



ONULIS

WRAP

User Guide



COPYRIGHT

Copyright © 2024 Onulis. All rights reserved.

No part of this document may be reproduced, stored in a retrieval system or database, translated into any human or computer language in any form, or transmitted in any form or by any means, mechanical, electronic, photocopying, recording, or otherwise, without prior written permission from Onulis. This document may be printed for internal use only. All copies shall retain a full copy of this copyright notice.

TRADEMARKS

WRAP and Onulis are registered trademarks of Onulis. All other product names, trademarks, or registered trademarks are property of their respective owners. All product, company, or service names used are for identification purposes only. Use does not imply endorsement.

LIABILITY

The information provided herein is for reference only. Onulis may, at any time and without notice, make changes to this document. Onulis shall not be liable for errors contained herein or for incidental, consequential, indirect, or special damages, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

It is the responsibility of the user to determine that a material is safe, lawful, and suitable for the intended application, and to identify the proper material disposal method, consistent with local environmental regulations.

Except as provided in Onulis' standard terms and conditions of sale, Onulis shall not be responsible for any loss resulting from any use of products described herein.

WARRANTY

The WRAP comes with a 1-Year Parts Warranty and Email Support. The Warranty only applies to the WRAP machine. Radiance values of the WRAPCure Certified lights are covered for manufacturing defects for 1-Year. Consumables are covered for manufacturing defects for 30 days. All replacement parts are covered for the 30 days or by the remaining time in an existing Warranty, whichever is greater. Warranty is voided by the use of third-party consumables and/or improper use of resins.

MAINTENANCE PLAN

The WRAP Maintenance Plans offer 1-Year Maintenance and Email Support. The Plan only applies to the WRAP machine. The Plan begins after the WRAP machine Warranty expires. All replacement parts are covered for the 30 days or by the remaining time in an existing Maintenance Plan, whichever is greater. Maintenance Plan is voided by the use of third-party consumables and/or improper use of resins.

DISCLAIMERS

User acknowledges that the contents of this document and all Onulis products are subject to its standard terms and conditions of sale, available at <https://www.onulis.com/terms-and-conditions-of-sale>, and incorporated herein by reference.

Specifications in this document are subject to change without notice.

TABLE OF CONTENTS

To ensure proper use of the Onulis WRAP or WRAPCure, please read through the entire User Guide prior to machine installation and operation.

WRAP Modes	1
Symbols & Warning Labels	1
Safety Precautions	2
First Aid for Working with Uncured Resin	3
Installation	
Machine Overview.....	4
Machine Display Indicators.....	5
System Size.....	7
Installation Guide.....	8
Operation	
WRAP Use Notes.....	9
Operation: WRAP Mode.....	11
Converting To: WRAPCure Mode*.....	17
WRAPCure Use Notes*.....	18
Operation: WRAPCure Mode*.....	19
Coverting To: WRAP Mode*.....	21
WRAPCure Certified Audit	23

For any questions about your purchase, please reach out to the following:

General Inquiries: info@onulis.com

Support Request: maintenance@onulis.com

Purchases: orders@onulis.com

Digital copies of the User Guide can be found at: www.onulis.com/user-guides



Use the QR code above to watch a video version of the User Guide.

* Settings only available on Cure Certified and Enabled machines.

WRAP MODES

WRAP Mode





Print waste resin into solid plastic stock.

WRAPCure Mode

Post-cure DLP parts. Available on all WRAPCure Enabled and Certified units.

For complete list of machine display indicators, see Page 5.

SYMBOLS & WARNING LABELS

Symbol	Meaning
	Wear protective nitrile or neoprene gloves when handling uncured resin or operating printer.
	Wear protective goggles when handling uncured resin or operating printer.
	Vapors from uncured resin can irritate the respiratory system. WRAP's carbon filtration system limits vapors. Read safety precautions before operating machine.
	Ultraviolet radiation occurs from machine's UV lamp. Read safety precautions before operating machine.

SAFETY PRECAUTIONS

This machine is intended to cure used or expired UV/EB resin and post-cure DLP parts. Do not use the product for anything other than its intended use. If the WRAP is not operated as specified, the user's safety may be compromised.

Material Handling

- Always wear safety goggles, nitrile or neoprene gloves, and a proper face mask when handling resin.
- Keep resin away from areas where food or beverages are stored, prepared, or consumed.
- Clean up any resin spills with disposable towels or another absorbent, non-reusable material. Rinse the spill area with isopropyl alcohol (IPA), followed by soap and water. Dispose of absorbent material in accordance with local regulations.
- Any contaminated clothing should be professionally cleaned; do not wash at home. Absorbed resin may re-expose user when items are worn.
- Direct contact with resin may cause an allergic reaction.
- Resin vapors can be irritating to the respiratory system. If irritation occurs, seek fresh air immediately.
- Consult your local municipality to confirm disposal of hard plastic waste.

Power

- Connect the printer to a 100 – 120 VAC power outlet.
- Do not connect the power plug to an outlet that does not have a ground wire. Doing so may expose the operator to serious danger from electric shock.
- Keep the power cord away from high temperatures and/or water.
- If the power cord is damaged, do not operate the machine.

Machine Operation

- This machine has been designed for indoor and non-extreme temperature conditions only. Store and operate machine in 65 - 95 °F (18 - 35 °C) temperatures.
- Do not operate or store machine in direct sunlight.
- Although machine contains carbon filtration, harmful fumes may still be emitted during machine loading and operation. Operate machine in a well-ventilated area, away from people.
- Clearance is required on the side of machine for carbon filters.
- Clearance is required above the machine for loading.
- Keep fingers and all other body parts clear of door when opening and shutting.
- Do not attempt to open the door during machine operation.
- If door lock fails, do not operate machine.
- Clean Drip Catch by spraying with isopropyl alcohol after every use.
- UV lamps will remain hot after printing is complete. Do not touch.
- UV lamps emit dangerous radiation. In the case of a system failure resulting in the UV lamps remaining on when the printer door is open, do not stare directly, and shutdown.
- All persons operating the WRAP should know the location of first aid and emergency equipment and how to use it.

Avoid direct contact with uncured resin. If contact occurs, wash the area immediately and thoroughly with water, and follow the first aid instructions below. If large areas of skin have been exposed, or in the case of prolonged contact, seek medical attention. If contact with eyes occurs, seek medical attention. If ingestion occurs, seek medical attention. If respiratory irritation occurs, seek medical attention.

Contact with Skin

If uncured resin comes in contact with skin, wash the affected area immediately and thoroughly with soap and cool water. When cleansing skin, pay attention to areas of the body that are not easily cleaned (hair, ears, nose, etc.). Remove any contaminated clothing.

- Do not use hot water. Cool water prevents skin pores from opening, making it difficult for uncured resin to penetrate the skin.
- Do not use solvents to clean skin.
- If skin contact results in prolonged irritation, seek medical attention.
- Avoid accidental transfer of uncured resin from the hands to other areas of the body and other surfaces.
- Professionally clean contaminated clothing; do not wash at home.
- Dispose of contaminated shoes or leather items in accordance with local regulations.

Contact with Eyes

If uncured resin comes in contact with eyes, flush immediately with cool water for 15 minutes and seek medical attention. Avoid sources of ultraviolet radiation (sunlight, fluorescent light, etc.).

The use of contact lenses when handling uncured resin is not recommended. If resin comes in contact with eyes when contact lenses are worn, immediately remove lenses and follow above cleaning technique.

- Clean and disinfect contaminated contact lenses.
- Do not wear contact lenses until eye irritation disappears.

Ingestion

Vapors from uncured resin can irritate the respiratory system. Always wear a proper face mask when handling uncured resin. In the case of ingestion, seek medical attention immediately.

MACHINE OVERVIEW

The Onulis Waste Resin Axial Printer consists of the following components.

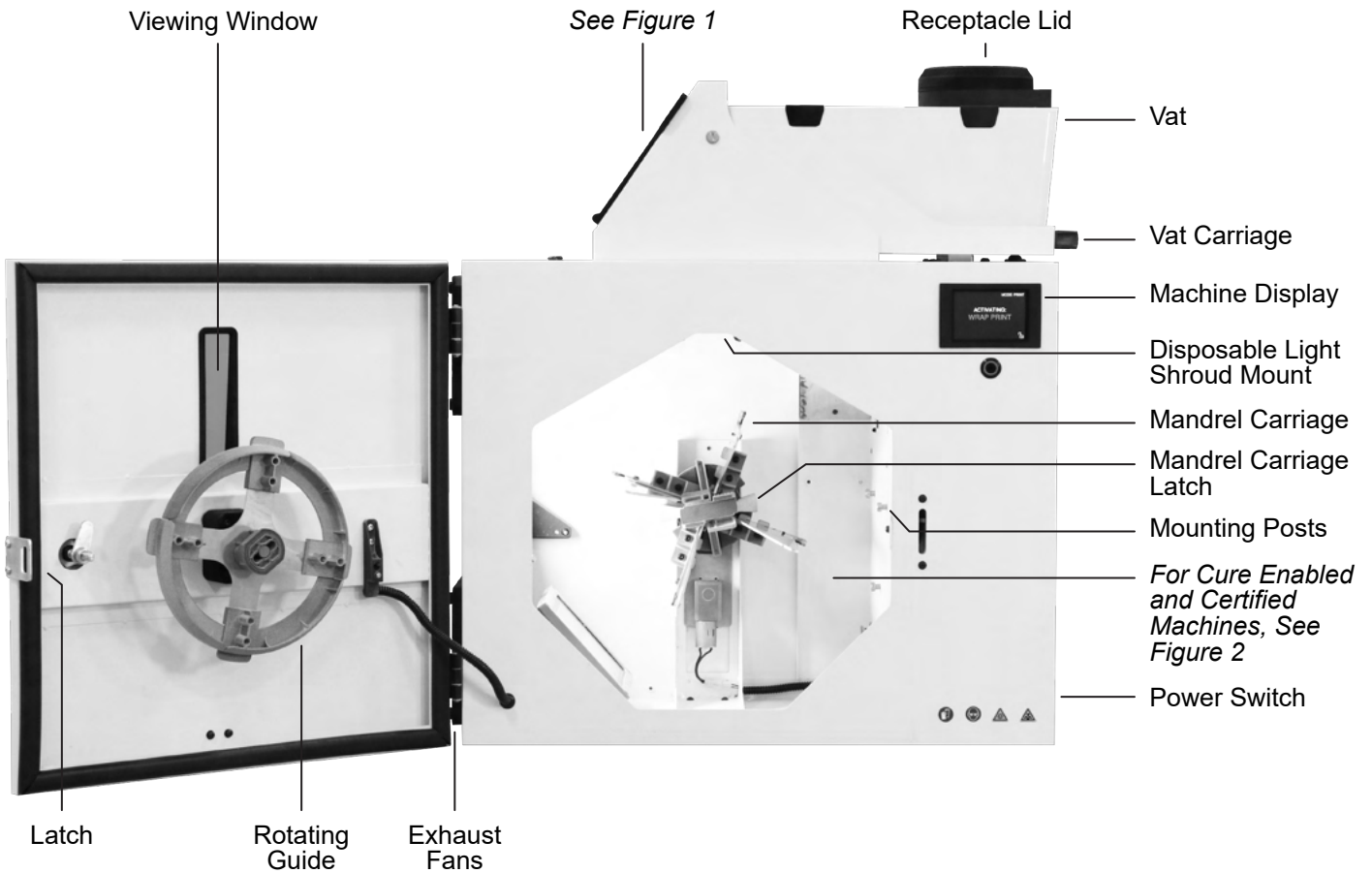


Figure 1

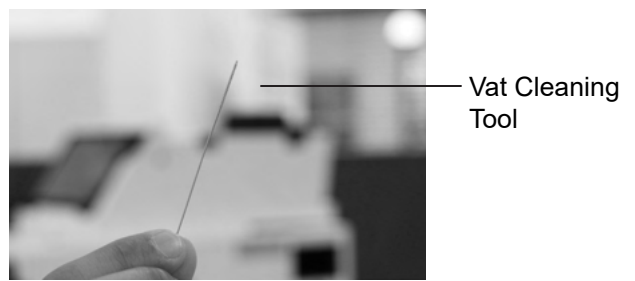
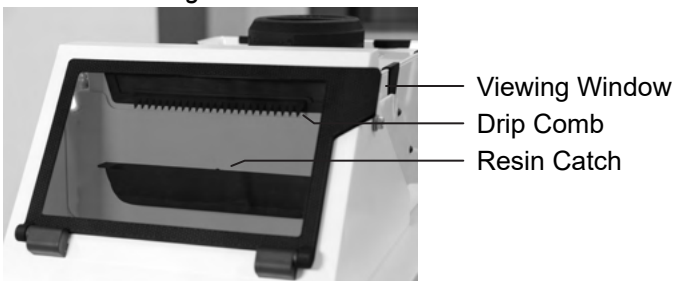
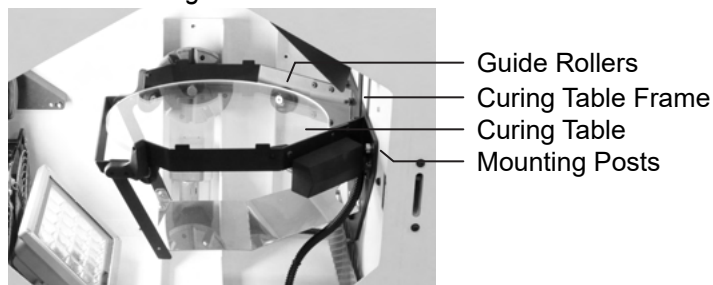


Figure 2

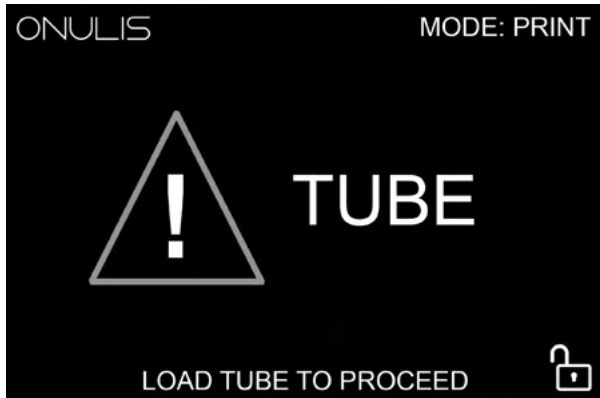


PATENTS PENDING

Machine Display Indicators

The Machine Display indicates the following.

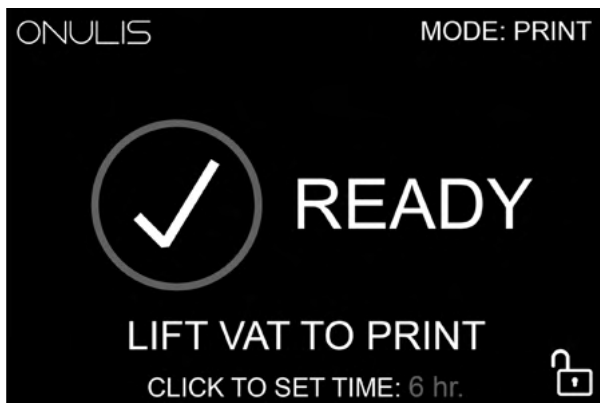
WRAP Mode: Waste Resin Axial Printing



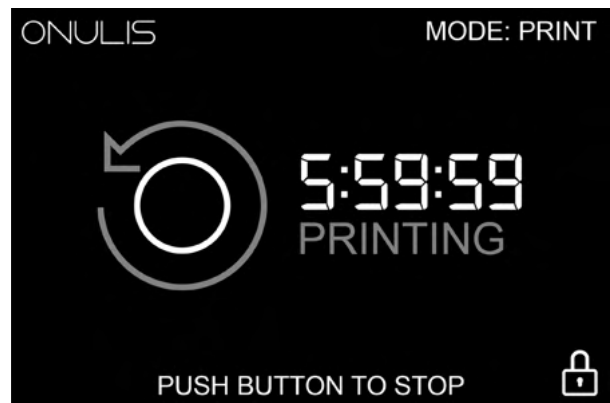
Load Disposable Tube onto Mandrel Carriage.



Close door.



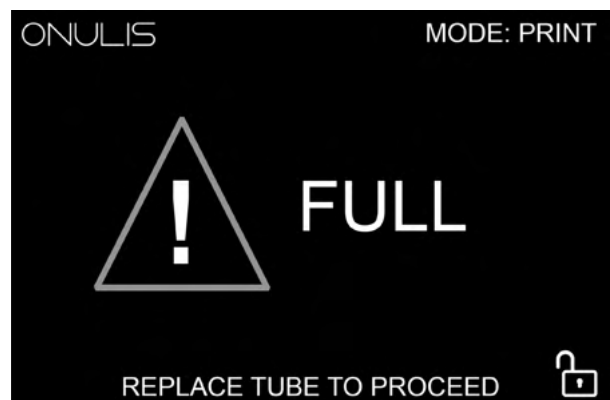
Click button to set print time. 1 hour increments from 6 - 1 hours. Then lift Vat Carriage to print.



Printing will automatically stop when timer ends. To manually end print, push button.



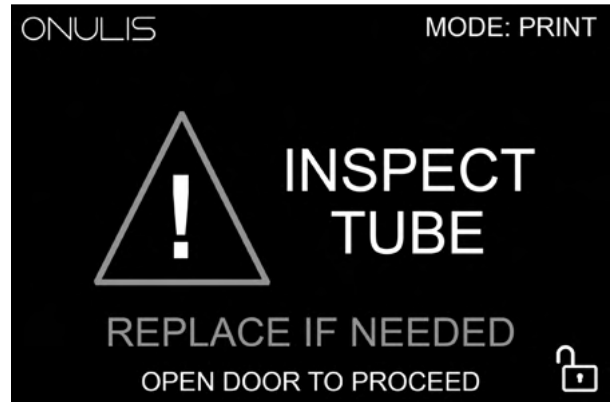
3 minute Final Cure ensures all resin is cured and exposed to UV light. To manually end printing, push button.



When Disposable Tube is full, printing will automatically stop.



Print stopped. Clean Drip Comb.



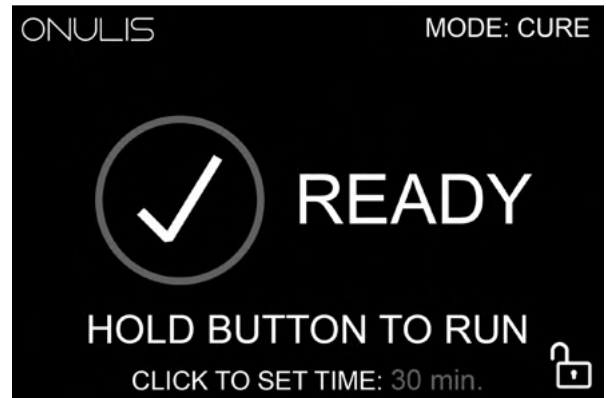
Inspect Tube, replace if needed.

WRAPCure Mode: DLP Part Curing
For Cure Enabled and Certified Machines

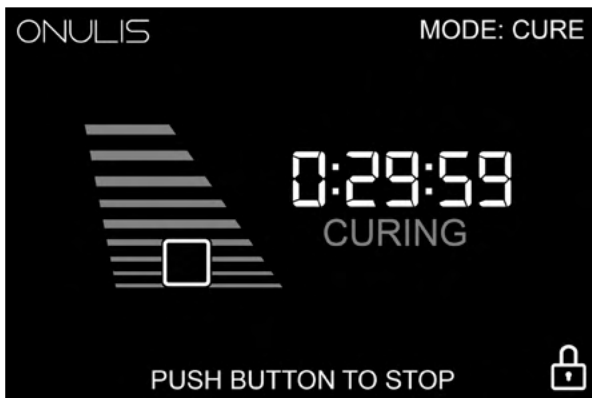


UV Lamp run-time listed for top and bottom light array. Click button to continue. Hold button to reset.

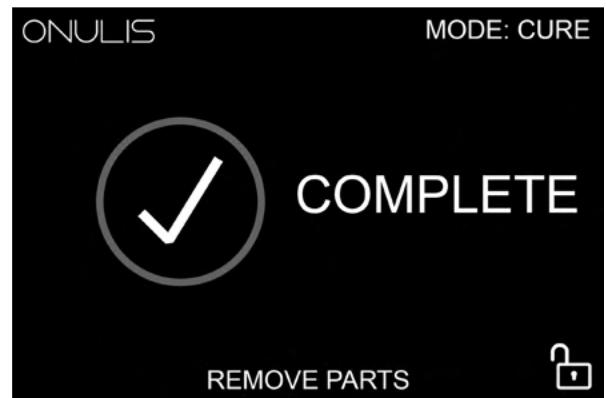
** Exclusive to WRAPCure Certified*



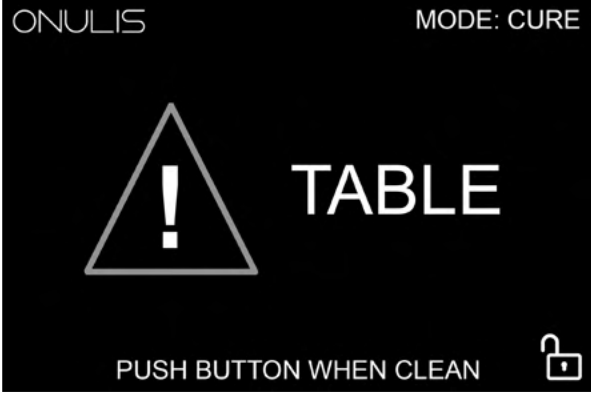
Click button to set print time. 5 minute increments from 30 - 5 minutes. Hold button to run.



Curing will automatically stop when timer ends. To manually end curing, push button.

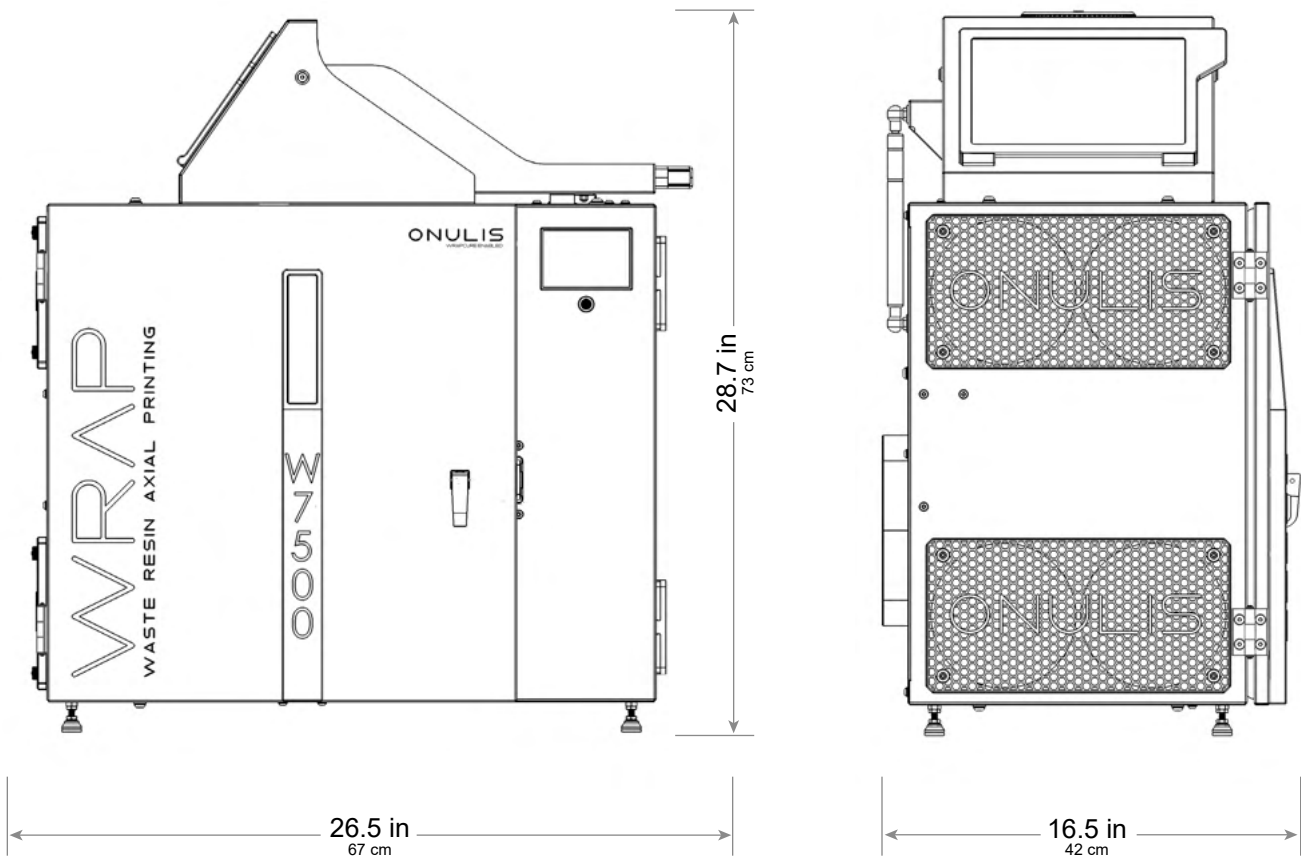


Curing is complete. Remove parts.



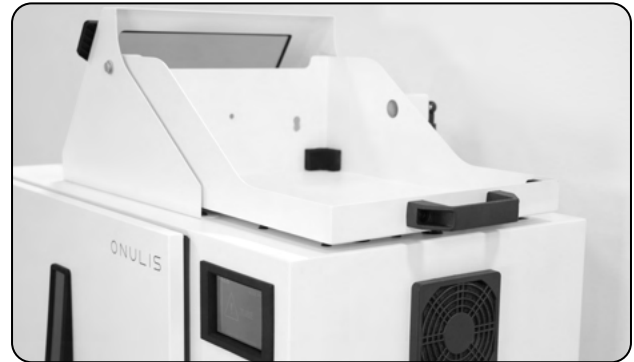
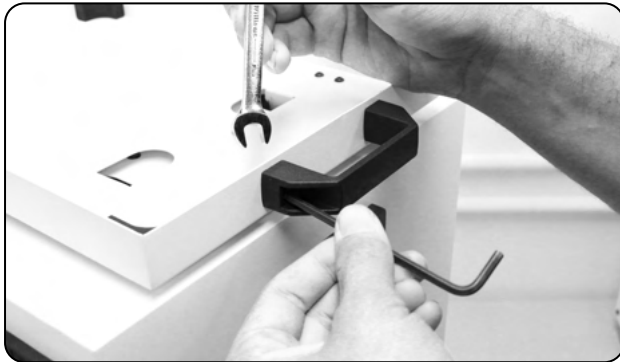
Once parts are removed, clean table with isopropyl alcohol. Push button when clean.

System Size



INSTALLATION GUIDE

1. Unbox product. Remove all packing materials on outside and inside of machine.
2. Ensure contents of container:
 - Waste Resin Axial Printer OPTIONAL: CURE ENABLED OR CERTIFIED
 - Curing Table CURE
 - Vat Carriage Handle
 - Low Viscosity Vat
 - Medium Viscosity Vat PLUS & CURE
 - High Viscosity Vat PLUS & CURE
 - Vat Cleaning Tool - *Vat Cleaning Tool packaged individually in each Vat.*
 - Vat Viscosity Testing Tool
 - Disposable Tube*
 - Disposable Filler Filter
 - Disposable Light Shrouds
 - Isopropyl Alcohol Bottle
 - Power Cord
3. Put the WRAP on flat, solid table. Attach the handle to the Vat Carriage, as shown below. Do not block exhaust fans. To avoid unwanted effects of natural UV light, do not place machine near window, or in direct sunlight.



4. To ensure even printing behavior, level machine, as shown below. Adjust machine feet as necessary.



5. Place Vat securely on Vat Carriage.
6. Plug power cord into grounded 100 – 120 VAC outlet.

PLUS Included in all WRAP+ purchases

CURE Included in all WRAPCure Certified and Enabled purchases

* WRAPCure includes 8 Disposable Tubes, all other purchases include 1 Disposable Tube

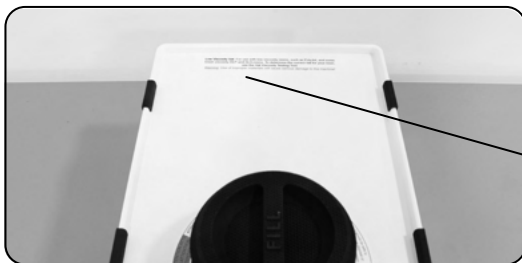
Selecting The Correct Vat

When pouring resin into a Vat, it is essential to ensure correct material selection. Vats are designed for specific material properties. Only pour a material into its intended Vat. As resin sits its viscosity can change. Pouring the incorrect resin into a Vat will cause serious damage to the machine!

Recommended: To ensure a consistent print, mix your resin prior to filling the Vat. When waste resin sits, mineral oil rises to the surface of the mixture. Stirring the resin prevents an excess of mineral oil in each print.

To determine the correct Vat for your resin, use the Vat Viscosity Testing Tool. Refer to Vat Viscosity Testing Tool User Guide for instructions, or see page 13.

Vat Identification Label can be found on top of a Vat. See below.



Vat Identification Label



Pictured Above: Vat Viscosity Testing Tool

Vat Disposal

If disposing of Vat, refer to PM Kit User Guide for instructions.

Disposable Light Shroud

The Disposable Light Shroud is designed to mitigate cured resin droplets on the internal walls of the WRAP.

During normal use, when uncured resin droplets release from the Drip Comb, small micro-drops will randomly land on various internal surfaces of the WRAP. These drops are formed through a break in the resin's surface tension when the drop separates from the Drip Comb. These droplets are fully cured and release easily from various surfaces.

For Light Shroud installation instructions, refer to page 11. For WRAP cleaning instructions, refer to PM Kit Use Guide.

Very Important: The Light Shroud is a disposable item and should be replaced every time the Disposable Tube is replaced.



Disposable Tube

The Disposable Tube should be replaced after every use.



Essential Machine Operation

Vat Carriage positioning during machine operation is shown below.

Note: When transferring Vat to and from Vat Carriage, always keep Vat level. Tilting may cause spillage of uncured resin.



Vat Carriage in POWER OFF or STOP position. Door is unlocked. Only open machine door when Vat Carriage is down.



Vat Carriage in POWER ON or PRINTING position. Door is locked.

Solid Plastic Stock

The solid plastic stock printed on the WRAP is fully cured resin, and safe for disposal¹ as standard household waste.

When curing PolyJet waste resin that has support mixed in, there may be small amounts of mineral oil on the surface of the solid plastic stock. The resin is fully cured. If desired, mineral oil can be wiped off with a paper towel or cloth.



¹ Consult your local municipality to confirm disposal of hard plastic waste.

OPERATION: WRAP MODE

Note: Ensure proper gloves, goggles, and face mask are on prior to operating equipment. To convert machine into WRAP Mode from Cure Mode, see page 21.

1

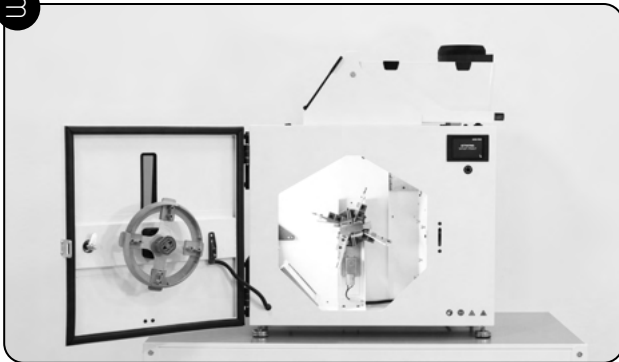
Refer to Installation Guide for proper machine placement and setup.

2



Power on.

3



Open door.

4

Form Disposable Light Shroud:

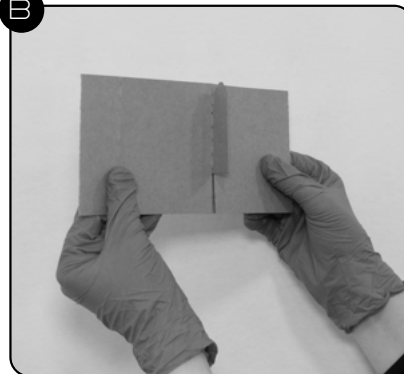
- Ⓐ Exercise flaps on both sides of Disposable Light Shroud by folding in both directions.
- Ⓑ Crease dotted fold lines on opposing corners of Disposable Light Shroud.
- Ⓒ Apply pressure at flaps to open Disposable Light Shroud.

See below.

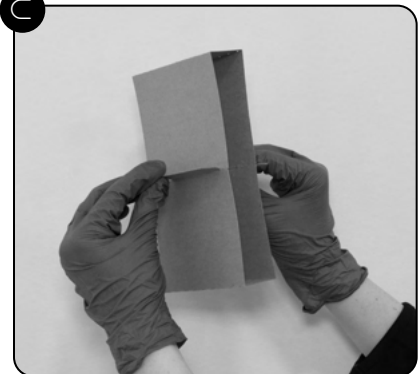
Ⓐ

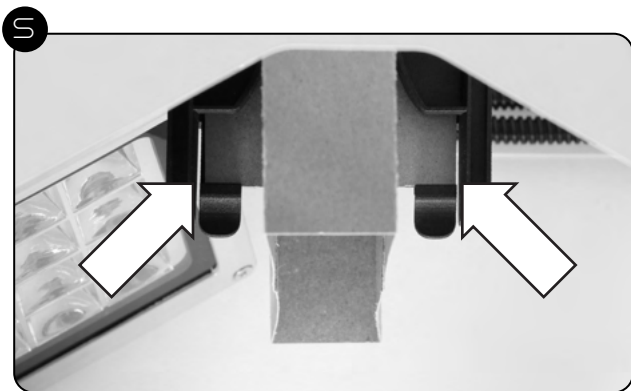


Ⓑ



Ⓒ





Place Disposable Light Shroud in machine. Move Disposable Light Shroud upward, until latches are fully engaged, as shown.

Note: Disposable Tube must be removed in order to install Disposable Light Shroud.

The Light Shroud is disposable and should be replaced every time a new Tube is used.



Place Disposable Tube on Mandrel Carriage.



Close and latch door. Apply light pressure, turn latch handle, and fold down to secure.



Note: "Ready" highlighted on machine readout.



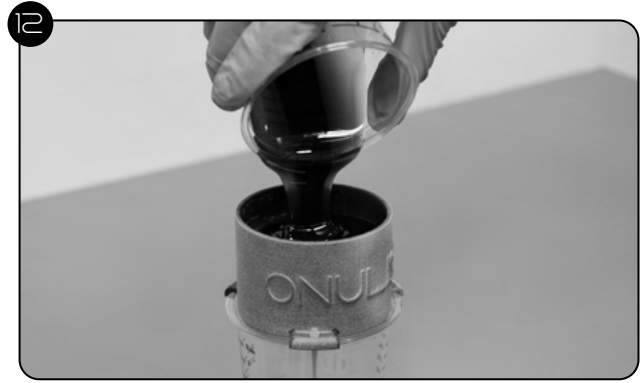
Recommended: To ensure a consistent print, mix your resin prior to filling the Vat. When waste resin sits, mineral oil rises to the surface of the mixture. Stirring the resin prevents an excess of mineral oil in each print.



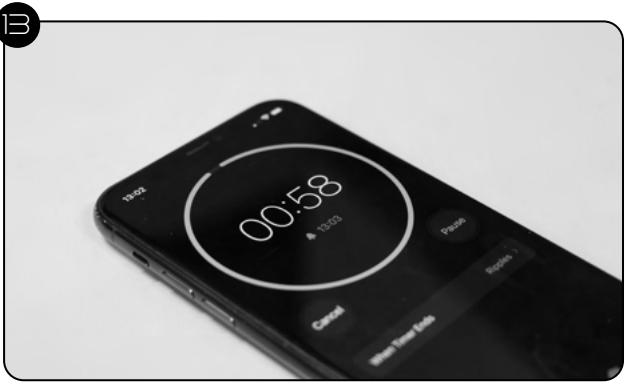
Use the Vat Viscosity Testing Tool to determine the correct Vat for your resin. Steps 11 - 14 show how to use the Vat Viscosity Testing Tool.



Place Viscosity Testing Tool on top of cup.



Pour resin sample into Tool, filling to slightly above START ledge, approximately 100ml.



As soon as resin reaches the first ledge, start one minute timer.

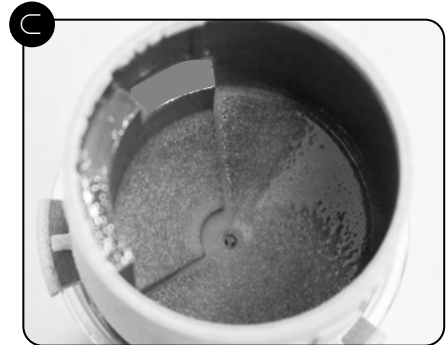
14 When timer is done, check to see the lowest visible ledge, as pictured below. The visible ledge will show what Vat should be used for each print.



If "HIGH" is showing, use "High Viscosity Vat."



If "MEDIUM" is showing, use "Medium Viscosity Vat."



If Tool is empty, use "Low Viscosity Vat."



WARNING: Pouring the incorrect resin in a Vat will cause serious damage to the machine!

Fill Vat:

- a. Remove Vat from Vat Carriage and place on flat counter.
- b. Remove Vat Receptacle Lid.
- c. Place Disposable Filler Filter in Vat receptacle.
- d. Slowly pour desired quantity of resin into Disposable Filler Filter. Do not fill Vat past MAX Fill line.
- e. Remove Disposable Filler Filter.
Note: Ensure residual resin on Disposable Filler Filter is fully cured by exposing it to sunlight prior to disposal. Dispose according to local regulations.
- f. Replace Receptacle Lid, turning clockwise until locked.
- g. Hold Vat horizontally and place in Vat Carriage. Do not tilt Vat during transport.



Click button to set print time. Programmable 1 hour intervals, from 6 - 1 hours.



To Power: Lift Vat Carriage handle to upright position until electromagnet holds it in place. Resin will begin dripping on rotating mandrel.



When stopped, Vat Carriage will automatically return to horizontal position.

To Stop Operation:

- a. To manually end operation, press "Stop" button.
- b. Machine will automatically stop after set print time, or machine will automatically stop when Disposable Tube is full, whichever occurs first.
- c. In the event of power outage, Vat will lower and dripping will stop.



Final Cure will begin, ensuring all resin is fully cured prior to Disposable Tube removal. To stop Final Cure, push button.



To remove cured resin, open door and remove Disposable Tube from mandrel carriage.

Note: Some mixed waste resins will contain mineral oils. If present on surface of solid plastic stock, wipe off with disposable towel.



Very Important: Remove Disposable Light Shroud from machine and dispose.

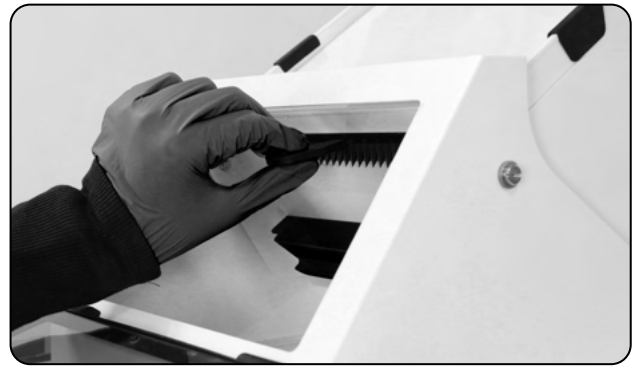
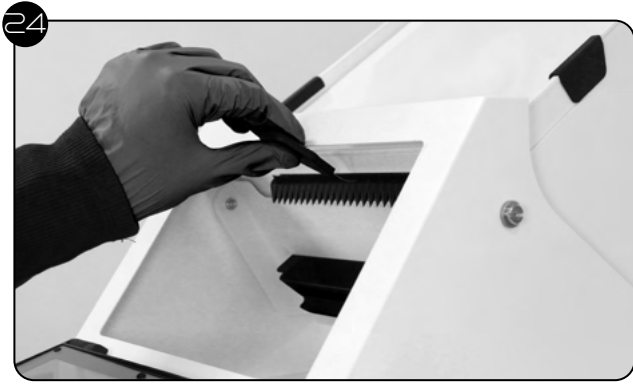
Ensure all resin is fully cured prior to disposal. Expose to sunlight if necessary.



Shut and latch machine door.



Very Important: To avoid clogging, spray isopropyl alcohol on Drip Comb face. Allow it to drain into Resin Catch.



Push Vat Cleaning Tool into holes above Drip Comb, using a downward U-shape motion. Move Cleaning Tool back and forth, letting any resin drip into Resin Catch.



Empty Resin Catch:

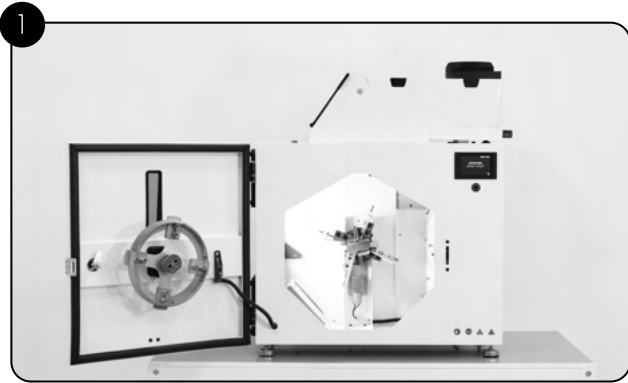
- a. Remove Vat from Vat Carriage and place on flat counter.
- b. Remove Vat Receptacle Lid.
- c. Open Viewing Window.
- d. Remove Resin Catch by lifting upwards, disengaging keyhole slot. Keep Resin Catch level.
- e. Pour any resin from Resin Catch into Vat.

Power off machine.

For Cure Certified and Enabled Machines:

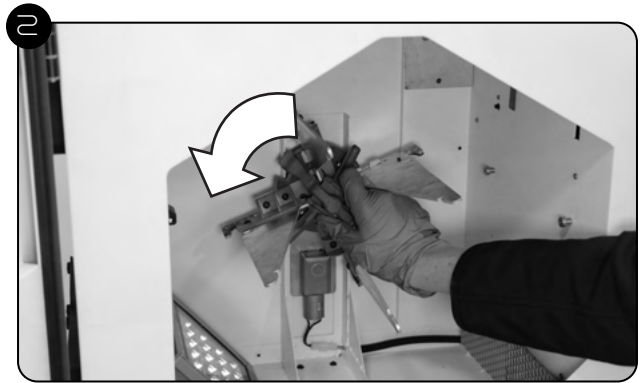
To convert machine to WRAPCure Mode, proceed to next page.

CONVERTING TO: WRAPCURE MODE

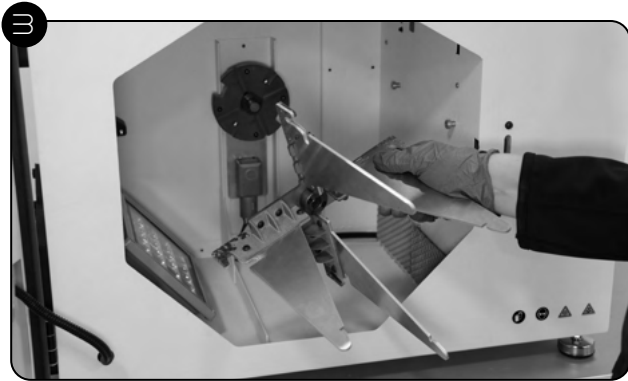


Open door.

Note: Disposable Tube must be removed in order to convert WRAP to WRAPCure.



Pinch sides of Mandrel Carriage Latch, and rotate counterclockwise, until Latch releases. Remove and set aside.



Hold spokes of Mandrel Carriage, pulling forward to remove from machine. Set aside.



Locate Rotating Guide on inner face of door.



Pull Latch to release Rotating Guide and remove it from door.



Install Curing Table, aligning mounting holes on side of Curing Table Frame with Mounting Posts on right side of machine chamber.

Note: WRAPCure Mode is now active.



Place Curing Table on Curing Table Frame.



Connect plug on Curing Table cord to socket located in lower right corner of mounting wall.

For Cure Certified and Enabled Machines:

To use WRAPCure Mode, proceed to next page.

WRAPCURE CERTIFIED USE NOTES

Recommended cure times for Origin One materials are available on the Onulis website. For quick access, scan the QR code below.

Always confirm the appropriate post-curing duration and any thermal post-curing for your DLP part with the material manufacturer. Curing time is located in the “Post Curing” section of the material manufacturer’s technical data sheet. Use the curing time designated for a 405nm LED light source.

Recommended Cure Times:



OPERATION: WRAPCURE MODE

Note: Ensure proper gloves, goggles, and face mask are on prior to operating equipment.

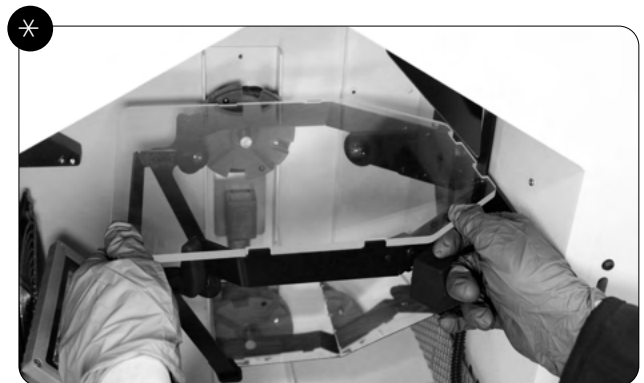
1 Refer to Installation Guide for proper machine placement and setup.



Power on.



Open door. Place DLP parts on Curing Table. If parts are longer than 9.5 inches, use optional Static Curing Table.* Close door.



To use Static Table, remove standard Curing Table and set aside. Place Static Table on frame. Place DLP parts on Static Table. Close door.



Push button to set curing time. Curing time options: 5 – 30 minutes, in 5 minute increments.

Note: Refer to the material manufacturer's specification sheet for proper curing duration. Use the curing time designated for a 405nm LED light source.



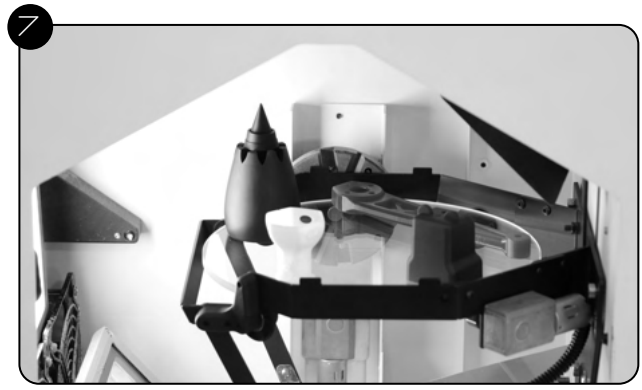
Depress and hold button to start curing cycle.

Note: 2 minute Pre-Heat process will begin, raising chamber to optimal curing temperature.



Curing will stop:

- a. When timer ends, or
- b. When button is pressed.



Open door, and remove cured parts.



Wipe down Curing Table with isopropyl alcohol.



Power off machine.

To convert machine to WRAP Mode, proceed to next page.

CONVERTING TO: WRAP MODE



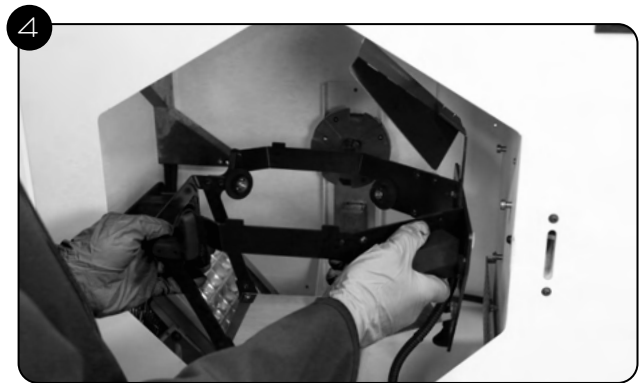
Open door.



Unplug Curing Table cord from socket.



Remove Curing Table, store safely.



Hold sides of Curing Table Frame, lifting off Mounting Posts and remove from machine. Set aside.



Insert Mandrel Carriage, installing on back machine post. Align spokes with slots in rear mount plate.



Push Mandrel Carriage Latch onto drive shaft, rotate clockwise until click.

Note: If Latch not engaging, remove and rotate latch 90°, reinstall.



Insert Rotating Guide on machine door post.
Push to lock.

Note: WRAP Mode is now active.

To use WRAP Mode, see page 11.

WRAPCURE CERTIFIED AUDIT

To audit the irradiance values of the lamps in your WRAPCure Certified unit, purchase of the Self-Audit Kit is necessary. The Self-Audit Kit is available on the Onulis site, at: <https://www.onulis.com/product-page/self-audit-kit>.

In the case that the unit's lamps and drivers no longer meet specification, a UV Recharge Pack is available. The UV Recharge Pack is available on the Onulis site, at: <https://www.onulis.com/product-page/uv-recharge-pack>

