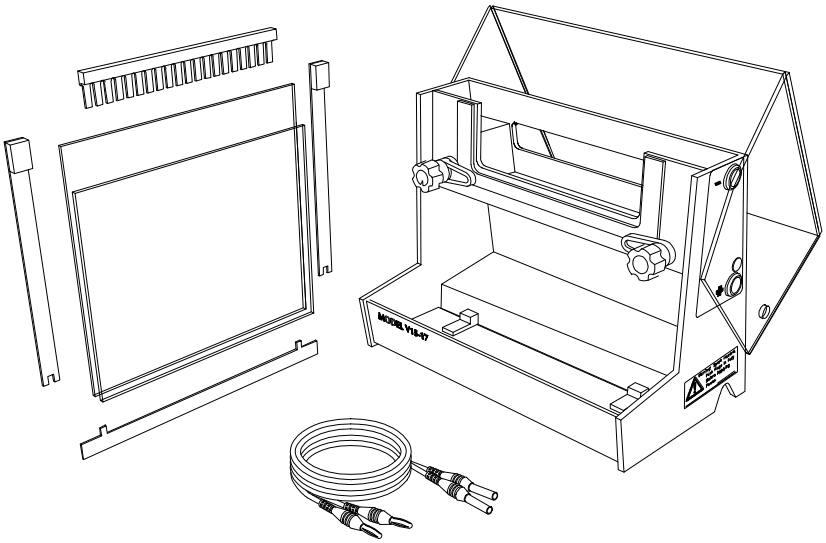
OPERATING MANUAL

V16 #21070010

V16-2 #31071010

V15.17 #21080023

V-Series of Vertical
Electrophoresis
Apparatus



V15.17 Shown

Separation Simplified.™

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V-SERIES APPARATUS OPERATING MANUAL - TABLE OF CONTENTS

1.0 BEFORE YOU BEGIN

1.1 IMPORTANT INFORMATION

V-Series (V16, V16-2 and V15.17) electrophoresis units are authorized for laboratory research use only. They have not been qualified for use in any human or animal diagnostic or therapeutic application. Use for other than the intended use may be a violation of applicable law.

If the product is used in a manner not specified by Apogee, the protection provided by safety features of the product may be impaired. Please carefully follow the manual's instructions. Do not alter equipment or operate with broken components. Failure to adhere to these directions could result in personal and/or laboratory hazards as well as invalidate the equipment warranty.

1.2 SAFETY WARNINGS

- **CAUTION: SHOCK HAZARD** This apparatus requires a 250 VDC power supply for operation which makes it a potential shock hazard. The power supply should be of the modern type and have open-circuit sensing.
- This apparatus should always be operated with caution. Careless handling can result in electrical shock.
- The system should be operated by trained personnel only.
- Some reagents indicated for use in this manual may be hazardous (*e.g.,* ethidium bromide, acetic acid, and boric acid, etc.); exercise care with these reagents.
- Always follow the power supply manufacturer's recommendations for use and follow safety procedures.
- Always turn off the DC power source ***before*** disconnecting the power cords from the apparatus.
- Never operate damaged or leaking equipment. Inspect the apparatus, electrical connections and power cords prior to use.
- For maximum safety, always operate this apparatus in an area that is not accessible to unauthorized personnel.

2.0 OPERATING INSTRUCTIONS

2.1 GEL CASTING

Gels can be cast after assembling the glass plates and spacers, using either a bottom spacer or gel sealing tape. These techniques are appropriate for casting agarose and polyacrylamide gels.

2.1.1 PREPARING GEL PLATE ASSEMBLY USING A BOTTOM SPACER

1. Clean the glass plates, spacers, and combs of dried gel fragments, grease, and dust.
2. Before the side spacers can be used the first time, wipe them with alcohol and attach a foam block 2 mm from the top (unnotched end) of each side spacer.
3. With the long glass plate [7.75" (197 mm) wide x 7.50" (191 mm)] long laid flat on a clean surface, place one side spacer along each short edge with the foam blocks at the top. Interlock

the bottom spacer with the side spacers. If the side and bottom spacers are interlocked properly there will be no reason to apply grease for good seal.

4. Place the short glass plate [7.75" (197 mm) wide x 6.31" (160 mm)] long on top of the spacers so that the sides and bottom of the plates and spacers are even.

   Critical: *The foam blocks at the tops of the side spacers must seat firmly against the top edge of the short glass plate.*

5. Clamp the assembly together with three spring clips on each side and three across the bottom for a total of nine spring clips. A gap between the foam block and the plate will allow a leak to form from the upper buffer reservoir. This could present a safety hazard.

   Note: *To prevent plate cracking and distorting of the glass, the spring clips must be placed such that they grip only over the spacers.*

2.1.2 POURING DISCONTINUOUS BUFFER SYSTEM GELS

Prepare the acrylamide solutions *without* ammonium persulfate (APS). The volumes required are listed in table 1.

Warning: *Unpolymerized acrylamide is a neurotoxin. Please consult the MSDS supplied by the manufacturer before handling this chemical.*

Table 1. Gel Solution Volumes as a Function of Gel Thickness

Gel thickness (mm)	Stacking gel volume (ml)	Resolving gel volume (ul)
0.8	5	25
1.0	10	45
1.5	15	80

1. Add APS to the resolving gel and carefully pour or pipette the gel solution into the gel plate assembly within 10 min, filling to within 1 to 2 mm above the desired level, as marked above. Overlay the solution with 0.5 to 1.5 ml of water-saturated n-butanol to keep the gel surface flat and the interface sharp during polymerization. The assembly should stand vertically and level, while the acrylamide polymerizes.
2. After the resolving gel has polymerized (30 to 45 min), pour off any unpolymerized solution and butanol. Rinse the top of the gel with deionized water.
3. Add APS to stacking gel and then add stacking gel solution to within 2 mm of the top of the short plate.
4. Before inserting the comb, break any small bubbles by touching them with a few µl of n-butanol. Insert the well-forming comb carefully. Be careful not to trap bubbles under the comb teeth. Allow the gel solution to polymerize completely before removing the comb.

2.1.3 POURING CONTINUOUS BUFFER SYSTEM GELS

1. Fill the gel assembly with acrylamide solution to within 2 to 3 mm of the top of the short plate. Required volumes are listed in table 1. Before inserting the comb, break any small bubbles by touching them with a few µl of n-butanol. Insert the well-forming comb carefully. Be careful not

to trap bubbles under the comb teeth. Allow the gel solution to polymerize, flat, horizontally, completely before removing the comb.

2. The V-Series S2 Casting Clamp allows the gel to be filled from the bottom as well as from the top. To fill the gel from the bottom, assemble the gel plates so that when the casting clamp is lying down on the molded feet, the short glass plate is on top. Open the bottom fill port and insert a Luer fitting. Attach a syringe of suitable reservoir to the fitting and slowly fill the gel. Do not interrupt the filling as this may introduce bubbles into the gel solution. Once the gel is filled, insert the well forming comb as before.

2.2 ASSEMBLING THE GEL ELECTROPHORESIS APPARATUS

1. Carefully remove the comb. Rinse the comb with deionized water. Rinse off any thin sheets or fragments of polyacrylamide around the wells.

2. Remove the spring clips (and/or tape, if used) from the gel plate assembly. Carefully remove the bottom spacer, if used. To remove the V-Series Casting Clamp, hold the gel assembly with one hand and carefully pull the clamp off starting at the top.

   Note: *The side spacers are made from Teflon and acrylamide will not polymerize against Teflon® so a thin channel of unpolymerized acrylamide will remain between the gel and side spacers. To eliminate this gap, press the side spacers inward.*

   Note: *Be sure that the foam blocks are securely down against the top edge of the short glass plate. A gap between the block and the plate will cause buffer to leak out of the upper buffer reservoir during electrophoresis.*

3. Place the gel plate assembly into the apparatus with the short plate against the gel sealing gasket and seal the gel in place with binder clamps. In the case of the V15.17, turning the knobs clockwise will cause the integral clamping fingers to spin into place and compress the gel assembly against the gasket. Even pressure on both clamping fingers will ensure a good leak free seal.

4. Place the apparatus on a level surface. Add 400 to 450 ml of electrophoresis buffer to the upper buffer reservoir, and 450 to 500 ml to the lower buffer reservoir. The buffer level in each reservoir should be approximately 5 mm above the edges of the gel.

   Caution: *Before applying power to the apparatus, check for leaks between the gel sealing gasket or foam blocks and the glass plates. Adjust the position and tension on the clamping fingers and position of the foam blocks as required. The gasket and blocks will compress and take a set after prolonged use making it difficult to affect a proper seal. Replacement parts are available (see Section 3). If no buffer leaks from the top chamber, add buffer to the bottom chamber.*

5. Make sure that no bubbles are trapped under the bottom edge of the gel. Remove bubbles with a syringe and bent needle.

2.3 LOADING SAMPLES

1. Rinse all wells with buffer to remove bubbles, gel fragments and residual unpolymerized acrylamide. If necessary, straighten the well walls with a syringe needle or a fine-tipped micropipette.

2. A gel may be tinted with bromophenol blue to make the wells visible. Sample loading volumes are listed in Table 2.
3. Load samples into the wells with a syringe or fine-tipped micropipette. Samples should contain 10% (w/v) sucrose, Ficoll® or glycerol to increase sample density and reduce mixing during loading.

Table 2. Sample Loading Volumes for V-Series Apparatus Combs as a Function of Gel Thickness

Number of Teeth	Tooth width (mm)	Gel thickness (mm)	Nominal Well Capacity (ul)
10	13.0	0.8	94
10	13.0	1.5	176
15	10.0	0.8	72
15	10.0	1.5	135
20	8.2	0.8	59
20	8.2	1.0	110

Note: All loading volumes are calculated for a sample depth of 9 mm.

2.4 ELECTROPHORESIS

1. Fill the buffer chambers with the requisite buffer solution.
2. Attach (V16 & V16-2) or rotate (V15.17) the safety interlock lid over the gel and attach the power cords **first to the apparatus**, then to the power supply.
3. Turn on the power supply and adjust the voltage or current to the settings required for your procedure.

2.5 POST-ELECTROPHORESIS

1. At the end of the electrophoresis period, turn off the power supply and disconnect the leads first from the power supply, then from the apparatus. Remove or open the safety interlock lid.
2. Discard electrophoresis buffer by pouring it out over the front of the apparatus.
3. Unclamp the gel plate assembly from the apparatus. Lay the gel plate assembly on a paper towel. Use a thin spatula to carefully pry the upper glass plate away from the gel.
4. Transfer the gel to a container of stain, fixative or transfer buffer for further processing.
5. Rinse all apparatus components thoroughly in deionized water and wipe or air dry.

3.0 TROUBLESHOOTING GUIDE

Some suggestions for resolving common problems are given below. Should these suggestions not resolve the problem, please call Technical Support (see Section 5.4 for numbers). If the unit must be returned for repair, also contact our service department, the technical support or your local distributor for shipping instructions. Please include a full description of the problem.

GLASS PLATES CRACK

- Lower the current or voltage on your power supply. Excessive power is causing overheating and thus causing the plates to crack.

GEL SOLUTION LEAKS FROM THE BOTTOM DURING CASTING

- The bottom spacer tabs may not be fully seated in the side spacer notches. Apply a small bead of grease to the spacer joints to ensure a positive seal.
- Seal the bottom of the gel assembly with a small amount of the resolving gel before casting the full gel.
- For continuous buffer system gels: fill the plate assembly, insert the comb and tilt the assembly back on to reduce hydrostatic pressure on the bottom joints while the gel polymerizes.

BUFFER LEAKS SLOWLY FROM THE UPPER RESERVOIR

- Adjust spring clips or clamps to improve the sealing of the gasket against the glass plate.
- Verify that the gel sealing gasket is intact and the spacer foam blocks are compressed against the upper edge of the short glass plate.
- Press side spacers against the gel to eliminate a fluid path that may have been formed by unpolymerized gel solution.
- Check the gel sealing gasket and foam blocks for wear or inability to seal properly against the short plate.
- Push down on the top of the side spacers to compress the foam block against the top of the short glass plate.

THE GEL DYE FRONT IS NOT STRAIGHT

- Level the apparatus.
- Ensure that the buffer depth covers the upper and lower edges of the gel evenly by 5 mm.
- Any entrapped bubbles along the bottom edge of the gel will cause an uneven electric field. Remove the bubbles.
- Reduce the voltage or current because your gel may be running too hot.

BANDS ARE DISTORTED OR STREAKED

- Sample may contain excess salt. Dialyze or desalt before loading on gel.
- Sample may be too concentrated. Dilute sample or reduce voltage.
- Sample may contain precipitated material. Centrifuge or filter before loading on gel.

DYE MIGRATION IS SLOWER THAN EXPECTED

- The electrophoresis buffer may be too concentrated. Check buffer preparation procedure. If the concentration is high, at constant voltage the current will be higher than usual; at constant current the voltage will be lower than usual.
- Check voltage or current settings on power supply.
- Check for secure connections of power cords to the power supply and the apparatus.

DYE MIGRATION IS FASTER THAN EXPECTED

- The electrophoresis buffer may be too dilute. Check buffer preparation procedure. Check voltage or current settings on power supply.

4.0 RELATED PRODUCTS AND REPLACEMENT PARTS

PRECISION MACHINED DELRIN® COMBS	DESCRIPTION	CATALOG #
10 well precision machined white Delrin comb	0.8 mm thick 1.5 mm thick	11956026 11956059
12 well precision machined white Delrin comb	0.8 mm thick 1.5 mm thick	11956034 11956067
14 well precision machined white Delrin comb	0.8 mm thick 1.5 mm thick	11956042 11956075
20 well precision machined white Delrin comb	0.8 mm thick 1.5 mm thick	21076013 21076021

PRECISION MACHINED SPACER SETS	DESCRIPTION	CATALOG #
1 bottom, 2 side spacers, 2 foam blocks	0.8 mm thick 1.5 mm thick	41077017 41077025

V-SERIES REPLACEMENT PARTS	DESCRIPTION	CATALOG #
Glass Plates (short and long) Long – 7.75" (197 mm) wide x 7.50" (191 mm) long Short – 7.75" (197 mm) wide x 6.31" (160 mm) long	Package of 3 pairs	11074010
Spacer Foam Blocks	Package of 12	21070057
Gel Sealing Tape (1.5 in. x 72 yd.)	1 roll 10 rolls	11032018 11032026
Power Cord Replacements 1 black & 1 red, 122 cm long	Package of 2	11099025
Banana Plug Replacement for both banana plugs Includes all necessary components (NO ELECTRODES)	Kit	21105101

V16 AND V16-2 REPLACEMENT PARTS	DESCRIPTION	CATALOG #
V16 Replacement Gasket (2 needed for V16-2) 1 gasket with 6 foam blocks for spacers	Kit	21960026
V16 & V16-2 <u>Upper</u> Pt/Ti Electrode Replacement Includes all necessary components	Kit	11958428
V16 & V16-2 <u>Lower</u> Pt/Ti Electrode Replacement Includes all necessary components	Kit	11958436

V15.17 REPLACEMENT PARTS	DESCRIPTION	CATALOG #
V15.17 Replacement Gasket 1 gasket with 6 foam blocks for spacers	Kit	21960059
V15.17 <u>Upper</u> Pt/Ti Electrode Replacement Includes all necessary components	Kit	11958345
V15.17 <u>Lower</u> Pt/Ti Electrode Replacement Includes all necessary components	Kit	11958329
V15.17 Gel Clamp Replacement Parts for 1 side	Kit	11958352

5.0 CARE AND HANDLING

5.1 MATERIALS AND CARE

Each V-Series apparatus is fabricated from high quality acrylic plastic and/or ABS. Acrylic and ABS both have very good heat, impact, and chemical resistance but ***will not*** withstand autoclaving.

> ***Caution:*** *Both electrodes are made from .012" diameter Pt/Ti wire for durability. Use care when cleaning this apparatus to prevent breakage of the electrodes because they <u>are not</u> warranted against breakage.*

All components may be washed with water and a detergent. To remove grease and oils, use a hexane, kerosene, or aliphatic naphtha. *Never* use abrasive cleaners, window sprays, or any fluid that may contain toluene, methylene chloride, phenol, acetone, benzene, halogenated hydrocarbon solvents, or undiluted laboratory alcohols.

Normal use and constant clamping pressure will cause the sealing gasket to take a set. Please store the unit without glass plates installed. Instructions for replacing the gasket are included with the gasket replacement kit.

5.2 MAINTENANCE

Routine inspection and maintenance will ensure both the safety and the performance of your vertical gel apparatus. For replacement parts, call your distributor or Apogee Technical Support.

- Because of the relatively high voltages that may be used, inspect electrical connections and power cords often. If power cords show any signs of wear or damage (e.g., cracks, nicks, abrasions, melted insulation or bare wire), replace immediately.
- Examine the electrode banana plugs and connection nuts to ensure that they are free of corrosion or they may offer higher resistance thus heating up and risking sparks and fire.
- Replace any damaged or permanently compressed foam parts.

5.3 GENERAL SPECIFICATIONS

Type	**V16 and V16-2**	**V15.17**
Gel Dimensions (W × H, using bottom spacer)	17.1 × 14.7 cm	17.1 × 14.7 cm

Voltage Range	250 VDC Max	250 VDC Max
Current Range	0-50 mA	0-50 mA
Operating Temperature Range	4-30°C	4-30°C
Construction	Acrylic	ABS and acrylic
Electrode material	Pt/Ti wire	Pt/Ti wire
Maximum gel thickness	3 mm	3 mm

5.4 TECHNICAL SUPPORT AND SERVICE

Should you have any problems with this unit, please contact:

Apogee Designs, Ltd.
Attn: Electrophoresis Support
101 Kane Street
Baltimore, MD 21224 USA

Phone: 443.744.0368 9 to 5PM EST, Monday through Friday
Fax: 410.633.3666
Email: info@apogeephoresis.com

5.5 INSTRUCTIONS FOR RETURN SHIPMENT

IMPORTANT: Before sending the unit back to us, it is absolutely necessary to call our Technical Support department to **get authorization to return products**!

- Return only defective devices. For technical problems which are not definitively recognizable as device faults please contact Apogee Technical Support.
- Use the original box or a similarly sturdy one.
- Label the outside of the box with **CAUTION! SENSITIVE INSTRUMENT!**
- Please enclose a detailed description of the fault and when, or how, the problem occurred.

Important: Clean all parts of the instrument from residues and of biologically dangerous, chemical and radioactive contaminants. Please include a written confirmation (use the respective Decontamination Declaration/Certificate following in Section 7 that the device is free of biologically dangerous and radioactive contaminants in each shipment. If the device is contaminated, it is possible that Apogee will be forced to refuse to accept the device.

The sender of the repair order will be held liable for possible damages resulting from insufficient decontamination of the device.

Please enclose a note which contains the following:

1. Sender's name and address and,
2. Name of a contact person for further inquiries with telephone number.

5.6 CLEANING AND DECONTAMINATION FOR RETURN OF PRODUCTS

Use the original product packaging whenever possible, to avoid damage to the unit being returned. All returned material must be cleaned and decontaminated prior to shipping. The components of apparatus products are fabricated from a variety of materials including: ABS, acrylic, vinyl, glass, silicone, aluminum and stainless steel.

Please clean any unit or product to be returned using the following three step procedure.

STEP 1: GENERAL CLEANING PROCEDURE

For materials not contaminated with biological or radiological substances, components may be gently washed with water and a non-abrasive detergent, and rinsed with deionized water. Dry using a soft cloth, paper towel or allow to air dry. A light application of hexane, kerosene, or aliphatic naphtha will remove grease.

To prevent surface damage, never use abrasive cleaners, window sprays or scouring pads to clean these products. Avoid excessive exposure to UV light, phenol, acetone, benzene, halogenated hydrocarbon solvents or undiluted alcohols because they may cause crazing.

STEP 2: BIOLOGICAL CLEANING PROCEDURE

Using a solution of either 5% household bleach in water or 70% ethanol in water, wipe down the apparatus using a clean cloth or sponge. Neutralize the solution by wiping the surface with a mild, nonabrasive detergent and rinse well with water.

STEP 3: RADIOLOGICAL DECONTAMINATION PROCEDURE

To meet various regulatory and safety standards, please follow the decontamination procedure given here if radioactive materials are used with this product or are used in the vicinity of where this apparatus has been used or stored.

WARNING: We cannot and will not accept return of products that are contaminated with any radioactivity.

For beta emitting isotopes such as ^{32}P, use a GM-type radioactivity meter calibrated in counts per minute (CPM) to determine the background readings for your work area. Wearing latex gloves, survey the unit to be returned with the GM meter. If any part of the unit is found to show readings higher than background, wash the area using Radiacwash© (Atomic Products Corp.) and paper towels, or another similar commercially available detergent. If none are available, a mild detergent or a Formula 409© type solution will do. As you clean, discard liquid and solid waste (gloves and paper towels) according to your local and institutional regulations for radioactive material disposal. Continue washing until the GM-meter reading for the contaminated area(s) is equal to or below background.

To decontaminate units where a GM-meter is not as useful for detection, as with 'H, or "S, it will be necessary to perform swipes of the unit and detect using a scintillation counter. The unit should be dry. Wipe surfaces with dry paper circles (these are commercially available or you can make your own). Areas can be charted, so that individual swipes can be done on different surfaces to better isolate areas of contamination.

Swipes should be placed into individual scintillation vials with an appropriate floor and then analyzed on a properly programmed scintillation counter. If contamination above 100 disintegrations per minute dpm/100cm^2 (dpm=CPM/efficiency) is found, wash the area as described above in ^{32}P decontamination. After cleaning the area, swipe it a second time to determine the amount of contamination remaining. If

the area still has greater than 100 dpm/cm^2, continue the cycle of swipes and washing until you achieve a reading of less than 100 dpm/cm^2.

Once the unit has been determined to be radiation free (<100dpm/cm^2) remove all the hazardous and radioactive labels from the unit. If the labels cannot be removed, deface them. Failure to do so may result in a significant delay or refusal of repair.

If your unit has non removable contamination (detectable with a GM-meter and not with paper swipes, or detectable with paper swipes but after continued washing the dpm/cm^2 remains constant and above 100) of a short half life isotope such as ^{32}P, it may be stored for ten half lives of isotopic decay and the decontamination procedure repeated.

Note: *Units contaminated with non removable, long half life isotopes may not be returned.*

Information: If you are currently using a decontamination procedure which employs different reagents from those listed, please consult this manual regarding compatibility with the materials in your unit. If questions still persist, please contact:

Apogee Designs, Ltd.
Attn: Electrophoresis Support
101 Kane Street
Baltimore, MD 21224 USA

Phone: 443.744.0368 9 to 5PM EST, Monday through Friday
Fax: 410.633.3666
Email: info@apogeephoresis.com

5.7 NOTICE REGARDING THE RETURN OF APPARATUS PRODUCTS

US FEDERAL REGULATIONS

In order to comply with US federal regulations and to protect the health and safety of employees, it is imperative that all customers read this notice and adhere to the requirements regarding the return of apparatus products. The US Department of Transportation, the Department of Health and Human Services, and the Nuclear Regulatory Commission have strict regulations on the shipment of hazardous materials (49 CFR Part 173) including etiologic agents (49 CFR Part 173 and 42 CFR Part 72) and radioactive materials (CFR 49 Part 173 and 10 CFR Part 20).

GERMAN LAW

To comply with German law (i.e. §71 StrlSchV, §17 GefStoffV and §19 ChemG) and to avoid exposure to hazardous materials during handling or repair, completion of this form is required before equipment leaves your laboratory.

When equipment is returned for repair, evaluation, credit or exchange, the customer becomes the shipper and must ensure that the item is free of contamination whether chemical, biological or radioactive. Procedures for decontamination are described above.

Materials received that have not been properly decontaminated or units which do not have hazard labels (such as 'caution radioactive materials') may be decontaminated at the customer's expense (approximately $350) and may result in delay or refusal of repair. In addition, in the case of radioactive contamination, Apogee may be required to notify a licensing authority who in turn may be required to notify the customer's licensing authority.

Please carefully follow the instructions on decontamination and fill out the Decontamination Declaration that follows. Place the Decontamination Declaration inside the top flap of the box where it can be immediately noticed by the receiver. Any change to this procedure may result in service delay.

Questions regarding the above requirements should be addressed to our Technical Support Department.

6.0 WARRANTY

Apogee warrants apparatus of its manufacture against defects in materials and workmanship, under normal service, for one year from the date of receipt by the purchaser. This warranty excludes damages resulting from shipping, misuse, carelessness, or neglect and does not include breakage of the electrodes or crazing from cleaning with solvents that attack ABS or acrylic. Apogee's liability under the warranty is limited to the repair of such defects or the replacement of the product, at its option, and is subject to receipt of reasonable proof by the customer that the defect is embraced within the terms of the warranty. All claims made under this warranty must be presented to within three years following the date of delivery of the product to the customer.

This warranty is in lieu of any other warranties or guarantees, expressed or implied, arising by law or otherwise. Apogee makes no other warranty, expressed or implied, including warranties of merchantability or fitness for a particular purpose. Under no circumstances shall Apogee be liable for damages either consequential, compensatory, incidental or special, sounding in negligence, strict liability, breach of warranty or any other theory, arising out of the use of the product listed herein.

In the interest of bettering performance, Apogee reserves the right to make improvements to the design, construction, and appearance without notice.

6.1 DECLARATION OF CONFORMITY AND CE MARK

Note: The information outlined in this section applies only to customers located in the European Union (EU).

This laboratory apparatus is identified with the **CE** mark. This mark indicates that the product complies with the following EU Directives and Standards:

APPLICATION OF COUNCIL DIRECTIVE(S):

89/336/EEC	Electromagnetic Compatibility
73/23/EEC	Low Voltage Directive

STANDARDS:

EN 50081-1:1992	Emissions
EN 50082-1:1992	Immunity
EN 61010-1:1993	Product Safety

7.0 DECONTAMINATION DECLARATION

RGA Number (IMPORTANT): _____

Customer Name: _____

Institute: _____

Address: _____

TEL #: _____ FAX #: _____

E-mail: _____

Unit type: _____ Serial number: _____

DESCRIPTION OF PROCEDURES USED TO DECONTAMINATE UNIT (LOOK AT 5.6)

☐ 1. Gently washed with water and a non-abrasive detergent, and rinsed with deionized water.

☐ 2. Using a solution of 5% household bleach in water or 70% ethanol in water, the unit was wiped down using a clean cloth or sponge and neutralized with deionized water.

☐ 3. To meet various regulatory and safety standards, please follow the decontamination procedures given in 5.6 if **radioactive materials** were used with this product.

This piece of equipment **has not** been decontaminated. Reason:

☐ To the best of my knowledge, unit is free of chemical, biological, or radioactive contamination.

I understand that if the equipment is found to be contaminated, regardless of the signature on this document, the equipment may be decontaminated at my expense. Also, if the equipment is found to be contaminated, the response time for repairs will be delayed.

Signature: _____

Title: _____

Date: _____

*Please place **completed and signed** form inside the box with the equipment where it can immediately be noticed by the receiver. We appreciate you taking the time to perform the necessary precautions to ensure that equipment being returned can be safely handled by our employees.*