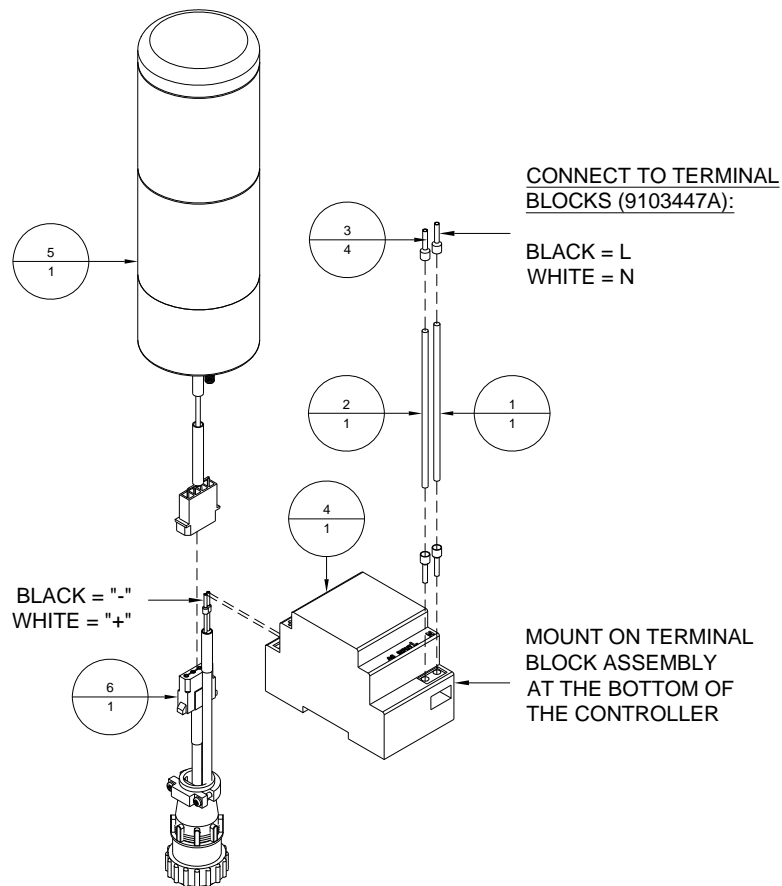


Table A-10: BK-TRACK-Y – Tracking Board Assembly, Hyperion-DC

Item	Part Number	Quantity	Description	Reference
1	401310	36	Screw, PHMS, 4-40 UNC x 1/4"	
2	402310	6	Screw, PHMS, 6-32 UNC x 1/4"	
3	404520	6	Screw, BHCS, 10-32 UNF x 3/8"	
4	440530	6	Washer, #6, Nylon	
5	9100724A	4	Jam/Proxi/Photocue Extension Cable	
6	9100725A	4	Shaft Encoder Extension Cable	
7	9101976	1	Board, Tracking	
8	9101977A	1	Cable, Tracking Board I/O	
9	9102011A	1	Cable, 12 VDC Power	
10	9104582	1	Bracket, Tracking Board, Hyperion-DC	
11	9104995	1	Cover, Hyperion PSM	
12	9105206A	1	Cable, SPOX, Track Pulse	
13	9105208A	8	Cable, SPOX, Tracking	
14	9105210A	8	Cable, SPOX, Registration	

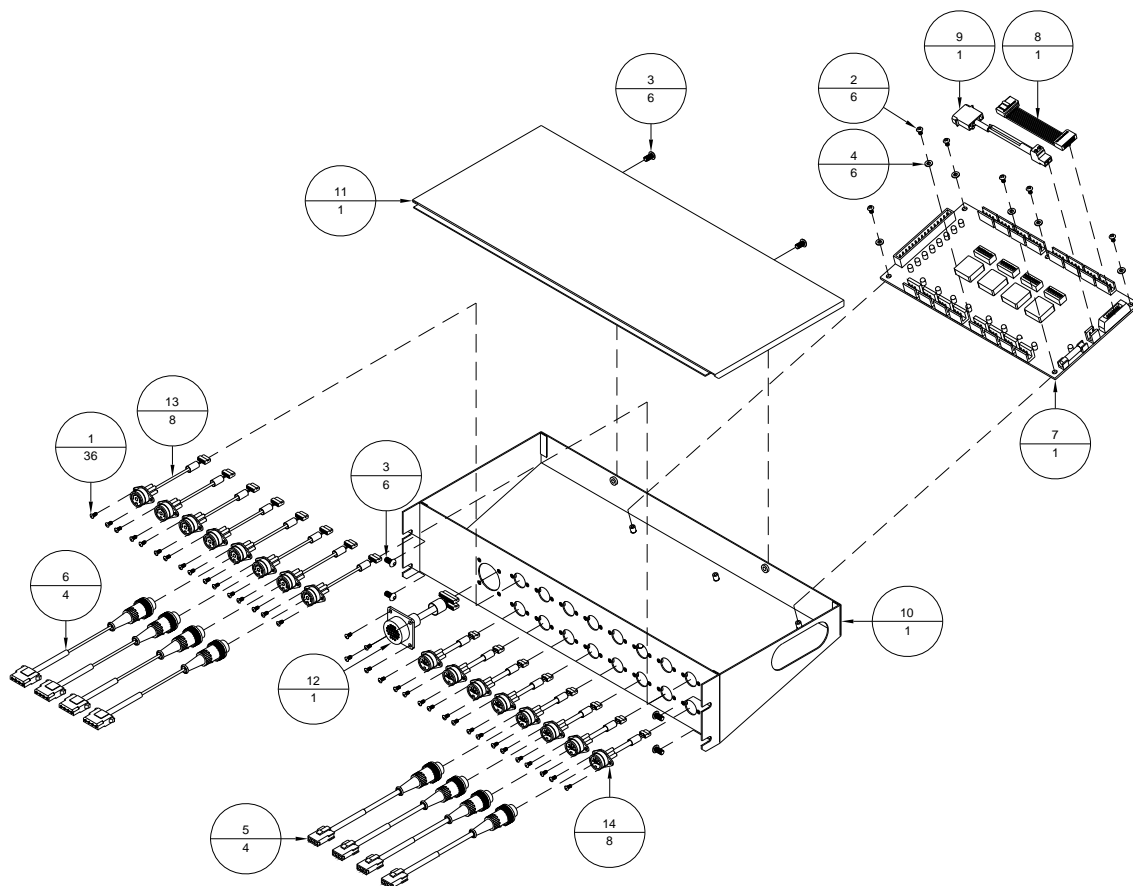
Figure A-10: BK-TRACK-Y – Tracking Board Assembly, Hyperion-DC

Table A-11: BK-1700-TRAN – Transformer Assembly, 4.5 kVA

Item	Part Number	Quantity	Description	Reference
1	406670	4	Screw, HHMS, 5/16-18 UNC x 1"	
2	439015	4	Lockwasher, 5/16 ID	
3	440015	4	Washer, 5/16 ID	
4	606033	2	Cable, #14-3, SJOW-A, 14"	
5	606040	1	Cable, #14-2, SJOW, BK/WH, 15"	
6	609111	1	Terminal, Ring, #10, 16-14 AWG, Blue	
7	609120	1	Terminal, Ring, 1/4", 16-14 AWG, Non-Ins.	
8	9102681	1	Wire, #14, Green/Yellow, 17"	
9	9103398	1	Transformer, 4.5 kVA, 200/208/230-120V	
10	9103433	10	Ferrule, #14 AWG, Blue	
11	9103434	3	Ferrule, #14, Dual Wire, Blue	

Figure A-11: BK-1700-TRAN – Transformer Assembly, 4.5 kVA

NOTE:

Line = Black

Neutral = White

Ground = Green or Green/Yellow

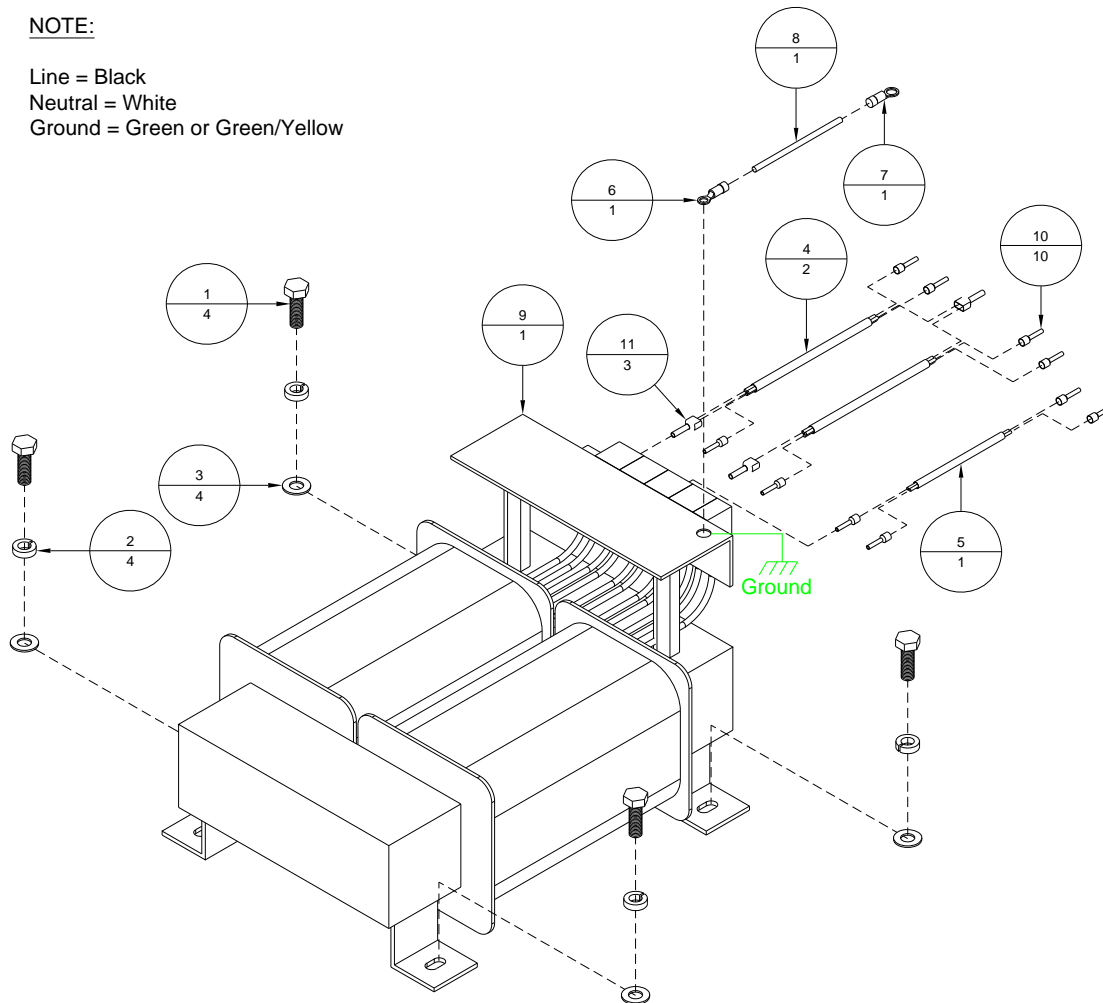


Table A-12: BK794-Y-19-RM83 – Printhead, Hyperion-DC

Item	Part Number	Quantity	Description	Reference
1	404520	4	Screw, BHCS, 10-32 UNF x 3/8"	
2	9101735	2	Fitting, Half	
3	9101773	1	Collar, Locking Shaft	
4	9101775	1	Hose, Corrugated Loom, 12"	
5	9101776	1	Sleeving, Braided Expandable, 230"	
6	9102603	2	Shrink Wrap, 1-1/2" OD	
7	9104402A	1	Hyperion Head & Mount Assembly	Page A-36
8	9104551A	1	Hyperion External Cable Assembly	
9	9105105	1	Label, Warning, Hyperion Ink Pen	
10	BK83M-1	1	Mount, Hyperion, BK83 Bridge	Page A-15

Figure A-12: BK794-Y-19-RM83 – Printhead, Hyperion-DC

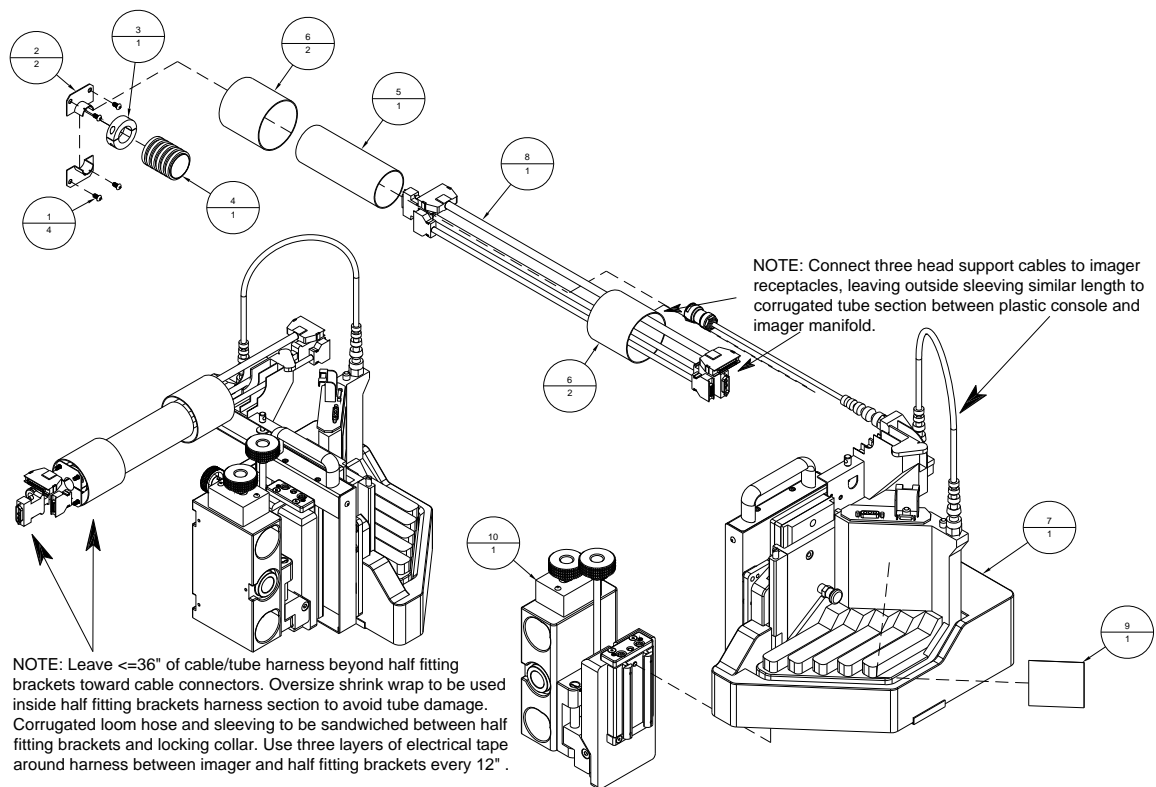


Table A-13: BK83B-22 – Printhead Bridge, Triple Rail, 22"

Item	Part Number	Quantity	Description	Reference
1	405560	4	Screw, BHCS, 1/4-20 UNC x 7/8"	
2	405850	6	Screw, SHSS, 1/4-20 UNC x 3/4"	
3	9102893	3	Shaft, 1" OD x 23.45" Lg.	
4	9104411	2	Foot, Triple Bridge	

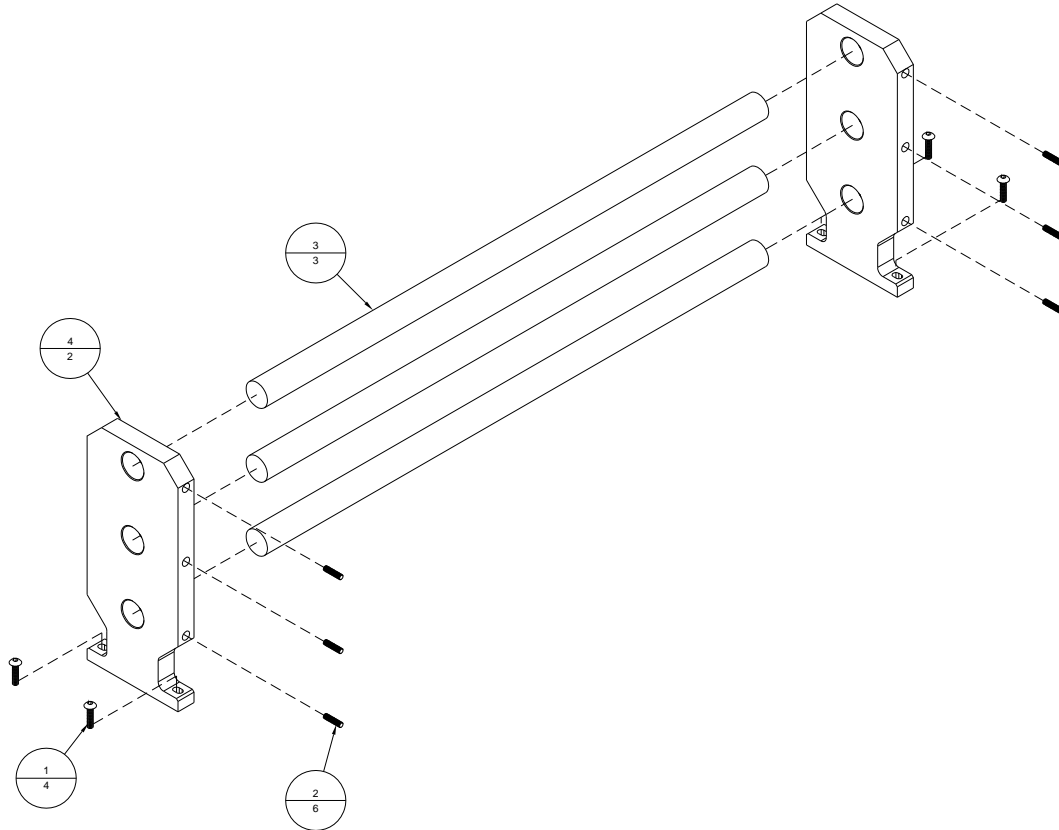
Figure A-13: BK83B-22 – Printhead Bridge, Triple Rail, 22"

Table A-14: BK83BP-22 – Printhead Bridge, Triple Rail, Photo, 22"

Item	Part Number	Quantity	Description	Reference
1	405270	2	Screw, SHCS, 1/4-20 UNC X 1"	
2	405520	2	Screw, BHCS, 1/4-20 UNC, 3/8"	
3	405560	4	Screw, BHCS, 1/4-20 UNC x 7/8"	
4	405850	6	Screw, SHSS, 1/4-20 UNC x 3/4"	
5	9100360	2	Endcap, Extrusion Rail, 10 Series	
6	9102893	3	Shaft, 1" OD x 23.45" Lg.	
7	9103193	1	Extrusion Rail, 1 x 1 x 23.45"	
8	9104411	2	Foot, Triple Bridge	

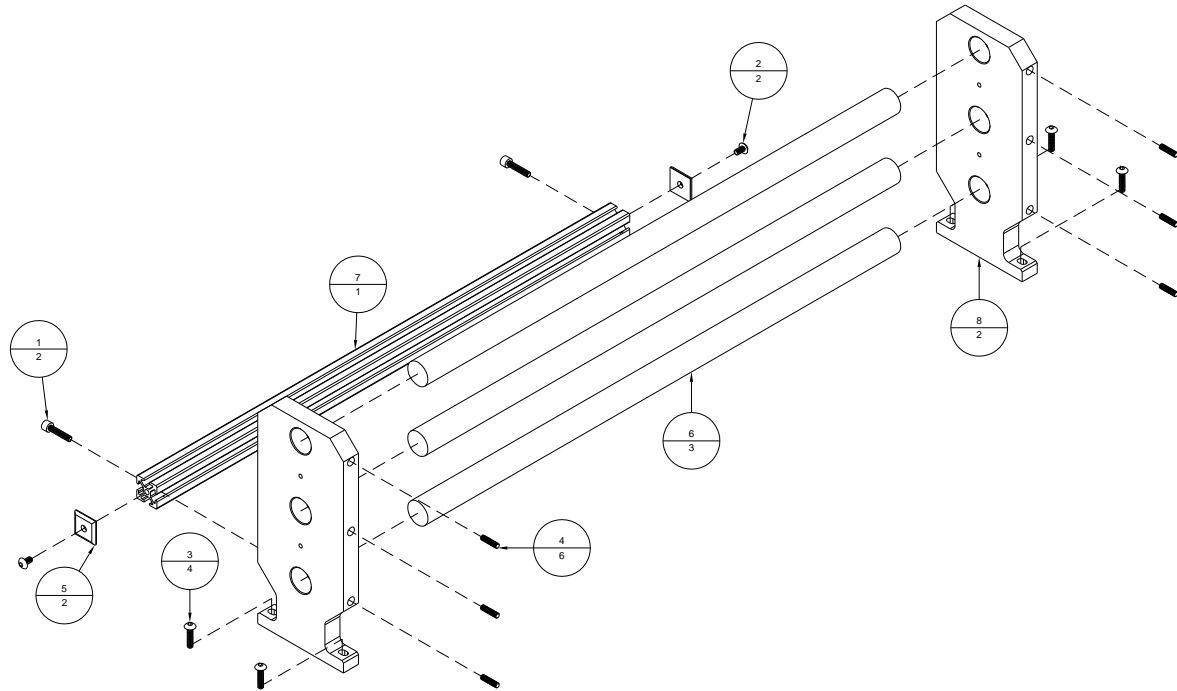
Figure A-14: BK83BP-22 – Printhead Bridge, Triple Rail, Photo, 22"

Table A-15: BK83M-1 - Mount, Hyperion, BK83 Bridge

Item	Part Number	Quantity	Description	Reference
1	9104413A	1	Bridge Mount Assembly – Triple	Page A-38
2	9104566A	1	Head Mount Assembly, Angular, Hyperion	Page A-39

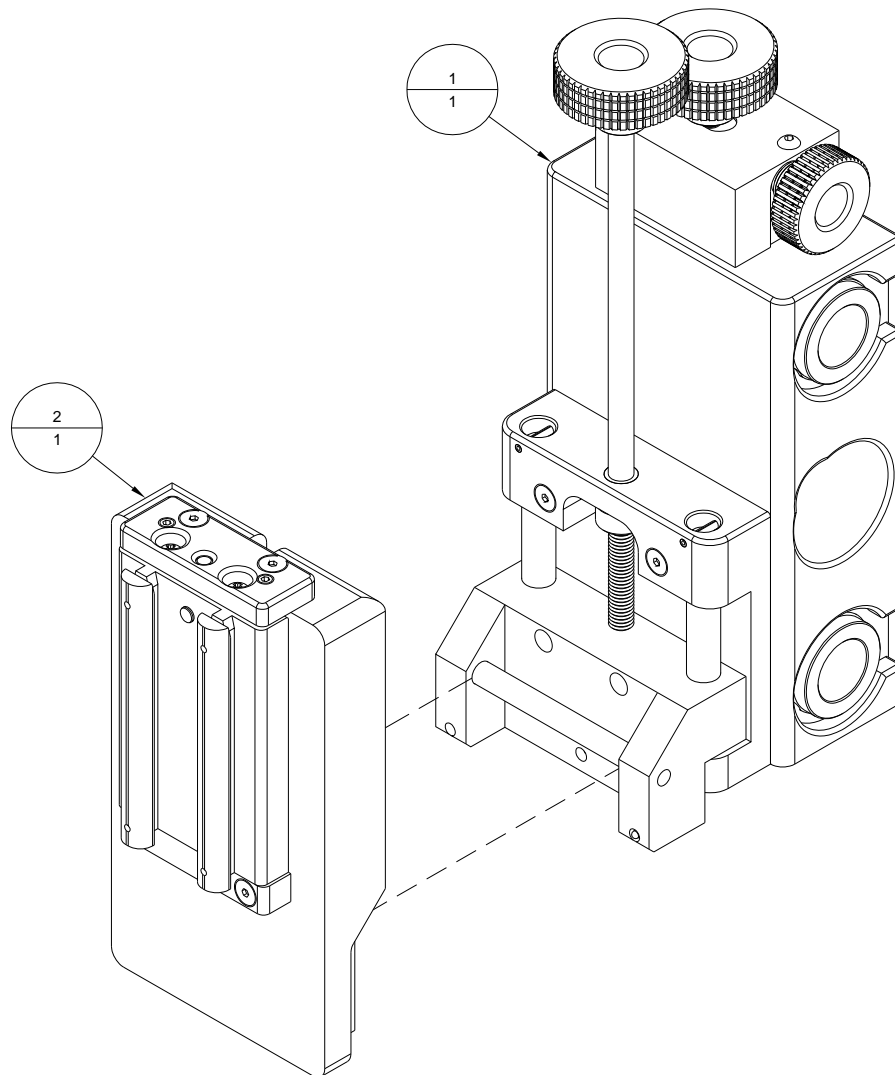
Figure A-15: BK83M-1 - Mount, Hyperion, BK83 Bridge

Table A-16: 9103178A – Field Connection Board Assembly

Item	Part Number	Quantity	Description	Reference
1	401310	12	Screw, PHMS, 4-40 UNC x ¼"	
2	402310	4	Screw, PHMS, 6-32 UNC x ¼"	
3	440530	4	Washer, #6 Nylon	
4	615063	5	Connector, Female, 3-Pin, BLA3	
5	615066	1	Connector, Female, 4-Pin, BLA4	
6	9100711A	5	Field Sensor Cable Assembly	
7	9100723A	1	Field Encoder Cable Assembly	
8	9100724A	5	Jam/Proxi/Photocue Extension Cable	
9	9100725A	1	Shaft Encoder Extension Cable	
10	9100731	1	Board, Field Connection	
11	9103178	1	Connector Plate, FCB	

Figure A-16: 9103178A – Field Connection Board Assembly

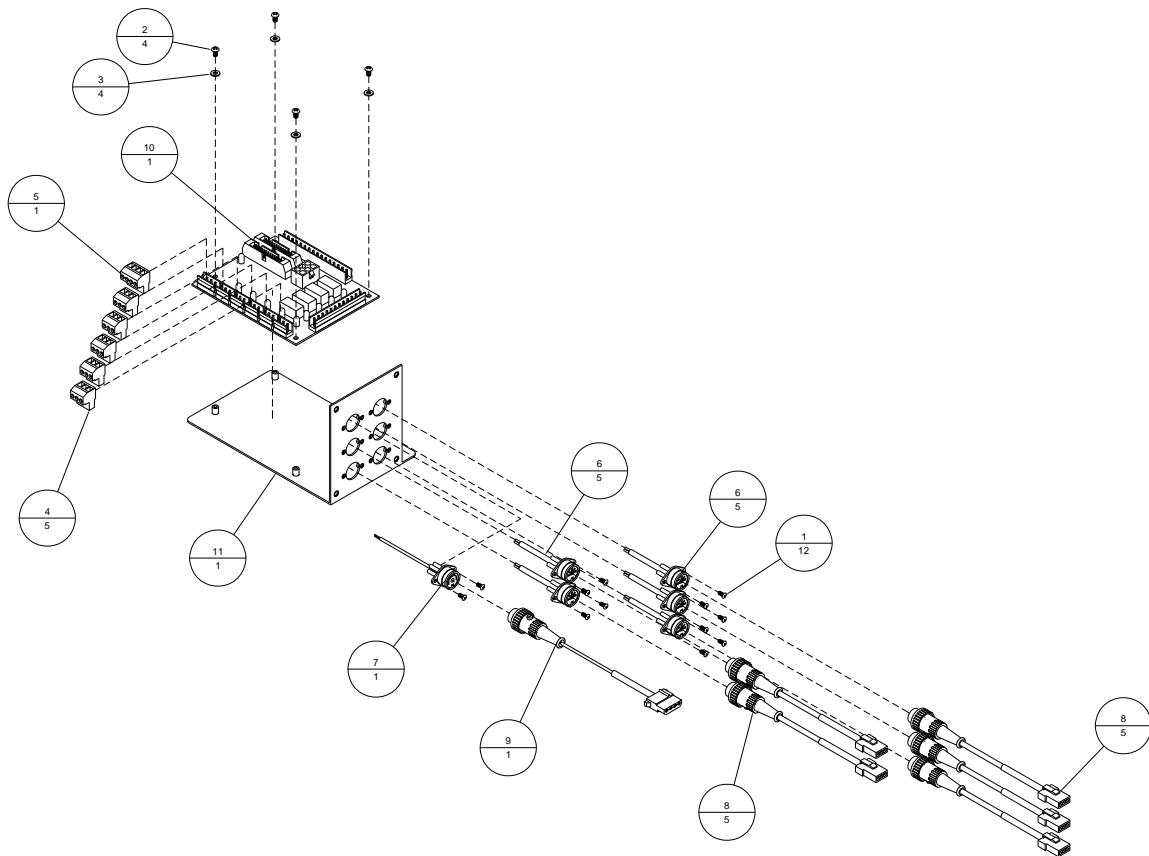


Table A-17: 9103217A – Cover Assembly, 3U

Item	Part Number	Quantity	Description	Reference
1	404050	4	Screw, FHCS, 10-32 UNF x ¾"	
2	9103217	1	Cover, Blind, 3U	
3	9103315	4	Washer, Cup, 10-32 UNF Flat Head	

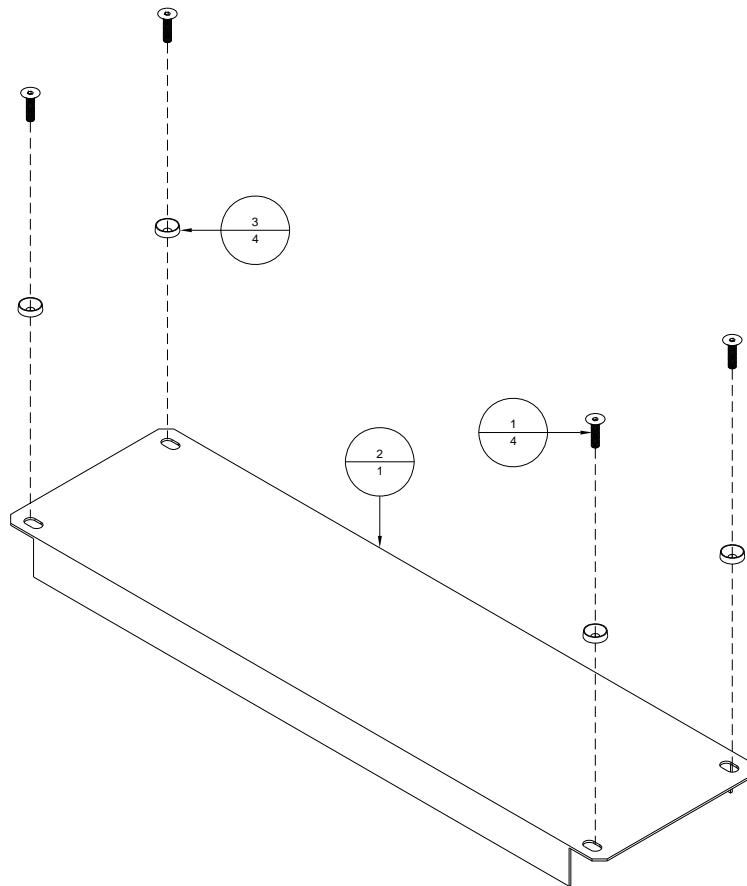
Figure A-17: 9103217A – Cover Assembly, 3U

Table A-18: 9103219A – Caster Wheel Assembly

Item	Part Number	Quantity	Description	Reference
1	420015	4	Nut, 5/16-18 UNC	
2	439015	4	Lockwasher, 5/16 ID	
3	440015	4	Washer, 5/16 ID	
4	9103219	1	Caster Wheel, 3" DIA	

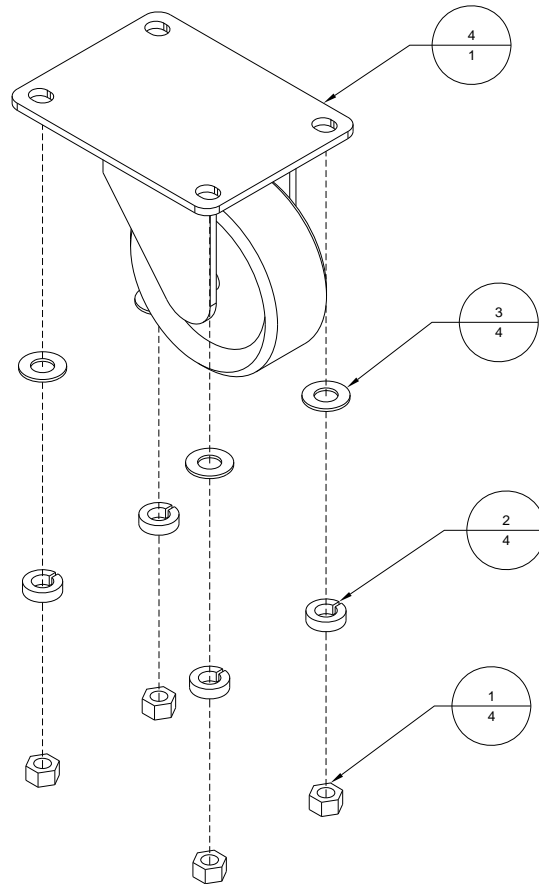
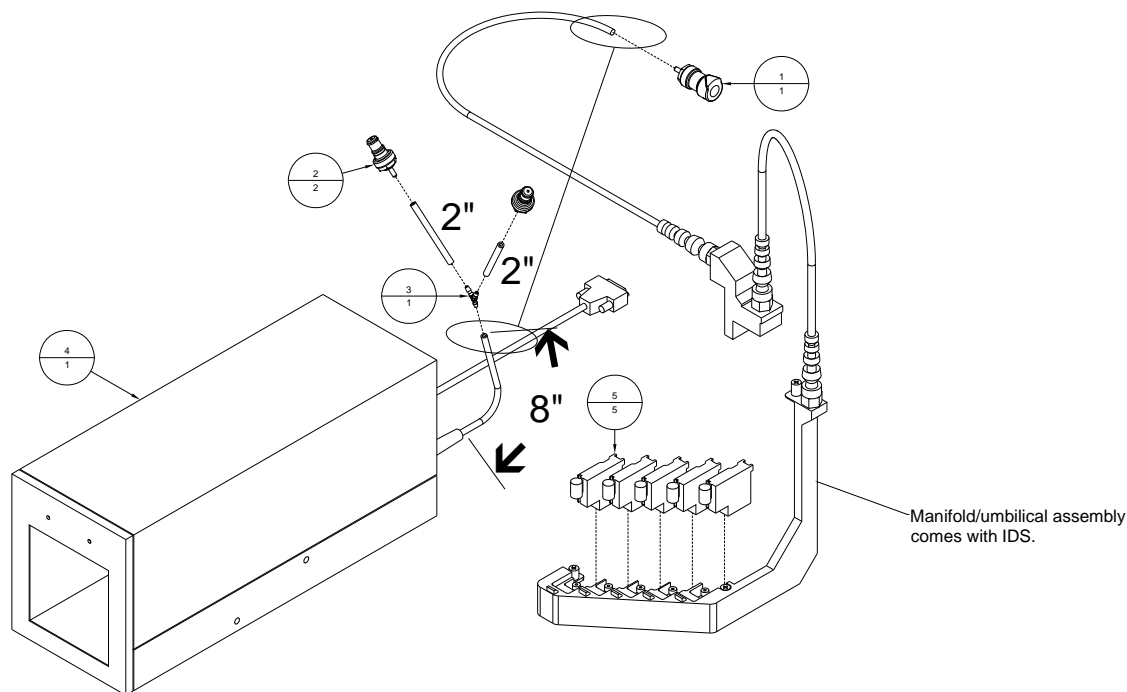
Figure A-18: 9103219A – Caster Wheel Assembly

Table A-19: 9103303A – Ink Delivery Module, Hyperion-DC

Item	Part Number	Quantity	Description	Reference
1	9103042	1	Coupling Body, Female, 1/8" OD	
2	9103303	2	Coupling Body, Male, 1/8" OD	
3	9103712	1	Y-Fitting, 1/8" ID, Black Nylon	
4	9104401	1	Hyperion Ink Delivery System	
5	9104554	5	Printhead, Hyperion Setup	

Figure A-19: 9103303A – Ink Delivery Module, Hyperion-DC

**NOTE:**

- Split PE tube 8 inches outside strain relief on IDS.
- Carefully pre-heat the IDS side tube and attach "Y" fitting.
- Cut 4" of remaining longer section tube - approx. 222" long, and split it into two 2" long sections.
- Carefully pre-heat one side of the two identical tubes (2") and attach male quick disconnect coupling onto each tube.
- Carefully pre-heat other side of previously assembled short tube sections with male quick disconnect couplings and attach them onto "Y" fitting.
- Carefully pre-heat long tube section (manifold side) and attach female quick disconnect coupling onto it.

Setup printheads (9104554) are used to prime the ink line. Use only when assembled in the Hyperion-DC Printhead.

IDS power cable is part of 9104551A (Q2326-67007).

Table A-20: 9103360A – Side Door Assembly, Left

Item	Part Number	Quantity	Description	Reference
1	404240	4	Screw, SHCS, 10-32 UNF x 5/8"	
2	404250	4	Screw, SHCS, 10-32 UNF x 3/4"	
3	609110	2	Connector, Push-On, 16-14 AWG, Blue	
4	9102681	1	Wire, #14, Green/Yellow, 20"	
5	9103360	1	Door, Side, Cabinet	
6	9103372	2	Hinge, Front Mount, Adjustable	
7	9103373	1	Latch, Quarter Turn	

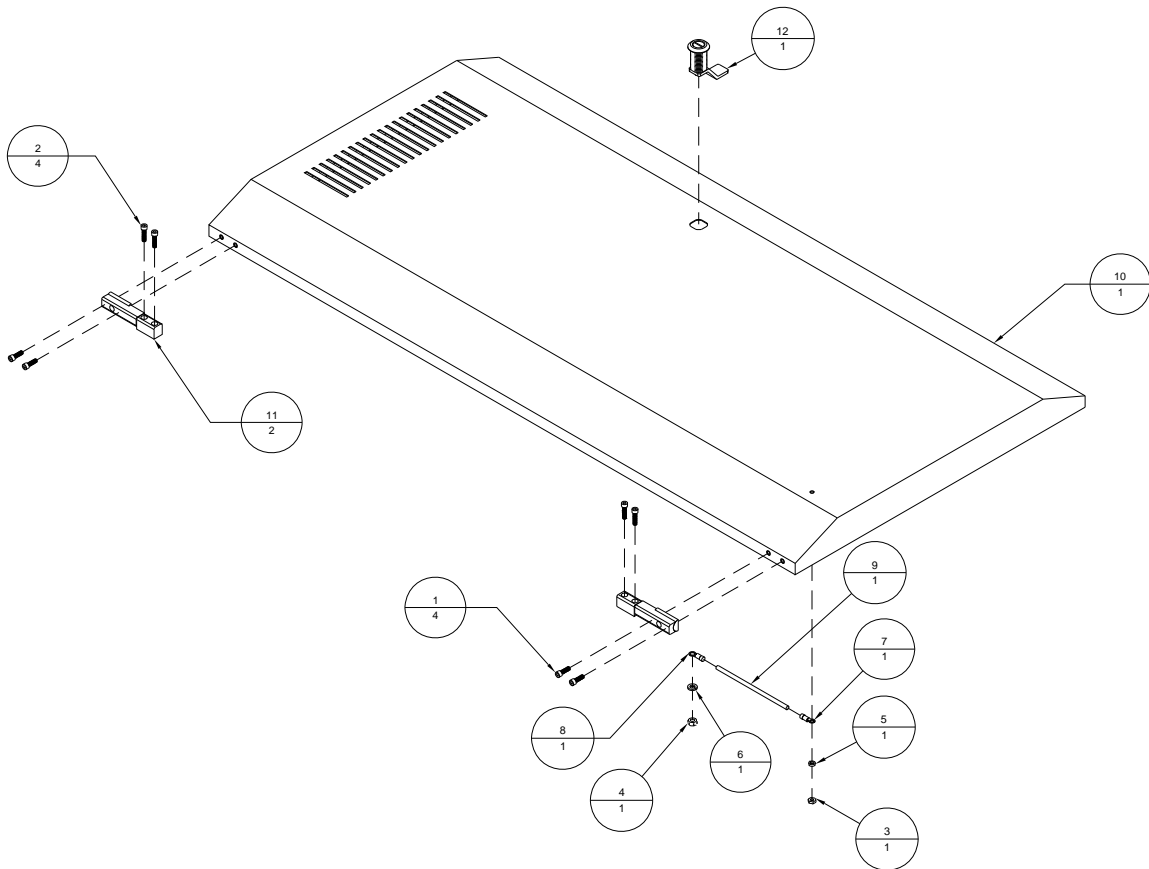
Figure A-20: 9103360A – Side Door Assembly, Left

Table A-21: 9103362A – Side Door Assembly, Bottom

Item	Part Number	Quantity	Description	Reference
1	404240	4	Screw, SHCS, 10-32 UNF x 5/8"	
2	404250	4	Screw, SHCS, 10-32 UNF x 3/4"	
3	420008	1	Nut, 10-32 UNF	
4	420010	1	Nut, 1/4-20 UNC	
5	439009	1	Lockwasher, #10	
6	439010	1	Lockwasher, 1/4" ID	
7	609111	1	Terminal Ring, #10, 16-14 AWG, Blue	
8	609120	1	Terminal Ring, 1/4", 16-14 AWG, Non-Ins.	
9	9102681	1	Wire, #14, Green/Yellow, 20"	
10	9103362	1	Door, Side, Cabinet	
11	9103372	2	Hinge, Front Mount, Adjustable	
12	9103373	1	Latch, Quarter Turn	

Figure A-21: 9103362A – Side Door Assembly, Bottom

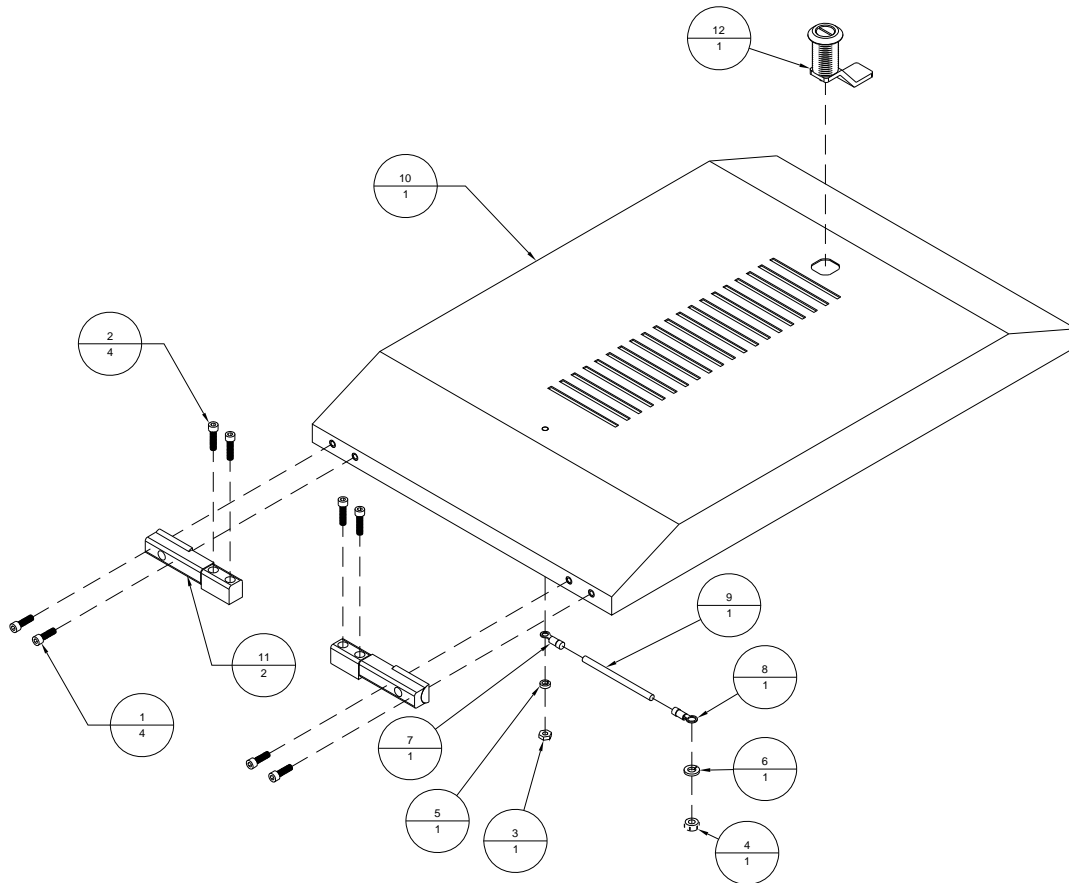


Table A-22: 9103403A – Rear Guard Assembly

Item	Part Number	Quantity	Description	Reference
1	404050	4	Screw, FHCS, 10-32 UNF x ¾"	
2	609110	2	Connector, Push-On, 16-14 AWG, Blue	
3	615425	1	Hole Plug, 7/8"	
4	9102681	1	Wire, #14, Green/Yellow, 20"	
5	9103315	4	Washer, Cup, 10-32 UNF Flat Head	
6	9103403	4	Hole Plug, Dome, 0.187"	
7	9103863	1	Cover, Bottom Guard	

Figure A-22: 9103403A – Rear Guard Assembly

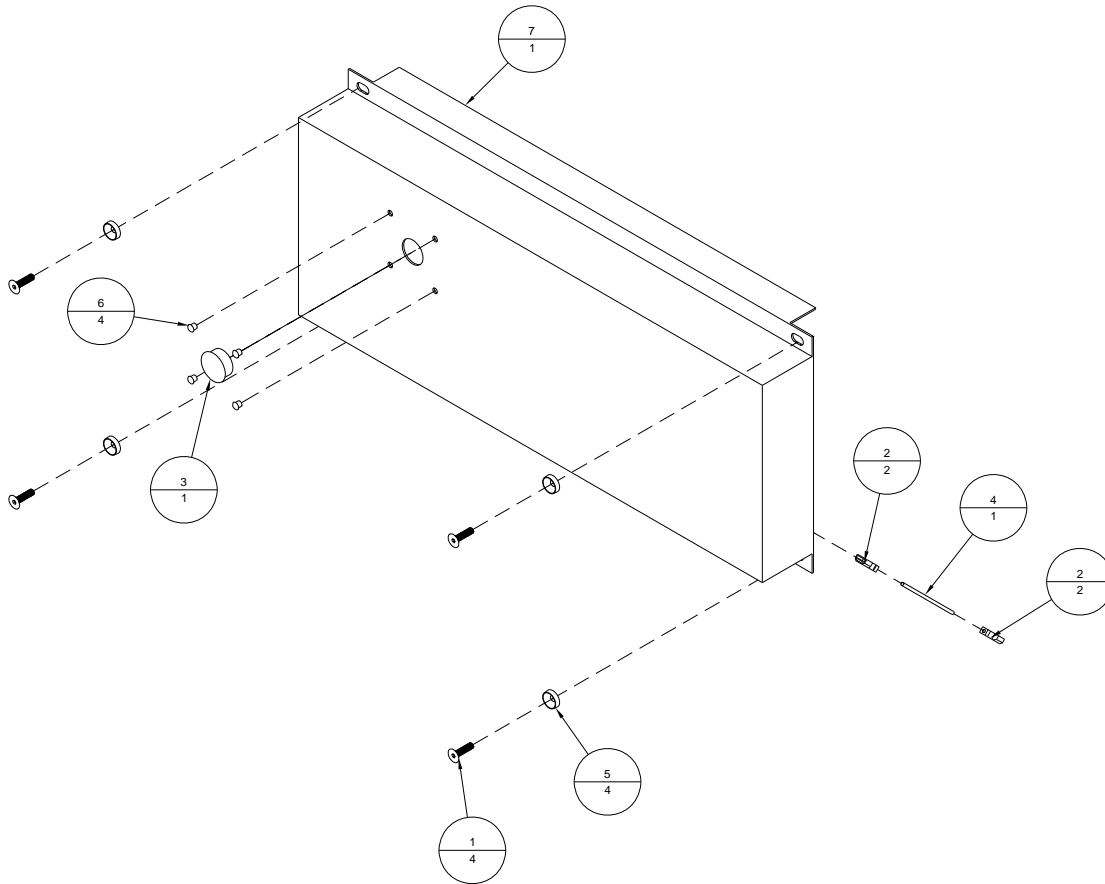


Table A-23: 9103407A – Controller Top Assembly

Item	Part Number	Quantity	Description	Reference
1	404530	8	Screw, BHCS, 10-32 UNF x 1/2"	
2	420008	2	Nut, 10-32 UNF	
3	439008	4	Lockwasher, #10, External Tooth	
4	440008	2	Washer, #10 ID	
5	615426	1	Hole Plug 1-1/8"	
6	9103406	1	Mount, Monitor, LCD	
7	9103409A	2	Side Door Assembly, Top	Page A-25

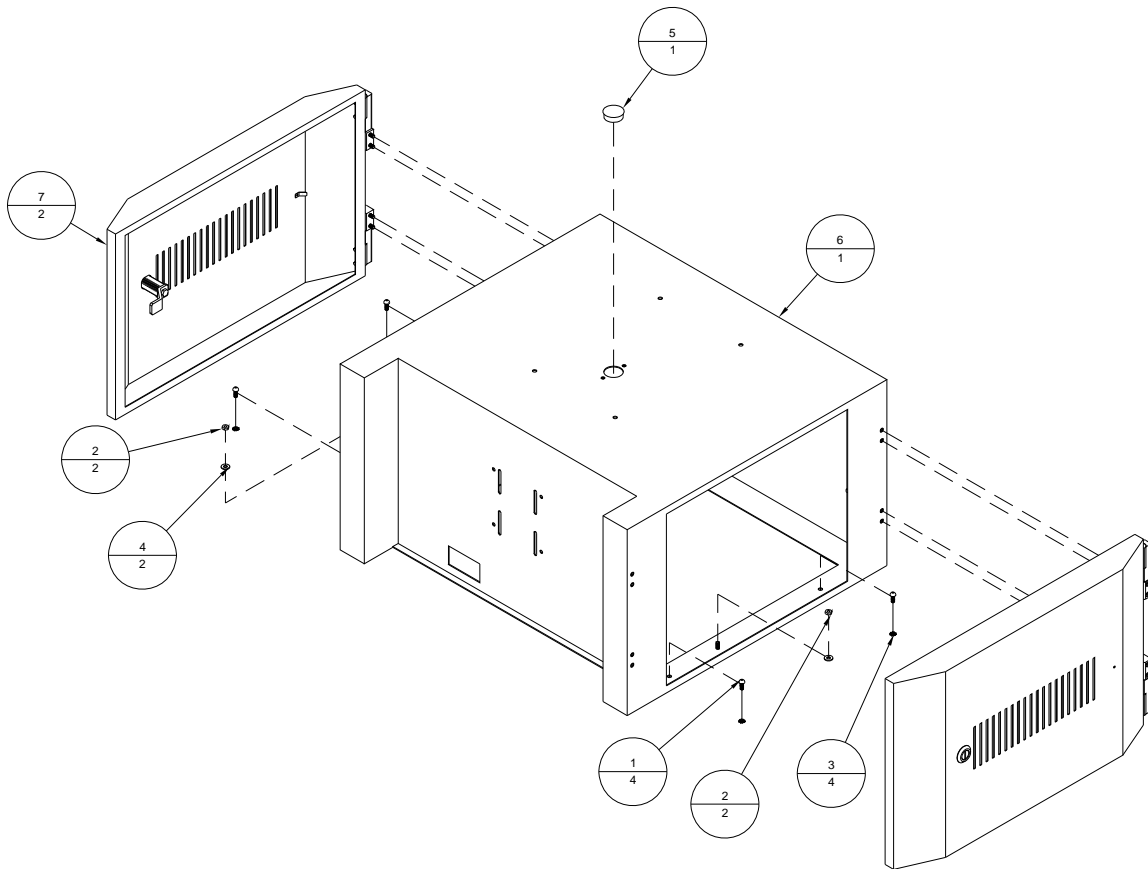
Figure A-23: 9103407A – Controller Top Assembly

Table A-24: 9103408A – Side Door Assembly, Right

Item	Part Number	Quantity	Description	Reference
1	404240	4	Screw, SHCS, 10-32 UNF x 5/8"	
2	404250	4	Screw, SHCS, 10-32 UNF x 3/4"	
3	609110	2	Connector, Push-On, 16-14 AWG, Blue	
4	9102681	1	Wire, #14, Green/Yellow, 20"	
5	9103372	2	Hinge, Front Mount, Adjustable	
6	9103373	1	Latch, Quarter Turn	
7	9103408	1	Door, Side, Cabinet	

Figure A-24: 9103408A – Side Door Assembly, Right

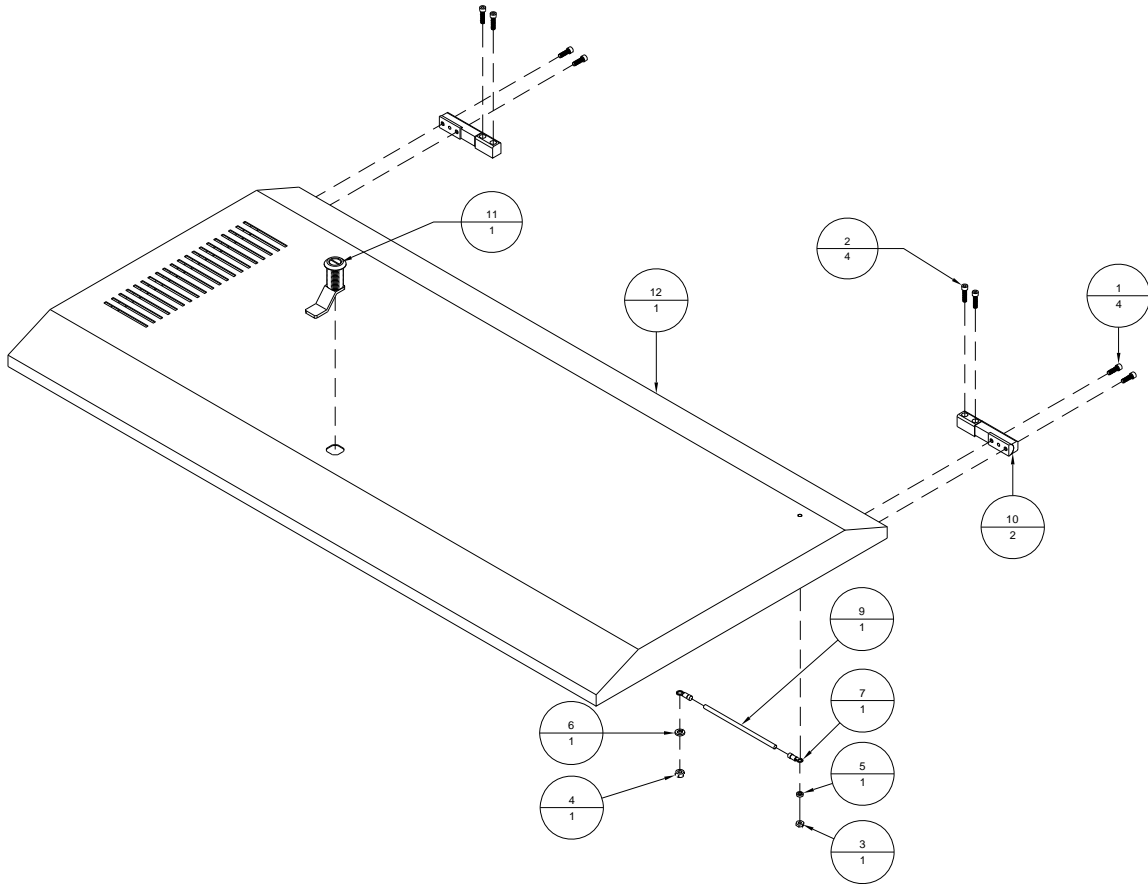


Table A-25: 9103409A – Side Door Assembly, Top

Item	Part Number	Quantity	Description	Reference
1	404240	4	Screw, SHCS, 10-32 UNF x 5/8"	
2	404250	4	Screw, SHCS, 10-32 UNF x 3/4"	
3	9103362	1	Door, Side, Cabinet, Short	
4	9103372	2	Hinge, Front Mount, Adjustable	
5	9103373	1	Latch, Quarter Turn	

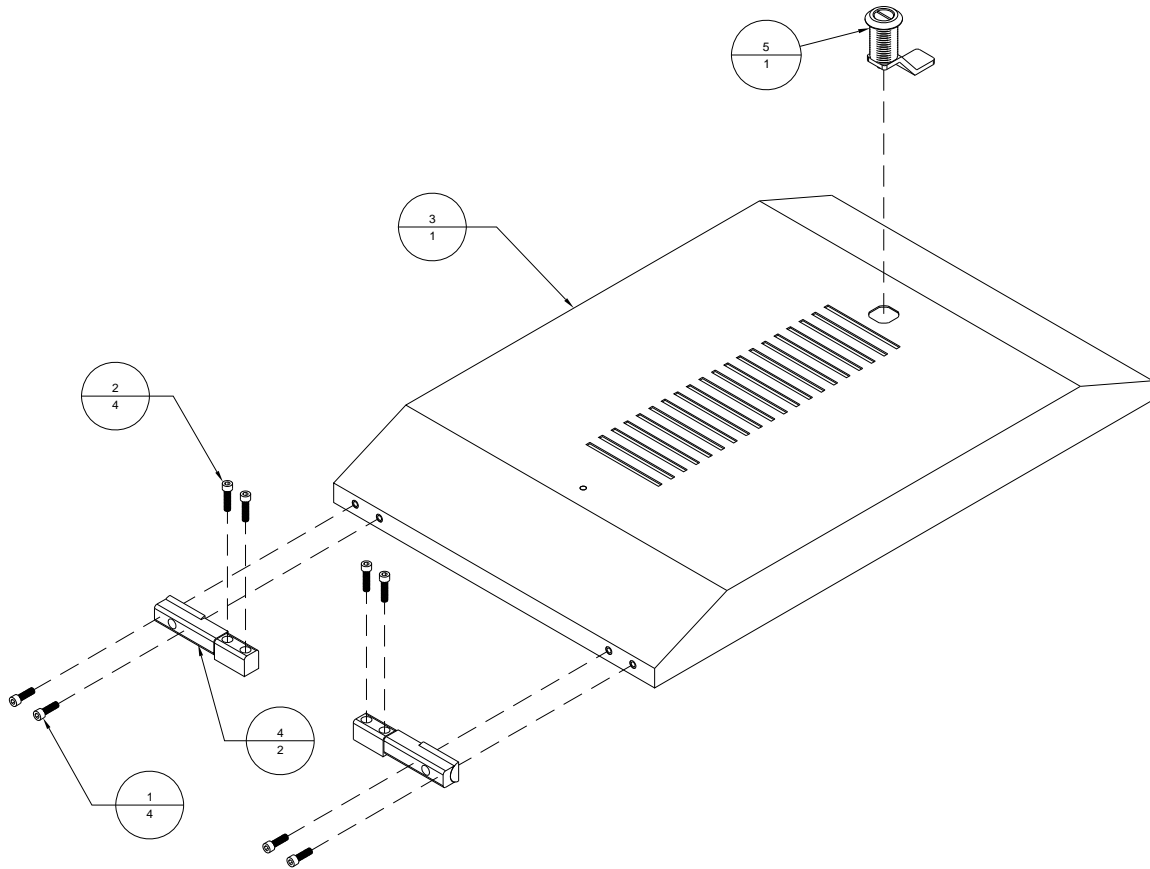
Figure A-25: 9103409A – Side Door Assembly, Top

Table A-26: 9103423A – Back Cover Support Assembly

Item	Part Number	Quantity	Description	Reference
1	404050	2	Screw, FHCS, 10-32 UNF x ¾"	
2	9103315	2	Washer, Cup, 10-32 UNF Flat Head	
3	9103423	1	Bracket, Back Cover Support	

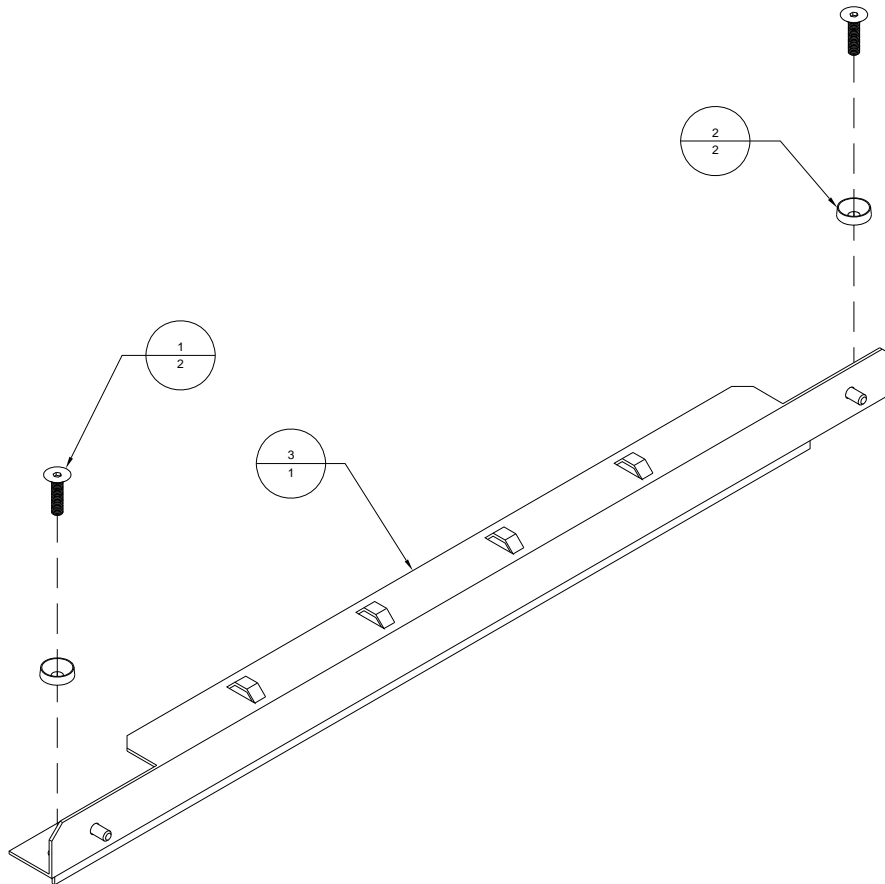
Figure A-26: 9103423A – Back Cover Support Assembly

Table A-27: 9103447A – Terminal Block Assembly, World

Item	Part Number	Quantity	Description	Reference
1	404530	2	Screw, BHCS, 10-32 UNF x ½"	
2	439009	2	Lockwasher, No. 10	
3	440008	2	Washer, #10 ID	
4	606008	1	Wire, #14, White, 12"	
5	606010	1	Wire, #14, Black, 12"	
6	609120	1	Terminal Ring, ¼", 16-14 AWG, Non-Ins.	
7	615021	1	T-Rail, DIN, 7"	
8	9102046	1	Terminal Marker, WS 12/6, L1	
9	9102047	1	Terminal Marker, WS 12/6, L2	
10	9102050	2	Terminal Marker, WS 12/6, L	
11	9102051	2	Terminal Marker, WS 12/6, N	
12	9102681	1	Wire, #14, Green/Yellow, 7"	
13	9103256	2	Cord, 10A/250VAC, 3m, Harmonized, IEC	
14	9103433	5	Ferrule, #14 AWG, Blue	
15	9103436	6	Terminal Block, Z-Roofstyle	
16	9103437	1	Terminal Block, Z-Roofstyle, Ground	
17	9103438	3	End Plate	
18	9103442	3	End Bracket	
19	9103447	2	Fuse Holder, 13/32" DIA	
20	9104887	6	Ferrule, #17 AWG / 1 mm ² , Yellow	

Figure A-27: 9103447A – Terminal Block Assembly, World

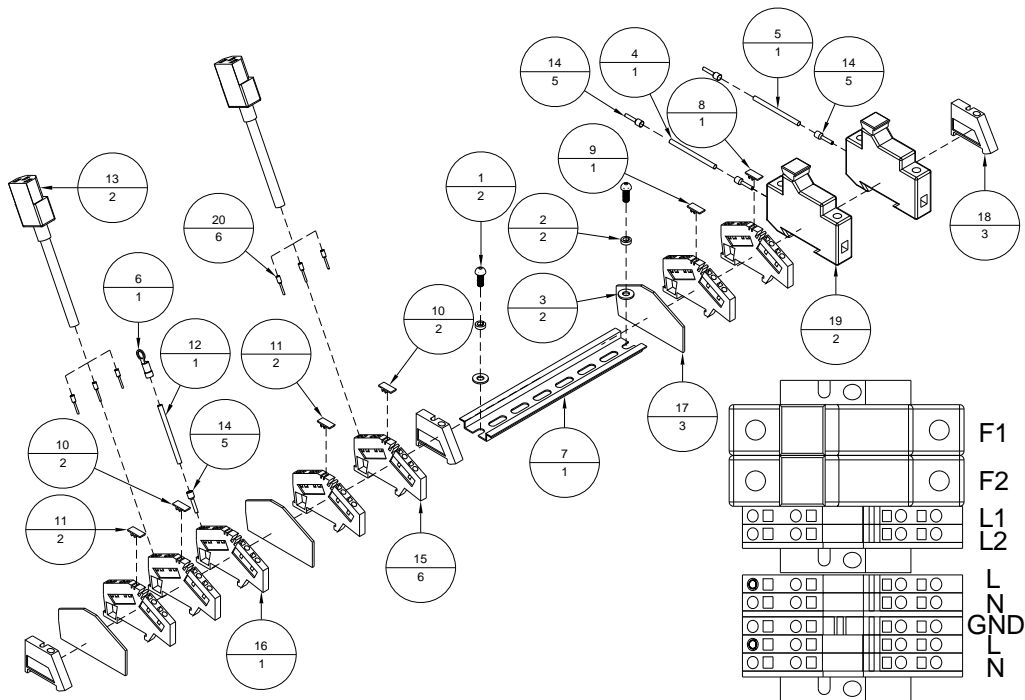


Table A-28: 9103460A - Locking Mechanism

Item	Part Number	Quantity	Description	Reference
1	404275	4	Screw, SHCS, 10-32 UNF x 1 1/4"	
2	404510	2	Screw, BHCS, 10-32 UNF x 1/4"	
3	404805	4	Screw, SHSS, 10-32 UNF x 1/8"	
4	404807	2	Screw, SHSS, 10-32 UNF x 3/16"	
5	436348	2	Dowel Pin, 1/4" DIA x 2"	
6	505056	6	Flange Bushing, 1/4 ID x 3/8 OD x 1/4" Lg.	
7	9102885	1	Knob, Diamond Cut, Knurled, 2" DIA	
8	9103457	1	Knob, Diamond Cut, Knurled, 1.57" DIA	
9	9103458	1	Threaded Rod, 3/8-16 UNC	
10	9103459	1	Slider Nut, 3/8-16 UNC	
11	9103460	2	Bracket, Slider Block	
12	9103461	1	Threaded Rod, 3/8-24 UNF	
13	9103462	1	Cover, Lateral Adjustment Mechanism	
14	9103463	1	Pin, Brass, 3/16" DIA x 0.6" Lg.	

Figure A-28: 9103460A - Locking Mechanism

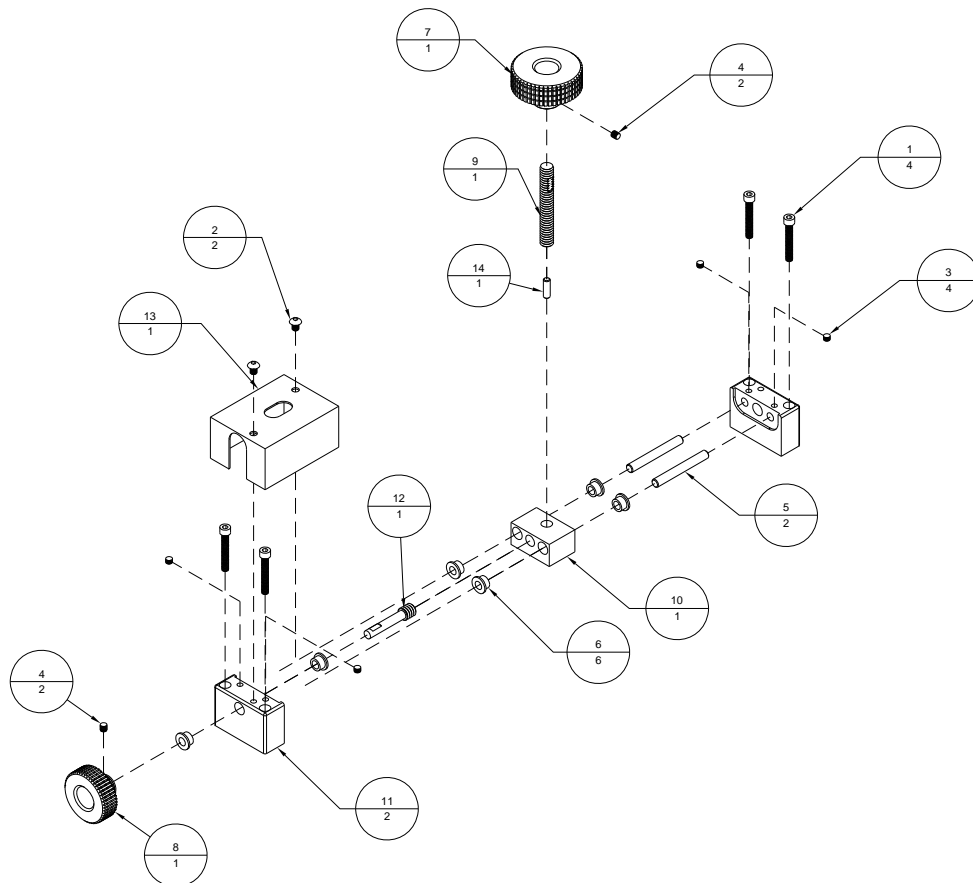


Table A-29: 9103863A – Front Guard Assembly

Item	Part Number	Quantity	Description	Reference
1	404050	4	Screw, FHCS, 10-32 UNF x ¾"	
2	606033	2	Cable, #14-3, SJOW-A, 24"	
3	609110	2	Connector, Push-On, 16-14 AWG, Blue	
4	9102681	1	Wire, #14, Green/Yellow, 20"	
5	9103187	1	Switch, Padlock, 25A	
6	9103315	4	Washer, Cup, 10-32 UNF Flat Head	
7	9103433	8	Ferrule, #14 AWG, Blue	
8	9103863	1	Cover, Bottom Guard	

Figure A-29: 9103863A – Front Guard Assembly

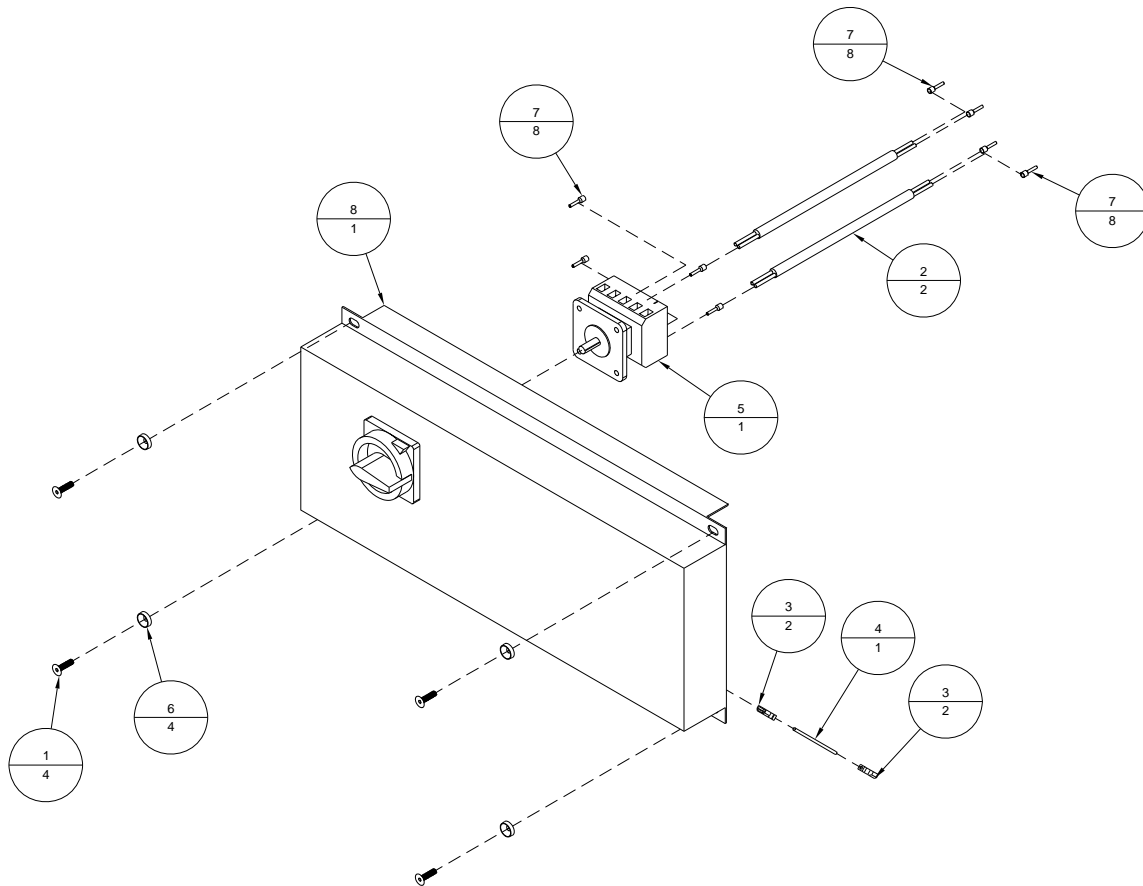


Table A-30: 9103869A – Side Cover Assembly

Item	Part Number	Quantity	Description	Reference
1	609110	2	Connector, Push-On, 16-14 AWG, Blue	
2	9102681	1	Wire, #14, Green/Yellow, 20"	
3	9103869	1	Bracket, Lower Vent	

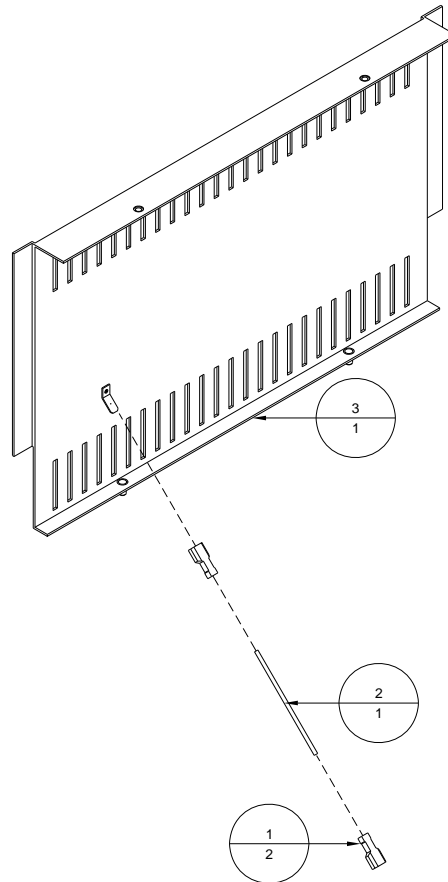
Figure A-30: 9103869A – Side Cover Assembly

Table A-31: 9104127A – Computer Drive Mount Assembly

Item	Part Number	Quantity	Description	Reference
1	402320	4	Screw, PHMS, 6-32 UNC x 3/8"	
2	413506	4	Screw, BHCS, M3 x 6 mm	
3	439006	8	Lockwasher, No. 6	
4	440005	8	Washer, #6	
5	600333	1	Hard Drive	
6	803601	1	DVD-ROM, Black	
7	9102882	1	Hard Drive Mount	

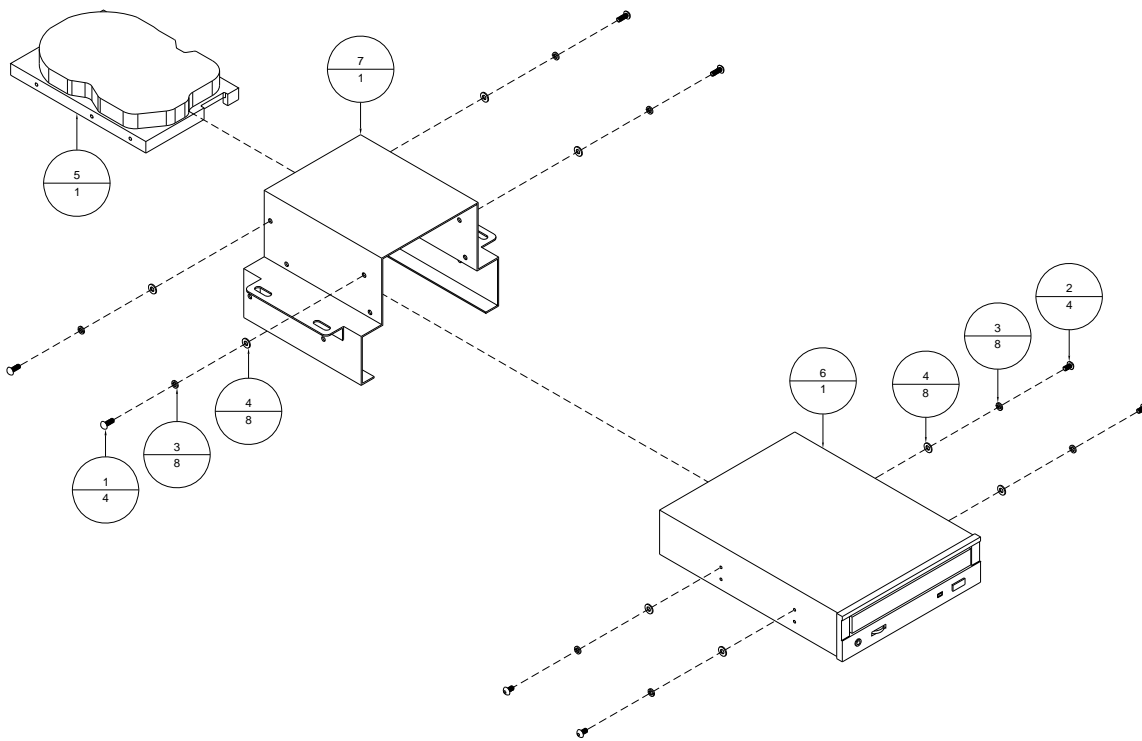
Figure A-31: 9104127A – Computer Drive Mount Assembly

Table A-32: 9104130A – Computer PCM Chassis Assembly

Item	Part Number	Quantity	Description	Reference
1	401310	8	Screw, PHMS, 4-40 UNC x ¼"	
2	402310	17	Screw, PHMS, 6-32 UNC x ¼"	
3	402320	4	Screw, PHMS, 6-32 UNC x 3/8"	
4	403510	4	Screw, BHCS, 8-32 UNC x ¼"	
5	404520	6	Screw, BHCS, 10-32 UNF x 3/8"	
6	420007	4	Nut, 8-32 UNC	
7	420008	2	Nut, 10-32 UNF	
8	439009	10	Lockwasher, No. 10	
9	440008	8	Washer, No. 10	
10	600101A	1	Counter Assembly	
11	609110	2	Connector, Push-On, Blue	
12	614307A	1	Cable, I/O Assembly	
13	615322	4	Female Screwlock, 4-40 UNC	
14	9101863	1	Power Supply, 12V, ATX	
15	9101971	1	Software, Compose IQ	
16	9102681	1	Wire, #14, Green/Yellow, 20"	
17	9102781A	1	Fan Assembly, 12 VDC	
18	9102782	1	Filter, 12 VDC Fan	
19	9102783	1	Fan, Finger Guard Metal	
20	9103178A	1	Field Connection Board Assembly	Page A-16
21	9103185	4	Screw, FPHM, 8-32 UNC x 1-3/4"	
22	9103188	5	Cover, Computer Slot	
23	9103196A	1	Cable, Data Ribbon, DB9 Male	
24	9103317A	1	Cable, Switch Pushbutton Assembly	
25	9103471A	1	Cable, FCB Output	
26	9103472A	1	Cable, FCB Input	
27	9104119A	1	Cable, Controller I/O Receptacle, 18"	
28	9104127A	1	Computer Drive Mount Assembly	Page A-31
29	9104130	1	Enclosure, Computer DPI/DPII	
30	9104133	1	Cover, Computer Module	
31	9104294	1	CPU, Pentium 4, Socket 775	
32	9104370	1	Card, Video, PCI Express	
33	9104418	1	Bracket, DP Card Support	
34	9104724	1	Motherboard, Socket 775	
35	9104726	1	Memory, 2 GB (DDR 2)	
36	9104729	1	Software, Windows Vista Ultimate	
37	9105162	1	Cable, DB9M Serial Adapter, Crossed	

Figure A-32: 9104130A – Computer PCM Chassis Assembly

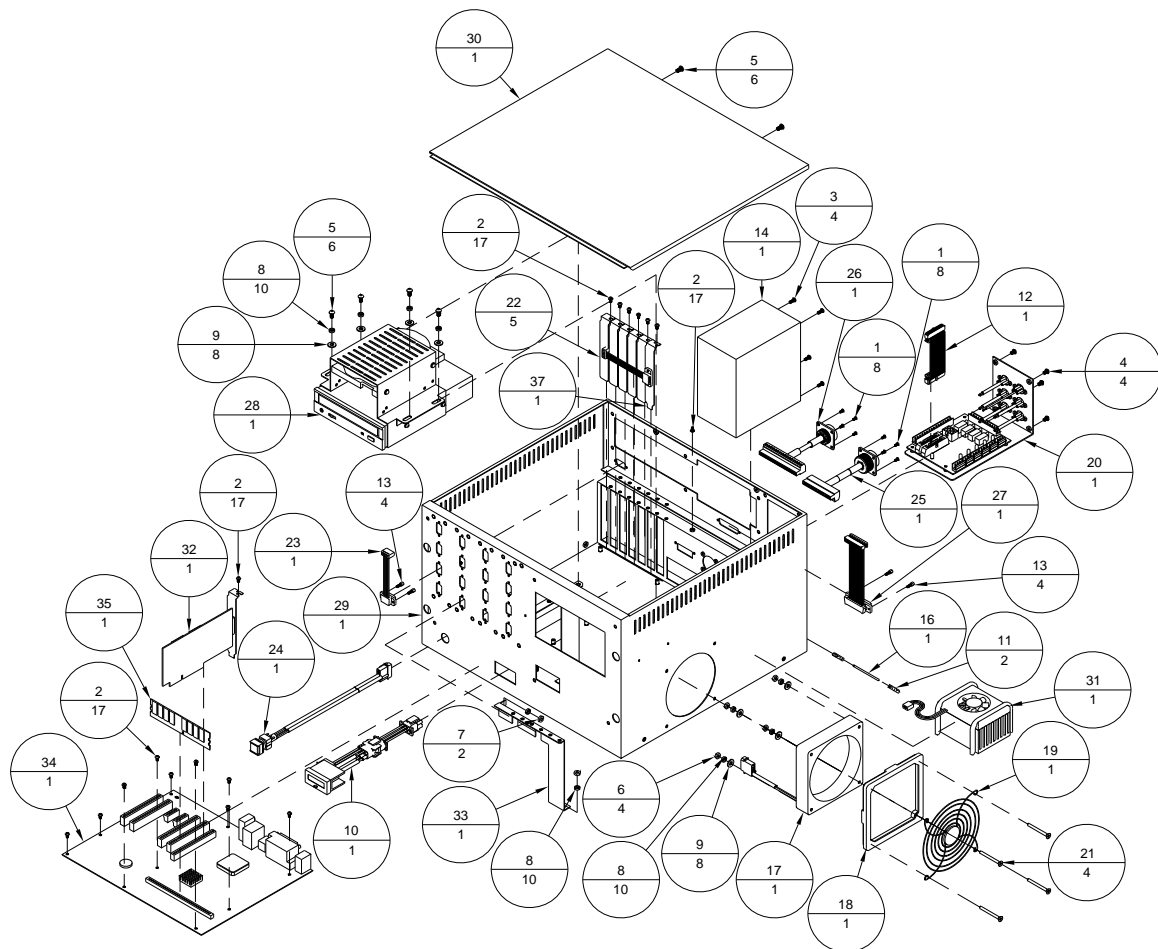


Table A-33: 9104131A – Faceplate Assembly, BK-PCM-16

Item	Part Number	Quantity	Description	Reference
1	401010	4	Screw, FHCS, 4-40 UNC x ¼"	
2	404050	4	Screw, FHCS, 10-32 UNF x ¾"	
3	406530	4	Screw, BHCS, 5/16-18 UNC x ½"	
4	439015	4	Lockwasher, 5/16 ID	
5	9102847	2	Handle, Pull, 5/16-18	
6	9103315	4	Washer, Cup, 10-32 UNF Flat Head	
7	9104119	2	Cable, USB-B To Header	
8	9104131	1	Faceplate, Computer Module, 16-Channel	
9	9104132	2	Connector, Serial Bus (USB Adapter)	

Figure A-33: 9104131A – Faceplate Assembly, BK-PCM-16

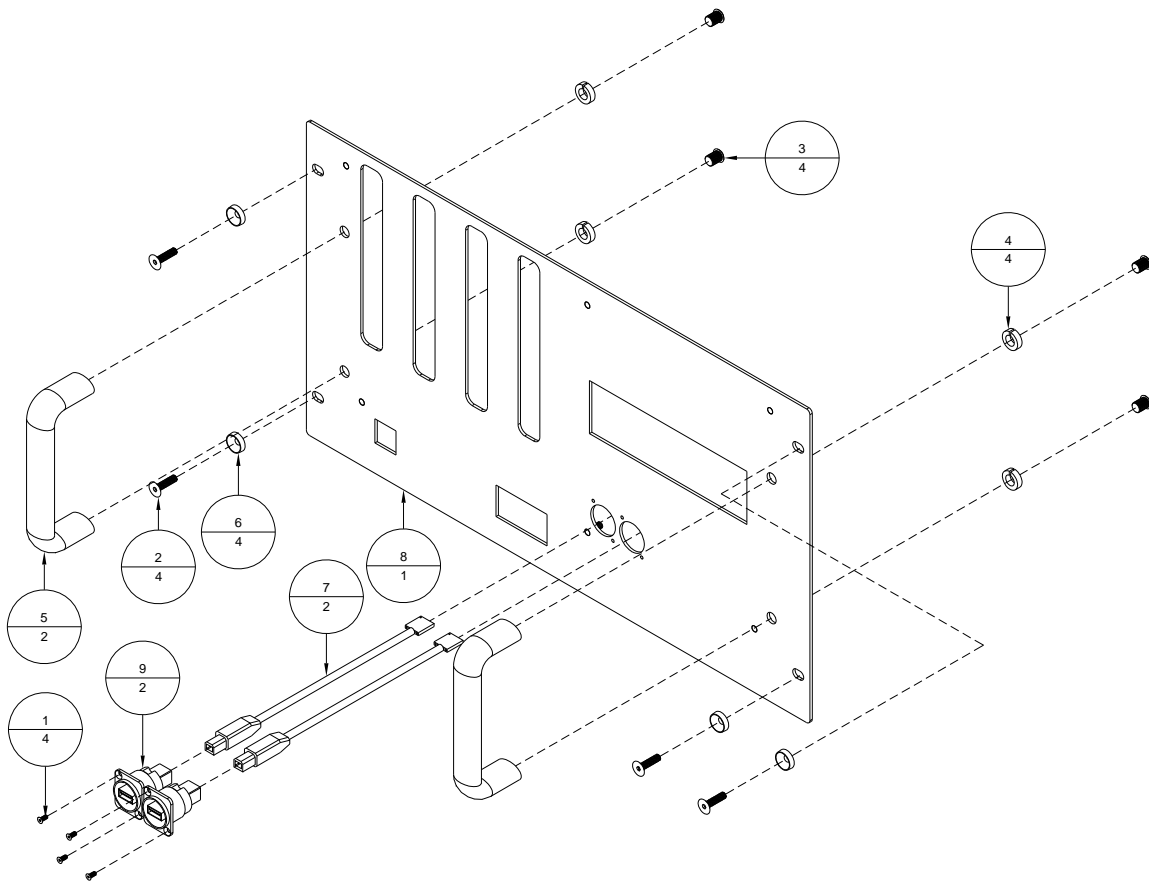


Table A-34: 9104135A – Image Accelerator Card Assembly, PCM

Item	Part Number	Quantity	Description	Reference
1	401310	6	Screw, PHMS, 4-40 UNC x ¼"	
2	402320	2	Screw, PHMS, 6-32 UNC x 3/8"	
3	440530	6	Washer, #6, Nylon	
4	9104115	1	Card, Image Accelerator	
5	9104135	1	Bracket, Image Accelerator Card	

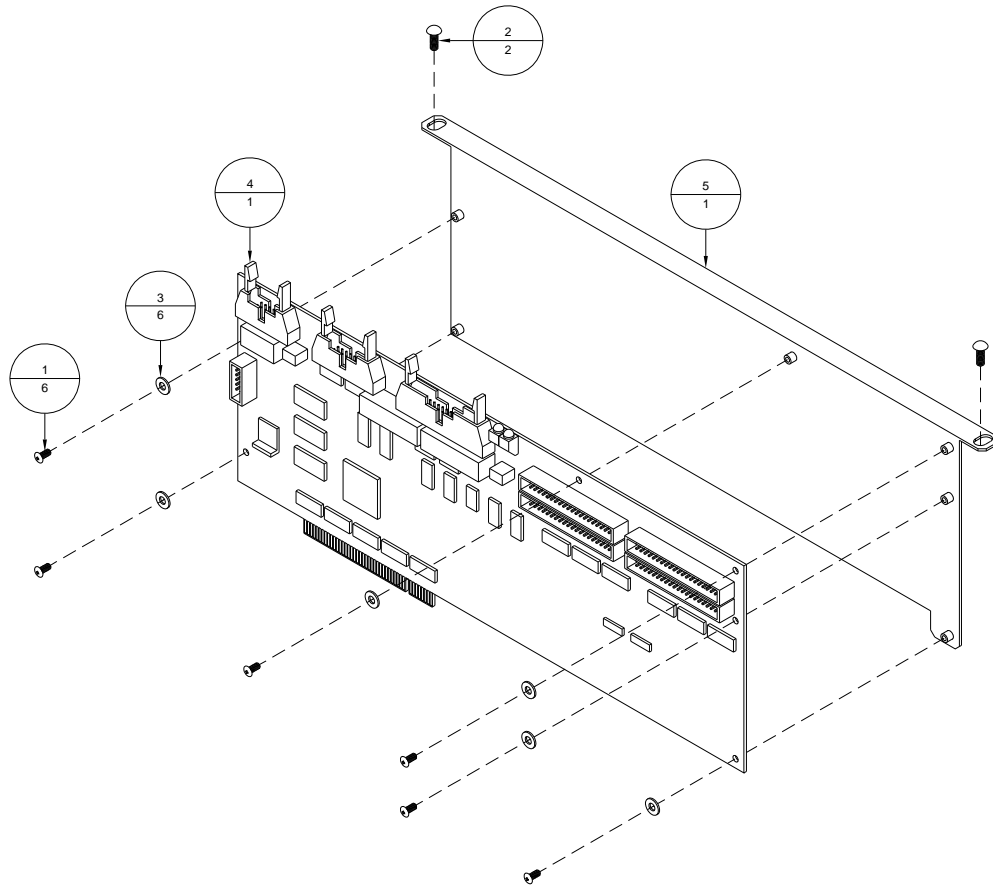
Figure A-34: 9104135A – Image Accelerator Card Assembly, PCM

Table A-35: 9104402A - Hyperion Head & Mount Assembly

Item	Part Number	Quantity	Description	Reference
1	439010	4	Lockwasher, 1/4" I.D.	
2	9104402	1	Hyperion Imaging Module	
3	9104409A	1	Hyperion Head Mount Assembly	Page A-37
4	9104415	4	Screw, PHMS, M6 x 1mm, 12 mm long	

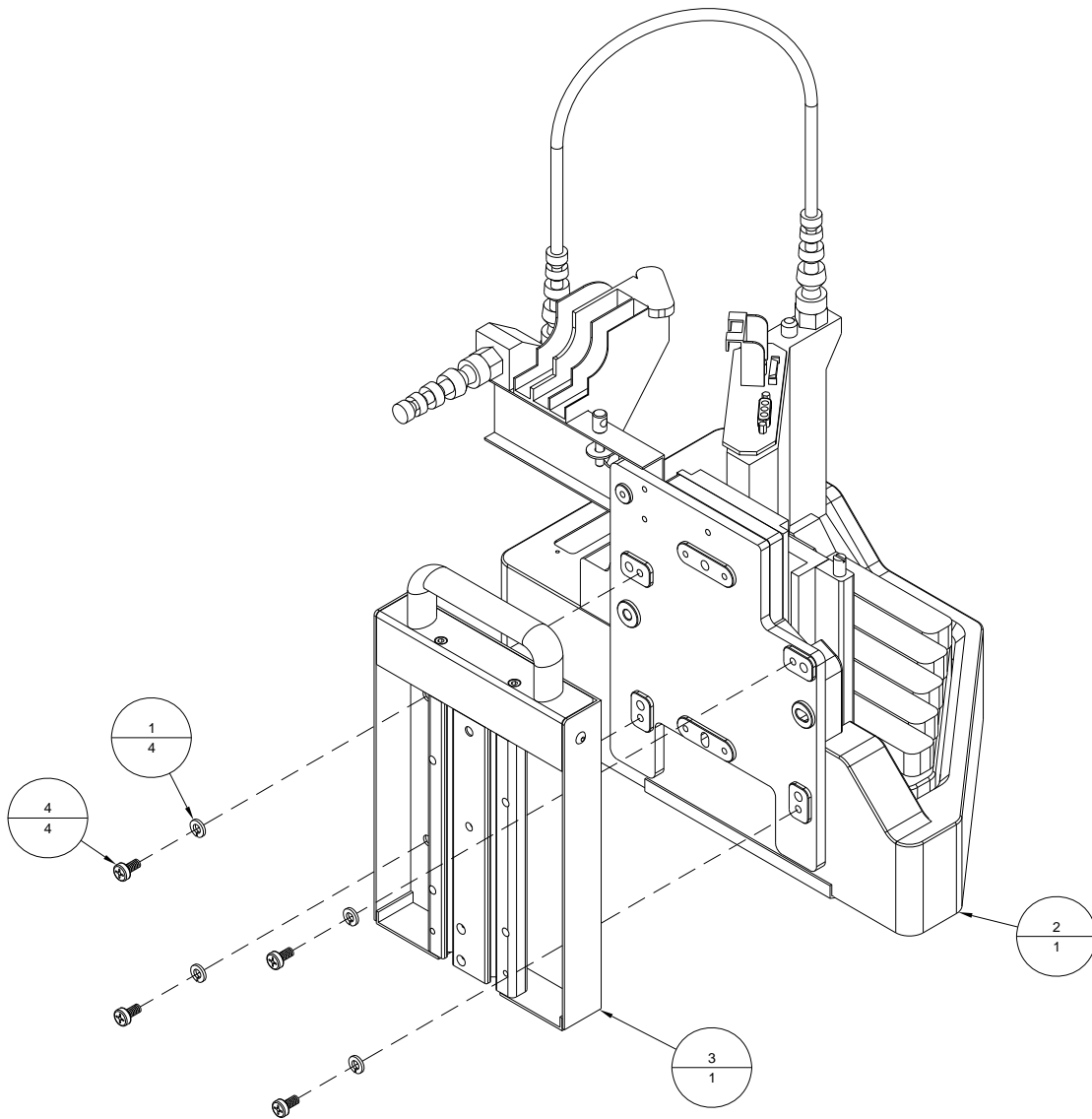
Figure A-35: 9104402A - Hyperion Head & Mount Assembly

Table A-36: 9104409A - Hyperion Head Mount Assembly

Item	Part Number	Quantity	Description	Reference
1	404282	2	Screw, SHCS, 10-32 UNF x 1 3/4"	
2	404540	5	Screw, BHCS, 10-32 UNF x 5/8"	
3	405540	2	Screw, BHCS, 1/4-20 UNC x 5/8"	
4	406585	2	Screw, BHCS, 5/16-18 UNC x 2"	
5	439010	2	Lockwasher, 1/4" ID	
6	9102088	1	Extrusion, Al, Profile 8	
7	9102847	1	Handle, Pull, 5/16-18	
8	9104409	1	Bracket, Hyperion head mount	
9	9104410	1	Bracket, Top head mount	
10	9105223	1	Block, Hyperion Angular Adjustment	
11	9105224	2	Screw, Set, 1/4-20 UNC, Brass Tip	

Figure A-36: 9104409A - Hyperion Head Mount Assembly

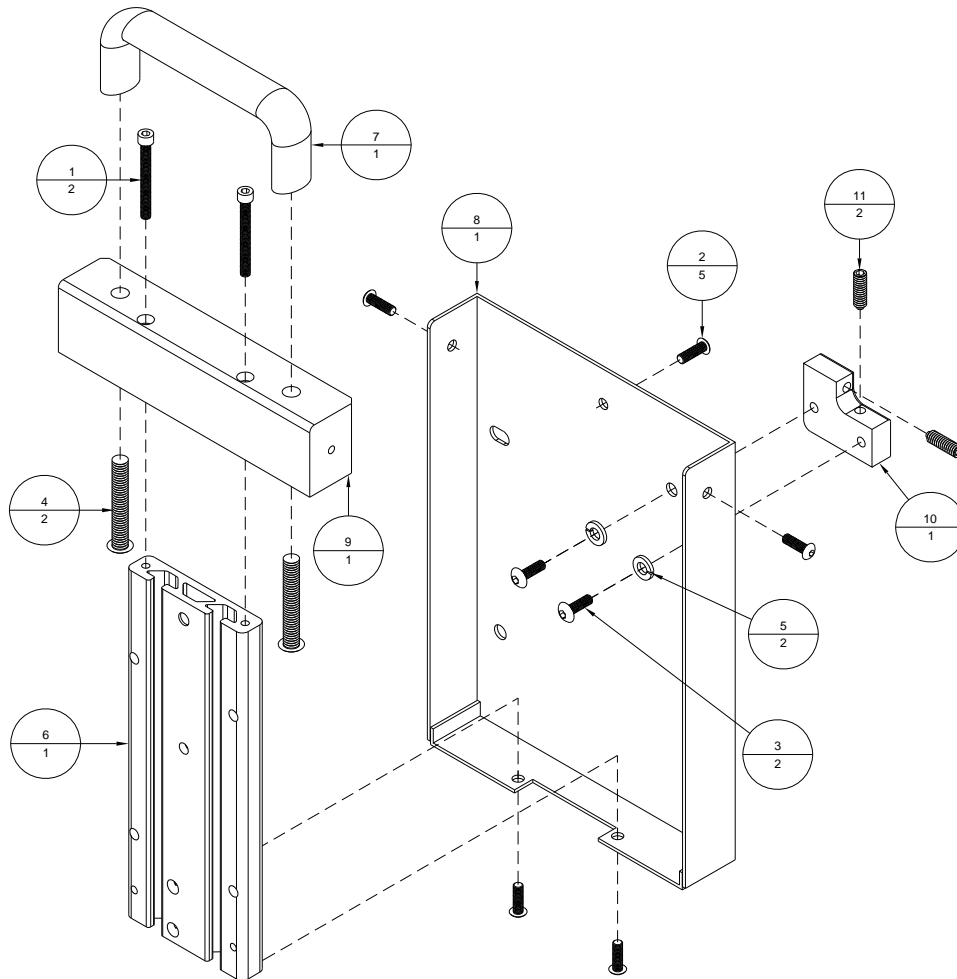


Table A-37: 9104413A - Bridge Mount Assembly - Triple

Item	Part Number	Quantity	Description	Reference
1	131020	1	Collar, 3/8" I. D.	
2	212533	3	Linear Bearing, 1" ID	
3	404040	2	Screw, FHCS, 10-32 UNF x 5/8"	
4	404080	2	Screw, FHCS, 10-32 UNF x 1 1/2"	
5	404520	3	Screw, BHCS, 10-32 UNF x 3/8"	
6	404807	1	Screw, SHSS, 10-32 UNF x 3/16"	
7	436060	4	Spring Pin, 1/8 in dia. x 1 in	
8	437156	6	Retaining Ring, 1 9/16" ID, External	
9	439009	3	Lockwasher, No. 10	
10	505384	1	Flange Bushing, 3/8 ID X 1/2 OD X 1/2 LG	
11	9101128	2	Dowel Pin, 1/2" DIA x 4"	
12	9102592	1	Shoulder Bolt, 3/8" x 3 1/2, 5/16-18 UNC	
13	9102877	1	Bearing, Thrust, 1/4" I.D.	
14	9102883	1	Mounting Block, Slider	
15	9102884	1	Plunger, spring loaded, Threaded, 1/4-20	
16	9102885	1	Knob, Diamond Cut, Knurled, 2" dia.	
17	9103460A	1	Locking Mechanism	Page A-28
18	9104412	1	Bracket, Head Guide Block	
19	9104413	1	Mount, Triple Bridge	
20	9104414	1	Rod, Threaded, Triple bridge	

Figure A-37: 9104413A - Bridge Mount Assembly - Triple

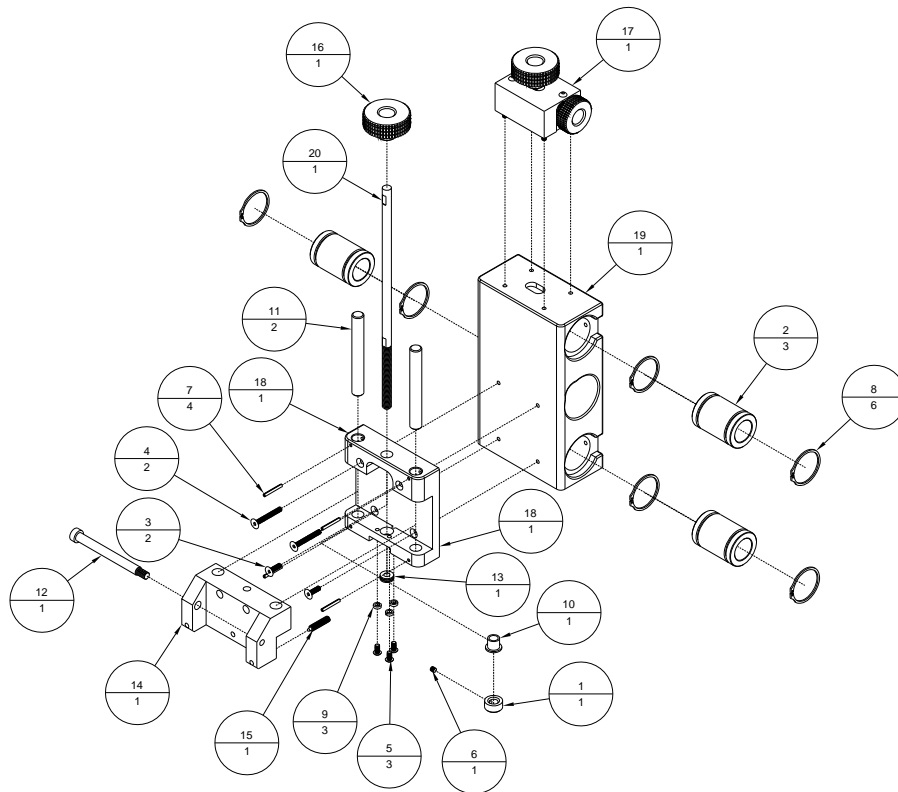


Table A-38: 9104566A - Head Mount Assembly, Angular, Hyperion

Item	Part Number	Quantity	Description	Reference
1	402250	4	Screw, SHCS, 6-32 UNC X 3/4 in	
2	404050SS	2	Screw, FHCS, 10-32 UNF x 3/4" SS	
3	404070	2	Screw, FHCS, 10-32 UNF x 1"	
4	404240	2	Screw, SHCS, 10-32 UNF x 5/8"	
5	405830	1	Screw, SHSS, 1/4-20 UNC x 1/2"	
6	436313	1	Dowel Pin, 1/4"DIA X 1"	
7	439009	2	Lockwasher, No.10	
8	505463	1	Flange Bushing, 1/4 ID X 3/8 OD X 3/8 LG	
9	505464	1	Flange Bushing, 1/4 ID x 3/8 OD x 1/2 LG	
10	9102094	2	Profile Bar	
11	9103993	1	Dowel pin, 1/4" DIA., 0.625" long.	
12	9103994	2	Screw, SHSS, 1/4-20 X 3/8, cone point	
13	9104010	1	Bracket, Angular, Top	
14	9104011	1	Bracket, Angular, Bottom	
15	9104012	1	Bracket, Swivel	
16	9104566	1	Mount, Hyperion, Solid	

Figure A-38: 9104566A - Head Mount Assembly, Angular, Hyperion

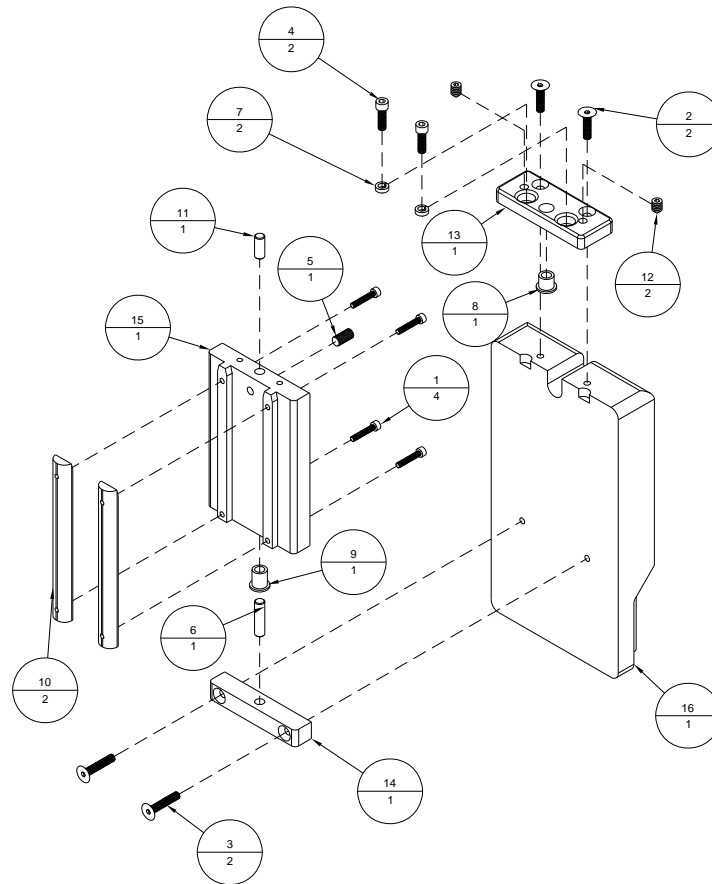


Table A-39: 9104567A – Stack Light Assembly, Amber, Green, 12VDC

Item	Part Number	Quantity	Description	Reference
1	404530	2	Screw, BHCS, 10-32 UNF x 1/2"	
2	606014	1	Cable, #22-4, Shielded, 18" long	
3	609000	2	Shrink Wrap, 3/16 in I.D., 1.5"	
4	614008	3	Contact, Male, 24-18 AWG, Mate-n-lok	
5	614009	1	Connector, 4-Pin, Male, Mate-n-lok	
6	9103468	3	Ferrule, #22 AWG, Turquoise	
7	9103612	1	Stack Light, Non-Flashing, Base	
8	9104643	1	Green Light Module, Stack Lights, 12VDC	
9	9104644	1	Amber Light Module, Stack Lights, 12VDC	

Figure A-39: 9104567A – Stack Light Assembly, Amber, Green, 12VDC

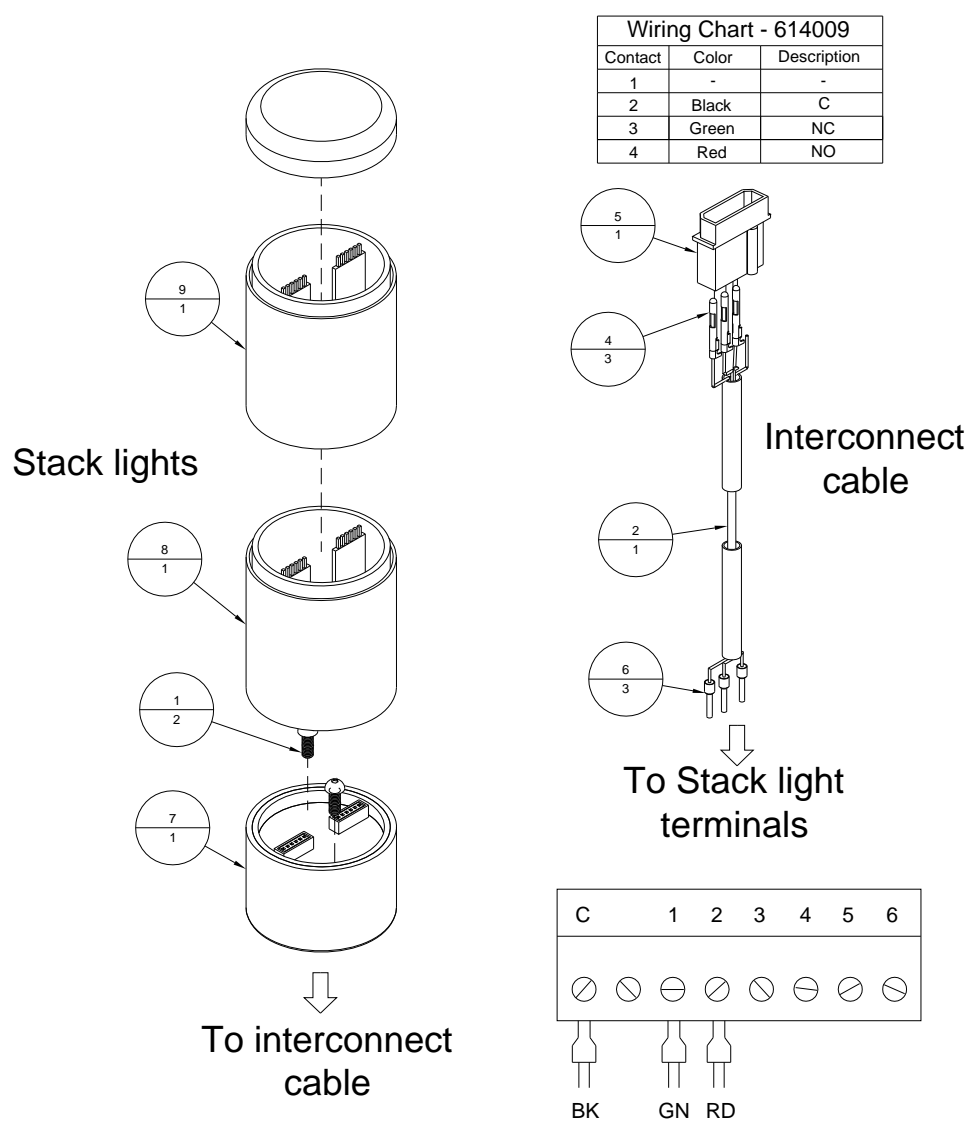


Table A-40: 9104939A – Power Supply Assembly, 24 VDC

Item	Part Number	Quantity	Description	Reference
1	402310	2	Screw, PHMS, 6-32 UNC x ¼"	
2	606001	1	Wire, #16, Red, 10" Lg.	
3	606002	1	Wire, #16, Blue, 10" Lg.	
4	606020	1	Wire, #18, Black, 18" Lg.	
5	606029	1	Wire, #18, White, 18" Lg.	
6	609111	1	Terminal, Ring, #10, 16-14 AWG, Blue	
7	609119	2	Terminal, Ring, #4, 22-18 AWG, Red	
8	615101	2	Tie Mount	
9	615140	2	Lashing Tie, Small	
10	9102681	1	Wire, #14, Green/Yellow, 8" Lg.	
11	9103435	2	Ferrule, #16 AWG, Red	
12	9103539	2	Ferrule, #18 AWG, White	
13	9104339	2	Terminal, Fork, #6, 16-14 AWG, Blue	
14	9104939	1	Power Supply, 24VDC	
15	9105208	1	Terminal, Fork, #6, 16-14 AWG, Narrow	

Figure A-40: 9104939A - Power Supply Assembly, 24 VDC

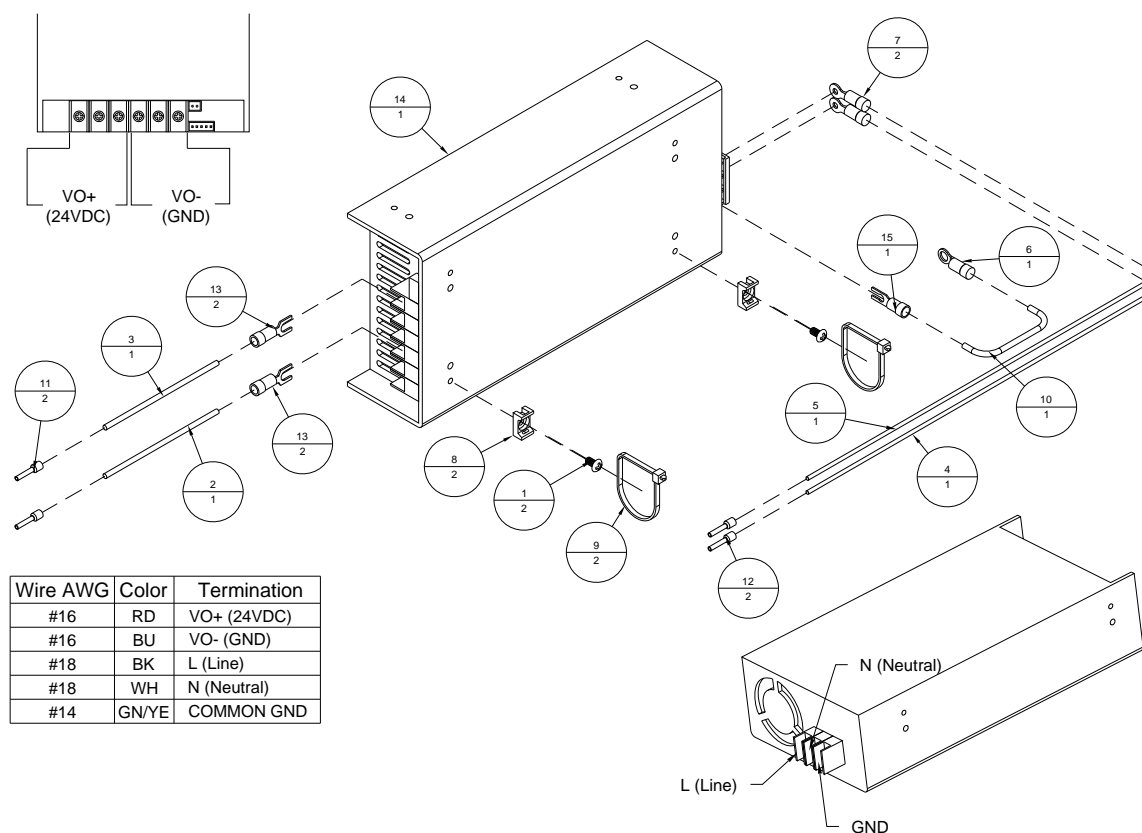


Table A-41: 9104941A – Bracket Assembly, HSB 1-2, One Channel

Item	Part Number	Quantity	Description	Reference
1	401310	2	Screw, PHMS, 4-40 UNC x ¼"	
2	402310	3	Screw, PHMS, 6-32 UNC x ¼"	
3	402320	4	Screw, PHMS, 6-32 UNC x 3/8"	
4	439004	8	Lockwasher, #4	
5	440530	3	Washer, #6, Nylon	
6	615322	2	Female Screwlock, 4-40 UNC	
7	9104334A	1	Cable, Twist Pair, HeadIF Board	
8	9104557	2	Lockwasher, #4, External Tooth	
9	9104940	1	Board, Hyperion System Bridge	
10	9104940A	1	Cable, Power, HSB	
11	9104941	1	Bracket, HSB Support	
12	9104959	8	Screw, PHMS, 2-56 UNC x ¼", S.S.	
13	9105133	1	Bracket, Strain Relief, 50-Position	
14	9105134	1	Bracket, Strain Relief, 26-Position	

Figure A-41: 9104941A – Bracket Assembly, HSB 1-2, One Channel

NOTE: Separate BLA2 connector from cable 9104940A, pull cable through cutout, reconnect BLA2 - **NOTE RED WIRE CONNECTS TO 24VDC, BLUE WIRE TO GND ON HSB.**

To add second printhead, add UBK-HSB-CH2.

HSB stands for Hyperion System Bridge.

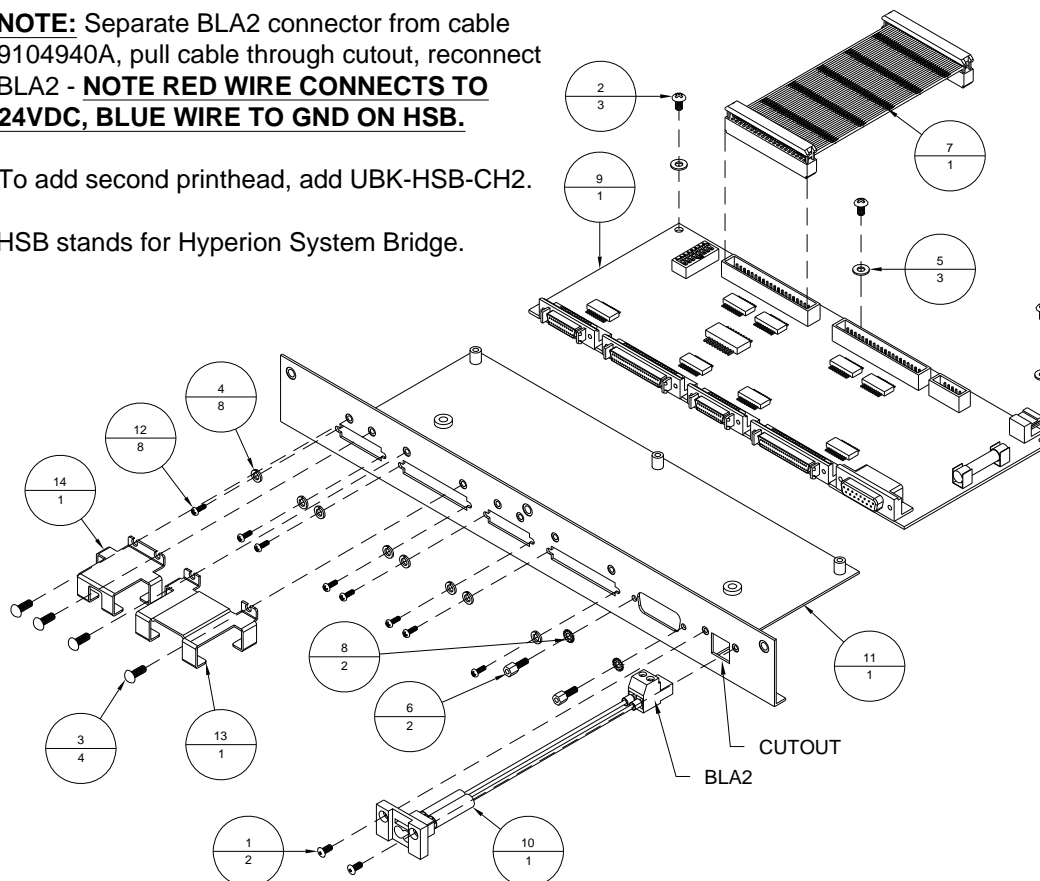


Table A-42: 9104942A – Bracket Assembly, HSB 3-4, One Channel

Item	Part Number	Quantity	Description	Reference
1	401310	2	Screw, PHMS, 4-40 UNC x ¼"	
2	402310	3	Screw, PHMS, 6-32 UNC x ¼"	
3	402320	4	Screw, PHMS, 6-32 UNC x 3/8"	
4	439004	8	Lockwasher, #4	
5	440530	3	Washer, #6, Nylon	
6	615322	2	Female Screwlock, 4-40 UNC	
7	9104334A	1	Cable, Twist Pair, HeadIF Board	
8	9104557	2	Lockwasher, #4, External Tooth	
9	9104940	1	Board, Hyperion System Bridge	
10	9104940A	1	Cable, Power, HSB	
11	9104942	1	Bracket, HSB Support, Reverse	
12	9104959	8	Screw, PHMS, 2-56 UNC x ¼", S.S.	
13	9105133	1	Bracket, Strain Relief, 50-Position	
14	9105134	1	Bracket, Strain Relief, 26-Position	

Figure A-42: 9104942A – Bracket Assembly, HSB 3-4, One Channel

NOTE:

Separate BLA2 connector from cable
 9104940A, pull cable through cutout, reconnect
 BLA2 - **NOTE RED WIRE CONNECTS TO
 24VDC, BLUE WIRE TO GND ON HSB.**

To add second printhead, add UBK-HSB-CH2.

HSB stands for Hyperion System Bridge.

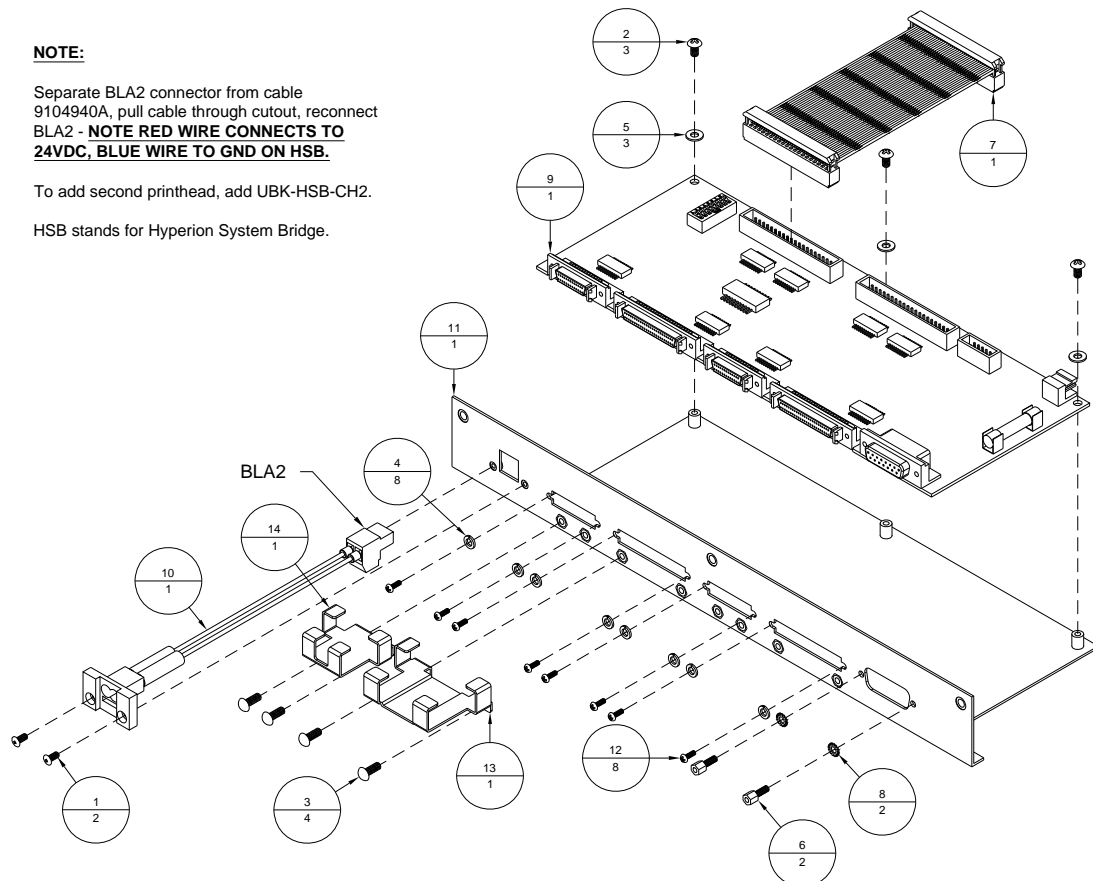


Table A-43: 9104943A – Chassis Assembly, Hyperion PSM

Item	Part Number	Quantity	Description	Reference
1	401010	6	Screw, FHCS, 4-40 UNC x ¼"	
2	401310	2	Screw, PHMS, 4-40 UNC x ¼"	
3	404520	2	Screw, BHCS, 10-32 UNF x 3/8"	
4	414310	2	Screw, PHMS, M4 x 10	
5	420004	4	Nut, 4-40 UNC	
6	420008	16	Nut, 10-32 UNF	
7	439004	4	Lockwasher, #4	
8	439005	2	Lockwasher, #8	
9	439008	3	Lockwasher, #10, External Tooth	
10	439009	13	Lockwasher, #10	
11	440006	2	Washer, #8, ½" OD x 0.05" Thick	
12	440008	11	Washer, #10	
13	606008	2	Wire, #14, White, 10" Lg	
14	606010	2	Wire, #14, Black, 10" Lg.	
15	606033	2	Cable, #14-3, SJOW-A, 8" Lg.	
16	606040	1	Cable, #14-2, SJOW, BK/WH, 14" Lg.	
17	609000	9	Shrink Wrap, 3/16" ID, 1" Lg.	
18	609110	1	Connector, Push-On, 16-14 AWG, Blue	
19	609111	2	Terminal Ring, #10, 16-14 AWG, Blue	
20	609113	4	Connector, Push-On, Yellow	
21	615322	4	Female Screwlock, 4-40 UNC	
22	9102205	1	Switch, Breaker, 15A, 2-Pole, Green	
23	9102681	1	Wire, #14, Green/Yellow, 7" Lg.	
24	9102681	1	Wire, #14, Green/Yellow, 20" Lg.	
25	9102862	1	Receptacle, Male, 250VAC/10A, IEC	
26	9103167	2	Receptacle, Female, 120 VAC, 15A, IEC	
27	9103176A	1	Cable, Power Supply Display Board	
28	9103433	12	Ferrule, #14 AWG, Blue	
29	9104557	4	Lockwasher, #4, External Tooth	
30	9104782A	1	Cable, PS-HSB	
31	9104939A	1	Power Supply Assembly, 24 VDC	Page A-41
32	9104943	1	Chassis, Hyperion PSM	
33	9104944A	1	Terminal Block Assembly, Hyperion PSM	Page A-46
34	9104950A	2	Cable, Hyperion-DC PSM, IH Power	
35	9104994A	1	Faceplate Assembly, Hyperion PSM	Page A-49
36	9104995	1	Cover, Hyperion PSM	
37	9105115	1	Bracket, 24V PS Subplate	
38	9105200	1	Board, Power Supply Display, Hyperion	

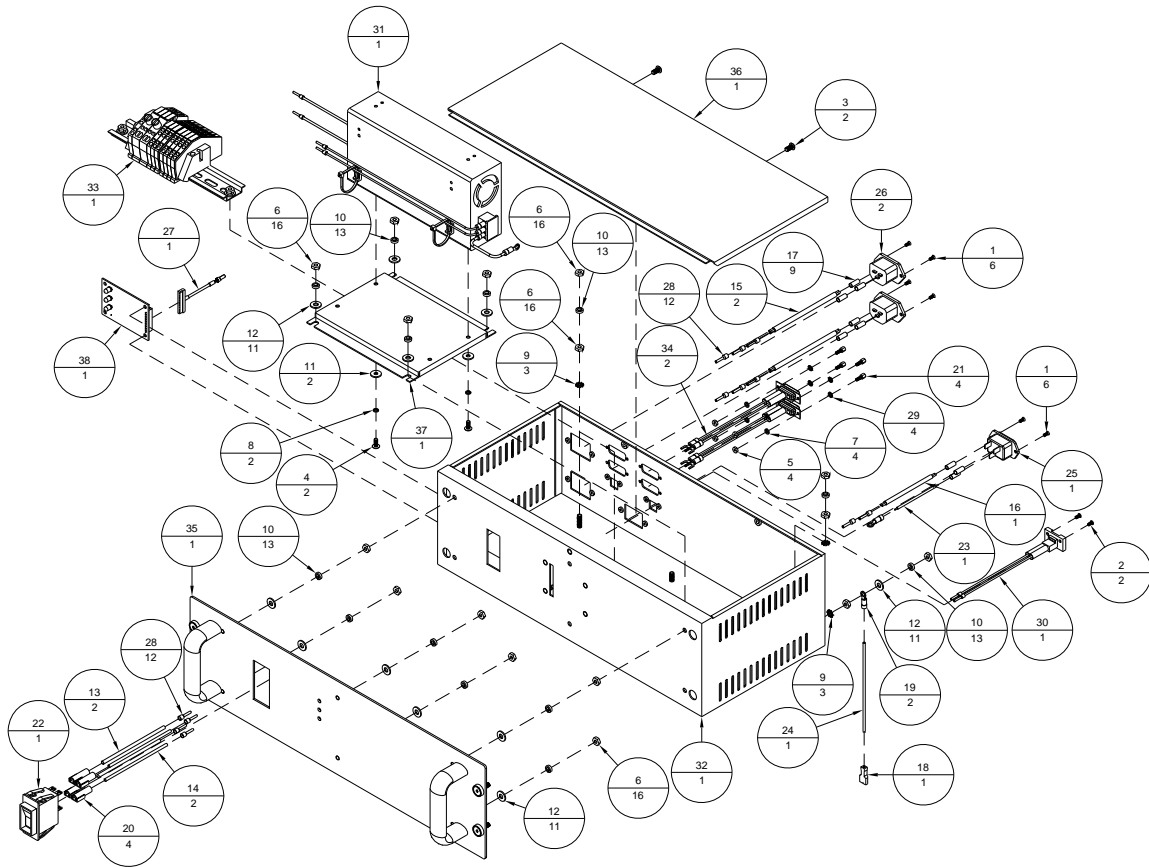
Figure A-43: 9104943A – Chassis Assembly, Hyperion PSM

Table A-44: 9104944A – Terminal Block Assembly, Hyperion PSM

Item	Part Number	Quantity	Description	Reference
1	420008	2	Nut, 10-32 UNF	
2	439009	2	Lockwasher, #10	
3	440008	2	Washer, #10	
4	615021	1	T-Rail, DIN, 7.5" Lg.	
5	9102045	1	Terminal Marker, WS 12/6, N'	
6	9102050	2	Terminal Marker, WS 12/6, L	
7	9102051	2	Terminal Marker, WS 12/6, N	
8	9102297	1	Terminal Marker, WS 12/6, L'	
9	9102299	2	Terminal Marker, WS 12/6, GND	
10	9103436	6	Terminal Block, Z-Roofstyle	
11	9103437	2	Terminal Block, Z-Roofstyle, Ground	
12	9103438	2	End Plate	
13	9103442	2	End Bracket	
14	9103605	2	Fuse, 5A, 5 x 20 mm, Time Delay	
15	9104363	2	Terminal Marker, WS 12/6, T5A L	
16	9105205	2	Terminal Marker, WS 12/6, 24 VDC	
17	9105218	2	Fuse Terminal, Tension Clamp	

Figure A-44: 9104944A – Terminal Block Assembly, Hyperion PSM

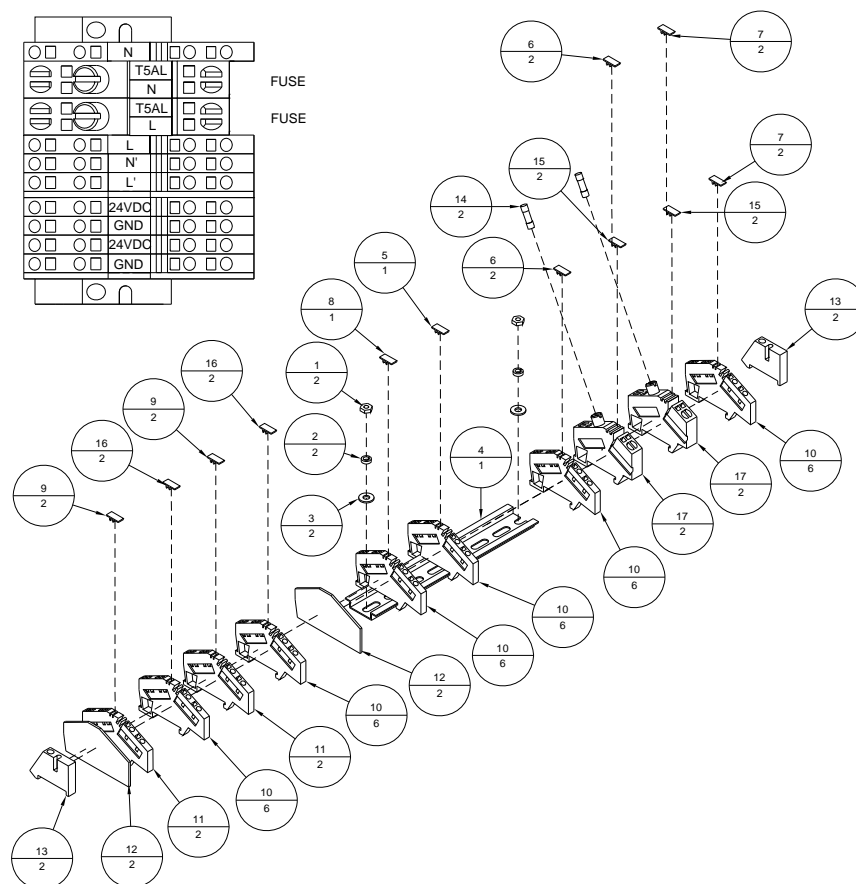


Table A-45: 9104946A – Ink Delivery Module, Hyperion-DC, 2-Channel

Item	Part Number	Quantity	Description	Reference
1	404050	4	Screw, FHCS, 10-32 UNF x 3/4"	
2	404320	4	Screw, PHMS, 10-32 UNF x 3/8"	
3	404520	2	Screw, BHCS, 10-32 UNF x 3/8"	
4	615425	1	Hole Plug, 7/8"	
5	9103303A	1	Ink Delivery Module, Hyperion-DC	Page A-19
6	9103315	4	Washer, Cup, 10-32 Flat Head	
7	9104408	4	Screw, BHCS, M8 x 1.25, 16 mm	
8	9104946	1	Bracket, IDM Support, 6U	
9	9104947	1	Bracket, IDM Mount, Hyperion-DC	
10	9104995A	1	Cable, Recovery Button	
11	9105209	1	Bracket, Recovery Button Support	

Figure A-45: 9104946A – Ink Delivery Module, Hyperion-DC, 2-Channel

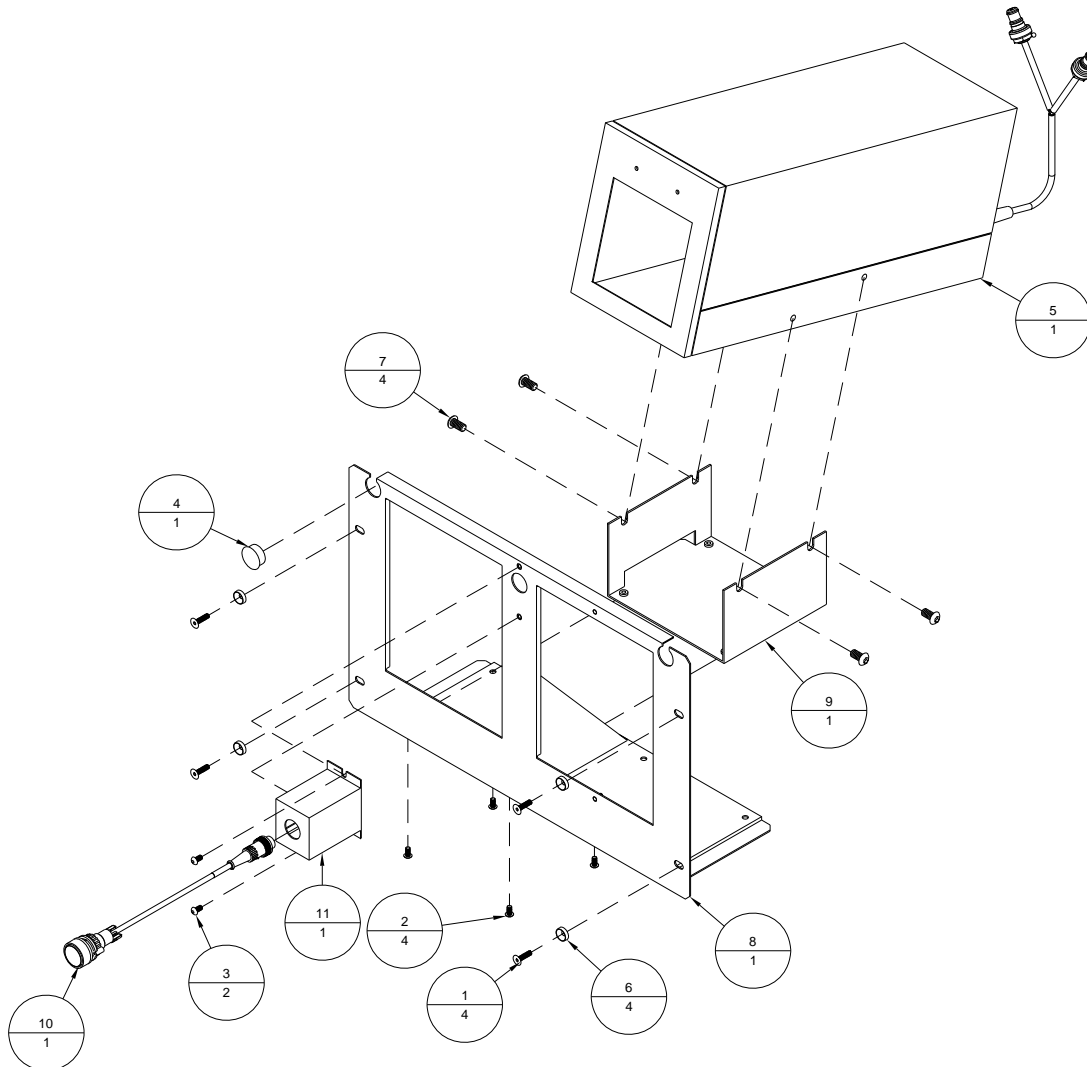


Table A-46: 9104961A – Hyperion-DC Ink Umbilical Crane Assembly

Item	Part Number	Quantity	Description	Reference
1	9103042	1	Coupling Body, Female, 1/8" OD	
2	9104554	5	Printhead, Hyperion IDS Setup	
3	9104961	1	Hyperion Ink Umbilical Crane	

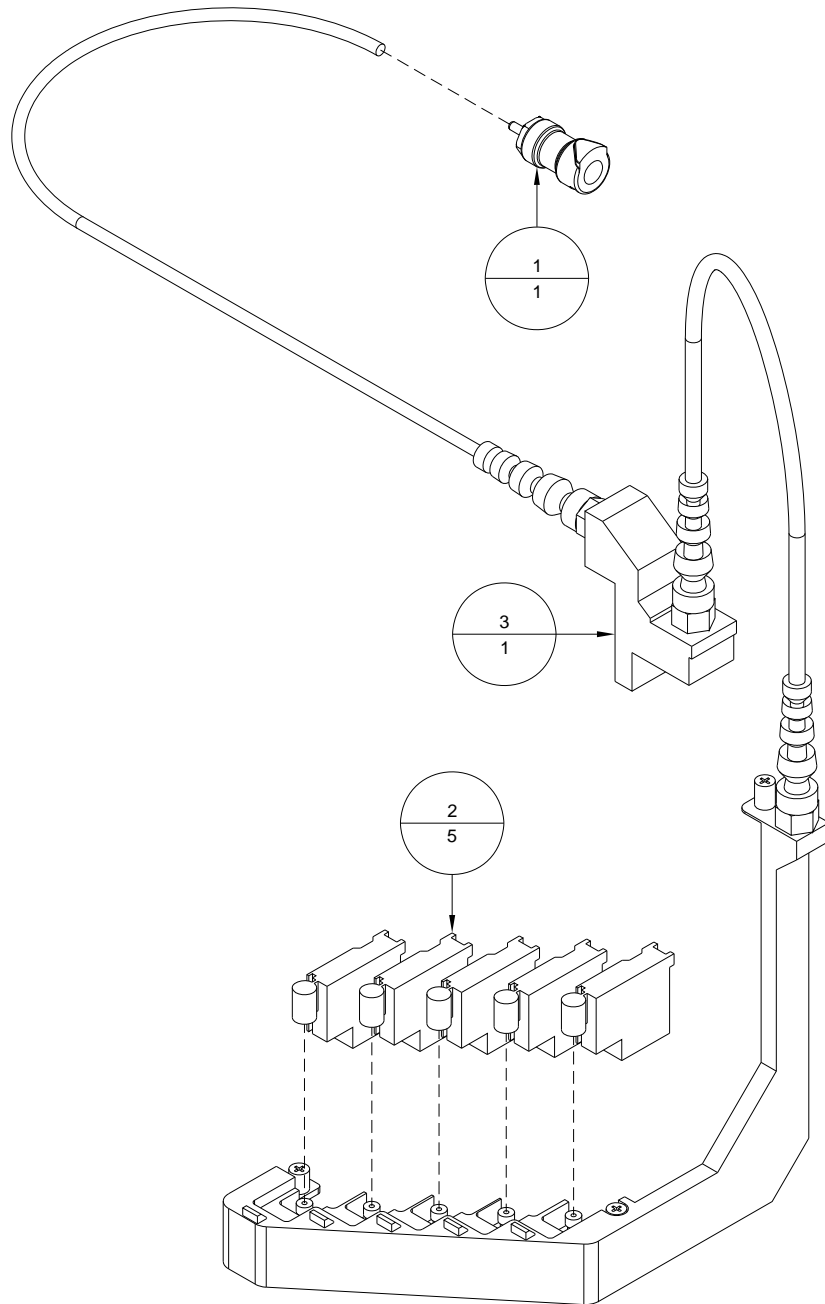
Figure A-46: 9104961A – Hyperion-DC Ink Umbilical Crane Assembly

Table A-47: 9104994A – Faceplate Assembly, Hyperion-DC PSM

Item	Part Number	Quantity	Description	Reference
1	404050	4	Screw, FHCS, 10-32 UNF x ¾"	
2	405530	4	Screw, BHCS, ¼-20 UNC x ½"	
3	439010	4	Lockwasher, ¼" ID	
4	9102846	2	Handle, Pull, ¼-20 UNC	
5	9103315	4	Washer, Cup, 10-32 Flat Head Screw	
6	9104994	1	Faceplate, Hyperion-DC PSM	

Figure A-47: 9104994A – Faceplate Assembly, Hyperion-DC PSM

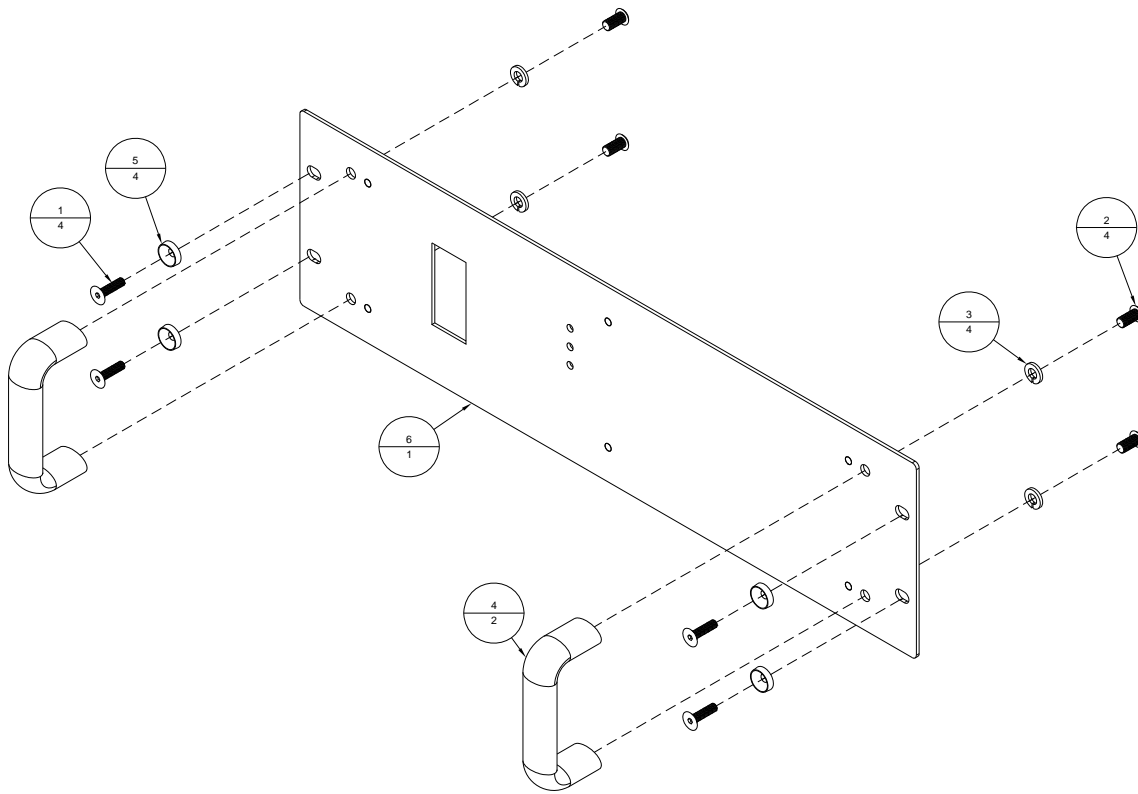


Table A-48: 9105009A – Spill Tray Assembly

Item	Part Number	Quantity	Description	Reference
1	404310	1	Screw, PHMS, 10-32 UNF x ¼"	
2	404330	2	Screw, PHMS, 10-32 UNF x ½"	
3	439009	2	Lockwasher, #10	
4	440008	2	Washer, #10	
5	9105009	1	Tray, Ink Spill	

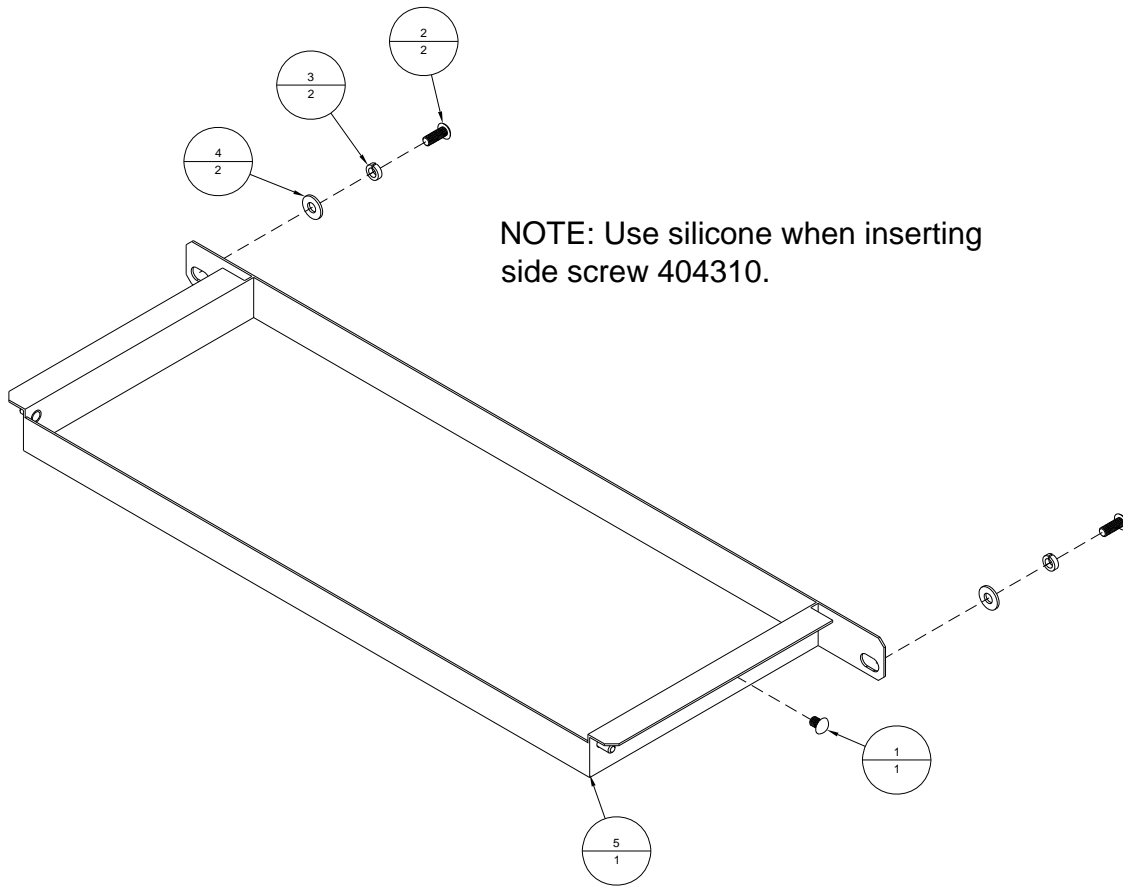
Figure A-48: 9105009A – Spill Tray Assembly

Table A-49: 9105211A – Umbilical Bracket Assembly, Hyperion-DC

Item	Part Number	Quantity	Description	Reference
1	404240	4	Screw, SHCS, 10-32 UNF x 5/8"	
2	404250	4	Screw, SHCS, 10-32 UNF x 3/4"	
3	420008	1	Nut, 10-32 UNF	
4	439008	1	Lockwasher, #10, External Tooth	
5	439009	1	Lockwasher, #10	
6	440008	1	Washer, #10	
7	609110	1	Connector, Push-On, 16-14 AWG, Blue	
8	609111	1	Terminal, Ring, #10, 16-14 AWG, Blue	
9	9102681	1	Wire, #14, Green/Yellow, 20" Lg.	
10	9103372	1	Hinge, Front Mount, Adjustable	
11	9103372	1	Hinge, Front Mount, Adjustable	
12	9103821	2	Bumper, Rubber 8-32 x 1/4"	
13	9105211	1	Bracket, Umbilical, Hyperion	

Figure A-49: 9105211A – Umbilical Bracket Assembly, Hyperion-DC

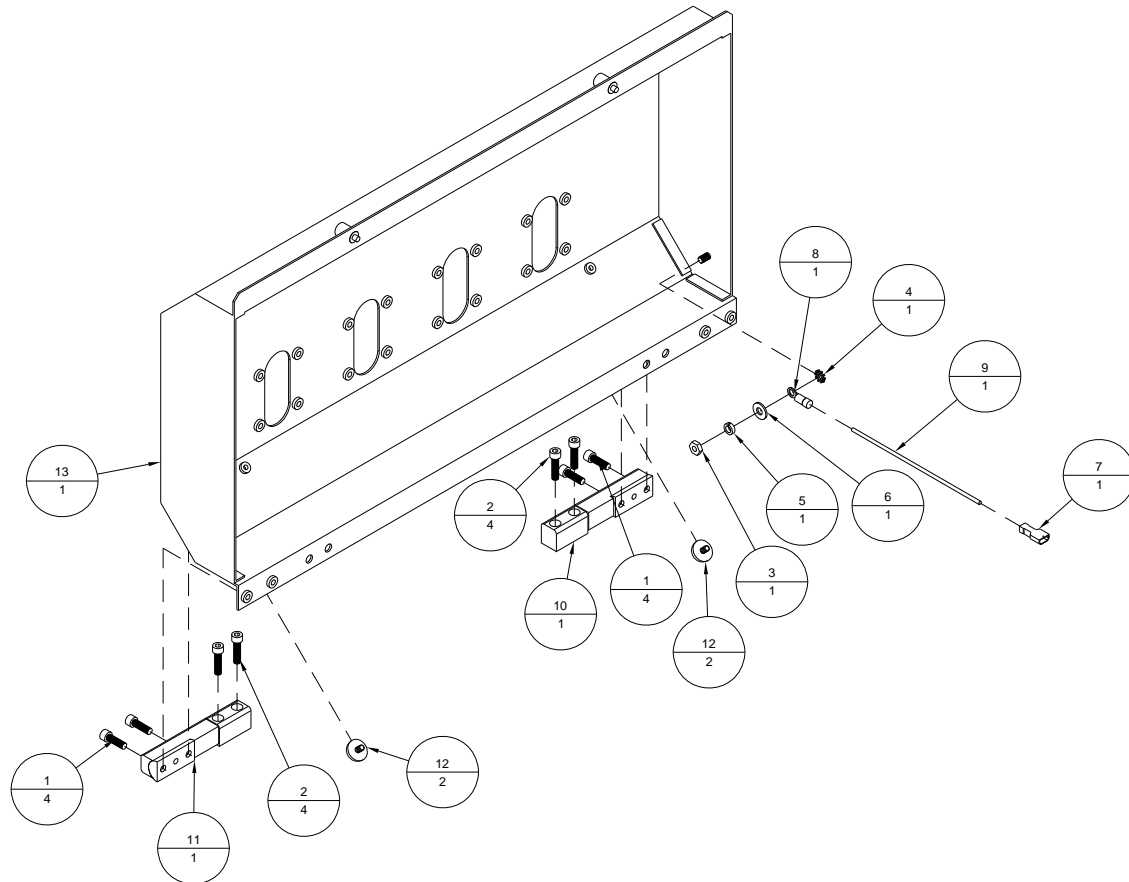
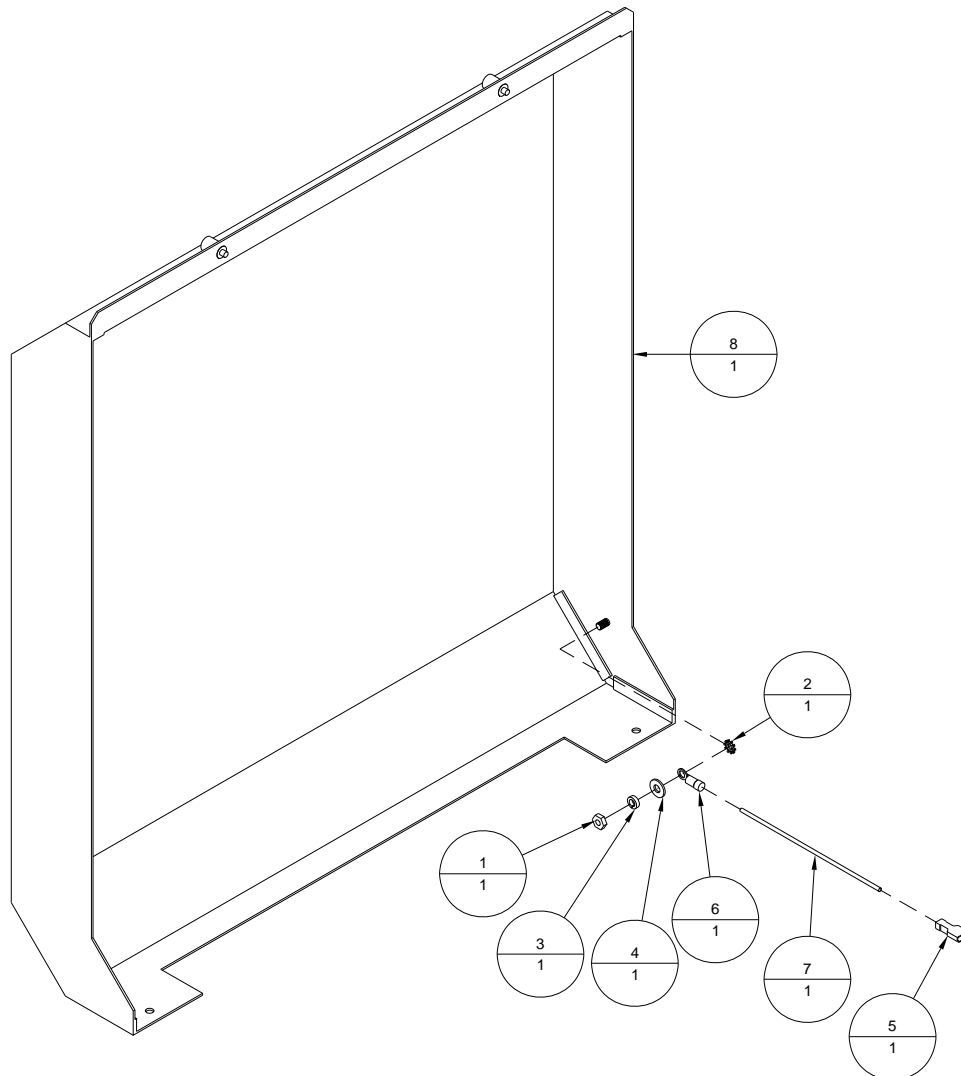


Table A-50: 9105212A – Lower Cover Assembly

Item	Part Number	Quantity	Description	Reference
1	420008	1	Nut, 10-32 UNF	
2	439008	1	Lockwasher, #10, External Tooth	
3	439009	1	Lockwasher, #10	
4	440008	1	Washer, #10	
5	609110	1	Connector, Push-On, 16-14 AWG, Blue	
6	609111	1	Terminal, Ring, #10, 16-14 AWG, Blue	
7	9102681	1	Wire, #14, Green/Yellow, 20" Lg.	
8	9105212	1	Cover, Rear, Lower	

Figure A-50: 9105212A – Lower Cover Assembly

List of Schematics

Figure B-1: BK-1700-FRM-C – Wiring Diagram, BK1700 / 1710 / 1720 B-1

Figure B-2: BK-PSM-2Y-C - Wiring Diagram, Hyperion-DC PSM, 2-Channel..... B-2

Figure B-3: BK-PSM-4Y-C - Wiring Diagram, Hyperion-DC PSM, 4-Channel..... B-3

Figure B-1: BK-1700-FRM-C – Wiring Diagram, BK1700 / 1710 / 1720

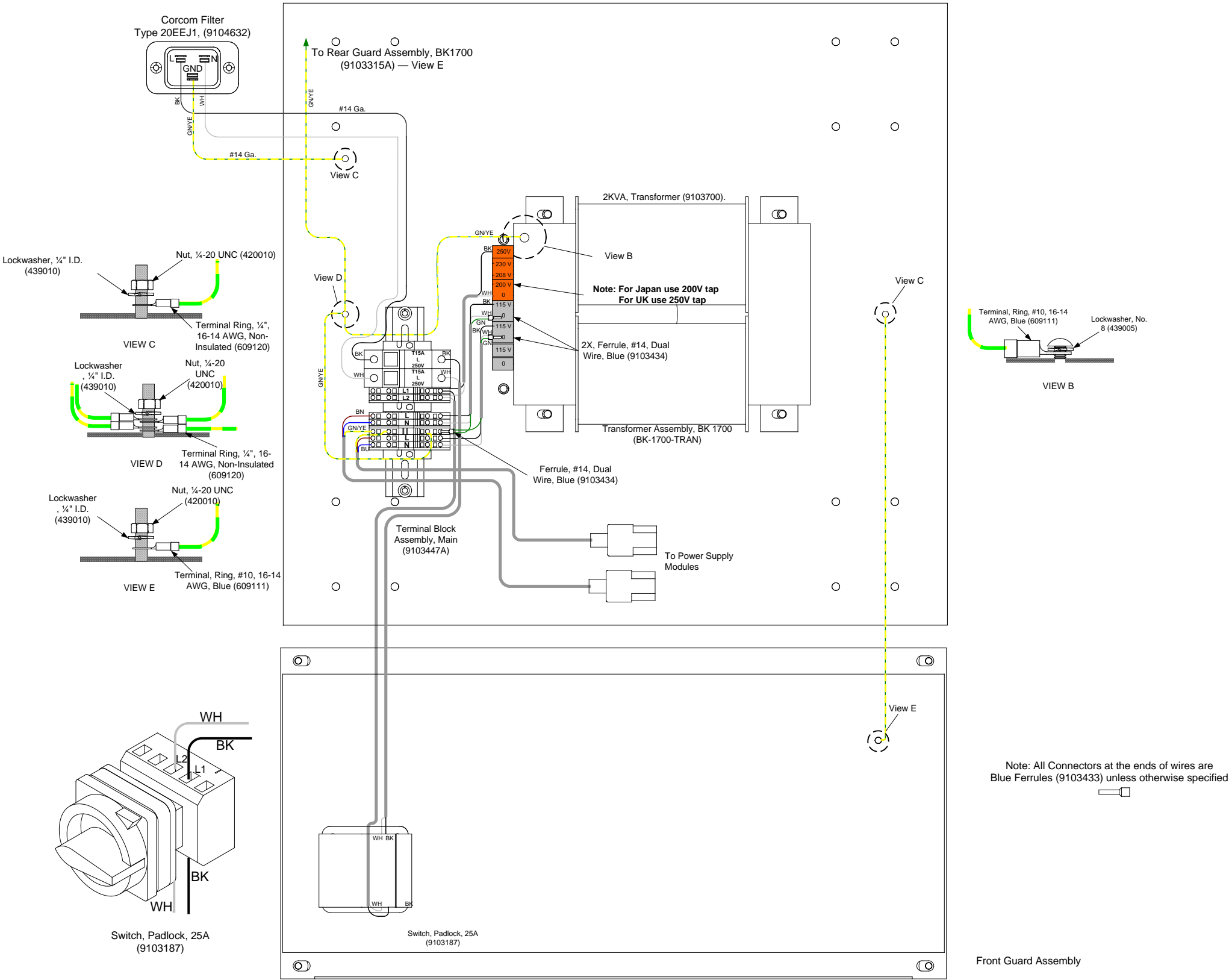


Figure B-2: BK-PSM-2Y-C - Wiring Diagram, Hyperion-DC PSM, 2-Channel

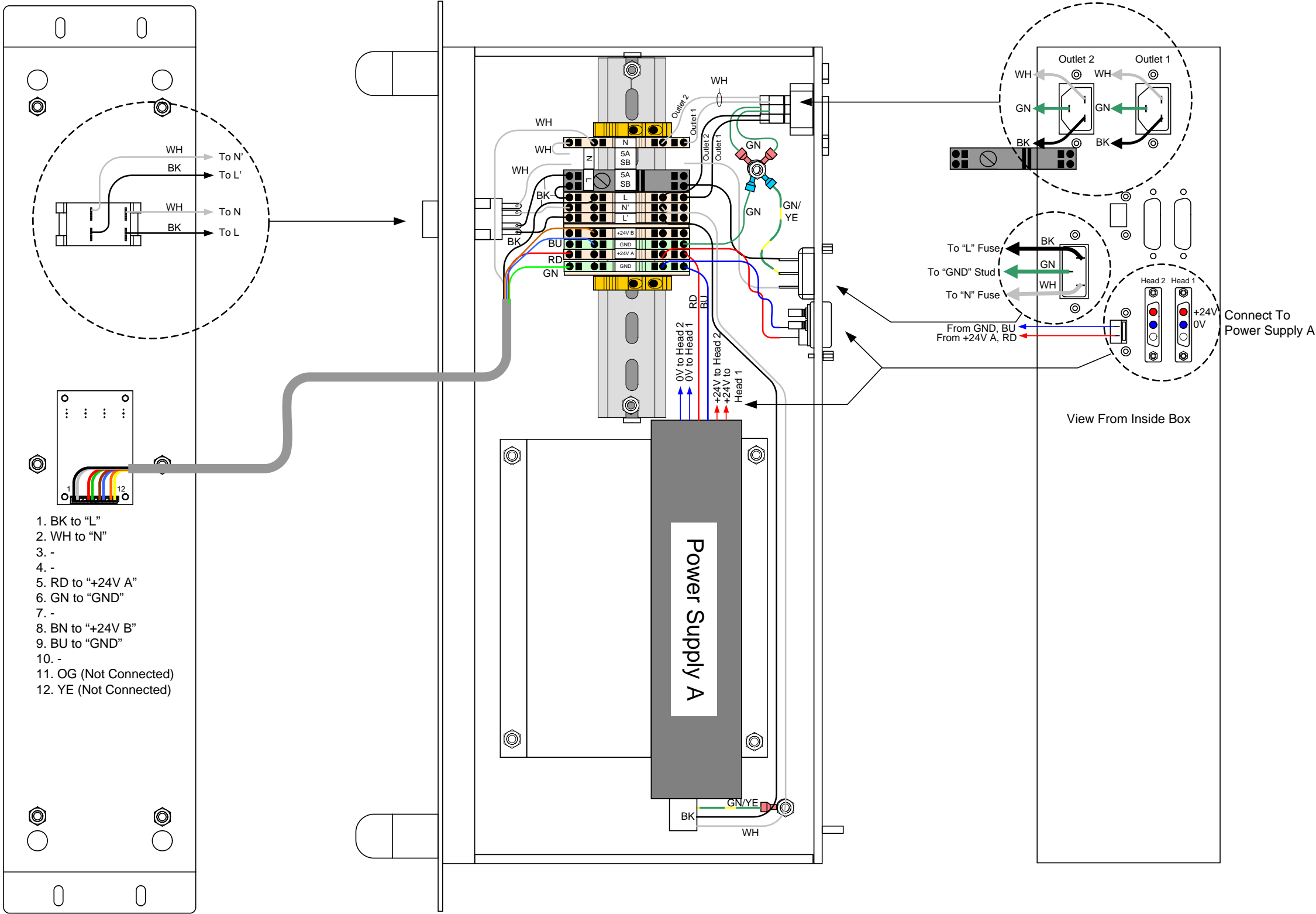


Figure B-3: BK-PSM-4Y-C - Wiring Diagram, Hyperion-DC PSM, 4-Channel

