USER GUIDE

PROJET® X60 SERIES

ProJet 160, 260C, 260Plus, 360, 460Plus

User Guide

Rev A

Note: Please refer back to http://infocenter.3dsystems.com/projetcjpx60/ (http://infocenter.3dsystems.com/projetcjpx60/) for the most up-to-date User Guide

NOTICES

Notices

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Symbols

The following symbols are used on the ProJet x60 system and in this manual.

 General Caution: User should use care to avoid possible damage to equipment.

 Hot Surface: User should use care when working near or on the labeled item.

 High Voltage: User should use appropriate electrical safety precautions.

PROJET X60 SERIES OVERVIEW

Welcome to the exciting world of 3D Printing with our newest 3D Printers, the ProJet® x60 Series. This series includes 5 models with different capabilities.

Model	Color	Cleaning	Build Volume
ProJet® 160	Monochrome	Separate Core Recycling Unit	7.3" x 9.3" x 5" (185 x 236 x 132 mm)
ProJet® 260C	64 CMY colors	Separate Core Recycling Unit	7.3" x 9.3" x 5" (185 x 236 x 132 mm)
ProJet® 260Plus	Full CMY color	Separate Core Recycling Unit	7.3" x 9.3" x 5" (185 x 236 x 132 mm)
ProJet® 360	Monochrome	Built-in	8" x 10" x 8" (203 x 254 x 203 mm)
ProJet® 460Plus	Full CMY color	Built-in	8" x 10" x 8" (203 x 254 x 203 mm)

The ProJet® x60 Series incorporates many features that automate and streamline the 3D printing process. The easy-to-use, quiet, office-friendly design, combined with high-performance composite materials, makes the ProJet® x60 Series the most cost-effective 3D printers available today for rapid prototyping.

In addition, the ProJet® x60 Series share the same hardware and controls, with the only differences outlined in the table above. This commonality makes training a simple matter for facilities that have multiple machines.

This manual will instruct you on how to take care of your printer and give you an introduction to 3D Printing. In addition, you can find information about 3D printing and its many applications and techniques on our 3DS Central Web site at 3dscentral.3dsystems.com.

This Web site is tailored to both beginner and advanced customers. We recommend that you register immediately to receive free, unlimited access to this excellent resource.

KEY FEATURES

Key Features

The ProJet® x60 series are our most affordable, convenient automated 3D printers. We've built in the feature customers most asked for:

- 300 x 450 DPI (max) resolution yielding excellent surface finish and resolution
- Automated Core Recycling
- Quick-loading binder cartridge
- Removable Build Bed for easier cleaning of delicate parts (ProJet® 160, 260C and 260Plus only).
- Office Friendly: Office friendly and environmentally safe materials that are safe to touch
- Common controls and hardware across models for easier cross-training

SPECIFICATIONS

Specifications apply to all ProJet x60 models, unless noted otherwise.

Printer Dimensions and Type	ProJet® 160/260C/260Plus: • With top cover closed: 29” wide x 31” deep x 55” high. (74 cm wide x 79 cm deep x 140 cm high) • With top cover open: 29” wide x 31” deep x 72” high. (74 cm wide x 79 cm deep x 183 cm high) • Full color capability; color shell thickness = .025” (ProJet® 260C and 260Plus only) ProJet® 360/460Plus: • With top cover closed: 48” wide x 31” deep x 55” high. (122cm wide x 79cm deep x 140cm high) • With top cover open: 48” wide x 31” deep x 72.3” high. (122cm wide x 79cm deep x 183cm high) • Integrated post-processing unit. • Full color capability; color shell thickness = .025” (ProJet® 460Plus only) All models: • Floor standing model on four casters. The front two casters are lockable. • Integrated vacuum system.
Printer Weight (Unloaded)	ProJet® 160/260C/260Plus: • 365 lbs. (166 kg) ProJet® 360/460Plus: • 425 lbs., 193 kg.
Network Connectivity Operating Environment	TCP/IP 100/10 Base T

Ambient Temperatures	• Maximum Temp. Range: 50-85° F (10 - 29.4° C) • Recommended Temp. Range: 55-80° F (12.7 - 26.6° C)
Ambient Relative Humidity	• Maximum RH Range: 15 - 70%, non-condensing • Recommended RH Range: 20 - 60%, non-condensing (May experience sub-optimal printing performance at environmental extremes.)
Build Volume (max)	ProJet® 160/260C/260Plus: • 7.3" x 9.3" x 5" (185 x 236 x 132 mm) • 340 cubic inches build capacity ProJet® 360/460Plus: • 8” x 10” x 8” (203 mm x 254 mm x 203 mm) • 640 cubic inches build capacity
Build Speed (max)	2-4 layers per minute
Layer Thickness	ProJet® 160/260C/260Plus: • .004” (.102 mm) ProJet® 360/460Plus: • .0035” - .004” (.089 - .102 mm)
Resolution (max)	300 x 450 dpi print resolution ProJet® 160/260C/260Plus: • Minimum feature size .016” (.41 mm)
Color Reproduction	ProJet® 260C: • Will reproduce 64 unique colors ProJect® 260Plus/460Plus: • Full CMY color

Noise Levels	During Printing = 57dB Emptying Overflow = 66dB Vacuuming - Cover Open = 86dB ProJet® 360/460Plus: Fine PXL Core Removal = 80dB
Regulatory Compliance	Meets CE and TUV certification standards
Power Requirements	ProJet® 160/260C/260Plus: • 100 - 120V~, 6.0 A, 50 - 60 Hz • 230V~, 2.75 A, 50 - 60 Hz • Fuse: 6.3A 260V Time Delay ProJet® 360/460Plus: • 100 - 120V~, 7 A, 50 - 60 Hz • 230V~, 4 A, 50 - 60 Hz • Fuse: 6.3A 250V Time Delay
Materials	VisiJet® PXL™ Core™ with VisiJet® PXL™ Binder
Printhead	All models: • HP11 clear ProJet® 260C/260Plus/460Plus: • HP57 tricolor
Liquid Waste System	Disposable absorbent waste tray - no liquid to spill

COMPUTER/SYSTEM REQUIREMENTS

Color Printers (ProJet® 260C, 260Plus & 460Plus)

Recommended System:

Operating System: The recommended computer operating systems include: Windows® Vista, and Windows 7.

Processor: Intel® Core2 or Core i5 series processor or better, dual (or more) cores; 2.5 Ghz or better

Video: Open GL accelerated graphics card, 256MB or more of dedicated (not shared) graphics memory (see note below)

Memory: 4 GB


Note: If using a 64-bit version of Windows, 6-8 GB is recommended

Hard Drive: 1 GB of free space (plus space for model files)

Ethernet 10/100/1000 Base T


Note: Intel built in graphics (e.g., Intel GMA and GMA HD) previous to the current version (HD Graphics 2000 and HD Graphics 3000) are not recommended due to performance and driver compatibility issues.

SOFTWARE

3DPrint™ 1.0 or later can be found here at: infocenter.3dsystems.com/projetcjpx60/software-downloads (http://infocenter.3dsystems.com/projetcjpx60/software-downloads)

HOW THE 3D PRINTING SYSTEM WORKS

The ProJet® ColorJet™ Printing System is based on the Massachusetts Institute of Technology's patented 3DP® Technology (3D Printing). This 3D Printing process involves:

Importing a solid 3D modeling file into the 3DPrint Software

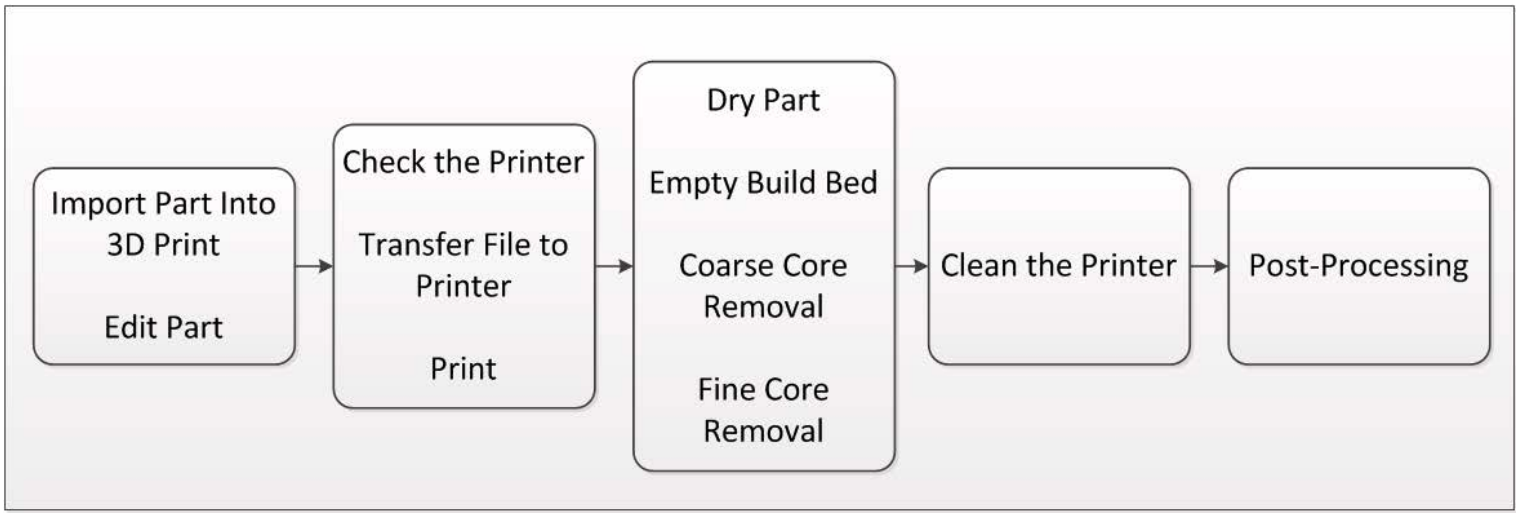
Setting up your files to print in the 3DPrint Software

Printing the part

Drying the part, emptying the build bed, and removal of excess PXL Core material

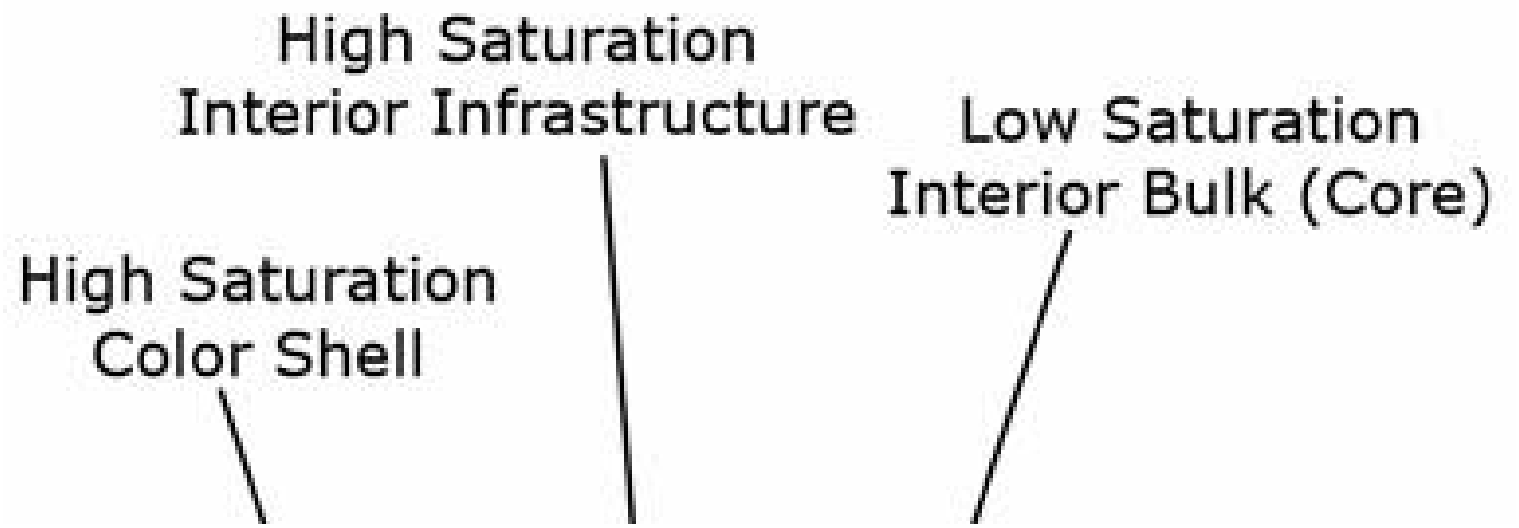
Cleaning and servicing the printer

(Optional) Applying post-processing materials to the printed part



To start, the 3DPrint Software takes a three-dimensional design file, (3DPrint is compatible with most 3D modeling software files) and converts it into cross-sections, or layers, that are between 0.0035" - 0.004" (0.089 - 0.102 mm) thick. Before printing, 3DPrint evaluates the part geometry and checks if there are enough materials in the printer to print the number of layers required to build the part. If there are, the printer then prints each layer, one after the other, from the bottom of the part to the top. If not, 3DPrint will prompt you to add Core, to add binder, or to change a print head before it will start the print job.

During printing, binder is first applied with a higher saturation to the edges of the part, creating a strong “shell” for the part exterior. In a color printer, this shell will contain the colors. Next, an infrastructure that works like strong scaffolding is created for the part walls, which are also built with a higher saturation of binder for added strength. The remaining interior areas are printed with a lower binder saturation, which gives the part its stability. See the illustration below.



When the part is finished printing, the user empties the Build Bed of most of the excess Core material around and on the part by vacuuming with the integrated vacuum system. This “coarse cleaning” returns the Core to the Feeder for reuse. After coarse cleaning, the part is ready to be removed from the printer and undergo “fine cleaning”. Fine cleaning consists of blowing off the remaining Core material using compressed air and brushing the part to loosen any Core that adheres. Fine cleaning is easily accomplished in the separate Core Recycling Unit, or in a printer equipped with a Post Processing Unit.

You can evaluate the part as it is, or you can choose to post-process the part with infiltration products to give it additional strength and durability. With the finished part in your hands, you can start improving or modifying your design within the same day, and usually within hours.

IMPORTANT TERMS

Alignment - The proper positioning or state of adjustment of components in relation to each other

Binder - VisiJet PXL liquid binder is dispensed through the HP11 print head and applied to the VisiJet PXL Core material. The binder saturation value will vary depending on the part geometry. The 3DPrint software uses a default core and shell saturation value that is suitable for most part geometries.

Build Bed - The area in front of the Feeder where the part is printed. The platform of the Build Bed can be raised or lowered using the appropriate command on the printer LCD menu. Before each build, the printer fills the Build Bed with VisiJet PXL Core and then spreads a final layer of Core to ensure the surface of the Build Bed is completely smooth.

Build Chamber - The interior of the printer that houses the Build Bed, Service Station, the Debris Separator, the Carriage, the Fast Axis assembly, the Vacuum Hose, and the Feeder.

Carriage - Assembly that houses the Print Head and its Pogo Pin Connectors.

Consumables - VisiJet PXL Core, VisiJet PXL binder, and the infiltrants that are used (wax, salt water, ColorBond, StrengthMax). All consumables have been developed for the fastest printing speeds and lowest materials costs.

Core - VisiJet PXL Core is the white powder material used for building parts. Core is also defined as the center of a printed part.

Debris Separator - Located in the Build Chamber. Its function is to prevent chunks or particles from going back into the printer Feeder during any vacuuming operation.

Deck - Area surrounding the Build Bed.

Feeder - Printer component that stores PXL Core. Core that is vacuumed up after a build, or Core that is manually emptied from the Build Bed, is recycled and returned to the Feeder for reuse.

Fast Axis - Printer component that houses the Carriage and the Fast Axis rails on which the Carriage moves. The Fast Axis moves on the Slow Axis rails which are housed beneath the Build Chamber Deck.

Infiltration - Process of applying various post-processing products (resins, wax, epoxy, etc.) to fully cleaned parts to give them specific properties such as strength and durability.

LCD - Liquid Crystal Display.

Platform - The metal plate in the Build Bed. The platform (or Build Platform) can be raised or lowered by selecting the appropriate command on the printer LCD menu. The Build Platform is also removable for ease of moving delicate parts to the Core Recycling Unit (ProJet 160/260C only).

Pogo Pins - Gold contact pins for the print head contacts. Clean the Pogo Pins with an alcohol swab whenever a print head is removed, cleaned, or replaced.

Print Head - There is one HP11 Print Head for the ProJet 160 and 360. It prints the pattern of the part by squirting tiny drops of PXL Binder onto the PXL Core material. When a new HP11 print head is installed, the printer runs an automatic purge cycle to clean the print head of its ink and to prepare it for dispensing binder. Note: Only HP11 model C4810A Black cartridges can be used.

The ProJet 260C and 460Plus also use an HP 57 color print head. It applies colored ink to the outside of the part.

Print Head Contacts - The contact points on a print head cartridge that match up with the Pogo Pins.

Purge - Process of removing ink from the HP11 print head to prepare it for dispensing PXL Binder.

Service Station - Cleans the print head jets to remove residue that accumulates during printing. It is extremely important

to clean the Service Station after every build to remove residue buildup. If the Service Station is not clean, your print head will not get properly cleaned and this will result in shortened print head life.

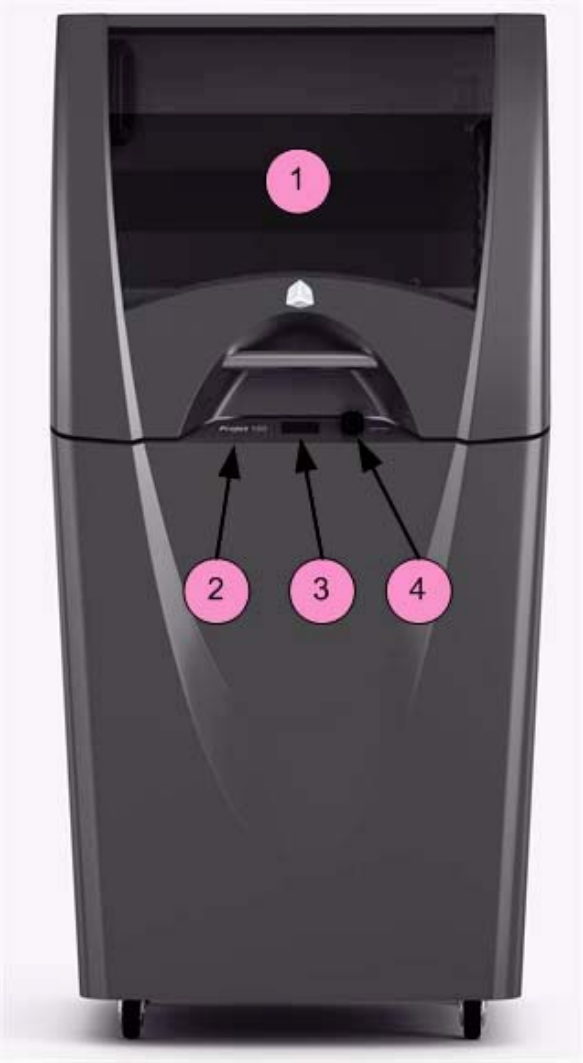
Slow Axis - Printer component that moves the Fast Axis front to back and is housed beneath the Build Chamber Deck.

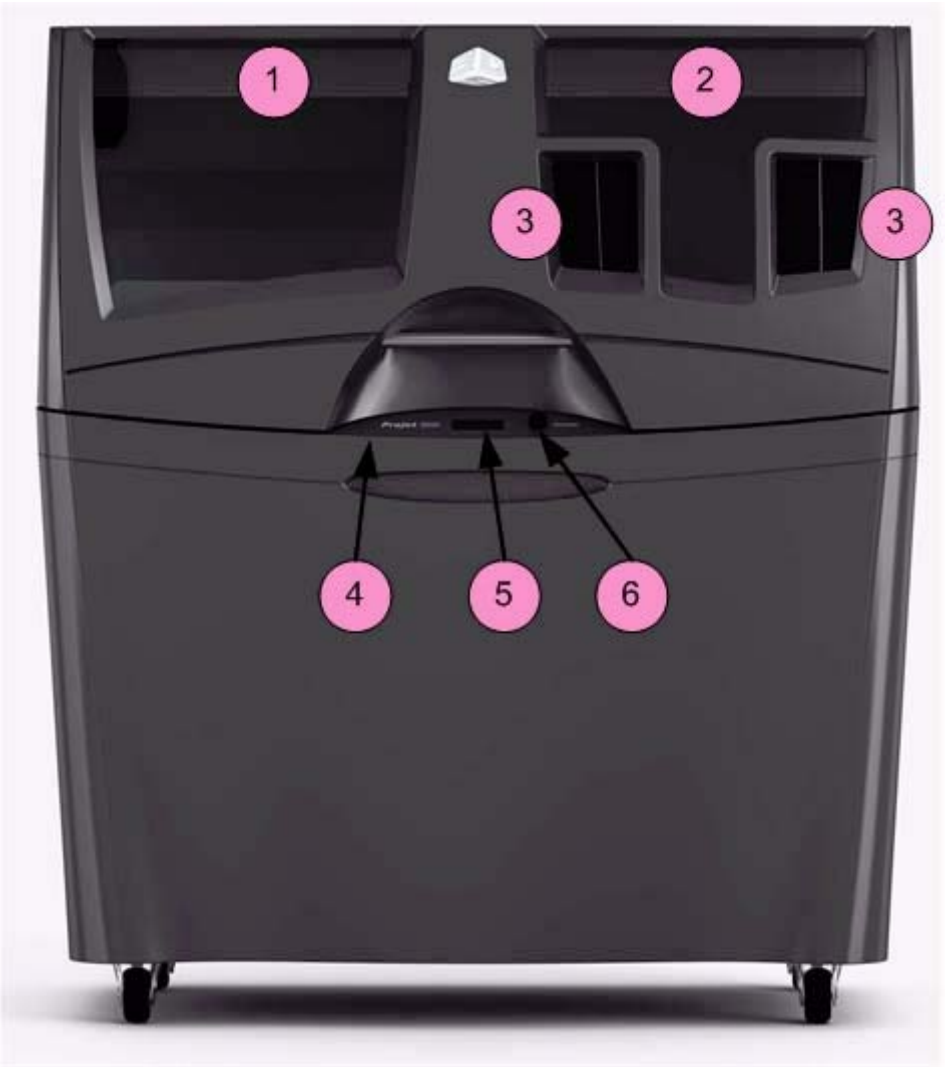
Waste Tray - Absorbs the binder waste and will require changing only when you are prompted to in 3DPrint. Located at the bottom rear of the printer after removing the rear panel.

PROJET® X60 COMPONENTS

The main components of the ProJet® x60 systems are highlighted below. Unless specified other wise, all components are the same on all three printers.

SYSTEM EXTERIOR



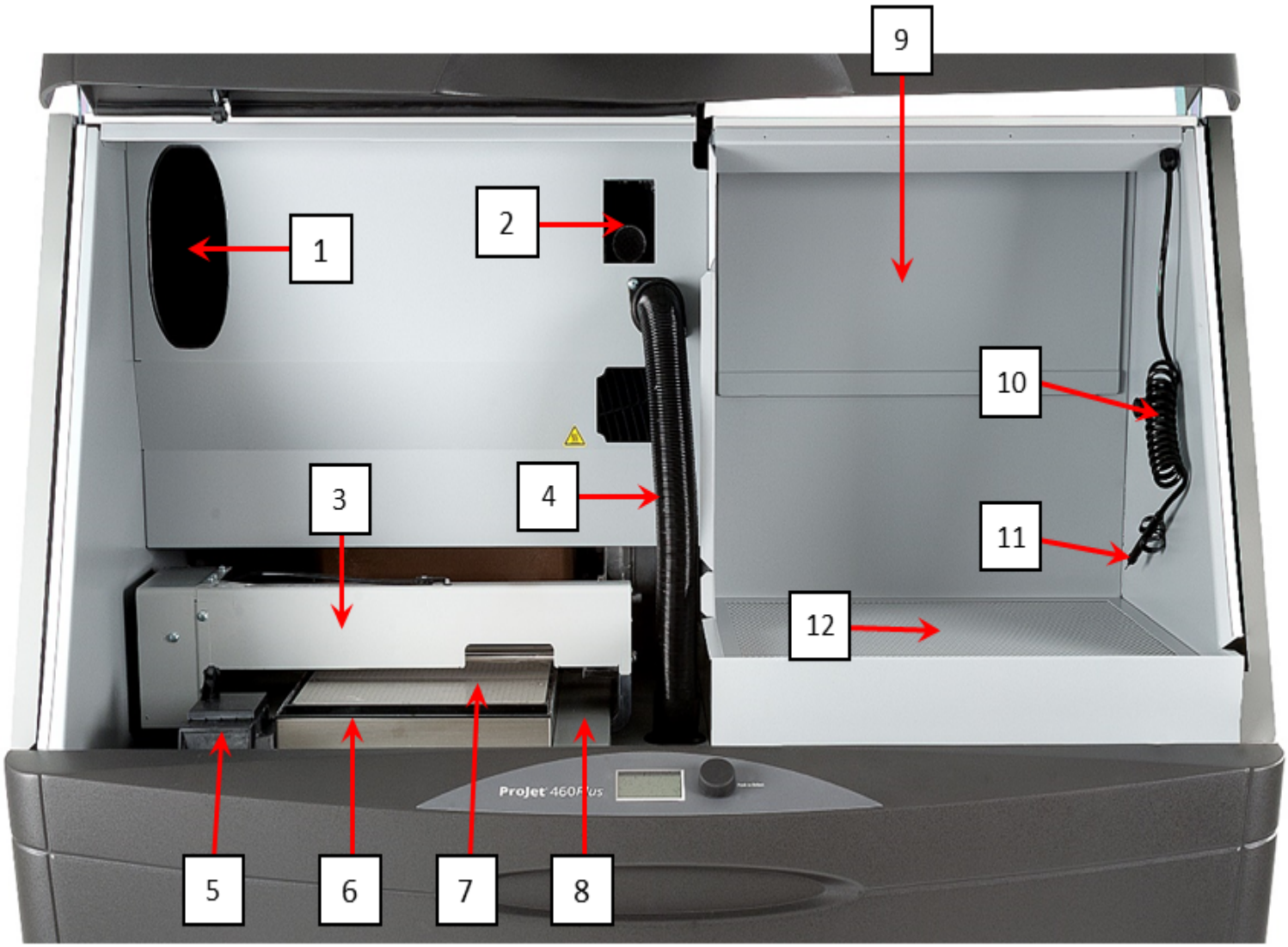


ProJet® 160/260C/260Plus

ProJet® 360/460Plus

Number	ProJet® 160/260C /260Plus	ProJet® 360/460Plus
1	Build Chamber	Build Chamber
2	Control Panel	Post-Processing Unit
3	LCD Display	Arm Holes
4	Control Knob	Control Panel
5		LCD Display
6		Control Knob

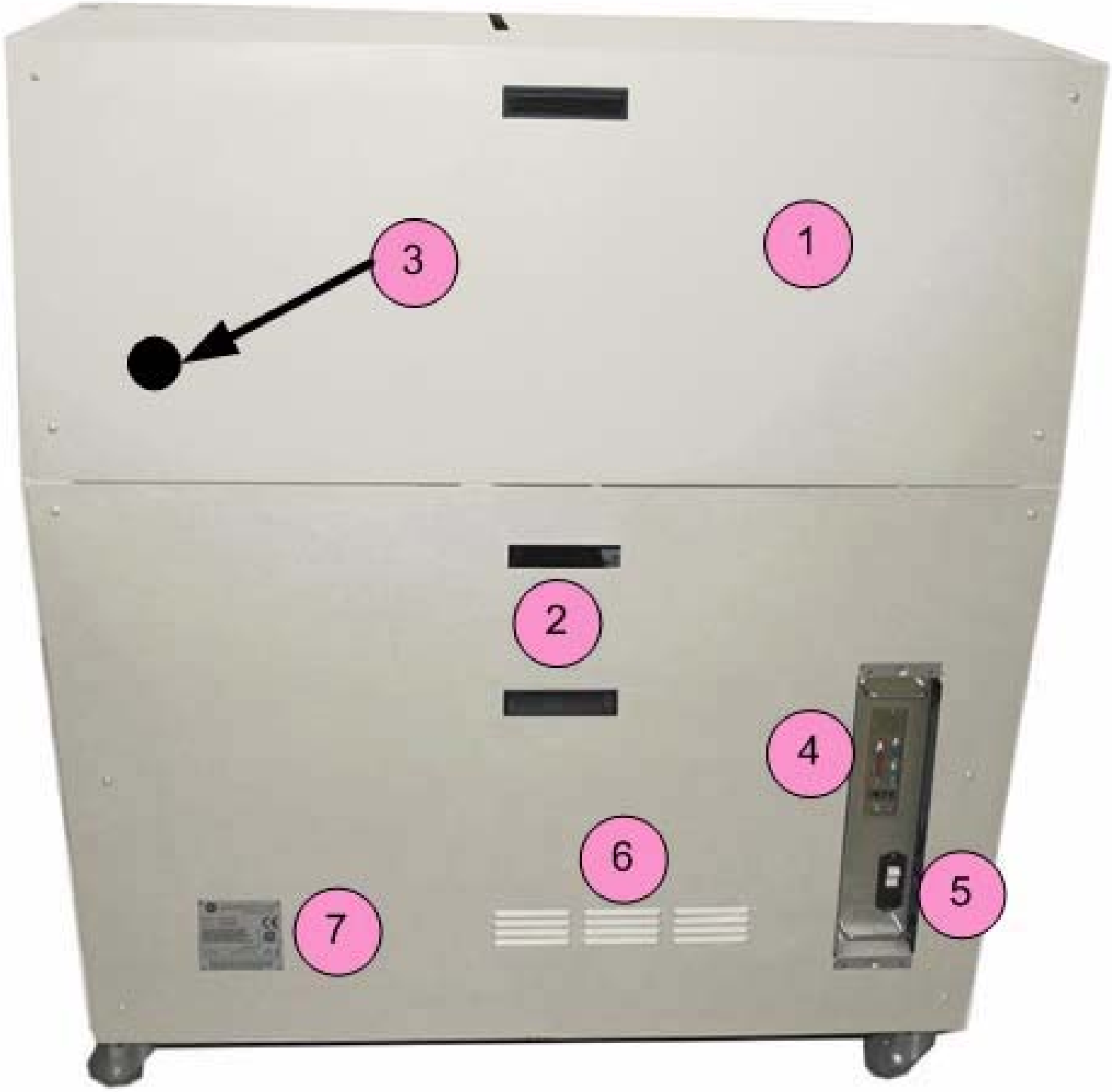
PRINTER INTERIOR



Build Chambers (All Models)	
1	Binder Cartridge (shown removed)
2	Debris Separator (shown removed)
3	Fast Axis Assembly
4	Vacuum Hose
5	Service Station
6	Front Overflow

7	Build Bed
8	Deck
Post-Processing Unit (360 and 460Plus only)	
9	Vacuum Accessory Storage Compartment
10	Air Hose
11	Air Wand
12	Perforated Floor

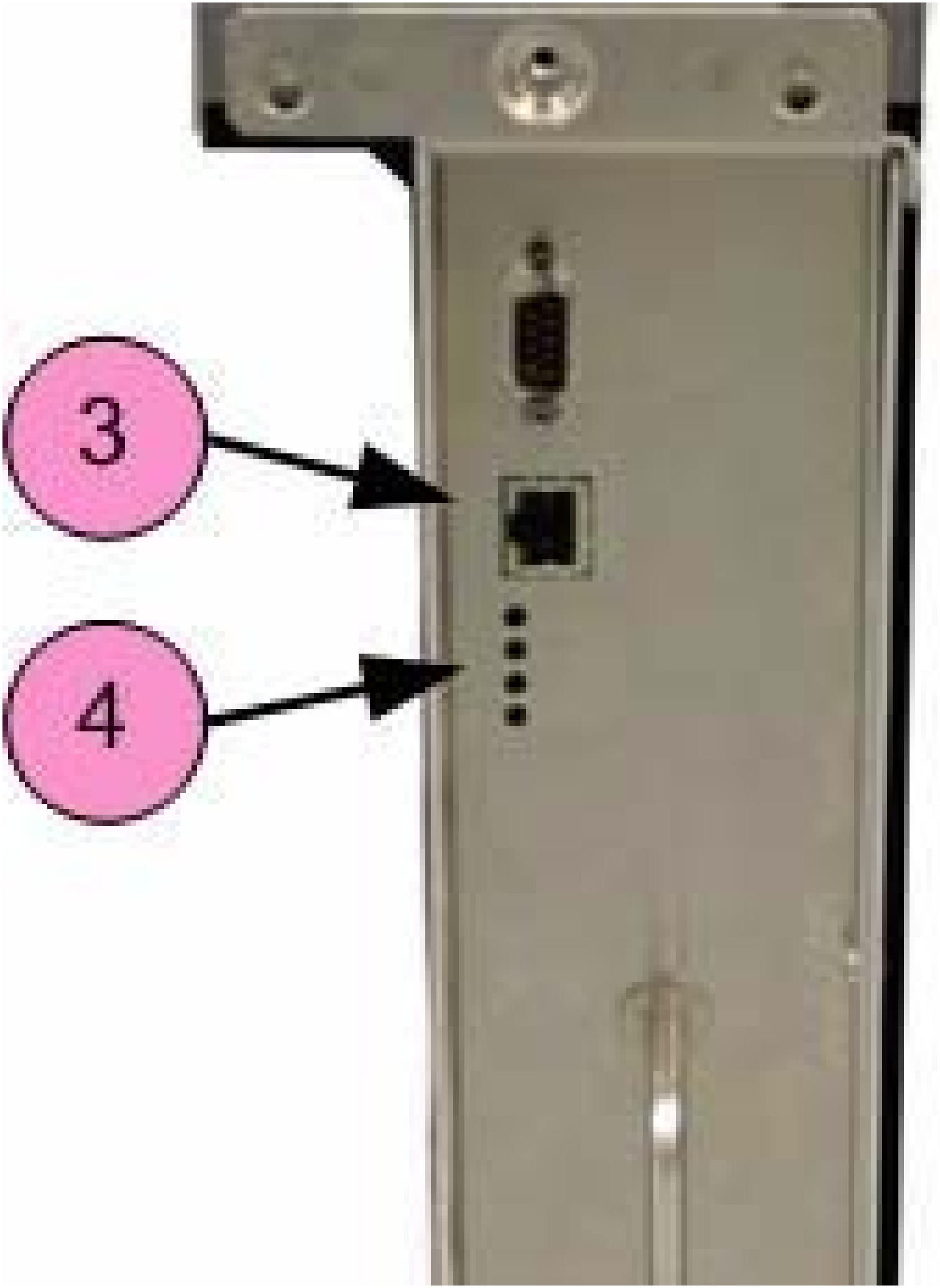
PROJET® X60 SERIES REAR VIEW



Number	Component
1	Rear Panel
2	Hand hold
3	Location of Vacuum Port - External Core Recycling Unit (ProJet® 160/260C/260Plus)

4	Electronics Box (E-Box)
5	Power Connection and Power Switch
6	Air Vents
7	Nameplate (Serial Number)

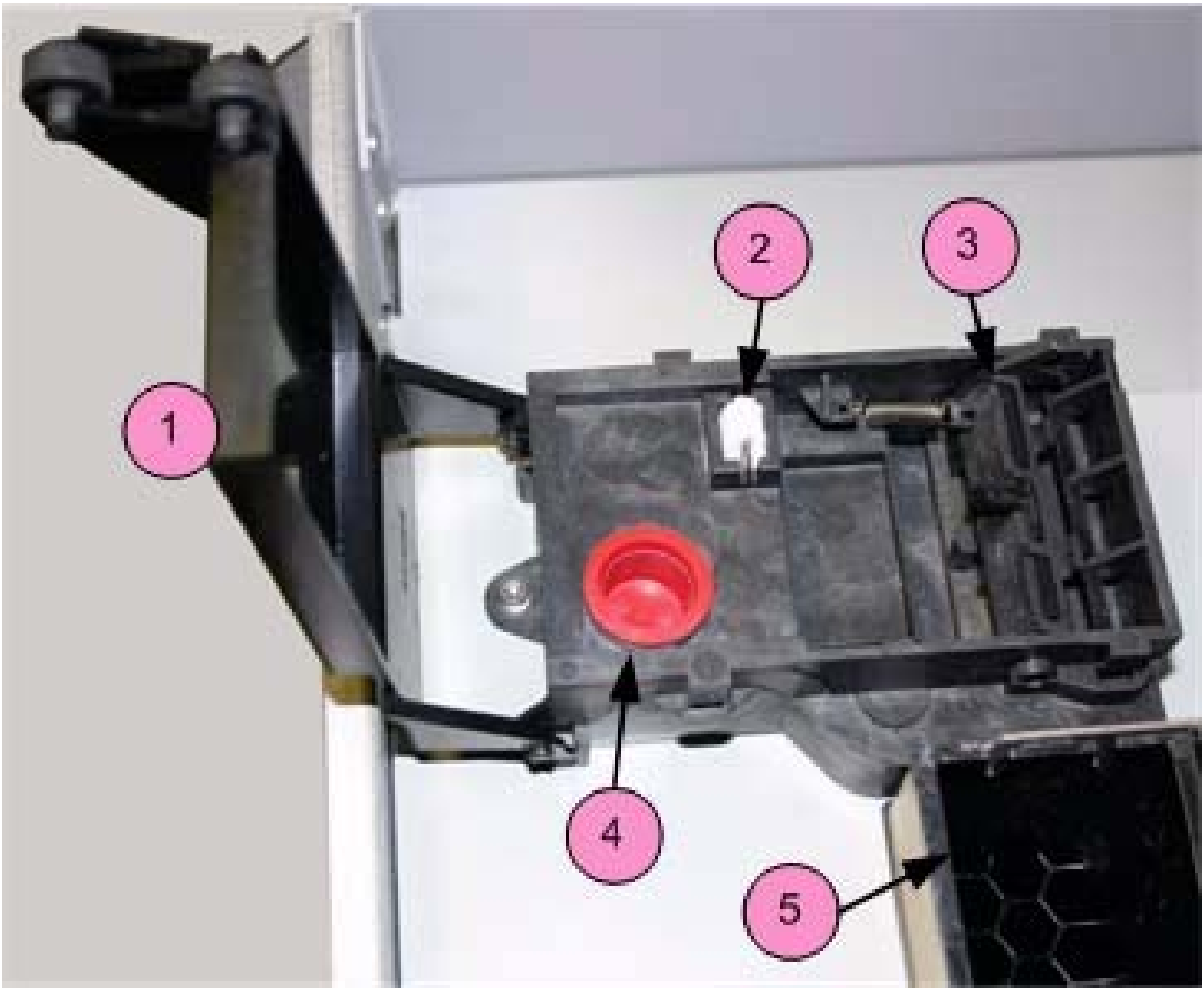
PROJET® X60 SERIES REAR VIEW - CONNECTIONS



Number	Component

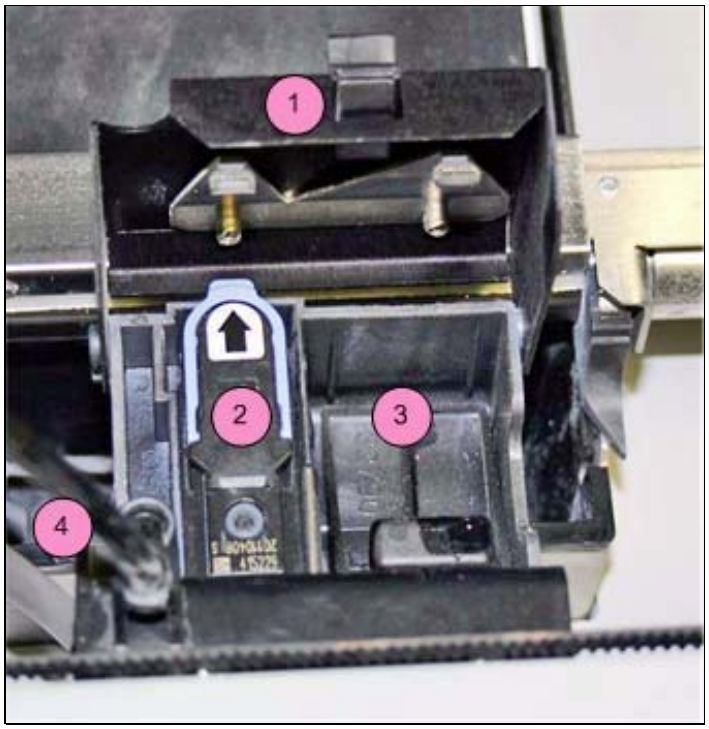
1	Power Switch
2	Power Cord Connection
3	Network Cable Connection (Ethernet/RJ-45)
4	Diagnostic LEDs

SERVICE STATION

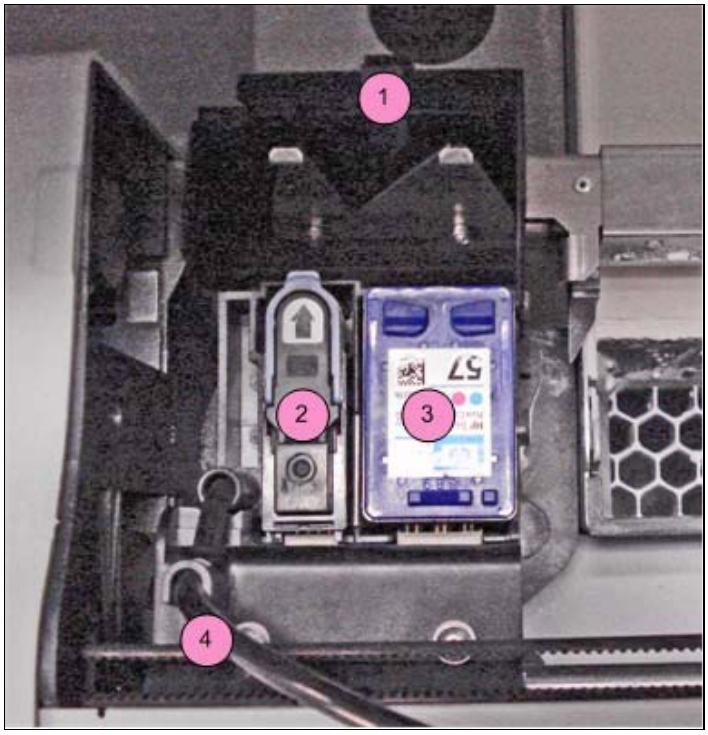


Number	Component
1	Cover
2	Wick
3	Squeegees
4	Fill Cap (Cleaning Solution)
5	Front Overflow

CARRIAGE AND PRINT HEAD



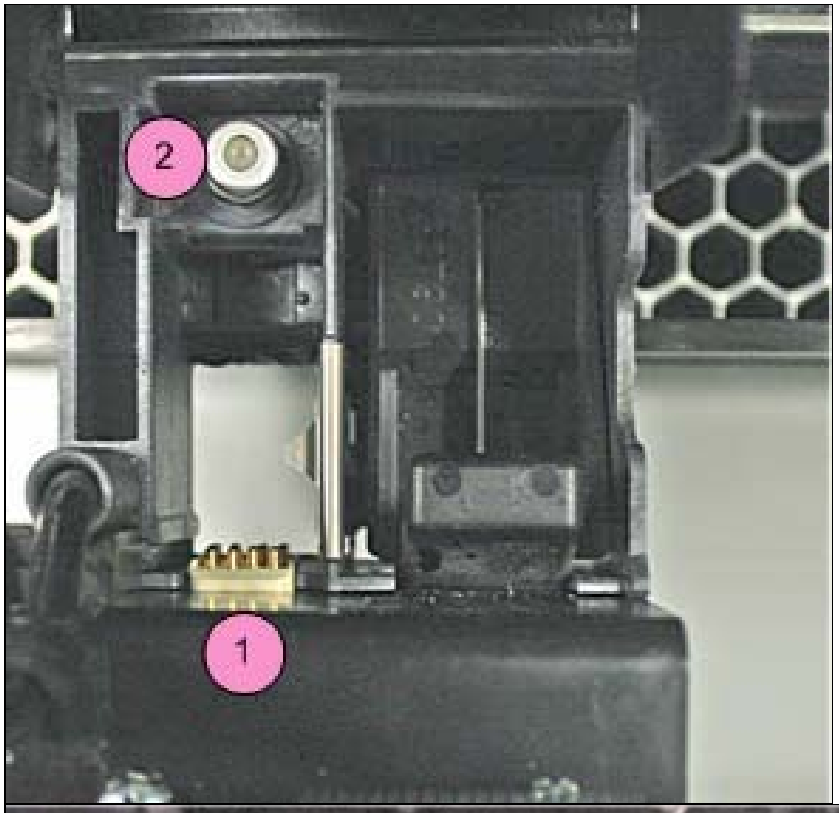
ProJet® 160/360

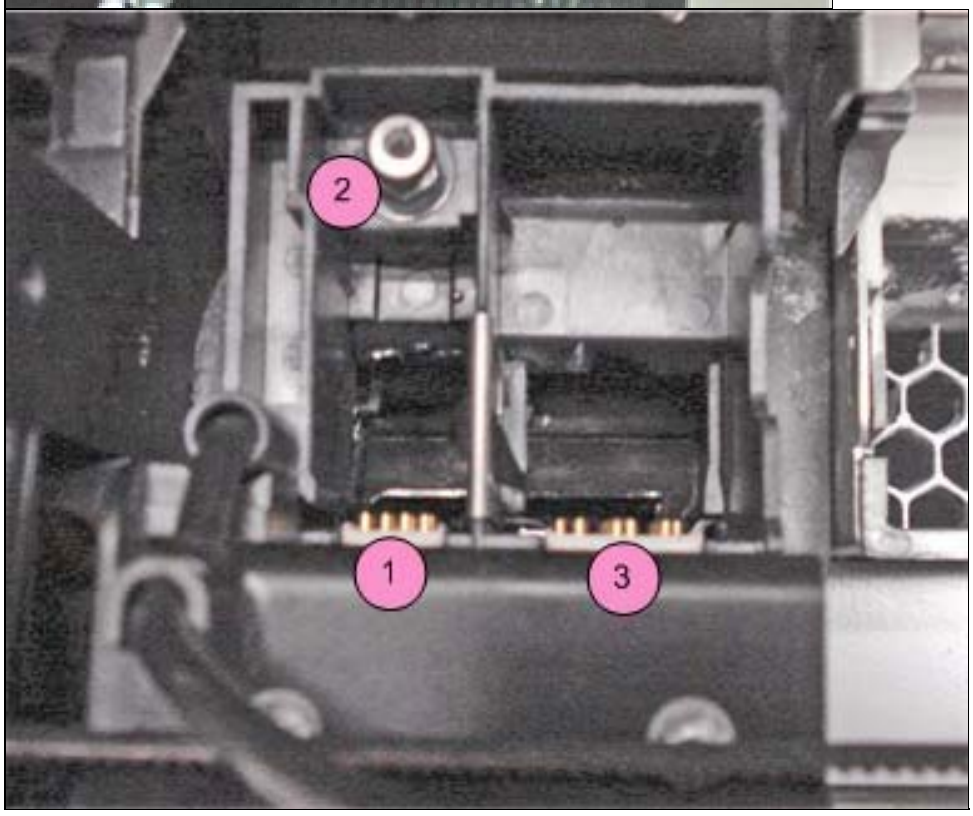


ProJet® 260C/260Plus/460Plus

Number	Component
1	Cover
2	Print Head (HP11)
3	Carriage Plug (ProJet® 360 only) Color Print Head (HP 57) (ProJet® 260C/260Plus/460Plus only)
4	Printhead Tubing

POGO PINS AND SEPTUM





ProJet® 160/360 ProJet® 260C/260Plus /460Plus

Number	Component

1	Pogo Pins - Binder Printhead (HP 11)
2	Septum - Binder Printhead (HP11)
3	Pogo Pins - Color Printhead (HP 57) (ProJet® 260C/260Plus/460Plus only)

CONTROL KNOB OPERATIONS

Push the Control Knob once to:

- Bring up the LCD menu.
- Select a menu item.
- Open a submenu.
- Start/Cancel/Stop a menu function.

Turn the Control Knob left or right to:

- Highlight a menu item.

LCD Menu Overview - ProJet® CJP 160

Main Menu	Printhead Submenu	Build Chamber Submenu
VACCUUM	MAIN MENU >	MAIN MENU >
EXTERNAL CLEANING	CHANGE PRINTHEAD	RAISE PLATFORM
PREP BUILD CHAMBER	FILL BED & PRINT BLOCK	LOWER PLATFORM
ACCESS BUILD PLATE	PRINT BLOCK ONLY	SPREAD LAYER
STATUS REPORT	PURGE PRINTHEAD	FILL BED
PRINTHEAD >		CONTROL ROLLER
BUILD CHAMBER >		
GO ONLINE		

LCD Menu Overview - ProJet® CJP 260C & 260Plus

Main Menu	Printhead Submenu	Build Chamber Submenu
VACCUUM	MAIN MENU >	MAIN MENU >
EXTERNAL CLEANING	CHANGE PRINTHEAD	RAISE PLATFORM
PREP BUILD CHAMBER	FILL BED & PRINT BLOCK	LOWER PLATFORM
ACCESS BUILD PLATE	PRINT BLOCK ONLY	SPREAD LAYER
STATUS REPORT	PURGE HP11 PRINTHEAD	FILL BED
PRINTHEADS >		CONTROL ROLLER
BUILD CHAMBER >		
GO ONLINE		

LCD Menu Overview - ProJet® CJP 360

Main Menu	Printhead Submenu	Build Chamber Submenu
VACCUUM/CLEANING	MAIN MENU >	MAIN MENU >
PREP BUILD CHAMBER	CHANGE PRINTHEAD	RAISE PLATFORM
STATUS REPORT	FILL BED & PRINT BLOCK	LOWER PLATFORM
ACCESS BUILD PLATE	PRINT BLOCK ONLY	SPREAD LAYER
PRINTHEADS >	PURGE PRINTHEAD	FILL BED
BUILD CHAMBER >		CONTROL ROLLER
GO ONLINE		

LCD Menu Overview - ProJet® CJP 460Plus

Main Menu	Printhead Submenu	Build Chamber Submenu
VACCUUM/CLEANING	MAIN MENU >	MAIN MENU >
PREP BUILD CHAMBER	CHANGE PRINTHEAD	RAISE PLATFORM
STATUS REPORT	FILL BED & PRINT BLOCK	LOWER PLATFORM
PRINTHEADS >	PRINT BLOCK ONLY	SPREAD LAYER
BUILD CHAMBER >	PURGE HP11 PRINTHEAD	FILL BED
GO ONLINE		CONTROL ROLLER

WHERE TO GO FOR MORE INFORMATION

Quick Start Guide - A Quick Reference Guide is included on the 3DPrint Installation media (typically a USB memory stick) that accompanied your printer. It has pictures and simple, step-by-step instructions to guide you through a print job. Additional copies are available on our Web site at infocenter.3dsystems.com/projetcjpx60/quick-start-guide (http://infocenter.3dsystems.com/projetcjpx60/quick-start-guide)

Software User Manual - A User Manual for the 3DPrint Software is supplied on the Installation media (typically a USB memory stick) with the software. Additional copies are available on our Web site at infocenter.3dsystems.com/projetcjpx60/3d-print™-software-user-guide (http://infocenter.3dsystems.com/projetcjpx60/3d-print™-software-user-guide)

Software Downloads - The latest 3DPrint software can be found at infocenter.3dsystems.com/projetcjpx60/software-downloads (http://infocenter.3dsystems.com/projetcjpx60/software-downloads)

Post-Processing - Learn more about the different post-processing products that are available to use with your printer, on the Materials section of our User Web site at infocenter.3dsystems.com/projetcjpx60/post-processing-guide (http://infocenter.3dsystems.com/projetcjpx60/infocenter.3dsystems.com/projetcjpx60/post-processing-guide)

Consumables - To order consumables/materials, contact your local Service Provider or Reseller.

CONTACT 3D SYSTEMS

If you have any questions about your 3D Printer or the 3DPrint Software, please contact your local Reseller/Service Provider. If they are unable to help, contact us directly.

Technical Support

US and Canada: 888-598-1438

UK and EMEA: +44 1442 279883

International: +1 803-326-3930

Email Technical Support

support-us@3dsystems.com (mailto:support-us@3dsystems.com)

SETUP AND PRINT THE BUILD

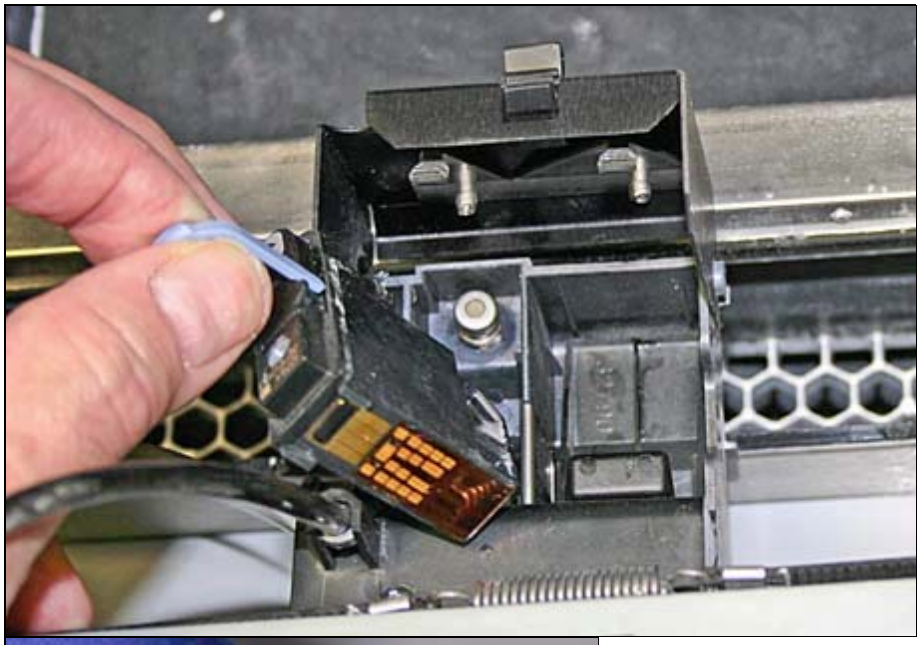
This section will briefly introduce you to using 3DPrint to get your part ready to build. Then it will show you how to get your ProJet® CJP x60 series printer ready and actually print your part. For all the details on using 3DPrint, refer to the 3DPrint User Manual. infocenter.3dsystems.com/projetcjpx60/3d-print™-software-user-guide (http://infocenter.3dsystems.com /projetcjpx60/3d-print™-software-user-guide)

INSTALL/CHANGE THE PRINT HEAD

If the Printer Status dialog indicates a print head needs changing, follow the steps below.

1. Open the printer top cover.
2. If the piston is not already lowered some distance into the build box, lower it now by selecting LOWER PISTON. The piston will lower a short distance. To lower it further, select LOWER PISTON again.
3. On the printer's LCD menu, select PRINT HEAD then CHANGE PRINT HEAD. The Printer moves the Fast Axis out over the Build Bed.
4. Open the carriage cover by releasing the latch.

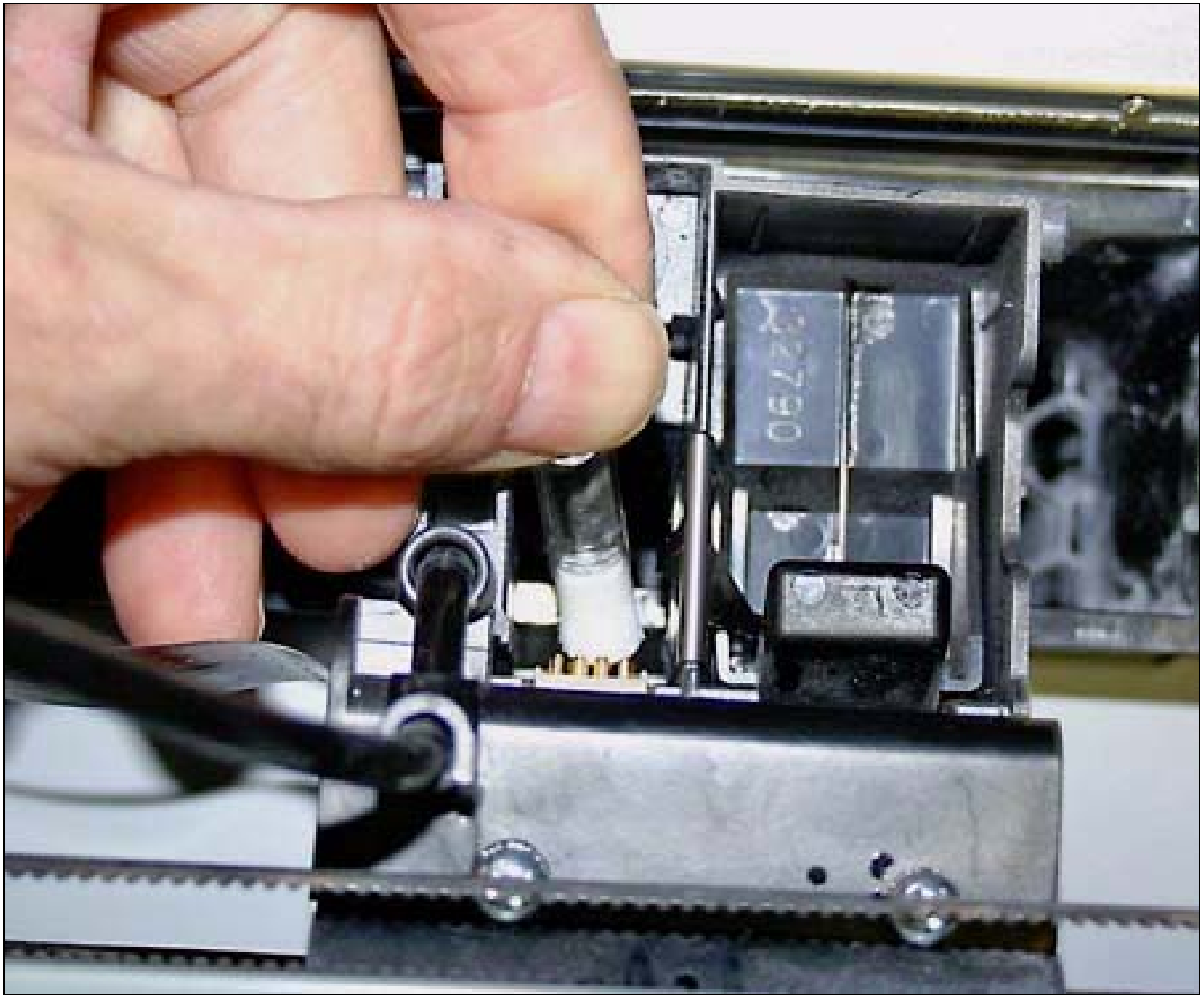
5. Lift print head out of its slot and properly recycle or dispose of the spent cartridge.



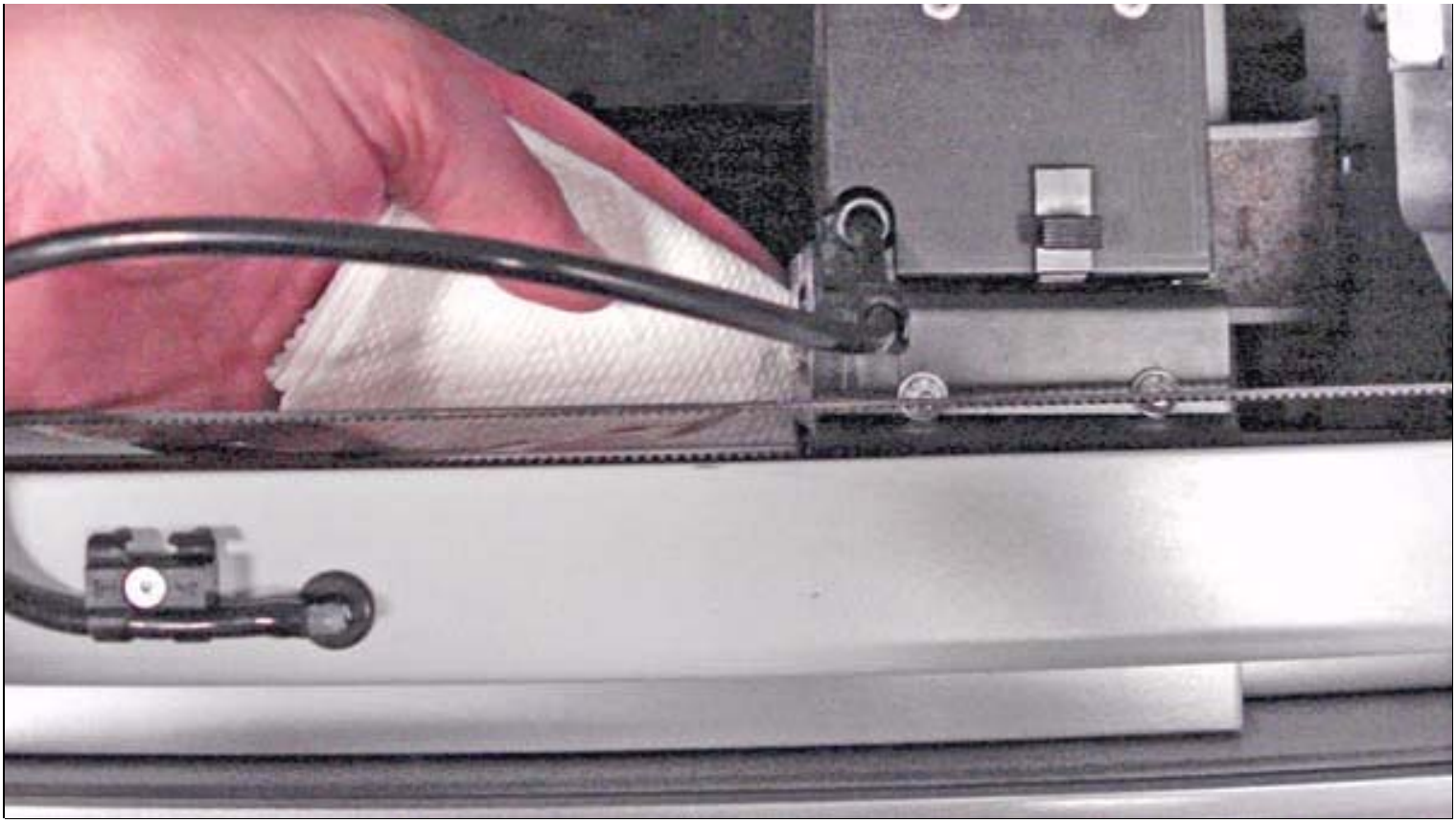
Get an alcohol crush-tube swab. Snap it to break the glass inside, and squeeze the tube to saturate the swab.

Alternately, you can use Isopropyl Alcohol on a non-shed swab.

Wipe off all the pogo pins for (both) printhead(s) (inside the carriage) with the alcohol swab. Use additional swabs if needed.

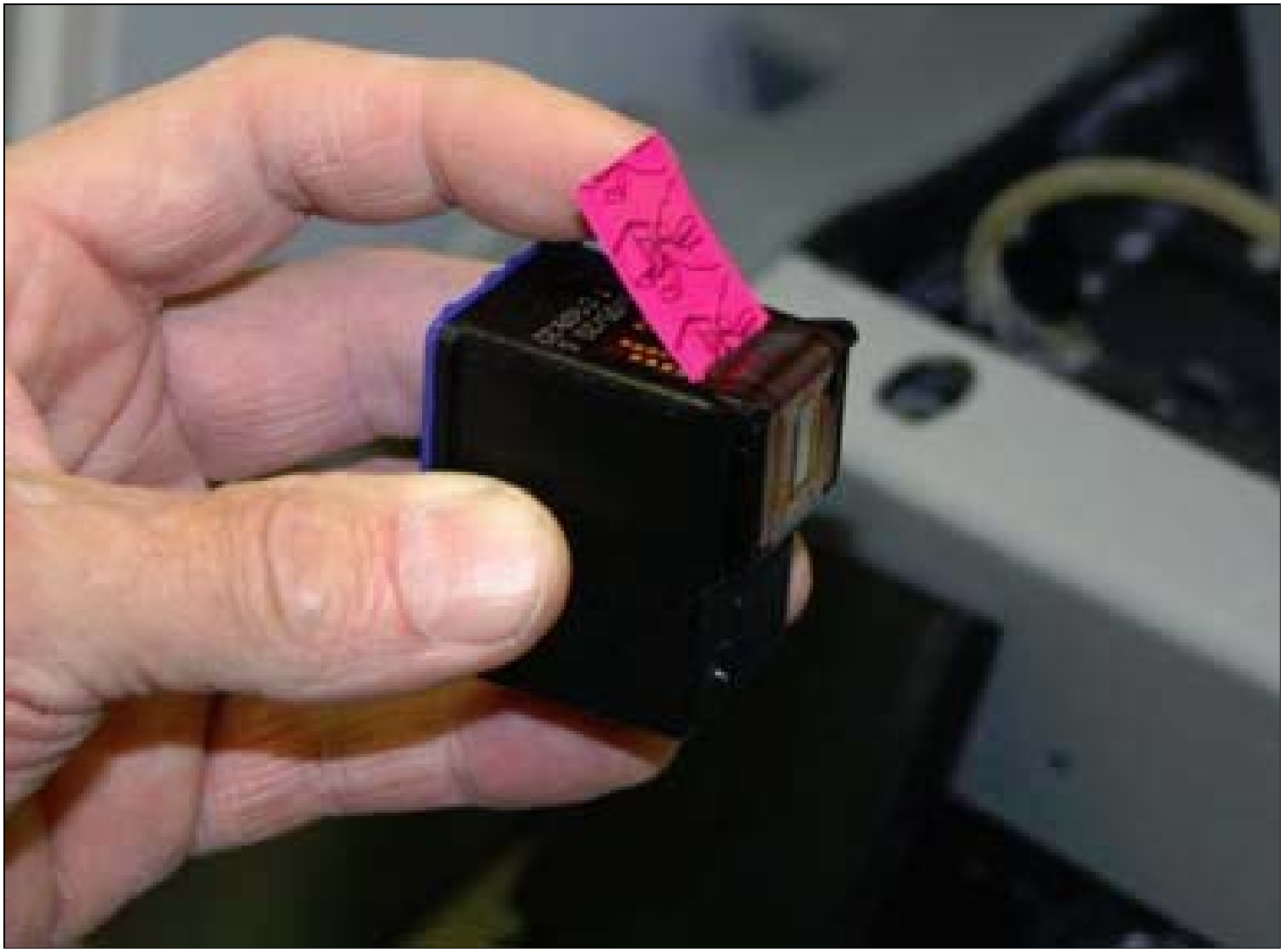


Wet a paper towel with distilled water and wipe the underside of the Carriage. Keep wiping until the towel picks up no more debris or ink.



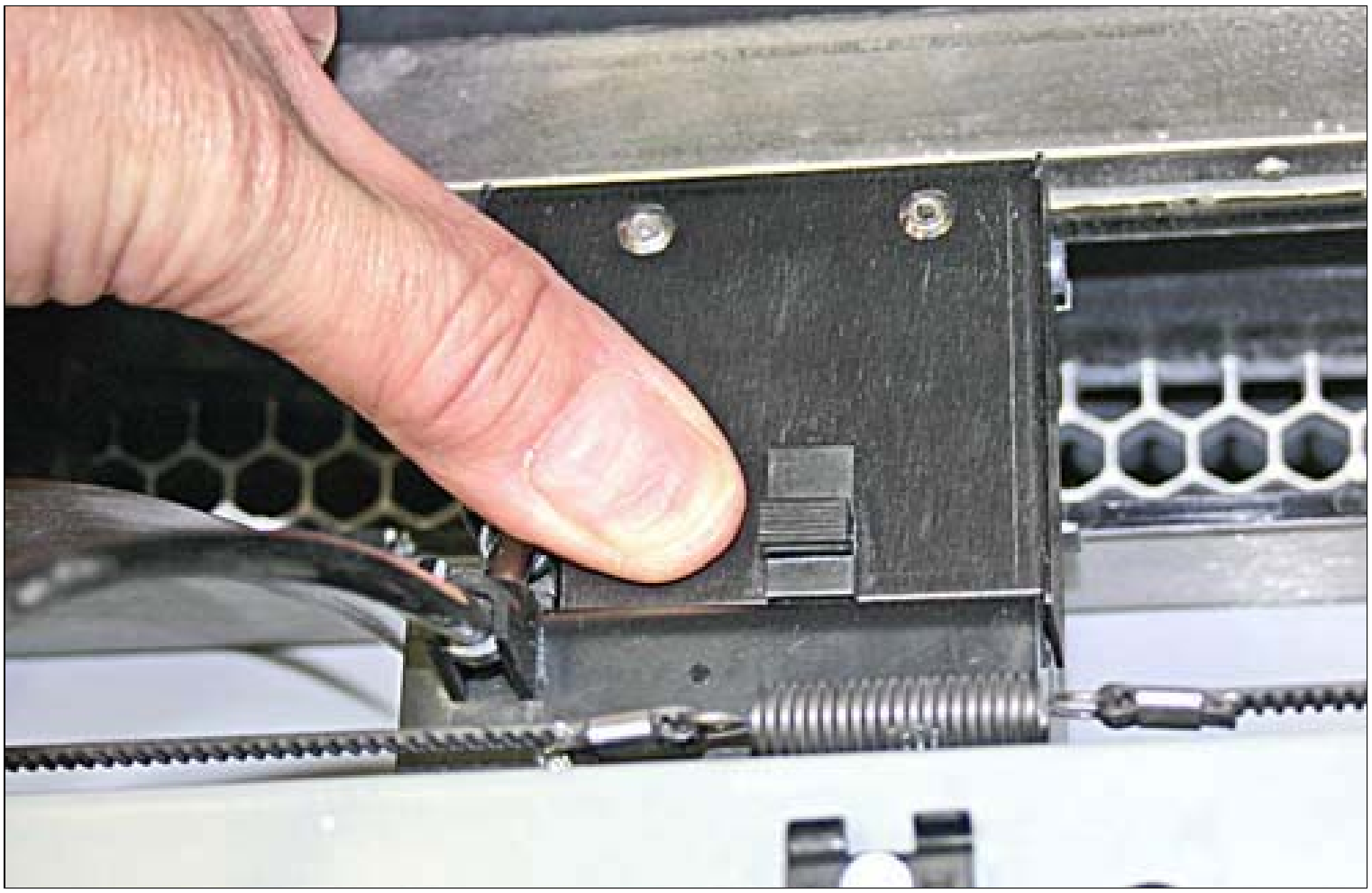
- Dry with a clean paper towel.
- Allow several minutes to ensure all alcohol has evaporated off of the pogo pins before proceeding to next step.
- Remove the new printhead from its packaging. Be sure to pull the tape tab off of the new printhead.


11



Insert the new printhead. Press down firmly on the top of the printhead, at the same side as the pogo pins, to securely fit the printhead into its slot.

Close the carriage cover by pressing down until you hear it click shut. Be sure the latch is engaged.



- Close the printer top cover. Select CONTINUE on the LCD.
- The fast axis reparks.
- If the HP11 printhead was replaced, it will need to be purged of its black ink before printing a part. You can select PURGE now, otherwise the printer will perform a purge the next time you start a build.
- In the 260C/260Plus/460Plus, the printheads will need to be realigned. This will be done via an automatic Alignment Print next time you start a build.

ADD BINDER

If there is not enough binder in one or more of the cartridges, 3DPrint displays BINDER LOW in the Printer Status dialog.

⚠ Important: Do not add binder unless you are prompted to in the 3DPrint Printer Status dialog to avoid overfilling the reservoir.

To add binder, follow the steps below.

1. Pull the empty binder cartridge out of its housing on the printer.
2. Get a new binder cartridge. Check the expiration date, and check the cartridge label for the correct orientation.
3. Insert the cartridge into its housing. Ensure the cartridge is pushed all the way in. You should feel it gently snap into place.

⚠ Important: If a cartridge does not snap into place, do not force it. Check the orientation and that it is the correct type and try again.

ADD CORE MATERIAL

3DPrint evaluates the geometry of the part to determine if there is enough Core material in the Feeder to complete the build. If there is not enough, 3DPrint displays ADD CORE in the Printer Status dialog.

⚠ Important: Do not add Core to the Feeder unless you are prompted to in the 3DPrint Printer Status dialog.

To add Core, follow the steps below.

- Before adding any Core, be sure you have

  Vacuumed all Core out of the Build Bed, and from the Deck, Fast Axis, etc.

  Finished cleaning any parts in the Post Processing Unit.

  Vacuumed up any other Core needing cleanup.

- Check the expiration date on the container.
- Open the printer top cover and place the container inside.

- Select VACUUM on the LCD menu. The vacuum starts. Direct the nozzle inside the container so it pulls up a

continuous stream of Core material.

TIP: To check that Core is getting into the Feeder, look at the Debris Separator. You should see material moving through the window when the vacuum is running.

The vacuum automatically shuts off when the Feeder becomes full. See below.

NOTE: When the feeder is full, it has enough material to complete a build that uses the entire vertical capacity of the Build Bed. Adding further material provides no benefit, and risks overfilling the feeder. Do not continue running the vacuum after the Feeder is Full message appears. If you continue to vacuum material into the feeder, the LCD will display FEEDER LIMIT and the vacuum will be disabled.

THE FEEDER IS FULL AUTO SHUTOFF IN 10 SEC KEEP VACUUM ON

. Remove the container and return the vacuum hose to its stand.

ADD CLEANING SOLUTION

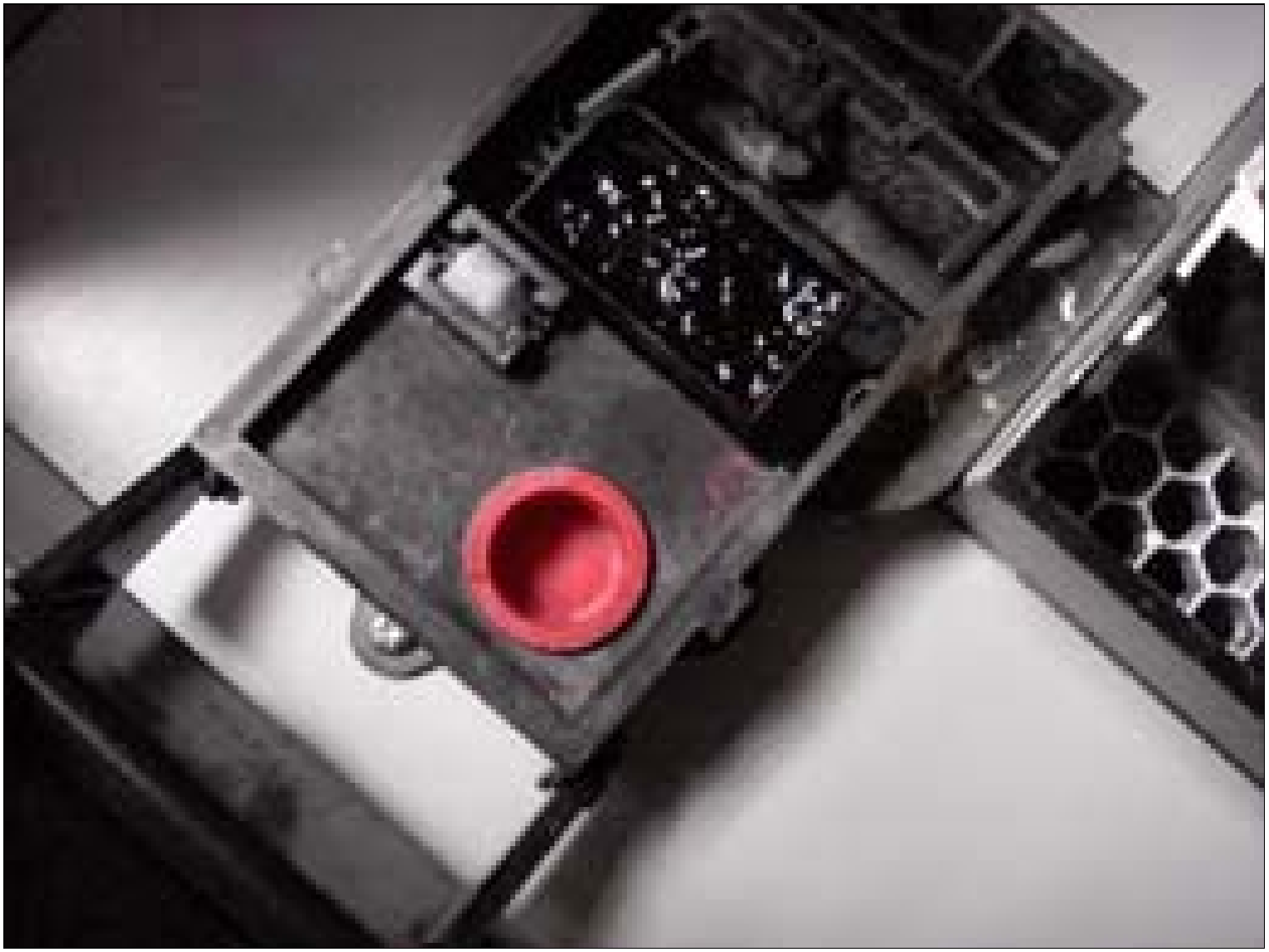
To add Cleaning Solution, follow the steps below.

NOTE: Wear protective gloves for the below procedure.

. Open the top cover and then open the Service Station cover.

. Hold down the top of the service station while pulling off the red cap.

. Remove the red cap. Add Cleaning Solution until the tank is HALF full. Do not overfill.



- Replace the cap and close the Service Station cover.
- Reset the Maintenance Counter in 3D Print. See the 3DPrint Software Manual for details on how to do this. infocenter.3dsystems.com/projetcjpx60/3d-print™-software-user-guide (http://infocenter.3dsystems.com/projetcjpx60/3d-print™-software-user-guide)

INSTALL 3DPRINT

If 3DPrint has not been installed, you will first need to install it. http://infocenter.3dsystems.com/projetcjpx60/software-downloads (http://infocenter.3dsystems.com/projetcjpx60/software-downloads). Installation instructions are available in the 3DPrint User Manual. Be sure to install the software on the same computer that is connected to your 3D Printer. Also be sure you use the version of 3DPrint that came with your ProJet x60 system.

If you encounter any problems during installation, please contact your local Service Provider or Reseller, or visit the Support section of our Web site at https://support.3dsystems.com (https://support.3dsystems.com)

OPEN A PART IN 3D PRINT

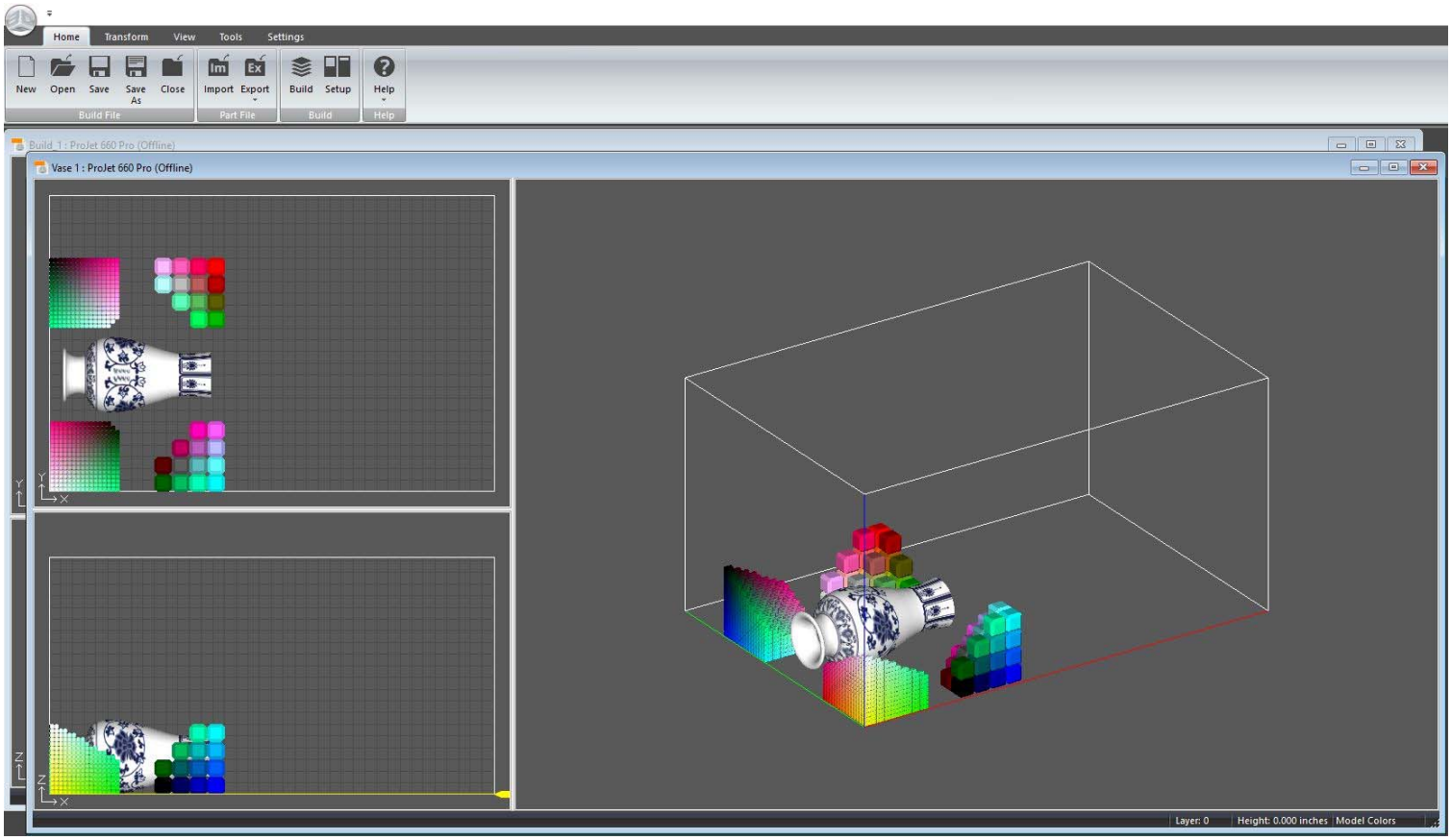
1. Launch the 3DPrint Software.
2. In the Open dialog, select a file to print, or browse to a file on your computer. Click the Open button, or double click on a file to open it in 3D Print.

Supported file types:

- .zbd
- .zpr
- .stl
- .wrl
- .ply

3DPRINT MAIN WINDOW

After the file is opened, the part will be displayed on the 3DPrint Main Window. Here it will be shown in a 3D View on the right, and 2-D views on the left showing a top view and a side view. See the 3DPrint User Manual for a complete description of the Main Window and its features and toolbars.



PART ORIENTATION, STRENGTH, AND PRINTING SPEED

How the part is oriented in the build volume will have an effect on the strength of the part before infiltration.

Orientation - and placement (location) on the build platform - will also impact the speed at which the build completes.

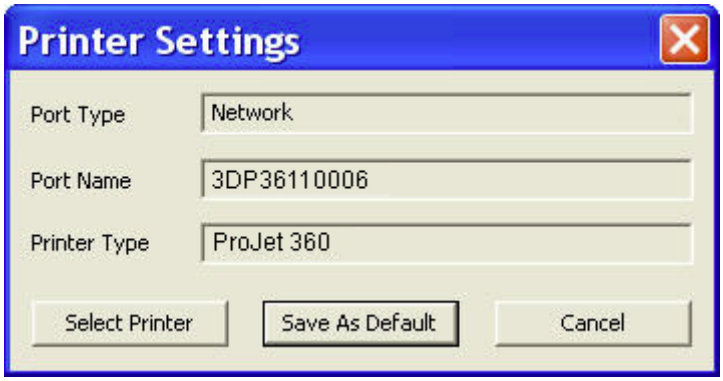
For details on placing and orienting your part using 3DPrint, refer to the 3DPrint User Manual.
infocenter.3dsystems.com/projetcjpx60/3d-print™-software-user-guide (http://infocenter.3dsystems.com/projetcjpx60/3d-print™-software-user-guide)

CHECK THE DEFAULT SETTINGS

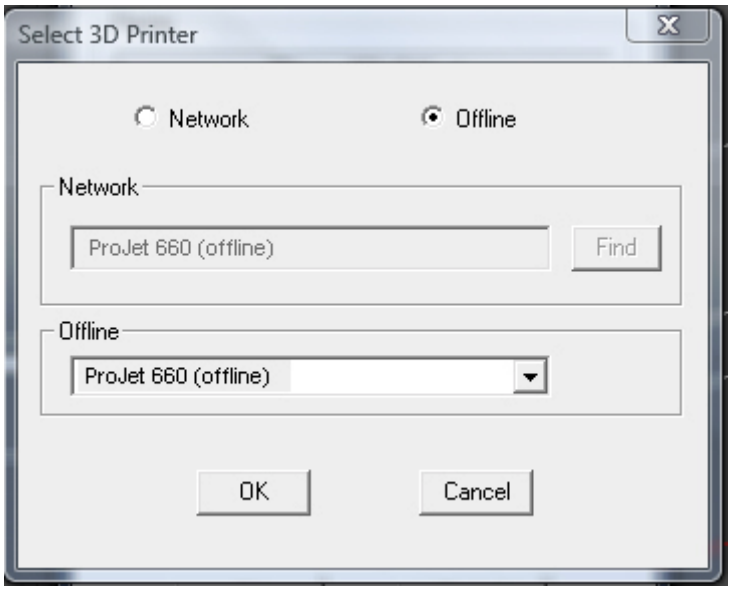
Before you start your build, check the settings for the printer.

PRINTER SETTINGS

- In 3DPrint, select Settings > Printer Settings to display the Default Printer Settings dialog.

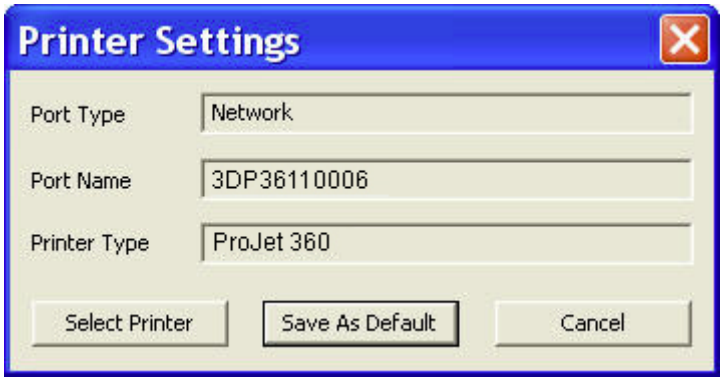


- The Port Type field should display Network. To select a different printer, choose Select Printer and follow the steps below. Note: the “Serial” port option is no longer available.
- When Select 3D Printer dialog opens, choose Network. The printer your computer is connected to will show up as an option. Select your 3D Printer and click OK.
- To connect to another printer, click the Find button and select the printer from the Network Printers drop-down list. Choose an Online printer and click OK.
- Click OK on the Select 3D Printer dialog.



- When the Select 3D Printer dialog closes, the Default Printer Settings dialog reopens for you to save your settings. Click the Save As Default button.

The printer listed in the Port Name field is saved as the default printer and the Port Type field shows Network or Offline.



NOTE: If you experience difficulty locating your printer through 3DPrint, please contact your local Reseller, or visit the support section of our Web site: https://support.3dsystems.com (https://support.3dsystems.com).

CHECK THE BUILD SETTINGS

Before printing, always check your build settings.

1. Select Settings > Materials.
2. Check that the printer listed in the Select Printer field is the printer connected with the computer running 3D Print, and that the printer is Online.
3. Print in Monochrome instructs the printer to ignore any color information contained in your 3D model and print a completely white, monochrome part. (ProJet® 260C, 260Plus and 460Plus only)
4. Click OK.

PREPARE THE BUILD AREA

Before printing, always check the below listed items.

Check that the Deck, Fast Axis, and Build Bed are clean of any loose Core material. See 'Vacuum Excess Core Material' for instructions on how to vacuum up excess Core from these areas.

Check that the Debris separator is empty. See 'Empty The Debris Separator' for instructions on how to empty the Debris separator.

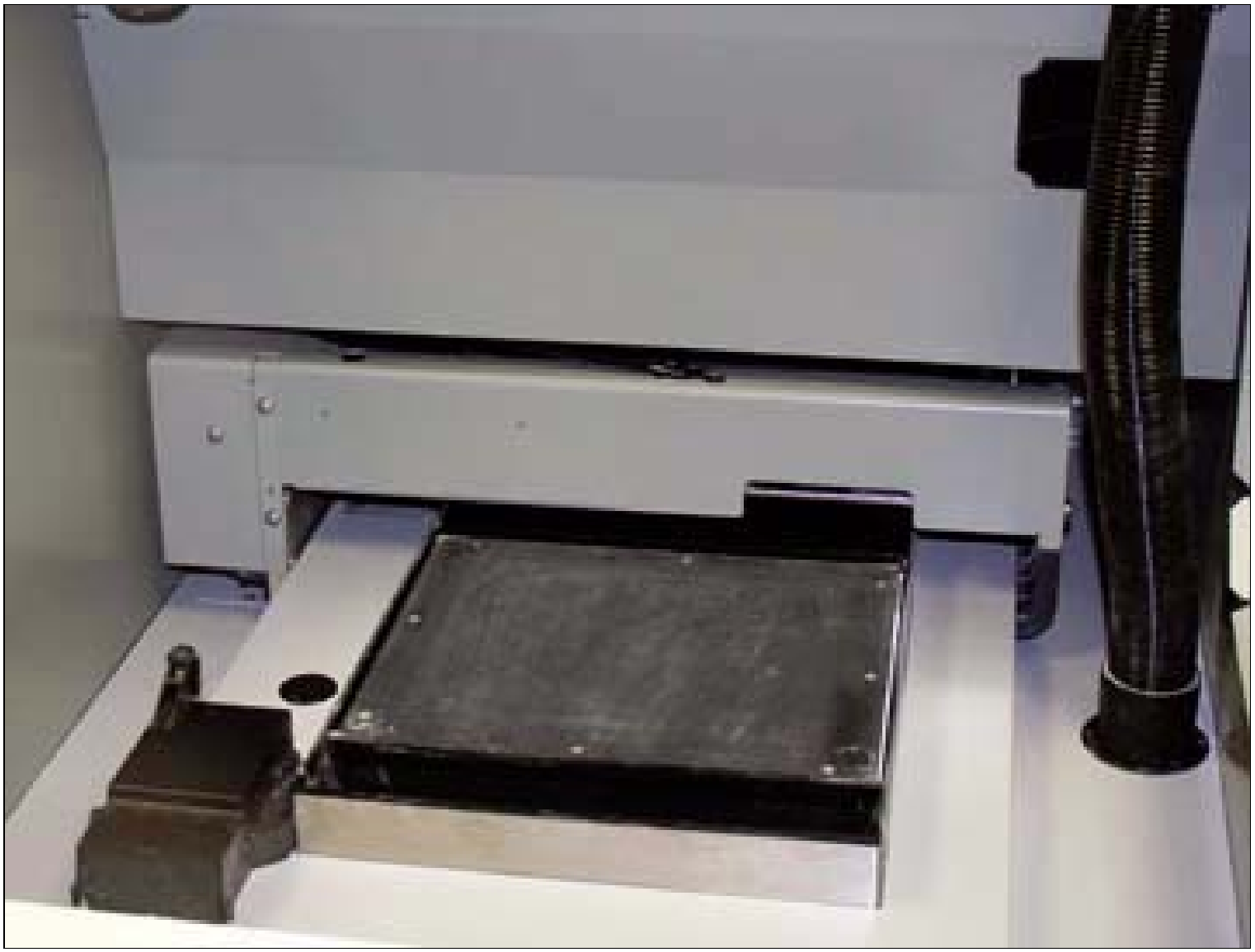
Check that Carriage and Rails are clean. See 'Clean The Fast Axis Rails and Carriage' for instructions on how to clean the Carriage and Rails.

Check that the Service Station is clean. See 'Clean The Service Station' for instructions on how to clean the Service Station.

Check that the Printhead is clean of debris. See 'Clean Printhead' for instructions on how to clean the Printhead.

Check that the platform is raised to the top of the Build Bed. Select PREP BUILD CHAMBER > CONTINUE on the LCD menu to raise the platform to its proper position.

Check that the vacuum hose will not contact the Fast Axis as it moves during printing.



A clean, properly prepared Build Bed

PRINT THE BUILD

. Select Build > on the Toolbar to display the Printing Options dialog.

Layer Print Range allows you to print either the entire build or just a selected range of layers.

Delay Start Time allows you to start the job at a specified later time.

Print Log and Detailed Report generate log files that describe what happened during the print job. These are very useful in troubleshooting printing problems, and we recommend you check them.

. Select OK when you have selected your options.

. The Printer Status dialog appears.

3DPrint checks the printer readiness and calculates the materials needed to complete the build. The results are reported in the Printer Status dialog for you to check before starting the build.

The dialog shows OK for each item and the Print button is enabled when the printer is ready.

If you see a message and the Print button is not available for selection, see Chapter 5 - Additional Operations for instructions on how to clear a message.

. Choose your options for the build in the Print Job Options section of the Printer Status dialog.

Delay Start Time - Delays starting the build for a time period you specify.

. Check the Printer Status window to see what is currently displayed on the printer LCD menu. The printer must be Online before you can start the print job.

. When all of the items in the Print Head, Core, and General sections show OK, the Print button is enabled. Click Print to start the build. Before starting the build, the printer will:

Service the print head

Fill the Build Bed with Core and then spread one layer to make the top surface smooth

. The Printing dialog opens and tracks the following information for the duration of the build:

Estimated Finish Time

Estimated Time Remaining

Layer% Completion status bar

Starting Time

Elapsed Time

Pause Button - Click to pause the build. Click again to resume the build

Cancel Button - Click to cancel the build

Cross-section view (2D) of the current build

Part orientation of the current build as it is printing, in the X-Z Axis (side view)

DRY THE PART

When your part is finished printing, the printer runs a drying cycle. A timer on the LCD menu will count down the time remaining to dry the part. Drying the part gives it added strength, so you should not handle parts before they have adequately dried.

You can leave the part in the Build Bed after the drying cycle ends and it will continue to increase in strength. The longer a part is dried the stronger it becomes, although until it is infiltrated, it will still be fragile and should be handled with care.

CLEAN THE PART

Once your part has dried, you will need to clean it to remove any remaining loose Core material. Cleaning is done in two stages: coarse cleaning, which removes the Core material around the part in the Build Bed; and fine cleaning, which removes any Core still clinging to the part itself.

COARSE CLEANING

Your part prints and dries in the Build Bed surrounded by unused, loose Core. You will need to remove unused Core from the Build Bed after the drying cycle is finished.

- Before you begin vacuuming, check the part orientation in 3DPrint to avoid damage to your part.
- On the LCD Display, select VACUUM.
- Open the printer top cover. The vacuum starts. Use the Control Knob to move the Build Platform up as you vacuum. Unused Core that is vacuumed from the Build Bed is recycled back into the printer Feeder so it can be used for future builds.

Important: For delicate parts, or parts with especially delicate features, it is recommended that you build the part with a Fixture. Refer to the 3DPrint User Manual for details on adding a Fixture.

Important: Never use the vacuum system for anything other that clean reusable Core™ material.

FINE CLEANING

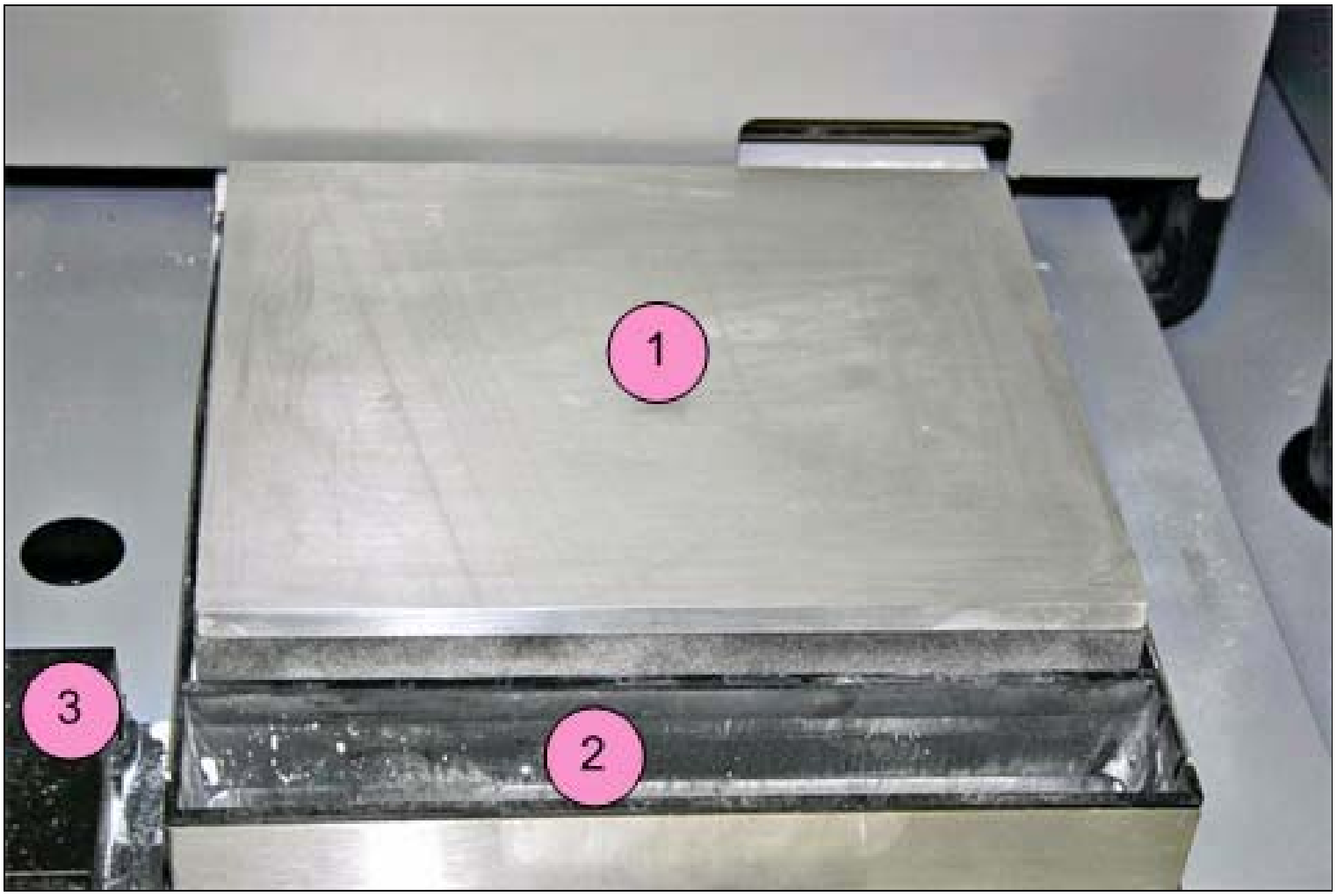
After the bulk of the Core is removed from the Build Bed, gently pick up the part and place it in the Cleaning Station Unit (160 and 260C and 260Plus) or built-in Post-Processing Unit (360 and 460Plus) where you can clean the part of any remaining Core with the Air Wand.

1. Open the printer top cover.
2. Ensure that the Fast Axis is pushed all the way back into its parked position.
3. Select BUILD CHAMBER > RAISE PLATFORM on the LCD menu. Hold the Control Knob down to raise the platform closer to the top of the Build Bed.
4. Gently lift the part and place it in the Cleaning Station or Post-Processing Unit.
5. Carefully clean the part using the air wand. Take are of thin or delicate areas. The airflow may be adjusted using the LCD menu Knob on the ProJet® 360/460, or by turning the control nut on the cleaning station.

USING THE REMOVABLE BUILD PLATE

The ProJet® 160, 260C and 260Plus feature a removable Build Plate, which allows you to pick up the entire Build Plate and use it as a tray to transport very delicate parts to the Cleaning Station.
To remove the Build Plate follow the steps below.

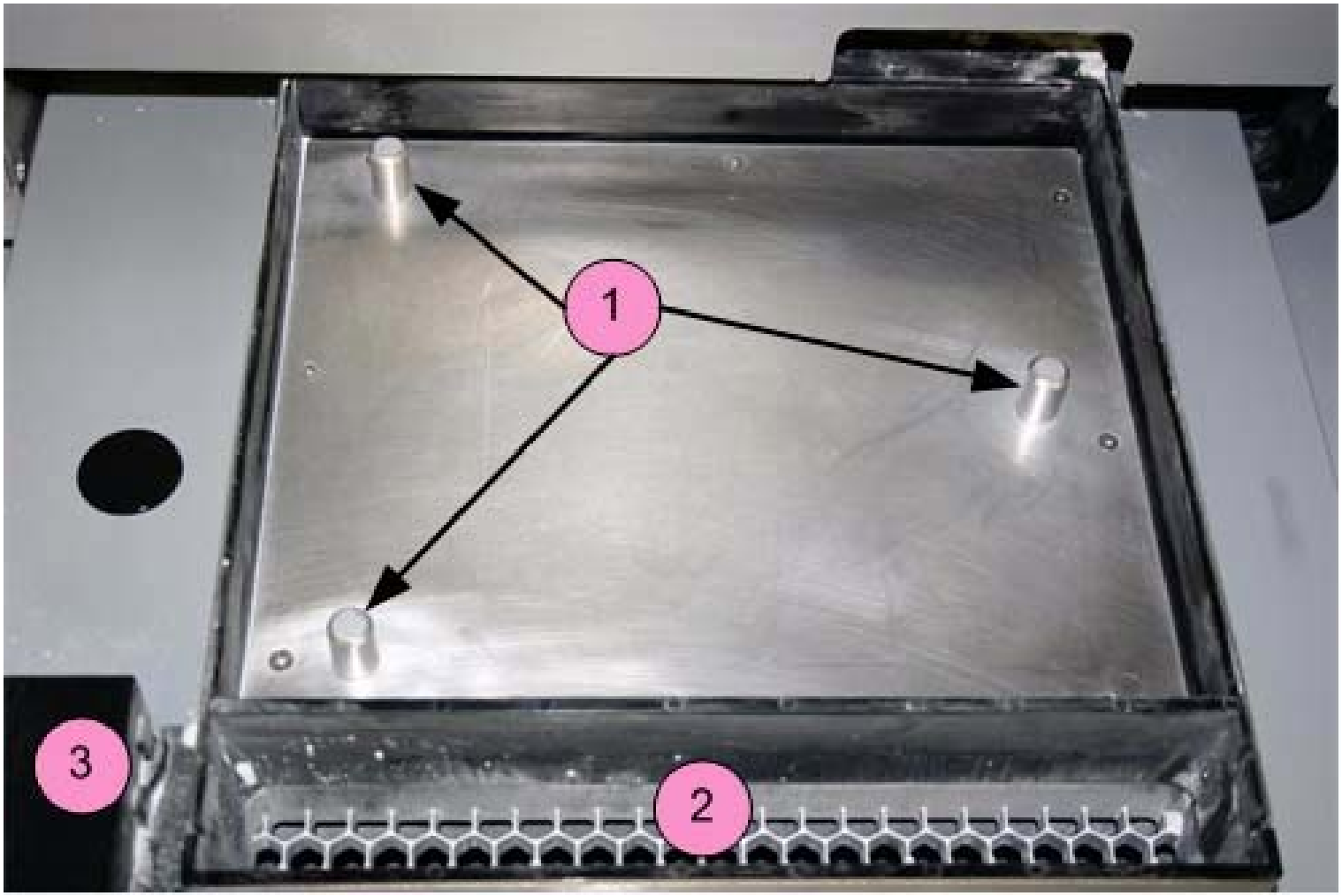
- Open the printer top cover.
- Ensure that the Fast Axis is pushed all the way back into its parked position.
- Following the steps in the Coarse Cleaning section, vacuum as much Core as you can from around the part.
- From the Main Menu on the LCD, select ACCESS BUILD PLATE on the LCD menu. The Build Platform will move up above the top of the Build Box, exposing the Build Plate.
- After a short time the Build Platform will move back down.



Number	Component
1	Build Plate (in raised position)
2	Front Overflow

3	Service Station

- Gently lift the Build Plate (and the part) and place it in the Cleaning Station.
- When you have cleaned your part and removed it from the Build Plate, clean any remaining Core off the Build Plate.
- Thoroughly clean the underside of the Build Plate to remove any Core from the holes that mate with the Locating Pins. Also clean any Core off the Locating Pins.
- Return the Build Plate to the Printer. Be sure to align the Build Plate onto the Locating Pins.



Number	Component
1	Local pins
2	Front overflow
3	Service Station

NEXT STEP: CLEANING THE PRINTER

Right now - after cleaning the part and before post-processing - while the part continues to dry, take a few minutes and clean the printer.

Regular cleaning and maintenance is the simplest, best way to ensure your parts look their best, and to keep your printer running trouble-free.

See ’Routine Cleaning’ for complete details on how to perform these routine cleaning tasks.

ROUTINE CLEANING

This chapter describes the routine cleaning you should complete after every build. This will prepare the printer for the next build and keep the printer running smoothly. These tasks take only a few minutes to perform but make a huge difference in how well your printer runs.

VACUUM EXCESS CORE MATERIAL

After every build, vacuum up all loose Core material in the Build Chamber, including the Build Bed, Deck, and Fast Axis including the Rails and Carriage. To vacuum:

1. Close the printer top cover.
2. Select VACUUM on the LCD menu.
3. Open the printer top cover. The vacuum starts. Remove the vacuum hose from its stand.
4. Vacuum any excess Core™ in the Build Bed, around the Deck, and on top of the Fast Axis. Pull the Fast Axis forward and check for Core™ towards the back of the Build Chamber as well.

You can leave Core in the Spread Deck (the area behind the Build Bed where Core™ is deposited from the Feeder and spread to the Build Bed).

. The vacuum will stop automatically if the Feeder becomes full, or you can push the Control Knob once to shut off the vacuum. If the Feeder does become full, the LCD displays:

FEEDER IS FULL
AUTO SHUTOFF IN 10 SEC
KEEP VAUUM ON

. Only continue running the vacuum if there is very little Core remaining to be cleaned up.

NOTE: When the feeder is full, it has enough Core to complete a build that uses the entire vertical capacity of the Build Bed. Adding further Core provides no benefit, and risks overfilling the feeder. Do not continue running the vacuum after the FEEDER IS FULL message appears. If you continue to vacuum Core into the feeder, the LCD will display FEEDER LIMIT and the vacuum will be disabled.

. When you are finished, return the hose to its holder.

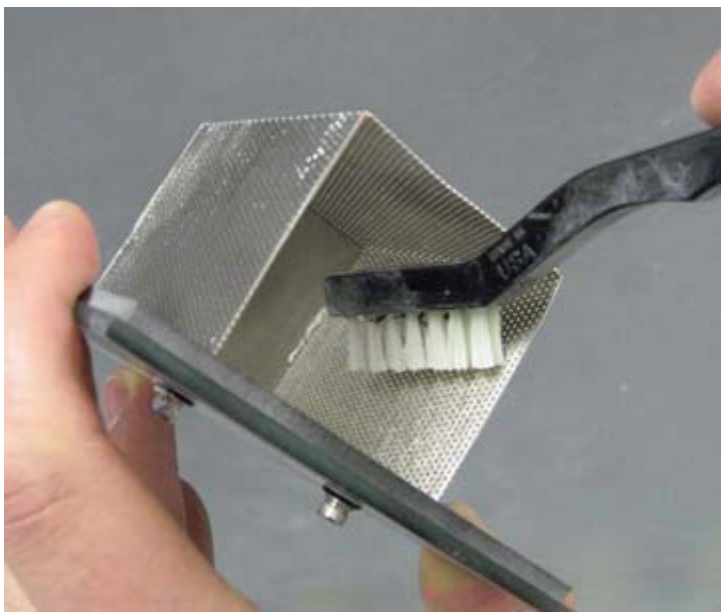
Important: Important: Never vacuum up any fluids or non Core™ material. Doing so will clog the vacuum system.

EMPTY THE DEBRIS SEPERATOR

After vacuuming, clean the Debris Separator. The Debris Separator catches any large particles and keeps those pieces from being recycled into the feeder. To clean the Debris Separator follow the steps below.

⚠ Important: The Debris Separator must be cleaned after every build, in order to maintain the efficiency of the vacuum system.

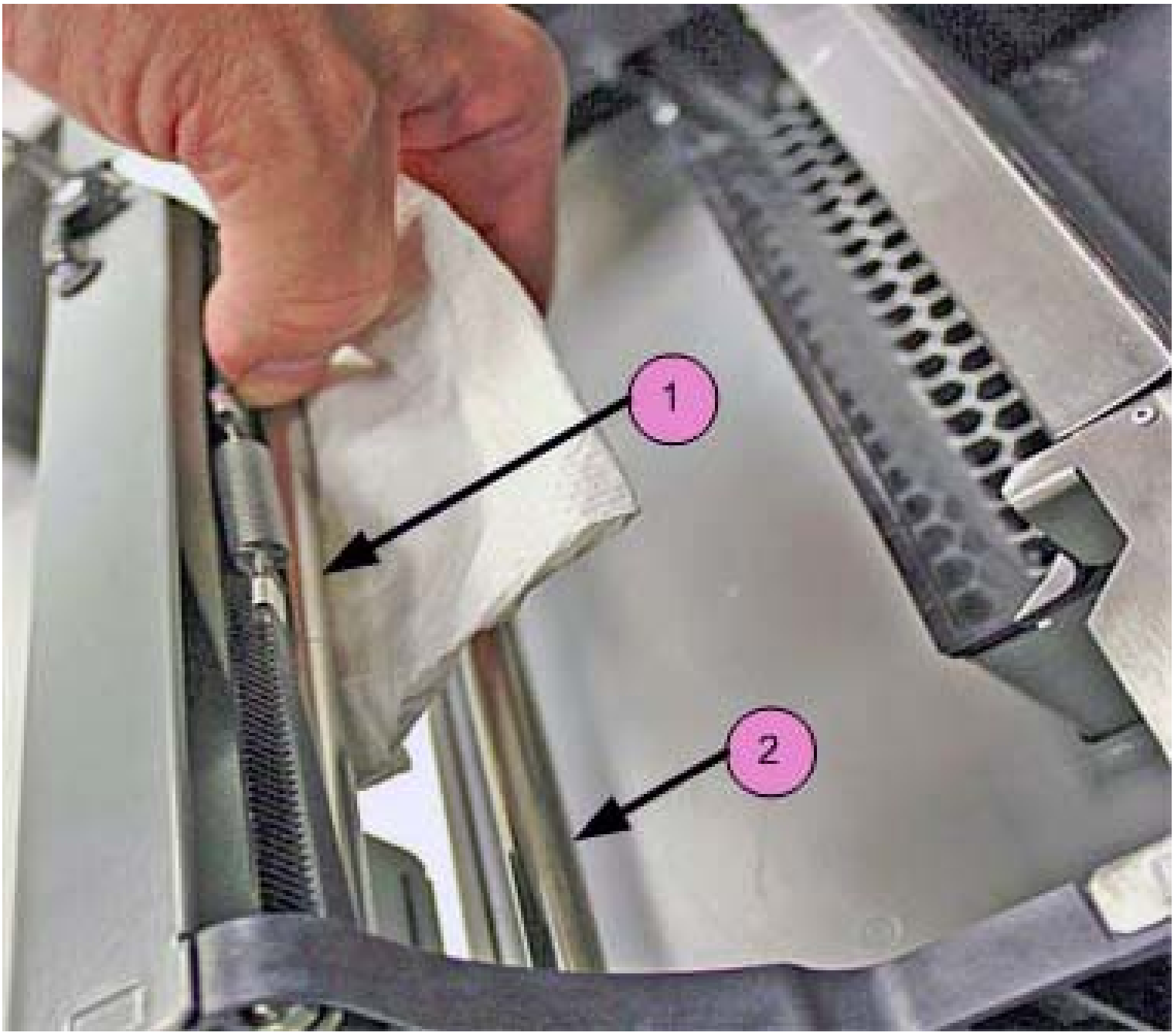
1. Pull the Debris Separator out of its holder on the printer.
2. Empty the contents into a trash receptacle.
3. Use the soft brush found in the Accessory Kit to brush any caked-on Core from the screen.
4. Reach into the receptacle area with a stiff brush and remove any Core clinging to the screen.



CLEAN THE FAST AXIS RAILS AND CARRIAGE

Keeping the Fast Axis Rails and Carriage clean will keep the Carriage moving smoothly and thus optimize printing accuracy.

- Open the printer top cover and pull the fast axis forward until it stops.
- Lay clean paper towels under the Fast Axis.
- Using a paper towel dampened with distilled water, wipe the top and bottom Rails to remove any Core. Move the Carriage back and forth as needed to clean the entire length of both rails.
- Dry both Rails thoroughly with a clean dry paper towel.



Number	Component

1	Top Rail
2	Bottom Rail

- Using a fresh paper towel, wipe the Carriage to remove any Core.
- Wipe or vacuum the Build Bed and Deck as needed to remove any Core dislodged from the Rails and Carriage.

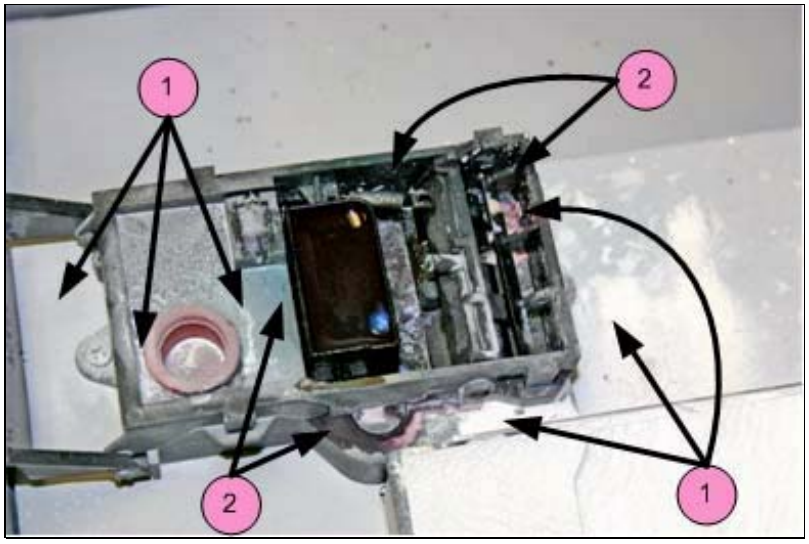
CLEAN THE SERVICE STATION

The function of the Service Station is to clean the print head during printing. Clean the Service Station after every build to remove residue buildup and ensure the print head is kept clean.

Before you begin:

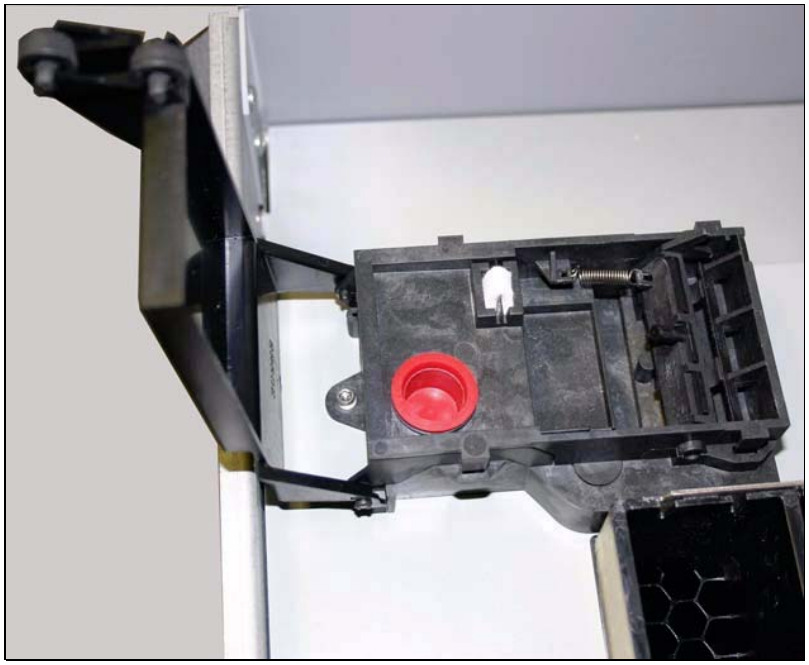
- Get several dry paper towels and some cotton swabs.
- Get the squirt bottle filled with distilled water.
- Wear disposable gloves.
- Get the Pick from the Accessories Kit.

EXAMPLE - DIRTY SERVICE STATION



Number	Description
1	Core Residue
2	Ink, Binder Residue

EXAMPLE - CLEAN SERVICE STATION



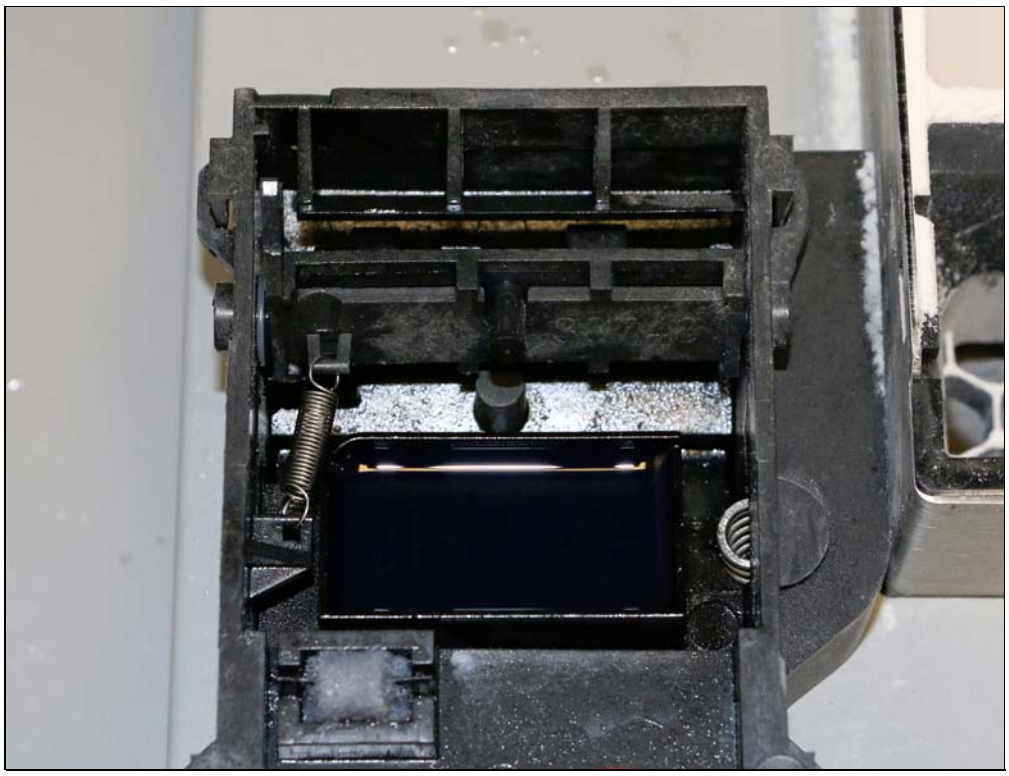
CLEANING PROCEDURE

. Place paper towels around the Service Station, and between the Service Station and the Build Bed.

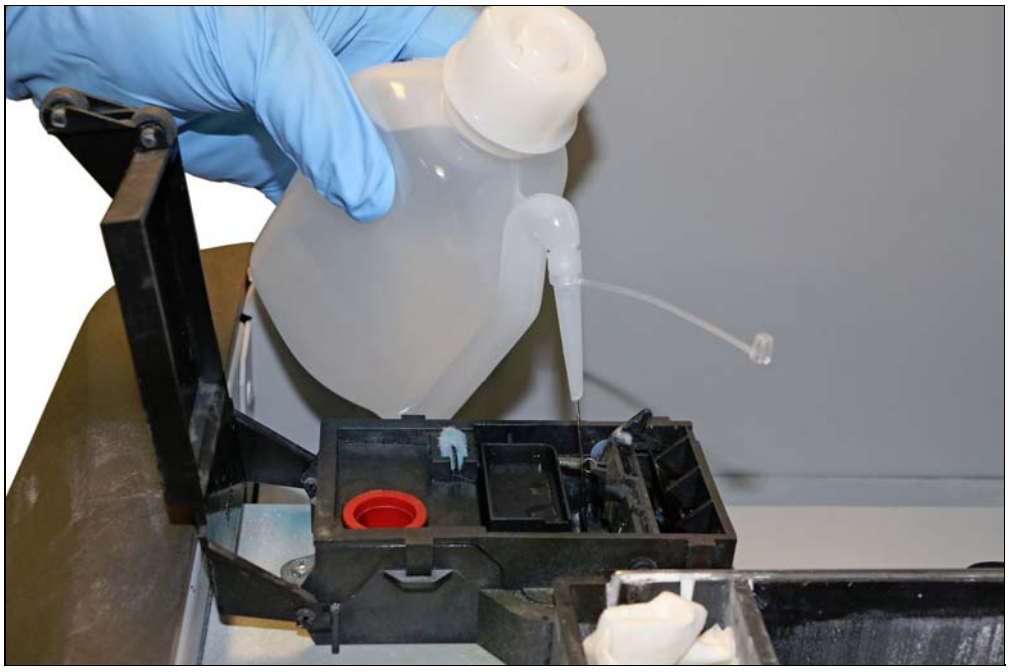
. Cover the front overflow with paper towels.

. Push the lever to position the Squeegees for easier cleaning.

Caution: Squeegees may fling waste as they flip upward.

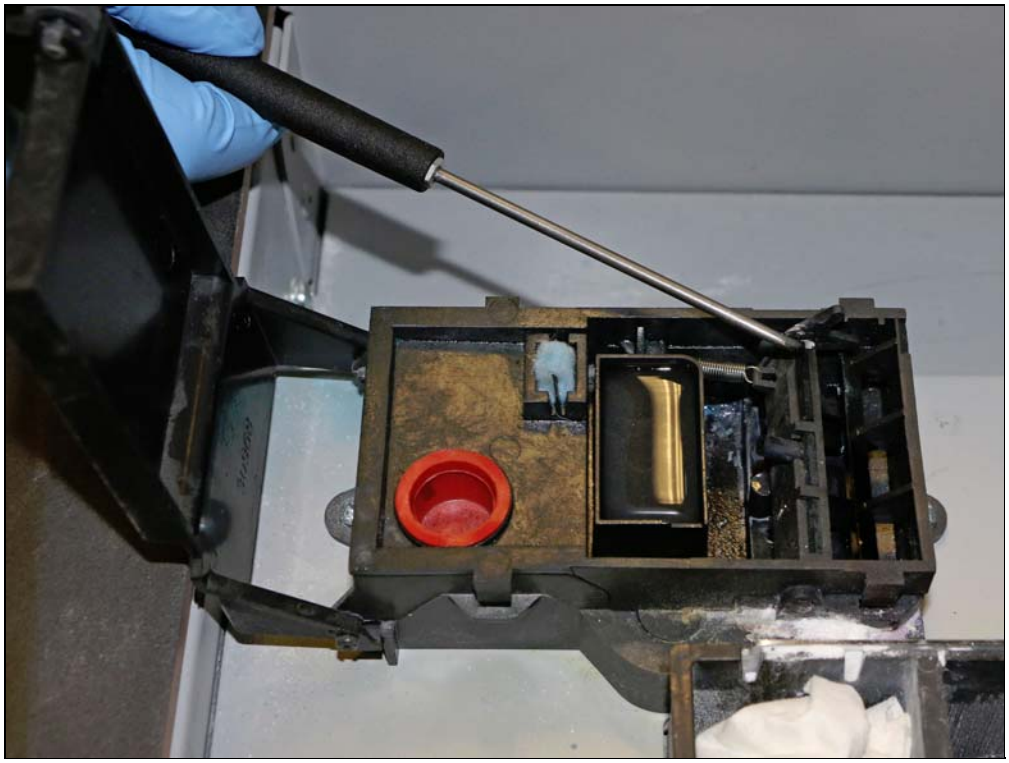


. Position the squirt bottle close to the station and squirt water into the service station.



. Use the cotton swabs or a paper towel and wipe the service station thoroughly.

. Use a brush or the Pick to scrape excess Core out of any corners.



Thoroughly wipe the Service Station clean.

NOTE: Pay special attention to the underside of the squeegee scraper bar to ensure it is completely clean.

Wipe up any water that may have spilled onto the Deck or Build Bed and any other contaminants or Core that has become wet. Vacuum up any loose Core. Do not vacuum the service station itself.

Important: Never vacuum up water or other fluids - it will clog the vacuum system.

Remove the paper towels from the front overflow. Close the printer top cover.

CLEAN THE PRINTHEAD

The bottom of the carriage on the ProJet® CJP x60 series printers may get covered with a combination of powder and cleaning solution from the service station. As a preventative step, it is recommended to inspect or clean the bottom of the carriage before each build.

. From the UI, select BUILD CHAMBER.

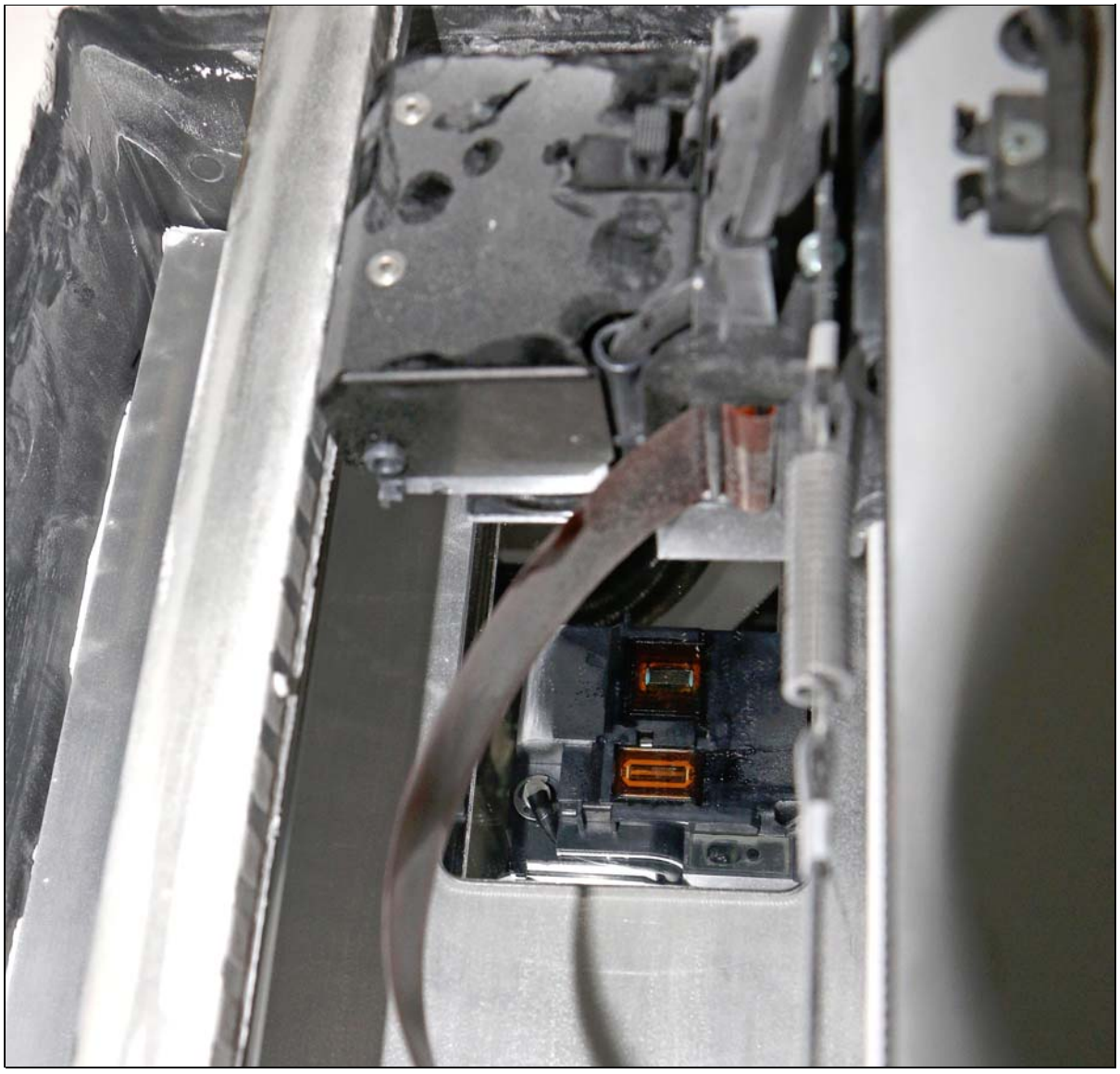
. Select LOWER PLATFORM.

. Lower Build Platform by holding down the Control Knob until the Build Platform lowers approximately 3 inches.

. Place provided magnetic mirror on the center of the Build Platform.

. Guide Carriage directly over mirror.

. Inspect Printhead for any debris that may have collected during a previous build.



If Printhead needs to be cleaned because of excessive debris build up, use the following steps:

- Moisten a paper towel with distilled water.
- Wipe the bottom of the carriage with paper towel. This should just take one or two passes of the paper towel. It does not have to be 100% clean, the goal is to minimize the build up of powder, especially on the surface just behind the print heads.

POST-PROCESSING

After your 3D model is fully dry and fine cleaned, it can be infiltrated. For monochrome parts where strength is not critical, Salt Water Cure is a quick, easy post processing method. Wax cure is an easy and safe method of infiltration resulting in brighter colors and medium strength. ColorBond™ is a high strength solution for concept models which is fast drying and results in very vibrant colors. StrengthMax™ will confer superior strength for functional models. Parts should be completely depowdered and allowed to dry at room temperature overnight before post processing for optimal results.

Post processing kits for the use of Salt Water Cure, Wax, ColorBond, and StrengthMax curing are available at your local 3DSystems authorized reseller.

POST PROCESSING USING SALT WATER CURE™

Salt Water Cure with Epsom salt is the best way to finish monochrome concept models quickly, easily and economically. No hazardous or restricted chemicals are involved; simply dissolve Epsom salt in warm water and it is ready to be misted over the surface of a part. Parts must then dry at room temperature for 24-48 hours, or can be speed dried with the use of an oven or hair dryer. This results in sufficient strength for safe handling as well as a smoother, harder surface finish. It also helps to maintain the part's original bright white appearance.

Note: Salt Water cure is for monochrome (colorless) parts only.

For complete details on post processing with Salt Water Cure see the VisiJet PXL User Guide.

POST PROCESSING USING WAX CURE

Wax cure is the safest and most economical way of finishing color models. Paraffin wax is melted in a vat large enough for the part, then the part is lowered in and wax is allowed to fully infiltrate the part. After infiltration the part can be placed in an oven for several minutes to quickly melt off residual surface wax. Parts are safe and cool enough to handle in less than five minutes, depending on size and geometry. This results in a part with medium strength, enhanced colors, and a smooth slightly glossy surface finish.

Important: Melted wax can present a burn hazard. Do not reach directly into the wax melting unit. Wear gloves. Melted wax may damage clothing.

Items Needed:

- Wax paper
- Paraffin wax
- Wax melting unit with dipping basket, set to 77°C (176°F)
- Lab oven, set to 50°C (122°F) (Optional)
- Paper towels (Optional)

Procedure:

1. Fill the wax melting unit with paraffin wax pellets and begin heating. Do not use any other kind of wax for post processing printed parts. Refer to the wax unit's user manual for setup and fill level instructions. Do not overfill. Melting generally takes at least one hour and generally longer, so have the wax unit ready beforehand.
2. Ensure the part to be waxed has been fully depowdered and is fully dry. Powder still on the part will stick when wax is applied and cause deformities.
3. Once the wax is fully melted, waxing may begin. Line the wax melting unit basket with parts to be waxed and carefully lower the basket into the chamber. Do not stack parts. Delicate parts should be placed in the basket alone and infiltrated one at a time. Always use the basket when waxing parts. Never lower parts into the chamber by hand.
4. Air bubbles can be seen exiting the parts. Keep parts fully submerged until the flow of bubbles completely stops. Failure to do so may cause bubbles to harden on parts.
5. After the flow of air bubbles has completely stopped, carefully raise the basket out of the waxing chamber and allow excess wax to drain off of the parts. Parts may be gently lifted and rotated to allow wax to uniformly coat them. Place parts on wax paper to allow the wax to harden for several minutes. Parts are generally cool enough to comfortably handle within 15 minutes.
6. (Optional) If excess wax is built up or a less glossy surface is desired, the part may be re-heated in an oven to allow wax to run out. Do not perform this step in a conventional oven. Exposed heating coils present a fire hazard. Allow the lab oven to heat.

(Optional) Place the part in the oven on wax paper covered with paper towels. Allow the part to heat in 60 second intervals, checking the part's surface finish at the end of each interval. Allowing the part to heat for too long will allow the majority of the wax melt out of the part, so be sure to continue to check the melting process until the desired surface finish is desired.

Note: Parts which have been wax cured should not be left in direct sunlight or an environment over 95°F (35°C).

POST PROCESSING WITH COLORBOND™

Important: You must read and understand the ColorBond User Guide and Material Safety Data Sheet before attempting to post process with ColorBond. ColorBond must be used with appropriate Personal Protective Equipment in a well ventilated area and stored in a cool, dry place. The curing reaction will generate heat. Wear a dust mask when sanding finished parts.

ColorBond infiltration is the most commonly used and best general purpose infiltration method. Using this method, parts may either be drizzled with or dipped in ColorBond depending on the model's level of detail and intended use. Drizzling is recommended for parts with delicate features using a smaller bottle of ColorBond, while dipping is the recommended method for maximum strength.

After applying a method of ColorBond infiltration, the part must then be dabbed clean of excess Infiltrant and left to dry. Parts are generally safe to handle after 15 minutes, but drying time may vary depending of part size and geometry. ColorBond infiltration results in a high strength part with the most vibrant colors. Surface finish is unaffected unless excess Infiltrant is not wiped off before drying. Parts infiltrated with ColorBond are easily sanded, painted, and joined.

For complete details on post processing with ColorBond see the ColorBond User Guide (http://infocenter.3dsystems.com/projetcjpx60/post-processing-guide).

POST PROCESSING WITH STRENGTHMAX™

Important: You must read and understand the StrengthMax User Guide and Material Safety Data Sheet before attempting to post process with StrengthMax. StrengthMax must be used with appropriate Personal Protective Equipment under a ventilation hood and stored in a cool, dry place. The curing reaction will generate heat. Wear a dust mask when sanding finished parts.

StrengthMax is a two part epoxy Infiltrant best used on functional parts where very high strength is desired. Resin and hardener are mixed at the appropriate ratio and then applied to the part with a paint brush in multiple thin coats. The part is then wiped clean of excess Infiltrant. Parts are generally no longer tacky after 2 hours and fully cured in 24 hours depending on part size and geometry.

Parts fully infiltrated with StrengthMax are roughly twice as strong as a part infiltrated with ColorBond. StrengthMax results in parts with colors that are vibrant, though slightly less so than those treated with ColorBond. The surface finish will be very glossy and smooth, depending on the amount of Infiltrant used. Parts infiltrated with StrengthMax are easily sanded, painted, joined, and even machined.

For complete details on post processing with StrengthMax see the StrengthMax User Guide (http://infocenter.3dsystems.com/projetcjpx60/post-processing-guide).

ADDITIONAL OPERATIONS

When you start a print job, 3DPrint checks the printer to ensure there are enough materials to complete the job and that the printer is properly prepared before starting the job. If the printer does not have enough Core, binder, or print head life to complete the job, a message appears in the Printer Status dialog telling you what you need to do to prepare the printer before printing.

Important: Do not add Core or binder to the printer, or change a print head, unless you see a message telling you to in the Printer Status dialog.

THE PRINTER STATUS REPORT

The printer has an onboard Status Report you can use to check Core levels, head life remaining, etc. This is especially useful if the printer is located some distance from the computer used to control it.

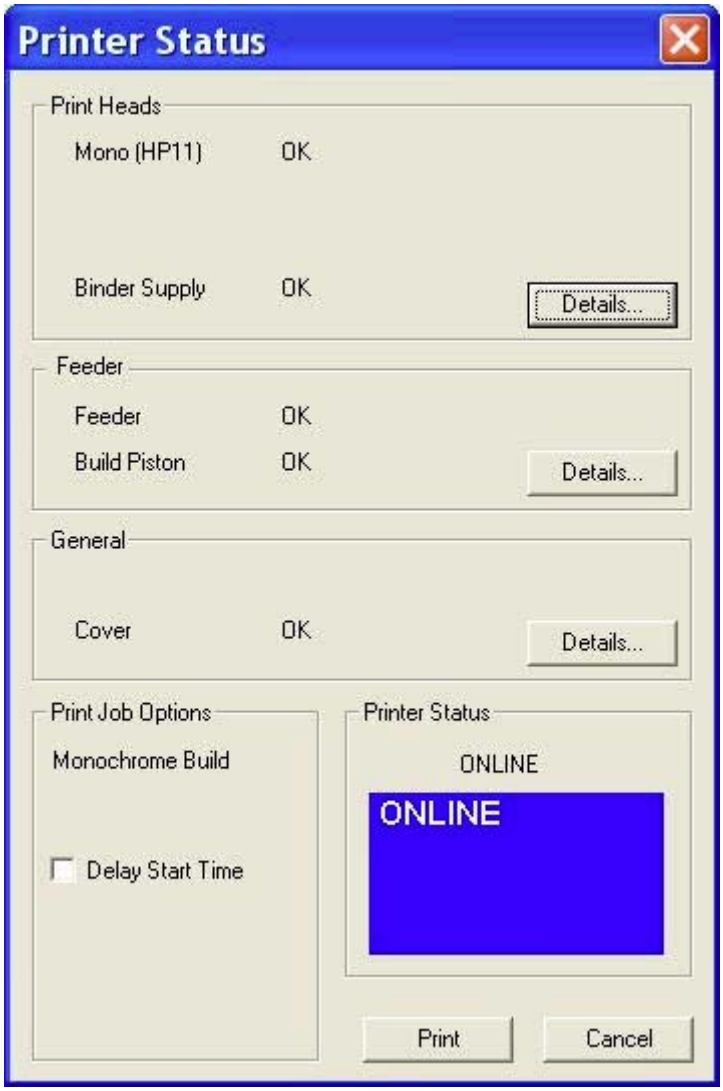
To access the onboard Status Report, select STATUS REPORT on the LCD. The Report will look similar to the example below:

BINDER LEVEL OK
HP11 REMAINING 25%
FEEDER LEVEL 4.6”
BUILD PLATFORM 3.4”
WASTE OK

THE PRINTER STATUS DIALOG

The Printer Status dialog in 3DPrint keeps you appraised of everything your ProJet® CJP 160/260C needs to start your print job. The two examples below show what appears when the printer is ready to print, and when it’s not ready.

READY TO PRINT



ProJet® CJP 160/360

ProJet® CJP 260C/260Plus/460Plus

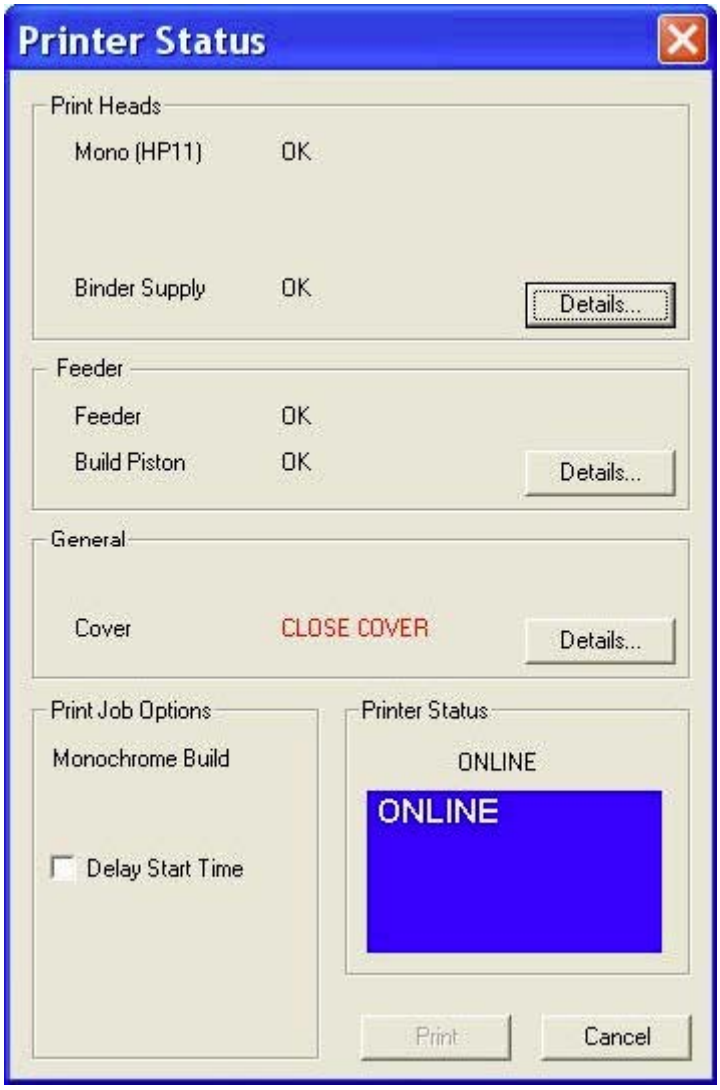
In the examples above, the Printer Status dialog shows the printer is ready for printing. Notice that each item shows OK, and the Print button is enabled. From here you would choose your printing options and click Print to start the job. Before the printer starts printing your file, it will first:

Fill the Build Bed with Core

Spread a layer to ensure the Build Bed surface is smooth

Service the print head

NOT READY TO PRINT



If there are not enough materials to complete the job, or the printer is not properly prepared, a message appears similar to the examples in red above. When any one of these messages appears, the Print button is disabled. The remainder of this chapter describes how to clear a message in the Printer Status dialog and start the build.

POSITION BUILD PISTON

The Build platform must be in its proper position at the top of the Build Bed in order for the printer to fill the bed and spread a layer of Core before starting a print job. If you see the message RAISE BUILD in the Printer Status dialog, go to the printer and select PREP BUILD CHAMBER to raise the platform to its proper position.

COVER

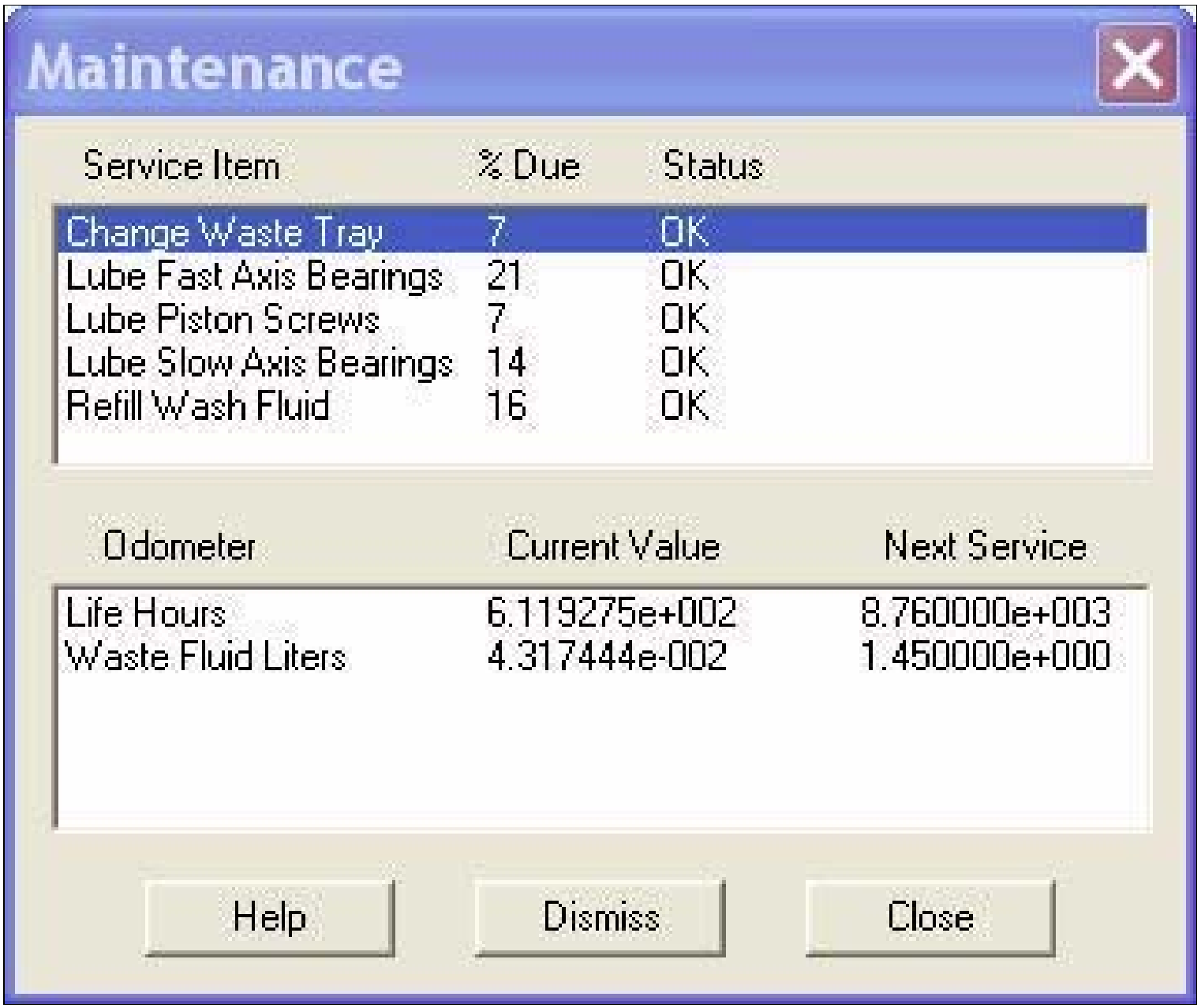
The printer cannot start a print job when the top cover is open. If the top cover is open, go to the printer and close it. Do not open the cover while the machine is printing as this will pause printing and may cause print quality defects.

PRINTER MAINTENANCE

This chapter details how to perform maintenance on your printer and how to prepare your printer for storage if you will not be running it for extended periods. Most of these procedures are only performed when you are prompted to in the 3DPrint Maintenance dialog. Others should be performed at the recommended frequency detailed in each procedure below.

THE MAINTENANCE DIALOG

The Maintenance dialog (found on the 3DPrint Tools menu) keeps a record of when the Fast Axis bearing, the Slow Axis bearing, and the Piston Screw require lubrication. 3DPrint will prompt you when lubrication of any of these components is required. Only lubricate these components when you are prompted to in 3D Print.

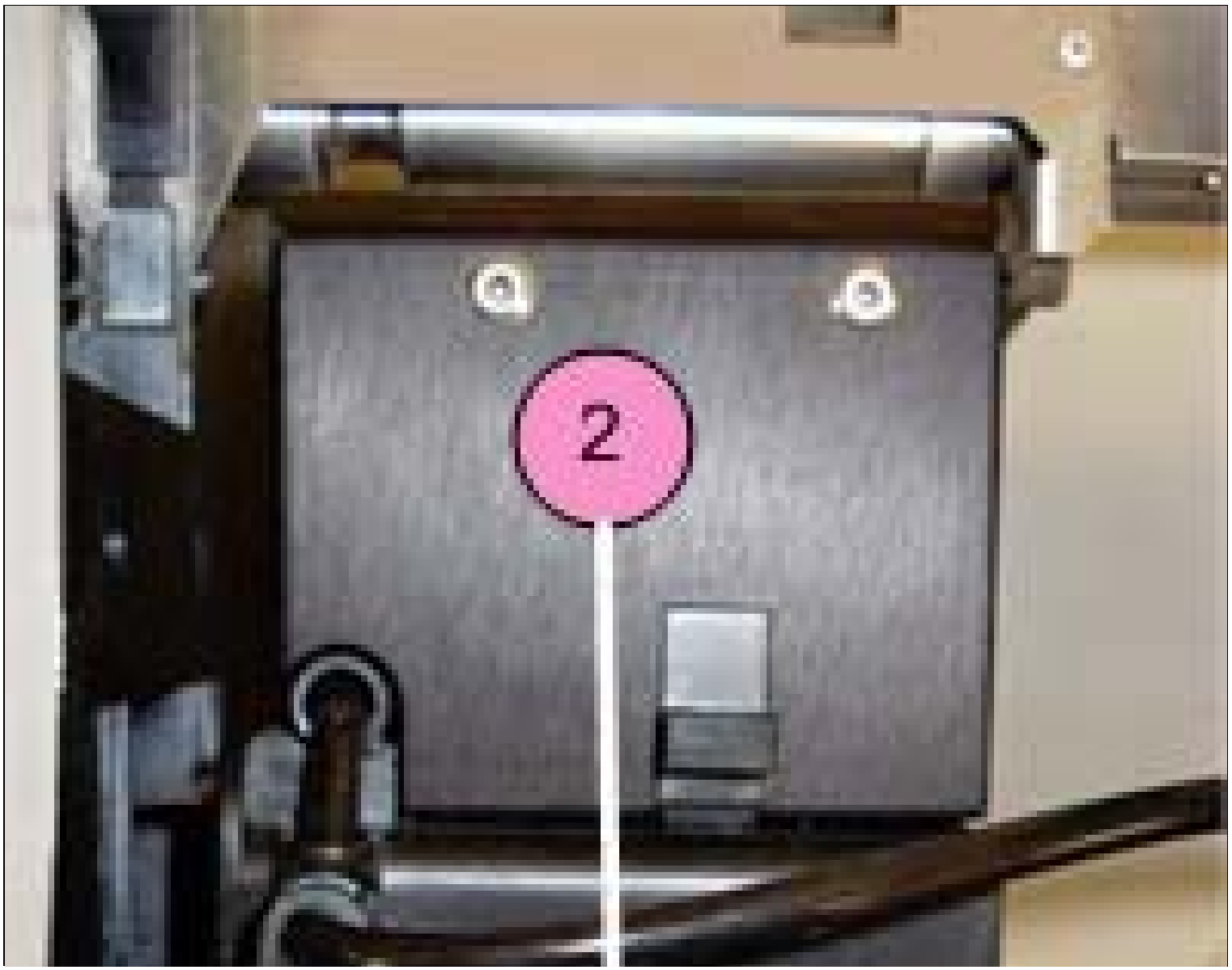


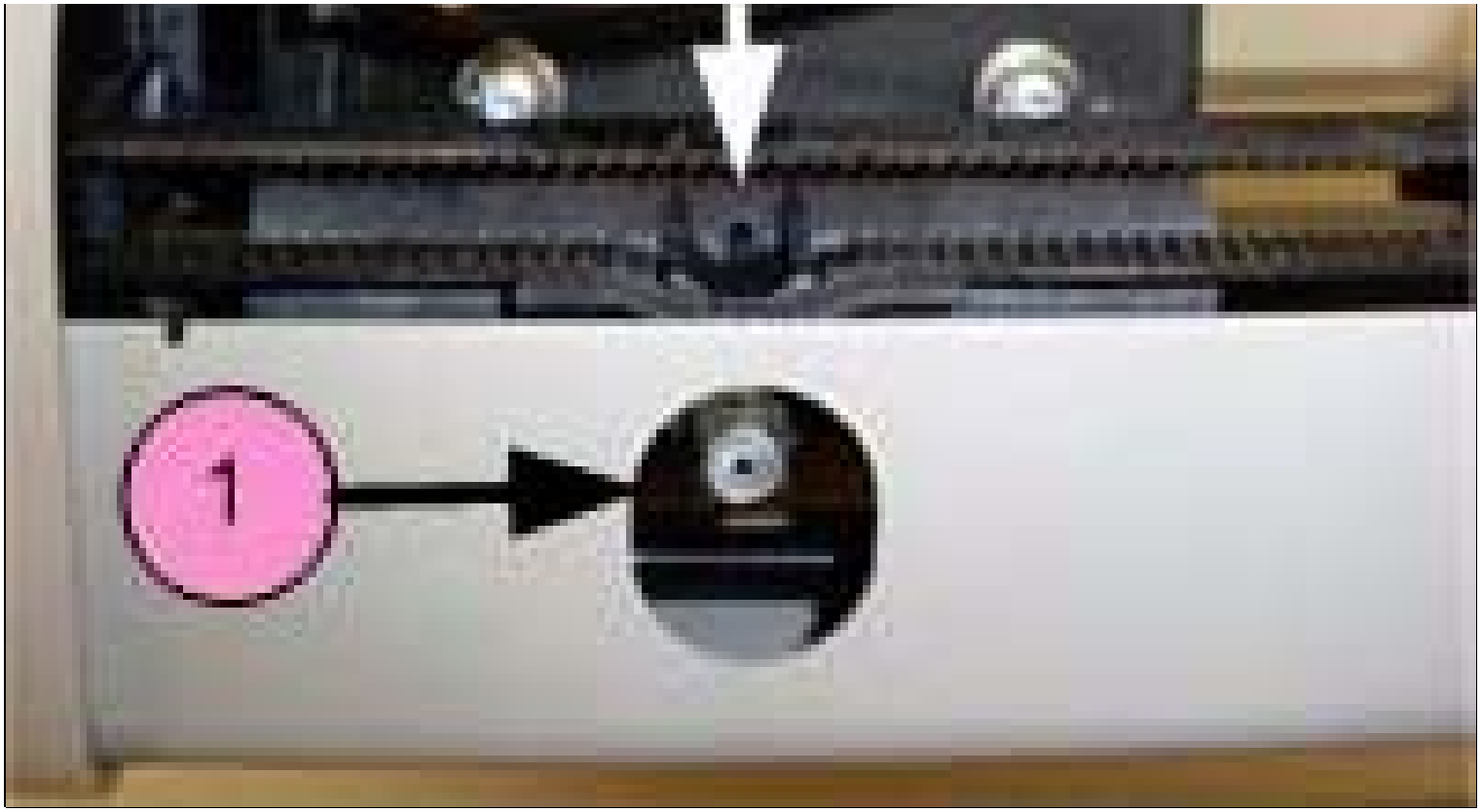
While lubrication of these items is important, it is equally important not to over-grease the bearings and piston screw when lubricating. Only a very small amount of grease is required to keep these parts working optimally. Over-lubricating creates a situation where lubricant builds up in places where it should not be, and may cause the printer to report an error.

FAST AXIS BEARING LUBRICATION

Frequency: When prompted in 3DPrint, or when you receive Error 2303-1.

1. Before lubricating the Fast Axis, make sure the rails and carriage are clean. Follow the cleaning instructions in the Routine Cleaning chapter.
2. Assemble the grease gun that is part of your Accessories Kit according to the instructions found in the document 09576 Grease Gun Loading Instructions, which is supplied on the software installation media shipped with the printer. You can also find these instructions on our Web site at infocenter.3dsystems.com/product-library/projet-cjp-x60/service (http://infocenter.3dsystems.com/product-library/projet-cjp-x60/service)
3. Squeeze the handle until grease dispenses from the tip. Wipe clean with a clean paper towel.
4. Locate the Fast Axis grease fitting. Place the tip of the grease gun over the grease fitting. Push down to snap the gun into place on the fitting.
5. Pump in a few squirts of grease until grease comes out the Relief Hole.
6. Slide the Carriage back and forth to distribute the grease evenly over the Top Rail.
7. Clean the excess grease off the Top Rail and Carriage.
8. Reset the Maintenance Counter in 3D Print.





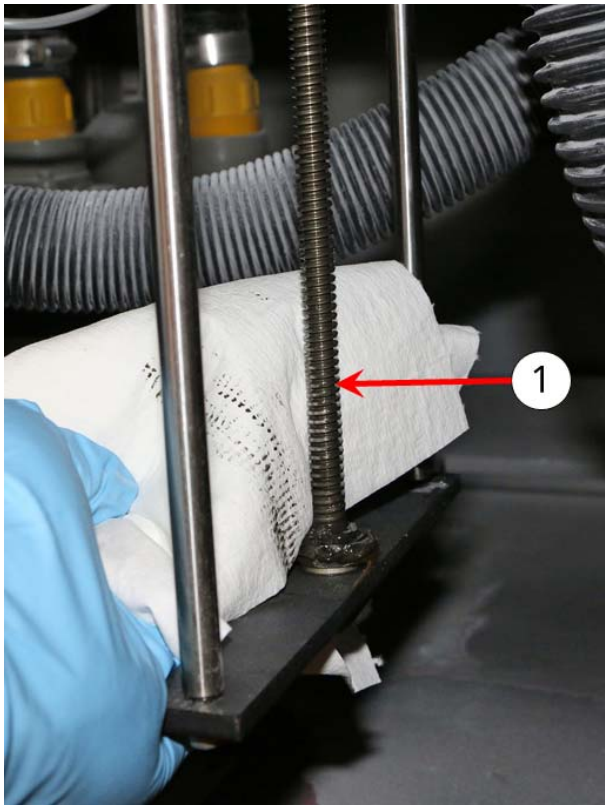
Number	Component
1	Fast Axis Grease Fitting
2	Relief Hole

PISTON SCREW LUBRICATION

Frequency: When prompted to in 3D Print.

NOTE: Wear protective gloves for the below procedure.

- Remove both the rear cover panel of the printer.
- Remove the left (Build Chamber) side panel.
- On the LCD display, select BUILD CHAMBER > LOWER PLATFORM. Hold the Control Knob down and lower the Build Bed platform as far as you can to expose the entire length of the piston screw.
- Assemble the grease gun that is part of your Accessories Kit according to the instructions found in the document 09576 Grease Gun Loading Instructions, which is supplied on the software installation media shipped with the printer. You can also find these instructions on our Web site a infocenter.3dsystems.com/product-library/projet-cjp-x60/service (http://infocenter.3dsystems.com/product-library/projet-cjp-x60/service)
- Look into the left end of the printer, under the build platform, and locate the piston screw.
- Wipe the Piston Screw clean of old grease, dust, etc.



Number	Component
1	Piston Screw

- Squirt grease onto a paper towel and spread the grease up and down the Piston Screw to evenly distribute it over the entire length of the screw.

- Move the Build Bed up and down through its full range of travel a couple of times to finish lubricating the screw.

  Use the LCD menu items BUILD CHAMBER > RAISE PLATFORM and BUILD CHAMBER > LOWER PLATFORM.

  Don’t forget to hold down the Control Knob to raise or lower the platform.

- Wipe off any grease that may collect at the bottom of the screw with a clean paper towel.

- Replace the side and back cover panels.

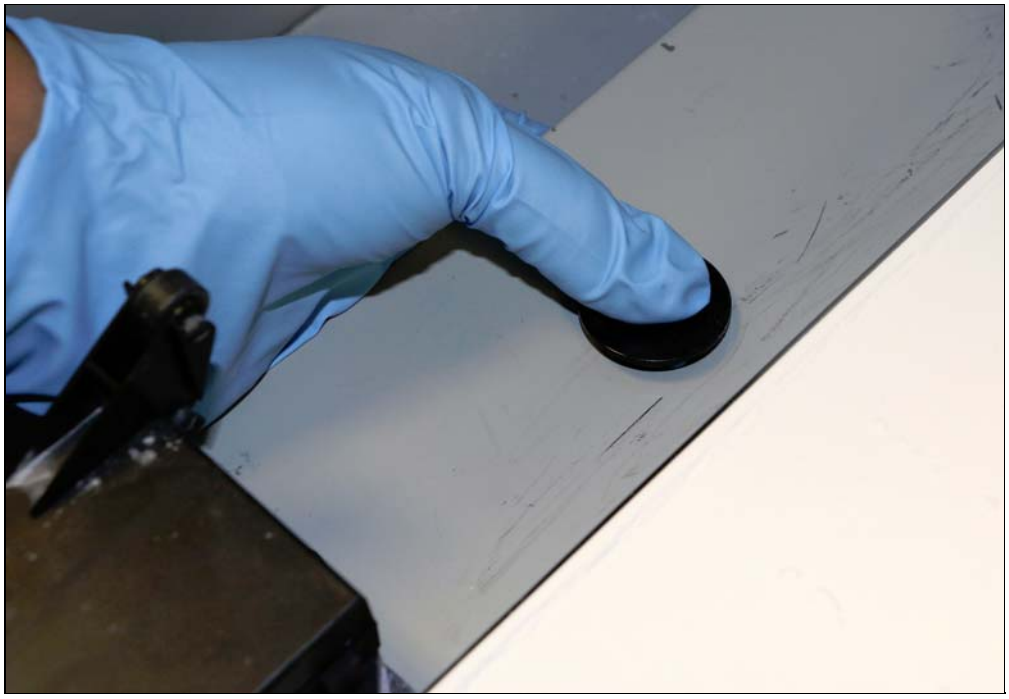
- Reset the Maintenance Counter in 3DPrint.

SLOW AXIS BEARING LUBRICATION

Frequency: When prompted in 3DPrint, or when you receive an Error 2303-0.

NOTE: Wear protective gloves for the below procedure.

1. Locate the round plastic cover on the Deck to the left of the Build Bed and close to the Service Station.
2. Reach your fingers under the left side of the deck and pop the cover off from underneath.



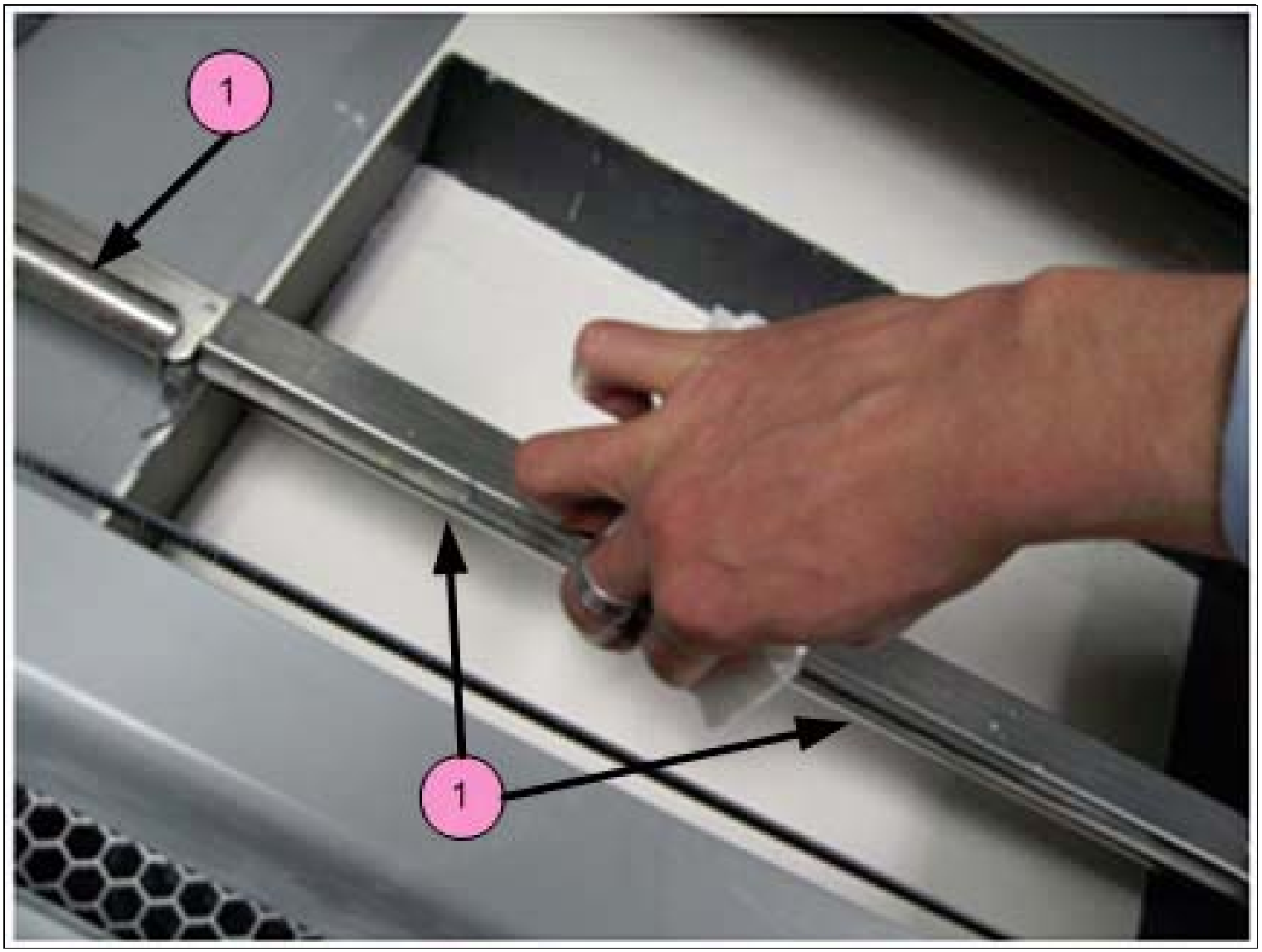
3. Pull the Fast Axis forward until that hole is visible between the Carriage rails and the Spreader Roller. You will see the Slow Axis bearing in the hole.
4. Assemble the grease gun that is part of your Accessories Kit according to the instructions found in the document 09576 Grease Gun Loading Instructions, which is supplied on the software installation media shipped with the printer. You can also find these instructions on our Web site at infocenter.3dsystems.com/product-library/projet-cjp-x60/service (http://infocenter.3dsystems.com/product-library/projet-cjp-x60/service)
5. Squeeze the handle until grease dispenses from the tip. Wipe clean with a clean paper towel.
6. Place the tip of the grease gun over the grease fitting. Push down to snap the gun into place on the fitting.

- Squeeze the trigger 2 - 3 times or until you feel the tension change and then STOP. Do not overgrease.
- Unsnap the grease gun from the fitting. Replace the plastic cover.
- Slide the fast axis forward and backward several times to spread the grease on the slow axis surfaces.
- Reset the Maintenance Counter in 3DPrint.

CLEAN THE SPREADER ROLLER

Frequency: On a regular schedule, depending on your usage. Or, whenever the printer has problems related to the surface finish of horizontal surfaces.

- On the LCD, select BUILD CHAMBER then LOWER PLATFORM. Lower the build bed by 4-5 inches.
- Move the Fast Axis out over the build bed.
- On the LCD, select BUILD CHAMBER then CONTROL ROLLER.
- On the LCD, select ROLLER ON/OFF to turn the Spreader Roller on.
- Using a paper towel dampened with distilled water, clean the Spreader Roller thoroughly by reaching up from underneath.



Number	Component
1	Spreader Roller

- Dry the roller thoroughly with a clean dry paper towel.

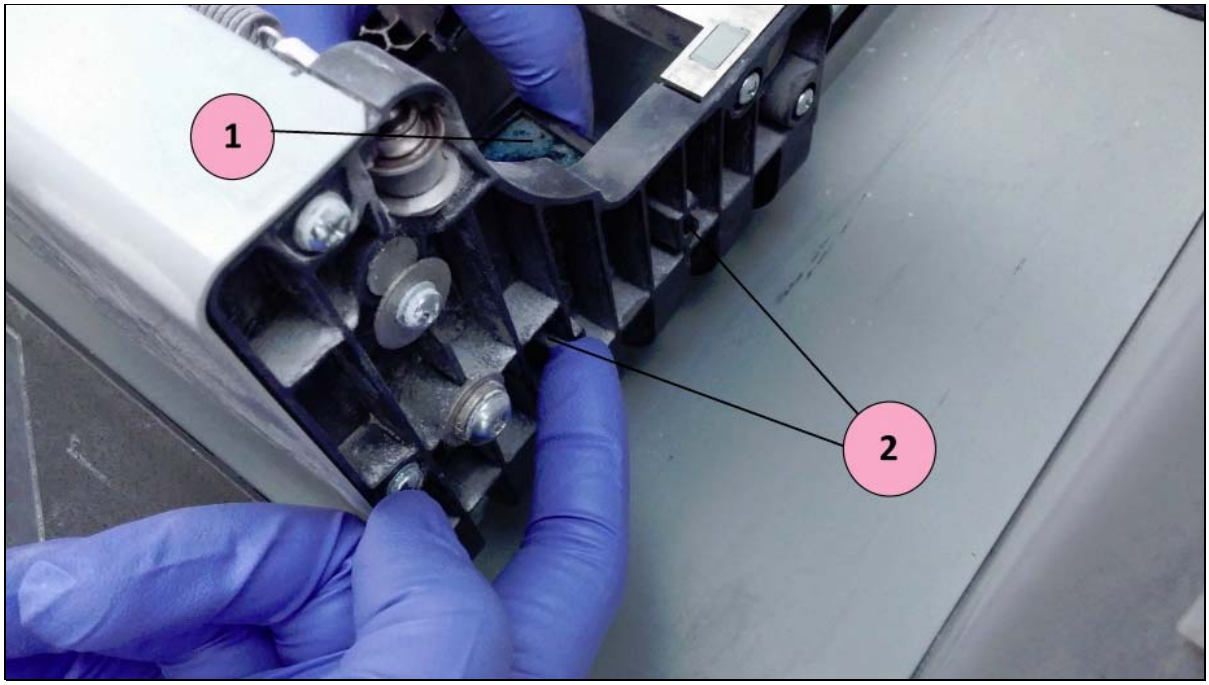
- On the LCD, select ROLLER ON/OFF to turn the Spreader Roller off.
- When finished, select EXIT (ROLLER OFF) to return to the Main Menu.
- Make sure the roller is completely dry before attempting to spread any Core.

REPLACING THE SPITTOON PAD

Frequency: As needed, when the pad becomes excessively saturated or leakage problems occur.

Important: Wear gloves for this procedure. Use caution as color ink may stain clothing.

1. Open the top cover. Pull the Fast Axis assembly all the way to the front of the printer.
2. Locate the Spittoon inside the Fast Axis assembly. Note the two prongs holding the Spittoon in place, located on the right- facing side of the Fast Axis.
3. With one hand on the Spittoon, use the other to gently push the front prong toward the back of the printer. At the same time, rock the Spittoon toward the rear of the printer- it will pop free of the Fast Axis.



Number	Components
1	Spittoon
2	Spittoon Prongs

4. Dispose of the saturated Spittoon Pad in a trash receptacle. Clean the Spittoon using a paper towel. Insert the clean replacement Spittoon Pad.
5. Re-insert the Spittoon in the correct orientation. It will click into place.

REPLACE THE WASTE TRAY

If the Waste Tray is Full, 3DPrint displays EMPTY WASTE TRAY in the Printer Status dialog.

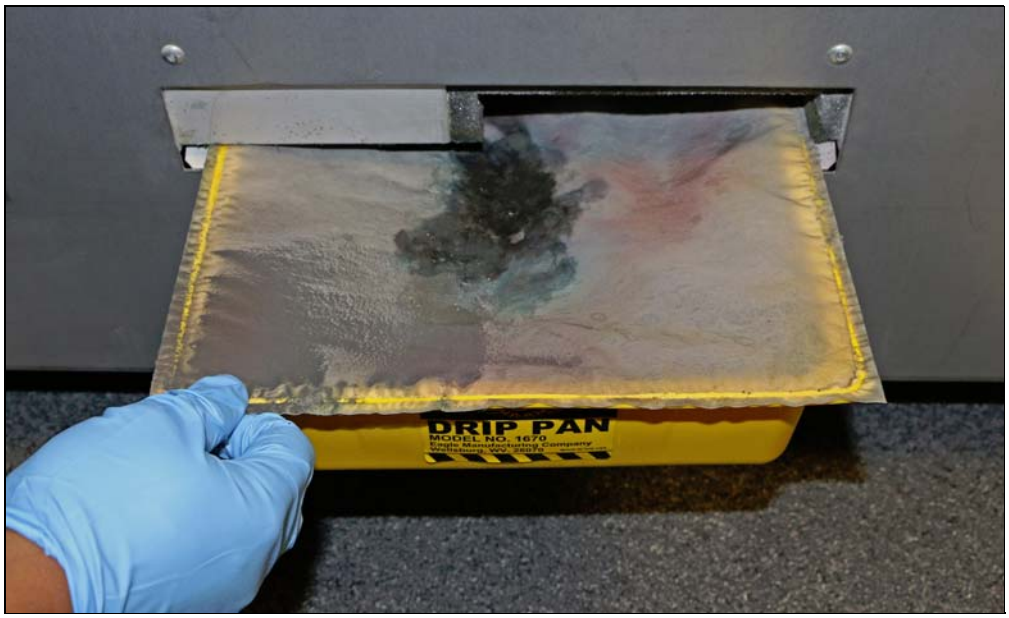
To replace the Waste Tray, follow the steps below.

NOTE: Wear protective gloves for the below procedure.

. Remove rear cover.

. Pull the full Waste Tray out of its compartment on the printer.

. Insert a new Waste Tray into its compartment. Ensure the Tray is pushed all the way in.



. Replace the rear panel.

UPGRADING THE FIRMWARE

At some point it may be necessary to upgrade the firmware that resides in your printer. You should only do this when instructed to by your local Service Provider or by 3D Systems Service.

- Open 3DPrint and select the printer you will be upgrading. Make sure the printer is powered up and online.
- In 3DPrint, select Service > Check Status to see which version of Firmware is installed on your printer.
- If you need to upload Firmware, do the following:

Go to infocenter.3dsystems.com (http://infocenter.3dsystems.com/) and find your printer in the Products section. Then, on your printer's page, click on Firmware and download the firmware to your desktop.
The firmware will be in a compressed format (zip). Unzip the file.
In 3DPrint, select Tools > Service> Upload New Firmware.
In the dialog that opens, navigate to the file on your desktop.
Double-click on the file. The new firmware will upload to your printer. This may take a few minutes.


Note - Do not turn off power to the ProJet during this time.

- The printer will automatically reboot.
- Wait for the LCD to display ONLINE before continuing.
- After rebooting, in 3DPrint select Tools> Service > Check Status. Verify that the new firmware version number is listed.

TROUBLESHOOTING THE PROJET® X60 PRINTERS

If you should encounter any problems with your ProJet® x60, the steps below will help you troubleshoot the problem and, in most cases, correct it yourself. If you need to call service, we've provided a list of the information to have ready for your Service Provider.

Start Here

Start with Section, 'Try This First'. In many cases this will solve the problem. If it doesn't, gather the information described below and use the Troubleshoot section that follows to find the problem.

Gather Information

Carefully observe what the printer is doing.

- Turn the printer off, wait 1 minute, then turn it on again.
- Does it power up normally? What is displayed on the LCD?
- Does it report any errors? What are the error codes?
- Are there problems with the parts it builds? What specifically is wrong with the parts?

Troubleshoot

Once you have the information above, use these troubleshooting flowcharts and tables to isolate the problem.

Power Up Problems

- Section, 'Problems Powering Up'

Print Head Errors

- Section, 'Print Head Errors/Weak Parts'

Motion Errors

- Section, 'Motion Errors/Fast Axis'
- Section, 'Motion Errors/Slow Axis'

Network Errors

- Section, 'Network Errors/Cannot Connect to Printer'
- Section, 'Network Errors/Packet Timeout'

Part Quality Problems

- Section, 'Part Quality Issues Streaky/Striped Parts, Delamination, Weak Parts'
- Section, 'Part Quality Issues Bad Surface Finish'

Other problems

- Section, 'Miscellaneous Problems'

Additional information

Section, ’Error Codes and Messages Background Details’

Section, ’Additional Information’

Call for Service

If you do need to call service, use the checklist provided here to gather the information your Service Provider will need.

Section, ’Calling for Service’

TRY THIS FIRST

Before calling for service, follow these steps:

1. Clean the machine thoroughly!

This includes all parts of the deck, service station, axis rails, pulley teeth, and pogo pins. Remove any debris build up at the ends of travel, on the axis rail and even on the axis rail supports.
Finally, you should remove the printheads and clean the pogo pins. If the printheads are old, dirty, or have reported an error through 3DPrint, replace the printheads with new ones.

2. Perform any needed maintenance.

Check the Printer Status Dialog window in 3DPrint for any maintenance that is due.

3. Inspect the printer.

Perform a quick inspection of the machine. During the inspection you should be looking for any signs of leaks, loose screws or loose nuts. Loose screws or nuts should be tightened and leaks should be reported to your local Service Provider immediately.

4. Check for motion problems

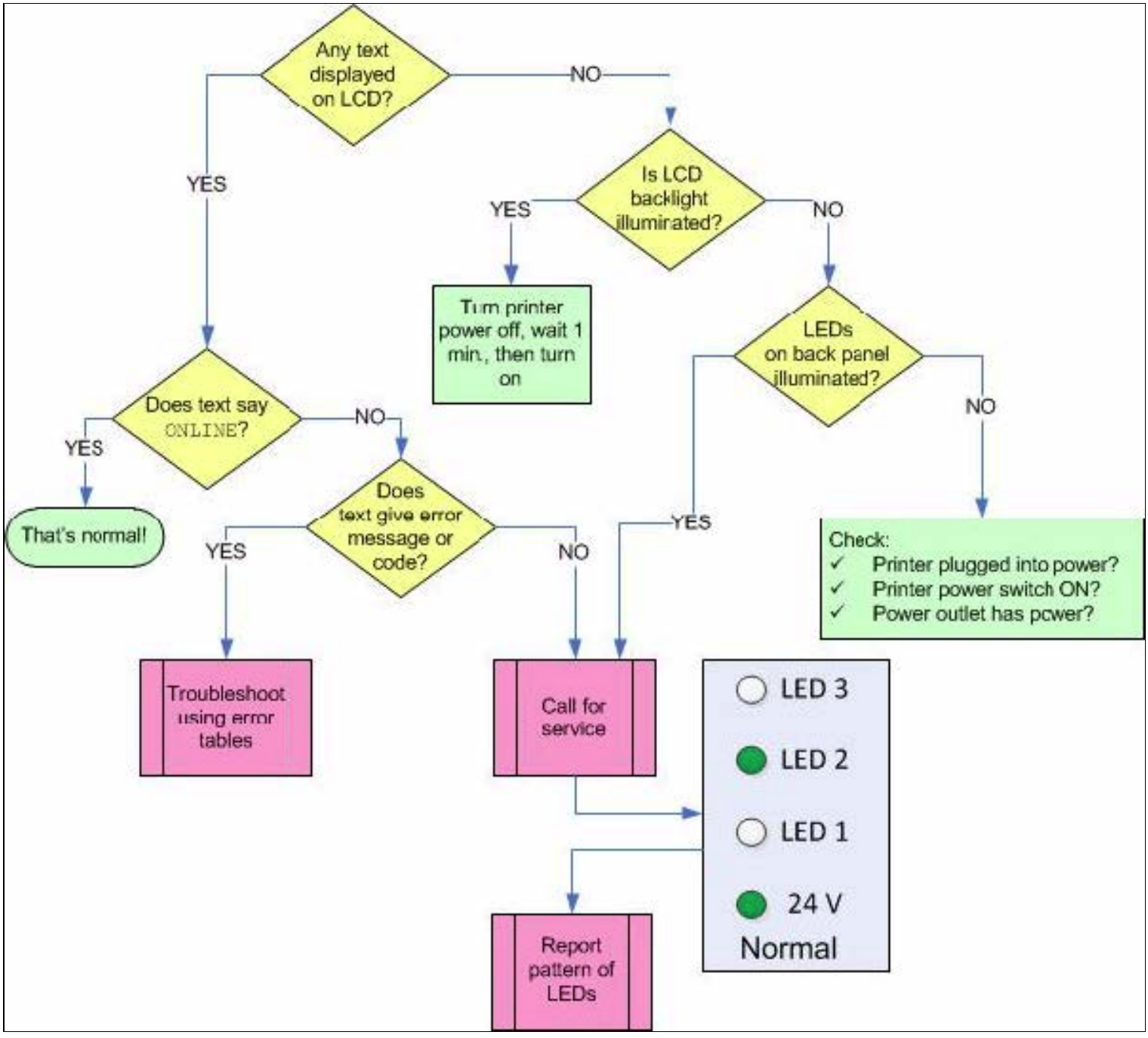
Turn the machine off and move the carriage and fast axis to the middle of the build bed. Wait 60 seconds, then re-boot the machine. Watch for any obstructions or jumpy movements. If the movements are jumpy in any axis, clean the rail as described in step 1 above and lubricate that axis.

5. Troubleshoot.

If none of these actions resolve the problem, you will need to troubleshoot what’s happening. Use the flowcharts and tables in the following sections to discover the problem and resolve it.

PROBLEMS POWERING UP

If your printer does not power up normally, use the flowchart below to isolate the problem.



PRINTHEAD ERRORS/WEAK PARTS

This section covers two types of problems, which share a common set of solutions.

Weak parts that break too easily when handled.

Error codes that indicate a problem with the print head.

Error Codes covered by this section:

Error 1000 Unknown head error

Error 1001 Head Power Fail

Error 1003 x Head Error

Error 1004 x Head Error

Error 1005 x Head Error

Error 1006 x Head Too Hot

Error 1007 x Head Error

Error 1009 x Head Error

Error 1010 x Head Error

Error 40800 x Head Error

Error 40801 Headcard Power Fail

Error 40802 x Use Only HP11

Error 60700 Head X temperature calibration failed

Error 60701 Head X invalid serial number

Error 60702 Head X temperature too high

Error 10040 Pogo Comm Error

For more detailed information on what these errors mean, see Section, ’Error Codes and Messages Background Details’.

TRY THIS FIRST

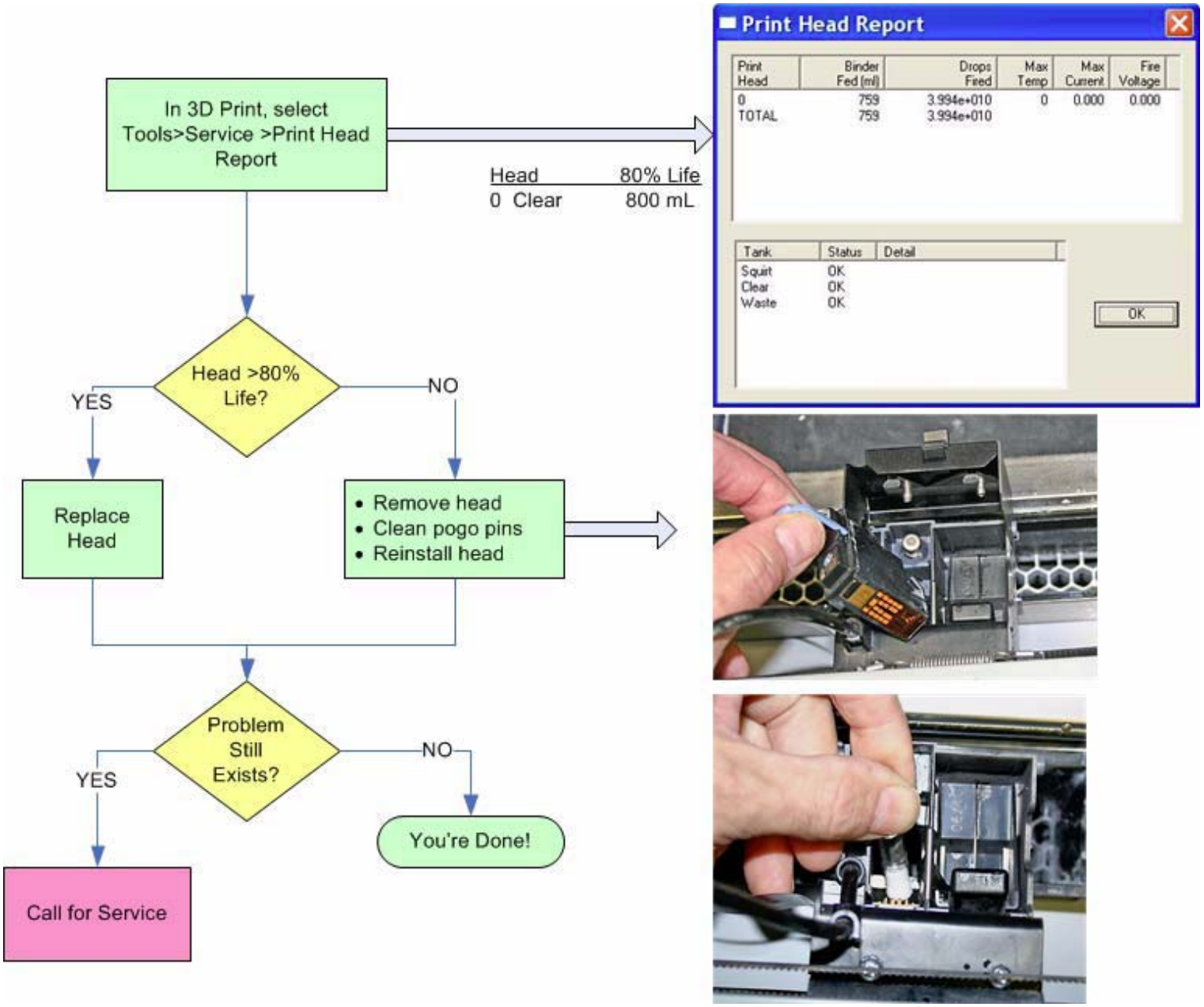
Most often, these errors (and weak parts) are caused by accumulation of Core material, binder, and debris on the print head. A dirty print head, in turn, is very often caused by a service station that is dirty and not cleaning the head properly. The first solution to try is to clean the service station thoroughly. See Section, 'Clean The Service Station'. If this fails to solve the problem, use the troubleshooting flowchart below.

TROUBLESHOOT PRINT HEAD/WEAK PARTS

If your printer is reporting print head errors, or is building parts that break too easily, follow the flowchart below. Also see Section, 'Part Quality Issues Streaky/Striped Parts, Delamination, Weak Parts'.

How to do it

To remove the printhead and clean the pogo pins, follow the steps in Section, 'Change Print Head'.



MOTION ERRORS/FAST AXIS

There are a number of Error Codes the printer may report that all relate to the Fast Axis, and that all share a common set of solutions.

Error Codes covered in this section:

- Error 2301:1 Motors Not Rezeroed
- Error 2303:1x Axis Pos Error
- Error 2305:1x Axis Settle
- Error 2400:1x Axis Seek Error
- Error 3011 System Error
- Error 3013 Sequencer Timeout
- Error 43000 Sequencer Timeout

For more detailed information on what these errors mean, see Section, ‘Error Codes and Messages Background Details’.

TROUBLESHOOT FAST AXIS

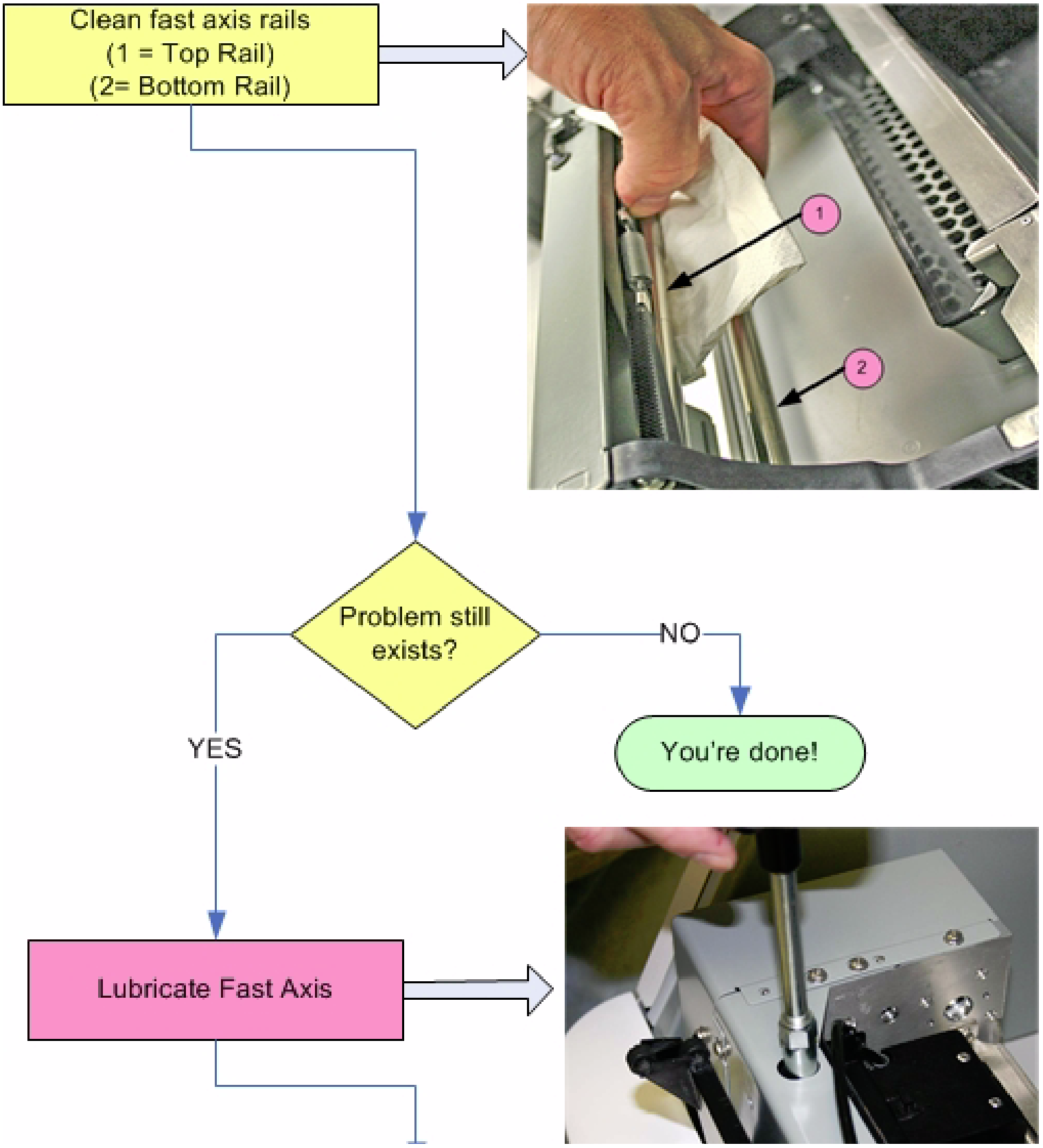
If your printer is reporting Fast Axis errors, follow the flowchart below.

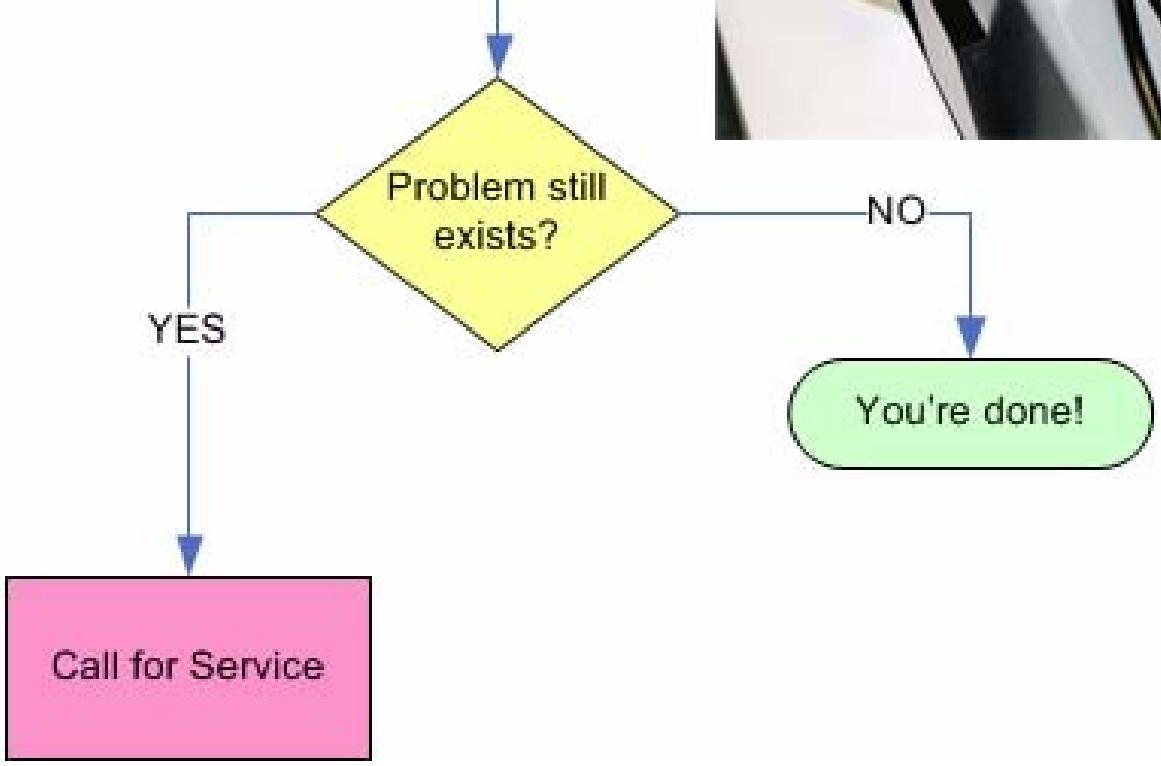
How to do it

To perform the cleaning and lubrication called for in the flowchart, see:

Section, 'Clean The Fast Axis Rails and Carriage'

Section, 'Fast Axis Bearing Lubrication'




Problem still exists?
NO
YES
You're done!
Call for Service

MOTION ERRORS/SLOW AXIS

There are a number of Error Codes the printer may report that all relate to the Slow Axis, and that all share a common set of solutions.

Error Codes covered in this section:

Error 2301:0 Motors Not Rezeroed

Error 2303:0 x Axis Pos Error

Error 2305:0 x Axis Settle Error

Error 2400:0 x Axis Seek Error

Error 3011 System Error

Error 3013 Sequencer Timeout

Error 43000 Sequencer Timeout

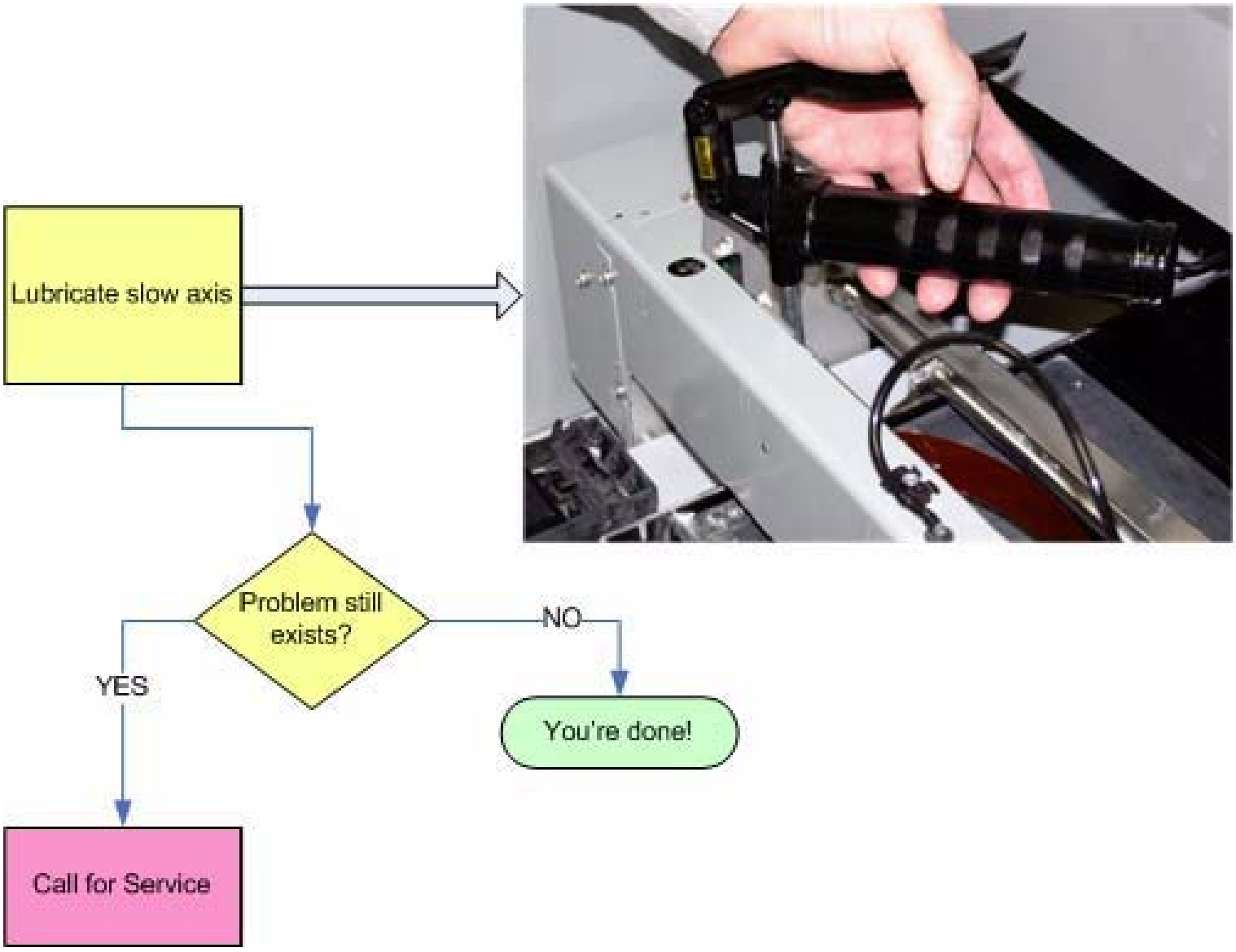
For more detailed information on what these errors mean, see Section, 'Error Codes and Messages Background Details'.

How to do it
To perform the cleaning and lubrication called for in the flowchart, see:

Section, 'Slow Axis Bearing Lubrication'

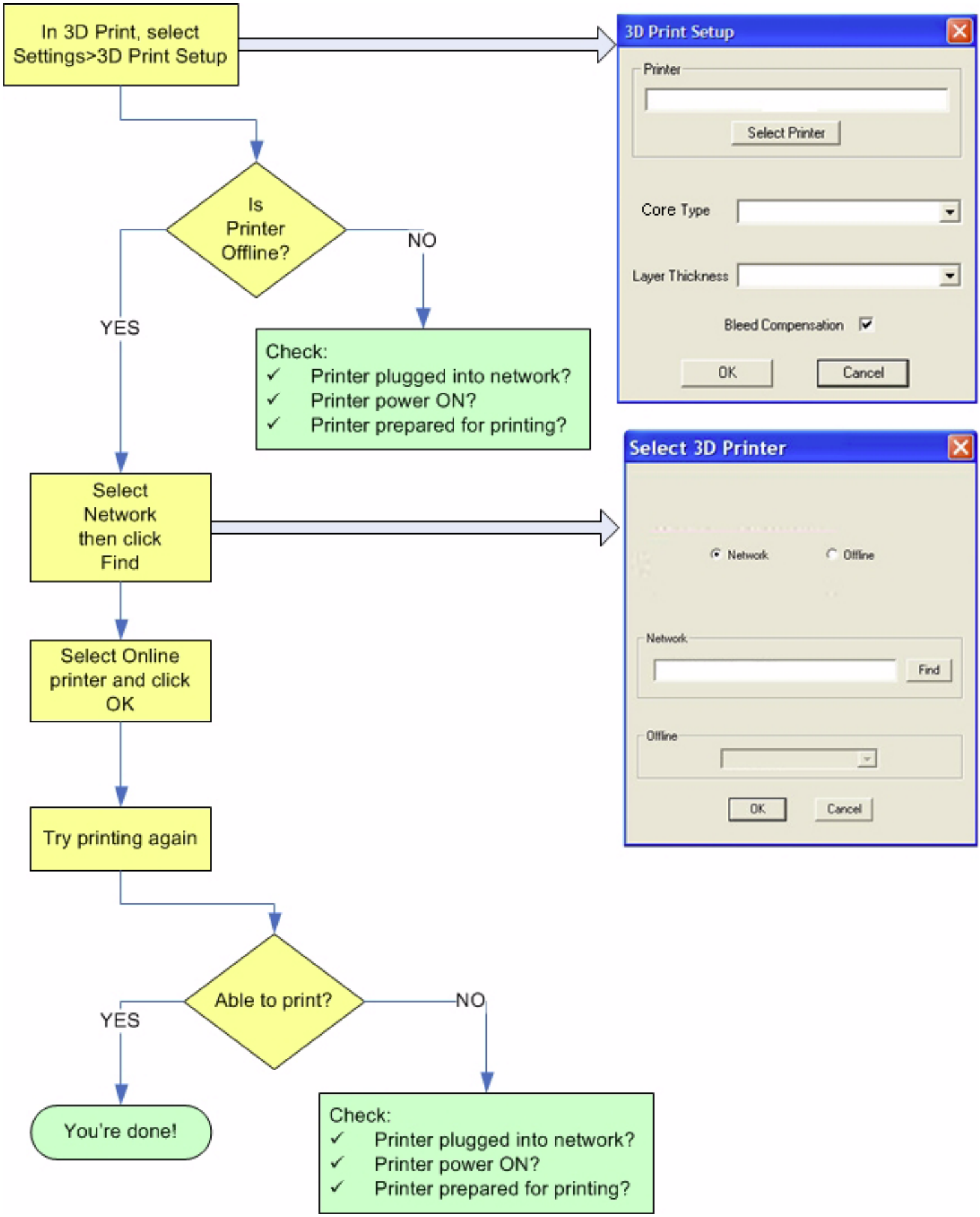
TROUBLESHOOT SLOW AXIS

If your printer is reporting Slow Axis errors, follow the flowchart below.



NETWORK ERRORS/CANNOT CONNECT TO PRINTER

If you have trouble connecting to your printer over the network, follow the troubleshooting flowchart below.



NETWORK ERRORS/PACKET TIMEOUT

Explanation: The Packet Time Out error is a result of lost or impaired communication between the printer and the PC.

A Packet Time Out error may also occur if the file is too large and the PC cannot transfer the file data fast enough. For example, some files may be layer-data heavy, meaning that the bulk of the data is in a small quantity of layers.

Solution: Check for these problems:

The PC used to control the printer may:

Be too busy running other applications.

Be running a virus or spyware scan.

Be in a “sleep” or “suspend” mode due to power management settings.

Not meet the minimum system requirements. See the minimum system requirements in Chapter 1, Overview.

The printer’s network connection may be lost

Printer’s network cable may be unplugged, or damaged.

Server is not responding.

Network is too busy.

PART QUALITY ISSUES STREAKY/STRIPED PARTS, DELAMINATION, WEAK PARTS

Explanation: In a color print job, streaky or striped parts are easy to identify (see photo below). The streaks or stripes are caused either by Core buildup on the print head, a failed print head, or an electrical issue within the printer. With a monochrome printer, this is harder to see, and in fact often shows up as weak parts, or parts that delaminate.

Delamination (layers splitting apart) may be due to a print head that is caked with Core, or a pause in network communications, or a manual pause of more than 15 minutes.

Solution - Both:

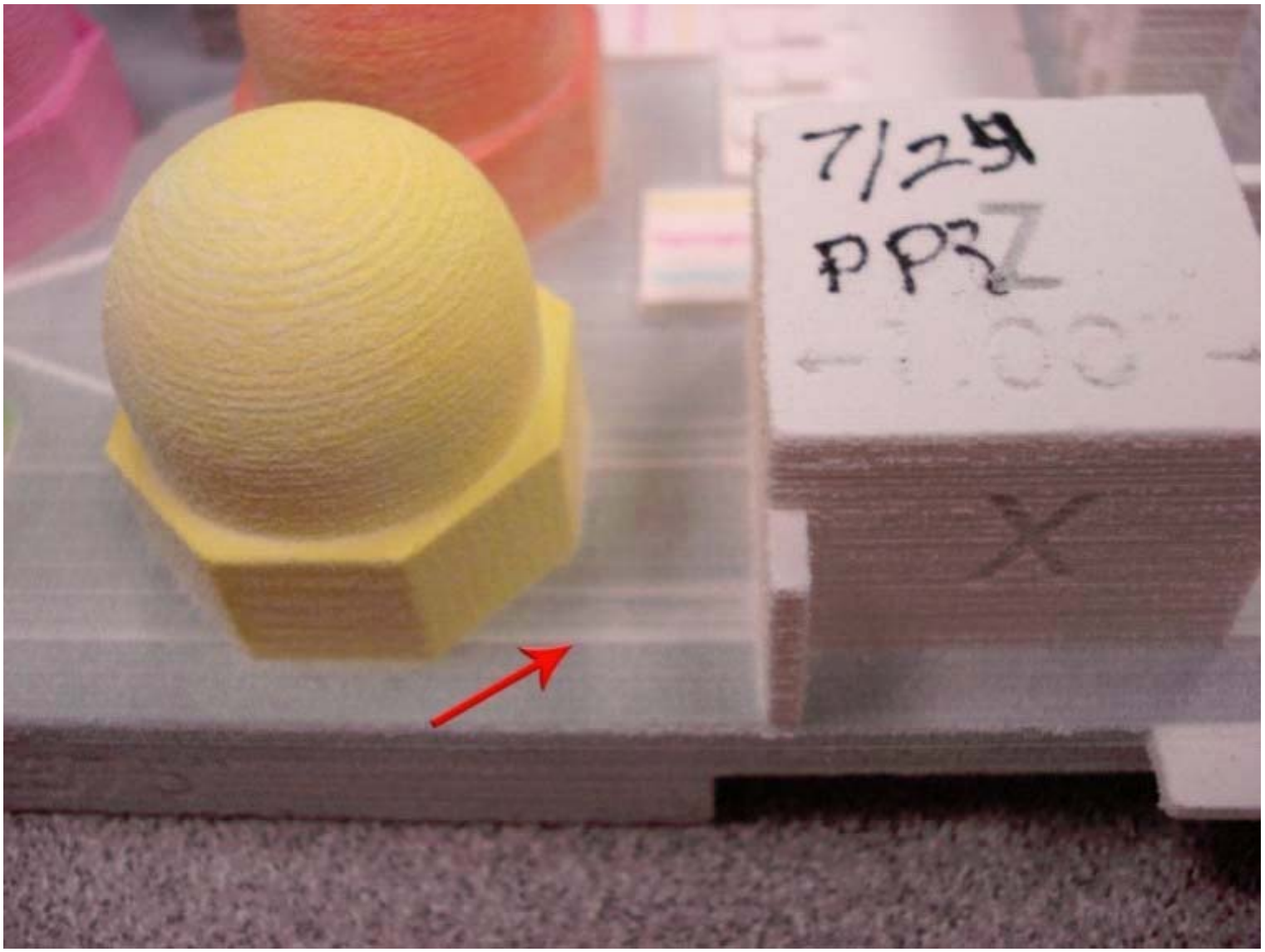
Clean the service station.

Ensure the printer has Cleaning Solution.

Clean the Fast Axis Rails of any debris and reboot the printer. See Section, 'Clean The Fast Axis Rails and Carriage'.

If the problem persists,

Clean the pogo pins and the print head contacts.



Additional Solution - Delamination

Check your PC settings. The printer may be pausing as it waits for additional data from the PC. While pausing, the printed

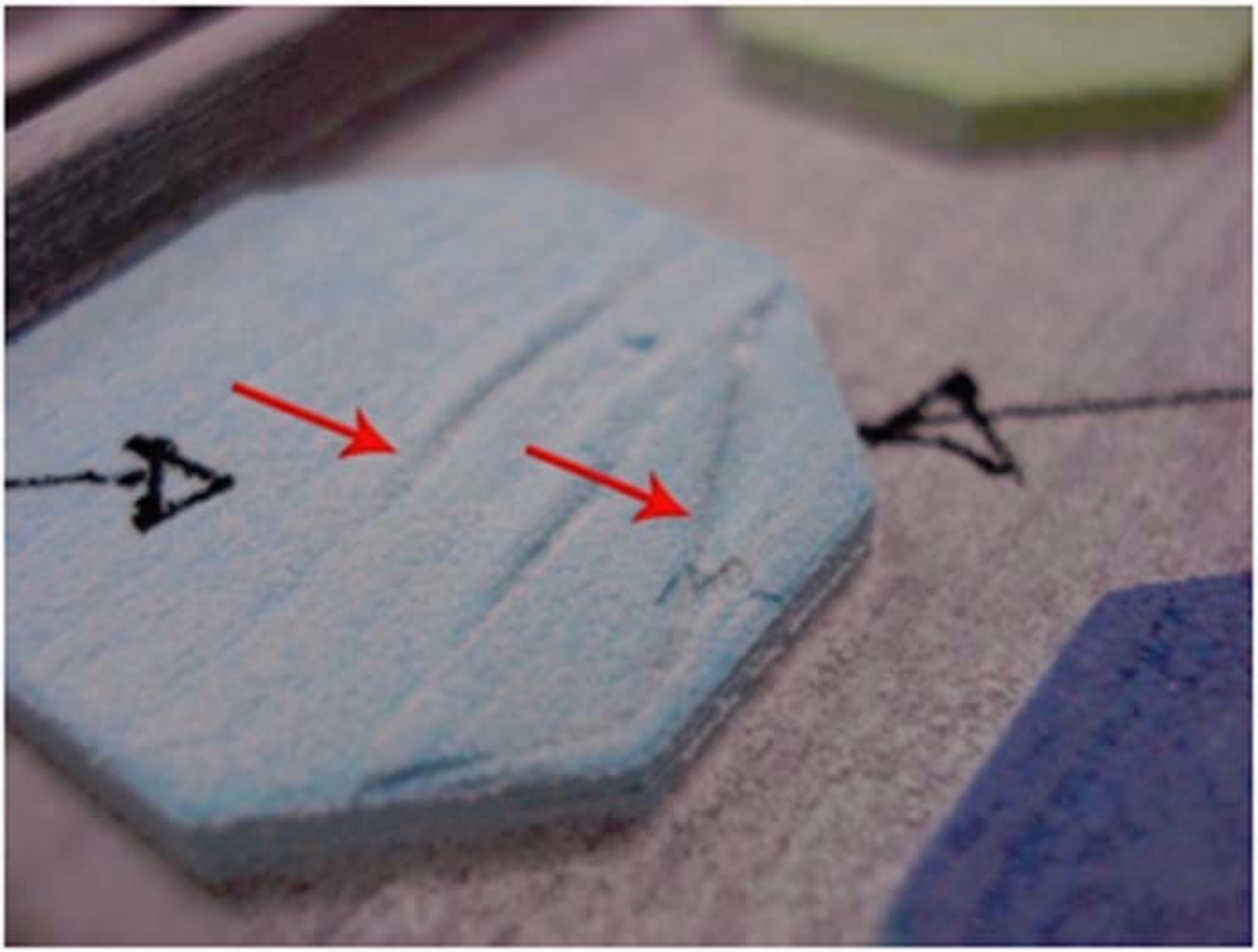
part begins to dry and as a result the next layer does not stick to the last layer printed. Your PC should be dedicated to 3D Print. Your PC Power Management software should be completely shut off.

PART QUALITY ISSUES - BAD SURFACE FINISH

The problems behind bad surface finish on parts will be different depending on whether the rough surface is in the vertical plane or the horizontal plane.

BAD HORIZONTAL SURFACE FINISH

Explanation:
A bad surface finish on horizontal surfaces is usually the result of debris buildup on the Spreader Roller. The debris sticks to the Roller and prevents it from spreading a smooth, flat layer of Core. See the photo below (color part shown to highlight the problem).



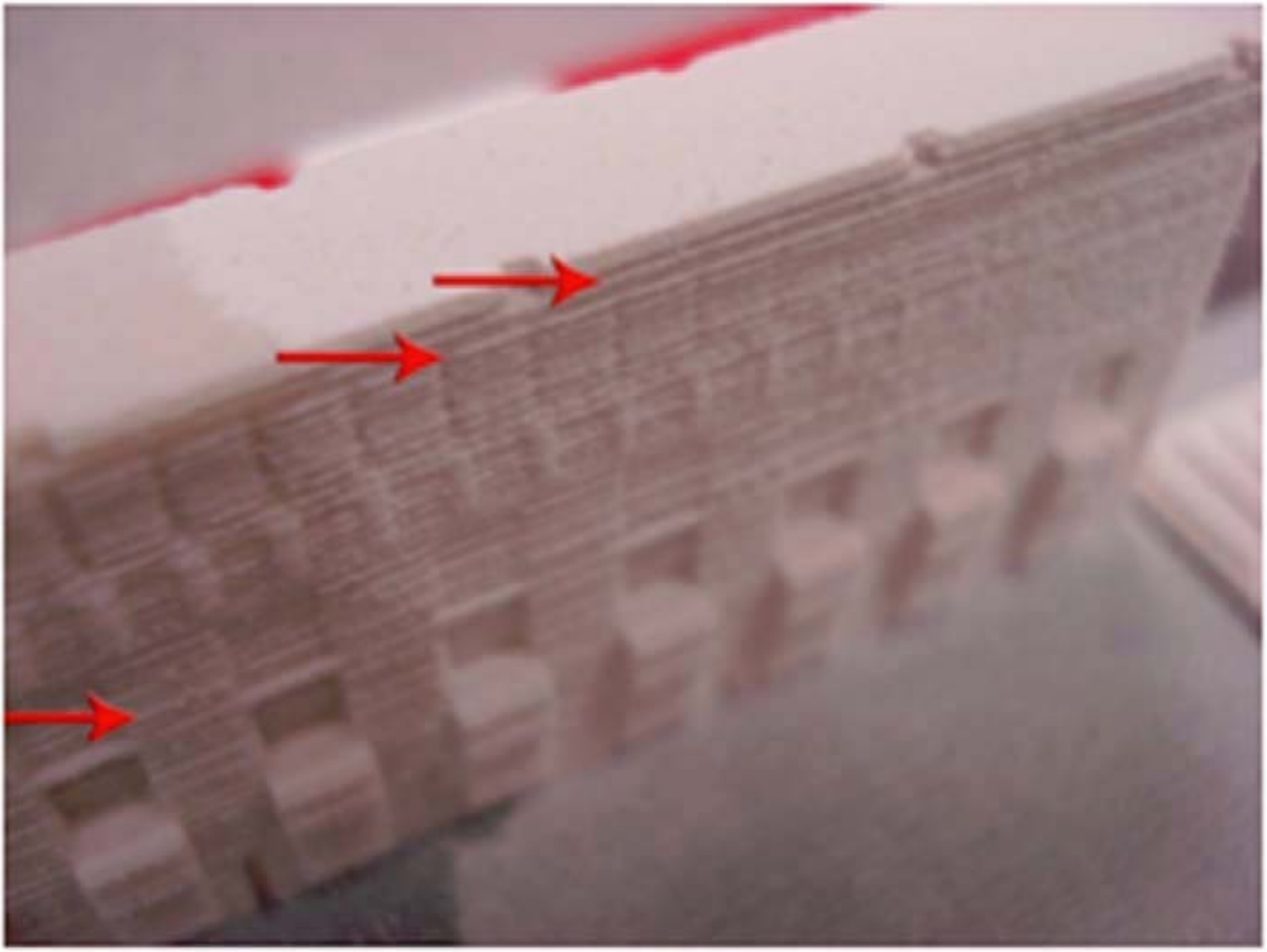
Solution
Clean the Spreader Roller. See Section, 'Clean The Spreader Roller'.

BAD VERTICAL SURFACE FINISH

Explanation:
A bad surface finish on vertical surfaces is usually the result of either or both of these:

A problem with the print head.

A motion problem with either the Fast Axis or the Slow Axis.



Solution - Print Head
Troubleshoot using Section, 'Print Head Errors/Weak Parts'.

Solution - Motion Problems

Clean the Fast Axis Rails. See Section, 'Clean The Fast Axis Rails and Carriage'.

MISCELLANEOUS PROBLEMS

VACUUM HAS LOW/NO SUCTION

Explanation: This is usually an indication that the Debris Separator needs to be emptied and cleaned, or that the vacuum hose is plugged or damaged. Less commonly, the printer may have been turned off and on too quickly. Always wait 1 minute after turning power off before turning it on again.

Solution:

Debris Separator

- Remove the Debris Separator and empty the contents into a waste receptacle.
- Check that its gasket is not damaged. Also check that all four magnets are in place on the back of the Separator. These magnets hold the Separator against the panel.
- When you replace the Debris Separator, ensure that it is flush against the panel.

Vacuum Hose

- Check the vacuum hose is not plugged with debris.
- Check that the vacuum hose is not cut or torn.

Power Cycling

- Turn the printer power off.
- Wait a full 60 seconds for the motors, valves, etc. to completely reset.
- Turn the printer power back on.

If after checking these items the problem persists, contact your Service Provider.

BINDER CARTRIDGE IS FULL BUT 3DPRINT INDICATES EMPTY

Explanation: This is usually caused by a damaged binder cartridge, or a failure in the binder cartridge pocket.

Solution:

Remove and reseat the binder cartridge. Check the following:

- Be sure it’s the correct cartridge for that pocket.
- Check the label to be sure it’s oriented correctly.
- Snap it fully into place in the pocket.

If that doesn’t solve the problem, try a new binder cartridge.
If a new binder cartridge doesn’t solve the problem, contact your Service Provider.

ERROR CODES AND MESSAGES BACKGROUND DETAILS

Below is a more detailed explanation of some of the error codes and messages the printer may report.

ERROR CODE	
Error 40800 Error 1004 Error 1010 Error 1009 Error 1003 Error 1008	Explanation: 1000ml is the expected life of a print head that uses clear binder. In the rare instances where the print head does not last this long, the reasons are varied. Some print heads may fail if the printer does not run a build on a regular basis. They may also prematurely fail if the printer is turned off for long periods. Solution: We recommend leaving your printer turned on when not in use. Doing this will allow the printer to automatically maintain the print head with a routine it runs between builds. Also, when changing a print head, be sure to clean the pogo pins at the same time. Failure to clean the pogo pins may result in poor contact to the print head, causing the system to report an error and preventing operation of the printer.
Error 1006	Explanation: This error is most likely caused by a print head reaching the end of its life. As a print head ages, it overheats and eventually reports this error. It could also be a failed connection between the printer and the print head. Solution: This error is most often avoided by following best practices for keeping the printer clear of excess Core and to clean the pogo contacts every time a print head is changed. The Printer will prompt you when the print head has reached its maximum life and requires changing. Change the print head according to the instructions in this manual. When a print head is changed, the Printer will run an automatic purge cycle.

Error 2303 (0) Error 2303 (1)	Explanation: If the error shows 2303 (0) it means that there is excessive friction on the slow axis rails, or something is obstructing the travel path of the axis. If the error is 2303 (1), it means that there is excessive friction on the fast axis rails, or something is obstructing the travel path of the axis. Solution: First, ensure there is nothing blocking the travel path of either axis. If there is no obstruction, then it usually means that the fast or slow axis needs to be greased. Follow the instructions in the Printer Maintenance chapter for greasing the slow or fast axis.
Error 1905	Explanation: This error is caused by a layer that is too large for the printer's buffer. The printer is unable to process the layer and reports the error. This is most common with GIS, architecture, and scanned files, which are usually very large. Solution: Try rotating the part on the X-Z-axis to increase the layer count and reduce the size of each layer. The risk in doing this is 3DPrint is unable to check for layer size before it begins the build. We recommend reducing the detail on the file and trying the print again.

ADDITIONAL INFORMATION

MATERIALS

Visit the Materials section of our Web site to get the latest information on:

- Materials that are compatible with your printer.
- Best Practices to help you create the very best parts.

http://www.3dsystems.com/materials/professional (http://www.3dsystems.com/materials/professional)

SERVICE

Visit the Support section of our Web site for tips on maintaining your printer, troubleshooting problems, or to contact our Service staff:

https://support.3dsystems.com (https://support.3dsystems.com)

CALLING FOR SERVICE

If you are still experiencing problems after troubleshooting, contact your local Reseller or Service Provider with the below information.

Serial Number

Company Name and Contact Info

Log File (obtainable through the 3DPrint Software Service Menu)

.INI File (Obtainable through the 3DPrint Software Service Menu)

SPREAD.CSV File (Obtainable through the 3DPrint Software > Service Menu, Receive File option)

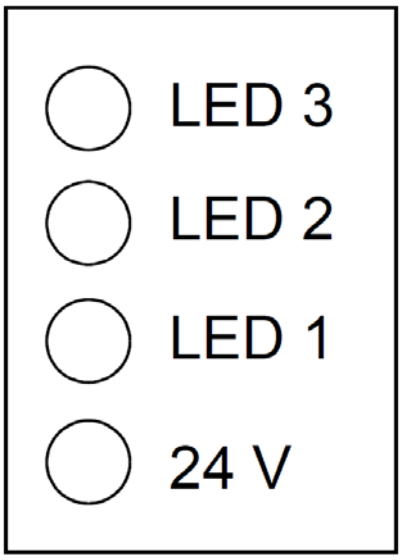
Head Report Information (Obtainable through the 3DPrint Software > Service Menu)

Binder/Core Types

Binder/Core Expiration Dates

EXACT Error Code/ Description of Problem

Also look at the back of the printer, near where the power cord attaches. If you have a ProJet® 160/260C Type 3, there will be 4 diagnostic LEDs. Record the pattern of which LEDs are illuminated and which are not, and report this to Service.



CONTACT 3D SYSTEMS

NOTE: Whenever you have a problem or a question it is best to contact your reseller directly first.

If the certified partner cannot help you then there is a Customer Support Hotline you can use. If you receive an unrecoverable error message, or if you need to contact us for another problem, you may contact our Customer Support Hotline.

Customer Support Hotline

Please contact your Customer Support Hotline at one of the following numbers:

US and Canada: 888-598-1438

UK and EMEA: +44 1442 279883

International: +1 803-326-3930

General

ProJet x60 service procedures must be performed only by a 3D Systems-certified service technician unless this guide explicitly states otherwise. If your 3D printer system needs service, contact 3D Systems Technical Support at the following numbers:

In the United States or Canada, call 800-793-3669

In Europe, call +49-6151-357357

You can also contact your local 3D Systems representative.

3D Systems' support portal is located at http://www.3dsystems.com/support (http://www.3dsystems.com/support)

For material safety data sheet, go to http://www.3dsystems.com/support/materials/msds (http://www.3dsystems.com/support/materials/msds)

BASIC REGULATIONS

3D Systems has tested this printer to electromagnetic emission and immunity standards. These standards are designed to mitigate interference caused or received by this printer in a typical office environment.

United States

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. If it is not installed and used in accordance with these instructions, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

Changes or modifications to this equipment not approved by 3D Systems can void the authority of the user to operate this equipment.

Canada

Ce dispositif est conforme aÌ la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage preìjudiciable, et (2) ce dispositif doit accepter tout brouillage rec?u, y compris un brouillage susceptible de provoquer un fonctionnement indeìsirable.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

European Union

CAUTION: This is a Class A product. In a domestic environment, this product can cause radio interference in which case the user could be required to take adequate measures.

Environmental Agency Notices:

Declared Noise Emissions in accordance with ISO 9296

REACH (Registration, Evaluation, Authorization and Restriction of Chemicals, 1907/2006) is the European Union's (EU) chemical substances regulatory framework. 3D System complies with the REACH directive. For information on SVHC (Substances of Very High Concern)

POWER CORDS AND USER DOCUMENTATION:

3D System products are provided with the power cord and user documentation suitable for the intended country of delivery. Products that are relocated to other countries should use nationally certified power cords and plugs to ensure safe operation of the product. Contact 3D System to determine if alternate power cords or user documentation in other languages is available for your market.

CERTIFICATIONS:

3D SYSTEMS

CE 17

EC DECLARATION OF CONFORMITY (DoC)

We

Manufacturer: *3D Systems Corporation*
Address: *333 Three D Systems Circle Rock Hill, SC 29730*

declare under sole responsibility for issuing this declaration of conformity in relation to the following Product(s):

Product Description: *3D Printer*
Model(s): *ProJet® 260C, ProJet® 260Plus, ProJet® 360, and ProJet® 460Plus*

For the above given Product(s) is hereby declared that it conforms to the essential requirements set out in community harmonization legislation mentioned below:

Low Voltage Directive 2014/35/EU of 26 February 2014
Electromagnetic Compatibility Directive 2014/30/EU of 14 October 2014

Statement about the relevant harmonized standards that have been used, or statement about the specifications in relation to which conformity is declared (Standard: Date of Issue):

EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011 +A2:2013
EN 55032:2012,+AC:2013 *EN 61000-3-3:2013*
EN 61000-3-2:2014

Additional Information: *Reserved*

Name of Person Authorized to compile the technical construction file:

Joel Delanoue
ZA des portes du Maine
72 380 Joué L'Abbé, France

Local contact for regulatory topics only:

North America	Europe
3D Systems Corporation *333 Three D Systems Circle* *Rock Hill, SC 29730, USA*	*3D France ZA* *des portes du Maine* *72 380 Joué L'Abbé, France*

Signed for and on behalf of:

Wilsonville, OR, USA	*January 11, 2017*	*David Heath, Product Safety Engineer*
Place of issue	*Date of issue*	