

BISCO'S

CE

VIPTM *junior* Dental Curing Light

Variable Intensity Polymerizer

110 Model

220 Model



OPERATOR'S MANUAL

See U.S. Patent: 6,602,074
Printed in the U.S.A.

IN-111R1
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Congratulations!!!

You have just purchased BISCO's Variable Intensity Polymerizer (**VIP™ junior**). This light is engineered to provide high intensity light curing for situations demanding rapid, intense polymerization (i.e. sealants and veneers), as well as those requiring a lower intensity, short curing time (i.e. tacking veneers or brackets in place). The **VIP junior** may also be programmed to deliver a special curing regimen for orthodontic applications. The combination of lower intensity, short curing time with high intensity final cure allows the user to apply the pulse-delayed curing technique.*

The **VIP junior** is programmed with preset exposures of 10, 20, 30 and 40 seconds at a high intensity (500mW/cm² minimum) and a 3 second exposure at the reduced intensity of 300mW/cm². Additionally, there is a built-in orthodontic program that automatically provides 32 repetitions of five seconds or three seconds of exposure time separated by a one second repositioning period. This allows a predetermined pace to be set for exposing and moving through a complete arch of brackets with exposure on two sides per bracket.

BISCO's VIP junior is one of the most versatile dental curing lights available today!

Caution: U.S. Federal Law restricts this device to sale by or on the order of a dental professional.

* B.I. Suh et al, "The Effect of the Pulse-Delay Cure Technique on Residual Strain in Composites," Compendium (Supplement), Vol. 20, No. 2 (1999): 4.

VIP™ *junior* OPERATOR'S MANUAL

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TECHNICAL INFORMATION

1. PRODUCT DESCRIPTION- Model VIP *junior*

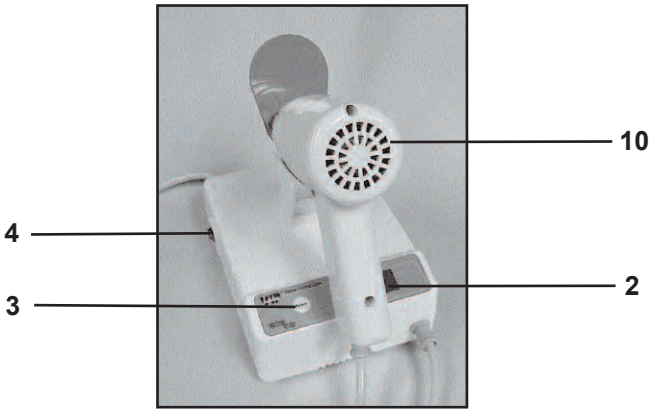


FIG. 1A, FRONT VIEW

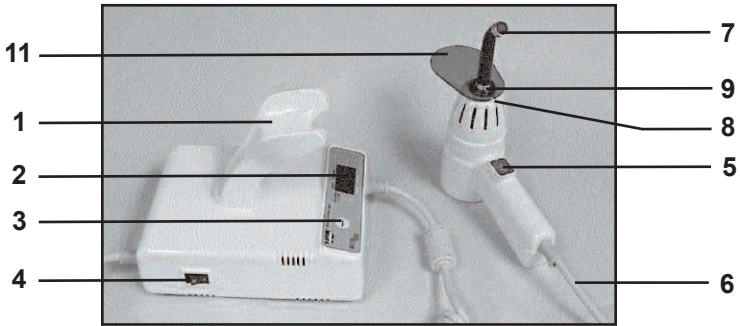


FIG. 1B, SIDE VIEW

- | | |
|---------------------|-----------------------------|
| 1. HANDPIECE HOLDER | 7. LIGHT PROBE |
| 2. DISPLAY WINDOW | 8. NOSE |
| 3. SELECT SWITCH | 9. LIGHT PROBE RECEPTACLE |
| 4. AC POWER SWITCH | 10. FAN |
| 5. TRIGGER SWITCH | 11. PROTECTIVE LIGHT SHIELD |
| 6. HANDPIECE CORD | |

2. ASSEMBLY AND SET-UP

- A. Ensure that the following parts are present in the shipping carton:
 - (1) BISCO **VIP junior** base unit and handpiece
 - (1) 11mm diameter angled fiber optic light probe
 - (1) Protective Light Shield and Grommet
 - (1) Handpiece mount and screws (2)
 - (1) Operator's Manual
- B. Inspect the plug on the end of the power cord and verify that it is the proper type for your wall receptacle. If not, contact your distributor.
- C. Locate the handpiece holder and two screws. Attach the handpiece holder to the top of the base with the two screws. (See Fig. 2, below.)
- D. Before plugging in the AC power cord, the power switch on the base unit should be off ("0").
- E. Insert the light probe into the front of the handpiece. It will snap into place.
- F. Attach the Protective Light Shield to the Light Probe. The Light Shield may be mounted on the nose or mounted on the probe by using the rubber grommet inserted into the Light Shield.
- G. Place the handpiece in the holder as shown. (See Fig. 1A, page 2.)

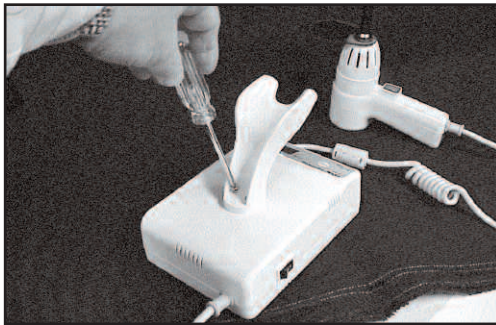


FIG. 2

3. SPECIFICATIONS AND CLASSIFICATION

TECHNICAL SPECIFICATIONS

A.	AC Supply Connection	110 MODEL < 100 VAC ± 10% @ 50/60 Hz 120 VAC ± 10% @ 50/60 Hz 220 MODEL < 230 VAC ± 10% @ 50/60 Hz
B.	Power input	105 VA maximum
C.	Equipment class	II
D.	Protection from electric shock	Type BF
E.	Protection from Ingress of Liquids	None
F.	Environment	Not intended for use where a mixture of flammable gases, including inhalation anesthetics, are present.
G.	Transport and Storage	
	• Ambient Temperature	-10° C to + 70° C (-14° F to + 158° F)
	• Relative Humidity	10% to 90%
	• Atmospheric Pressure	500 hPa to 1060 hPa (0.5 atm to 1.0 atm)
H.	Operation	
	• Ambient Temperature	Continuous operation +10° C to + 40° C (+50° F to + 104° F)
	• Relative Humidity	30% to 75%
	• Atmospheric Pressure	700 hPa to 1060 hPa (0.7 atm to 1.0 atm)
I.	Lamp	12 Volt, 75 Watt Lamp
	• Color Temp	3400° K
	• Focal Length	26.5mm
	• Diameter	36mm
	• Base type	G5.3-4.8
J.	Handpiece Cord	2 meters (6.5 feet)
K.	Unit Dimensions	
	• Height (with handpiece mounted)	22cm (8.7 inches)
	• Length	22cm (8.7 inches)
	• Width	14cm (5.5 inches)
L.	Unit Weight	
	• Handpiece	0.35 kg (12 oz)
	• Base unit	1.6 kg (3 lb. 8 oz)
M.	Thermal Cutoff	Handpiece thermostat protection 105° C/221° F
N.	Additional symbols	None

4. COMPLIANCE SPECIFICATIONS

The Model **VIP junior** is considered to be a Class B device for Emissions/Immunity and complies with:

47 CFR Part 15 Subpart B: 1996
EMC Directive 89/336/EEC

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interferences in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This curing light has been classified with respect to electric shock, fire and mechanical hazards only in accordance with EN60555-2-1987, EN61000-3-3/01.95 and EN60601-1-2/05.93.

5. PERFORMANCE SPECIFICATIONS

A. Output Wavelength Range	400-500 nm (nanometers)
B. Output Light Intensity High (approx.)	500mW/cm ² (mW/cm ² = milliwatts per square centimeter)
Output Light Intensity Low (approx.)	300mW/cm ²
Output Light Intensity at repositioning (approx.)	100mW/cm ²

6. SAFETY PRECAUTIONS

- A. **Warning!** Read the Operator's Manual before using the **VIP junior**.
- B. **Warning!** Do not operate handpiece unless fully assembled with probe installed.
- C. **Warning!** The fiber optic light probe must be sterilized prior to patient contact.
- D. **Warning!** Do not place light probe directly on or towards unprotected gingiva or skin.
- E. **Warning!** Do not look directly into the end of the light probe or handpiece while operating. Protective eyewear will block the energy and must be worn by the operator, assistant and the patient.
- F. **Warning!** Do not expose patients with a history of photosensitivity or those using photosensitive medications to the light emitted from this unit.
- G. **Warning!** This product is not suitable for use in environments where flammable gases, including inhalation anesthetics, are present.
- H. **Warning!** Turn the power off before removing the front end of the handpiece and changing the lamp.
- I. **Warning!** When replacing lamp; lamp may be very hot, even after burning out. Allow sufficient cooling time before attempting removal. **Do not use latex/vinyl gloves as hand protection for a hot lamp.**
- J. **Warning!** Do not allow the base or handpiece to drop to the floor. The plastic housing and/or internal components may be damaged. Do not use a unit that has visible signs of damage or that sounds like there are loose parts internally. Contact your distributor for repair. The warranty does not cover damage due to dropping.
- K. **Warning!** Do not spray the outer surface of the base unit with water, cleanser or chemical disinfectant or it may result in electrical shock and damage to inner circuit. If this happens, please contact your distributor for inspection.
- L. **Caution!** Do not restrict airflow through the handpiece.
- M. **Caution!** Always place handpiece into holder following each curing procedure.
- N. **Caution!** Do not place the base unit in a location subject to water spray or water dripping. Avoid direct spray on the handpiece. Device is rated ordinary equipment for water ingress protection.
- O. **Caution!** Do not turn the unit off while the fan is running. Allowing the fan to complete the cooling cycle will prolong the lamp life.
- P. Do not use for any purpose other than curing dental materials.
- Q. The **VIP junior** has been specifically designed to safely and effectively perform for dental applications and to meet worldwide electrical safety standards, including USA, Canada, and Europe.

INSTRUCTIONS FOR USE

7. USER FUNCTIONS

A. General Dentistry Mode

The **VIP junior** has four preset combinations of exposure time and intensity levels. Exposure times of 10, 20, 30 and 40 seconds are available in combination with the maximum (high) output intensity mode - H. In the low intensity mode - L, a 3 second exposure time is the only option.

B. Orthodontic Mode

In the orthodontic program mode, the unit will automatically progress through 32 continuous cycles of 5 seconds each (program mode A32) or 3 seconds each (program mode C32) of high intensity exposure separated by 1 second of repositioning time. The light is on at low intensity during repositioning to aid in probe placement and is not intended to perform curing. An audible beep will sound at the beginning and end of each 5 or 3 second exposure interval. The display will show the number of intervals left as the unit counts down from 32.

The orthodontic mode allows a user to expose and cure 16 brackets pre-placed on an arch at a preset pace. Exposure is on 2 sides of each bracket.

8. OPERATING INSTRUCTIONS

- A. Turn unit on by switching the AC power switch to "1". (See Fig. 1A, page 2.)
- B. The select switch allows the user to progress through the selection menu in the following order: L03, H10, H20, H30, H40 or the two orthodontic settings of A32 and C32. (See Fig. 1A, page 2 and Section 7 above.)
- C. By pressing and releasing the trigger switch, the unit will emit a blue light of the selected intensity range (H=high, L=low) for the displayed number of seconds or begin the continuous orthodontic sequence. At any time during the cycle, the light can be turned off manually by pressing and releasing the trigger switch on the handpiece. (See Fig. 1B, page 2.)
- D. When the selected time is greater than 10 seconds, an audible beep will sound every 10 seconds. The display will show the amount of curing time remaining as the unit counts down or will display the number of orthodontic sequences remaining from the initial 32. When the selected time expires, two audible beeps will sound.
- E. The light probe tip should be placed in close proximity to the material to be cured. Avoid actual contact. The flat end of the light probe should be parallel to the surface being cured.

9. DISINFECTION/STERILIZATION

The *VIP junior* has an aseptic design with Mylar-coated “select” and “trigger” switches. This design reduces spaces where bacteria and debris can accumulate.

NOTE: Always wear protective barriers (gloves, masks, eye protection, etc.) when disinfecting/sterilizing the unit.

Caution! The unit must be turned off (“0”) before cleaning and disinfecting.

A. Disinfecting the Handpiece, Base Unit and Cord

The handpiece, base unit and cord should be disinfected between patients by wiping down with a disinfecting solution such as glutaraldehyde solution or denatured alcohol. Do not spray the solution directly onto the components.

B. Sterilizing the Light Probe

Prior to sterilization, the probe should be cleaned by wiping the surface lightly with a cleansing solution and wiping with a dry cloth. The light probe is autoclavable and must be sterilized after each patient use to prevent cross-contamination. It is recommended to use a steam autoclave, using distilled water at a temperature of 250° F (121° C) for 30 minutes. Allow to cool for 20 minutes before handling.

The following precautions will prevent damage from occurring to the probe.

- Chemical autoclaves should not be used.
- Autoclave separately from all dental handpieces and instruments.
- Do not use phenol-based iodophors or iodine complexes on the light probes.
- Do not ultrasonically clean the light probe.
- Do not use any instruments or abrasives on the ends of the light probe.

C. Sterilizing the Light Shield and Grommet

Use a cold sterilization solution per manufacturer’s instructions to properly sterilize the light shield and grommet. Do not autoclave the light shield or grommet.

10. TROUBLESHOOTING GUIDE

PROBLEM

Curing lamp is on, the fan does not operate.

Curing lamp does not switch on, the fan does not operate and no message is shown on the screen.

Curing lamp does not switch on, but the fan is working and "overheat" lights up on the panel when the trigger switch is pressed.

Curing lamp is on but does not seem to be curing material.

Display becomes scrambled.

Probe tip becomes hot.

SERVICE PROCEDURE

- Unit must be shut off immediately; contact your distributor for repair.
- Check to make sure that the power switch, located at the rear left side of the base, is in the ON "1" position and the 5-seconds "activating" time has elapsed.
- Check the power cord connections at the AC outlet (mains) to be sure they are properly seated.
- Verify the AC outlet is energized by plugging a known working appliance into it or plug the unit into another known working AC outlet.
- If not certain what has happened, contact your distributor for repair.
- Allow the lamp to cool for about 5 minutes; if this does not help, check the lamp to be sure it is properly seated; if seated but still unlit, then replace the lamp. (See Section 11, LAMP REPLACEMENT.)
- If not certain what has happened, contact your distributor for repair.
- Check output with radiometer. Reading should be above 450mW/cm². If not, check if probe is dirty, scratched, or cracked, or has build-up of cured composite on the tip. If so, clean or replace probe.
- Replace lamp. (See Section 11, LAMP REPLACEMENT.)
- Verify that material is not expired.
- If not certain what is wrong, contact your distributor for repair.
- A spike in the power may upset the operation of the microprocessor. Turn power off, wait 5 seconds to allow the unit to reset and turn unit back on.
- Filter may be cracked or missing. Return for repair.

11. LAMP REPLACEMENT

Lamp replacement is simple! There is no need for tools.

Warning! When replacing the lamp:

- Turn off power to the unit ("0") and disconnect the AC plug from the outlet.
 - Lamp may be hot, even after it burns out. Allow sufficient cooling time before attempting removal of the lamp. **Do not use latex/vinyl gloves as hand protection for a hot lamp.**
 - Do not operate handpiece unless fully assembled.
- A.** Remove the probe. Unscrew the nose of the handpiece from the handle by turning counter-clockwise while looking at the front of the nose. (See Fig. 3A & 3B, below.)
- B.** Gently pull out the old lamp by pulling on the glass reflector with a slight rocking motion. Insert the new lamp into the socket. **Do not touch the bulb itself!** (See Fig. 3C, below.)

Replacement lamps must possess proper optical characteristics (color temperature, beam shape, focal point) and electrical characteristics (voltage and current load) to guarantee specified performance. Using the improper lamp may damage the unit and void the warranty. For guaranteed performance, order BISCO part no. V-10105A.

- C.** When replacing the lamp, it is a good idea to always check the filters for cleanliness and integrity. Hold the nose up to a light and look through it. The filter should be dark blue with no scratches, cracks or cloudiness. If this is not what you observe, contact your distributor to replace the part with a new one.
- D.** Replace the nose on the handpiece and screw back in place by rotating clockwise. Do not over tighten. (See Fig. 3B & 3A, below.)

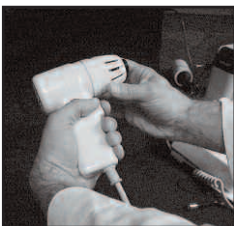


FIG. 3A



FIG. 3B



FIG. 3C

12. PRODUCT LIABILITY

BISCO is responsible for the performance, safety and reliability of the **VIP junior** unit only if:

- The instructions for use are followed during operation.
- IEC requirements are followed for the electrical installation.
- Repairs, adjustments, assembly and modifications of the components are carried out by authorized BISCO personnel.

VIP™ *junior*

Dental Curing Light Warranty

BISCO warrants the **VIP *junior*** curing light to be free from defects from workmanship and materials for a period of one year from purchase date excluding those parts subject to normal wear and tear. This warranty is null and void if damage to the product is due to:

- (1) servicing or attempt at servicing by personnel not authorized by BISCO to service product.
- (2) incorrect operation, misuse or abuse of the product; or
- (3) non-compliance with operating instructions.

Repairing or replacing the unit free of charge fulfills this warranty. **THIS WARRANTY IS THE COMPLETE AND EXCLUSIVE U.S. WARRANTY MADE BY BISCO. BISCO DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. BISCO SHALL NOT BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND.**

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