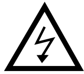
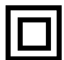
- Separate the DNA samples by standard electrophoresis.
- Prepare a 3x Sybr Green I OR 1x Sybr Gold Staining Buffer
3x Sybr Green I Staining Buffer: add 15 µl of 10,000x Sybr Green I to 50 ml running buffer (1xTAE or 1xTBE, pH 7.5 to 8.0), mix thoroughly. OR 1x Sybr Gold Staining Buffer: add 5 µl of 10,000x Sybr Gold to 50 ml running buffer (1xTAE or 1xTBE, pH 7.5 to 8.0), mix thoroughly.
- It is very important to use polypropylene containers instead of glass containers. Glass surfaces will absorb Sybr Green and render it unable to stain the DNA.
- Place the gel into the staining buffer. Ensure there is enough buffer to cover the whole gel. Incubate for about 60 minutes with gentle agitation. Cover the container with a piece of aluminum foil to prevent photo bleaching of the dye from the ambient light.
- Visualize the DNA bands with the PrepOne™ Sapphire.

APPENDIX 7: EXPLANATION OF SYMBOLS


Caution, risk of electric shock

Caution


Equipment protected throughput by DOUBLE INSULATION or REINFORCED INSULATION

This product meets the IEC Publication 1010-1 Edition 1990

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Electrophoresis for Molecular Biology Innovations
1-858-684-3190 ♦ www.embitec.com

RunOne™ System Instruction Manual

Version 120820

DNA Electrophoresis

Maximum Input Voltage
120 Volts

SAFETY

Always wear protective gloves and safety goggles in the laboratory. The RunOne Electrophoresis System is intended for laboratory research use only. The RunOne Power Supply is an integrated power supply designed for use with the RunOne Electrophoresis Cell only. Do not attempt to use the RunOne Power Supply with any other electrophoresis apparatus, and do not attempt to use the RunOne Electrophoresis Cell with any other power supply. The RunOne Electrophoresis Cell and Power Supply should not be modified or altered in any way.

Embi Tec is not responsible for any injury or damage caused by the use of this system for purposes other than for which it was intended or by modifications to the system not performed by Embi Tec.

*WARNING: Death or injury may occur if any voltage adjustment device other than an isolated step-down transformer with no more than 10nF capacitance is used. PLEASE USE WITH CAUTION.

WARRANTY

The RunOne Electrophoresis System is warranted to be free of defects in materials and workmanship for one year period from the date of purchase. If a defect is found during this warranty period, Embi Tec will replace the defective parts at no charge, provided the customer agrees to fill out the Return Authorization Form and the product is returned within the warranty period. This warranty specifically excludes:

- Defects caused by improper operation
- Damage caused by improper handling or accidental misuse
- Damage caused by the use of organic solvents
- Common replacement parts including platinum wire and fuses
- Damage incurred during shipping

Please keep a record of the order information for future reference:

- Date of Purchase: ________________________
- Purchase Order Number: __________________
- Date of Delivery: _________________________
- Invoice Number: __________________________

*WARNING: If any voltage adjustment device other than an isolated step-down transformer with no more than 10nF capacitance is used unit is void of all warranty. Customer is responsible for any problems should they arise.

- Place the gel into the staining buffer. Ensure there is enough buffer to cover the whole gel. Incubate for at least 45 to 60 minutes with gentle agitation. Cover the container with a piece of aluminum foil to prevent photo bleaching of the dye from the ambient light.
- Visualize the DNA bands with the PrepOne™ Sapphire.

APPENDIX 6: SUGGESTED PROTOCOLS FOR WORKING WITH SYBR® GREEN I OR SYBR GOLD

1. Using Sybr stains (concentrated stock at 10,000x) to cast agarose gel with 1x Sybr Green I or Sybr Gold:

   (This method gives fast result, but the stain in gel may affect on the migration of DNA fragments.)

   - To make a Wide gel, prepare 40 ml of molten agarose gel solution. Cool to about 60 oC. (Use a polypropylene container as Sybr stains will adsorb onto the glass surface.)
   - Add 4 µl 10,000x of concentrated Sybr Green I (or Sybr Gold) to the gel solution, mix thoroughly.
   - Cast the gel as usual. Wait 45 to 60 minutes or until the gel solidifies and is ready for use.
   - Load and run your DNA samples as usual.
   - After electrophoresis, take the gel out of the warm buffer and let it cool down for a while; visualize the DNA bands with the PrepOne Sapphire.

   Tips for using Sybr stains to prepare precast agarose gels:

   (1) Sybr stains are sensitive to heat. Do not heat Sybr stains in the microwave.
   Boiling & near boiling temperatures destroy the Sybr stains' ability to stain nucleic acid.

   (2) Dilute Sybr stain stock reagent (10,000x) 1: 10,000 into the gel solution right before pouring the gel. Cool the gel solution to ~ 60°C or below.
   *For example: add 2 µl Sybr Green I (or Sybr Gold) to 20 ml gel solution, mix well before pouring the gel.

   (3) Use polypropylene containers to prepare the gel solution mixture. Sybr stains bind to glass and other non-polypropylene plastics which may result in a decreased sensitivity from your sample.

2. Post staining DNA bands following gel electrophoresis with 3x Sybr Green I or 1x Sybr Gold in running buffer:

   (This is the best method for maximum sensitivity! DNA migration will not be affected by the stain.)

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5. Visualize the DNA bands with a UV transilluminator.

6. If destaining is needed for better gel imaging purpose, place the gel into a container with 100 ml DI water; destain the gel for 10 to 15 minutes.

7. Visualize the DNA bands with a UV transilluminator and take gel image according to your specific instrument operation manual.
   *Note: EtBr is a known mutagen and suspected carcinogen. Always wear gloves and safety goggles when handling it. Follow appropriate hazardous material disposal regulations.

APPENDIX 5: SUGGESTED PROTOCOLS FOR WORKING WITH GELGREEN™

1. Using GelGreen (concentrated stock at 10,000x in water) to cast agarose gel with 1x GelGreen:
   (This method gives fast result, but the stain in gel may have a small affect on the migration of DNA fragments.)
   • To make a Wide gel, prepare 40 ml of molten agarose gel solution. Cool to 70 - 80 °C. (Use polypropylene containers to prepare the gel solution mixture. GelGreen binds to glass and other non-polypropylene plastics which may result in a decreased sensitivity from your sample.)
   • Add 4 µl 10,000x of concentrated GelGreen to the gel solution, mix thoroughly.
   • Cast the gel as usual. Wait 45 to 60 minutes or until the gel solidifies and is ready for use.
   • Load and run your DNA samples as usual.
   • After electrophoresis, take the gel out of the warm buffer and let it cool down for a while; visualize the DNA bands with the PrepOne™ Sapphire (PI-1000) blue light illuminator.

2. Post staining DNA bands following gel electrophoresis with a 3x GelGreen in 0.1 M NaCl solution:
   (This is the best method for maximum sensitivity! DNA migration will not be affected by the stain.)
   • Separate the DNA samples by standard electrophoresis.
   • Prepare a staining buffer (3x GelGreen in 0.1M NaCl solution)

   (1) Add 15 µl of 10,000x GelGreen stock reagent to 50 ml 0.1M NaCl solution, mix thoroughly.

   (2) It is very important to use polypropylene containers instead of glass containers. Glass surfaces will absorb GelGreen and render it unable to stain the DNA.

RUNONE ELECTROPHORESIS SYSTEM SPECIFICATIONS

RunOne System General Specifications

Equipment Pollution Degree	2
Equipment Installation Category	2
Maximum Relative Humidity	80%
Operating Termperature Range	4 to 40°C
Maximum Altitude	Less than 2000 Meters

RunOne Casting System

Casting Stand	Molded Polycarbonate (PC)
White Comb	Molded PC; 1 mm thick For Mini Gel: 6 well (28 µl), 8 well (17 µl) For Wide Gel: 12 well (30 µl), 17 well (17 µl)
Agarose Mini Gel Tray	Molded PC, smoke tinted 5.4(w) x 5.9(l) cm
Agarose Wide Gel Tray	Molded PC, smoke tinted 10.9(w) x 5.9(l) cm

RunOne Electrophoresis Cell

Running Tank	Molded PC, white or clear
Running Tank Lid	Molded PC, clear
Dimensions	14.1(w) x 19.7(l) x 5.5(h) cm
Electrodes	Platinum wire

RunOne Power Supply	***With Timer***	***Without Timer***
Voltage Output	25V, 50V, 75V, 100V	25V, 50V, 100V
Input Voltage Maximum	120 VAC, 60 Hz	
Power Rating	70 W	
Electrical Rating	120 VAC, 60 Hz, 70 W, 600 mA	
Dimensions	4.4(w) x 10.4(l) x 2.8(h) cm	
Over Current Limit (a protection feature)	At 320 mA, current will run at constant, thus voltage will drop gradually as temperature goes up.	At 400 mA, current will trip off and then power will shut down.

Isolated Step-Down Transformer (for 220-240V operation only)

Voltage Output	120V ~ 50 Hz, 50 VA
Input Voltage Maximum	230V ~ 50 Hz, 60 VA
Safety Certification	CE, IEC1010-1
Dimensions & Weight	8.0(w) x 7.0(l) x 6.0(h) cm; 950 g

RunOne PreCast Gels

Gel Types	Agarose with or without ethidium bromide (EtBr); Polyacrylimide (PAG); MOPS (RNA Gel)
Concentrations	Agarose: 0.8%, 1%, 2%, 3%, 4% PAG: 6%, 7.5%, 10%, 10% Ultra MOPS: 1.25%
Buffer Types	TBE, TAE, MOPS
Gel Dimensions Landscape Gel Medium Gel Long Gel Portrait Gel XL Gel XW Gel PAG Gel	 11.7 (W) x 5.6 (L) cm 11.6 (W) x 8.9 (L) cm 11.6 (W) x 11.7 (L) cm 6.4 (W) x 9.5 (L) cm 12.8 (W) x 24.0 (L) cm 23.0 (W) x 14.5 (L) cm 10.9 (W) x 5.9 (L) cm

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I. GENERAL INFORMATION

The RunOne Electrophoresis System is designed for easy and fast DNA separation in an ultra-compact, horizontal format. The System includes:

1) RunOne Casting System
2) RunOne Electrophoresis Cell
3) RunOne Power Supply with or without Timer

The RunOne Casting System includes a horizontal casting stand, which contains six individual compartments; allows up to four Mini (5.4 x 5.9 cm) and two Wide (10.9 x 5.9 cm) agarose gels to be cast simultaneously. Agarose gel trays (smoke tinted) are provided. These gel trays are designed to optimize consistent gel performance for hand cast agarose gels.
The RunOne Cell accommodates two Mini gels or one Wide gel per run. The RunOne Cell comes with its own integrated power supply. The palm-sized RunOne Power Supply with or without Timer connects with and becomes an integral part of the RunOne Cell.
The RunOne Electrophoresis System is intended for in vitro research use only.

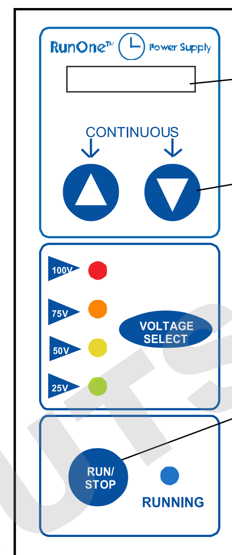
Unpacking:
When you receive the RunOne System, inspect the shipping container for any damage which may have occurred during shipping. Damage to the shipping container may indicate damage to the contents. If you determine the contents were damaged during shipping, immediately file a claim with the carrier. The Embi Tec warranty does not cover damage which occurs during shipping. Please confirm that the RunOne System is complete and contains the components listed below; contact Embi Tec immediately if any part is missing or damaged.

RunOne System Packing List:

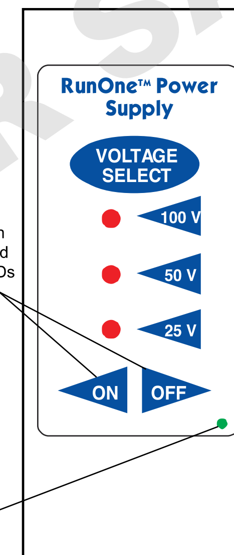
RunOne Casting System	**Number**
Casting Stand	1
White Comb	2
Agarose Mini Gel Tray smoke tinted 5.4(w) x 5.9(l) cm	4
Agarose Wide Gel Tray smoke tinted 10.9(w) x 5.9(l) cm	2
RunOne Electrophoresis Cell	
Running Tank	1
Running Tank Lid	1
RunOne Power Supply	
RunOne Power Supply (w/ or w/o Timer)	1
Power Supply Cord (for 100-120V version)	1
Isolated Step-Down Transformer (for 220-240V version)	1

APPENDIX 3: RUNONE POWER SUPPLY OPERATION, FEATURES AND MAINTENANCE

Power Supply w/ Timer



Power Supply w/out Timer



APPENDIX 4: STAINING GELS WITH ETHIDIUM BROMIDE AND UV VISUALIZATION

Materials:

- One Mini or Wide agarose gel
- Staining container - slightly bigger than the gel dimensions
- 10 mg/ml or 1% (w/v) ethidium bromide (EtBr) solution*
- Rotary shaker
- Deionized (DI) water

Method:

1. Set rotary shaker to approximately 70 r.p.m.

2. Pour 100 ml of DI water into the staining container and place on the shaker.

3. Add 10 µl of EtBr solution to the DI water. Shake for at least one minute to allow the EtBr solution to mix for uniform dispersion.

4. Place one gel in the staining solution and stain for 15 to 20 minutes with gentle agitation.

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APPENDIX 2: GEL AND BUFFER PREPARATION

1. Agarose Gel preparation (Mini/wide gels):W
   Agarose gels of any desired concentration can be prepared using this equation:

$$X = \frac{\%\text{ of Gel Needed} \cdot V}{100}$$

X = amount of agarose needed (g)
V = desired volume of gel solution (ml)

The following table shows the amount of agarose and volume of gel solution needed to make one mini/wide gel at various gel percentages (thickness is about 6 mm):

Gel (%)	Agarose (g) Mini / Wide	1x Running Buffer (ml) Mini / Wide	Max. Loading Volume (µl; wider well)	Max. Loading Volume (µl; smaller well)
0.8	0.16 / 0.32	20 / 40	30	15
1.0	0.20 / 0.40	20 / 40	30	15
1.5	0.30 / 0.60	20 / 40	30	15
2.0	0.40 / 0.80	20 / 40	30	15
3.0	0.60 / 1.20	20 / 40	30	15
4.0	0.80 / 1.60	20 / 40	30	15

2. Polyacrylimide Gel Preparation:
   Visit <www.embitec.com> for detailed information.

3. 10x TAE Running Buffer, 1 liter recipe (Catalog# EC-1016 to order):
   Tris base (m.w. 121.14) 48.4 g
   Glacial Acetic Acid 10.0 ml
   EDTA Free Acid (f.w. 292.25) 2.92g
   Add DI water to 1 liter, mix to dissolve and then store at room temperature.

4. 5x TBE Running Buffer, 1 liter recipe (Catalog# EC-1017 to order):
   Tris base (m.w. 121.14) 54.0 g
   Boric Acid 27.5 g
   EDTA Free Acid (f.w. 292.25) 2.92g
   Add DI water to 1 liter, mix to dissolve and then store at room temperature.

5. 5x TAE Sample Buffer, 30 ml recipe (Catalog# EC-1018 to order):
   10X TAE Running Buffer 1.125 ml
   100% Glycerol Solution 6.0 ml
   Bromophenol Blue 0.075 g
   Xylene Cyanol 0.075 g
   Add DI water to 30 ml, mix to dissolve and then store at 4˚C.

6. 5x TBE Sample Buffer, 30 ml recipe (Catalog# EC-1019 to order):
   5X TBE Running Buffer 2.25 ml
   100% Glycerol Solution 6.0 ml
   Bromophenol Blue hhh0.075 g
   Xylene Cyanol 0.075 g
   Add DI water to 30 ml, mix to dissolve and then store at 4˚C.

II. INSTALLATION

1. Place the Running Tank Lid on the Running Tank:
Lid should sit flush with the Running Tank. If it is not flush with the running tank, the power supply connection will not be made.

2. Slide the Power Supply into Place:
As the Power Supply slides into position, you will hear an audible ‘snap’; continue pushing the Power Supply until it can go no further.

NOTE: Unit will not function if lid and power supply are not connected properly.

III. CASTING AGAROSE GELS

Remove the casting accessories from the casting stand. Make sure the agarose gel trays are clean and lint free before each use. See Appendix 1 for agarose gel selection guidelines and Appendix 2 for agarose gel and buffer preparation.

1. Place the casting stand on a level surface to ensure uniform gel thickness.

2. We recommend using 20 ml and 40 ml of gel solution for each Mini gel and Wide gel respectively. This gel volume will make a gel about 6 mm thick.

3. Place the agarose gel trays in the casting stand (Figure 1). Allow the agarose gel solution to cool to 65 - 70˚C before pouring into the gel trays. This precaution will prevent the gel trays from warping in a long run.

4. Pour the agarose gel solution into the gel tray. Check for and remove any air bubbles in the gel solution. Note: A small amount of gel solution will flow underneath the tray. This will not affect gel solidification or performance.

5. Insert the desired side of comb into the gel solution and allow it to solidify for at least 45 minutes. The gel will appear opaque when it is completely solidified. Note: For ≤ 0.8% agarose gels, cast at room temperature and then place the casting system in a 4˚C refrigerator for complete solidification before removing the comb.

6. Before removing the comb from the solidified gel, wet the area around the comb with the running buffer. Remove the comb by gently pulling upwards.

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7. Remove the gel tray with the gel from the casting stand by gently squeezing in on both sides of the tray while pulling upward. Clear away any excess
solidified agarose from the bottom of the tray. We recommend keeping the gel in the tray during sample loading and electrophoresis, or when storing gels in the refrigerator.

8. Unused agarose gels can be stored in refrigerator (4°C) for up to a week. To prevent the gels from drying during storage, we recommend filling the wells with running buffer and keeping the gels in an airtight container or a Ziploc pouch lined with a paper towel or other absorbent material saturated with
running buffer.

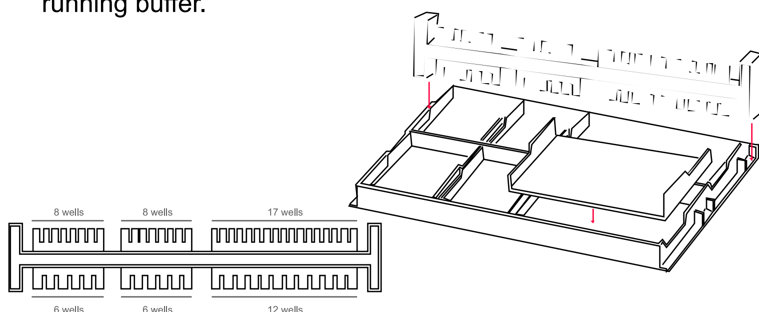

Figure 1: RunOne Casting System

IV. SAMPLE LOADING AND RUNNING GELS

DNA migrates from the cathode (-) to anode (+) in the RunOne Cell as indicated by the polarity arrow on the tank lid. The running platform accommodates two Mini gels or one Wide gel.

1. Place the agarose gel with the tray on the running platform of the RunOne tank. Orient the gel so that the wells are closer to the Power Supply.

2. Pour about 250 to 300 ml of the matching running buffer into the tank. Make sure the agarose gel is just covered with the running buffer. Do not fill buffer above the maximum line marked on the internal sides of the tank.

3. Flush the wells with the running buffer to remove any debris. Check the wells for air bubbles and remove any with a pipette.

4. Load the samples into the wells. (Refer to Appendix 2 for recommended maximum loading volume of different wells.)

Gel Type & Size (width x length)	Gel (%)	Number of Row(s)	Maximum Separation Distance (cm)	Optimum Separation Range
Medium (11.6 x 8.9 cm)	0.8	1	8.2	200 to 12000 bp
	1.0	1	8.2	600 to 10000 bp
	2.0	1	8.2	100 to 6000 bp
	3.0	1	8.2	60 to 2000 bp
	4.0	1	8.2	60 to 1600 bp
Long (11.6 x 11.7 cm)	1.0	1	11.2	600 to › 10000 bp
	2.0	1	11.2	100 to 6000 bp
	3.0	1	11.2	40 to 3000 bp
	4.0	1	11.2	40 to 1600 bp
Long (11.6 x 11.7 cm)	1.0	2	5.5	600 to 10000 bp
	2.0	2	5.5	200 to 7000 bp
	3.0	2	5.5	60 to 2000 bp
	4.0	2	5.5	60 to 1600 bp
Long (11.6 x 11.7 cm)	1.0	3	3.6	600 to 10000 bp
	2.0	3	3.6	200 to 5000 bp
	3.0	3	3.6	100 to 2000 bp
	4.0	3	3.6	60 to 1200 bp
Long (11.6 x 11.7 cm)	1.0	4	2.7	800 to 8000 bp
	2.0	4	2.7	200 to 4000 bp
	3.0	4	2.7	100 to 2000 bp
	4.0	4	2.7	60 to 1000 bp
Long (11.6 x 11.7 cm)	1.0	6	1.7	1000 to 4000 bp
	2.0	6	1.7	200 to 2000 bp
	3.0	6	1.7	100 to 1500 bp
	4.0	6	1.7	100 to 1000 bp
Long (11.6 x 11.7 cm)	1.0	8	1.3	1000 to 4000 bp
	2.0	8	1.3	200 to 2000 bp
	3.0	8	1.3	100 to 1500 bp
	4.0	8	1.3	100 to 1000 bp
Long (11.6 x 11.7 cm)	1.0	12	0.8	1000 to 4000 bp
	2.0	12	0.8	200 to 2000 bp
	3.0	12	0.8	100 to 1500 bp
	4.0	12	0.8	100 to 1000 bp
XL (12.8 x 24.0 cm)	1.0	2	11.2	600 to › 10000 bp
	2.0	2	11.2	100 to 6000 bp
	4.0	2	11.2	40 to 1600 bp
XL (12.8 x 24.0 cm)	1.0	4	5.5	600 to › 10000 bp
	2.0	4	5.5	300 to 7000 bp
	4.0	4	5.5	60 to 1600 bp
XL (12.8 x 24.0 cm)	1.0	8	2.7	800 to 8000 bp
	2.0	8	2.7	200 to 2000 bp
	4.0	8	2.7	60 to 1600 bp

3. For information about Polyacrylamide Gel Selection, please visit website <www.embitec.com>.

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VII. REPLACEMENT OF CONSUMABLE PARTS

- The RunOne Power Supply and RunOne Electrophoresis Cell has no consumable parts. Call 858-684-3190 or 800-255-1777; email <inquiry@embitec.com> for any service issues.
- The RunOne Casting System (EP-1001), the RunOne Casting Stand (EP-1075), RunOne White Comb (EP-1004), Agarose Gel Trays (EP-1005, EP-1011 & EP-1043) and other compatible RunOne Combs (EP-1008, EP-1014 & EP-1015) are available. Please visit <www.embitec.com> for product details and pricing, or send your order to <orders@embitec.com>.

APPENDIX 1: GEL SELECTION CHARTS

1. Agarose Gel Selection Chart (mini/wide gels, maximum separation distance is 5cm:

Gel (%)	Optimum Separation Range
0.8	800 to › 10000 bp
1.0	600 to 10000 bp
1.5	450 to 8000 bp
2.0	300 to 7000 bp
3.0	60 to 2000 bp
4.0	60 to 1600 bp

2. RunOne PreCast Agarose Gel Selection Chart

Gel Type & Size (width x length)	Gel (%)	Number of Row(s)	Maximum Separation Distance (cm)	Optimum Separation Range
Portrait (6.4 x 9.5 cm)	1.0	1	8.7	600 to 10000 bp
	2.0	1	8.7	100 to 6000 bp
	3.0	1	8.7	40 to 2000 bp
	4.0	1	8.7	40 to 1600 bp
Portrait (6.4 x 9.5 cm)	1.0	2	4.5	600 to 8000 bp
	2.0	2	4.5	100 to 5000 bp
	3.0	2	4.5	60 to 2000 bp
	4.0	2	4.5	60 to 1600 bp
Landscape (11.7 x 5.6 cm)	0.8	1	5.0	800 to › 10000 bp
	1.0	1	5.0	600 to 10000 bp
	2.0	1	5.0	300 to 7000 bp
	3.0	1	5.0	60 to 2000 bp
	4.0	1	5.0	60 to 1600 bp
Landscape (11.7 x 5.6 cm)	1.0	2	2.5	1000 to 8000 bp
	2.0	2	2.5	300 to 5000 bp
	3.0	2	2.5	100 to 2000 bp
	4.0	2	2.5	60 to 1000 bp

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5. Place the Running Tank Lid on the Running Tank.

6. Attach the power cord to the RunOne Power Supply and connect the Power Supply to the RunOne Cell. Plug the Power Supply cord into a wall outlet (100-120V only). An LED on the power supply keypad will turn on which indicates the power supply is functional and ready for use. (Refer to Appendix 3 for additional information regarding Power Supply Operation.)

7. (a) For the Power Supply without Timer, there are 3 voltage output choices: 25V, 50V & 100V. Press the VOLTAGE SELECT button to choose the desired voltage output. Then press the ON button to start the electrophoresis. Press the OFF button to turn off the power supply when electrophoresis is finished.

   (b) For the Power Supply with Timer, there are 4 voltage output choices: 25V, 50V, 75V & 100V. Press the VOLTAGE SELECT button to choose the desired voltage output. Set your desired run time. Then press the RUN/STOP button once to start the electrophoresis. The blue “RUNNING” LED will turn on which indicates power to the RunOne Cell. Timer will start counting down. When the time is up, power will shut off to the RunOne Cell and stop the run automatically. The alarm will start beeping and timer will count up at the end of the run. Pressing the RUN/STOP button again will stop the alarm and the timer.

V. FREQUENTLY ASKED QUESTIONS

1Q. Does it matter if some of the gel solution gets under the gel tray while casting gel?

1A. No. A small amount of gel solution will flow underneath the tray; this will not affect gel performance. After the gel is solidified, just remove the thin layer of gel (with a tissue paper) before running the gel.

2Q. Sometimes the gel tray floats above the running platform after I add running buffer to the tank. How do I get the gel tray to sit properly?

2A. To anchor the gel with the gel tray to the running platform, push it down and slide it slightly sideways.

3Q. Why do I occasionally have trouble loading my sample into a well?

3A. One possibility is insufficient sample buffer density. Check your sample loading buffer concentration and dilute with sample accordingly. For example, when using a 6x sample loading buffer, mix every 1 volume of the sample loading buffer with 5 volumes of sample.

4Q. Why is electrophoresis taking much longer than the expected run time?
4A. Check to make sure the running buffer was correctly prepared and diluted to 1x concentration (or to 0.5x concentration if running a gel prepared with a 0.5x buffer). Excessive salt concentration in the buffer produces higher current levels and results in a lower voltage gradient and thus a longer run time.

5Q. What should I do if the green LED in the lower right corner of the Power Supply without Timer does not light when it is plugged into a wall outlet?
5A. If the green LED does not light, check the fit between the lid, running tank and power supply. Lid should fit flush with the running tank and the power supply should be slide into place. Also check the power source or the wall outlet. If all components are in place, power source is okay and the green LED still does not light, call Embi Tec for technical service.

6Q. During a run, the voltage indicator LED begins blinking on and off continuously. What does this mean?
6A. The current has exceeded the safety limit of 300 mA and the RunOne Power Supply has shut down. Check to make sure the running buffer was correctly prepared and diluted to 1x concentration. If the running buffer has been reused a couple times, it is time to change buffer. We highly recommend using fresh buffer for every run.

7Q. I reuse the running buffer at least three times; can I just add more running buffer to replenish any buffer loss after each run?
7A. No, do not add running buffer to replenish any buffer loss due to evaporation. The more running buffer you add after each run, the more concentrated your running buffer will become. Excessive salt concentration in the buffer will result to:
(1) Higher current levels and leads to excessive heat generation. Eventually, the buffer temperature can be high enough to melt your gel.
(2) If the current exceeds the safety limit of 300 mA, the RunOne Power Supply will shut down to prevent overheating. You risk losing your samples.
(3) Excessive salt concentration in the buffer produces higher current levels and results in a lower voltage gradient and thus requires a longer time to run a normal gel.
*We DO NOT recommend reusing running buffer. Use FRESH buffer for every run. If you insist on reusing running buffer, limit it to one or two short runs only, and use DI water to replenish any buffer loss due to evaporation.

8Q. During electrophoresis, the bromophenol blue and xylene cyanol dye fronts did not migrate into the gel.
8A. Check to make sure the gel was properly placed on the running platform with the wells closer to the power supply. DNA migrates from the cathode (-) to anode (+) in the RunOne Cell as indicated by the polarity arrow on the tank lid.

9Q. After staining the gel, I don't see any sample bands. What could be causing this?
9A. If the standard is stained properly, try lengthening the staining time. If the sample is still not seen, there may not be enough DNA in the sample.

10Q. How do you recommend cleaning the RunOne System?
10A. Simply rinse out the inside of the running tank with DI water and flip it over and let air dry. We DO NOT recommend submerging the unit in water, or getting down into the electrode area to clean the gap or groove.
DO NOT WIPE OR HANDLE THE PLATINUM WIRE.

11Q. What volume of agarose solution should I be using to cast gels?
11A. When using the RunOne Casting system, use 40 ml for the Wide gel and 20 ml for the Mini gel. When casting a gel using a MultiCaster, use 85 ml for the Long gel (Blue and Aqua MultiCasters) and 65 ml for the Medium gel (Orange, White and Yellow MultiCasters).

12Q. What is the maximum sample volume I can load with the RunOne?
12A. When using the RunOne White Comb to cast gels, you can load up to 30 µl in the wider wells and 15 µl in the smaller wells. When using the MultiCaster Aqua, Blue, White or Yellow combs to cast gels with different MultiCasters, you can load up to 30 µl in the wider wells and 11 µl in the smaller wells. (Please refer to 11Q&A for recommended volume of agarose solution to be used.)

*Note: For more FAQs, visit <www.embitec.com>

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