



TIGER^{3D} APEX™

2K

4K



OPERATIONS MANUAL



OPERATIONS MANUAL

2K + 4K



HIGH-RESOLUTION 3D PRINTING -EVOLVED-



Dentistry



Microfluidics



Jewelry



Engineering

The next evolution of Tiger is here! Introducing the **Tiger3D APEX K Series**, the latest edition to our family of **The Most Advanced High Definition DLP Printers**.

Tiger3D APEX K Series 3D Printers offer the highest resolution available in a desktop 3D Printer, available in both **2K** and **4K PRO** models. Whether you require high throughput or quality, Tiger3D has a machine for your needs.

Packed with features like an **all-new Windows based interface** and **Automatic Cleaning System**, **built-in Wifi** and **20% faster printing speeds**, Tiger3D APEX K Series is the quickest line to your business' production!

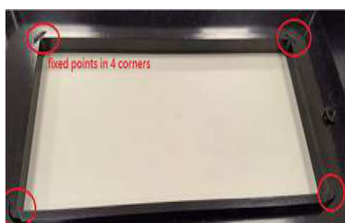
TABLE OF CONTENTS

1.1 Usage Instructions.....	5
1.2 Regulatory Statements.....	5
1. Product Information.....	5
1.3 Safety Precautions.....	6
1.4 General Information.....	7
2.1 Verifying Package Contents.....	8
2. 3D Printer Setup.....	8
2.2 Printer Set Up.....	9
2.3 Power Button Operation.....	10
2.4 Picker Plate Installation.....	11
2.5 Fill resin tank.....	11
2.6 Resin Tank Related Consumables and Spare Parts.....	12
2.7 Replacing the Film Module for the PRO Series.....	12
3. 3D Printer Software Operation.....	13
4. After Printing.....	13
4.1 Model Removal.....	13
4.2 Cleaning the Picker Plate.....	13
4.3 Cleaning the Resin Tank.....	13
5. Warranty Information.....	14
6. Tiger3D Consumables.....	15
7. Notes.....	19
7. Notes.....	21

1.1 Usage Instructions

Please read through the following instructions before you start using your printer.

1. Ensure that the glass under the tank is flush against the corners to prevent damage to your 3D printer while printing.



2. Ensure there's no debris inside the resin tank and that the glass is set up properly before printing.
3. Avoid printing at the center with a single object or small parts repeatedly as it may damage the tank.

1.2 Regulatory Statements

FCC NOTICE

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. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their expense.

1.3 Safety Precautions

Please read through the following Safety Precautions before you start using your printer.

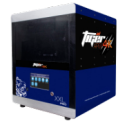


1. Use only the power adapter and accessories provided by the manufacturer.
2. Before plugging the power adapter into an electrical outlet, verify the local power rating conforms with the specified voltage and frequency.
3. This printer requires a grounded, single-phase electrical power source.
4. Make sure power and communication cables are well managed to prevent from tripping.
5. For best results, use resins supplied by Tiger3D printers.
6. Do not expose the resin tank to direct light source as the resin will solidify under UV light.
7. Chemical substances like resin may cause skin irritation. Please read the guidelines in the Material Safety Data Sheet (MSDS) of the resin supplied by manufacturer. Wear gloves when necessary.
8. Before moving the printer, be sure to drain and remove any excess resin from the resin tank and in advance to prevent spillage.
9. Keep door closed during printing or curing to prevent UV leakage.
10. UV light may cause injury to the eyes. Do not stare into the printer directly during operation. As a precaution it's recommended to wear UV protective glasses while operating the printer.
11. Set the printer on a flat, level surface and keep the printer in an upright position at all times.
12. Do not store the printer in extreme heat or frigid temperatures.
13. Do not disassemble or repair the device yourself. Doing so may cause further printer malfunction. For all technical questions, please reach out to a certified Tiger3D technician at 800-221-7448.
14. For your safety, please keep hands away from the picker plate while the printer is operational.
15. Force Shut-Down Method: Press the Power Button and hold 3 seconds to shut down.

1. PRODUCT INFORMATION



1.4 General Information



ITEM	APEX HD	APEX XHD	APEX PRO XHD	APEX PRO XXL
Item SKU	78-6080	78-6050	78-60110	78-60150
Build Size	80 x 45 x 120 mm (3.1 x 1.77 x 4.7 in)	57 x 32 x 120 mm (2.2 x 1.2 x 4.7 in)	110 x 62 x 120 mm (4.3 x 2.4 x 4.7 in)	150 x 84.5 x 120 mm (5.9 x 3.3 x 4.7 in)
XY Resolution	41.5 μm	30 μm	40 μm	55 μm
Light Engine Pixels	True 2K (2.07 MP)		Super 4K (4.1 MP)	
Z-Layer Resolution	5 μm to 200 μm			
Wavelength (μm)	385/405 nm wavelength are available for all configurations			
Software	Operating System: Windows Supported file type: .SLC / .STL Size limit: 500mb (network) 1GB (USB)			
I/O Interfaces	Touch screen / Ethernet / Wifi, USB			
Power Input	100~240V, 4.73A 50/60Hz			
Operating Temperature	10° to 30°			
Humidity (RH)	40% to 60%. Please keep the 3D printer should keep in dry conditions			
Printer Dimensions and weight	Unpacked: 50 x 57 x 59 cm / 56 kilograms Packed: 80 x 80 x 93 cm / 76 kilogram (19.6 x 22.4 x 23.2 in / 123.2 lb) (31.5 x 31.5 x 36.6 in / 167.2 lb)			



NOTICE: Tiger3D is not responsible for damages to the machine or injuries of the operator as a result of failing to read the instructions provided in this operations manual. Repair can only be performed by an authorized Tiger3D technician.

2. 3D PRINTER SETUP

2.1 Verifying Package Contents

Please verify the packages' contents as soon as you receive our products and check for any potential exterior damage due to transportation. Your Tiger3D Printer comes with two packages: The Tiger3D Printer package and the Starter Kit package.

1.Remove the top cardboard cover

2.Remove the EPE surrounding the inner box

3.Remove the outer cardboard panels

4.Remove the inner cardboard cover



WARNING: Tiger3D APEX 3D Printers' net weight is at least 124 pounds (56 kilograms). Please be careful, and use proper lifting techniques to avoid injury.

3D PRINTER STARTER KIT



1.Tiger3D 3D Printer Resin: Burgundy

2.Picker Plate

3.Ethernet Cable

4.Power Supply

5.Putty Knife

6.Side Cutters

7.Tweezers

8.Plastic Spatula

9.Resin Tank Container

10. Scrapers

11. UV Curing Lamp

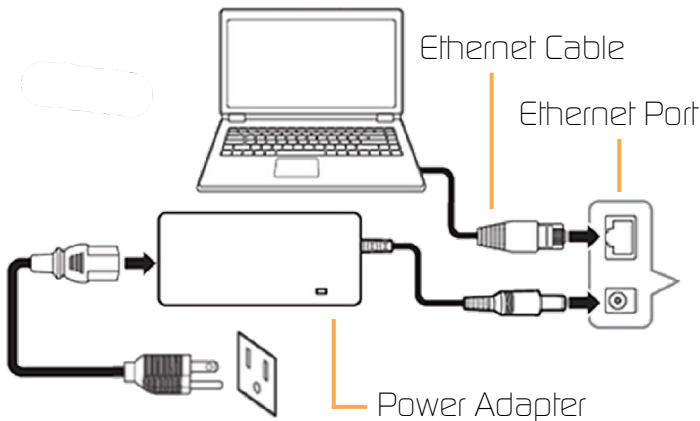
2.2 Printer Set Up



- (1) Connect the power cord and adapter to your device, and then plug it into an electrical outlet
- (2) Connect your printer with laptop

Basic: Connect printer and laptop via ethernet cable (Graph1.)
LAN: Connect both printer and laptop to local area network
IP sharer: Connect both printer and laptop to IP sharer



[Initiating time 1 minute]
[Initiating time a few seconds]
[Initiating time a few seconds]



2.3 Power Button Operation

(1) Power On

1. Press Power Button => Panel shows Starting up => Panel shows Menu
- (2) Power Off
2. Press Power Button => Confirm message => Confirm to shut down
- (3) Emergency shut down
3. Press Power Button and hold 3 seconds to shut down
- (4) Power Button Signal

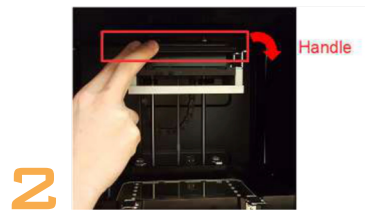
Blue		Solid	Standby mode
		Blinking	Starting up or printing
Red		Error	

2.4 Picker Plate Installation

Hold the picker plate by both ends and install it into the machine.



Pull down the latch to lock the picker plate in place.

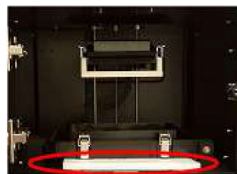


※ Remove the Picker: Lift the handle → Carry both end of picker → Remove the Picker

2.5 Fill resin tank



- ※ Install the resin tank with the sheet metal side facing downwards inside the printer. (see pictures below)
- ※ Lock all four latches of the resin tank in place after installation.
- ※ EPE sheet (white styrofoam sheet) must be removed before using your 3D printer.



2.6 Resin Tank Related Consumables and Spare Parts

TIGER3D - STANDARD TEFLON TANK (NON XXL)

(SKU: 78-5005)

COMPATIBILITY: TIGER3D APEX SERIES, HD, XHD AND XL (PREVIOUS MODELS)



Top view



Bottom view

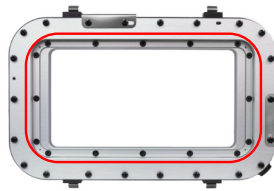
TIGER3D - PRO TEFLON TANK

(SKU: 78-60156)

COMPATIBILITY: ALL APEX SERIES 3D PRINTERS



Top view



Bottom view



Replacement Teflon Screen
(SKU: 78-60155)

2.7 Replacing the Film Module for the PRO Series

- (1) Turn over the teflon tank module
- (2) Remove 16 screws as shown in circled red area above
- (3) Remove old teflon film module and replace with the new film module
- (4) Set all previously removed 16 screws back in place
- (5) Securely fasten all screws in place

Please refer to User Utility Manual, all-in-one software for Tiger3D printers.

4. AFTER PRINTING

4.1 Model Removal

1. Lift the latch securing the Picker Plate
2. Remove the Picker along with the printed model
3. Use compressed air gun and denatured alcohol to clean the printed model
4. Place cleaned model in the supplied curing box
5. Carefully remove the printed model from the picker using the supplied putty knife



NOTICE: Do not expose the resin tank to a direct light source as the resin will solidify under UV light. Use the supplied resin tank container to store the resin tank to prevent unwanted solidification.

4.2 Cleaning the Picker Plate

Use the supplied putty knife or similar object to scrape away the excess printed model from the picker. If any greasy residue persists, use a soft cloth dipped in alcohol to rub the surface until the grease is removed.

4.3 Cleaning the Resin Tank

1. Pour excess resin out of resin tank
2. Fill the resin tank with denatured alcohol and let it soak
3. Use a tissue or microfiber cloth to wipe the bottom of tank.

Alternatively, allow the 3D printer to automatically clean itself via its Self Cleaning System. For more information, please refer to User Utility Manual.



- Tiger3D's 24 month warranty covers replacement parts and labor starting at the date the new machine is shipped.
- Warranty/service is void if consumables or parts used in the machine are not sourced with Romanoff's Authorized Supply Network.
- Installation and training are performed remotely by a Factory Certified Technician (FCT). Onsite Service is available upon request at a preferred rate.
- Technician travel expenses are not included for labor.
- Travel expenses are not included for onsite installation or training.
- Replacement warranty parts must be approved by Romanoff, prior validation of one of our factory certified technicians. Customer may be required to return defective parts. Shipping is not included.
- It is the customer's responsibility to follow the technicians' advice and recommendations to ensure proper operation and use of the 3D printer. Improper use, inadequate conditions or use of supplies or consumables different from the products sourced with Romanoff's Authorized Network will result in void of the warranty with no financial obligation for Romanoff.



CAUTION



- Before printing, please check the surface of the picker plate and ensure the tank is free of residual debris or resin that may affect print quality.
- Do not shut down the 3D Printer power during the curing process.
- Update the firmware frequently for the best user experience.
- Do not interrupt the firmware upgrade process. Any interruptions during the firmware upgrade process **may cause your printer to malfunction.**
- APEX series Tank module and APEX Pro series Teflon film module are consumables.
- Replace them periodically to avoid loss in print quality.



Tiger3D Printer Resin: Burgundy - 500g

Tiger 3d Burgundy is a Photopolymer resin designed for precious metal applications. Its unique and special formulation allows clean burn-out and no ash content through the lost wax casting process.

Description	Item #
A. Tiger3D Printer Resin: Burgundy - 500grams	78-5002A



Tiger3D Printer Resin: Black- 1kg

Tiger3D Black is a photopolymer resin suitable for prototyping applications. Most commonly used for producing jigs and fixtures. When cured, the material is firm and strong. It has a curing time of 3 seconds per layer. Suggestion curing time for Tiger3D Printer per layer: Thickness 30um : 3.5 sec, Thickness 50um : 6.0 sec.

Description	Item #
B. Tiger3D Printer Resin: Black - 1kg	78-5004A



Tiger3D Printer Resin: Clear - 1kg

Tiger3D Clear is a photopolymer resin suitable for the fabrication of microfluidic devices. It has a very low viscosity and is clear as glass. Achieve the smallest enclosed micro channels printed at 0.35mm. Suggestion curing time for Tiger3D Printer per layer: Thickness 30um : 1.2 sec. Thickness 50um : 1.5 sec.

Description	Item #
C. Tiger3D Printer Resin: Clear - 1kg	78-5011



Tiger3D Printer Resin: Jade - 500g

Tiger3D Jade is a Photopolymer resin which cures at 405nm and is designed for lost wax casting applications. Its unique and special formulation allows clean burn-out and no ash content through the lost wax casting process.

Description	Item #
D. Tiger3D Printer Resin: Jade - 500g	78-5002A

Tiger3D Perforated Glass for APEX PRO & XXL Models

Compatible with Tiger3D APEX PRO series printers and Tiger3D XXL Printers. This component is part of the Protective Layering System. Replace when surface becomes cloudy. This item should not be held with bare hands to prevent finger prints.

A.



	Description	Item #
A.	Tiger3D Perforated Glass for APEX Pro & XXL Models	78-5008-XXL

Tiger3D Perforated Glass for APEX Models

Compatible with Tiger Series 1st Generation, Tiger Plus Series XL, HD and XHD, Tiger APEX Series XL, HD and XHD.
Not suitable for XXL, Apex Pro and 4K models.

B.



	Description	Item #
B.	Tiger3D Perforated Glass for APEX	78-5009

Tiger3D Glass Tray Container

This Tiger3D Printer Glass Tray Container can be used with any of the Tiger3D Series printers. The purpose of this component is to catch any resin that could spill accidentally to protect the projector.

C.



	Description	Item #
C.	Tiger3D Glass Tray Container	78-5008

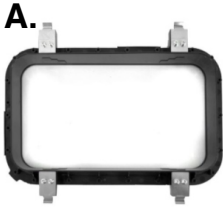
Tiger3D Soft Tank Scraper

This soft plastic scraper is used for any Tiger3D series printer and can be used in most DLP/SLA desktop printers. Tiger3D Scraper is used specifically to easily stir resin before every build and safely remove residues of cured resin from the bottom of the tank.

D.



	Description	Item #
D.	Tiger3D Soft Tank Scraper	78-5007



Tiger3D - Standard Teflon Tank

Standard Teflon Tank for the Tiger3D, Tiger3D Plus & Tiger3D APEX Series of 3D Printers. Please avoid contact with bare hands. The teflon screen must be kept clean to prevent distortion during the 3D printing process. Can be cleaned with alcohol. *(Not compatible with XXL models.)*

Description	Item #
A. Tiger3D Standard Teflon Tank	78-5005



Tiger3D APEX - Pro Teflon Tank

Pro Teflon Tank for the Tiger3D APEX 3D printer series. Please avoid contact with bare hands. The teflon screen must be kept clean to prevent distortion during the 3D printing process. Can be cleaned with alcohol. *(For Tiger3D APEX Series 3D Printers only)*

Description	Item #
B. Tiger3D Standard Teflon Tank	78-60156



Tiger3D - Pro Teflon Tank Replacement Teflon Film

Pro Teflon Tank for the Tiger3D APEX 3D printer series. Please avoid contact with bare hands. The teflon screen must be kept clean to prevent distortion during the 3D printing process. Can be cleaned with alcohol. *(For Tiger3D APEX Series 3D Printers only)*

Description	Item #
C. Tiger3D Standard Teflon Tank	78-60155

Tiger3D Build Plate

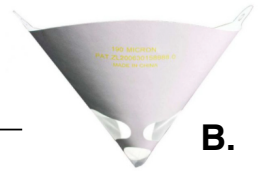
This metal build plate/platform can be used on all desktop Tiger3D Series printers. The build plate is securely mounted to the Z Motor and raises out of the resin tank layer by layer until the resin build is finished.



Description	Item #
B. Tiger3D Build Plate	78-5006

Tiger3D Material Filter

Sold in packs of 10.



Description	Item #
A. Tiger3D Material Filter	78-5002-F

Tiger3D UV Curing Lamp 110V

This Tiger3D Printer UV Curing lamp features an automatic timer allowing you to auto shut the light off after 120 seconds or 180 seconds. During the UV curing process, parts are commonly submerged in water in a clear glass tray. The Tiger3D Printer UV Curing Lamp is a must to successfully produce castable 3D prints.



Description	Item #
C. Tiger3D Printer UV Curing Lamp 110V	78-5010

7. NOTES



HAVE A QUESTION?

**CONTACT US AT ANY TIME VIA OUR LIVE CHAT AT
TIGER3DPRINTERS.COM OR ROMANOFF.COM
OR CALL US TOLL FREE AT 1-800-221-7448**