

# About Vertical Electrophoresis

## Preventing leaking gels

The two most important things to be aware of when casting gels using the caster systems are:

- that the glass plates have been inserted into the casting or gel running module on a flat surface.
- that the spacers are flush with the bottom edges of the glass plates.

Perfect alignment of spacers can be guaranteed using the new glass plates with bonded spacers.

## Overcome polymerisation problems

If you are experiencing problems obtaining good polymerisation adjacent to spacers and combs then this can be overcome by pre-soaking the combs and spacers in distilled water or a 10% solution of ammonium persulphate.

## Avoiding over-tightening

Over-tightening the cam pins on the casting systems is a common cause of problems when using these units. Cams should only be tightened just until appreciable pressure is felt.

## Extracting the tube gel

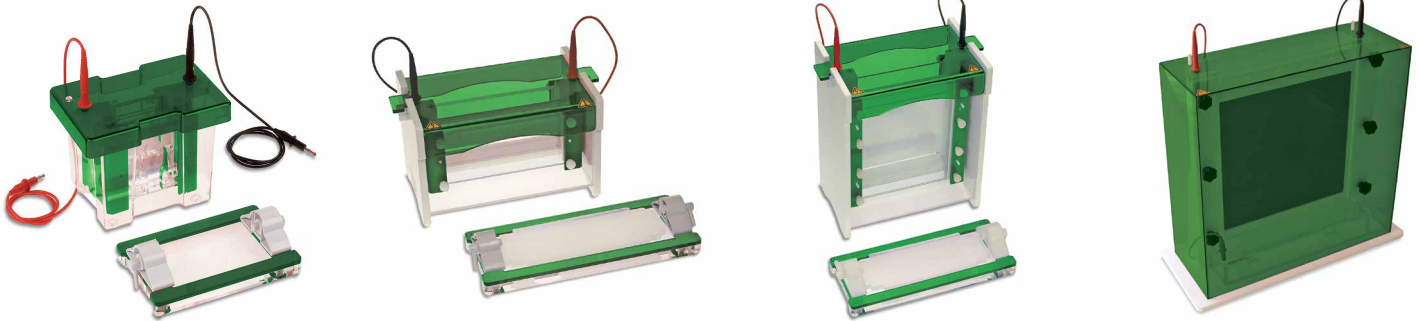
Tube gel electrophoresis can be difficult because of problems with extracting the tube gel from the capillary tube. The tube gel is best extracted by gently pipetting liquid behind the tube gel and then catching it in the Gel extraction platform.

## Enhance transfer

If the gel blot sandwich is too thick, this may bow the cassette causing loss of contact between gel and membrane resulting in poor transfer. The thickness of the blot can be lessened by removing the fibre pad on the non-membrane side of the blot.

## EVS1000 series

## Vertical units



## ● Overview

### Low cost

### Injection moulded construction

Durable, leak-proof environment for complete safety and long life.

### Easy to use

Leak proof "Plug and Go" casting dams allow gels to be rapidly cast externally while the tank remains in use for electrophoresis.

<b>Plate dimensions</b>	10x10 cm
<b>Gel dimensions</b>	7.5x8 cm
<b>Number of gels</b>	1 to 4
<b>Buffer volume</b>	250 ml to 1200 ml
<b>Sample Capacity</b>	80 (20 per gel)
<b>Unit Dimensions</b>	19x13x15 cm
<b>Warranty</b>	12 months

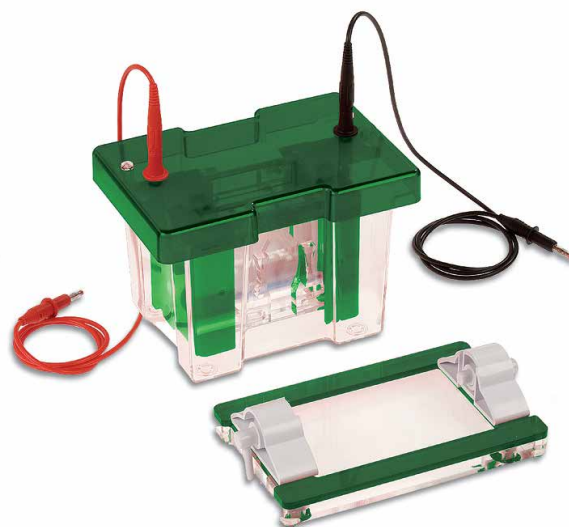
### Recommended power supply

**EV1450**

**EV2310**

EVS1100 is constructed using the latest injection moulding manufacturing techniques. This gives a high quality, low cost product with unsurpassed finish, durability and strength.

The unit incorporates a sealing system which is compatible with all major types of 8x10 cm and 10x10 cm pre-cast gel. Runs up to four 1 mm thick gels. Gel casting and running utilise the same insert, no transfer of glass plates during gel casting is necessary. The insert allowing very rapid set up of both hand cast and pre-cast gels. Reversible gasket for use with Bio-Rad 'non-eared' or short glass plates. Accessory electro-blotting and tube gel modules are available which use the same outer tank and lid.



## ● Ordering codes

Code	Description
<b>EVS1100-SYS</b>	Mini vertical unit, 2 sets of glass plates with bonded 1 mm thick spacers cooling pack, dummy plate, casting base 2 combs: 12 sample, 1 mm thick, 12 samples

### Combs

Code	Description	Sample volume
<b>EVS1100-C5-0.8</b>	0.75 mm thick, 5 sample	70 µl
<b>EVS1100-C9-0.8</b>	0.75 mm thick, 9 sample	35 µl
<b>EVS1100-C10-0.8</b>	0.75 mm thick, 10 sample	30 µl
<b>EVS1100-C12-0.8</b>	0.75 mm thick, 12 sample	25 µl
<b>EVS1100-C20-0.8</b>	0.75 mm thick, 20 sample	15 µl
<b>EVS1100-C5-1.0</b>	1 mm thick, 5 sample	100 µl
<b>EVS1100-C9-1.0</b>	1 mm thick, 9 sample	50 µl
<b>EVS1100-C10-1.0</b>	1 mm thick, 10 sample	40 µl
<b>EVS1100-C12-1.0</b>	1 mm thick, 12 sample	35 µl
<b>EVS1100-C20-1.0</b>	1 mm thick, 20 sample	20 µl
<b>EVS1100-C5-1.5</b>	1.5 mm thick, 5 sample	140 µl
<b>EVS1100-C9-1.5</b>	1.5 mm thick, 9 sample	70 µl
<b>EVS1100-C10-1.5</b>	1.5 mm thick, 10 sample	60 µl
<b>EVS1100-C12-1.5</b>	1.5 mm thick, 12 sample	50 µl
<b>EVS1100-C20-1.5</b>	1.5 mm thick, 20 sample	30 µl
<b>EVS1100-C5-2.0</b>	2 mm thick, 5 sample	200 µl
<b>EVS1100-C9-2.0</b>	2 mm thick, 9 sample	100 µl
<b>EVS1100-C10-2.0</b>	2 mm thick, 10 sample	80 µl
<b>EVS1100-C12-2.0</b>	2 mm thick, 12 sample	70 µl
<b>EVS1100-C20-2.0</b>	2 mm thick, 20 sample	40 µl

### Preparative Combs

Code	Description	Sample volume
<b>EVS1100-P1-0.8</b>	0.75 mm thick, prep 1, marker 1	500 µl
<b>EVS1100-P1-1.0</b>	1 mm thick, prep 1, marker 1	650 µl
<b>EVS1100-P1-1.5</b>	1.5 mm thick, prep 1, marker 1	1000 µl
<b>EVS1100-P1-2.0</b>	2 mm thick, prep 1, marker 1	1300 µl

### Microtiter Combs

Code	Description	Sample volume
<b>EVS1100-CMT8-0.8</b>	0.75 mm thick, 8 sample MC	40 µl
<b>EVS1100-CMT16-0.8</b>	0.75 mm thick, 16 sample MC	20 µl
<b>EVS1100-CMT8-1.0</b>	1 mm thick, 8 sample MC	60 µl
<b>EVS1100-CMT16-1.0</b>	1 mm thick, 16 sample MC	25 µl
<b>EVS1100-CMT8-1.5</b>	1.5 mm thick, 8 sample MC	80 µl
<b>EVS1100-CMT16-1.5</b>	1.5 mm thick, 16 sample MC	40 µl
<b>EVS1100-CMT8-2.0</b>	2 mm thick, 8 sample MC	120 µl
<b>EVS1100-CMT16-2.0</b>	2 mm thick, 16 sample MC	50 µl

### Replacement parts & Accessories

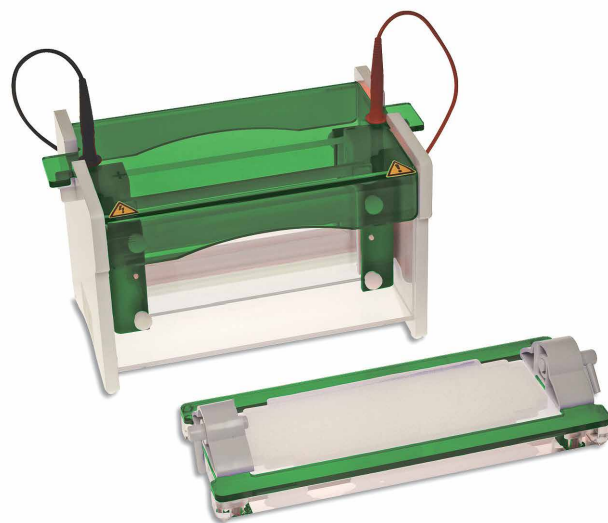
Code	Description
<b>EVS1100-BASE</b>	Gel casting base, 10 cm
<b>EVS1100-SILMAT</b>	Replacement silicone mat for gel casting base, 10 cm
<b>EVS1100-GELINSERT</b>	Inner running module
<b>EVS1100-COOL</b>	Mini cooling pack
<b>EVS1100-NGLASS</b>	Notched glass plates, 10x10 cm, 2 mm thick, pk/2
<b>EVS1100-GLASS</b>	Glass plates, 10x10 cm, 2 mm thick, pk/2
<b>EVS1100-GLASS-SP-0.8</b>	Glass plates, 10x10 cm, + 0.75 mm bonded spacers, pk/2
<b>EVS1100-GLASS-SP-1</b>	Glass plates, 10x10 cm, + 1 mm bonded spacers, pk/2
<b>EVS1100-GLASS-SP-1.5</b>	Glass plates, 10x10 cm, + 1.5 mm bonded spacers, pk/2
<b>EVS1100-GLASS-SP-2</b>	Glass plates, 10x10 cm, + 2 mm bonded spacers, pk/2
<b>EVS1100-DUMMY</b>	Dummy plate, 10x10 cm
<b>EVS1100-SP-0.8</b>	Spacers, 0.75 mm thick, 10 cm, pk/2
<b>EVS1100-SP-1.0</b>	Spacers, 1 mm thick, 10 cm, pk/2
<b>EVS1100-SP-1.5</b>	Spacers, 1.5 mm thick, 10 cm, pk/2
<b>EVS1100-SP-2.0</b>	Spacers, 2 mm thick, 10 cm, pk/2
<b>E1091</b>	Replacement platinum wire, 0.2 mm thick, 50 cm

<b>Plate dimensions</b>	20x10 cm
<b>Gel dimensions</b>	18x8 cm
<b>Number of gels</b>	1 to 4
<b>Buffer volume</b>	600 ml to 2800 ml
<b>Sample Capacity</b>	192 (48 per gel)
<b>Unit Dimensions</b>	26x16x16 cm
<b>Warranty</b>	12 months

### Recommended power supply

**EV2310**  
**EV2650**

EVS1200 allows double the number of samples to be resolved as the mini unit. This allows consistency of sample comparison on a single gel and is designed for those with greater than 20 samples to compare and resolve. Simple set up using ultra soft silicone seals guarantees trouble free glass plate loading and gel casting. Dual gaskets on the gel running insert along with notched and plain glass plates ensure leak proof gel running. Rapid set up cooling retains resolution in extended separations and also saves on buffer volume. 4 mm thick glass plates prevent breakage and have bonded spacers for convenience.



## ● Ordering codes

Code	Description
<b>EVS1200-SYS</b>	Mini-wide vertical unit, 2 sets of glass plates with bonded 1 mm thick spacers cooling pack, dummy plate, casting base 2 combs: 12 sample, 1 mm thick, 24 samples

### Combs

Code	Description	Sample volume
<b>EVS1200-C5-0.8</b>	0.75 mm thick, 5 sample	160 µl
<b>EVS1200-C10-0.8</b>	0.75 mm thick, 10 sample	80 µl
<b>EVS1200-C24-0.8</b>	0.75 mm thick, 24 sample	30 µl
<b>EVS1200-C30-0.8</b>	0.75 mm thick, 30 sample	25 µl
<b>EVS1200-C48-0.8</b>	0.75 mm thick, 48 sample	15 µl
<b>EVS1200-C5-1.0</b>	1 mm thick, 5 sample	200 µl
<b>EVS1200-C10-1.0</b>	1 mm thick, 10 sample	100 µl
<b>EVS1200-C24-1.0</b>	1 mm thick, 24 sample	40 µl
<b>EVS1200-C30-1.0</b>	1 mm thick, 30 sample	35 µl
<b>EVS1200-C48-1.0</b>	1 mm thick, 48 sample	20 µl
<b>EVS1200-C5-1.5</b>	1.5 mm thick, 5 sample	320 µl
<b>EVS1200-C10-1.5</b>	1.5 mm thick, 10 sample	160 µl
<b>EVS1200-C24-1.5</b>	1.5 mm thick, 24 sample	60 µl
<b>EVS1200-C30-1.5</b>	1.5 mm thick, 30 sample	50 µl
<b>EVS1200-C48-1.5</b>	1.5 mm thick, 48 sample	30 µl
<b>EVS1200-C5-2.0</b>	2 mm thick, 5 sample	400 µl
<b>EVS1200-C10-2.0</b>	2 mm thick, 10 sample	200 µl
<b>EVS1200-C24-2.0</b>	2 mm thick, 24 sample	80 µl
<b>EVS1200-C30-2.0</b>	2 mm thick, 30 sample	70 µl
<b>EVS1200-C48-2.0</b>	2 mm thick, 48 sample	40 µl

### Preparative Combs

Code	Description	Sample volume
<b>EVS1200-P1-0.8</b>	0.75 mm thick, prep 1, marker 1	1100 µl
<b>EVS1200-P1-1.0</b>	1 mm thick, prep 1, marker 1	1500 µl
<b>EVS1200-P1-1.5</b>	1.5 mm thick, prep 1, marker 1	2200 µl
<b>EVS1200-P1-2.0</b>	2 mm thick, prep 1, marker 1	3000 µl

### Microtiter Combs

Code	Description	Sample volume
<b>EVS1200-CMT18-0.8</b>	0.75 mm thick, 18 sample MC	40 µl
<b>EVS1200-CMT36-0.8</b>	0.75 mm thick, 36 sample MC	20 µl
<b>EVS1200-CMT18-1.0</b>	1 mm thick, 18 sample MC	50 µl
<b>EVS1200-CMT36-1.0</b>	1 mm thick, 36 sample MC	25 µl
<b>EVS1200-CMT18-1.5</b>	1.5 mm thick, 18 sample MC	80 µl
<b>EVS1200-CMT36-1.5</b>	1.5 mm thick, 36 sample MC	40 µl
<b>EVS1200-CMT18-2.0</b>	2 mm thick, 18 sample MC	100 µl
<b>EVS1200-CMT36-2.0</b>	2 mm thick, 36 sample MC	50 µl

### Replacement parts & Accessories

Code	Description
<b>EVS1200-BASE</b>	Gel casting base, 20 cm
<b>EVS1200-SILMAT</b>	Replacement silicone mat for gel casting base, 20 cm
<b>EVS1200-GELINSERT</b>	Inner running module
<b>EVS1200-COOL</b>	Maxi cooling pack
<b>EVS1200-NGLASS</b>	Notched glass plates, 20x10 cm, 4 mm thick, pk/2
<b>EVS1200-GLASS</b>	Glass plates, 20x10 cm, 4 mm thick, pk/2
<b>EVS1200-GLASS-SP-0.8</b>	Glass plates, 20x10 cm, + 0.75 mm bonded spacers, pk/2
<b>EVS1200-GLASS-SP-1.0</b>	Glass plates, 20x10 cm, + 1 mm bonded spacers, pk/2
<b>EVS1200-GLASS-SP-1.5</b>	Glass plates, 20x10 cm, + 1.5 mm bonded spacers, pk/2
<b>EVS1200-GLASS-SP-2.0</b>	Glass plates, 20x10 cm, + 2 mm bonded spacers, pk/2
<b>EVS1200-DUMMY</b>	Dummy plate, 20x10 cm
<b>EVS1200-SP-0.8</b>	Spacers, 0.75 mm thick, 10 cm, pk/2
<b>EVS1200-SP-1.0</b>	Spacers, 1 mm thick, 10 cm, pk/2
<b>EVS1200-SP-1.5</b>	Spacers, 1.5 mm thick, 10 cm, pk/2
<b>EVS1200-SP-2.0</b>	Spacers, 2 mm thick, 10 cm, pk/2
<b>E1091</b>	Replacement platinum wire, 0.2 mm thick, 50 cm

<b>Plate dimensions</b>	20x20 cm
<b>Gel dimensions</b>	16x17.5 cm
<b>Number of gels</b>	1 to 4
<b>Buffer volume</b>	1200 ml to 5600 ml
<b>Sample Capacity</b>	192 (48 per gel)
<b>Unit Dimensions</b>	30x18x27 cm
<b>Warranty</b>	12 months

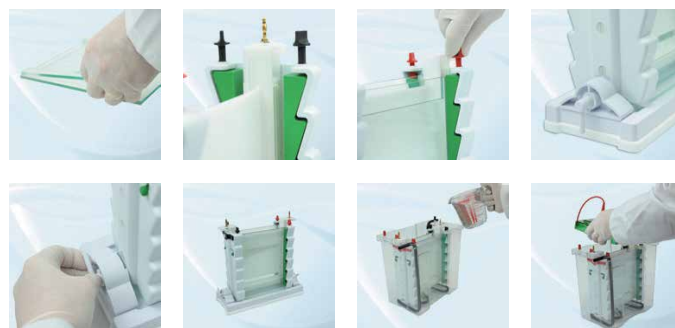
### Recommended power supply

**EV2650**  
**EV3150**  
**EV3020**

EVS1300 is designed to perform a variety of separations, including first- and second-dimension SDS-PAGE, native, preparative, gradient and high-resolution nucleic acid electrophoresis, plus capillary tube gel IEF and electro-blotting.

By introducing innovative, new vertical leak-free casting with vertical screw-pin technology only four screws are now necessary to secure as many 20x20 cm gels. Glass plates compress gently against a flat, level gasket to prevent current leakage from the inner buffer chamber during electrophoresis.

Detachable inner cooling coil connects to the laboratory water supply or a recirculating chiller to provide uniform, smile-free electrophoresis, while allowing runs to be performed at higher voltage. 4 mm thick glass plates reduce breakage and have bonded spacers for added convenience. Prep combs can be used to maximize sample loading and recovery. Accessory electro-blotting and tube gel modules are available which use the same outer tank and lid.



## Ordering codes

Code	Description
<b>EVS1300-SYS</b>	Maxi vertical unit, 2 sets of glass plates with bonded 1 mm thick spacers cooling coil, dummy plate, casting base, 2 combs: 24 sample, 1 mm thick

### Combs

Code	Description	Sample volume
<b>EVS1300-C5-0.8</b>	0.75 mm thick, 5 sample	160 µl
<b>EVS1300-C10-0.8</b>	0.75 mm thick, 10 sample	80 µl
<b>EVS1300-C24-0.8</b>	0.75 mm thick, 24 sample	30 µl
<b>EVS1300-C30-0.8</b>	0.75 mm thick, 30 sample	25 µl
<b>EVS1300-C48-0.8</b>	0.75 mm thick, 48 sample	15 µl
<b>EVS1300-C5-1.0</b>	1 mm thick, 5 sample	200 µl
<b>EVS1300-C10-1.0</b>	1 mm thick, 10 sample	100 µl
<b>EVS1300-C24-1.0</b>	1 mm thick, 24 sample	40 µl
<b>EVS1300-C30-1.0</b>	1 mm thick, 30 sample	35 µl
<b>EVS1300-C48-1.0</b>	1 mm thick, 48 sample	20 µl
<b>EVS1300-C5-1.5</b>	1.5 mm thick, 5 sample	320 µl
<b>EVS1300-C10-1.5</b>	1.5 mm thick, 10 sample	160 µl
<b>EVS1300-C24-1.5</b>	1.5 mm thick, 24 sample	60 µl
<b>EVS1300-C30-1.5</b>	1.5 mm thick, 30 sample	50 µl
<b>EVS1300-C48-1.5</b>	1.5 mm thick, 48 sample	30 µl
<b>EVS1300-C5-2.0</b>	2 mm thick, 5 sample	400 µl
<b>EVS1300-C10-2.0</b>	2 mm thick, 10 sample	200 µl
<b>EVS1300-C24-2.0</b>	2 mm thick, 24 sample	80 µl
<b>EVS1300-C30-2.0</b>	2 mm thick, 30 sample	70 µl
<b>EVS1300-C48-2.0</b>	2 mm thick, 48 sample	40 µl

### Preparative Combs

Code	Description	Sample volume
<b>EVS1300-P1-0.8</b>	0.75 mm thick, prep 1, marker 1	1100 µl
<b>EVS1300-P1-1.0</b>	1 mm thick, prep 1, marker 1	1500 µl
<b>EVS1300-P1-1.5</b>	1.5 mm thick, prep 1, marker 1	2200 µl
<b>EVS1300-P1-2.0</b>	2 mm thick, prep 1, marker 1	3000 µl

### Microtiter Combs

Code	Description	Sample volume
<b>EVS1300-CMT18-0.8</b>	0.75 mm thick, 18 sample MC	40 µl
<b>EVS1300-CMT36-0.8</b>	0.75 mm thick, 36 sample MC	20 µl
<b>EVS1300-CMT18-1.0</b>	1 mm thick, 18 sample MC	50 µl
<b>EVS1300-CMT36-1.0</b>	1 mm thick, 36 sample MC	25 µl
<b>EVS1300-CMT18-1.5</b>	1.5 mm thick, 18 sample MC	80 µl
<b>EVS1300-CMT36-1.5</b>	1.5 mm thick, 36 sample MC	40 µl
<b>EVS1300-CMT18-2.0</b>	2 mm thick, 18 sample MC	100 µl
<b>EVS1300-CMT36-2.0</b>	2 mm thick, 36 sample MC	50 µl

### Replacement parts & Accessories

Code	Description
<b>EVS1300-BASE</b>	Gel casting base, 20 cm
<b>EVS1300-SILMAT</b>	Replacement silicone mat for gel casting base, 20 cm
<b>EVS1300-GELINSERT</b>	Inner running module
<b>EVS1300-COOL</b>	Maxi cooling pack
<b>EVS1300-NGLASS</b>	Notched glass plates, 20x20 cm, 4 mm thick, pk/2
<b>EVS1300-GLASS</b>	Glass plates, 20x20 cm, 4 mm thick, pk/2
<b>EVS1300-GLASS-SP-0.8</b>	Glass plates, 20x20 cm, + 0.75 mm bonded spacers, pk/2
<b>EVS1300-GLASS-SP-1.0</b>	Glass plates, 20x20 cm, + 1 mm bonded spacers, pk/2
<b>EVS1300-GLASS-SP-1.5</b>	Glass plates, 20x20 cm, + 1.5 mm bonded spacers, pk/2
<b>EVS1300-GLASS-SP-2.0</b>	Glass plates, 20x20 cm, + 2 mm bonded spacers, pk/2
<b>EVS1300-DUMMY</b>	Dummy plate, 20x20 cm
<b>EVS1300-SP-0.8</b>	Spacers, 0.75 mm thick, 20 cm, pk/2
<b>EVS1300-SP-1.0</b>	Spacers, 1 mm thick, 20 cm, pk/2
<b>EVS1300-SP-1.5</b>	Spacers, 1.5 mm thick, 20 cm, pk/2
<b>EVS1300-SP-2.0</b>	Spacers, 2 mm thick, 20 cm, pk/2
<b>E1091</b>	Replacement platinum wire, 0.2 mm thick, 50 cm

These systems include all modules and accessories required for slab gel electrophoresis, 2-D electrophoresis and electro-blotting.

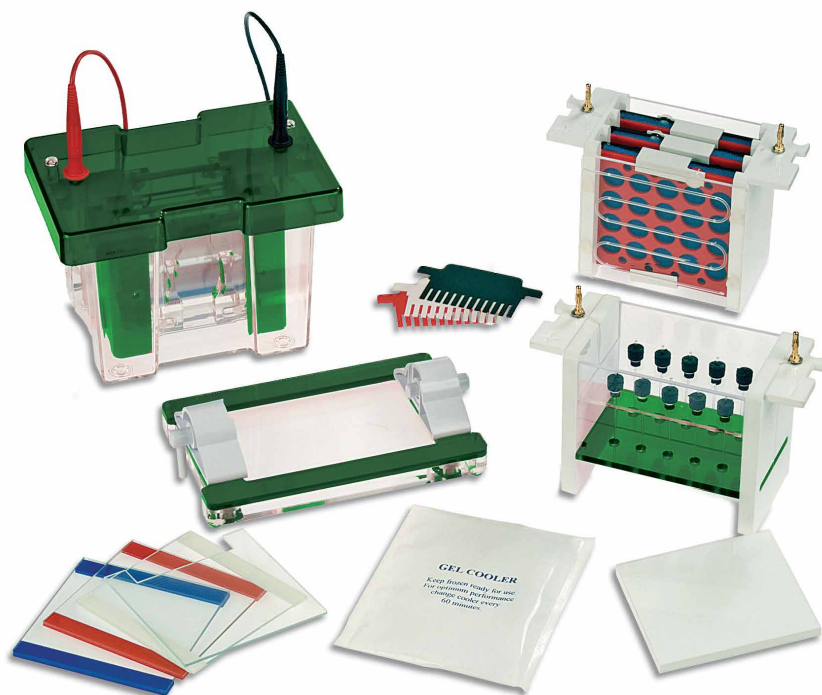
The central component is the mini vertical unit, mini-wide vertical unit or maxi vertical unit. These include a rapid and intuitive casting system, enhanced and easy to set up cooling system and have increased capacity (can run up to four gels per run).

In addition, the tube gel module is capable of resolving up to 10 first dimension gels and the electro-blotting module has a four blot (mini) or three blot (mini-wide and maxi) capacity.

Each of these techniques benefits from rapid set up cooling packs which provide enhanced resolution even during high intensity 2-D electrophoresis and electro-blotting.

All replacement parts and accessories of the corresponding vertical units can also be used for these systems.

Recommended power supply: EV3020



## ● Ordering codes

Code	Description
<b>EVS1100-MULTI</b>	Modular system: EVS1100-SYS + capillary module + electro-blotting module + 2 sets of glass plates with bonded 1 mm thick spacers + 2 combs, 1 mm thick, 12 samples + cooling pack + dummy plate + casting base + 100 capillary tubes (1 mm int. diameter) + blanking plugs + 4 compression cassettes 10x10 cm + 8 fibre pads
<b>EVS1200-MULTI</b>	Modular system: EVS1200-SYS + capillary module + electro-blotting module + 2 sets of glass plates with bonded 1 mm thick spacers + 2 combs, 1 mm thick, 24 samples + cooling pack + dummy plate + casting base + 100 capillary tubes (1 mm int. diameter) + blanking plugs + 3 compression cassettes 20x10 cm + 6 fibre pads
<b>EVS1300-MULTI</b>	Modular system: EVS1300-SYS + capillary module + electro-blotting module + 2 sets of glass plates with bonded 1 mm thick spacers + 2 combs, 1 mm thick, 24 samples + cooling coil + dummy plate + casting base + 100 capillary tubes (1 mm int. diameter) + blanking plugs + 3 compression cassettes 20x20 cm + 6 fibre pads

## Replacement parts & Accessories

Code	Description
<b>EVS1100-TUBE-1.0</b>	Mini capillary tubes, 1 mm internal diameter, 8 mm, pk/100
<b>EVS1100-TUBE-1.5</b>	Mini capillary tubes, 1.5 mm internal diameter, 8 mm, pk/100
<b>EVS1100-TUBEPORT</b>	Capillary blanking ports pk/10
<b>EVS1300-TUBE-1.0</b>	Maxi capillary tubes, 1 mm internal diameter, 17 mm, pk/100
<b>EVS1100-BLOTINSERT</b>	Mini blot insert + 4 cassettes 10x10 cm + 8 fibre pads
<b>EVS1100-CASSETTE</b>	Mini blot cassette, 10x10 cm
<b>EVS1100-FIBREPAD</b>	Mini fibre pads, 10x10 cm, pk/6
<b>EVS1100-TUBEINSERT</b>	Mini tube gel insert + 100 capillary tubes (1 mm int. diameter)
<b>EVS1200-BLOTINSERT</b>	Mini-wide blot insert + 3 cassettes 20x10 cm + 6 fibre pads
<b>EVS1200-CASSETTE</b>	Mini-wide blot cassette, 20x10 cm
<b>EVS1200-FIBREPAD</b>	Mini-wide fibre pads, 20x10 cm, pk/6
<b>EVS1200-TUBEINSERT</b>	Mini-wide tube gel insert + 100 capillary tubes
<b>EVS1200-BLOTINSERT</b>	Maxi blot insert + 3 cassettes 20x20 cm + 6 fibre pads
<b>EVS1300-CASSETTE</b>	Maxi blot cassette, 20x20 cm
<b>EVS1300-FIBREPAD</b>	Maxi fibre pads, 20x20 cm, pk/6
<b>EVS1300-TUBEINSERT</b>	Maxi tube gel insert + 100 capillary tubes (1 mm int. diameter)