ALFAMAQ

CoPilot 500

Industrial Inkjet Printing System
User Guide

PRINTHEAD 1   PRINTHEAD 2

HEALTH
FLAMMABILITY
REACTIVITY

CO *Pilot 500*
by SQUID INK

CO *Pilot 500* TURBO
by SQUID INK

CO *Pilot 500* HS TURBO
by SQUID INK

SQUID INK

CoPilot 500

Industrial Inkjet Printing System User Guide

For use with:

- **CoPilot 500 Controller,
  CoPilot 500 Turbo Controller, or
  CoPilot 500 High Speed Turbo Controller**

- **CoPilot 500 Oil Printhead or
  CoPilot 500 Solvent Printhead**

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Contents

Abbreviations & Terminology

The following abbreviations are used throughout this User Guide:

Abbreviation	Meaning	Abbreviation	Meaning
C	Celsius	NTFS	A USB format
CE	Meets safety, health, and environmental requirements of the European Union	P/N	Part Number
cm	Centimeters	PDF417	A barcode format
CP500	CoPilot 500	PNP	Positive-Negative-Positive
dpi	Dots per inch	QR	A barcode format
EAN-8	A barcode format	RJ12	Registered Jack 12
EAN-15	A barcode format	SCC-14 28	A barcode format
F	Fahrenheit	SCC-14 ITF	A barcode format
FAT32	A USB format	SSCC-18	A barcode format
fpm	Feet per minute	SSID	Service Set Identifier
ft	Feet	TUV	Meets the requirements of the German Equipment and Product Safety Act
GB	Gigabytes	UCC-128	A barcode format
GND	Ground	UDP	User Datagram Protocol
GUI	Graphic User Interface	UPC-A	A barcode format
Hz	Hertz	USB	Universal Serial Bus
IP	Internet Protocol	VAC	Volts Alternating Current
IT	Information Technology	W	Watts
LED	Light-Emitting Diode	WiFi	Wireless networking technology
ml	Milliliters	°	Degrees
m	Meters	'	Feet
MicroQR	A barcode format	"	Inches
min	Minutes	<	Less than
mm	Millimeters	>	Greater than
MSI	A barcode format	#	Number
NPN	Negative-Positive-Negative	%	Percent

Safety

Please follow these simple safety steps to ensure smooth and safe operation:

- While unpacking and setting up the unit, always take care to use proper lifting techniques. Avoid overreaching and leaning over while handling the printer and accessories.

- While installing, maintaining, and operating the printing system, always wear safety glasses, gloves, and protective clothing.

- Make sure the electrical power source is properly wired and grounded. The power source should comply with all safety regulations and codes applicable to the installation location.

- Turn off and unplug the printing system while servicing and performing maintenance.

> **NOTE:** Some service and maintenance procedures require the power to be left on. During such procedures, carefully follow the safety instructions.

- Use only Squid Ink Manufacturing ink and Squid Ink Manufacturing approved fluids.

- The Squid Ink CoPilot 500 printer systems use a Cartridge Ink or Bag Ink system. Do not open or puncture the Ink Cartridge or Ink Bag in any way other than normal installation.

- Keep all fluids away from open flame and excessive heat, as they may be combustible.

- Avoid prolonged contact with skin. Fluids can be washed with soap and water.

- Do not look directly into the Printhead. If fluids make eye contact, flush immediately with water and receive appropriate medical attention.

- Never pour fluids into sink, sewer, or drain. Dispose of fluids in accordance with all ordinances and regulations pertaining to fluid disposal.

Understanding Safety Notifications

⚠️	**WARNING:** Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠️	**CAUTION:** Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
⚠️	**ATTENTION:** Indicates a hazardous situation which, if not avoided, could result in property damage only.

General Precautions

When installing, operating, and maintaining the CoPilot 500, observe the following precautions.

☣️	**WARNING: Health Hazard** Some inks and solvents may be a health hazard if exposed for too long. Ensure that the area has adequate ventilation.
⚡	**WARNING: Electrical Hazard** Do not open cover. No user-serviceable parts inside.
⏚	**WARNING: Electrical Ground Hazard** Ensure that unit is properly grounded.
☂️	**WARNING: Keep Dry** Keep the equipment dry and indoors.
🔥	**CAUTION: Fire Hazard** Inks, cleaners, and flush fluids may be flammable. Use caution and keep away from flame.
🌱	**CAUTION: Environmental Hazard** Inks, cleaners, and flush fluids may be harmful to the environment. Dispose of properly.

Introduction

General System Description

The CoPilot 500 printing systems consist of a Controller with integrated Touchscreen user interface and up to two Printheads that can use either Cartridge Ink or Bag Ink systems. The CoPilot 500 printing systems are designed to print superior quality high-resolution characters on a variety of porous surfaces.

NOTE: For the purposes of this document, unless a specific differentiation is made:

- "**CoPilot 500**" can refer to a:
    - CoPilot 500 system
    - CoPilot 500 Turbo system
- "**Controller**" can refer to a:
    - CoPilot 500 Controller
    - CoPilot 500 HiSpeed Controller
    - CoPilot 500 Turbo Controller
    - CoPilot 500 High Speed Turbo Controller
- "**Printhead**" can refer to a:
    - CoPilot 500 Oil Printhead
    - CoPilot 500 Solvent Printhead
    - CoPilot 500 HiSpeed Printhead

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may also cause harmful interference in which case the user will be required to correct the interference at his or her own expense.

Messages for the CoPilot 500 printing systems are created and edited using PC-based Orion™ software. Messages are then loaded onto the Controller through an Ethernet connection or from a USB device. Refer to the *Orion™ Software User Guide* that came with the printer for information on how to create and print messages.

The Controller sends the print messages to the Printhead. If using a Cartridge Ink system, ink flows from the Ink Cartridge down into the Ink Reservoir and through an Ink Line to the Printhead. If using a Bag Ink system, ink comes from an Ink Bag installed in an Ink Pan and

flows through the Ink Line to the Printhead. The ink is then ejected onto the substrate through the Ink Nozzles on the front of the Printhead. Because the system uses capillary action (rather than a motor) to help supply the ink to the Printhead, the CoPilot 500 is referred to as a "passive ink system."

System Components

- Controller

- Printhead(s)

- Printhead Data Cable(s)

- Photocell (Trigger)

- Encoder (Optional)

- Ink System (Bag or Cartridge)

- Mounting Hardware

IMPORTANT: If you purchased an optional level of Orion™ that allows connecting to multiple Printers, a *Download Instructions* card is included in the shipping carton. **Do not throw this card away.** The card contains the Orion license number required for downloading Orion and connecting the CoPilot 500 printing system. If there is no card, you can still download Orion and connect to a single printer. If there are problems, call Customer Service at 800-877-5658.

Printhead Overview

Front View

Purge Tube (Capped)

Check Valve

Photocell Mounting Bracket Holes

Nozzle Face

SQ-CP500-00053-01

Rear View

Power & Communication Indicator LED

Ink Line Fitting

Hose Clamp

Ink Level Signal Port (Cartridge Only)

Data Cable Port

SQ-CP500-00052-01
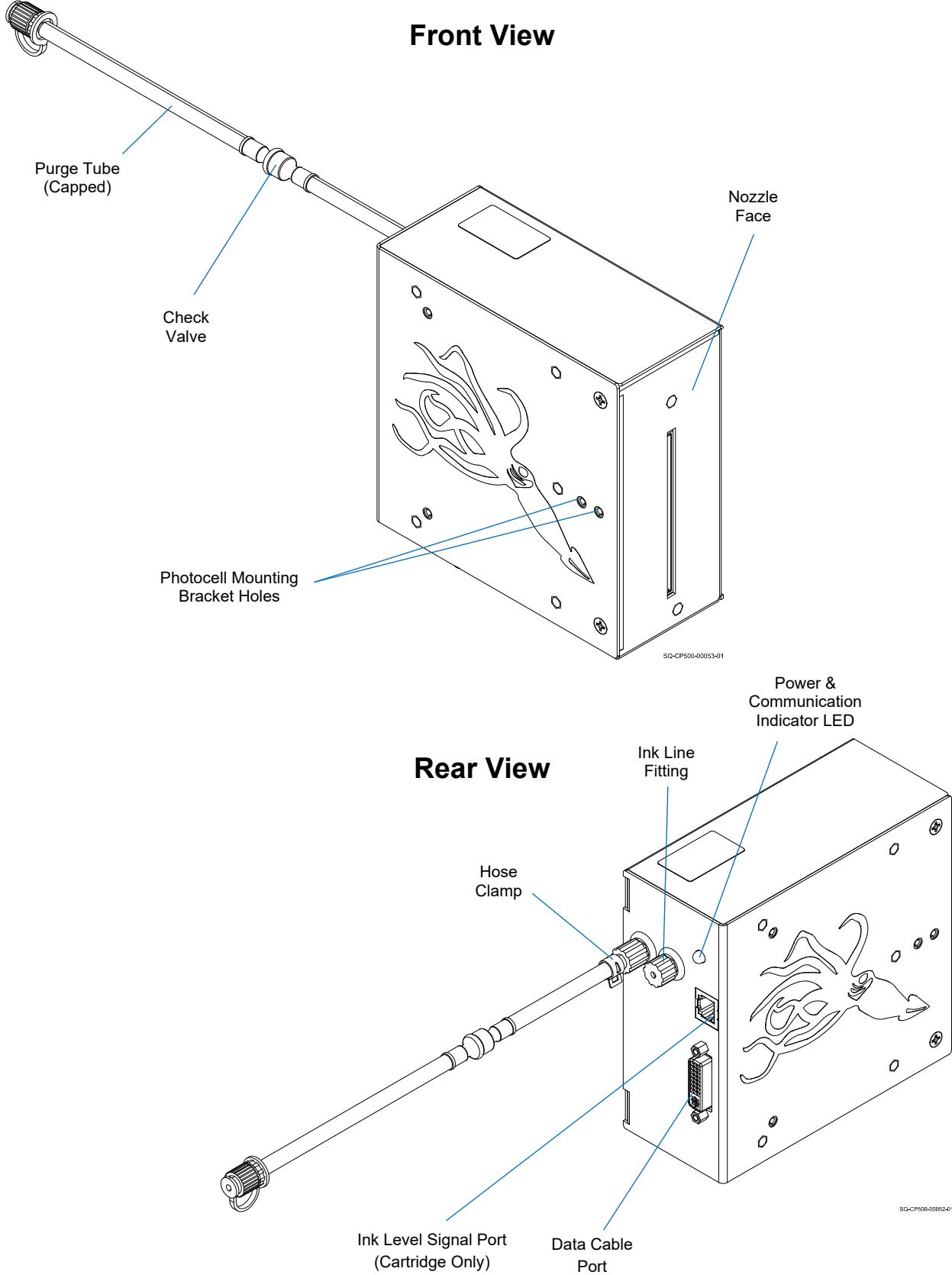
Controller Overview

Front View

Touchscreen Display

Photocell/Encoder IN

Photocell/Encoder OUT to Second CoPilot System

Ethernet Port

Label with Serial Number

Power Switch

Power Cord Receptacle

Fuse

USB Port

SQ-CP500-00054-01

Rear View

Printhead 1 Data Cable Port

Printhead 2 Data Cable Port

SQ-CP500-00055-01
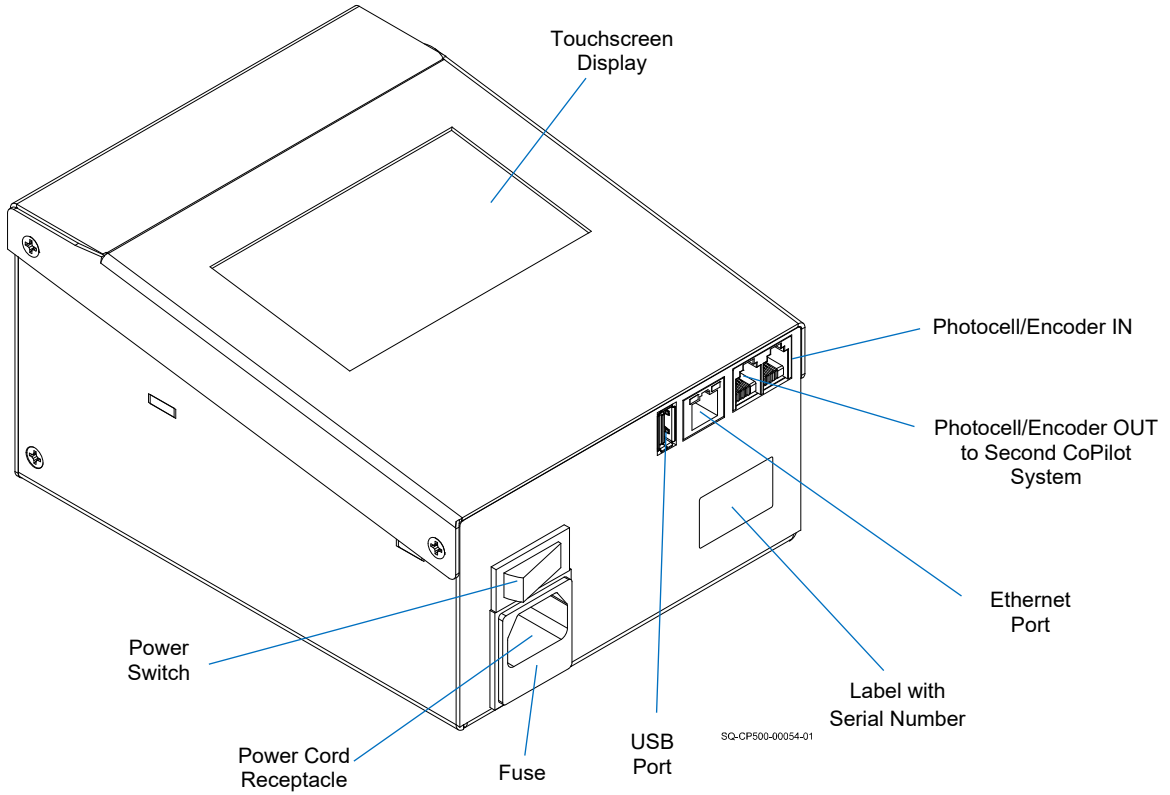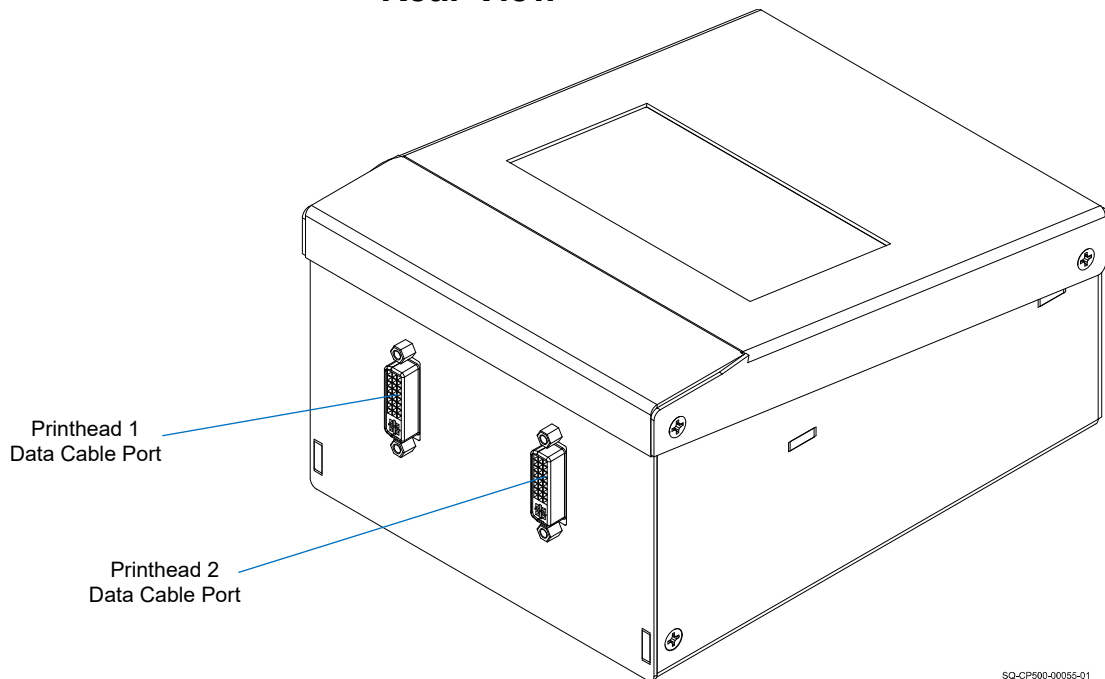
System Specifications

Print Technology	Piezo impulse Printhead technology
Maximum Print Height	2.8" (7.1 cm) per Printhead
Maximum Throw Distance	0.19" (48.3 mm)
Message Length	180" (457.2 cm)
Vertical Print Resolution	185 dpi
Horizontal Print Resolution	205 dpi
Time and Date	Internal real-time clock with battery backup
Product Sensor	External Photocell trigger or optional Encoder
Communication Interface	One USB host and one Ethernet input
Electrical Requirements	100–240 VAC, 50/60 Hz, 65 W maximum
Storage Environment	34 °F (1 °C) - 122 °F (50 °C)
Substrate Capabilities	Porous and non-porous applications
Ink Capabilities	Oil-based or solvent-based, depending on Printhead
Ink System	Passive Ink Control System: Squid Ink Manufacturing 500 ml cartridge or 500 ml Bag Ink systems.
Low Ink Indicator	Message alert on Touchscreen Optional Low Ink Alarm Beacon
Agency Certifications	TUV and CE certified

Specifications That Vary by Model:

Metric	CoPilot 500 Oil Printhead	CoPilot 500 Solvent Printhead	CoPilot 500 HiSpeed Printhead
Controller Compatibility	CP500* CP500 Turbo CP500 HiSpeed Turbo	CP500* CP500 Turbo	CP500 HiSpeed** CP500 HiSpeed Turbo
Ink Compatibility	Oil	Solvent	Oil
Print Speed	Up to 205 fpm (62 m/min) @ 205 dpi	Up to 150 fpm (45 m/min) @ 205 dpi	Up to 300 fpm (91 m/min) @ 205 dpi for static messages. Contact Squid Ink Technical Services at 1-800-877-5658 for dynamic message speed assistance.
Drop Size	60 pL	60 pL	30 pL
Operating Environment	34° F (1° C) to 104° F (40° C)	62° F (17° C) to 100° F (37° C)	34° F (1° C) to 104° F (40° C)

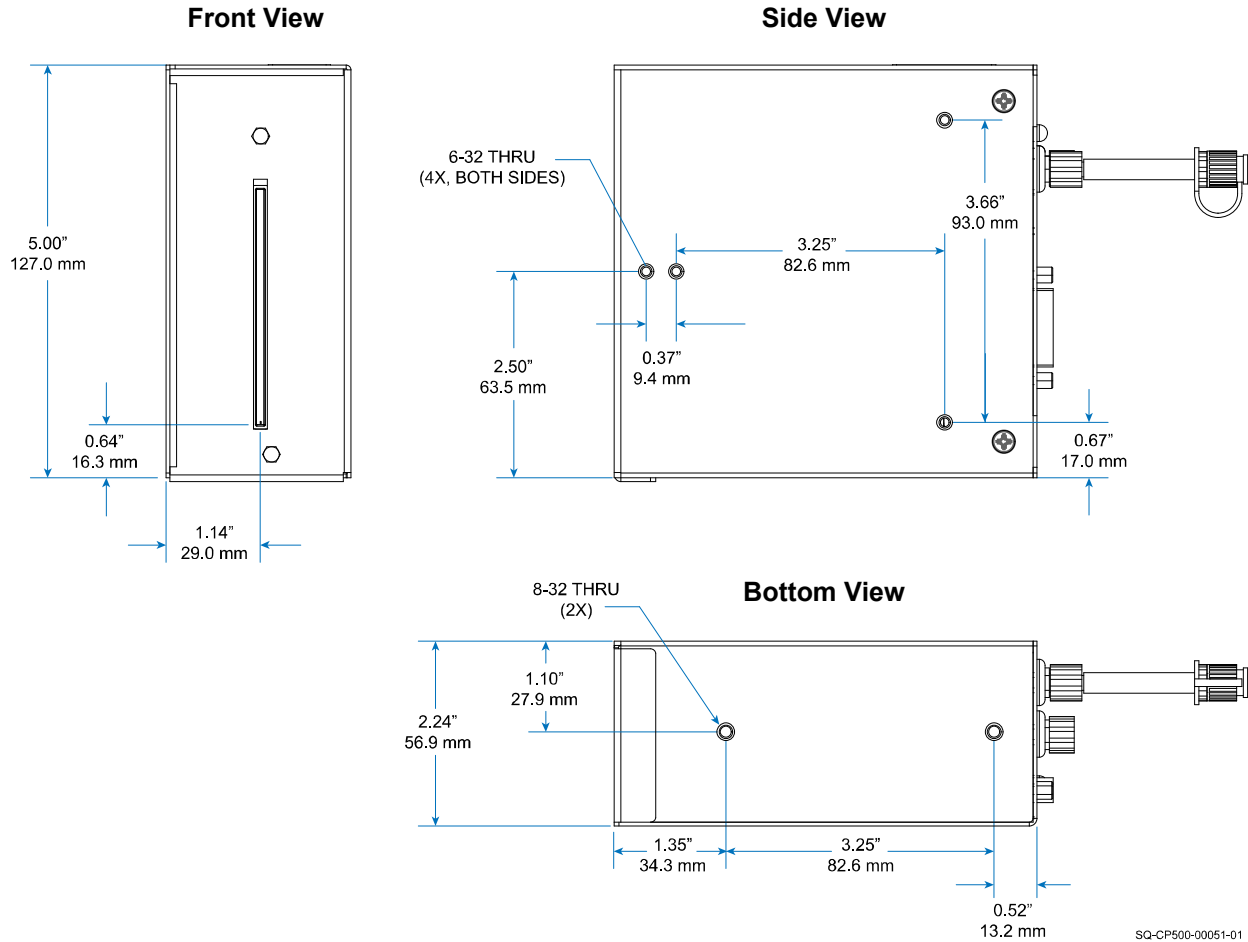* The CoPilot 500 Controller has been replaced by the CoPilot 500 Turbo Controller.

** The CoPilot 500 HiSpeed Controller has been replaced by the CoPilot 500 HiSpeed Turbo Controller.

Software Specifications

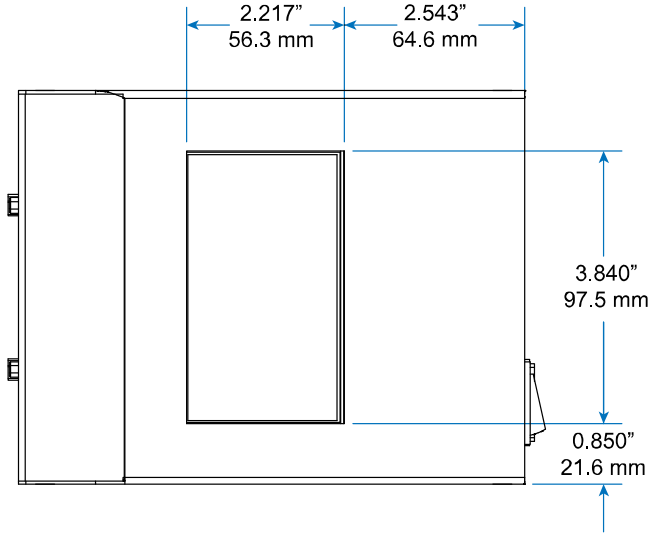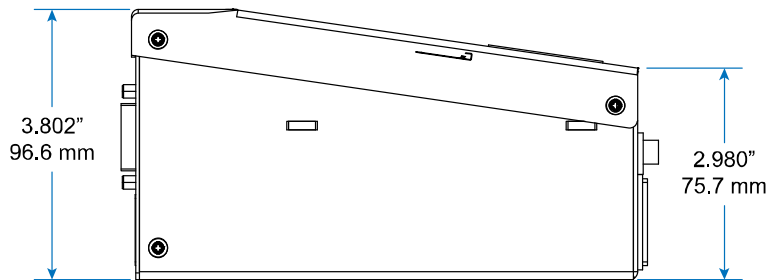|	
Time and Date	Multiple formats including: 1,2,4, -digit year, 1,2-digit month, 3 letter month, custom month string, 1 letter day of month (Korean), 2-digit day of month, 1-digit day of week, 1,3 letter day of week, 2-digit week of year, 3 digit Julian year, 1 letter hour, (a-x), 2-digit hour 12 or 24, 2-digit minute, 2 digit second, 1,2 letter meridians (A/P, AM/PM), custom week string.
Counters	Supports 16 Counters, one of which can be a daily counter.
Shift Codes	Four programmable shift codes with automated rollover.
Barcodes	Code 39, Interleaved 2 of 5, UPC-A, EAN-8, EAN-13, Code 128, UCC-128, SCC-14 ITF, SCC-14 28, SSCC-18, MSI, DataMatrix, QR, MicroQR and PDF417 bar codes standard.
Fonts	Arial (regular and bold), Courier, Tahoma (regular and bold), and Lucida resident fonts for use in variable data elements. Static elements in any Windows® font.
Printing Features	Reverse, Rotate, Repeat, Invert
Message Storage Capacity	1024 Messages. There is capacity to store more than 1024 messages based on the message complexity up to 1 GB free space.
Message Length	Limited by substrate length up to 180"
Logos and Graphics	Orion™ Graphical Interface Software supports almost any type of image file.
Languages	English, Spanish, German, Chinese, Japanese, Korean, Russian, and Polish.

Component Dimensions

Printhead

Front View

Side View

5.00"
127.0 mm

0.64"
16.3 mm

1.14"
29.0 mm

6-32 THRU
(4X, BOTH SIDES)

3.25"
82.6 mm

3.66"
93.0 mm

2.50"
63.5 mm

0.37"
9.4 mm

0.67"
17.0 mm

Bottom View

8-32 THRU
(2X)

1.10"
27.9 mm

2.24"
56.9 mm

1.35"
34.3 mm

3.25"
82.6 mm

0.52"
13.2 mm

SQ-CP500-00051-01

Controller

Top View

2.217"
56.3 mm

2.543"
64.6 mm

3.840"
97.5 mm

0.850"
21.6 mm

Side View

3.802"
96.6 mm

2.980"
75.7 mm

Front View

5.418"
137.6 mm

Bottom View

2.770"
70.4 mm

2.439"
62.0 mm

2.620"
66.5 mm

MOUNTING HOLES
M6X1 (2X)

7.125"
181.0 mm
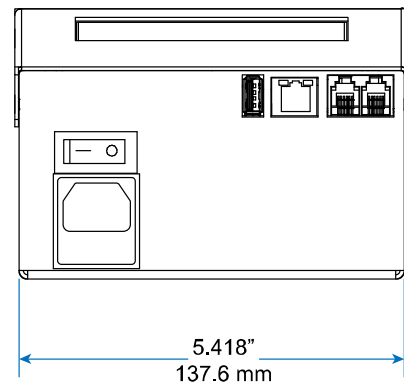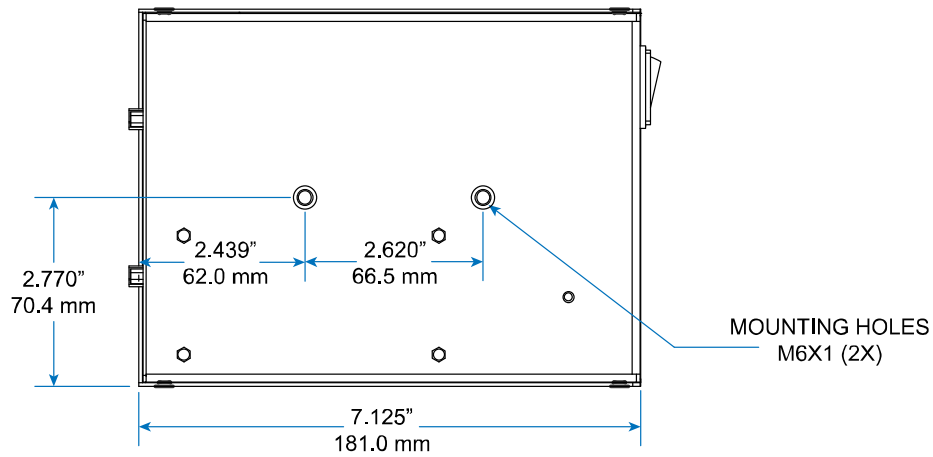
SQ-CP500-00056-01

Options

Part Number	Description	Purpose
Dependent on ink	Starter Kit	Includes ink, cleaner and flush, Printhead wipes, hand cleaner, and latex gloves.
1604177	Encoder Assembly Kit	For operation with variable-speed Conveyors.
2004194	Barcode Laser Scanner	Allows scan and print message retrieval.
2004570	Spring-Loaded Printhead Bracket	Prevents Printhead from being accidentally bumped by products on Conveyor.
2003927	Low-Ink Alarm Beacon Assembly	Alerts when ink levels become low.
2003975	Audible Low-Ink Warning Assembly	Alerts when ink levels become low.

Spring-Loaded Printhead Bracket

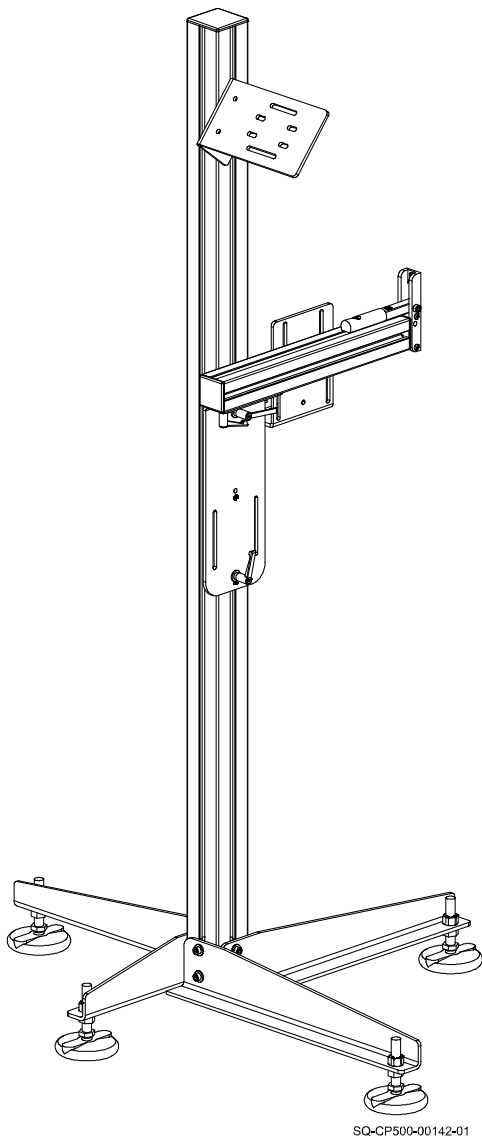(Part Number 2004570)
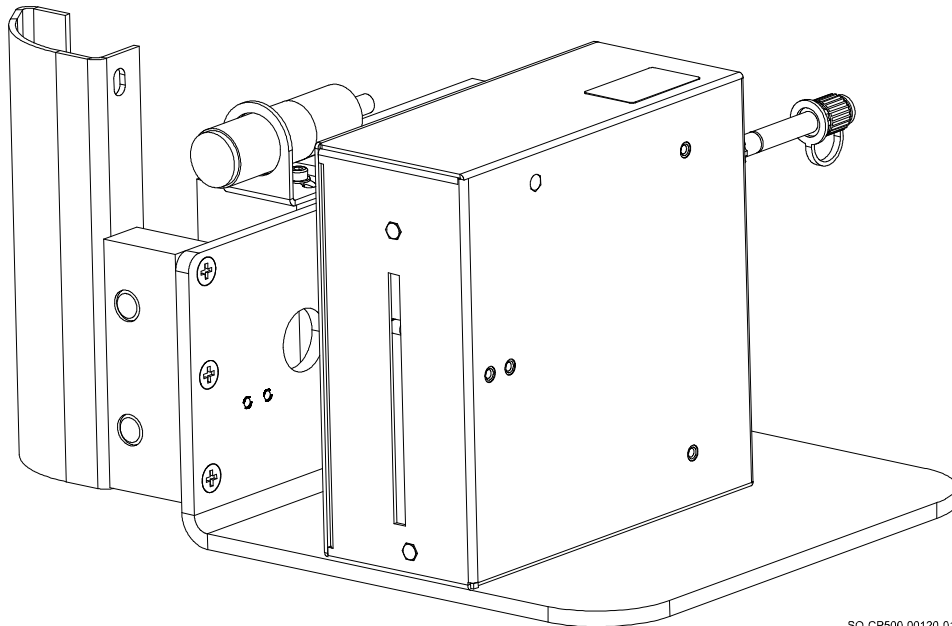
SQ-CP500-00120-01

Mounting Hardware

Squid Ink offers a variety of Floor Stands and Conveyor Mounts for a range of unique situations (see "Replaceable Parts" on page 129). Floor Stand Mounts isolate the CoPilot 500 from vibrations and movements of the Conveyor. Conveyor Mounts attach directly to the Conveyor. Contact your Squid Ink distributor for guidance on which stand best suits your needs, and follow the mounting instructions for the mounting system that you choose.

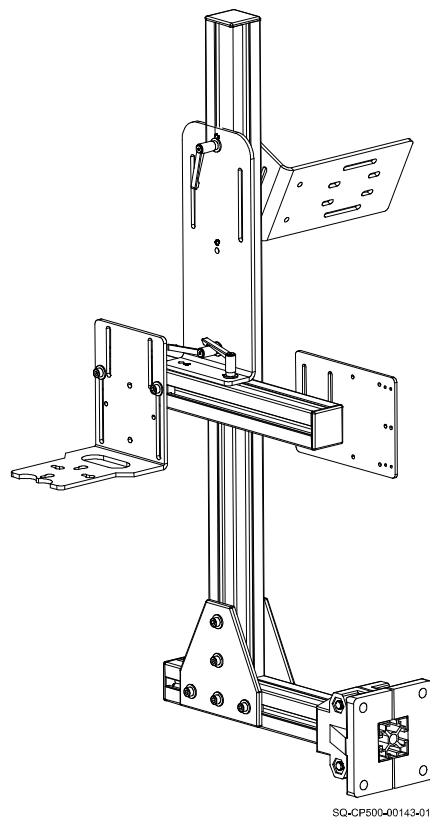> **NOTE:** Stands and mounts do not come with CoPilot 500 Controllers or Printheads.

Floor Stand

(Part Number 2004940)

Conveyor Mount

(Part Number 2004943)

SQ-CP500-00143-01

SQ-CP500-00142-01

The "Floor Stand Assemblies" and "Conveyor Mount Assemblies" sections, starting on page 131, have complete lists of available Floor Stands and Conveyor Mounts.

Installation and Setup

General Recommendations

Material Handling

The most critical item for consistently superior quality printing is material handling. This is an area controlled by the customer and the installer. Always use adequate Conveyor Product Guides, and ensure that they are installed and maintained properly. Incorrect or inconsistent product handling will cause print quality problems, maintenance problems, and could lead to Printhead damage. The customer is responsible for maintaining proper material handling equipment.

**Properly Installed and Maintained
Conveyor Guides**

Conveyor
Guides

SQ-CP500-00033-01
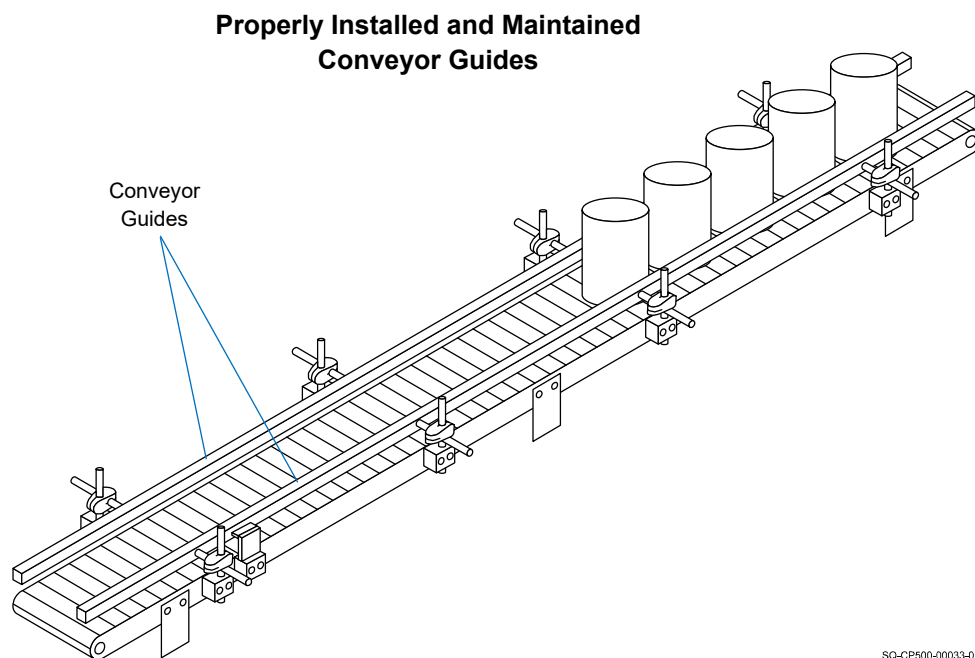
Grounding

Always ensure that the power source is properly grounded before using. To further improve print quality and protect the system from static electricity, install a 0.25" (or wider) Ground Braid (Part Number 2005024) between the Printhead Controller and earth ground.

AC Power

In some locations where the printing system is installed, AC power may be subject to line noise, brownouts, and blackouts. If line noise, brownouts, or blackouts occur on a regular basis, a good-quality line conditioner or Uninterruptible Power Supply (Part Number 2004199) should be installed to ensure data integrity. In many cases, these devices may not be necessary; it is acceptable to start an installation without them. However, if system lockups or occasional distorted print occurs, the first corrective measure should be to isolate and clean up the AC power.

Work Area

A Printhead may occasionally require priming, purging, or flushing due to environmental contaminants collecting on the Nozzle Face. Priming, purging, and flushing require the use of clean, non-abrasive, lint-free wipes (Part Number 2005470) that will become soiled with ink during use. A small cabinet or box near the Printer to store the wipes and to keep them clean is recommended. A small waste receptacle is also recommended for soiled wipe disposal.

Vibration

CoPilot 500 Print Engines do not de-prime easily. They are tolerant of being bumped by passing products and normal Conveyor vibrations. However, sustained, long-term vibration may lead to erratic print performance. In cases where the Conveyor is especially vibration-prone, the entire printing system should be mounted on an optional Floor Stand available from Squid Ink.

Maintenance Access

When planning the installation, allow for easy access to the Printheads so that priming and cleanup can be done conveniently.

Mounting

Each installation is unique, and Squid Ink Manufacturing cannot anticipate customer requirements for attaching Mounting Brackets to the production line. Several mounting systems are available for the CoPilot 500 printing system. Follow the instructions for the specific mounting system ordered with your Printer.

⚠	**ATTENTION:** Use only the supplied Mounting Screws to attach the Printhead and Controller to the Mounting Brackets. Using Mounting Screws other than those supplied by Squid Ink Manufacturing can result in damage to the Printhead or the Controller.

Main Components on Mounting Bracket
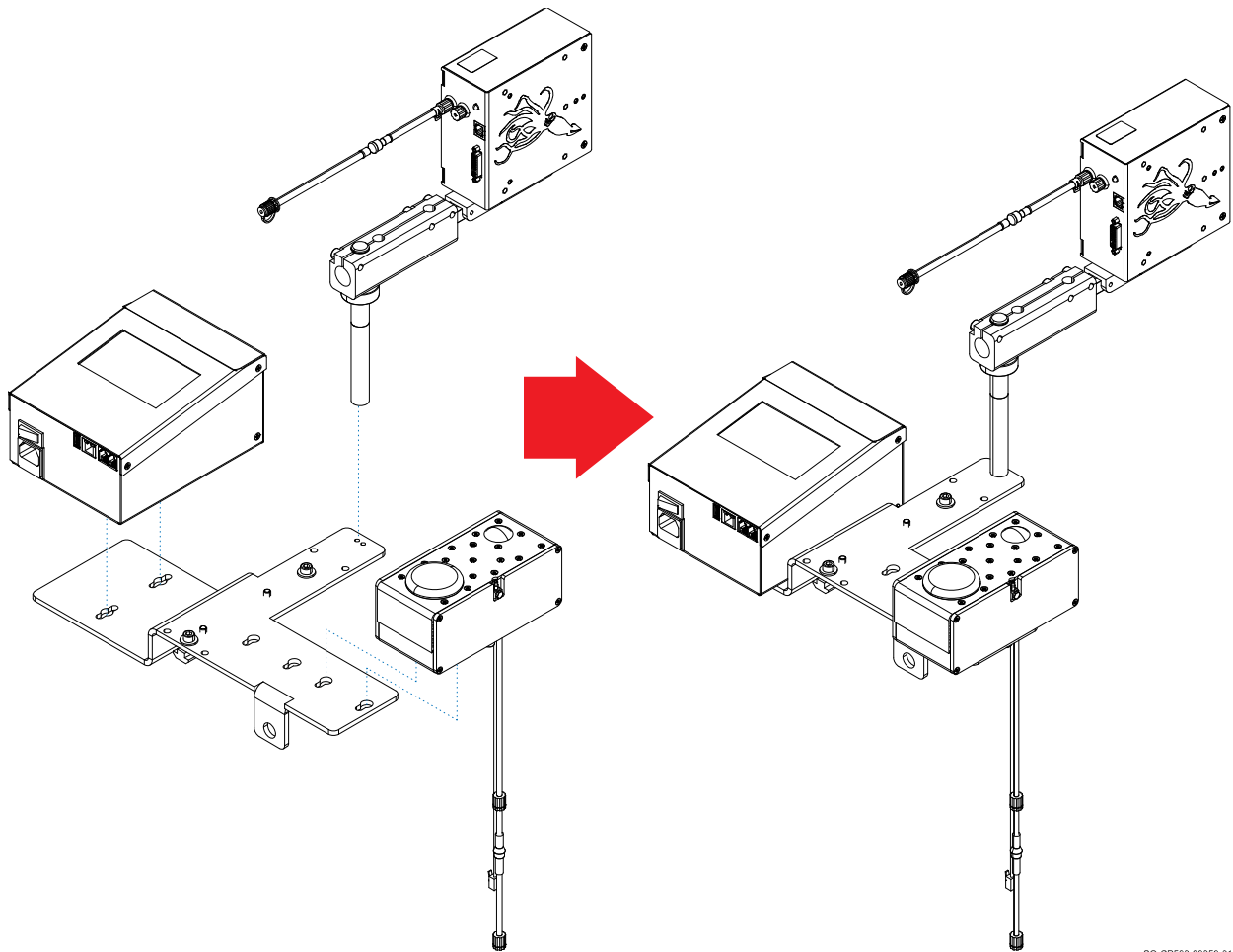
SQ-CP500-00059-01

Mounting the Controller

The Controller is attached to the Mounting Bracket by inserting the two supplied Mounting Screws into the two M6 mounting holes located on the bottom of the Controller.

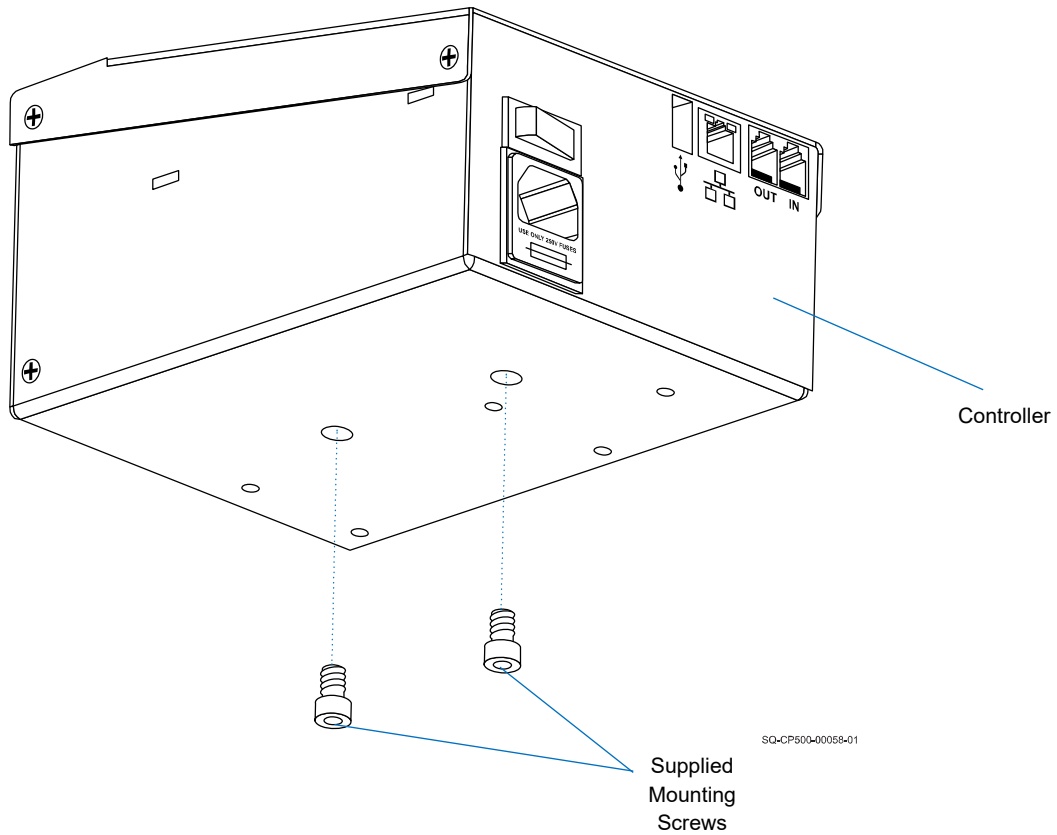|	
VIDEO: Mounting the Controller To see a video of this procedure, click this link: https://youtu.be/zSjTfhCmU8M?t=49 Or scan the QR code at right using the camera app on your mobile device. **View Time:** 0:49 – 2:38	SQ-CP500-00069-01 Mounting the Controller https://youtu.be/zSjTfhCmU8M?t=49 0:49-2:38

Attaching the Controller

Controller

SQ-CP500-00058-01

Supplied
Mounting
Screws

Mounting Printhead(s)

Printhead mounting varies by situation. This section lays out some general principles for Printhead mounting. A Mounting Bracket is necessary when the Printhead is going to be printing in any direction other than straight ahead.

Attaching a Mounting Bracket to the Printhead
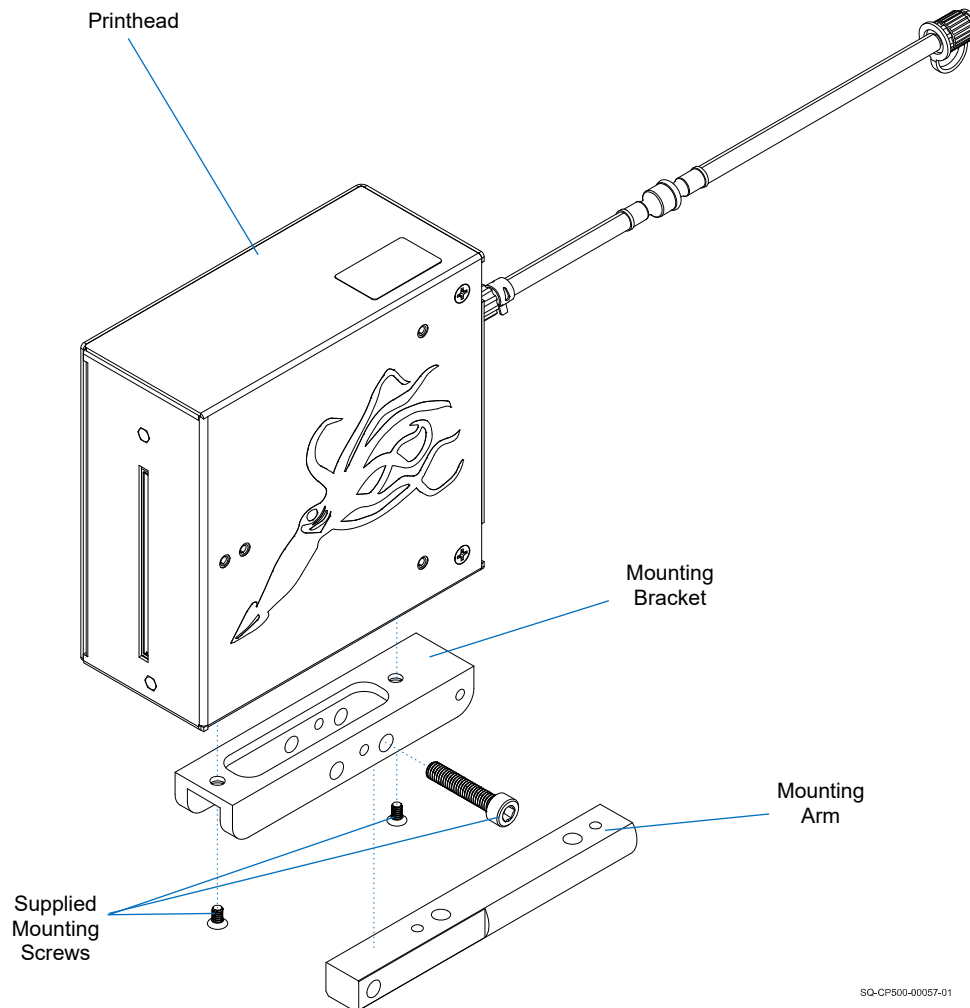
If printing straight ahead, the Printhead can be attached directly to a Floor Stand or Conveyor Mount (see "Replaceable Parts" on page 129).
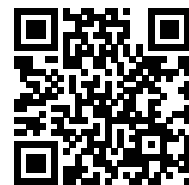

VIDEO: Mounting the Printhead

To see a video of this procedure, click this link:
https://youtu.be/zSjTfhCmU8M?t=251
Or scan the QR code at right using the camera app on your mobile device.

View Time: 4:11 – 6:10

### To Mount a Printhead on a Conveyor Mount or Floor Stand:

1. Use the supplied Screws to attach the Mounting Bracket to the downstream side of the Printhead.

Attaching the Printhead to a Conveyor Mount or Floor Stand
(Left-to-Right Product Flow)
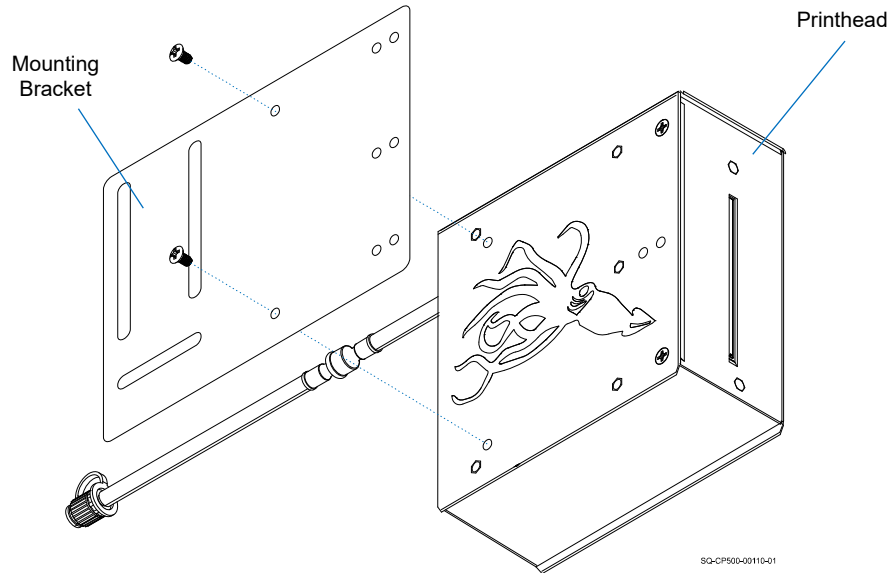
Mounting Bracket

Printhead

SQ-CP500-00110-01

2. Use the T-Nuts and accompanying Screws to attach the Mounting Bracket (through the two vertical slots) to the Mounting Arm, and then tighten the T-Nuts.

Attaching the Mounting Bracket to the Mounting Arm

Mounting Bracket

Cross Section of Mounting Arm

Screw

T-Nut

Mounting Arm

Screws

Mounting Bracket

T-Nuts

SQ-CP500-00111-01
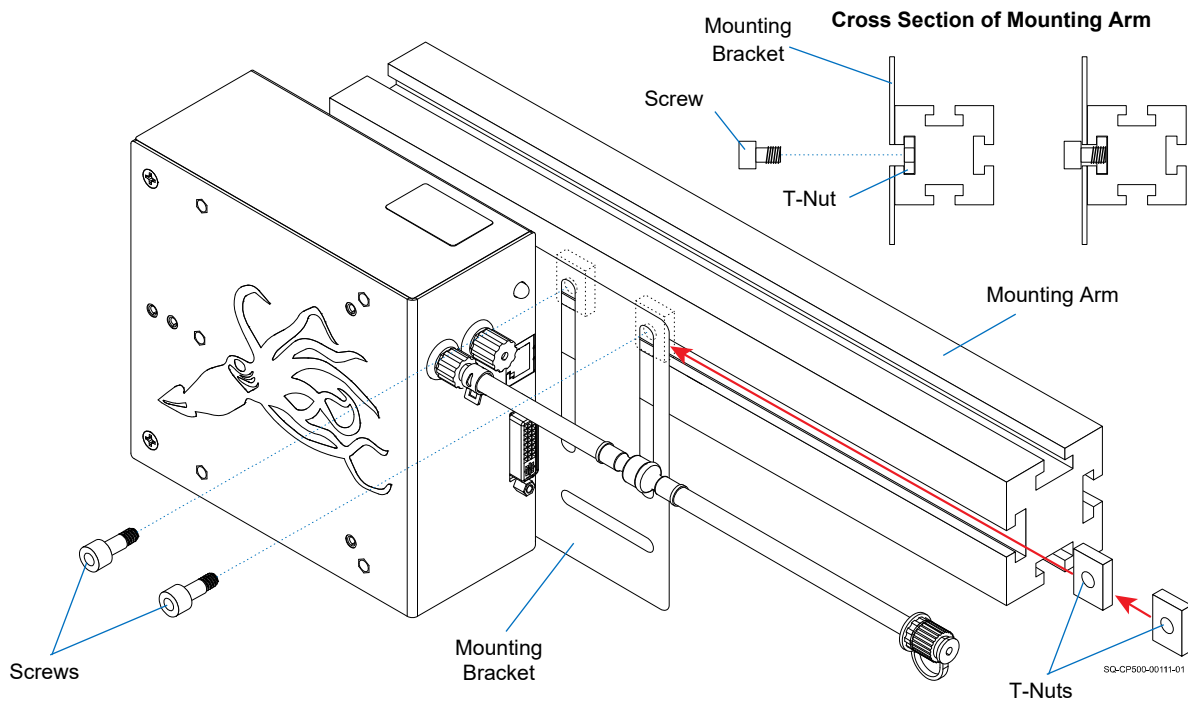
Mounting the Ink System

Because the CoPilot 500 uses a passive ink system that relies on a specific relationship between the height of the Printhead and the Ink System, both of these items should be attached to the same Mount, whether that is a Conveyor Mount or Floor Stand.
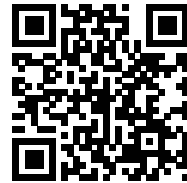
Cartridge Ink System

VIDEO: Mounting the Ink System

To see a video of this procedure, click this link:
https://youtu.be/zSjTfhCmU8M?t=370
Or scan the QR code at right using the camera app on your mobile device.

View Time: 6:11 – 6:44

Items Needed to Mount a Cartridge Ink System:

- Alan Wrench
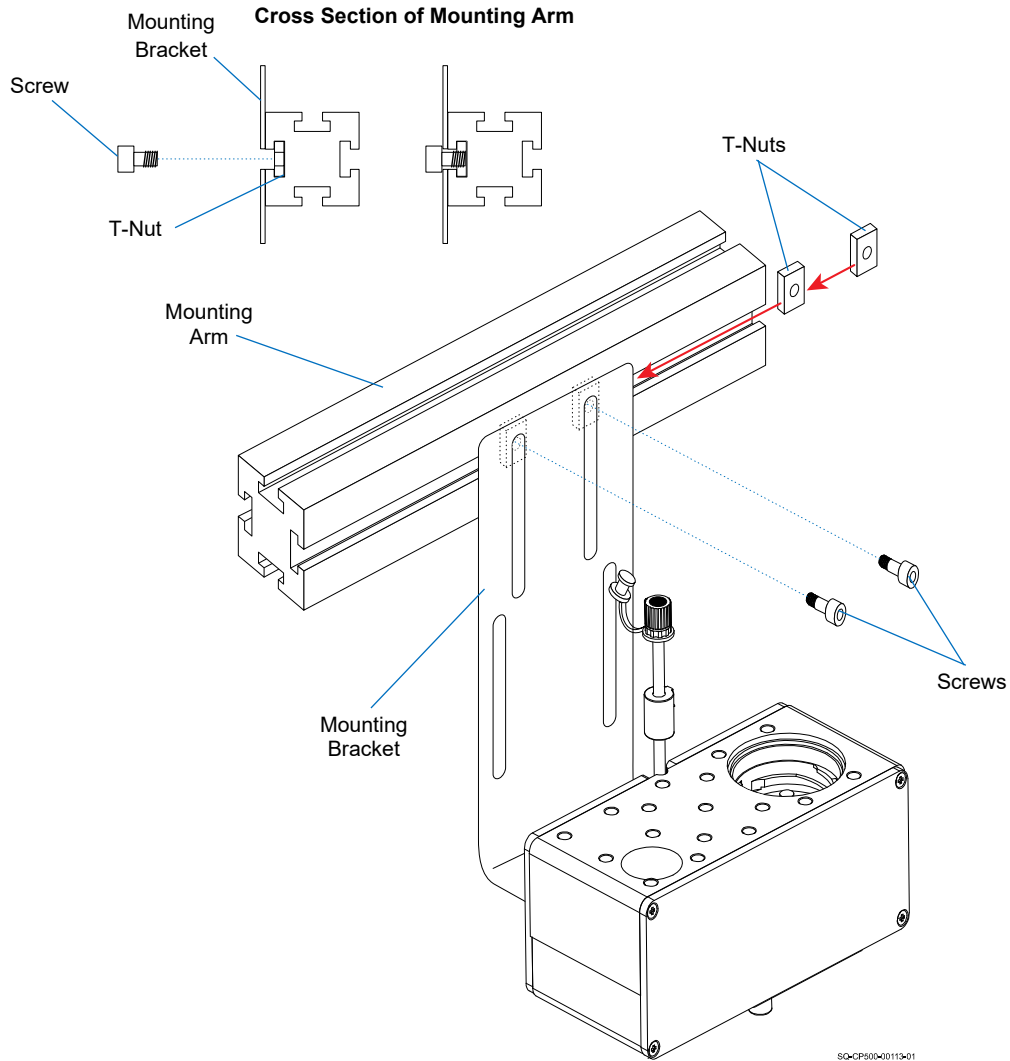- Phillips Head Screwdriver

To Mount a Cartridge Ink System:

1. Use the supplied Screws to attach the bottom of the Ink Reservoir to the L-shaped Ink System Mounting Bracket.
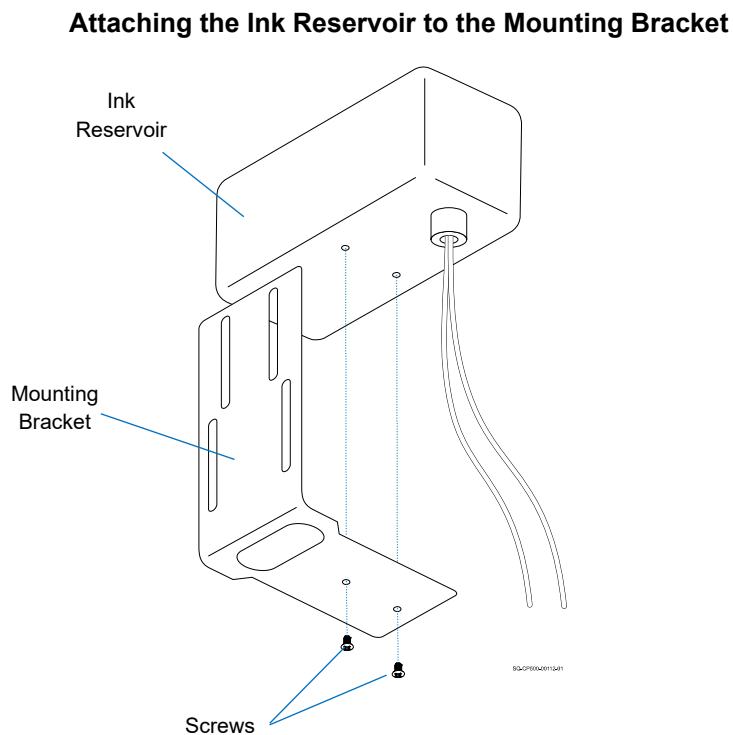
Attaching the Ink Reservoir to the Mounting Bracket

2. Use the T-Nuts and accompanying Screws to attach the Mounting Bracket (through the two vertical slots) to the Mounting Arm, and then tighten the T-Nuts.

Attaching the Mounting Bracket to the Mounting Arm
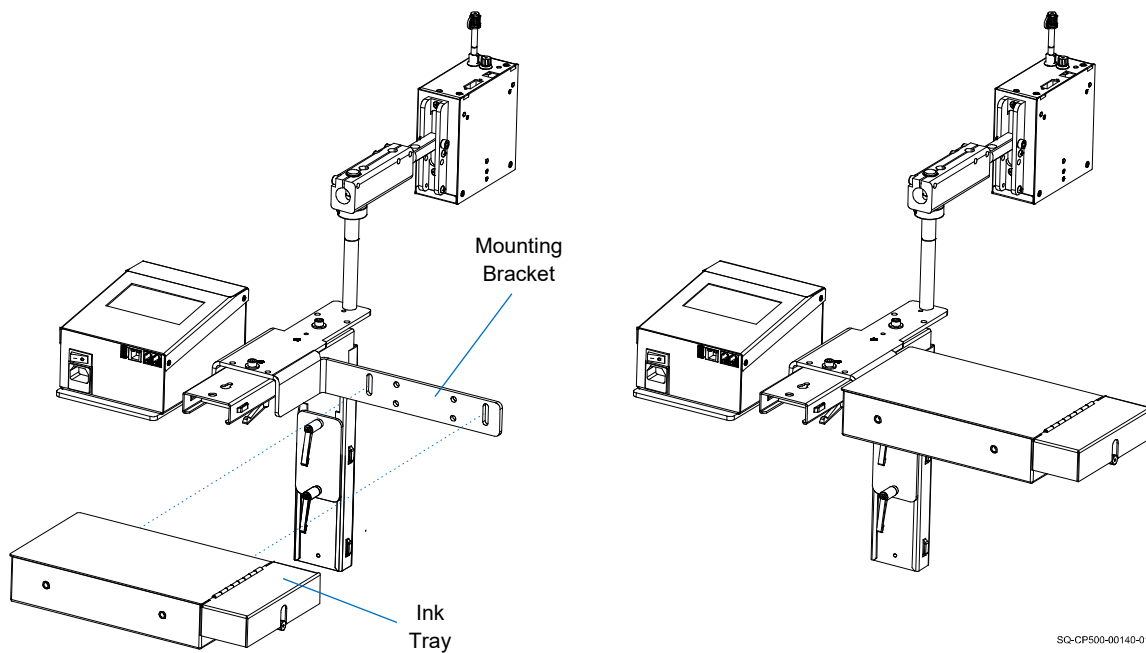
Bag Ink System

Items Needed to Mount a Bag Ink System:

- Alan Wrench
- Phillips Head Screwdriver

To Mount a Bag Ink System:

1. Use the supplied Screws to attach the side of the Ink Tray to the Ink System Mounting Bracket.

Attaching the Ink Tray to the Mounting Bracket

Mounting
Bracket

Ink
Tray

SQ-CP500-00140-01

Mounting a Photocell

A Photocell triggers printing when a product passes in front of it. The Photocell can be mounted directly to the Printhead using the supplied Mounting Bracket and Screws. The Photocell should be mounted on the upstream side of the Printhead so that it will "see" the product before the product passes in front of the Printhead.
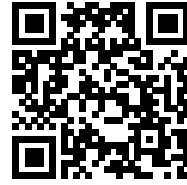
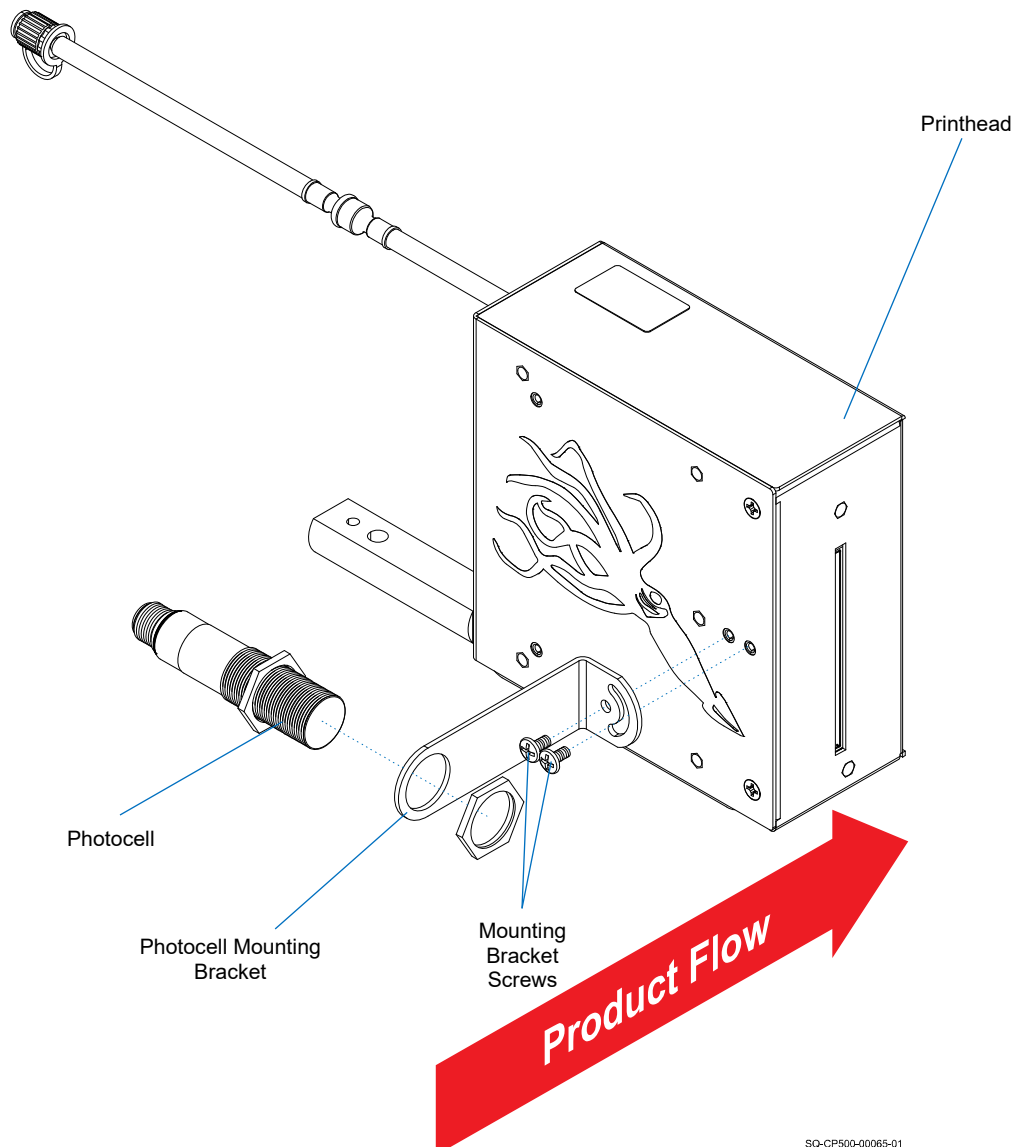| |
|---|
| **VIDEO: Mounting a Photocell**

To see a video of this procedure, click this link:
https://youtu.be/zSjTfhCmU8M?t=548
Or scan the QR code at right using the camera app on your mobile device.

View Time: 9:08 – 10:25 |

Printhead

Photocell

Photocell Mounting
Bracket

Mounting
Bracket
Screws

Product Flow

SQ-CP500-00065-01

Distance from Substrate

Generally, the closer the Printhead is to the surface to be printed (substrate), the better the print quality. Squid Ink recommends keeping the printed surface within 1/8" (3.2 mm) from the Nozzle Face. While throw distances greater than 1/8" (3.2 mm) are possible, print quality may be affected.
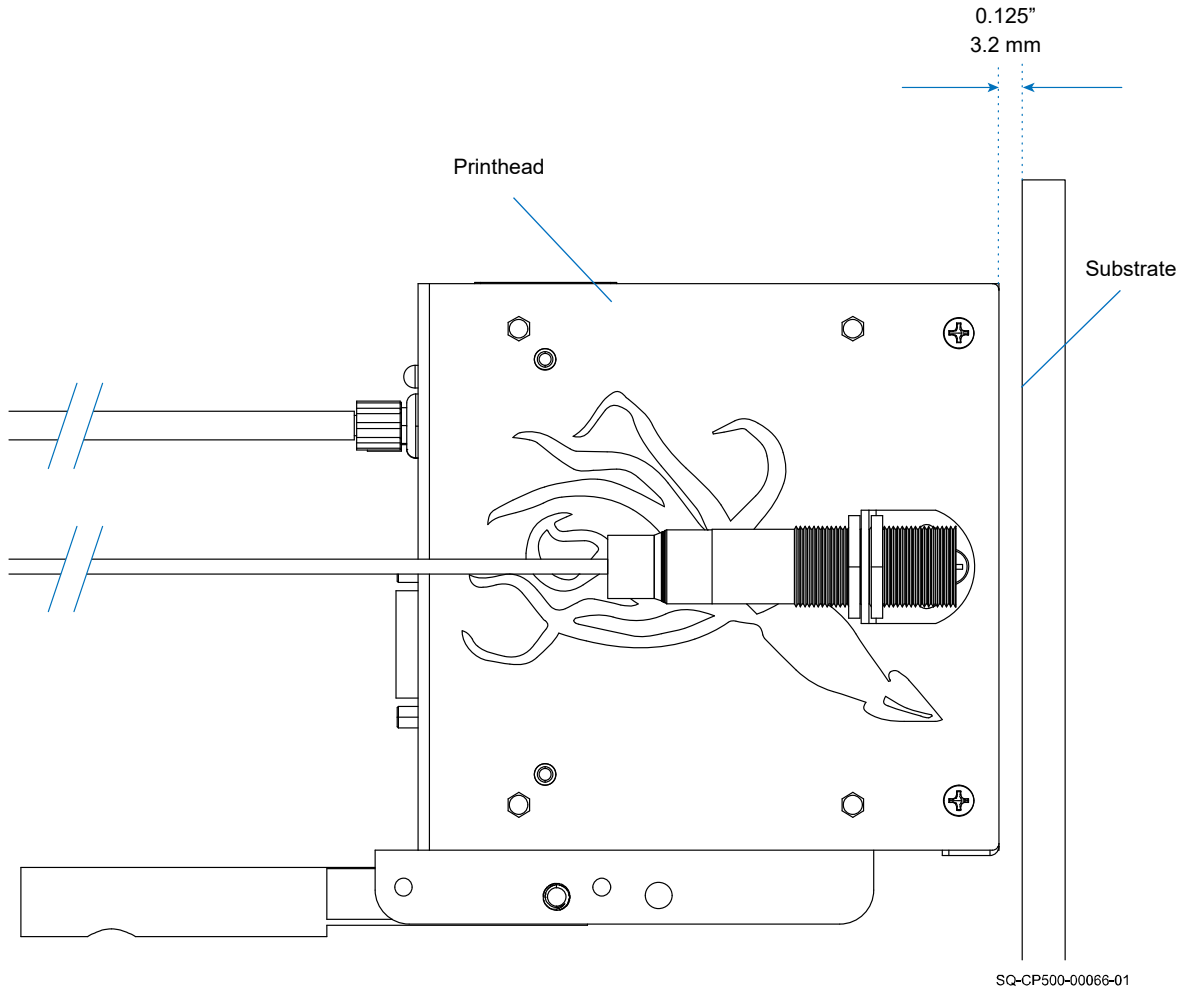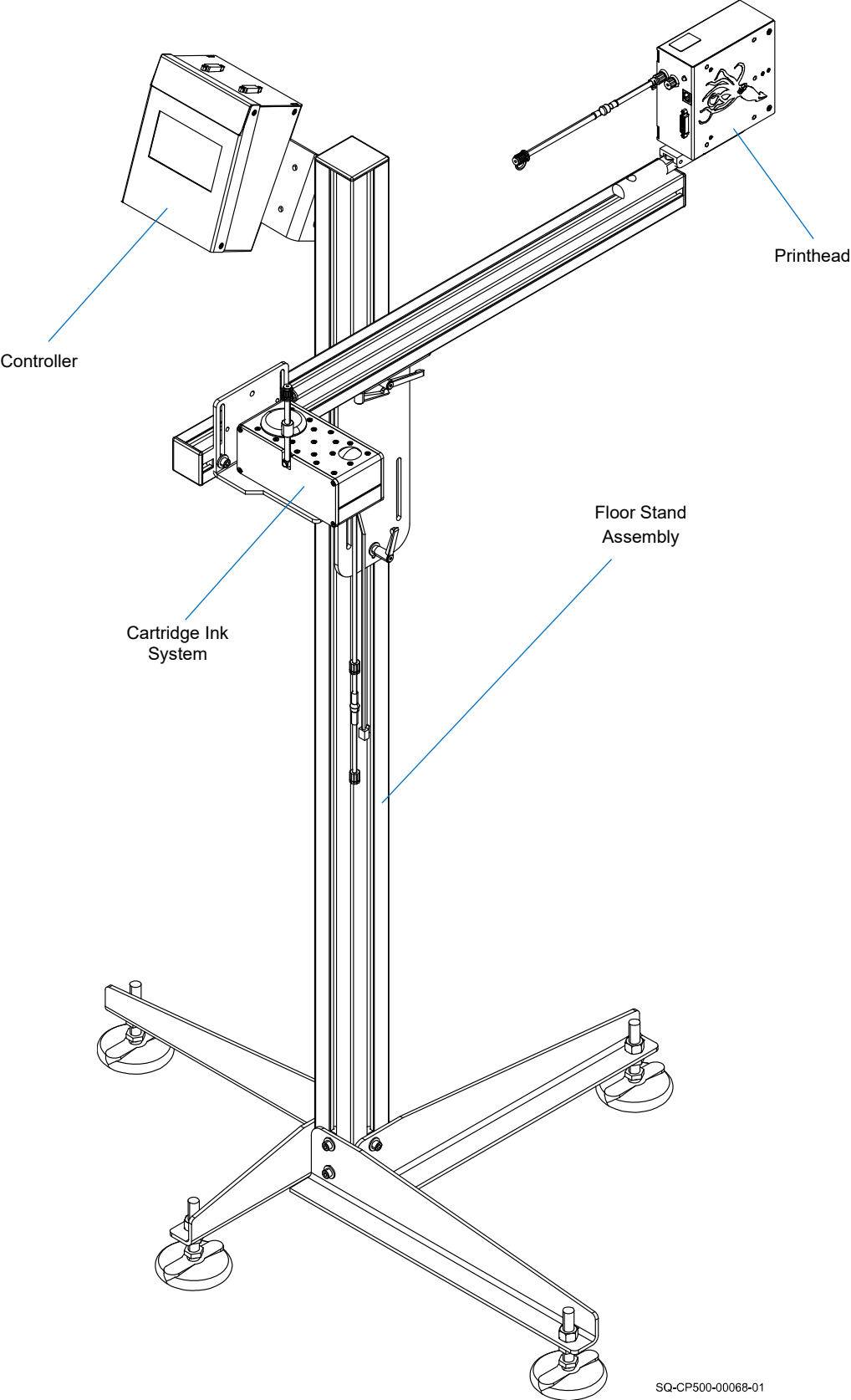
SQ–CP500–00066–01

Dual Printheads with Bag Ink System
Mounted on Floor Stand

Printheads

Bag Ink System

Controller

Floor Stand
Assembly
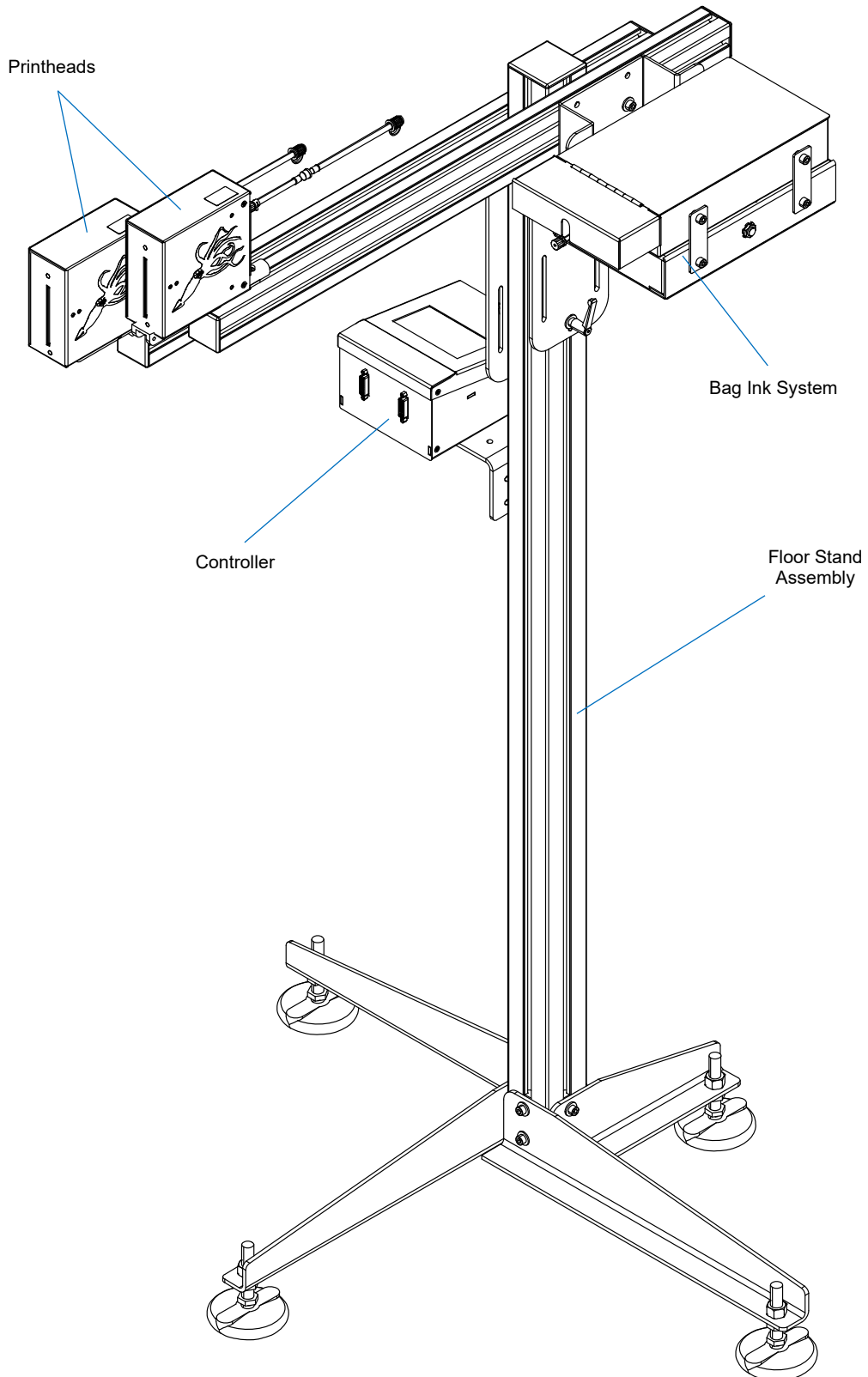
SQ-CP500-00067-01

**Printhead with Cartridge Ink System
Mounted on Floor Stand**

Controller

Printhead

Floor Stand
Assembly

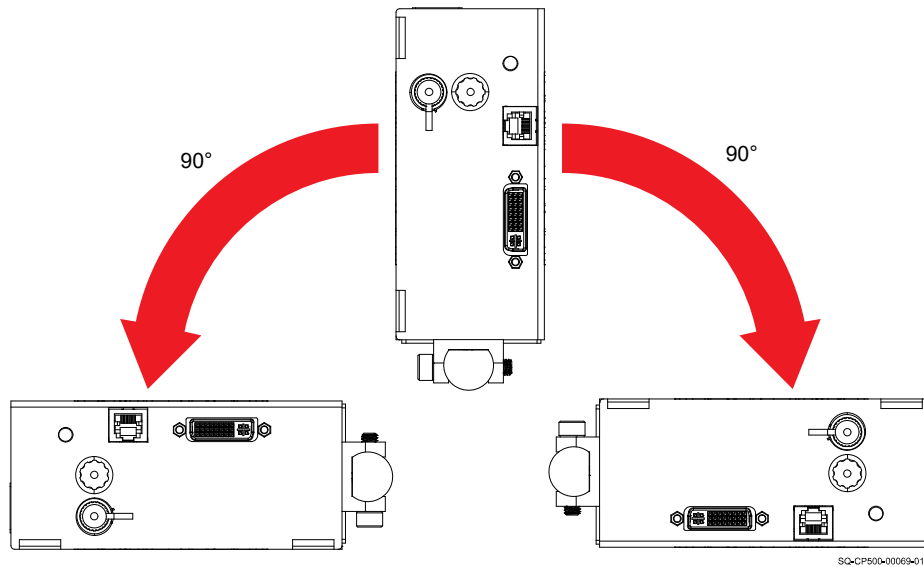Cartridge Ink
System

SQ-CP500-00068-01

Rotating or Tilting the Printhead

The Printhead can be mounted in a rotated or tilted orientation. This is useful when printing on an incline Conveyor or vertical Web.
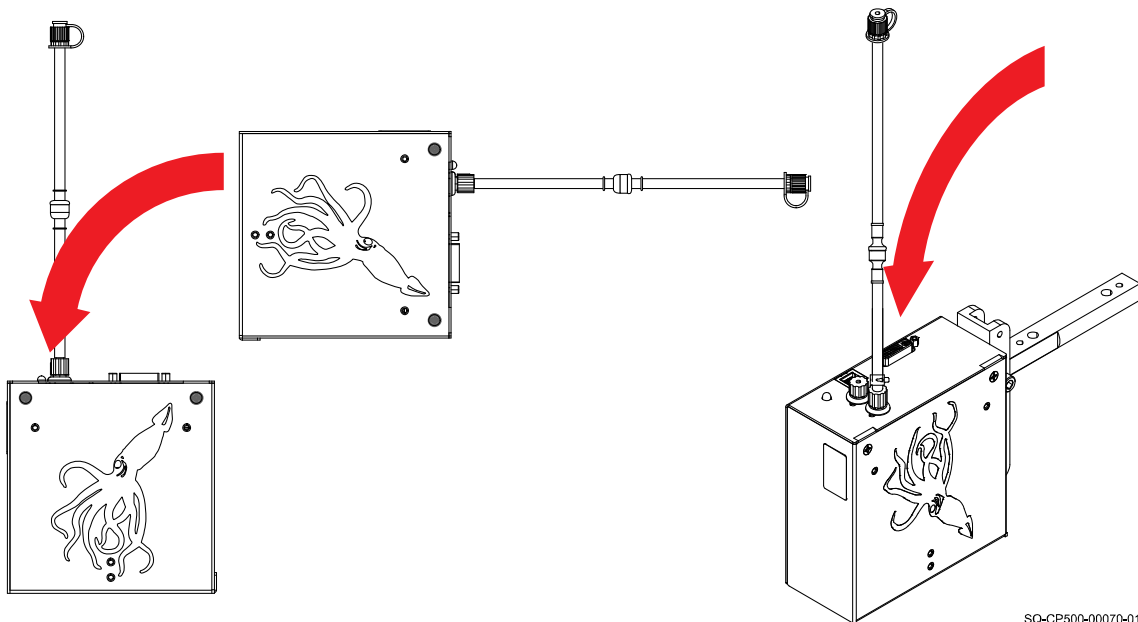
The Printhead can be rotated 90° clockwise or counter-clockwise (sideshooter position) when viewed from behind the Printhead.

The Printhead can be tilted from 0° (straightshooter position) to 90° pointing down (downshooter position). **The printer will not print pointing up**.

Sideshooter Position

SQ-CP500-00069-01

Downshooter Position

SQ-CP500-00070-01

Connecting the Ink Supply

Ink and fluids are supplied to the Printhead with a Cartridge Ink or Bag Ink system. Normally, an ink system (Cartridge or Bag) will be needed for each installed Printhead. However, one ink system (Cartridge or Bag) can supply two Printheads if they are mounted at the same height.

⚠️	**ATTENTION:** Use only Squid Ink approved fluids for cleaning or flushing the Nozzle Face. Use only the appropriate cleaning or flushing fluid for the specific ink being used (see "Inks and Fluids" on page 133).

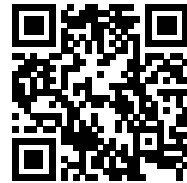| ⚠️	**ATTENTION:** Never operate the Printhead without ink. Doing so can cause overheating and damage the Printhead, and will void the warranty.

Cartridge Ink System Setup

| **VIDEO: Installing an Ink Cartridge**	
To see a video of this procedure, click this link: https://youtu.be/zSjTfhCmU8M?t=712 Or scan the QR code at right using the camera app on your mobile device. **View Time:** 11:52 – 13:43	SQ-CP500-00106-01 Installing an Ink Cartridge https://youtu.be/zSjTfhCmU8M?t=712 11:52–13:43

To Set Up a Cartridge Ink System:

1. Remove the Shipping Cover from the Ink Reservoir by pulling it upward and off. Save the Shipping Cover for future use.

Removing the Shipping Cover from the Ink Reservoir
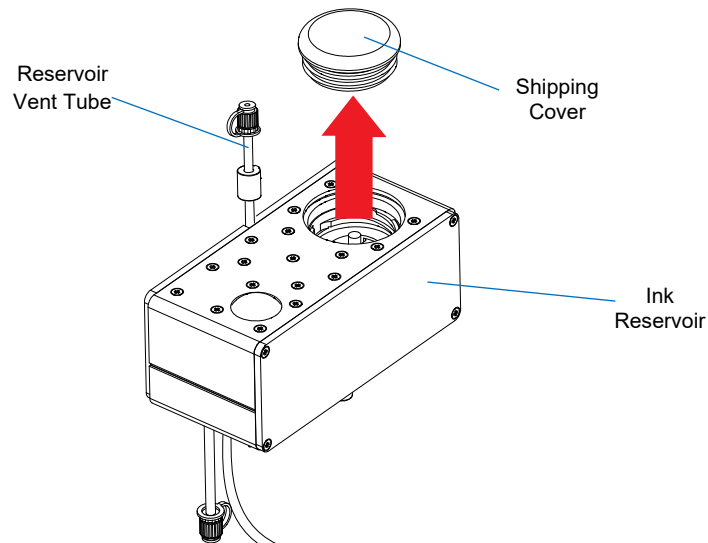
2. Ensure that the Printhead is properly aligned to the Ink Reservoir (see "Printhead Height Relative to Ink Reservoir or Ink Pan" on page 47).

3. Ensure that the Ink Reservoir Vent Tube is uncapped for printer operation.

4. Ensure that the Ink Reservoir O-Ring (Part Number 2006088 for Oil, 2006094 for Solvent) is in place to complete the seal between Ink Cartridge and Ink Reservoir.

> **NOTE:** If the O-Ring is missing, the Printhead will have difficulty staying primed, resulting in poor print quality, and will leak profusely.

O-Ring Placement

Reservoir Cap

O-Ring
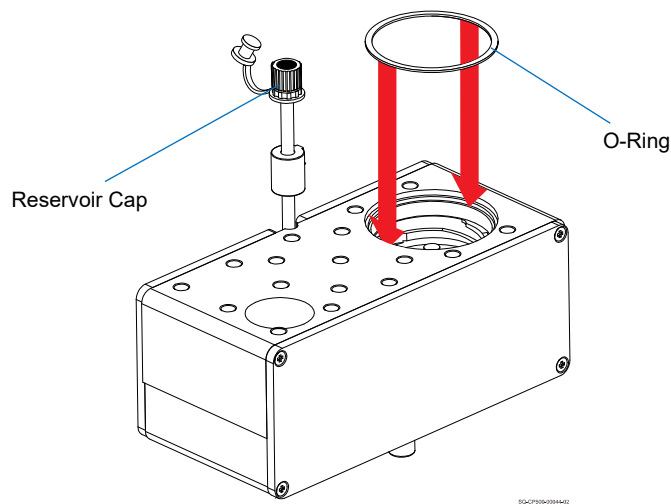
5. Install a new Ink Cartridge onto the Ink Reservoir

   a. Use a sharp knife to remove the foil seal from the center section of the new Ink Cartridge so that the Ink Release Valve operates properly.

> **NOTE:** It is important to remove all foil from the opening of the Ink Cartridge so that the Printhead receives the correct amount of ink.

Removing the Foil Seal

Sharp Knife

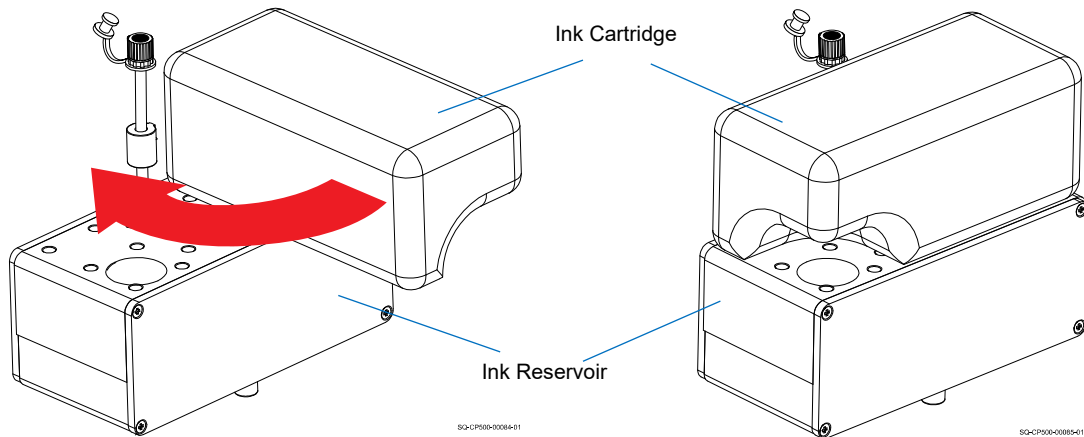Opening

Foil Seal

Underside of Ink Cartridge
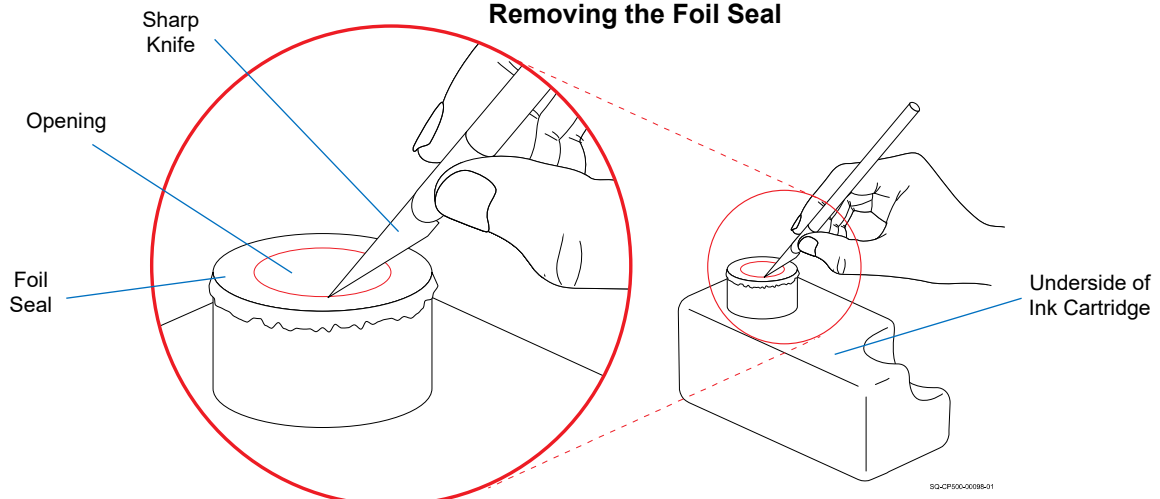
b. Aligning the Cartridge at a right angle to the Ink Reservoir, lower the Ink Cartridge onto the Ink Reservoir.

Lowering the Ink Cartridge onto the Ink Reservoir
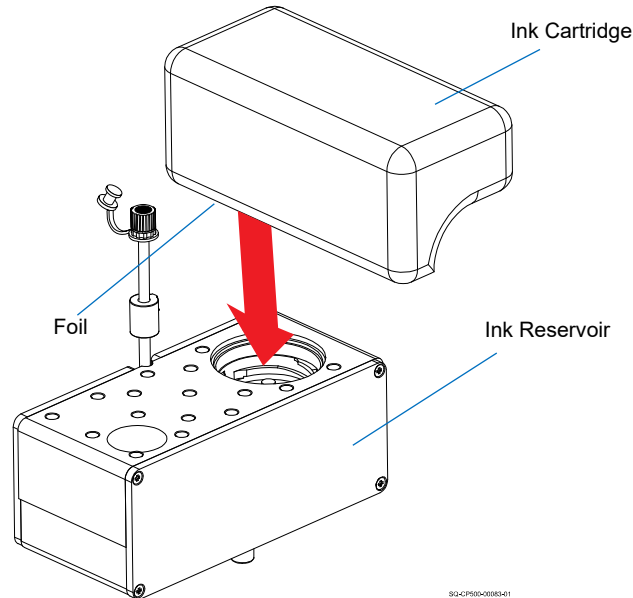
c. Rotate the Ink Cartridge 90° clockwise to thread it down into the seat of the Ink Reservoir.

Rotating the Ink Cartridge

d. Once the Ink Cartridge is properly in position, ink will fill the Ink Reservoir.

6. Connect the Printhead and Ink Reservoir, making sure that the Inline Check Valve (Part Number 2002057 for Oil, Part Number 2002058 for Solvent) is attached snugly to the Printhead and Ink Supply Line.
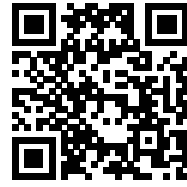
VIDEO: Connecting an Ink Cartridge

To see a video of this procedure, click this link:
https://youtu.be/zSjTfhCmU8M?t=159
Or scan the QR code at right using the camera app on your mobile device.

View Time: 2:39 – 4:11

VIDEO: Connecting the Ink Lines

To see a video of this procedure, click this link:
https://youtu.be/zSjTfhCmU8M?t=405
Or scan the QR code at right using the camera app on your mobile device.

View Time: 6:45 – 9:07
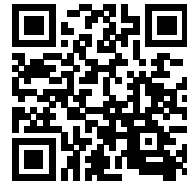
Connecting the Printhead and Ink Reservoir

Printhead

Ink Line IN

Reservoir Vent Tube (uncapped for operation)

Ink Cartridge

Printhead Purge Tube (capped for operation)

Ink Reservoir

Inline Check Valve

Ink Line from Reservoir

Low Ink Signal Wire (connected to Controller)

SQ-CP500-00040-04

7. Make sure that the Reservoir Vent Tube (Part Number 2001069 for Oil, Part Number 2001070 for Solvent) is uncapped for operation.

NOTE: The Reservoir Vent Tube must be uncapped during operation to allow air to flow into the Ink Reservoir. However, when the system is not in use, the Reservoir Vent Tube should be capped to prevent debris from entering the system. It should also be capped when moving the system to prevent ink from escaping.

8. Make sure that the Printhead Purge Tube is capped for operation.

9. Connect the Low Ink Signal Wire to the RJ-12 Ink Level Signal Port on the back of the Printhead.

10. Correctly position the Printhead relative to the substrate (see "Distance from Substrate" on page 35).

| ⚠	**ATTENTION:** Do not position the Printhead where it can be hit by products passing on the Conveyor, as this can damage the Printhead.

Bag Ink System Setup

To Set up a Bag Ink System:

1. Attach the Ink Tray to the mounting hardware according to the mounting instructions.

> **NOTE:** Squid Ink offers several mounting systems. Mounting and installation may vary depending on the mounting system used. Contact your authorized Squid Ink distributor for guidance on the best mounting system for your needs.
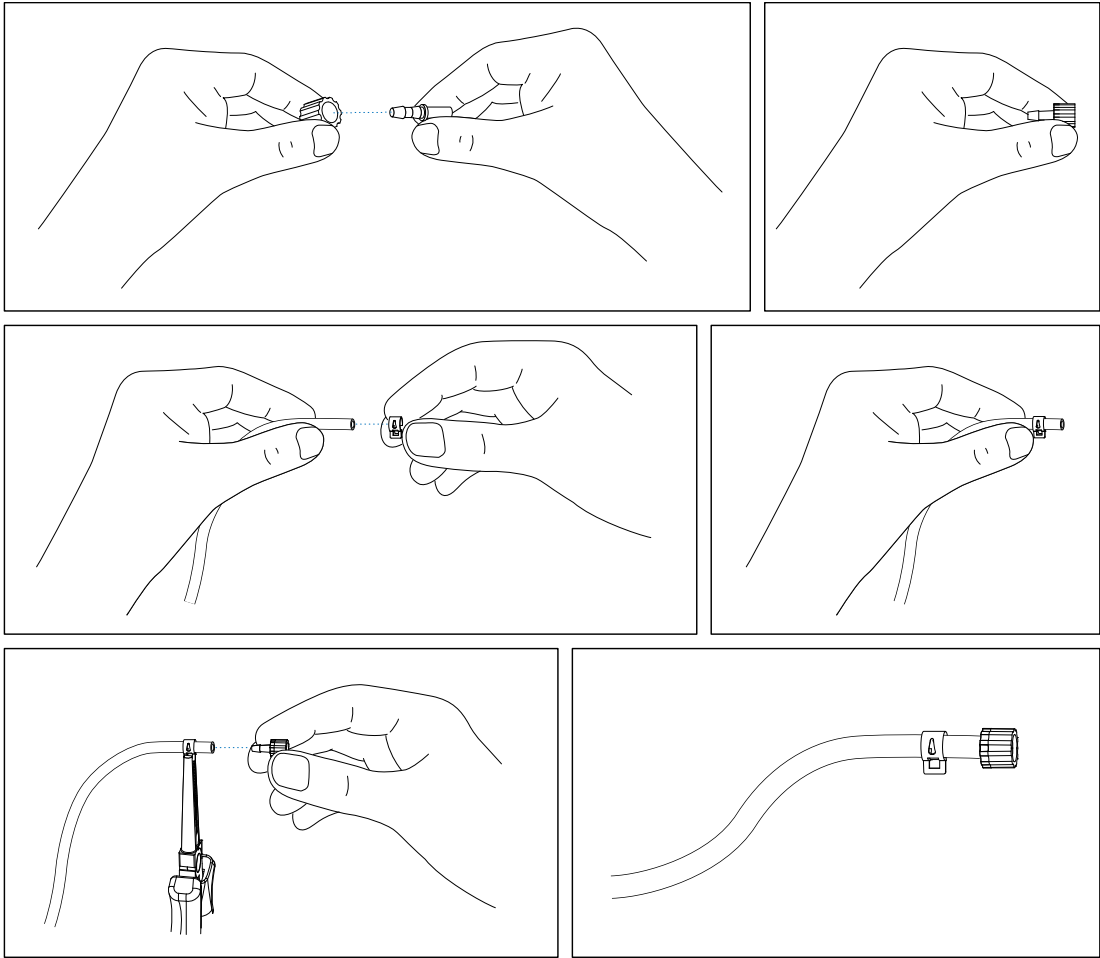
Ink Tray Attached to Mounting System
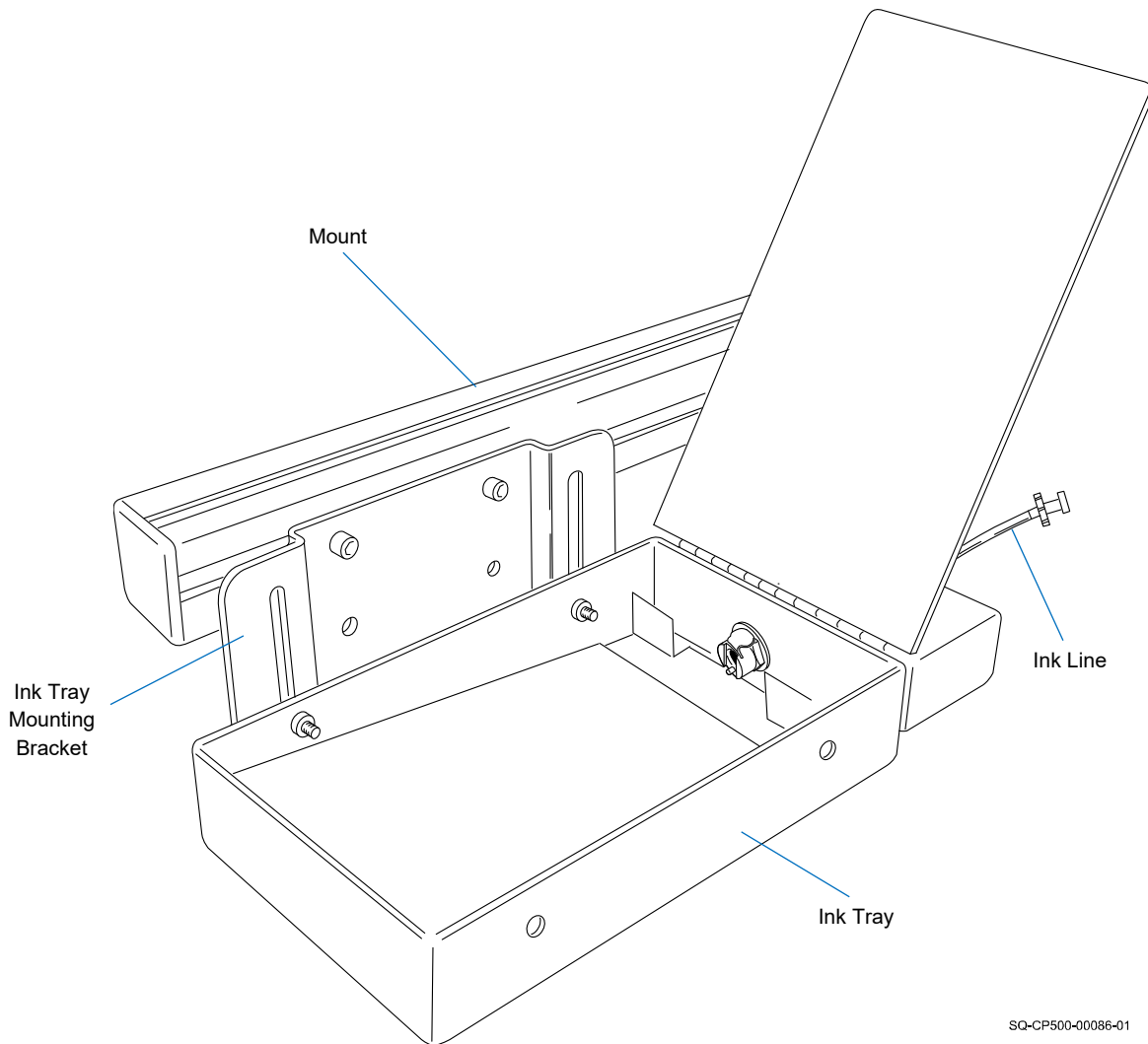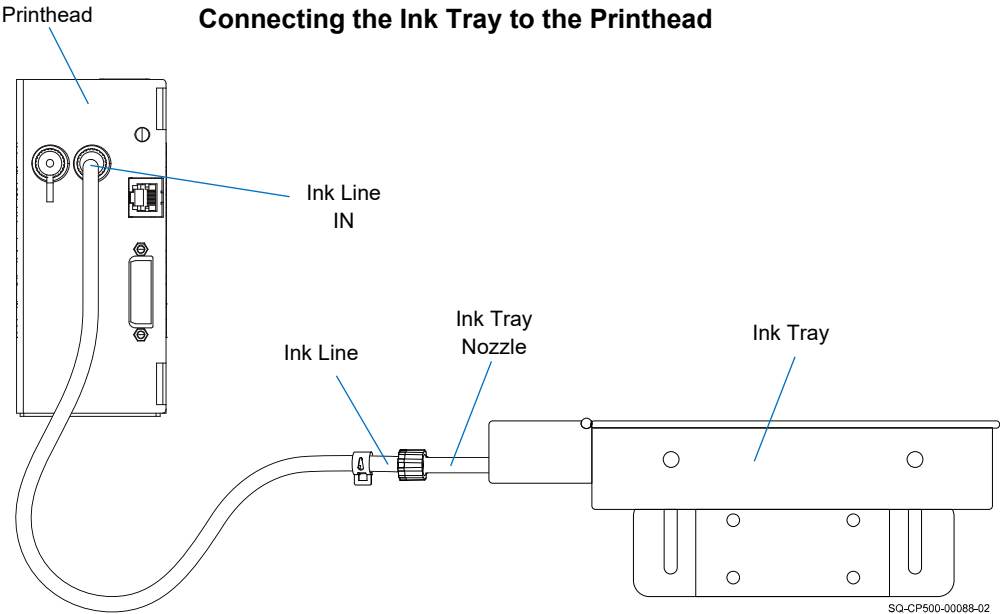

SQ-CP500-00086-01

2. Ensure that the Printhead is properly aligned to the Ink Reservoir (see "Printhead Height Relative to Ink Reservoir or Ink Pan" on page 47).

3. Fabricate an Ink Line with female Luer fittings on each end using the supplied tubing and fittings.

Fabricating an Ink Line

SQ-CP500-00087-02

4. Attach one end of the fabricated Ink Line to the Ink Tray Nozzle and attach the other end to the Ink Line IN on the back of the Printhead.

Printhead

Connecting the Ink Tray to the Printhead

Ink Line
IN

Ink Line

Ink Tray
Nozzle

Ink Tray

SQ-CP500-00088-02

**5.** Connect the Ink Bag to the Ink Bag Connect Fitting in the Ink Tray.

> ⚠ **WARNING:** Do not squeeze the Bag like a sponge. Doing so is very hazardous, can potentially lead to personal injury, will likely damage the Print Engine, and will void the warranty.

> **IMPORTANT:** Twisting, pulling, or bending the Bag material can cause small cracks at the sealed joints, leading to leaks.

> **IMPORTANT:** As the Bag becomes nearly empty (<25% full), the Pressure Plate may need to be removed to generate an effective purge, but be very careful not to apply much pressure, twist, or strain the Bag connection.

Installing the Ink Bag
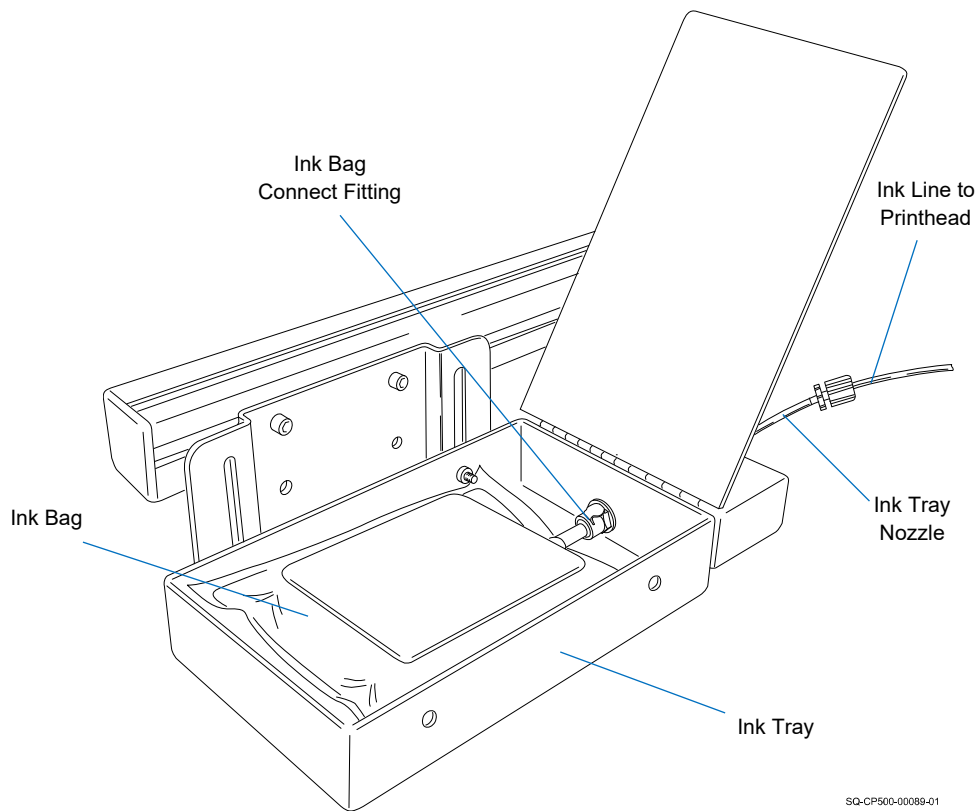
SQ-CP500-00089-01

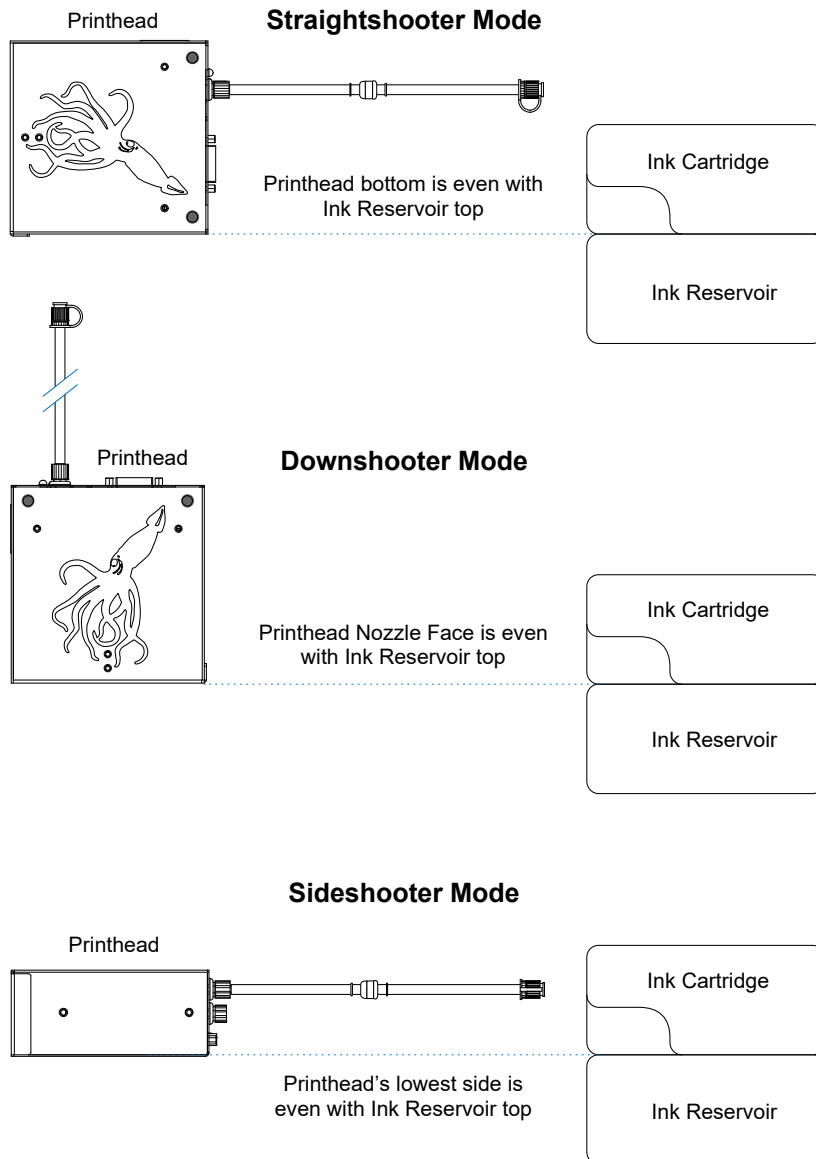# Printhead Height Relative to Ink Reservoir or Ink Pan

The following Printhead-to-Ink Bag or Reservoir height drawings are a starting point or guideline. The heights may need to be adjusted slightly if the following problems occur:

- If the Bag or Reservoir is too high, the Printhead will flood with ink and the print will start to disappear, and possibly drip ink.

- If the Bag or Reservoir is too low, the Printhead will be "starved" for ink, and the print will begin missing jets.
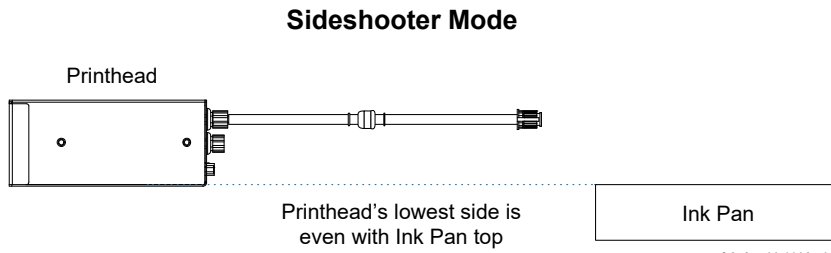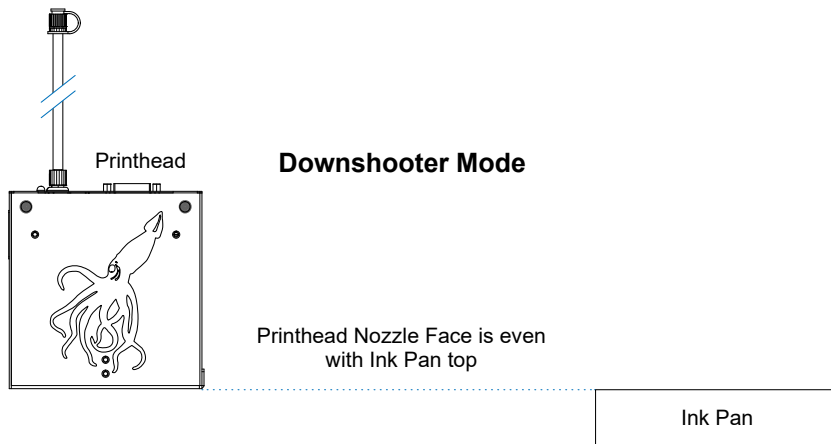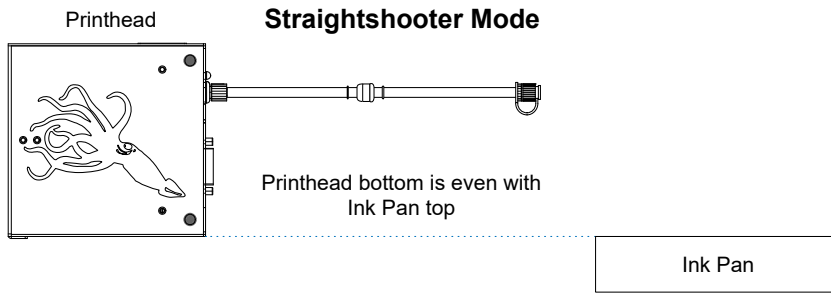
Oil-Based Systems

For oil-based systems, the lowest surface of the Printhead should be at the same level as the top of the Ink Reservoir (Cartridge Ink system) or Ink Pan (Bag Ink system).

Oil Printhead with Cartridge System

Printhead   **Straightshooter Mode**

Printhead bottom is even with Ink Reservoir top

Ink Cartridge

Ink Reservoir

Printhead   **Downshooter Mode**

Printhead Nozzle Face is even with Ink Reservoir top

Ink Cartridge

Ink Reservoir

Sideshooter Mode

Printhead

Printhead's lowest side is even with Ink Reservoir top

Ink Cartridge

Ink Reservoir

SQ-CP500-00061-01

Oil Printhead with Bag System

Printhead   **Straightshooter Mode**

Printhead bottom is even with
Ink Pan top

Ink Pan

Printhead   **Downshooter Mode**

Printhead Nozzle Face is even
with Ink Pan top

Ink Pan

Sideshooter Mode

Printhead

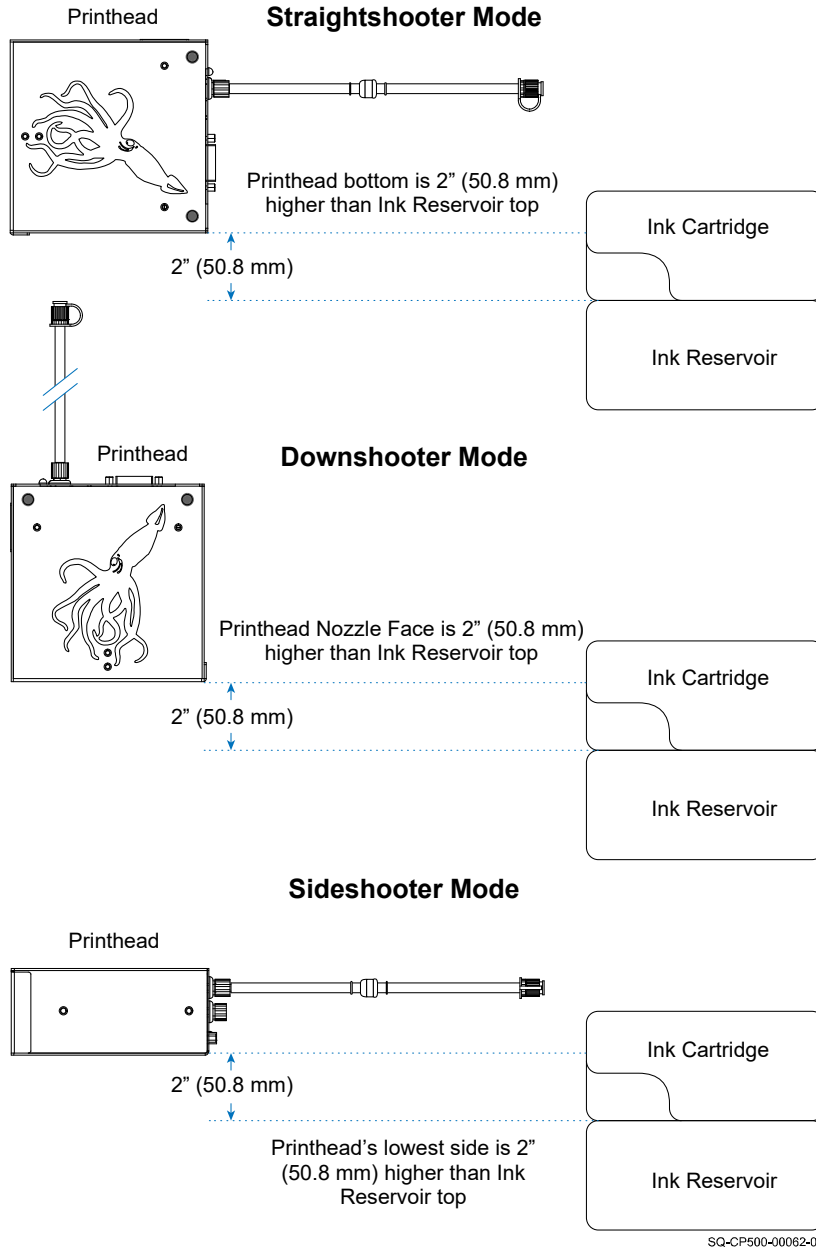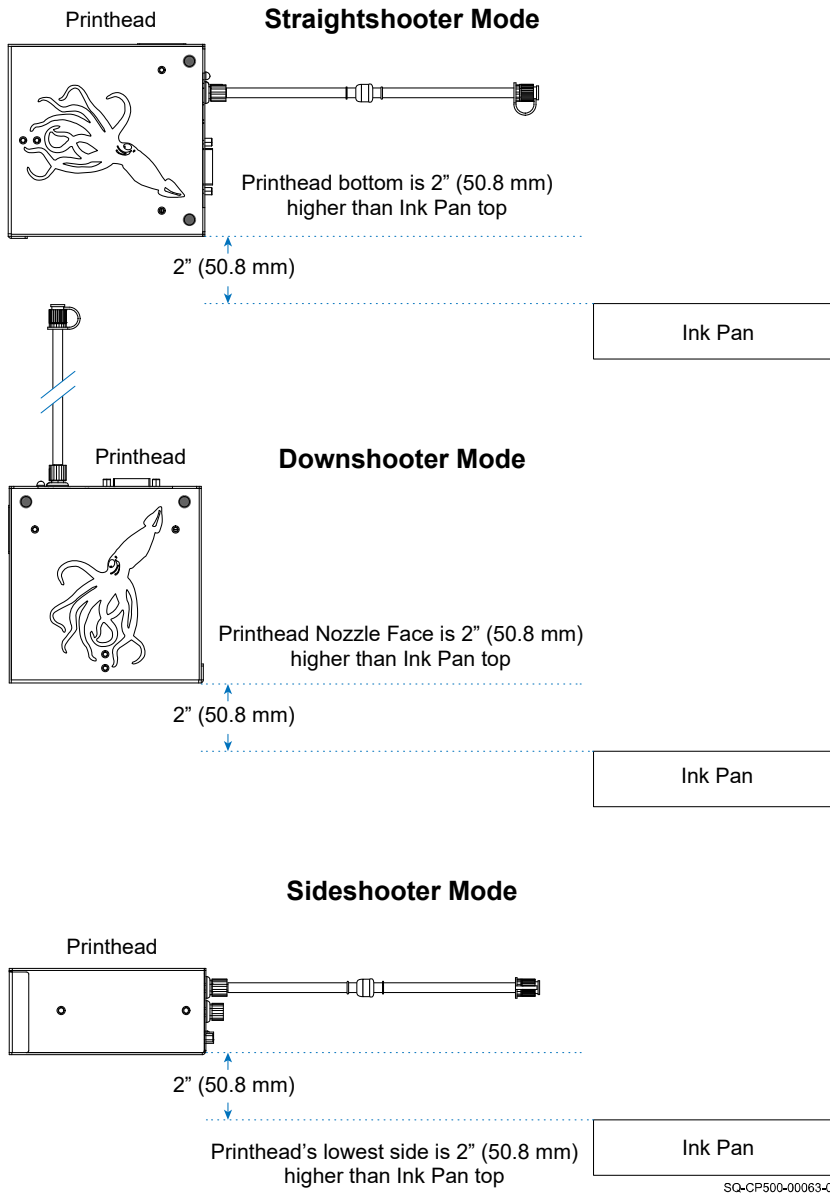Printhead's lowest side is
even with Ink Pan top

Ink Pan

SQ-CP500-00064-01

Solvent-Based Systems

For solvent-based systems, the lowest surface of the Printhead should be 2" (50.8 mm) higher than the top of the Ink Reservoir (Cartridge Ink system) or Ink Pan (Bag Ink system).

Solvent Printhead with Cartridge System

Printhead   **Straightshooter Mode**

Printhead bottom is 2" (50.8 mm) higher than Ink Reservoir top

2" (50.8 mm)

Ink Cartridge

Ink Reservoir

Printhead   **Downshooter Mode**

Printhead Nozzle Face is 2" (50.8 mm) higher than Ink Reservoir top

2" (50.8 mm)

Ink Cartridge

Ink Reservoir

Sideshooter Mode

Printhead

2" (50.8 mm)

Printhead's lowest side is 2" (50.8 mm) higher than Ink Reservoir top

Ink Cartridge

Ink Reservoir

SQ-CP500-00062-01

Solvent Printhead with Bag System

Printhead   **Straightshooter Mode**

Printhead bottom is 2" (50.8 mm)
higher than Ink Pan top

2" (50.8 mm)

Ink Pan

Printhead   **Downshooter Mode**

Printhead Nozzle Face is 2" (50.8 mm)
higher than Ink Pan top

2" (50.8 mm)

Ink Pan

Sideshooter Mode

Printhead

2" (50.8 mm)

Printhead's lowest side is 2" (50.8 mm)
higher than Ink Pan top

Ink Pan

SQ-CP500-00063-01

Cable Connections

Connecting Photocell Trigger to Controller

Connect the Photocell Signal Cable to the "IN" Port on the back of the Controller.

Connecting a Photocell
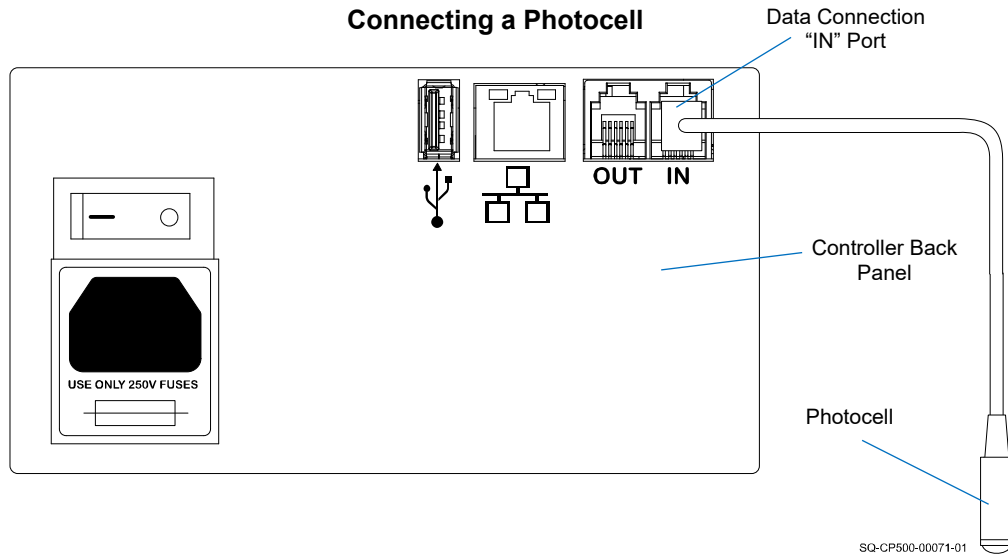
Connecting an Optional Encoder to Controller

Connect the optional Encoder and Photocell trigger to the RJ12 Adapter Cable. Connect the Adapter Cable to the "IN" Port on the back of the Controller.

VIDEO: Mounting and Connecting an Encoder

To see a video of this procedure, click this link:
https://youtu.be/zSjTfhCmU8M?t=626
Or scan the QR code at right using the camera app on your mobile device.

View Time: 10:26 – 11:51

Connecting an Encoder

Data Connection "IN" Port

OUT   IN

USE ONLY 250V FUSES

RJ12 Adapter Cable

Controller Back Panel

Encoder

Photocell

SQ-CP500-00072-01
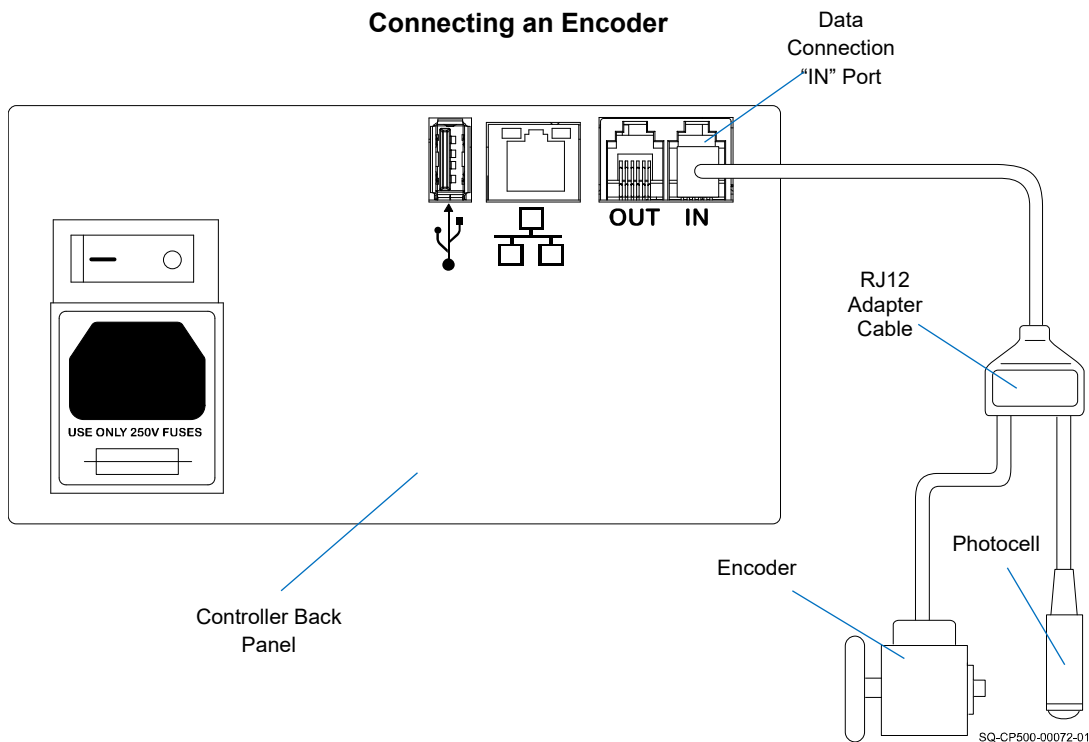
Custom Triggering Device

Some applications may require the use of a site-specific triggering device. Use the following Pin Assignments on the RJ12 Connector to install a custom triggering mechanism.

⚠	**ATTENTION:** Site-specific or unusual devices should only be connected by trained and qualified personnel. Please contact your authorized Squid Ink distributor to discuss device compatibility before connecting.

Pin Number

6 5 4 3 2 1

GND ←

GND ←

Device

Encoder Input ← "Open Collector"

Encoder Input ← "Open Collector"

Power ←
Not for Customer Device Use
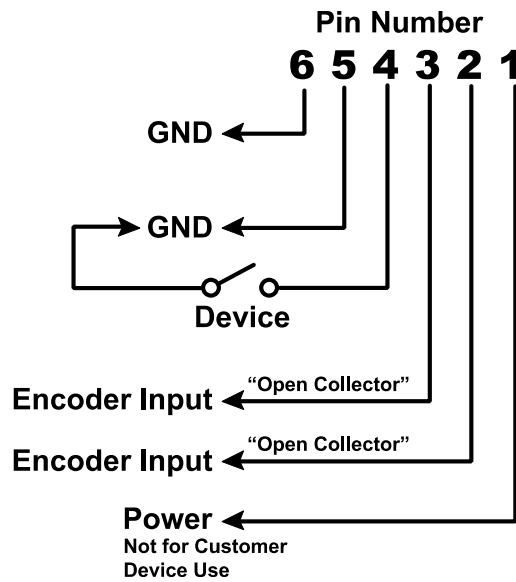
On the RJ12 Input Connector, connect Pin 4 to an NPN sinking open-collector output with Pin 5 acting as ground. When using a relay, connect the relay across Pins 4 and 5. The relay should be normally open, and should close when activated.

⚠	**ATTENTION:** Do not apply external voltage to any Pin on the RJ12 Connector.

Printhead Data Cable

⚠️ **WARNING:** Ensure that the Controller Power Switch is turned **OFF** and the Controller is disconnected from the power source when connecting a Printhead.

VIDEO: Connecting the Data Cable

To see a video of this procedure, click this link:
https://youtu.be/zSjTfhCmU8M?t=1064
Or scan the QR code at right using the camera app on your mobile device.

View Time: 17:44 – 18:32
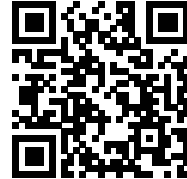
SQ-CP500-00108-01
Connecting the Data Cable
https://youtu.be/zSjTfhCmU8M?t=1064
17:44–18:32

On the front of the Controller, there are Data Connections for two Printheads. They are labeled "PRINTHEAD 1" and PRINTHEAD 2".

Connect a Data Cable to "PRINTHEAD 1". Connect the other end of the Data Cable to the Printhead that will be designated "Printhead 1."

NOTE: A single printer setup MUST always connect to the PRINTHEAD 1 Port, as the system will not work if nothing is plugged into the PRINTHEAD 1 Port.

Connecting Printhead 1

Printhead 1

Printhead 1 Data Connection

Printhead 2 Data Connection

PRINTHEAD 1

PRINTHEAD 2

Controller

Printhead Data Cable

SQ-CP500-00074-02
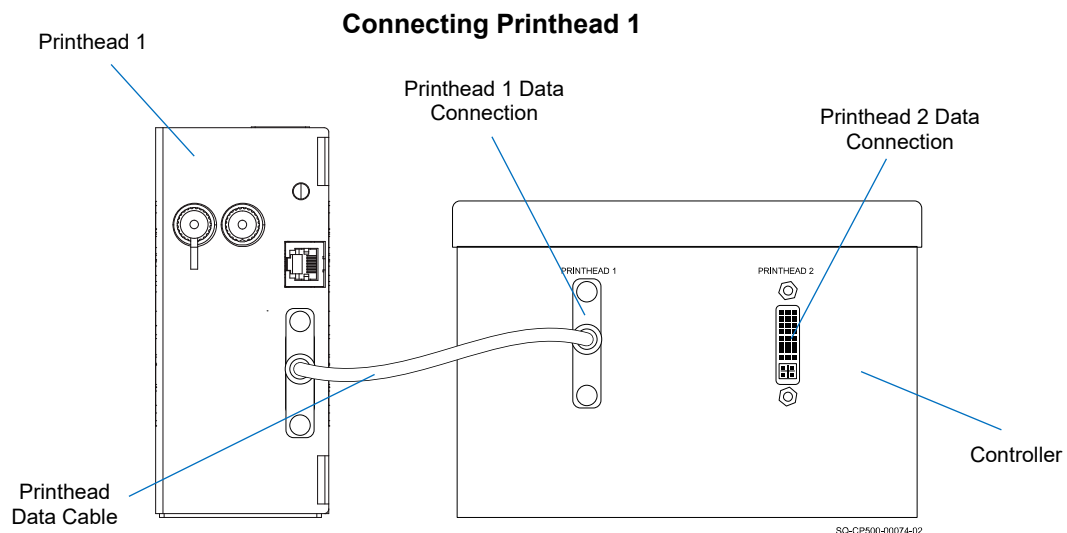
The Data Cable also carries power from the Controller to the Printhead. There is no Power Switch on the Printhead. The Printhead will power up when the Controller is turned on.

Connecting a Second Printhead

![warning]	**WARNING:** Ensure that the Controller Power Switch is turned **OFF** and the Controller is disconnected from the power source when connecting a second Printhead.

To connect a second Printhead, connect the Printhead Data Cable to PRINTHEAD 2 Port on the Controller, and connect the other end to the Printhead that will be designated "Printhead 2."

Connecting a Second Printhead

Printhead 2   Printhead 1   Data Cable to Printhead 1   Controller

PRINTHEAD 1   PRINTHEAD 2

SQ-CP500-00075-02

Data Cable to Printhead 2
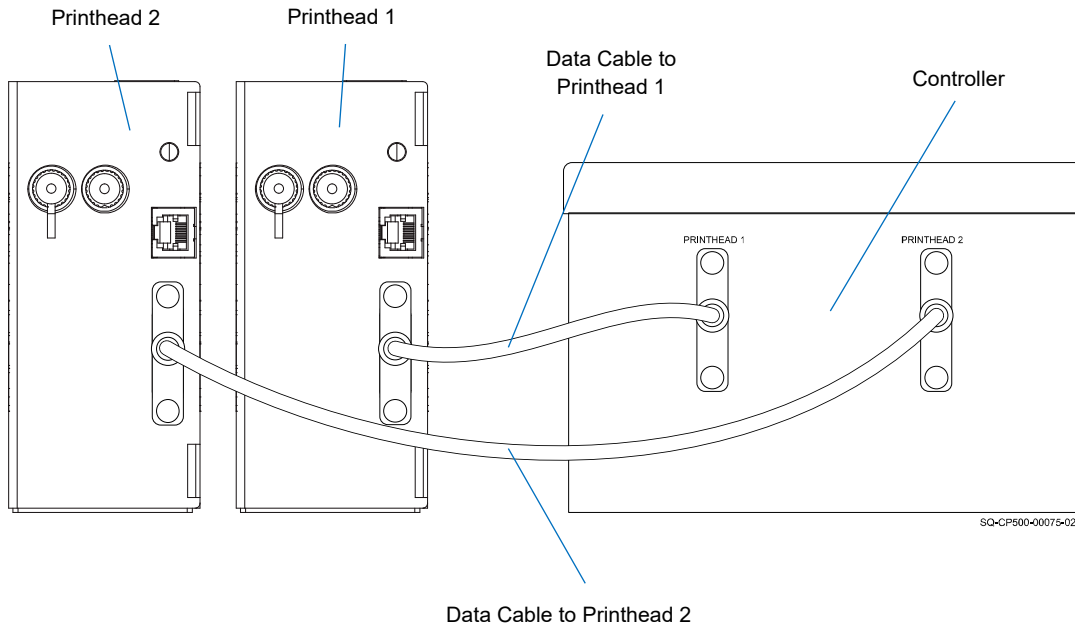
Connecting a Second CoPilot 500 Printing System

Connecting a second CoPilot 500 system allows two different messages to be printed on the same box at the same time – for example, when printing on both sides of a box. If using a second CoPilot 500 printing system, connect an RJ12 Sensor Cable between the first and second CoPilot 500 Controllers. Connect the Sensor Cable from the "OUT" Connection Port on the first Controller to the "IN" Connection on the second Controller.

⚠	**ATTENTION:** Do not connect the "IN" and "OUT" Ports to the Ethernet Port. The "IN" Port of the second Controller must be connected to the "OUT" Port on the first Controller.

Connecting a Second System

SQ-CP500-00076-01
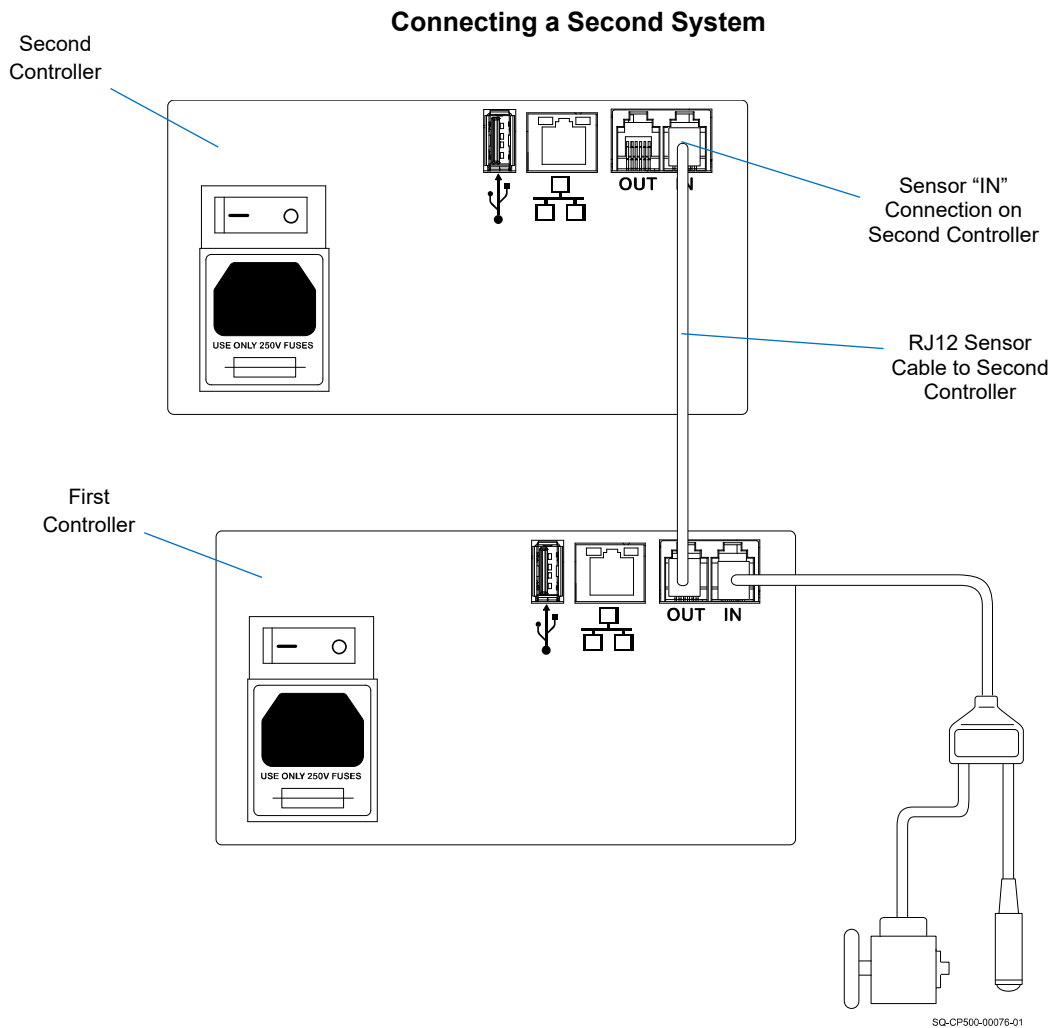
NOTE: Theoretically an infinite number of CoPilot 500 printing systems can be attached using the "IN" and "OUT" Data Connection Ports. However, the number of printers chained through a single triggering device would be limited by the specific installation and use. Other Squid Ink printing systems can also be connected downstream from the controller. For example, there could be a CoPilot, AutoPilot, and an SQ-2 printing system all attached to a single triggering device.

Connecting an Optional Low Ink Warning Beacon

An optional Low Ink Warning Beacon (Part Number 2003927) can be connected to the Controller. An optional Audible Warning Beacon (Part Number 2003975) is also shown). The Low Ink Warning Beacon is useful for alerting operators that ink is running low before missed prints or Printhead damage occurs due to the printer running out of ink.

Connecting a Warning Beacon
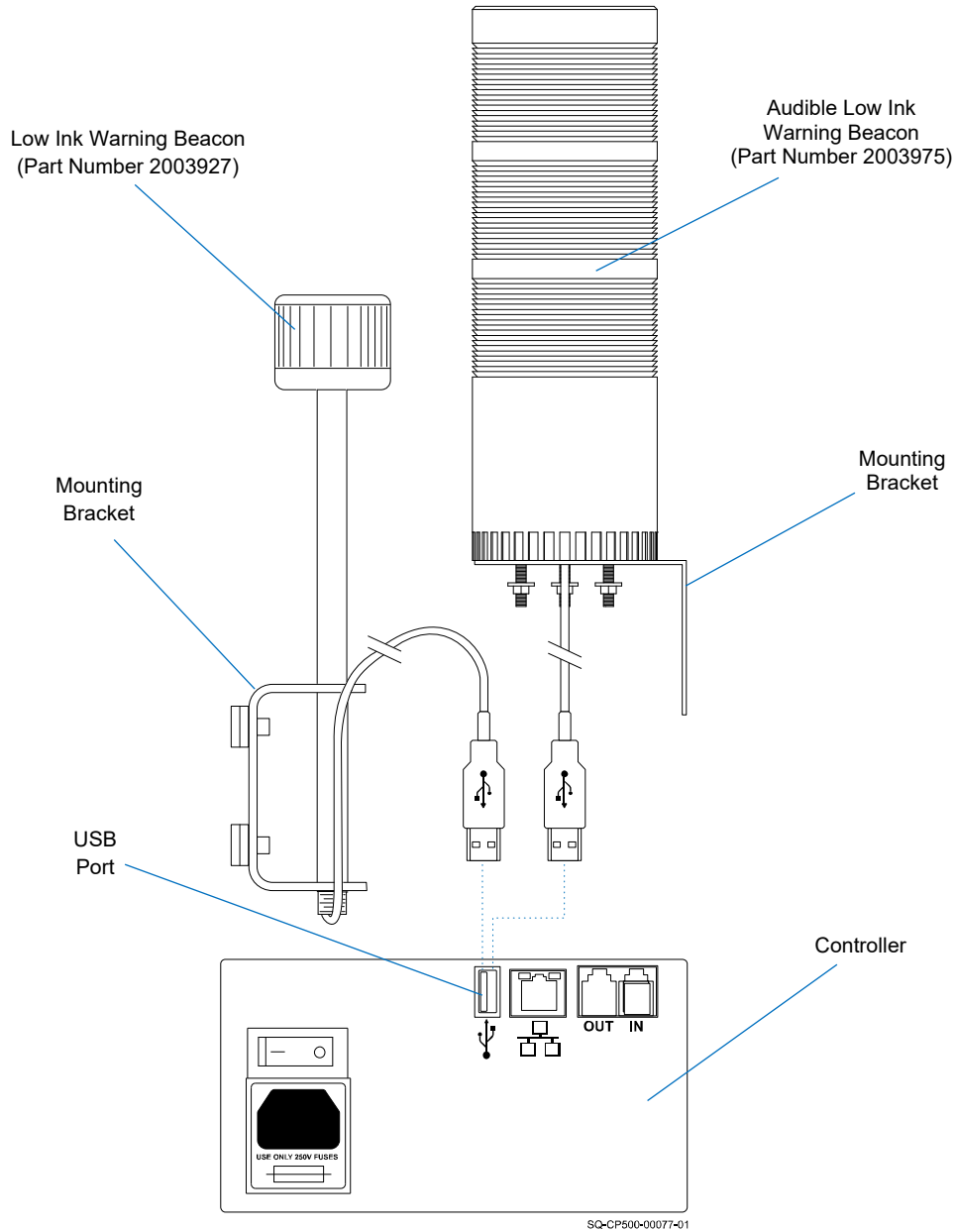
Since each installation is unique, Squid Ink cannot anticipate an ideal location for the Low Ink Warning Beacon. The Beacon has a generic Mounting Bracket attached to it. Mount the Warning Beacon within 5' (1.5 meters) from the Controller.

Connecting to a Desktop PC

To connect to a desktop PC, connect an Ethernet Cable to the Ethernet Port on the Controller and into the Ethernet Port on the PC.

Connecting to a PC

Desktop PC

Ethernet
Cable

Ethernet
Port

OUT   IN

Controller

USE ONLY 250V FUSES

SQ-CP500-00078-01
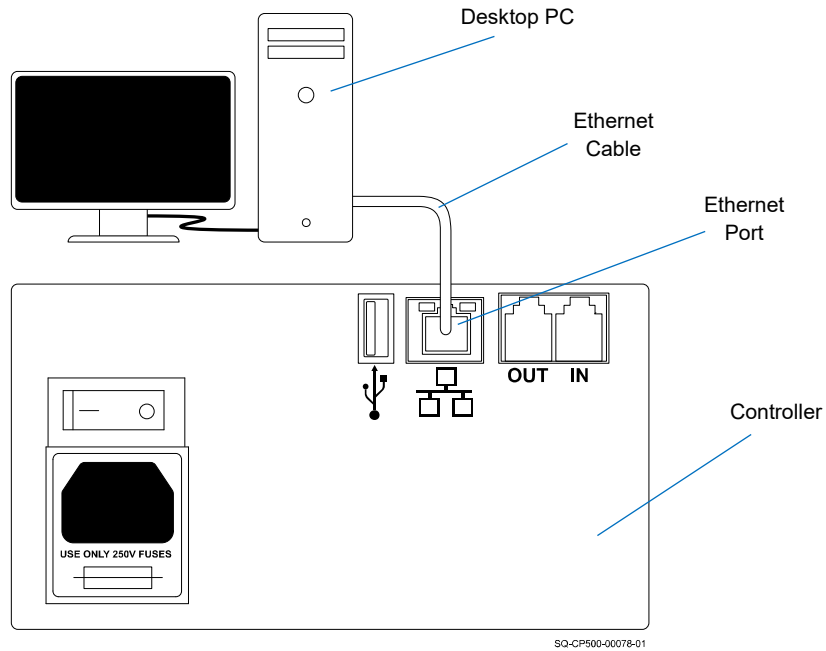
Connecting to a Local Area Network

The network connection is located on the Controller. To connect to a local area network, plug the Ethernet Cable into the Ethernet Port on the Controller and into the Ethernet Port on a connected PC.

Connecting to a Network
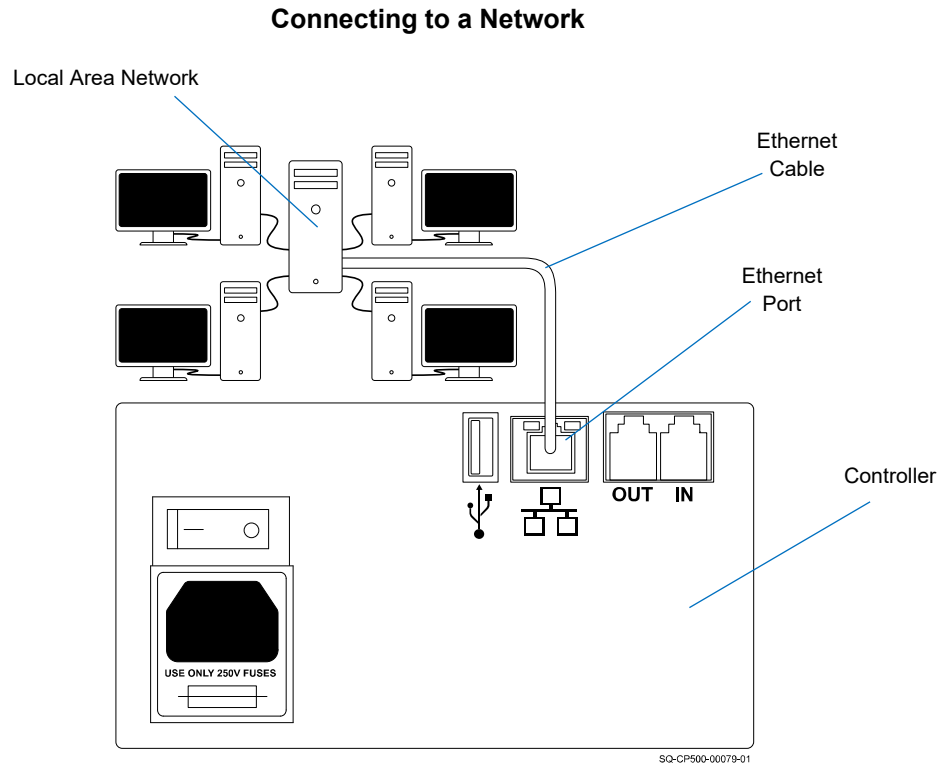
SQ-CP500-00079-01

USB Port

There is a USB Port on the back of the Controller. The USB Port can be used for a variety of USB-supported devices such as a WiFi Adapter Antenna, Low Ink Warning Beacon, Scanner, or removable USB Drive.

Locating the USB Port

USB Port
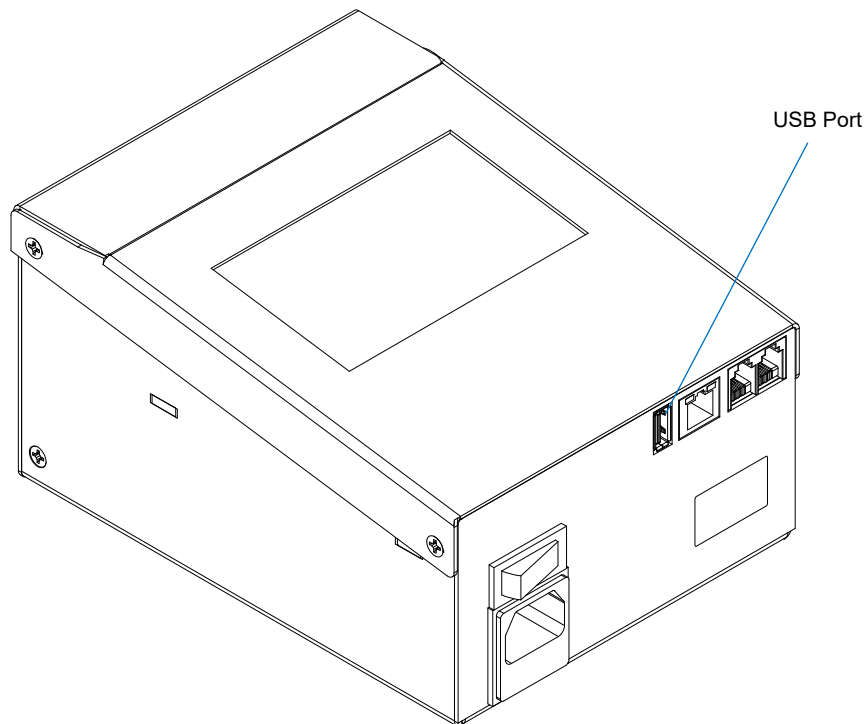
SQ-CP500-00054-01

A removable USB Drive can be used to load messages from the Orion™ message creation software package and to install printer firmware and software updates.

The **USB Button** in the **Settings Screen** will be disabled if there is no USB device present. The **USB Load Screen** will automatically open if a USB Drive is plugged in during power up.

NOTE: USB format must be FAT32 or NTFS.

Optional Four Port USB Hub

There is only a single USB Port on the Controller. However, the CoPilot 500 is not limited to a single USB device. The optional Four Port USB Hub (Part Number 2004242) can provide three points of entry for USB devices.

Connecting Multiple USB Devices

Low Ink Warning Beacon
(Part Number 2003927)

USB Hub Power
Supply

USB
Drive

USB WiFi
Adapter

USB Cable
to Controller

4-Port USB Hub
(Part Number 2004242)

OUT   IN

USB Port

USE ONLY 250V FUSES
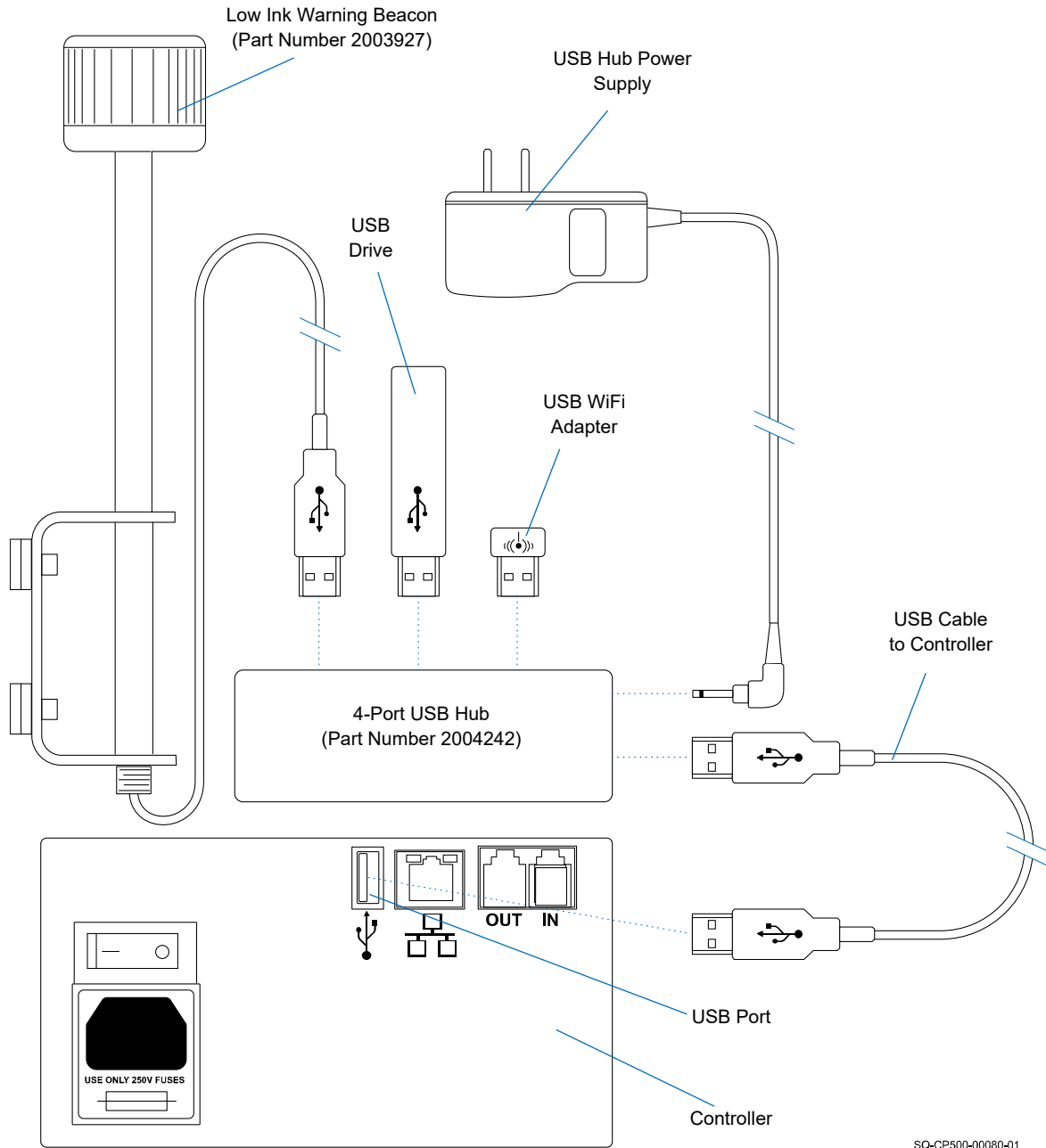
Controller

SQ-CP500-00080-01

Power Supply

The Power Cord Receptacle is located on the back of the Controller. Plug the supplied Power Cord into the Power Cord Receptacle, **making sure the Power Switch is in the OFF position,** and plug the other end of the Power Cord into a properly wired and grounded electrical outlet.

Plugging in the Power Cord
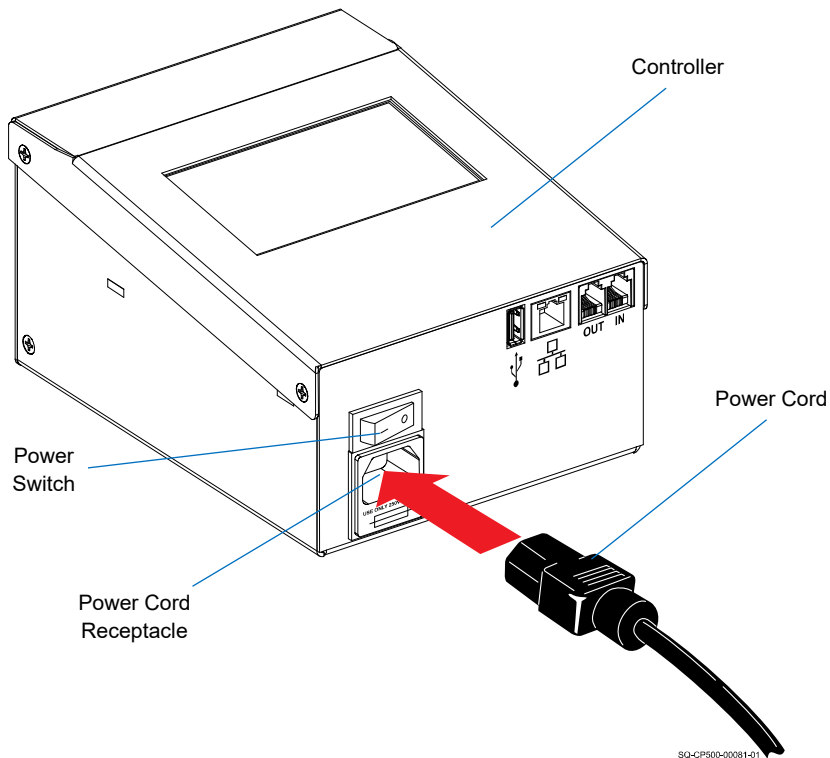
Commissioning the Printhead

If the printing system is new or has been idle for an extended period, the Printhead must be commissioned (primed) to remove potential air bubbles from the Printhead Nozzles. Air bubbles can lead to dropouts or poor print quality.

⚠️	**ATTENTION:** To avoid scratching the Printhead Faceplate, use only non-abrasive lint-free wipes (Part Number 2007021). Wear protective gloves when commissioning the Printhead. Ensure that nothing is covering the Nozzle Face before priming or printing.

Commissioning an Ink Cartridge System

| **VIDEO: Priming the Printhead**	
To see a video of this procedure, click this link: https://youtu.be/zSjTfhCmU8M?t=824 Or scan the QR code at right using the camera app on your mobile device. **View Time:** 13:44 – 17:43	SQ-CP500-00107-01 Priming the Printhead https://youtu.be/zSjTfhCmU8M?t=824 13:44–17:43
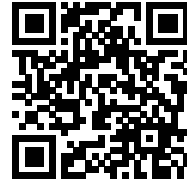
Items Needed to Commission the Printhead:

- Nonabrasive lint-free wipes (Part Number 2007021)
- Container to collect discharge ink
- Protective gloves

To Commission the Printhead:

1. Place a container suitable for capturing ink under the Printhead Purge Tube.
2. Remove the Cap from the Printhead Purge Tube.
3. Verify that the installed Ink Cartridge is properly seated in the Ink Reservoir.
4. Verify that the Reservoir Vent Tube is uncapped.

Uncapped Reservoir Vent Tube

Properly Seated Ink Cartridge

SQ-CP500-00085-01
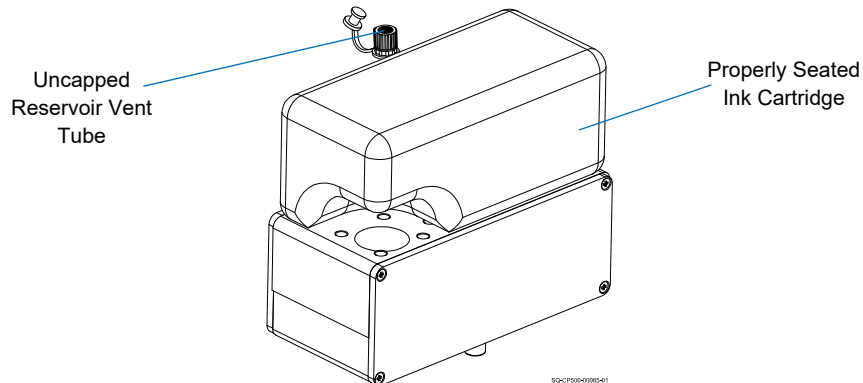
5. Fold a non-abrasive, lint-free wipe and place it below the front of the Nozzle Face to catch any excess ink.

Preparing to Prime the Printhead

SQ-CP500-00048-01
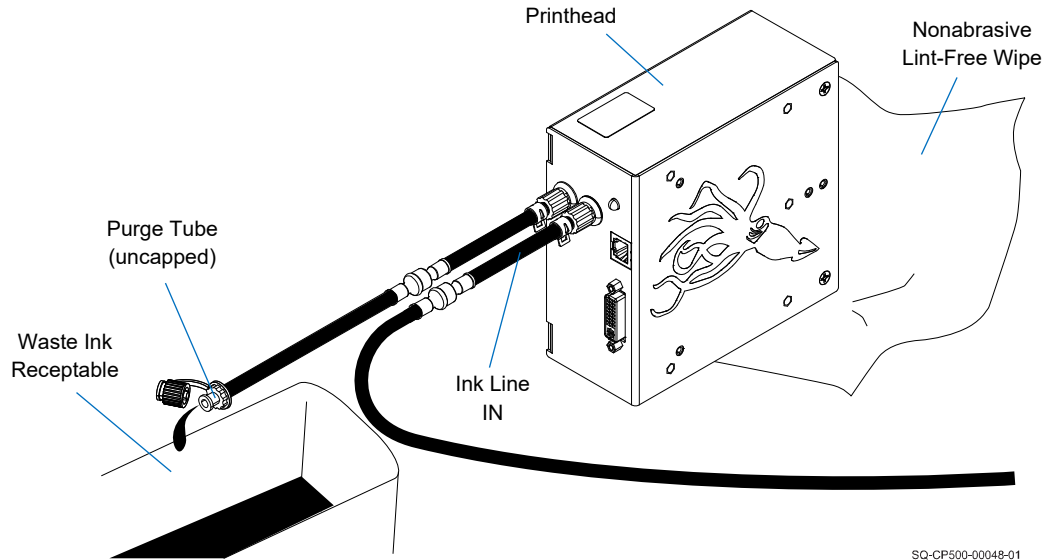
6. On the rear of the Ink Reservoir, press the Priming Bulb repeatedly until ink exits the Drain Tube and the Nozzle Face. A slow drip out of the Printhead is required for an effective purge. Continue to press the Priming Bulb until ink comes out of the Purge Tube without air bubbles.

Pressing the Priming Bulb
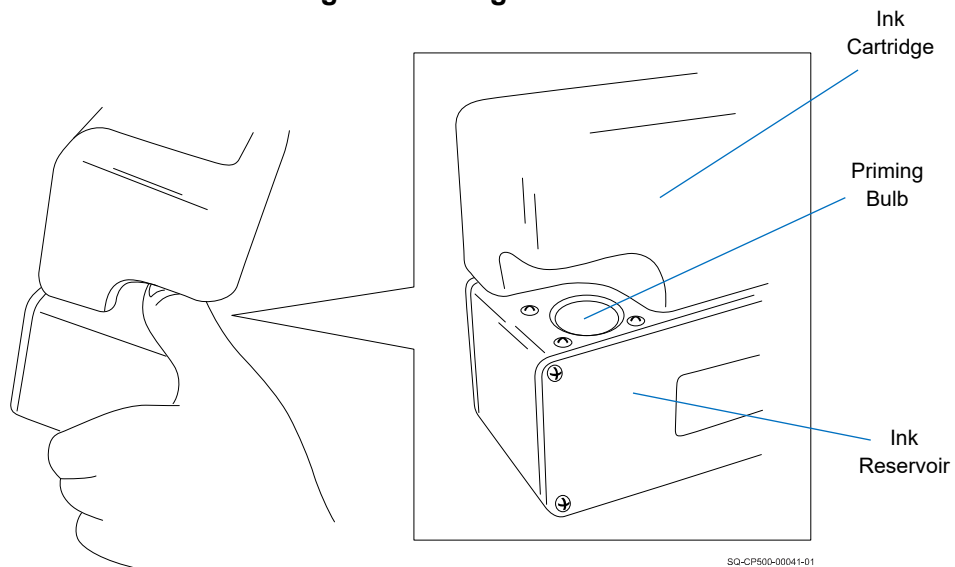
SQ-CP500-00041-01

7. Replace the Cap on the Purge Tube. This seal must be tight for the printer to function.

Capping the Purge Tube

Purge Tube
(capped)

SQ-CP500-00047-01
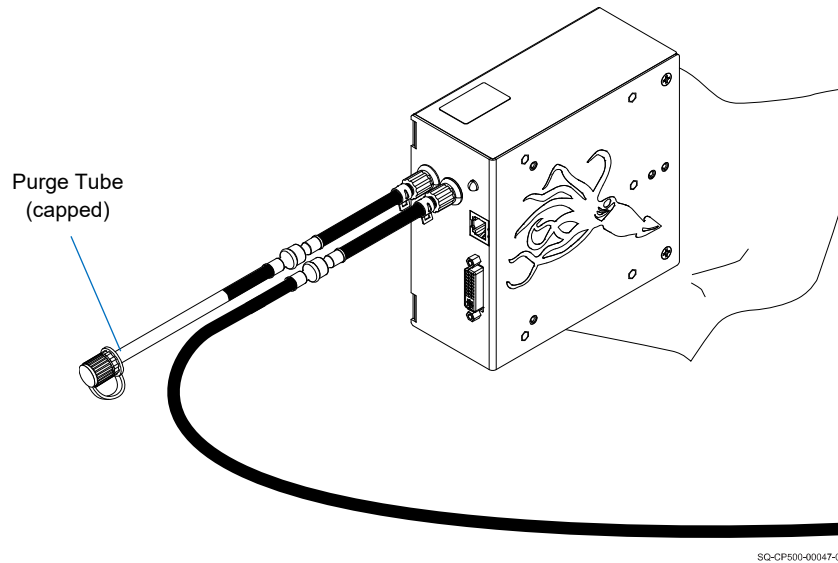
8. Fold a non-abrasive, lint-free wipe and hold it against the lower part of the Nozzle Face.

9. Press the Priming Bulb repeatedly until bubble-free ink comes out of all the Printhead Nozzles.

10. When finished purging, gently wipe excess ink from the Nozzle Face.

The Printhead is now commissioned and ready to print.

Commissioning a Bag Ink System

After the Ink Bag is attached, the ink system must be commissioned (primed) to get the ink flowing into the Printhead.

Items Needed to Commission the Printhead:

- Nonabrasive lint-free wipes (Part Number 2007021)
- Container to collect discharge ink
- Protective gloves

To Commission the Printhead:

1. Place a container suitable for capturing ink under the Printhead Purge Tube.
2. Remove the Cap from the Printhead Purge Tube.
3. Fold a lint-free, non-abrasive wipe and hold it gently against the front of the Nozzle Face.

Preparing to Prime the Printhead
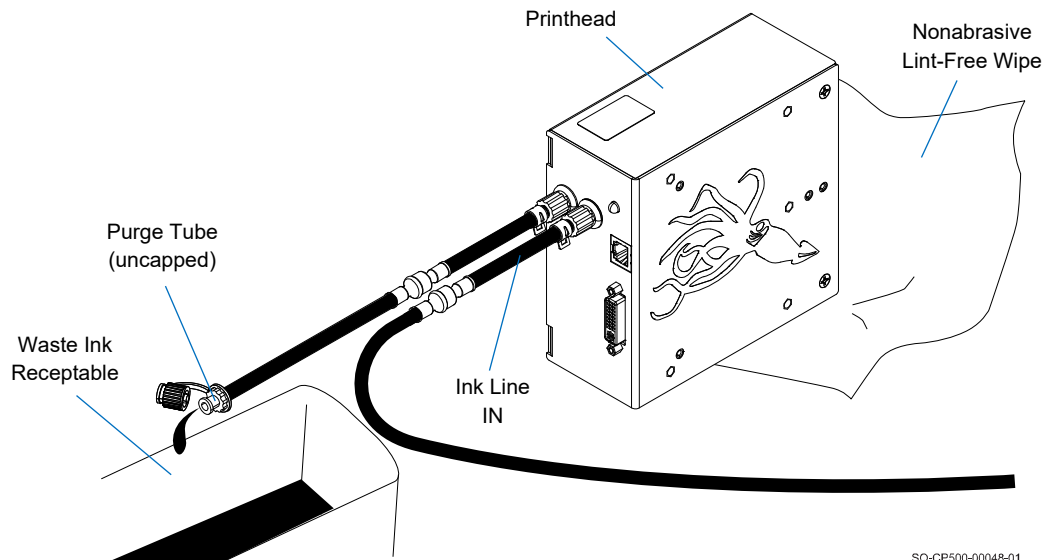
SQ-CP500-00048-01

4. Gently but firmly press down on the Ink Bag until ink exits the Purge Tube and the Nozzle Face. Continue to press the Ink Bag until ink comes out of the Purge Tube without air bubbles.

IMPORTANT: Be sure to have the wipe in place before applying pressure to the Ink Bag, and be sure to release the pressure before removing the wipe.

Pressing the Ink Bag
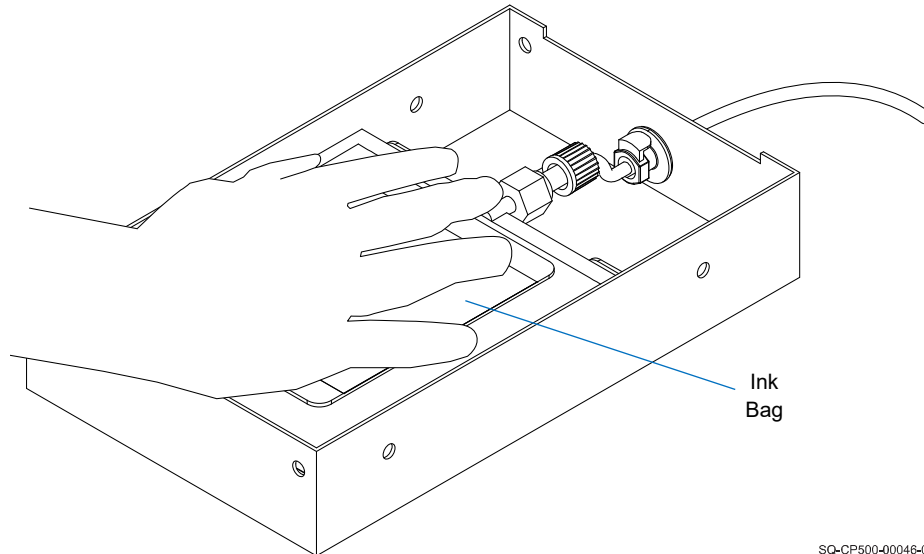
SQ-CP500-00046-02

5. While continuing to press gently but firmly on the Ink Bag, replace the Cap on the Purge Tube. This seal must be tight for the printer to function.

Capping the Purge Tube

Purge Tube
(capped)
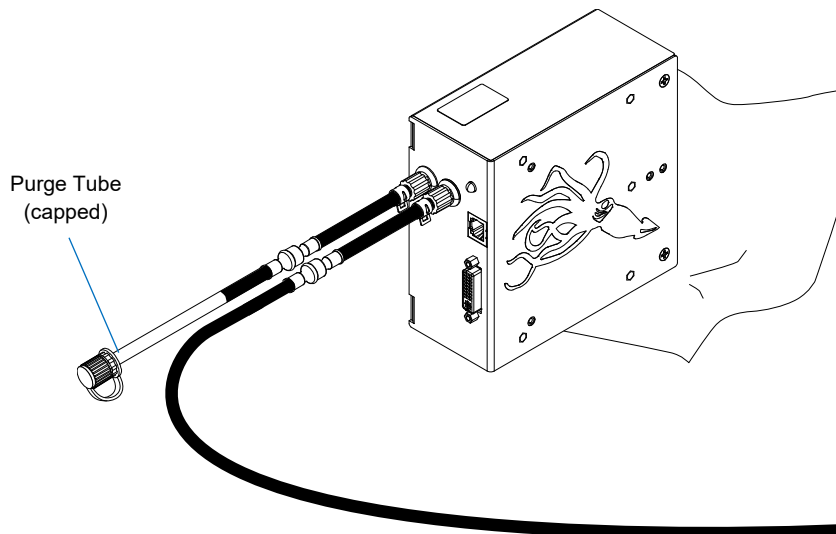
SQ-CP500-00047-01

6. Press the Ink Bag repeatedly until bubble-free ink comes out of all the Printhead Nozzles.

7. When finished purging, gently wipe excess ink from the Nozzle Face.

The Printhead is now commissioned and ready to print.

Software Interface

Interface Button Overview

IMPORTANT: GUI response time may be negatively impacted when printing at high speeds. If this occurs, stop printing before attempting to modify any other settings.

Button	Function
Start or Stop Printing START STOP	Select **Start** to start printing. Select **Stop** to stop printing.
Zoom Screen 🔍	Select the **Zoom Screen** to view the message at an enlarged or reduced size. **Note:** The **Zoom Screen** is disabled on messages longer than 42".
Message Screen 📁 🗑 ⬆ ⬇ APPLY	Select the **Message Screen** to display a list of messages available for printing. Delete message. Scroll Up. Scroll Down. Apply current settings and values.

Button	Function
Settings Screen	Select the **Settings Screen** to configure Printer settings.
	Return to the **Home Screen**.
	Return to previous screen.
	Switch between the **Settings Page One Screen** and the **Settings Page Two Screen**.
	Information.
	Set line speed.
	Set distance from Printhead to trigger (Photocell).
IN	Show distance in inches.
CM	Show distance in centimeters.
	Set print direction.
ABC	Set print direction: left to right.
ABC	Set print direction: right to left.
	Encoder settings.
	Reset the Encoder.

Button	Function
	Repeat and Squid Connect trigger settings.
	Select Photocell as trigger
	Select screen as trigger
	SquidConnect Dongle Active
	Open the **Counters Screen**.
	Spit settings.
	Selects Printhead 1.
	Selects Printhead 2.
	Barcode validation.
	Connect to USB: only enabled if a USB Drive is present.
	A USB Drive is connected.
	Copy messages and fonts from USB to Controller.
	Copy messages and fonts from Controller to USB.
	USB Debug Report: Copies the current message and configuration to a Zip file on a connected USB Drive to help diagnose any printer problems.
	Eject the USB Drive.
	Reset production counter to zero and ink supply to "full."
	Reset ink supply to "full."
	Reset production counter to zero.

Button	Function
	Printhead temperature.
	Open the **Wireless Connect Screen**.
	Access or dismiss the on-screen keyboard.
	Disconnect from WiFi.
	Open the **Bluetooth Connect Screen**.
	Access or dismiss the on-screen keyboard.
	Recalibrate the Touchscreen.
	Access a remote database server.
	Search the remote database.
	Show or change the current date.
	Show or change the current time.
	Select the **Peak Encoder Speed Screen**.
	Reset the peak Encoder speed.
	Select the **Custom Keyboard Screen**.
	Select standard keyboard.
	Select custom keyboard.

Button	Function
	Select the **Language Screen**.
	Use a static IP address.
Sleep	Select the **Sleep** button to place the Printer into Sleep Mode. This is a soft shutdown. Sleep is useful for long periods of idle time. Touch the Controller Touchscreen to restart. If the Spit Mode is turned on, the Printer continues to spit ink while in Sleep Mode (see "Spit Settings" on page 87), reducing the chance of some types of ink drying in the Print Nozzles.
User Data	If the current message contains user data, the **User Data** button is available to open the **User Data Prompt Screen**.
GUI Refresh	Graphic User Interface Refresh. Used to turn GUI Refresh off on messages over 42" long. This significantly helps GUI response time.

Home Screen

The **Home Screen** contains the following:

- A preview of the current message

- The name of the current message

- Product count

- Ink status

- Printing status

If a USB Drive is plugged into the USB Port at startup, the Touchscreen will automatically display the **USB Load Screen**. To go the **Home Screen**, select **Back**.
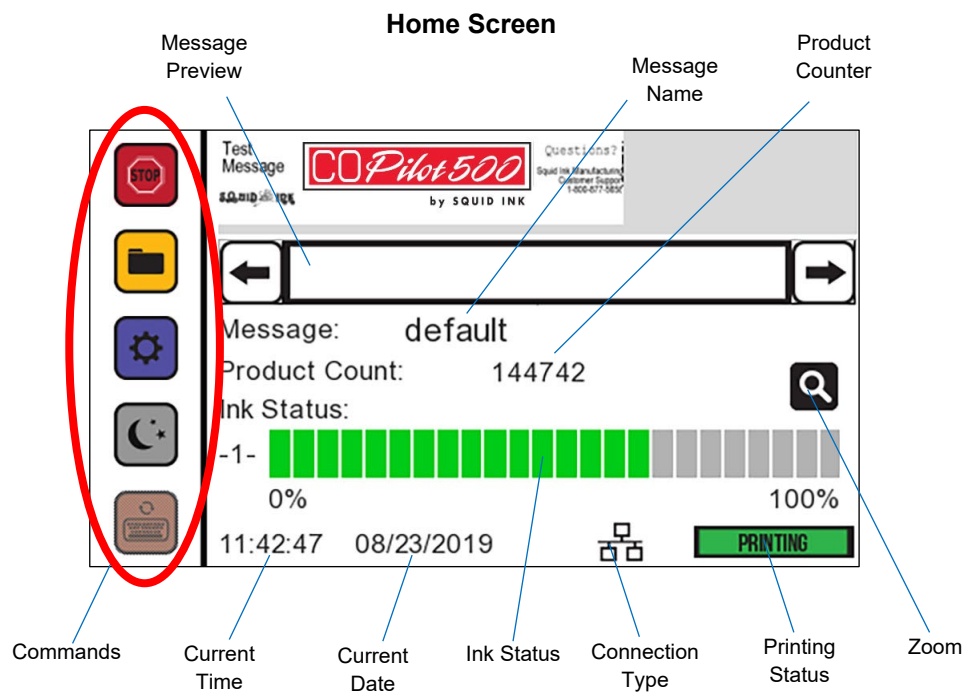
Home Screen

Zoom Screen

The **Zoom Screen** enables the user to view the print message at a larger size on screen.
Zooming does not affect the print size of the message.

To access the **Zoom Screen** from the **Home Screen**, select the **Zoom** button on the right
side of the screen. The **1** and **2** buttons indicate the active Printhead.

Select **Full Message Width** , **75%**, and **100%** to zoom in and out of the message. The
current zoom setting button is available.

Zoom Screen
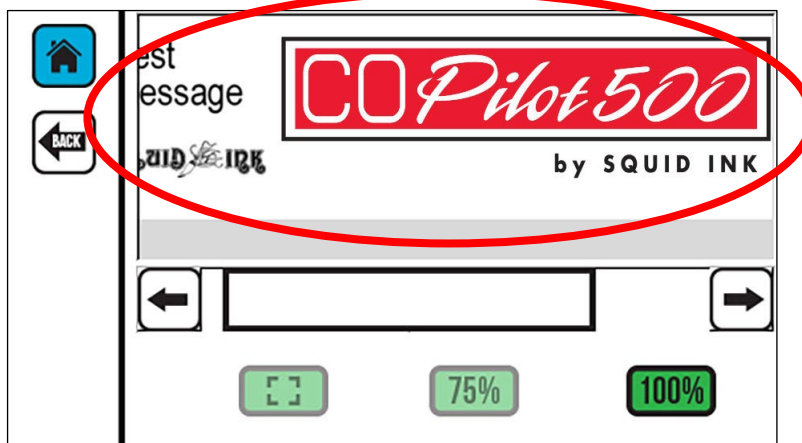
Message Screen

The **Message Screen** contains a list of available messages. Refer to the *Orion Software User Guide* for information about creating messages on a PC and downloading them to the Controller.

Use the **Up** and **Down** arrows or drag the scroll bar to view the list of available messages. To select a message for printing, choose the desired message and then select **APPLY**.

Message Screen

Message Name
00001
00002
00010
A6M5 Zero
Aichi D3A Val
Apollo 10
Apollo 11

SQ-CP500-00126-01
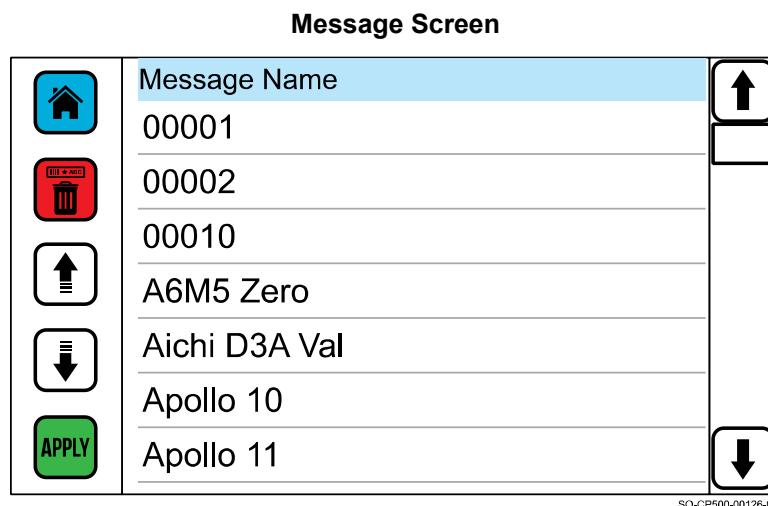
Delete

The **Delete** button removes a selected message from the Controller.

Deleting the message only deletes the message copy in the Controller. It does not delete the message from Orion.

> **NOTE:** A message cannot be deleted if it is currently open.

Message Screen Remote Server

If the Printer is using a remote database server to load messages for printing, use the keyboard on the Touchscreen to enter a message ID. Select **APPLY** to load the message for printing. When the message is loaded, a green checkmark is briefly displayed in the lower right corner of the screen. If the connection fails, an error message is briefly displayed. The Printer returns to the **Home Screen**.

Message Screen with Remote Server

Settings Screen

The **Settings Screen** contains two pages of Printer configuration settings. Select to switch between **Settings Page One Screen** and **Settings Page Two Screen**.

Settings Screen – Page 1

Settings Screen – Page 2
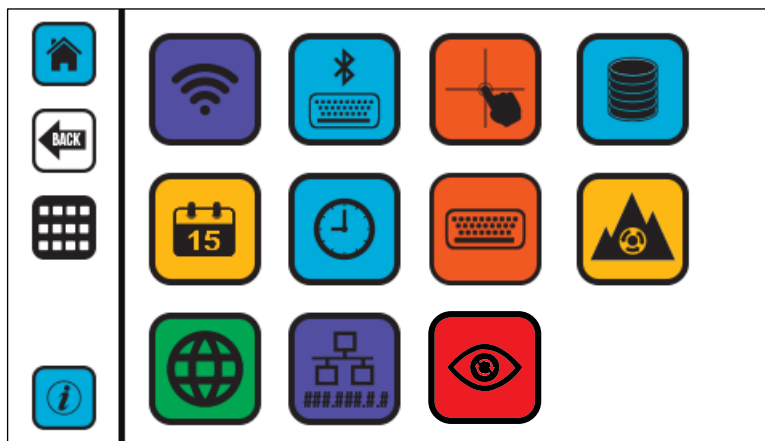
Following describes the settings accessible through the **Settings Screen** and what their functions are.

Line Speed

The **Line Speed Screen** sets a static line speed for the Printer in feet per minute (fpm).

To set the line speed, use the **Plus** (+) or **Minus** (-) buttons to increase or decrease the line speed, or move the scroll bar in either direction. Maximum line speeds are:

Maximum Line Speed for Each CoPilot 500 Controller Model			
CP500	**CP500 HiSpeed**	**CP500 Turbo**	**CP500 HiSpeed Turbo**
205 fpm	300 fpm	205 fpm	300 fpm
62.5 m/min	91.4 m/min	62.5 m/min	91.4 m/min

Line Speed Screen
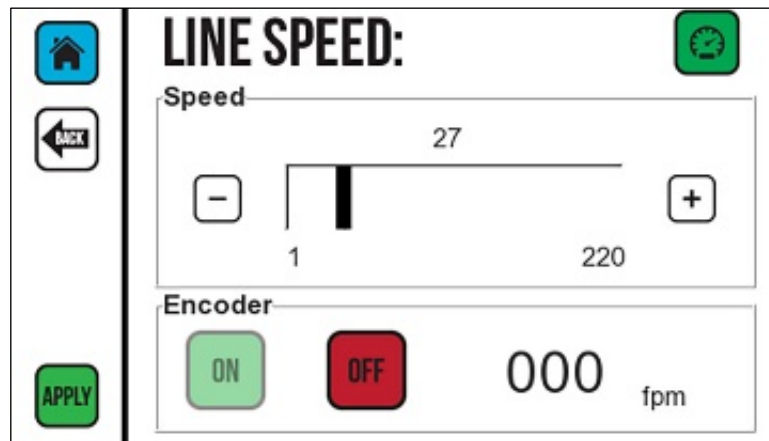
Encoder Timeout

The Encoder Timeout (upper half of screen) is the amount of time in seconds that the Printer waits for a signal after the Encoder Wheel stops spinning. This number should be set to significantly higher than the normal pauses that the Conveyor makes while operating. If the Conveyor stops for a period longer than the "Encoder Timeout" time while printing a message or between messages, the Printer stops looking for an Encoder signal, and the message must be restarted.

Use the **Plus** (+) or **Minus** (-) buttons or the slider to increase or decrease the amount of time. The default setting is 15 seconds. The maximum setting is 86400 seconds (24 hours). The amount of time is displayed in hours, minutes, and seconds.

Line Speed Using an Encoder

To use an Encoder to control line speed, select **ON**.
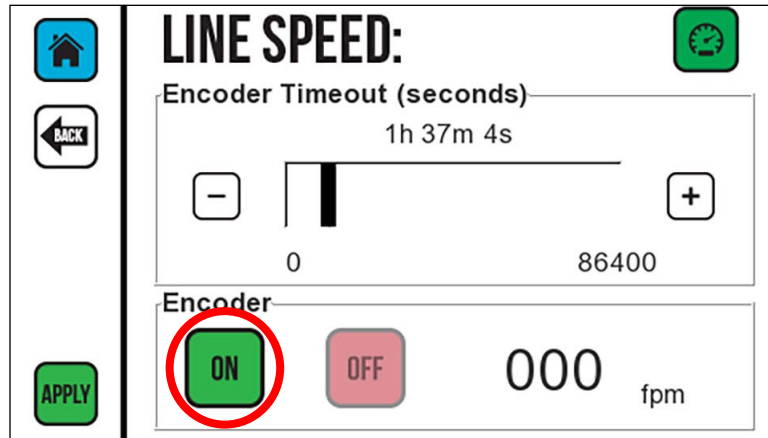
Select **APPLY** to save changes.

Select **BACK** to return to the previous screen.

Distance to Trigger

Distance to Trigger is the amount of distance between the trigger (usually a Photocell) and the Jets on a Printhead. Squid Ink recommends mounting the Photocell approximately 6" (15 cm) upstream from the Printhead, and setting the "Distance to Trigger" to that distance. Distance to Trigger can be set in inches or centimeters.

To Change the Distance to the Trigger:

1. To set the unit of measure for the distance:

    a. Select **IN** to set the print delay in inches.

    b. Select **CM** to set the print delay in centimeters.

2. Use the **Plus** (+) button or **Minus** (-) button or the slider for the selected Printhead to increase or decrease the distance Printhead and trigger.

3. Select **APPLY**.

Distance to Trigger Screen
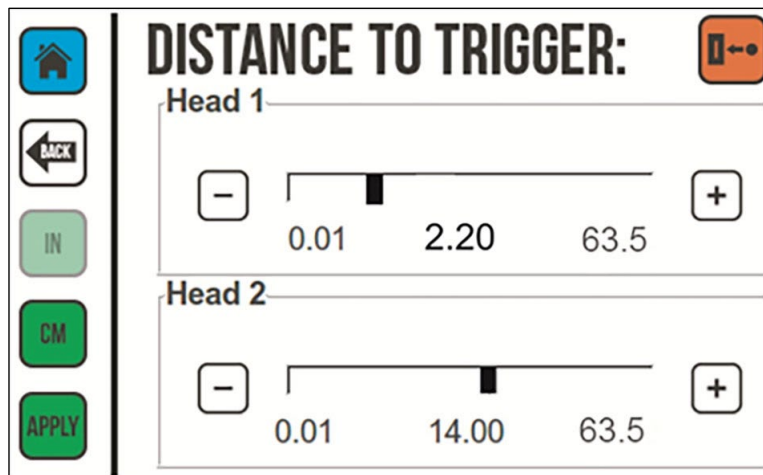
Print Direction
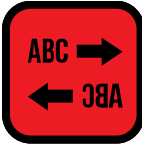
Print Direction is the direction of the Conveyor flow relative to the position of the Printer when viewed from behind the Printhead.

To Set the Print Direction for the Selected Printhead:

1. Select the button that corresponds to the direction of the Conveyor flow.

2. Select **APPLY** to set the print direction. Select **BACK** to return to the previous screen.

Print Direction
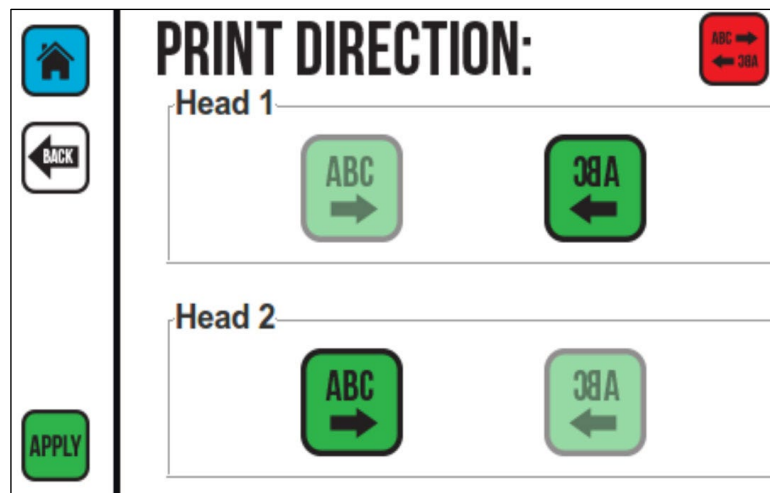
Encoder

The **Encoder Divider Screen** sets the divider value if an optional Encoder is installed. The encoder divider value sets the horizontal scale of the printed message based on the number of pulses from the Encoder during a given time period. Use the **Plus** (+) or **Minus** (-) buttons or the slider to increase or decrease the Encoder Divider value.

Encoder Screen
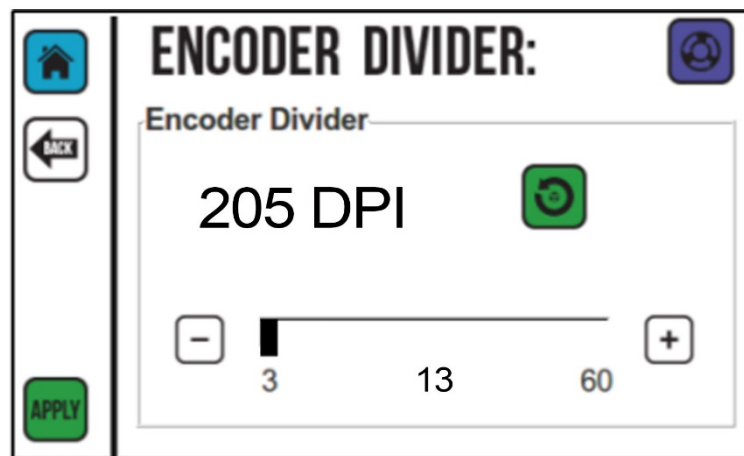
Encoder Reset

The Encoder Reset button resets the Encoder Divider to the default value of 3 (300 dpi).

Select **APPLY** to save changes to the Encoder settings. Select **BACK** to return to the previous screen.

Repeat and Squid Connect Trigger Settings

The **Repeat Trigger** is for printing a repeating message on each single product. It controls whether SquidConnect printing is active or inactive using SquidConnect Pin 6. Refer to the *SquidConnect User Guide* for more information. If the SquidConnect Dongle is not installed, this option is not available. If SquidCheck is active, this option is not available.

To use "Repeat Trigger," the message created in Orion must have "Repeat Mode" checked.

If using a Photocell or Switch Box to activate the trigger, select **Photocell** .

Photocell Active
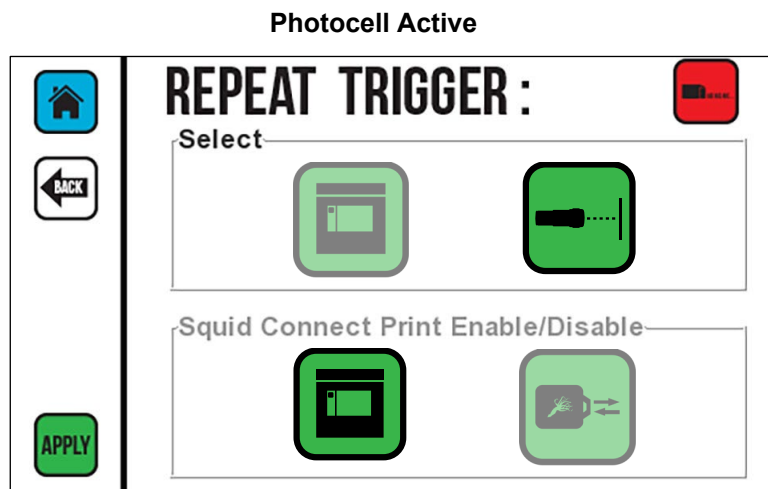
When using the GUI interface to Start and Stop Repeat printing, select **Screen** .

Screen Active
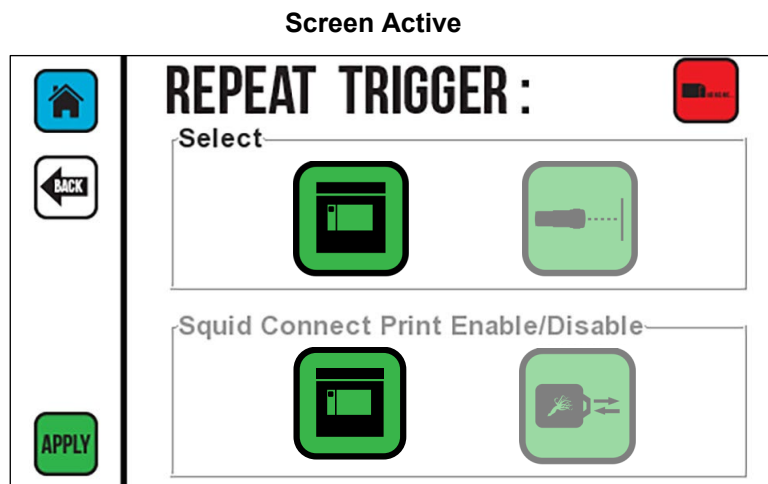
SquidConnect provides non-barcode electronic information regarding the operational status of a CoPilot printer. The outputs can be used to enable or disable the Printhead, or notify the user or PLC when the printer is ready or actively printing, when the ink supply is low or almost empty.

SquidConnect Inactive
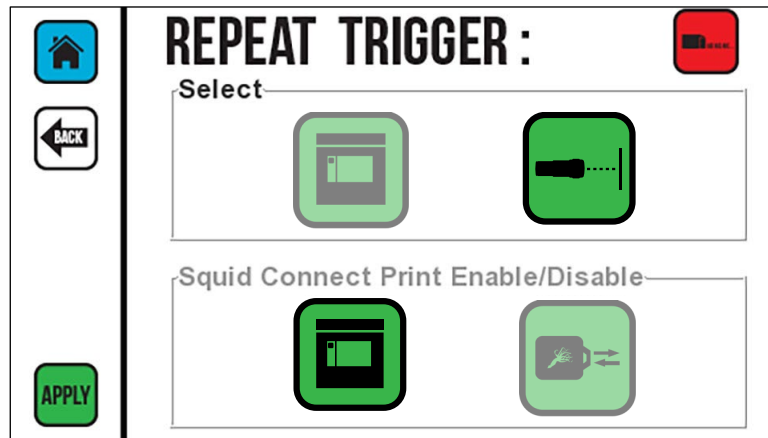
SquidConnect Dongle Active
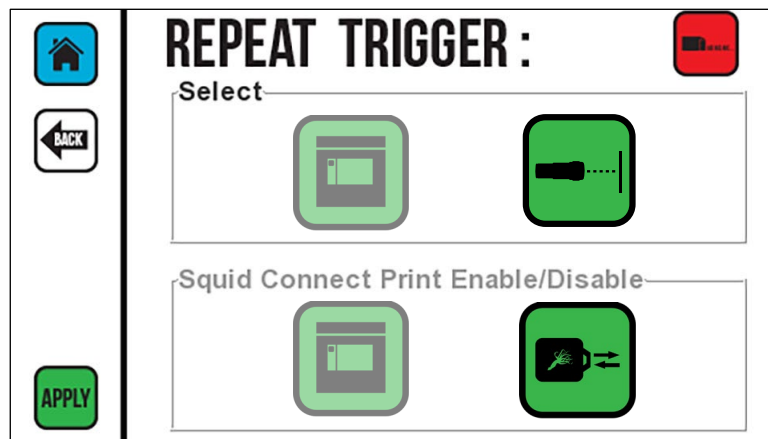
Counters

Counters can be used to track many items, such as the number of boxes or pallets printed on. Use the **Counters Screen** to set the current value of each printer counter in the current message.

Counters Screen
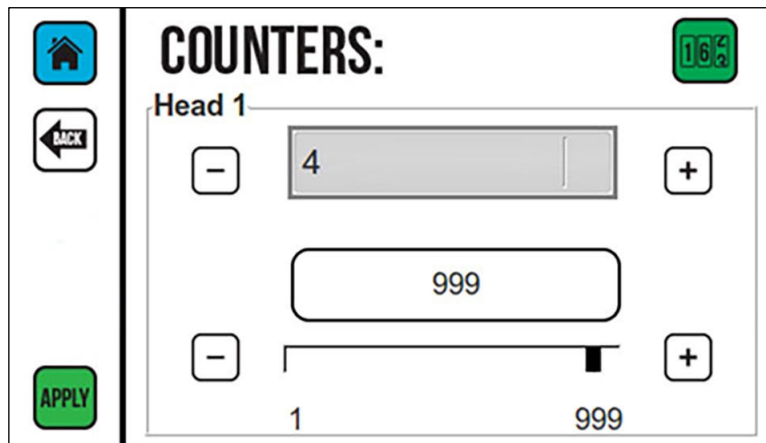
To change the counter value, use the **Plus** (+) or **Minus** (-) buttons or the slider to increase or decrease the counter.

Select to open the mini keyboards.

Alpha	Numeric	Alphanumeric

Select **APPLY** to set the current counter value.

Spit Settings

When Spit Mode is active, the Printhead spits a small quantity of ink at predetermined intervals. The spit function is useful when printing with fast-drying solvent-based inks because it keeps the ink from drying and clogging in the Ink Nozzles. Use the **Spit Settings Screen** to configure settings for Spit Mode. The Spit Mode is not used with oil-based inks on the CoPilot 500.

Spit Settings Screen
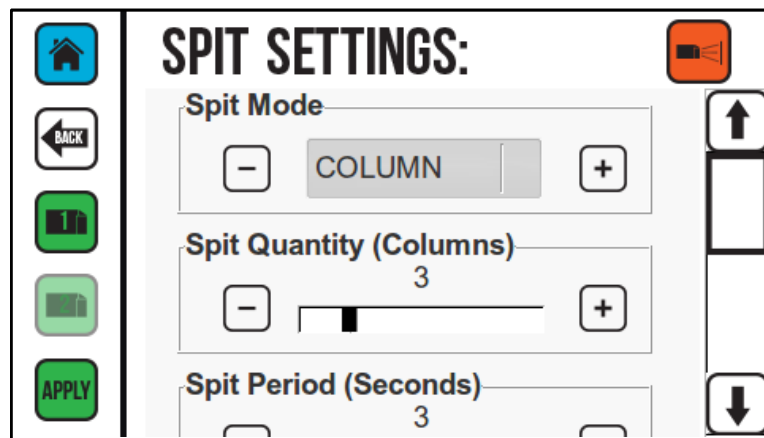
Spit Mode

There are four Spit Modes:

OFF: If selected, turns the Spit Mode off. When printing with oil-based ink, always set the Spit Mode to OFF.

COLUMN: Spits a column of ink the entire height of the Printhead at selected time periods.

GHOST ALL: Spits a small amount of ink (not enough to impact print appearance) through all the Printhead Nozzles at set time intervals, even during printing. This is useful when printing with very fast-drying inks.

GHOST: Spits a small amount of ink through the Printhead Nozzles when not printing. This is useful if a long message only uses some of the Nozzles in the Printhead.

Spit Quantity (Columns)

The quantity of the Spit Mode based on the number of columns the Printhead will spit each time.

Spit Period (Seconds)

The time between spits in seconds.

Spit Delay (Milliseconds)

The time in milliseconds between when the message stops printing and the spit begins.

Spit Timeout (Seconds)

The time in seconds that the Printer continues to spit after the last trigger. This is important if the Printer is idle for a long period such as overnight or after a long break. The Printhead will continue to spit throughout the idle period to reduce the likelihood of ink drying and clogging the system.

Spit Settings Screen
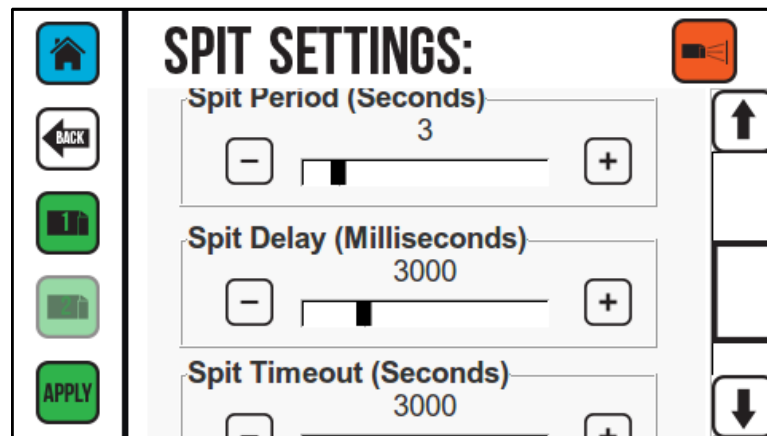
If using solvent-based inks, contact your Squid Ink distributor for guidance on the appropriate Spit Mode settings to use.

Barcode Validation

An optional SquidCheck™ Print Validation System (Part Number 2003850) can be used to validate bar codes and ensure that they are present, scannable, and accurate. For details on connecting the SquidCheck Print Validation System, please refer to the SquidCheck manual.

USB Load

This button is not available if no USB Drive is connected. The **USB Load Screen** provides functions for data management and system updates. The **USB Load Screen** opens automatically when a USB device is connected.

> **NOTE:** The USB format must be FAT32 or NTFS.

USB Load Screen
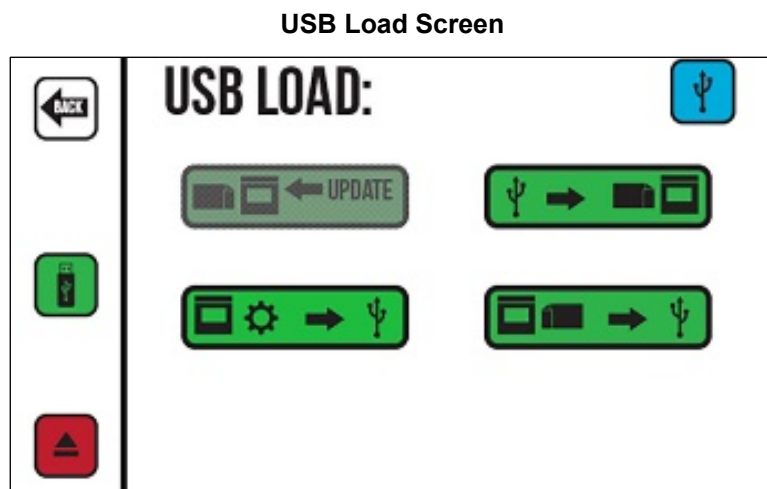
If system updates are available on an installed USB Drive, this button becomes active. Select this button to install the updates.

Copies all installed messages and fonts from the Controller to a connected USB Drive.

USB Debug Report: Copies the current message and configuration to a Zip file on a connected USB Drive to help diagnose any printer problems. If the correct flag from Orion is on the USB Drive, the button to access the **Reset Screen** also appears below the "USB Debug Report" button.

Copies messages and fonts from a connected USB Drive to the Controller. All messages and fonts in the printer specific folder, or the generic printer folder if the specific folder does not exist will be copied.

Ejects a connected USB Drive before physically disconnecting the USB Drive.

Reset

The **Reset Screen** resets the production counter to zero and/or resets the ink level to full. A supervisor might wish to reset the production counter to zero at the beginning of a new shift, for example, to track the number of products labelled each shift.

Reset Screen
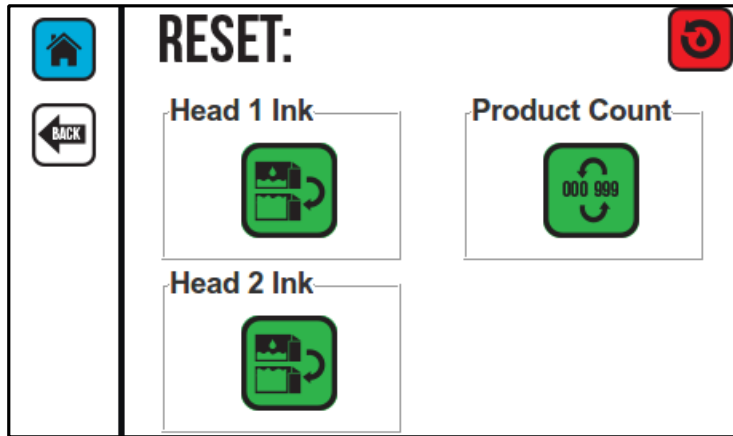
1. Select the **Reset Ink Printhead** button to reset the ink supply to full.

2. On the **Reset Screen**, select Head 1 or Head 2.

3. Select the **Counter Reset** button to reset the production counter to zero.

> **NOTE**: The Counter Reset function only resets the onscreen production counter to zero. It does not reset any counters that might be included in the message.

Printhead Temperature

The **Printhead Temperature** button is used to display the current temperature for the Printhead in Fahrenheit or Celsius.

Printhead Temperature - Fahrenheit
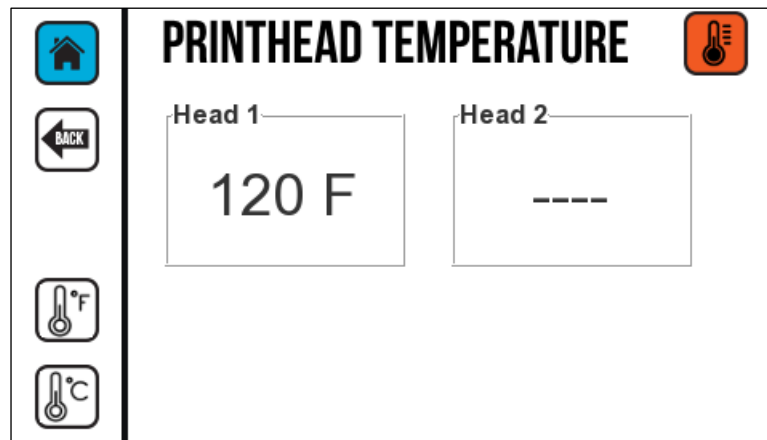
Printhead Temperature - Celsius
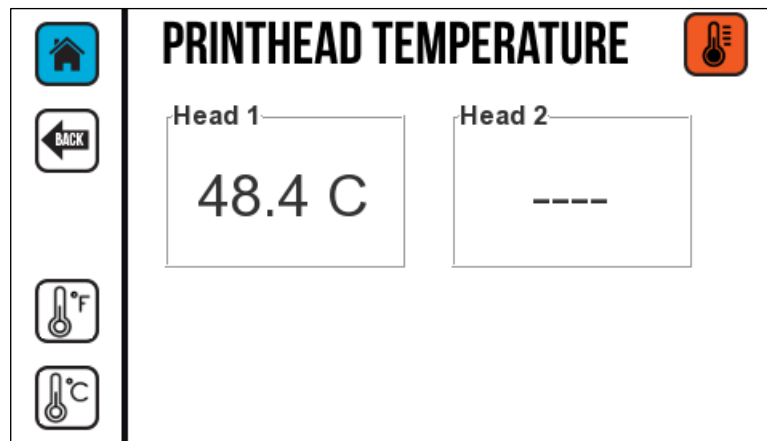
The appropriate environmental temperature range for the Printhead during operation is 34 - 104 °F (1 - 40 °C). If the Printhead temperature reading fails (likely because the Printhead is busy printing), the reading will default to 32 °F (0 °C).

Calibrating the Touchscreen

If the buttons on the Touchscreen no longer activate the corresponding functions or are unresponsive, recalibration may be necessary. Select this button to calibrate the Touchscreen.

To Recalibrate the Touchscreen:

1. On the **Settings Screen**, select the **Calibrate Screen** button.

2. In the **Calibrate Screen**, select the **Calibrate** button.

3. In the Calibrate utility, touch the center of each small box in turn as they appear.

4. After the center box has been touched, a "Calibration Completed" message is displayed. The Controller returns to the **Settings Screen**.

5. Restart the Controller for calibration results to take effect.

> **NOTE:** If the screen is out of calibration and cannot be recalibrated using the Controller, select **Reset Calibration** on the Printer Configuration **Tools** tab in Orion. Refer to the *Orion Software User Guide* for more information.

Remote Database Server

The **Remote Database** function allows the Controller to connect to a remote database. Refer to the *Orion Software User Guide* for more information on creating database messages.

Select the **Database** button to open the **Remote Database Screen**.

Remote Database Server Screen

Start/Stop Tab

The **Start/Stop** tab contains the **Remote Mode ON** and **OFF** buttons. If Remote Mode is turned on, the **ON** button is green. If Remote Mode is turned off, the **OFF** button is red.

Select **APPLY** to save changes to the Remote Mode.

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Remote Server Tab

To Locate the Database Server for Messages to Print:

1. On the **Remote Server** tab, select the **Search** button.
2. In the list of connected servers, select a server.
3. Select **APPLY**. A green checkmark is displayed briefly when the server connects.

Multicast Tab

The Multicast Address IP setting and UDP Port will match the communication settings for the DB server created using Orion. Normally, the settings will be automatically populated with the default value and should not have to be changed. If the address is changed in Orion, it will also have to be changed at the Controller. If the address is changed, notify your IT Administrator to ensure that the new values do not conflict with existing devices.

Orion Communication Settings
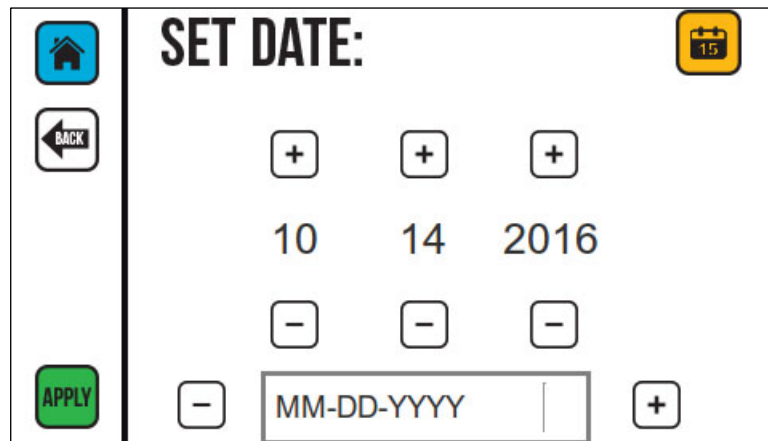
Set Date

Use the **Set Date** function to set the date in the Printer. This can be the date that printing is taking place, an expiration date, or any other date desired in the message.

1. Use the **Plus** (+) or **Minus** (-) buttons to select the date format at the bottom of the screen.

2. Select the **Plus** (+) or **Minus** (-) buttons to increase or decrease the month, day, and year.

3. Select **APPLY** to set the date.

Set Date Screen

Set Time

Use the **Set Time** function to set the current time in the Printer. This is typically set to the current time to track time of packaging.

The time is displayed in hours, minutes, and seconds. To change the time value, select the **Plus** (+) or **Minus** (-) buttons for the hours, minutes, and seconds to increase or decrease the time.

Select **APPLY** to set the current time value. Select **BACK** to return to the previous screen.

Set Time Screen

Peak Encoder Speed

Select the **Peak Encoder** button to display the top line speed recorded by the Encoder in feet per minute (fpm).

Peak Encoder speed is used to determine what speed the Printer requires to be able to print accurately. This feature is used with variable-speed production lines that perform short speed bursts where the line speed function is not fast enough to display the peak speed. A horizontally stretched message may indicate that the line speed is faster than the Printer is capable of printing.

To record a lower peak speed, the "Peak Encoder Speed" must be reset. An example of a time when lowering the peak speed would be needed is if the operator wants to slow the production line speed, but inadvertently turns the speed control in the wrong direction, speeding up the production line. The operator may immediately realize their mistake and turn the speed back down, but the higher speed is still displayed until the Peak Encoder Speed is reset or the Peak Encoder Speed records a higher speed.

Select the **Reset** button to reset the Peak Encoder Speed.

Peak Encoder Speed Screen
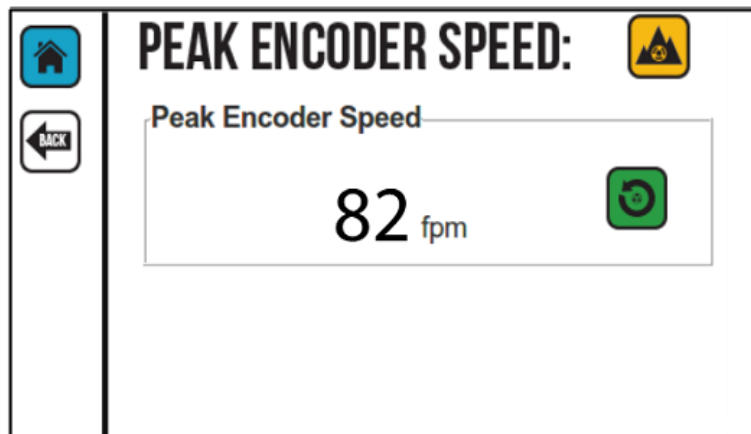
Custom Keyboard

If a custom keyboard has been created in Orion for use with User Data, the **Custom Keyboard Screen** can be used to select that keyboard.

Custom Keyboard Screen
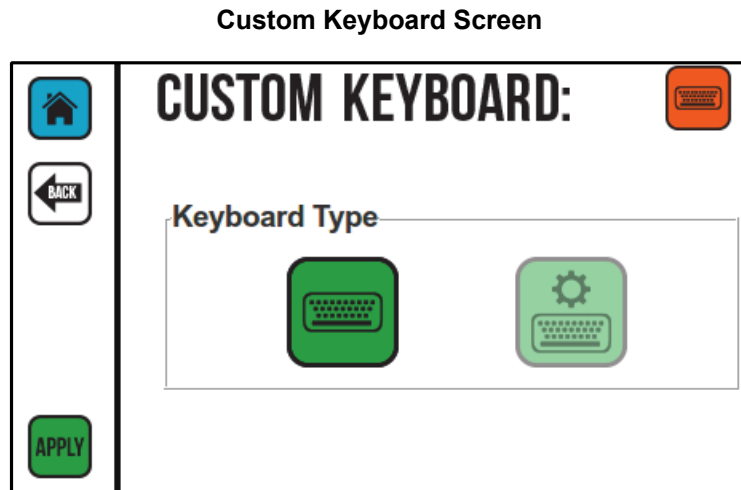
Standard Keyboard Selected

  When available, the Controller uses the standard CoPilot 500 keyboard.

Custom Keyboard Unselected

  When the **Standard Keyboard** button is available, the **Custom Keyboard** button is not available.

Custom Keyboard Selected

  When this button is available, a custom keyboard associated with the user data for the specific message can be opened. Custom keyboards are created in Orion. Refer to the "Custom Keyboards" section in the *Orion Software User Guide* for more information.

NOTE: If the keys on a custom keyboard are all blank, the keyboard was most likely not sent to the Controller from Orion. Verify in Orion that the associated keyboard was sent to the Printer.

Custom Keyboard Example

Language

The CoPilot 500 printing systems support eight languages:

 U.S English

 German

 Mandarin Chinese

 Spanish

 Korean

 Japanese

 Russian

 Polish

To Select a Language:

1. On **Settings Screen Two**, select the Language icon.

2. In the **Language** window, select the desired language.

3. Select **APPLY**. A blue outline appears around the selected language.

Language Screen 1

4. To open **Language Screen Two**, select the **More** ⊞ button. The Controller displays the selected language.

Language Screen 2

5. Restart the Controller for the language change to take effect.

Static IP Address

A static IP address can be assigned to the Controller.

> **NOTE:** When assigning a new IP address, work with the local IT Administrator to ensure that the new address does not conflict with existing devices.

To Provide a Static IP Address (rather than a dynamic IP address):

1. On **Settings Screen Two**, select the **IP Address** button.

2. In the **IP Address** dialog box, select the **Static IP** button.

3. Use the onscreen keyboard to enter a new IP address and subnet mask.

| Static IP | 192.168.0.52 |
| Subnet Mask | 255.255.255.0 |

○ DHCP   ◉ Static IP

```
1  2  3  4  5  6  7  8  9  0  -  =  \  `
q  w  e  r  t  y  u  i  o  p  [  ]  Backspace
Caps  a  s  d  f  g  h  j  k  l  ;  '
Shift  z  x  c  v  b  n  m  ,  .  /  Shift
Alt                                   ←  →
```

4. Select the button [...] to enter the Default Gateway.

| Static IP | 192.168.0.52 |
| Default Gateway | |

○ DHCP   ◉ Static IP

```
1  2  3  4  5  6  7  8  9  0  -  =  \  `
q  w  e  r  t  y  u  i  o  p  [  ]  Backspace
Caps  a  s  d  f  g  h  j  k  l  ;  '
Shift  z  x  c  v  b  n  m  ,  .  /  Shift
Alt                                   ←  →
```

5. Select **APPLY** to assign the new IP address.

User Data

User data is data that is provided by the user. If user data is contained in the current message, the **User Data** button is available. The **User Data** function allows messages that contain user data to be edited directly from the Touchscreen, USB Keyboard, or USB Barcode Scanner.

If the Message Contains User Data:

1. On the **Home Screen**, select the **User Data** button.

2. On the **User Data Screen**, use the onscreen keypad to enter additional data into the text or barcode string.

3. Select **APPLY** to apply the new data to the current message.

Wireless Interface
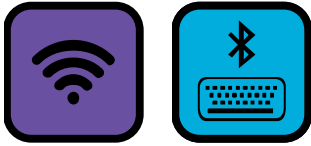
The Controller can be connected to a wireless network or Bluetooth keyboard.

A tablet or desktop computer cannot connect directly to the Controller or Printhead using a wireless network. Instead, a Wireless Router or Wireless USB Adapter compatible with the CoPilot 500 system must be used.

To establish a wireless connection, use either the of the following:

- USB Wireless Adapter (Part Number 2003947) for wireless connectivity between PC or tablet

- Wireless Router (Part Number 2003946) for wireless connectivity between PC or tablet, 300 ft. range

The software that comes with these devices does not need to be installed. These drives are already built into the CoPilot 500 printing system. Wireless Routers and Wireless USB Adapters may be purchased directly from Squid Ink.

When connecting to a wireless network, the Controller may be turned on or off.

NOTE: The Wireless Router must support Wireless Protected Access (WPA) Encryption. Older standards are not supported.

To Connect to a Wireless Network:

1. Install the Wireless USB Adapter.

2. Start the Controller.

3. On the **Settings** menu, select to open **Settings Screen Two**.

Wireless Interface Screen

4. On **Settings Screen Two**, select the **Wireless** button ⬚.

5. On the **WIFI Screen**, select the **Scan** button ⬚. The Printer detects the available wireless networks.

6. In the **SSID** box, select a network from the list of available wireless networks.
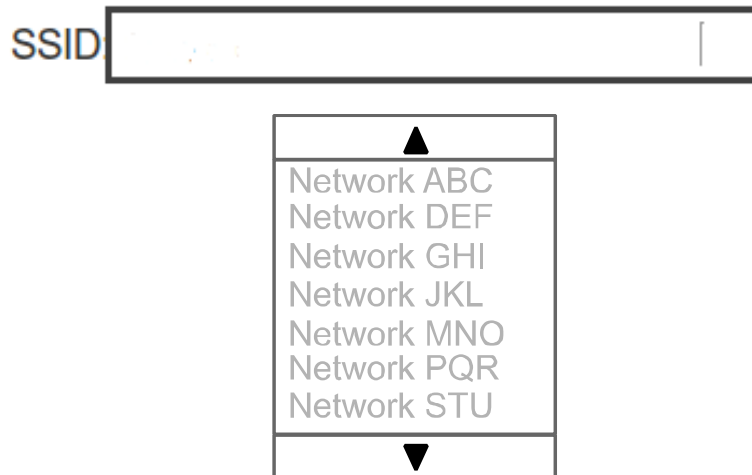
7. If there is a security code for the network, select ⬚⬚ to use the onscreen keyboard to enter the password.

8. After entering the correct password select the **Onscreen Keyboard** button ⬚⬚ to close the keyboard.

9. Select **APPLY** to connect to the network.

When successfully connected to the wireless network, the **Connected** [wifi icon] button is available and the IP address for the CoPilot 500 Controller is displayed. The password is not displayed after the Controller successfully connects.
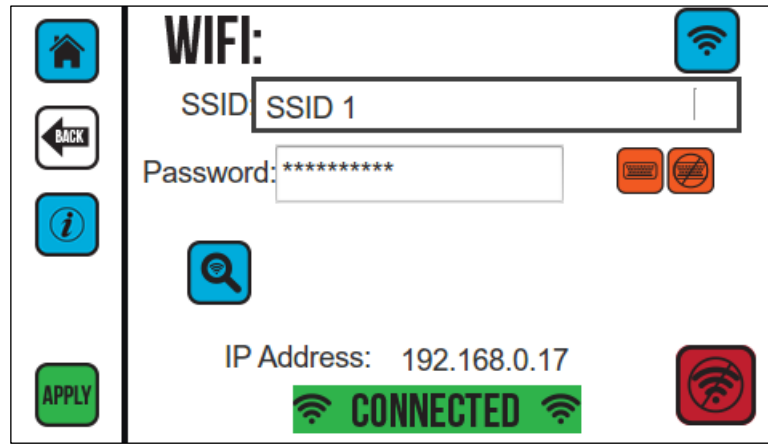
To end the wireless connection, select the **Disconnect** button [icon] before removing the Wireless USB Adapter from the USB Port on the Controller.
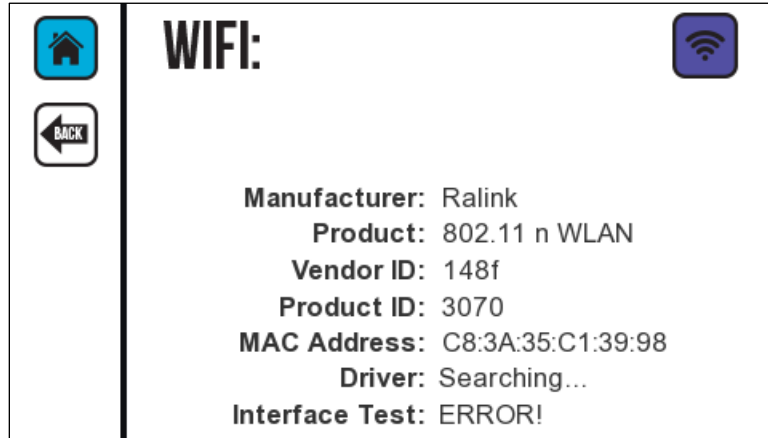
To resume wireless, insert the Wireless USB Adapter, and select **APPLY**. The SSID and password from the previous session are used once a wireless connection is established.

To restore LAN operation using the Ethernet, select the **Disconnect** button [icon], then plug in an Ethernet Cable, and then restart the Controller.

Select the **Information** button [icon] to display information about the current Wireless Adapter.
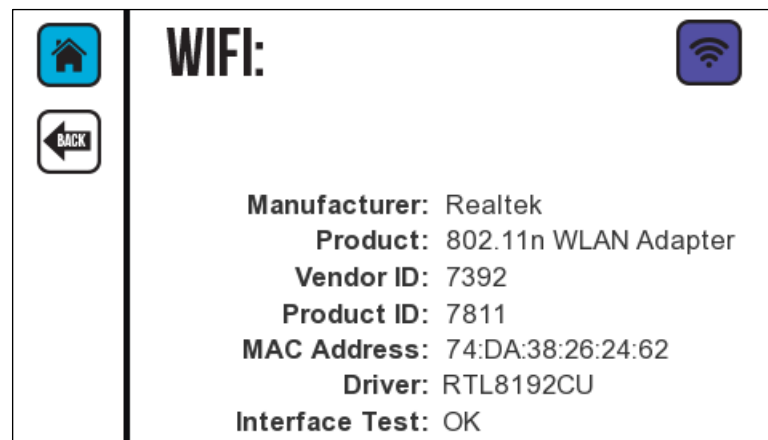
If the following screen is displayed, the Controller has determined that the Adapter is incompatible and cannot be used.

NOTE: Restart the Controller when changing from wireless to Ethernet or from Ethernet to wireless.

Temperature Warning Screens

The system checks the Printhead temperature every few minutes to detect if it is overheating. For CoPilot 500 Oil systems, if a temperature over 130 °F (54.4 °C) is detected for the interface, a full-screen warning is displayed. For CoPilot 500 Solvent systems, if a temperature over 115 °F (46.1 °C) is detected for the interface, a full-screen warning is displayed. Tap the Touchscreen to dismiss the full-screen warning.

The original screen is displayed.
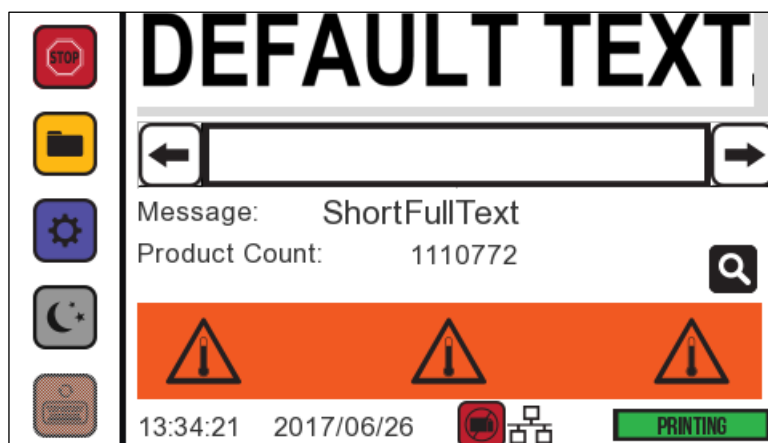
If this happens, the Printhead can still print, but it is possible that a critical warning will follow unless time is taken to cool down the Printhead. If a temperature over 140 °F (60 °C) is detected, a critical warning screen is displayed, and printing is disabled. Tap the Touchscreen to dismiss the full-screen warning.
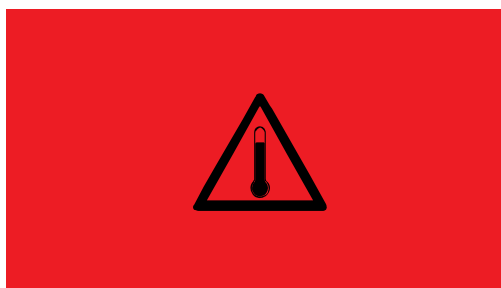
Following a critical temperature warning, allow the Printheads to cool.

When the temperature drops below 130 $^\circ$F (54.4 °C) on a CoPilot 500 Oil system or below 115 °F (46.1 °C) on a CoPilot 500 Solvent system, the original screen is displayed. Printing can resume.
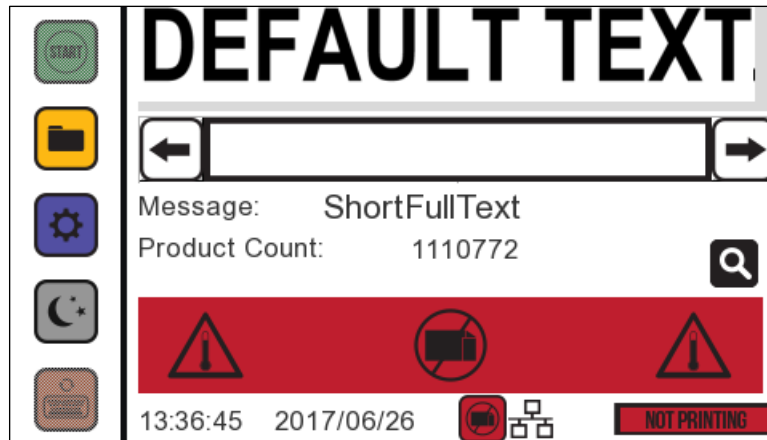
GUI Refresh

GUI Refresh provides updates to the messages, such as counter, shift, time, or date, as they occur over time. Press the **GUI Refresh** button to turn off/on "GUI Refresh"

GUI Refresh is on
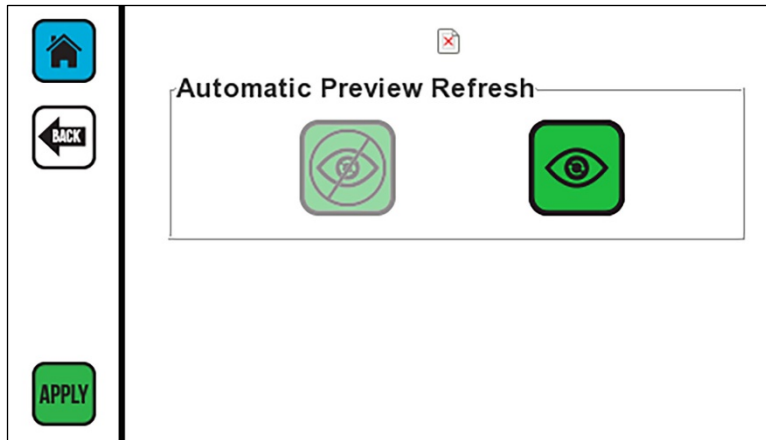
GUI Refresh is off
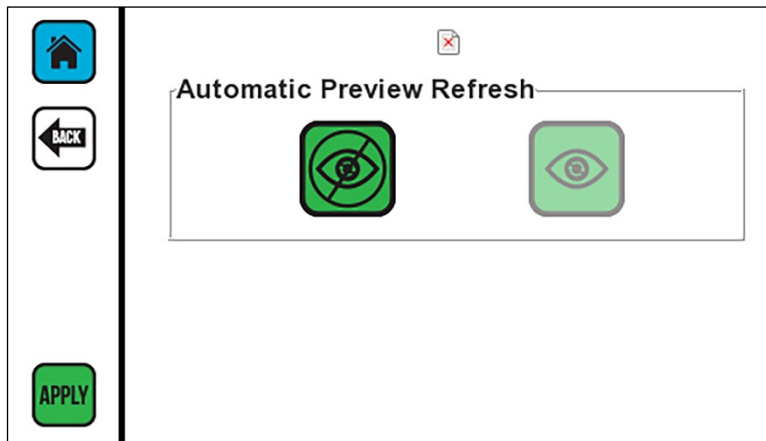
Software Setup

Before printing a message, the proper settings for the physical conditions need to be entered into Orion. This is typically done during installation by a qualified Squid Ink distributor.

VIDEO: Software Setup To see a video of this procedure, click this link: https://youtu.be/zSjTfhCmU8M?t=1113 Or scan the QR code at right using the camera app on your mobile device. **View Time:** 18:33 – 21:33	SQ-CP500-00109-01 Software Setup https://youtu.be/zSjTfhCmU8M?t=1113 18:33–21:33
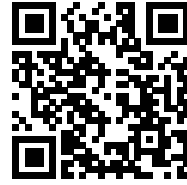
NOTE: This video shows an example of how to perform software setup for a specific scenario. The desired parameters will vary based on needs, connected equipment, inks used, Conveyor direction, and other factors.

Entering the Proper Settings

To Enter the Proper Settings:

1. From the **Home Screen**, select the **Settings Screen**.

2. Go through each of the options on both **Settings** pages (see "Settings Screen" on page 78) and input the choices that apply to the Conveyor and other equipment being used.

3. If using user data, follow the directions under "User Data" on page 105.

4. If using a wireless interface, follow the directions under "Wireless Interface" on page 106.

Operation

Powering On

When all the components have been properly mounted and connected, the system is ready to be powered up to begin printing.

Checklist Before Powering On:

- Ensure that the Nozzle Face is positioned to be 0.125" (3.2 mm) from the items to be printed as they pass by on the Conveyor.

- Verify that nothing is covering the Nozzle Face before priming or printing.

- Ensure that all components have been securely mounted.

- Ensure that all Data and Power Cables are properly seated and connected.

- Ensure that Ink Lines are correctly and securely connected, and that the Printhead is receiving ink.

To Power On:

1. Turn the Power Switch located on the back of the Controller to the ON position.

2. After the power is turned on, the system goes through a brief startup sequence lasting approximately one minute.

3. When startup is complete, the **Home Screen** is displayed on the Touchscreen.
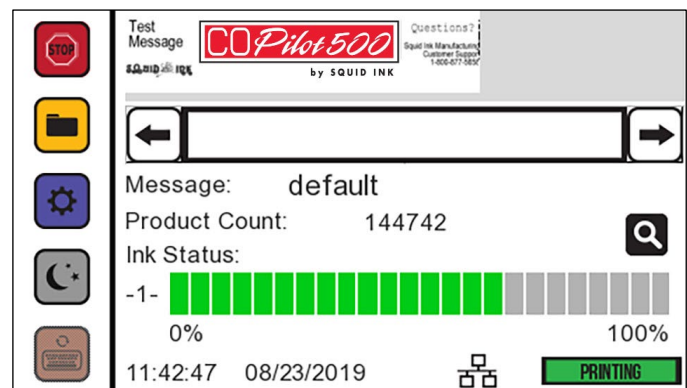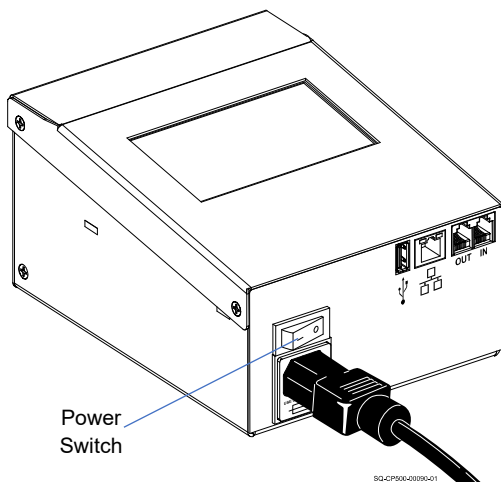
Creating a Print Message

To Create a Print Message:

1. Print messages are created on a PC using Orion software. For more information on creating a print message in Orion, see the *Orion User Guide.*

Transferring a Print Message

Once a print message has been created in Orion, it can be transferred to the Controller by USB or Ethernet.

To Transfer a Print Message by USB:

1. Insert a USB Drive into the USB Port of the PC.

   > **NOTE:** The USB format must be FAT32 or NTFS.

2. Transfer the file for the print message onto the USB Drive.

3. Remove the USB drive from the PC and insert the USB Drive into the USB Port of the Controller.

4. On the Touchscreen, copy the message file from the USB Drive to the Controller by selecting the button below.

To Transfer a Print Message by Ethernet:

1. Send the message to the Printer using Orion.

Loading a Print Message

A print message can be loaded directly from the Controller or, if connected to a network, from a remote PC or network.

To Load a Print Message:

1. From the **Home Screen**, go to the **Message Screen** by selecting the **Message** button.

2. Use the **Up** and **Down** arrows or drag the scroll bar to view the list of available messages.

3. Select the desired message and then select **APPLY**. The message loads into the "Message Preview" area of the **Home Screen**.

Printing a Message

To Print a Message:

1. From the Controller, load the desired message. The message name should be visible to the right of "Message" on the **Home Screen**.
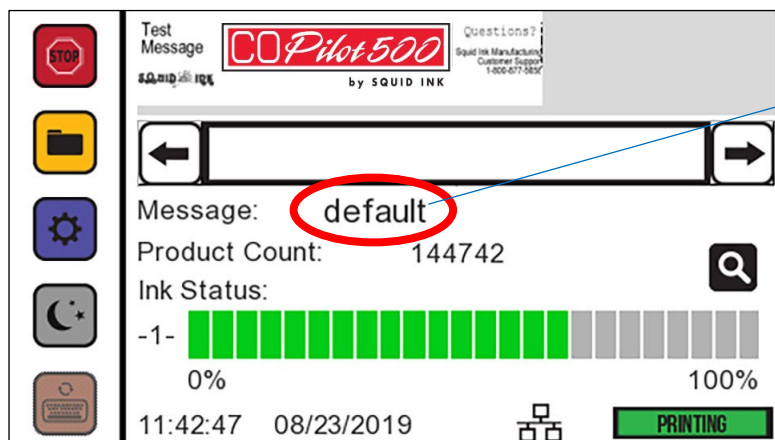
Message Name

2. To start printing, select the **Start** button in the upper left.

3. To stop printing, select the **Stop** button in the upper left..

Powering Off

To power off, turn the Power Switch on the Controller to the OFF position.

Power Switch
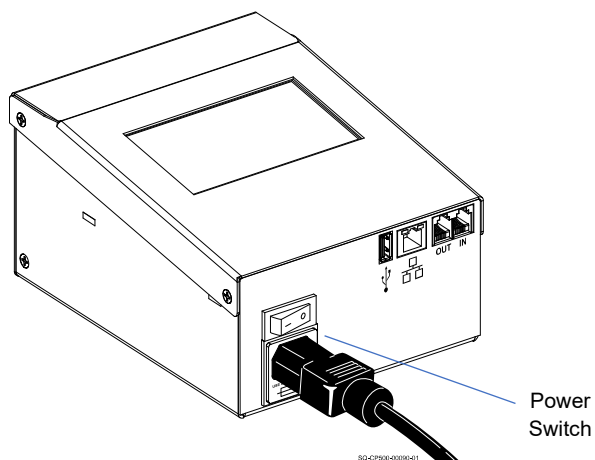
For a soft shutdown, which reduces time needed to boot up, select the **Sleep** mode on the Touchscreen.

Maintenance

The CoPilot 500 printing system requires very little maintenance during normal operation.

⚠	**ATTENTION:** There are no field-replaceable parts in the Printhead or Controller. Do not attempt to open the Printhead the Controller. Doing so can damage the equipment and will void the warranty. Contact Squid Ink or an authorized Squid Ink distributor for assistance.

Checking Mounting Hardware and Connections

Occasionally check the mounting hardware and retighten any Mounting Brackets or Screws that may have vibrated loose during operation.

Occasionally check the Data Cable connections between components to ensure that they are secure and properly seated.

Cleaning the Nozzle Faceplate

If the Nozzle Faceplate becomes contaminated or clogged, gently wipe the front of the Printhead with a non-abrasive lint-free wipe (Part Number 2005470) and gently spray using a spray bottle of internal flush fluid compatible with the ink type being used (see "Inks and Fluids" on page 133). For oil-based Printheads, never use external cleaning fluid on the Nozzle Faceplate. Instead, if needed, soak the lint-free wipe in internal flush fluid and very gently blot off any other debris, applying very little pressure.

⚠	**ATTENTION:** Use only Squid Ink approved fluids for cleaning or flushing the Nozzle Face. Use only the appropriate cleaning or flushing fluid for the specific ink being used (see "Inks and Fluids" on page 133).

⚠	**ATTENTION:** Use only non-abrasive, lint-free wipes (Part Number 2007021). Always wipe in one direction without applying any finger pressure.

⚠	**ATTENTION:** The Orifice Strip is very fragile. Avoid direct contact with it if at all possible.

Flushing the Printhead

If cleaning the Nozzle Face does not improve print quality, flush the Printhead with the appropriate internal cleaning fluid. The procedure is different depending on whether a Cartridge Ink System or Bag Ink System is being used. Flushing takes approximately five minutes for each Printhead. The tools required are included in the CoPilot 500 Startup Kit.

⚠	**ATTENTION:** Use only Squid Ink approved fluids for cleaning or flushing the Nozzle Face. Use only the appropriate cleaning or flushing fluid for the specific ink being used (see "Inks and Fluids" on page 133).

⚠	**ATTENTION:** Use only non-abrasive lint-free wipes (Part Number 2007021).

Items Needed to Flush the Printhead (Cartridge Ink System):

- Non-Abrasive, Lint-Free Wipes

- Syringe and Tube from Flush Kit (P/N 2001022 for oil-based, P/N 2001083 for solvent-based)

- Quart Container of Internal Flush Fluid Appropriate for the Ink Used (see "Inks and Fluids" on page 133)

- Waste Ink Receptacle

To Flush the Printhead (Cartridge Ink System):

1. Power down the system (see "Powering Off" on page 118).

2. Disconnect the Ink Line from the Ink Line IN on the back of the Printhead.

3. Place a container suitable for capturing ink under the Printhead Purge Tube.

4. Remove the Cap from the Printhead Purge Tube.

5. Fold one or more non-abrasive, lint-free wipes and hold them gently against the front of the Nozzle Face.

6. Fill the syringe from the Flush Kit with the appropriate internal flush fluid for the type of ink being used (see "Inks and Fluids" on page 133).

7. Attach one end of the tube from the Flush Kit to the syringe.

8. Connect the other end of the tube to the Ink Line IN, and gently push the internal flush fluid through the Ink Line IN. Ink will exit the Purge Tube.

Pushing Ink Out the Purge Tube

Ink Line IN

Printhead

Purge Tube
(uncapped)

Waste Ink
Receptacle

Tube from
Appropriate
Flush Kit

Syringe

Non-abrasive
Lint-Free Wipe(s)

SQ-CP500-00129-02
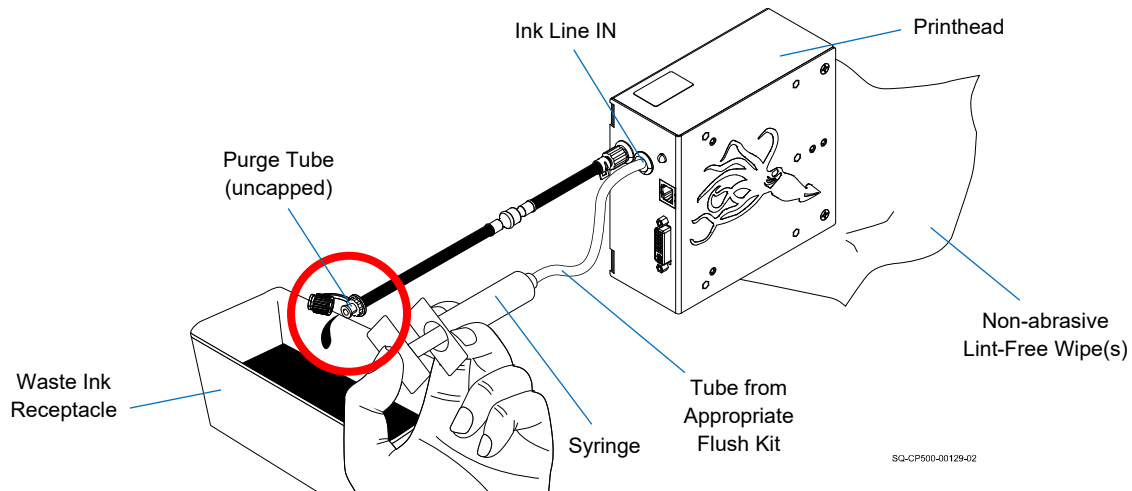
9. Refill the syringe and repeat until the fluid coming out of the Purge Tube is clear and free of ink.

10. Replace the Cap on the Printhead Purge Tube.

11. Move the waste ink receptacle underneath the Nozzle Face.

12. Refill the syringe with internal flush fluid.

13. Connect the other end of the tube to the Ink Line IN, and gently push the flush fluid through the Ink Line IN. Ink and flush fluid will come out the Nozzle Face.

Pushing Fluid Out the Nozzle Face

Printhead

Ink Line IN

Tube from
Appropriate
Flush Kit

Purge Tube
(capped)

Non-abrasive
Lint-Free Wipe(s)

Syringe

Waste Ink
Receptacle

SQ-CP500-00131-02
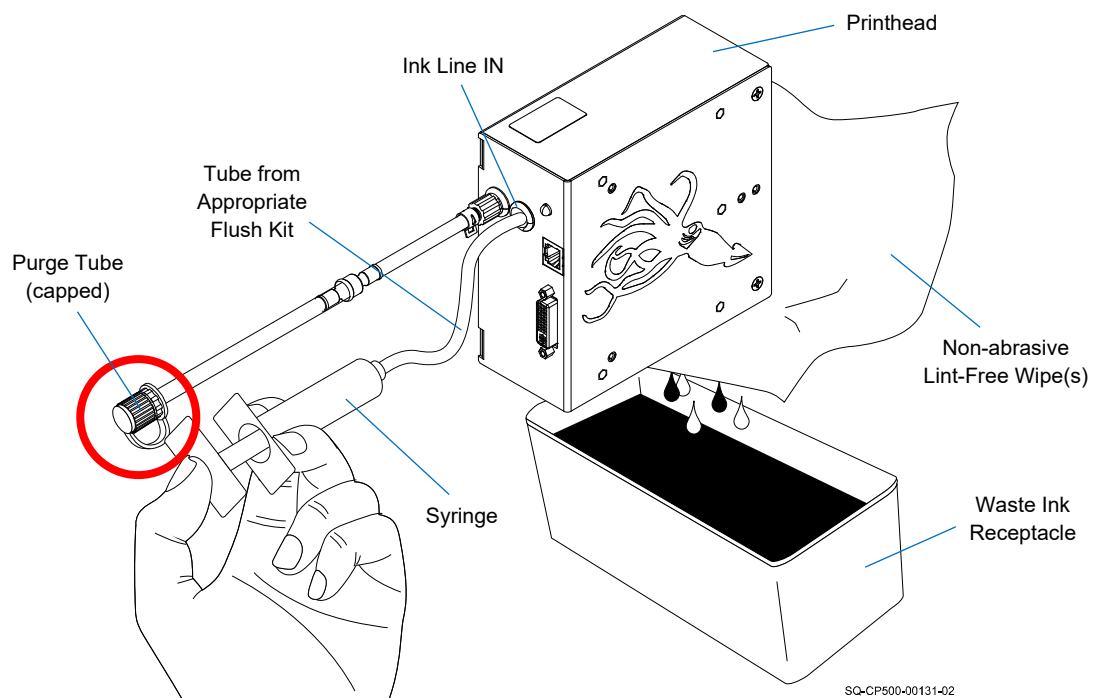
14. Refill the syringe and repeat until the fluid coming out of the Nozzle Face is clear and free of ink.

Items Needed to Flush the Printhead (Bag Ink System):

- Non-Abrasive, Lint-Free Wipes

- Bag of Internal Flush Fluid Appropriate for the Ink Used (see "Inks and Fluids" on page 133)

- Waste Ink Receptacle

To Flush the Printhead (Bag Ink System):

1. Power down the system (see "Powering Off" on page 118).

2. Remove the Ink bag from the Ink Tray, and insert a bag of appropriate internal flush fluid instead.

3. Place a container suitable for capturing ink under the Printhead Purge Tube.

4. Remove the Cap from the Printhead Purge Tube.

5. Fold one or more non-abrasive, lint-free wipes and hold them gently against the front of the Nozzle Face.

6. Gently but firmly press down on the Flush Bag until the fluid coming out of the Purge Tube is clear and free of ink.

   > **IMPORTANT:** Be sure to have the wipe in place before applying pressure to the Flush Bag, and be sure to release the pressure before removing the wipe.

Pressing the Flush Bag

Flush
Bag
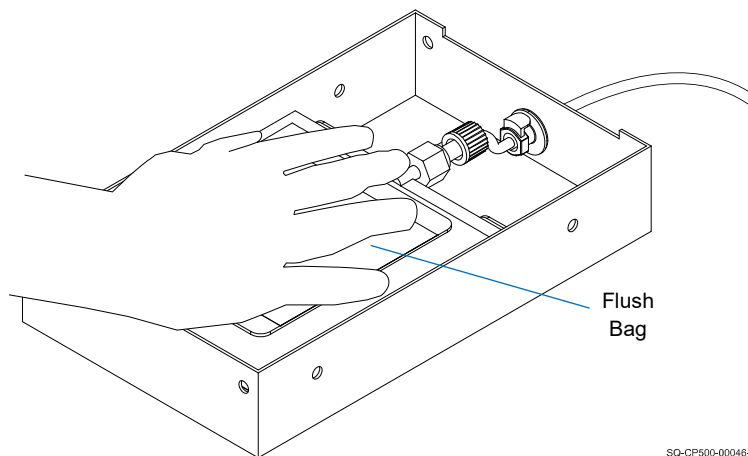
SQ-CP500-00046-02

7. While continuing to press gently but firmly on the Ink Bag, replace the Cap on the Purge Tube. This seal must be tight.

8. Continue to press the Ink Bag until the fluid coming out of the Nozzle Face is clear and free of ink.

Purging the Printhead of Air Bubbles

If print quality is inconsistent, the Ink Lines or Printhead may have air bubbles that need to be purged. To remove bubbles from the ink Lines and Printhead, follow the steps for commissioning the Printhead (see "Commissioning the Printhead" on page 63).

External Cleaning

With the exception of the Nozzle Face, the outside surfaces of the Printhead and Controller can be sprayed with compatible external cleaning fluid and gently wiped clean with a clean cloth. Never immerse the components in water or cleaning fluids.

> ⚠️ **ATTENTION:** Use only Squid Ink approved fluids for cleaning or flushing the Nozzle Face. Use only the appropriate cleaning or flushing fluid for the specific ink being used (see "Inks and Fluids" on page 133).

Preparing a CoPilot 500 for Shipping or Storage

Items Needed to Prepare a CoPilot 500 Printhead for Shipping or Storage:

- Non-Abrasive, Lint-Free Wipes
- Syringe and Tube from Flush Kit (P/N 2001022 for oil-based, P/N 2001083 for solvent-based)
- Internal Flush Fluid (see "Inks and Fluids" on page 133).
- Waste Ink Receptacle
- Resealable Plastic Bag
- Two rubber bands
- 2 Caps (P/N 2006023)

To Prepare a CoPilot 500 Printhead for Shipping or Storage:

1. Thoroughly flush the Printhead (see "Flushing the Printhead" on page 120) using the correct internal flush for the type of ink used (see "Inks and Fluids" on page 133).
2. Use air in the syringe to push remaining fluid out of the Printhead.
3. Refill the syringe with air and repeat until the Printhead no longer contains fluid.
4. Gently spray the Orifice Strip with internal flush fluid.
5. Very gently dab the Orifice Strip with a non-abrasive, lint-free wipe, and use the wipe to gently remove any fluids from the exterior of the Printhead.

6. Disconnect the Purge Tube from the Printhead.

7. Use the appropriate Caps from the Cap Kit to seal the Purge Tube Nozzle and Ink Line IN Nozzle.

8. Fold two non-abrasive, lint-free wipes, hold them so that they cover the entire Nozzle Face, and secure them in place with two rubber bands.

9. Place the Printhead in a resealable plastic bag.

10. Remove as much air as possible from the bag and seal it.
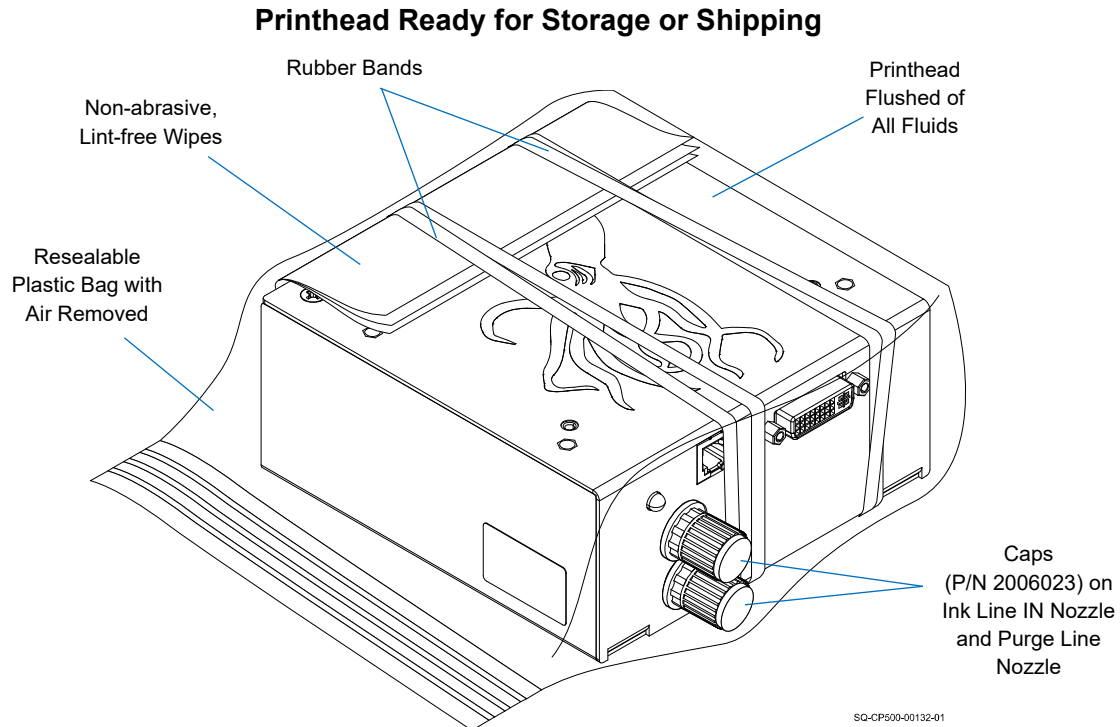
Printhead Ready for Storage or Shipping

Items Needed to Prepare a CoPilot 500 Ink Reservoir for Shipping or Storage:

- Non-Abrasive, Lint-Free Wipes
- 2 Quarts of Internal Flush Fluid (see "Inks and Fluids" on page 133).
- Large Waste Ink Receptacle

To Prepare a CoPilot 500 Ink Reservoir for Shipping or Storage:

1. Remove the Ink Cartridge from the top of the Ink Reservoir.

2. Disconnect the Ink Line from the Ink Reservoir.

3. Cap the Reservoir Vent Tube.

4. Cap the Ink Line.

Capping Off the Ink Line and Pouring Flush into the Ink Reservoir
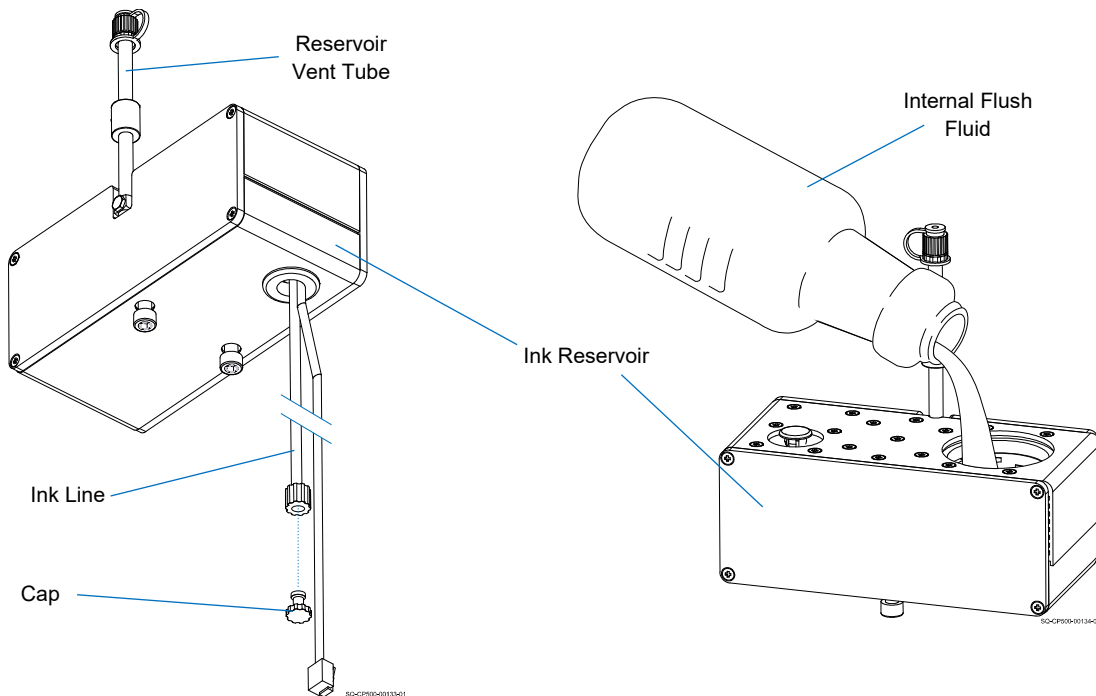
5. Pour half a quart of internal flush fluid into the Ink Reservoir, slosh it around in the Ink Reservoir, and pour it out into the waste ink receptacle.

6. Repeat two more times.

7. Screw the Shipping Cap onto the Ink Reservoir.

Capping the Ink Reservoir
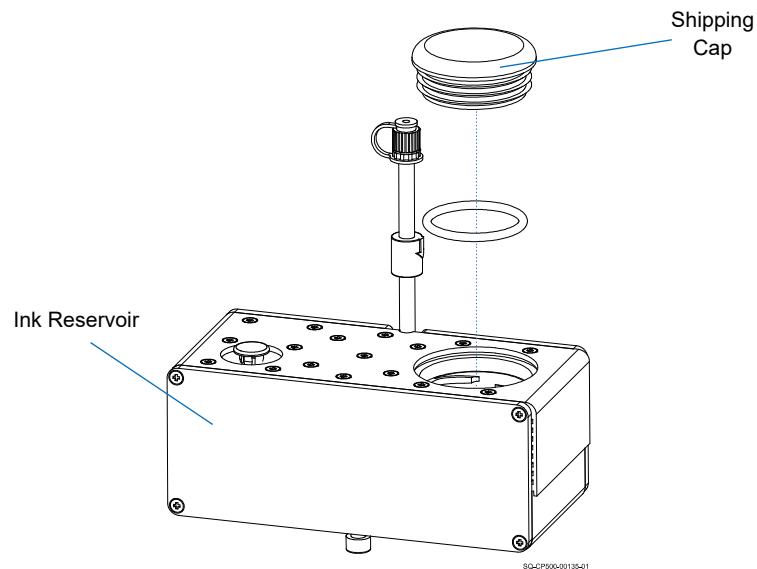
ATTENTION: To avoid damage that can affect functionality, Ink Reservoirs should spend a minimum amount of time in storage or shipping.

Items Needed to Prepare a CoPilot 500 Ink Tray for Shipping or Storage:

- Non-Abrasive, Lint-Free Wipes
- Bag of Internal Flush Fluid Appropriate for the Ink Used (see "Inks and Fluids" on page 133).
- Waste Ink Receptacle
- Nozzle Cap (P/N 2006023)

To Prepare a CoPilot 500 Ink Tray for Shipping or Storage:

1. Remove the Ink bag from the Ink Tray, and insert a bag of appropriate internal flush fluid instead.
2. Place a container suitable for capturing ink beneath the Nozzle side of the Ink Tray.
3. Disconnect the Ink Line from the Ink Tray Nozzle.
4. Gently but firmly press down on the Flush Bag until the fluid coming out of the Nozzle is clear and free of ink. This should happen fairly soon, if not immediately.

Pressing the Flush Bag
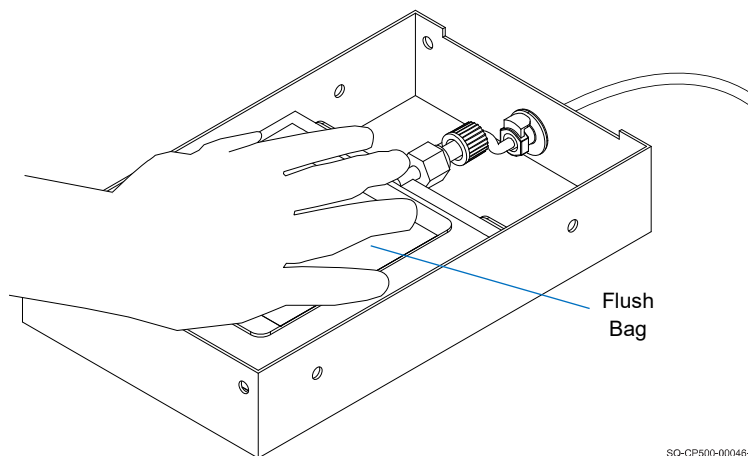
Flush
Bag

SQ-CP500-00046-02

5. Remove the Flush Bag from the Ink Tray.
6. Dampen a non-abrasive, lint-free wipe with internal flush fluid and gently wipe any ink residue off the inside and outside Nozzles.
7. Cap the outside Nozzle.

Troubleshooting

Problem	Possible Cause	Solution
Print quality distorts occasionally or system locks up.	Line noise, brownouts, or blackouts may be affecting the quality of the AC power supply to the system.	Install a good-quality AC power Line Conditioner or Uninterruptible Power Supply (Part Number 2004199) to ensure clean electrical supply.
Touchscreen buttons no longer activate the corresponding functions or are unresponsive.	Touchscreen needs to be recalibrated.	Recalibrate the Touchscreen (see "Calibrating the Touchscreen" on page 94).
Controller display goes black with one sentence of text.	System power corruption.	Install a Line Conditioner (Part Number 2004199) to ensure clean electrical supply.
	High static discharge.	Add a 0.25" (or wider) Ground Braid (Part Number 2005024) between the Controller and earth ground. Note: A substitute Carbon Fiber Brush (Part Number 2006400) is also available to reduce substrate static electricity build-up.
Print quality is poor.	Clogged Ink Nozzles on the Printhead.	Clean the Nozzle Face (see "Cleaning the Nozzle Faceplate" on page 119).
	Dried ink or impurities in the Printhead or Ink Line.	Flush the Printhead (see "Flushing the Printhead" on page 120).
	Air bubbles in the Printhead or Ink Line.	Purge the Printhead of air bubbles (see "Purging the Printhead of Air Bubbles" on page 123).

Parts List

Replaceable Parts

⚠	**ATTENTION:** There are no field-replaceable parts in the Printhead or Controller. Do not open the Printhead or Controller on site.

Complete Systems

System Part Number	Controller	Ink Base	Printhead Type	Number of Printheads	Ink System Type	Number of Ink Systems
2005930	CoPilot 500 Turbo* 2005095	Oil	CoPilot 500 Oil 2005900	1	Cartridge	1
2005931				2		2
2005932		Solvent	CoPilot 500 Solvent 2005901	1		1
2005933				2		2
2005934		Oil	CoPilot 500 Oil 2005900	1	Bag	1
2005935				2		2
2005936		Solvent	CoPilot 500 Solvent 2005901	1		1
2005937				2		2
2005960	CoPilot 500 HiSpeed Turbo* 2005095-HS	Oil	CoPilot 500 HiSpeed 2005900-HS	1	Cartridge	1
2005961				2		2
2005964				1	Bag	1
2005965				2		2

* The CoPilot 500 Controller has been replaced by the CoPilot 500 Turbo Controller.

** The CoPilot 500 HiSpeed Controller has been replaced by the CoPilot 500 HiSpeed Turbo Controller.

Other Replaceable Parts

Part Number	Description	Ink Base
2005900	CoPilot 500 Printhead - Oil-Based:	Oil
2005901	CoPilot 500 Printhead - Solvent-Based	Solvent
2005900-HS	CoPilot 500 HiSpeed Printhead	Oil
1602018	Photocell Assembly	
1604177	Encoder Assembly Kit	
2001065	Cartridge Ink System Porous	Oil
2001066	Cartridge Ink System Non-Porous	Solvent
2001079	CoPilot 500 Starter Kit, Oil Based, Cartridge	Oil
2001080	CoPilot 500 Starter Kit, Solvent-Based, Cartridge	Solvent
2001159	Bag Ink System Porous	Oil
2001160	Bag Ink System Non-Porous	Solvent
2002023	CoPilot 500 Starter Kit, Oil Based, Bag	Oil
2002024	CoPilot 500 Starter Kit, Solvent-Based, Bag	Solvent
2003585	Low Ink Alarm Beacon Assembly Kit	Oil
2003588	Controller to Controller Data Cable 10ft.	
2003864	RJ12 "Y" Splitter Cable	
2003921	Printhead Data Cable 3ft.	
2003927	Low Ink Alarm Beacon Assembly Kit	Solvent
2004187	Power Supply Cord for Controller	
2004918	Printhead Rotation/Tilt Mounting Kit	
2004920	Mounting Bracket Assembly	Oil
2005990	CoPilot 500 Controller (works with CoPilot 500 Oil or Solvent Printhead)	
2005095	CoPilot 500 Turbo Controller (works with CoPilot 500 Oil or Solvent Printhead)	
2005095-HS	CoPilot 500 Turbo Controller (works with CoPilot 500 HiSpeed Printhead only)	Oil

Floor Stand Assemblies

Part Number	Description
2004940	1 short Arm (14"), Brackets for downshoot, Ink Reservoir and Controller * Must order 2004918 to accommodate twist applications
2004941	2 short Arms (14") Brackets for downshoot, Ink Reservoirs and Controller * Must order 2004918 to accommodate twist applications
2004942	1 short Arm (14"), 1 Stitch Plate Bracket set, Brackets for two Ink Reservoirs and one Controller (for one CoPilot 500 with 2 Printheads total)
2004946	2 short Arms (14"), Controller Mounting L-Bracket, black Mounting Plates for CoPilot 500 Printheads, and Ink System Mounting Brackets
2004947	2 long Arms (30"), Controller Mounting L-Bracket, black Mounting Plates for CoPilot 500 Printheads, and Ink System Mounting Brackets
2004951	2 Arms, 2 Stitch Plate Bracket sets for four Printheads, four Ink Reservoir and two Controllers (for two CoPilot 500 Controllers with 4 Printheads total)
2004956	1 short Arm (14"), Controller Mounting L-Bracket, black Mounting Plate for CoPilot 500 Printhead, and Ink System Mounting Bracket
2004957	1 long Arm (30"), Controller Mounting L-Bracket, black Mounting Plate for CoPilot 500 Printhead, and Ink System Mounting Bracket
2005941	1 short Arm (14"), black Baseplate to mount Controller, Printhead and Ink System (2004920), and Printhead Mounting Post (2004918)

Conveyor Mount Assemblies

Part Number	Description
2004925	Tubing kit with one short Arm (14") * Must order Printhead Mounting Post (2004918) to accommodate down, horizontal, or twist applications
2004926	Tubing kit with two short Arms (14") * Must order Printhead Mounting Post (2004918) to accommodate down, horizontal, or twist applications
2004928	Tubing kit with Slider Brackets for two CoPilot 500 Printheads and Ink Systems
2004943	Tubing kit (single head) with black Printhead Plate for low profile Printhead mounting
2004944	Tubing kit (dual head) with black Printhead Plates for low profile Printhead mounting
2004950	Tubing kit with Slider Brackets for four CoPilot 500 Printheads and Ink Systems and two Controllers
2005940	Mounting Bracket for complete printing system, includes: • Mounting Bracket Assembly (2004920) • Printhead Rotation/Tilt-Mounting Kit (2004918) • Conveyor Mounting Assembly (2002059)

Inks and Fluids

⚠️	**ATTENTION:** Use only Squid Ink approved fluids for cleaning or flushing the Nozzle Face. Use only the appropriate cleaning or flushing fluid for the specific ink being used (see "Inks and Fluids" on page 133).

⚠️	**ATTENTION:** For oil-based Printheads, never use External Cleaning Fluid as an Internal Flush Fluid or Storage Solution, and never use External Cleaning Fluid on the Printer Face.

⚠️	**ATTENTION:** Always use nonabrasive lint-free wipes (Part Number 2007021) when cleaning and maintaining the Printhead.

Ink Base	Ink Description	Internal Flush Fluid/Storage Solution	External Cleaning Fluid
Oil	SI-PZ1000	SI-PZ1043-Q Part Number: 2101143	SI-PZ1053
Mineral Oil Free (MOF)	SI-PZ1525	SI-PZ1943-Q Part Number: 2101943	SI-PZ1053
Solvent	SI-PZ3300	SI-PZ3043-Q Part Number: 2103143	

Exploded Views

Cartridge Ink System

Cartridge Ink System Assembly

(Part Number 2001065 – Oil) | (Part Number 20001066 – Solvent)
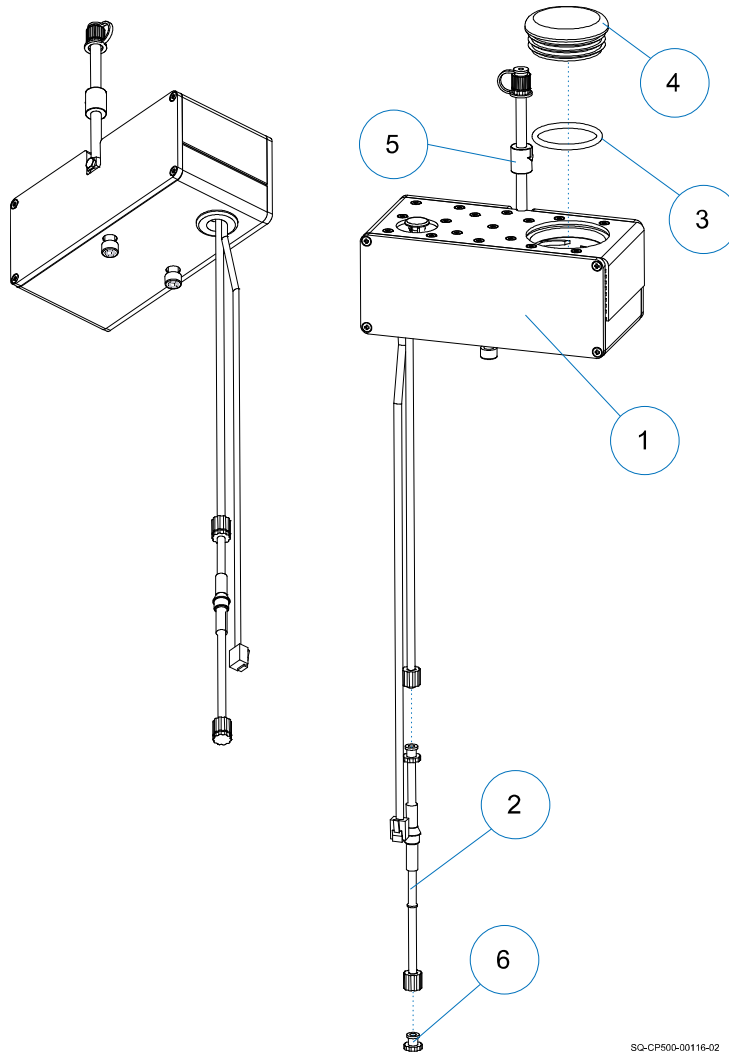
SQ-CP500-00116-02

Item Number	Part Number	Description	System	Qty
1		GENERIC INK SYSTEM ASSY		1
2	2002057	CHECK VALVE ASSEMBLY - PO	Oil	1
	2002058	CHECK VALVE ASSEMBLY - PO	Solvent	1
3	2006088	BOTTLE O-RING #221 50 DUR, VITON	Oil	1
	2006094	BOTTLE O-RING #221 50 DUR, EPDM	Solvent	1
4	2006006	DUST CAP-2" OD, BLACK ROUND, LPDE		1
5	2001069	KIT, OIL-BASED VENT KIT	Oil	1
	2001070	KIT, SOLVENT-BASED VENT KIT	Solvent	1
6		CAP		1

Cartridge Ink System Assembly

(Part Number 2001065 – Oil) | (Part Number 20001066 – Solvent)
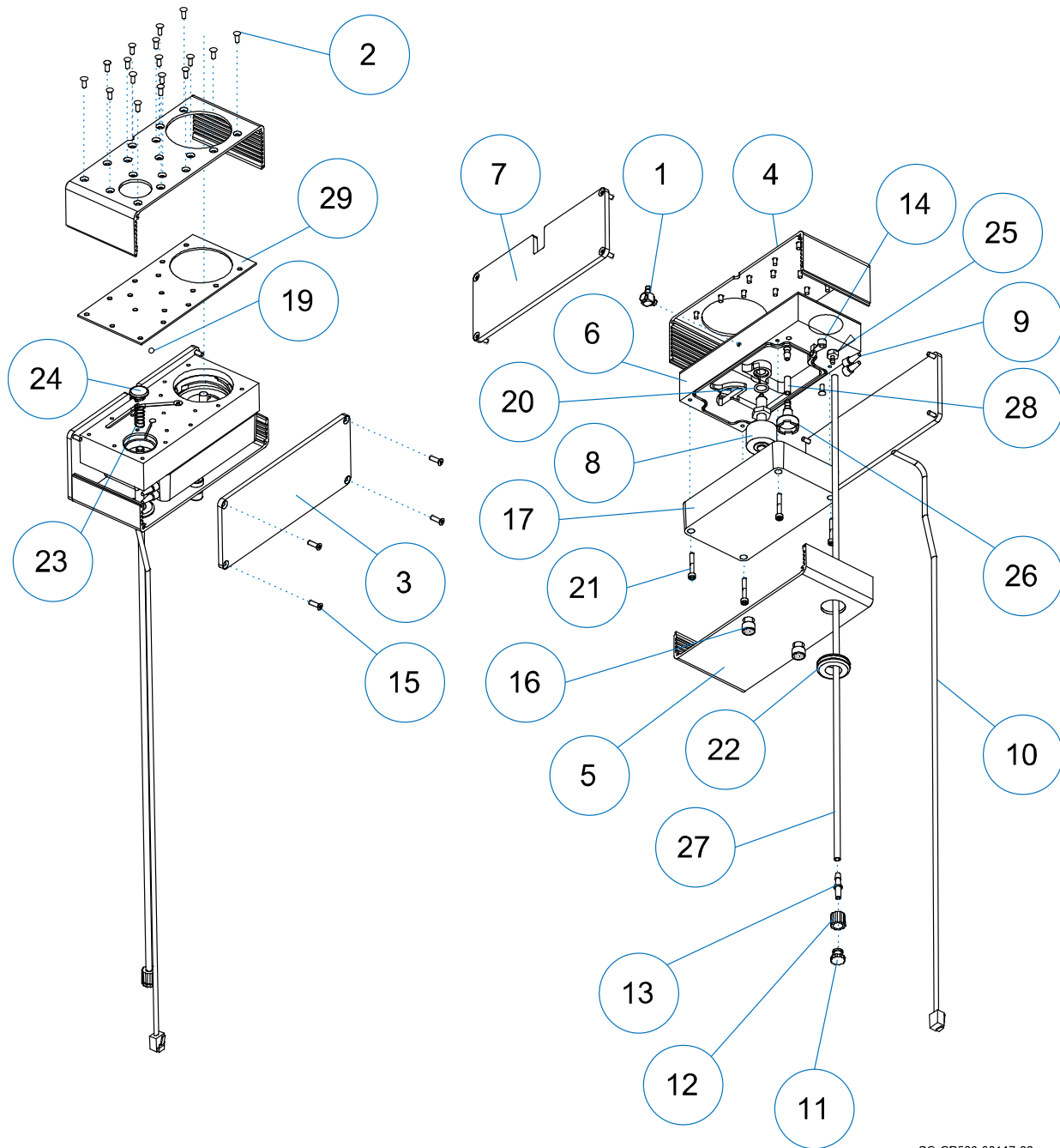
SQ-CP500-00117-02

Item Number	Part Number	Description	System	Qty
	2001065	Cartridge Ink System Assembly	Oil	
	2001066	Cartridge Ink System Assembly	Solvent	
1	1603588	FTG-ELBOW, 1/8 BARB, #10-32		1
2	1705038	SCREW, M3 X 8, FH, BLK		18
3	2003069	PZP END PLATE		1
4	2003072	PZP INK SYS COVER		1
5	2003073	PZP INK SYSTEM BASE		1
6	2003074	PZP TANK COVER		1
7	2003099	PZP END PLATE W/CUT		1
8	2004129	FLOAT SWITCH, NC		1
9	2004131	CRIMP WIRE SPLICES 22-14 GA		2
10	2004156	CABLE, MOD-LOW INK, 6X4		1
11	2006025	FITTING, FEM LUER, CAP, PP		1
12	2006026	LUER LOCK RING USED W/2006027		1
13	2006027	FITTING-MALE LUER, 1/8 BARB		1
14	2006070	TIEWRAP 4" WITH #4 MTG HOLE		1
15	2006082	SCREW – FHP, M3 X 10MM, SS		8
16	2006083	SCREW – SHC, M6 X 10, SS		2
17	2006084	PZP TANK		1
18	2006085	O-RING, TANK, 70 DUR, BUNA		1
19	2006087	TEFLON BALL 5/32"		1
20	2006089	O-RING, SWITCH, 70 DUR, BUNA		1
21	2006091	SCREW, SHC, M3 X 20, SS		4
22	2006092	GROMMET RUBBER SBR 1/2 X 3/4		1
23	2006131	SPRING-COMP .3"ODx.69"Lx.025"		1
24	2006132	PLUG-BUTTON, 3/8"ID, .578D		1
25	2006133	FTG, BARBED, 1/4-28, 1/8 ID TUBE		1
26	2006134	FILTER-TUBE, 149 MICRON		1
27	2003379	TUBING LDPE 1/8" ID	Oil	1
	1701002	TUBING LDPE 1/8" ID	Solvent	1
28	2007009	TUBING LDPE 1/8" ID		1
29	2007133	PZP COVER GASKET-GYLON		1

Bag Ink System

Bag Ink System Assembly – Oil

(Part Number 2001159)
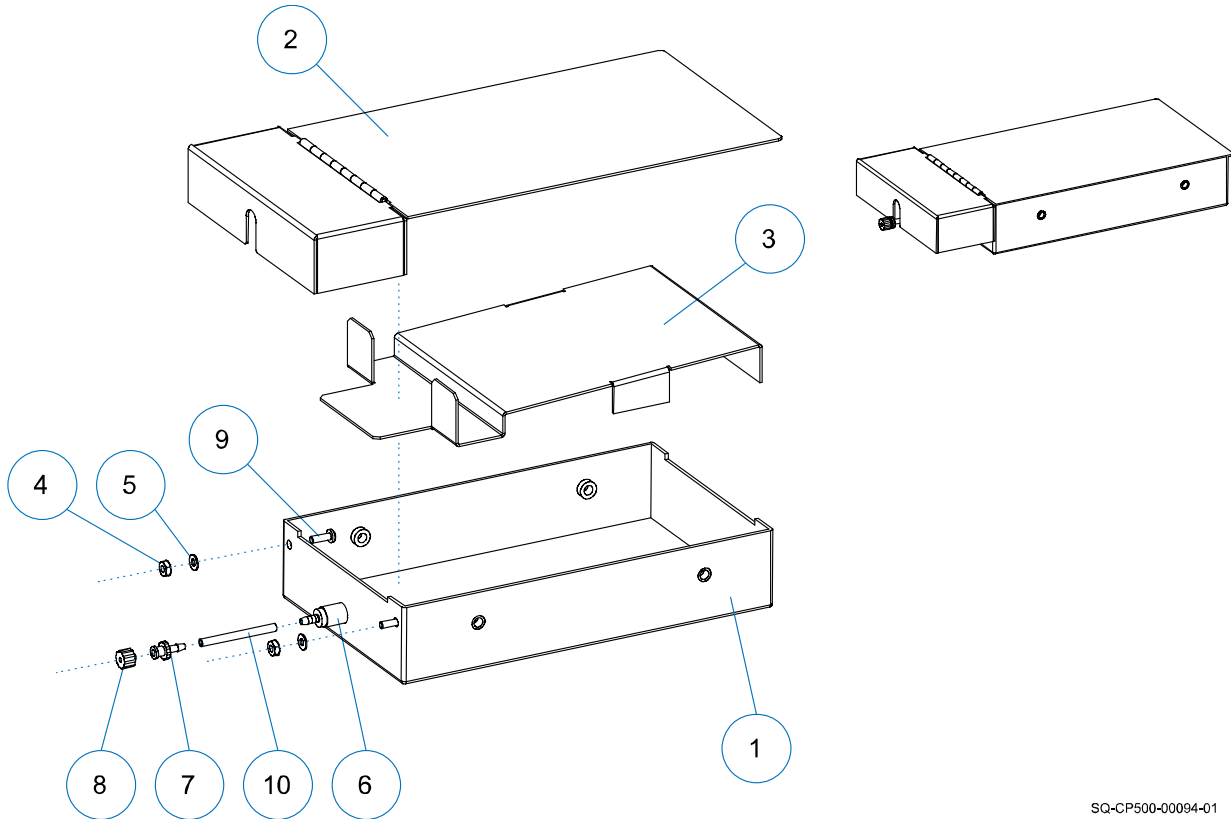
SQ-CP500-00094-01

Item Number	Part Number	Description	Qty
1	2003014	PAN INK SYSTEM	1
2	2003015	COVER INK SYSTEM	1
3	2003017	TRAY INK SYSTEM	1
4	2006007	NUT HEX 8-32 KEPS SS	2
5	2006020	WASHER-FLAT #8 SST	2
6	2006022	FITTING-FEM LUER TO 1/8" BARB	1
7	2006023	LUER LOCK RING	1
8	2006024	FITTING QCONN FEM BLK	1
9	2006056	SCRW-PH 8-32X6/16 SST PH	2
10	2003379	TYGON TUBING	1

Bag Ink System Assembly – Solvent

(Part Number 2001160)
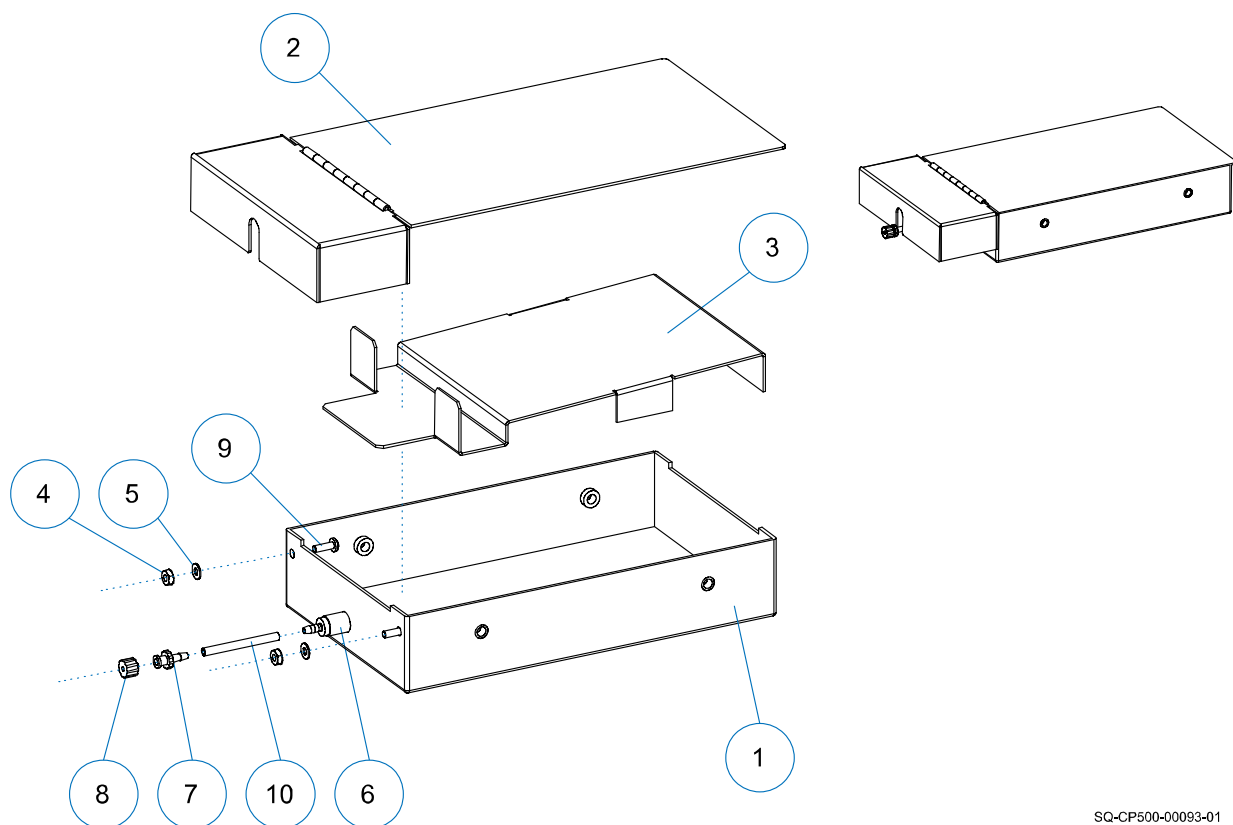
SQ-CP500-00093-01

Item Number	Part Number	Description	Qty
1	2003013	PAN INK SYSTEM	1
2	2003015	COVER INK SYSTEM	1
3	2003017	TRAY INK SYSTEM	1
4	2006007	NUT HEX 8-32 KEPS SS	2
5	2006020	WASHER-FLAT #8 SST	2
6	2006021	FITTING OCONN FEM W/E	1
7	2006022	FITTING-FEM LUER TO 1/8" BARB	1
8	2006023	LUER LOCK RING	1
9	2006056	SCRW-PH 8-32X6/16 SST PH	2
10	2007009	TUBING LDPE 1/8" 4'L	1

Printhead

CoPilot 500 Printhead

Part Number 2005900 – Oil
Part Number 2005901 – Solvent
Part Number 2005900-HS – HiSpeed

SQ-CP500-00095-02
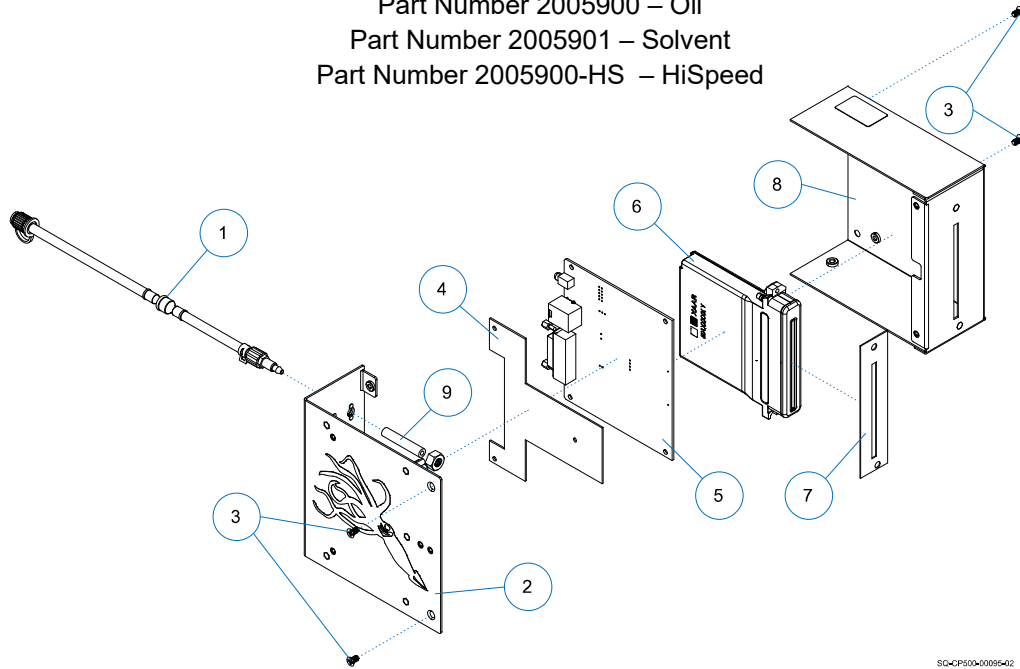
Item Number	Part Number	Description	System	Qty
	2005900	Printhead	Oil	
	2005901	Printhead	Solvent	
	2005900-HS	Printhead	HiSpeed	
1	2005920	CHECK VALVE ASSY	Oil	1
	2005921	CHECK VALVE ASSY	Solvent	1
2	2005905	FAB, PRINTHEAD COVER		1
3	2003271	SCREW, #6-32X1/4, FH UNDERCUT, SS		4
4	2005908	FAB INSIDE GUARD, COPILOT 500		1
5	1440010	PCB ASSY – PRINTHEAD, COPILOT 500		1
6	2005999	PRINT ENGINE, OIL-BASED, COPILOT 500	Oil	1
	2005998	PRINT ENGINE, SOLVENT-BASED, COPILOT 500	Solvent	1
7	2005917	GASKET, PRINTHEAD SEAL, COPILOT 500	Oil	1
	2005916	GASKET, PRINTHEAD SEAL, COPILOT 500	Solvent	
8	2005904	FAB/WELD PRINTHEAD CHASSIS		1
9	2003379	TUBE, TYGON, 1/8" ID, 1/4" OD	Oil	2
	2007009	TUBE, TYGON, 1/8" LDPE, 1/4" OD	Solvent	2

CoPilot 500 Controller*/CoPilot 500 HiSpeed Controller**
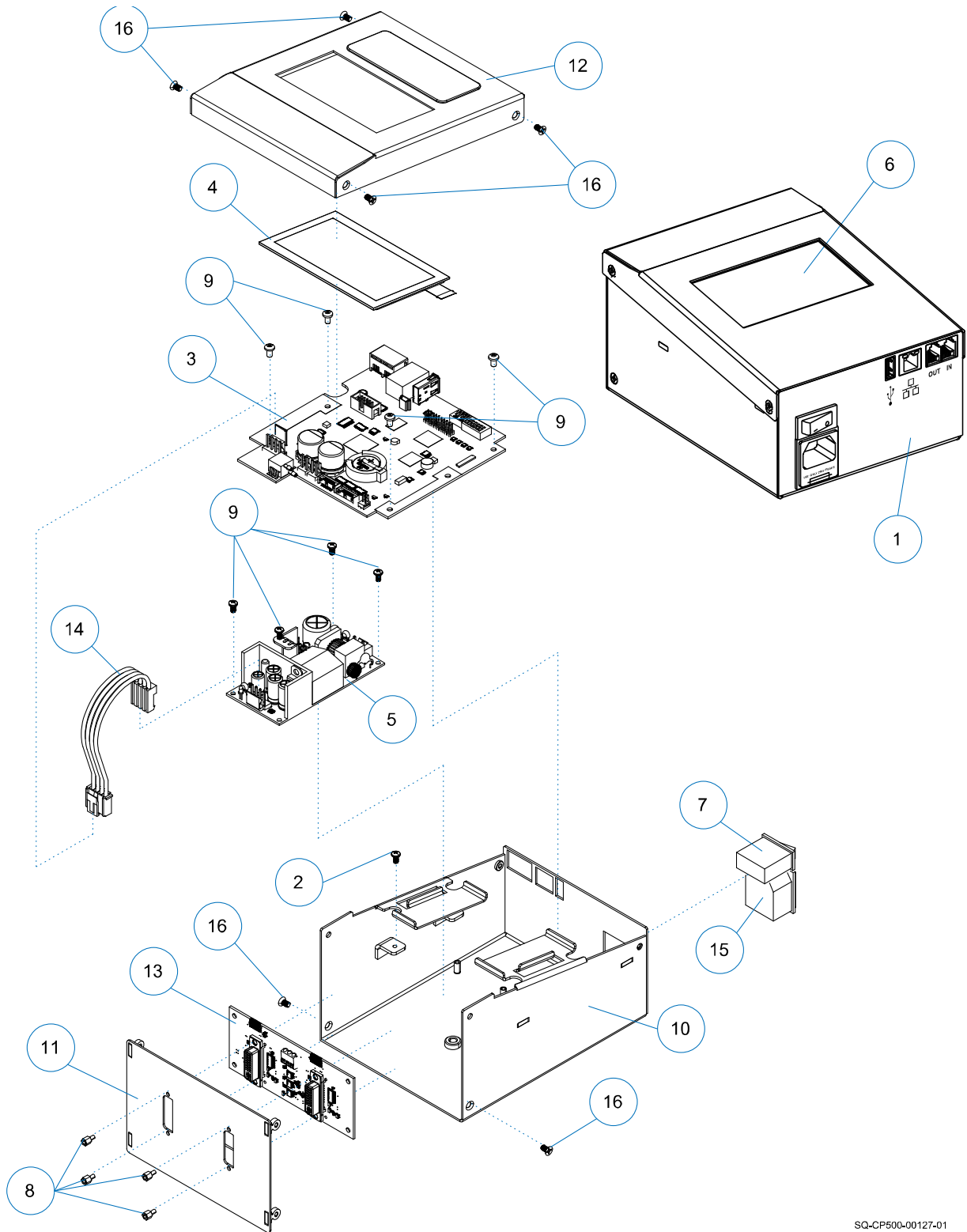
SQ-CP500-00127-01

* The CoPilot 500 Controller has been replaced by the CoPilot 500 Turbo Controller.

** The CoPilot 500 HiSpeed Controller has been replaced by the CoPilot 500 HiSpeed Turbo Controller.

CoPilot 500 Turbo/CoPilot 500 HiSpeed Turbo Controller

SQ-CP500-00128-01

Item Number	Part Number	Description	Model	Qty
	2005095	Controller	Standard	
	2005095-HS	Controller	HiSpeed	
	2005095	Controller	Turbo	
	2005095-HS	Controller	HiSpeed Turbo	
1	098898-001	LABEL-PROT EARTH GRND, IEC 5019		1
2	102448-001	NUT-KEP, M3, ZINC		1
3	1603530	ASSY-MAIN PCB*	Standard HiSpeed	1
	1440019	ASSY-MAIN PCB, COPILOT TURBO	Turbo HiSpeed Turbo	1
4	1603526	GASKET – LCD SEAL, JETLINE & CP		1
5	1603529	AC-DC POWER SUPPLY, OUTPUT 24V		1
6	1603532	4.3" LCD W/ TOUCHSCREEN		1
N/S	1603548	CABLE ASSY – JUMPER FOR IEC LINE		1
N/S	1603575	BATTERY – 3V, 230mAh, COIN CELL		1
7	1603576	POWER SWITCH-ROCKER, 10A, 250 VAC		1
N/S	1603578	CABLE ASSY – JUMPER FOR IEC NEUT		1
N/S	1603601	FUSE – 4A, 5 X 20MM, FAST ACT		1
N/S	1603624	TAPE-2 SIDE ADHESIVE, 1/2" SQUARE		4
8	1605001	STANDOFF, HEX M/F, 3/16, ZINC*		4
9	2001430	SCREW – PHP, M3 X 6, W/EXT WASHER		8
10	2003907	FAB – CONTROLLER CHASSIS		1
11	2003908	FAB – BACK PLATE CONTROLLER		1
12	2003909	FAB – CONTROLLER COVER		1
13	2003912	PCB ASSY – HOST INTERFACE BOARD		1
N/S	2003917	CABLE ASSY – POWER TO MAIN PCB		1
N/S	2003918	CABLE ASSY – GROUND, FROM SWITCH		1
N/S	2003919	CABLE – PH DATA, RIBBON, 3.5" LONG		2
14	2003920	CABLE ASSY – POWER TO INTERFACE BOARD		1

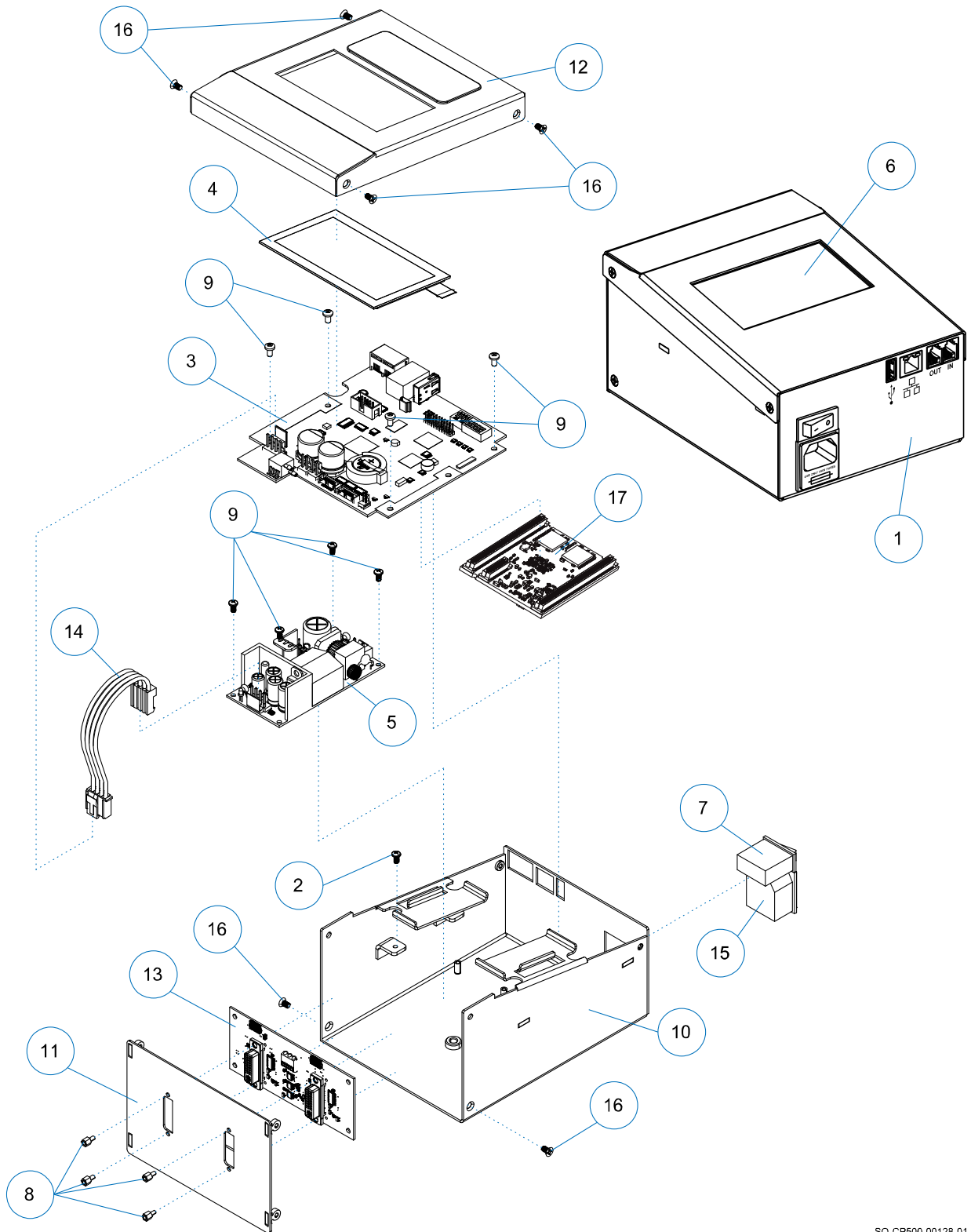| Item Number	Part Number	Description	Model	Qty
N/S	2003922	CABLE ASSY – SWITCH TO POWER SUPPLY		1
15	2003923	POWER SOCKET-AC, SNAP-IN, FUSED		1
16	2006225	SCREW – FHP, M3 X 5, SS		6
17	2004000	TQ MODULE	Turbo HiSpeed Turbo	1
N/S	2004031	FERRITE CORE 192 OHM SOLID 15X15X18MM*	Standard HiSpeed	1
N/S	2004032	DOUBLE COATED TISSUE TAPE*	Standard HiSpeed	2
N/S	2004033	EVA FOAM (HARD) SPACER*	Standard HiSpeed	1

* The CoPilot 500 Controller has been replaced by the CoPilot 500 Turbo Controller.

** The CoPilot 500 HiSpeed Controller has been replaced by the CoPilot 500 HiSpeed Turbo Controller.

System Updates

Occasionally software and firmware updates will become available from Squid Ink Manufacturing. Software and Printer System Firmware can be updated from a desktop computer using Orion™. Periodically check to see if updates are available at https://www.squidink.com/products/coding-marking-software/orion-software/.

> **IMPORTANT:** All updates are downloaded using the Orion™ Message Creation Software Package. For detailed instructions on receiving software and firmware updates for the CoPilot 500 printing system, refer to the *Orion™ User Guide*.

Applying Updates from USB

Update Software and Firmware

To install software and firmware updates to the printer, install the USB Drive containing the updates into the USB Port and select the **Update Firmware/Software** button in the **USB Load Screen**.

> **IMPORTANT:** USB format must be FAT32 or NTFS.

While the system is updating, a progress screen will display.
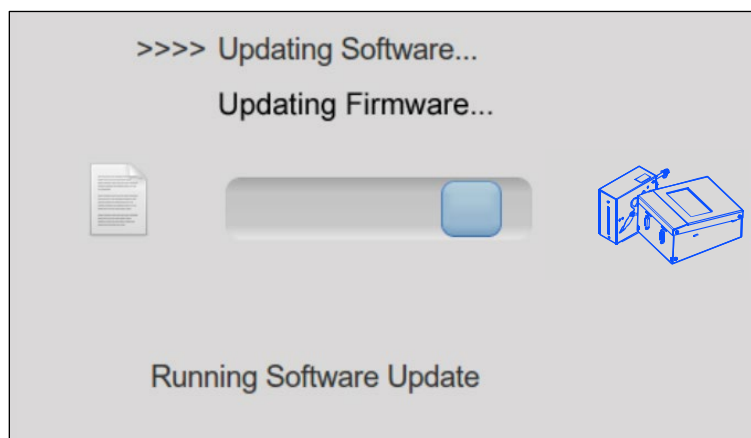
When the update is complete, an "Update Complete" screen will display with a green check next to the update indicating the update has been successful.
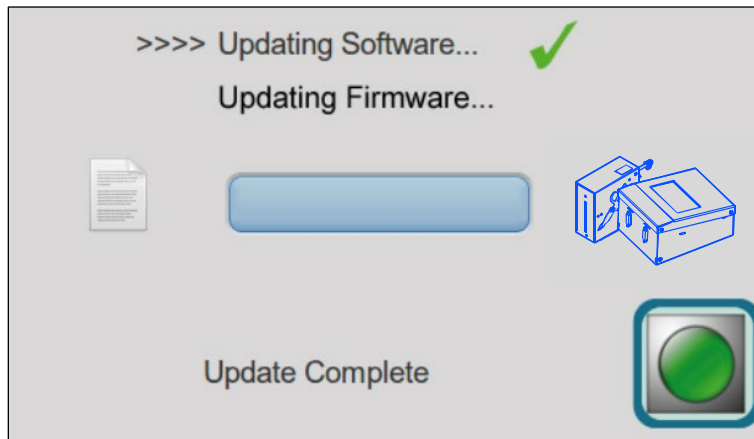
If there is a problem with the update the "ERROR Unable to complete update" screen will display with a red X mark next to the problem update.
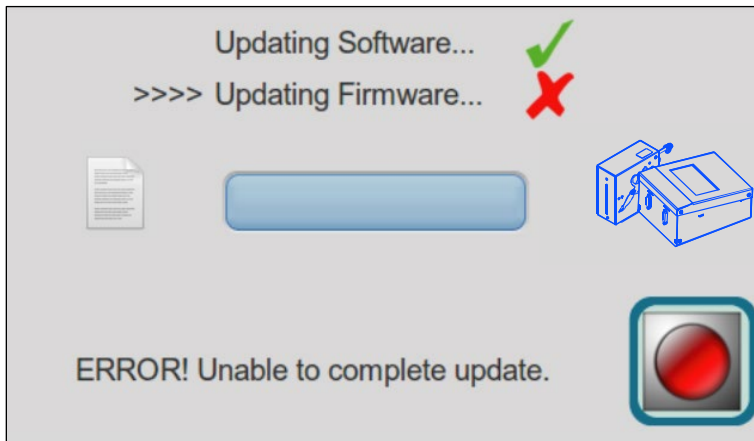
In the unlikely event that there is a problem, remove the USB device containing the update, power the printer off and on, and then retry installing the update. If the problem persists, call Squid Ink Manufacturing Technical Support.

Product Warranty

Warranty Statement

Squid Ink Manufacturing, Inc. warrants that all of the piezo printing systems it ships will be in good working order and free from defects in material and workmanship and will conform to the published specifications for that product.

Warranty Period

For hardware and software products including printheads, the warranty period is 12 months from the date of shipment from Squid Ink.

Printheads

Use of inks, flush fluids, and cleaning fluids that are not obtained from Squid Ink, or which do not meet Squid Ink's manufacturing specifications *and* have written approval of Squid Ink void the warranty on printheads. Use of a printhead wipe material not approved by Squid Ink voids the warranty on printheads. Printheads are specifically <u>not</u> warranted against clogged jets, crooked jets, or scratched orifice plates.

Piezo print engines sold separately as replacement engines and installed by Squid Ink are warranted for 90 days from the date of shipment from Squid Ink. Replacement print engines sold separately and installed by the customer are not warranted.

Repairs

All repairs are rigorously tested for optimum operation and print performance and warranted to be, under normal and proper use, free from defects in material and workmanship for a period of 90 days from the date of service.

Print Quality

Print quality achieved in a given application is dependent on the installation, the material handling, and the maintenance provided. Squid Ink makes no warranty that the print quality achieved in an application will be the same as that achieved during a printer demonstration or on a test piece in our print laboratory.

Shipping Policy

Customer pays all incoming shipping charges. If the item is defective and under warranty, Squid Ink will pay all return shipping charges via the least costly method. If expedited shipping is desired, the customer must furnish their shipping account number and shipping fees will be charged to that account.

Exclusions

Damage due to tampering, abuse, improper adjustment, electrical interference, hot-plugging printheads, or the use of non-approved components will void any and all warranties by Squid Ink and its distributors. Use of inks, flush fluids, and cleaning fluids that are not

obtained from Squid Ink, or which do not meet Squid Ink's manufacturing specifications *and* have written approval of Squid Ink void the warranty on printheads. Use of a printhead wipe material not approved by Squid Ink voids the warranty on printheads. Printheads are specifically <u>not</u> warranted against clogged jets, crooked jets, or scratched orifice plates.

Warranty Procedures

If you believe that a product may be defective and may be covered by warranty, please call Squid Ink Technical Service at 1-800-877-5658. If defective, you will receive a Return Material Authorization number and may return the defective item to Squid Ink. Squid Ink will analyze the product and, if indeed found to be defective, we will, at our option, replace or repair the item. If the item is found not to be eligible for warranty, you will be notified and may decide on disposition. Defective products will be replaced or repaired as promptly as possible.

Warranty within 60 days of invoice

For warranty questions that take place within 60 days of the original invoice, Squid Ink will allow cross-shipment of a replacement component to an end-user customer or Squid Ink distributor. The customer will be invoiced for the replacement component. Upon receipt of the returned component, Squid Ink will evaluate it and issue credit where necessary.

For components that have been misused or externally damaged, Squid Ink will not issue credit, and will contact the customer to determine whether or not they want the component repaired and/or returned.

Warranty 60 days to 1 year from invoice (6 months for Printheads)

For warranty questions that take place more than 60 days from the original invoice, Squid Ink requires the end-user or Squid Ink distributor to return the component to Squid Ink for repair. Upon receipt of the returned component, Squid Ink will evaluate it and repair as necessary.

Components that fall within our warranty policy will be repaired normally within 5 business days of receipt and returned to the customer via standard ground shipping at Squid Ink's expense. If expedited shipping is required, the customer must furnish their shipping account number and shipping fees will be charged to that account.

For components that have been misused or externally damaged, Squid Ink will contact the customer to determine whether or not they want the component repaired and/or returned.

Warranty Eligibility

The warranty provided by Squid Ink Manufacturing, Inc. is only to the original buyer.

Limited Warranty

THE ABOVE WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF

MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.

Disclaimer of Damages

REGARDLESS OF WHETHER ANY REMEDY SET FORTH HEREIN FAILS OF ITS ESSENTIAL PURPOSE, IN NO EVENT WILL SQUID INK MANUFACTURING, INC. BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, INDIRECT OR SIMILAR DAMAGES, INCLUDING LOST PROFIT OR LOST OPPORTUNITIES OF ANY TYPE ARISING OUT OF THE USE OR INABILITY TO USE THESE PRODUCTS EVEN IF SQUID INK MANUFACTURING, INC. HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Technical Support

For help installing, operating, and maintaining the CoPilot 500 printing system, contact your authorized Squid Ink reseller or Squid Ink Technical Support.

Toll-Free Phone: 800-253-2627

Phone: (55) 5426-4137

Email: info@alfamaq.mx

Web: www.alfamaq.mx

Thank you for your purchase of Squid Ink products. We are pleased to be a part of your marking and coding needs.