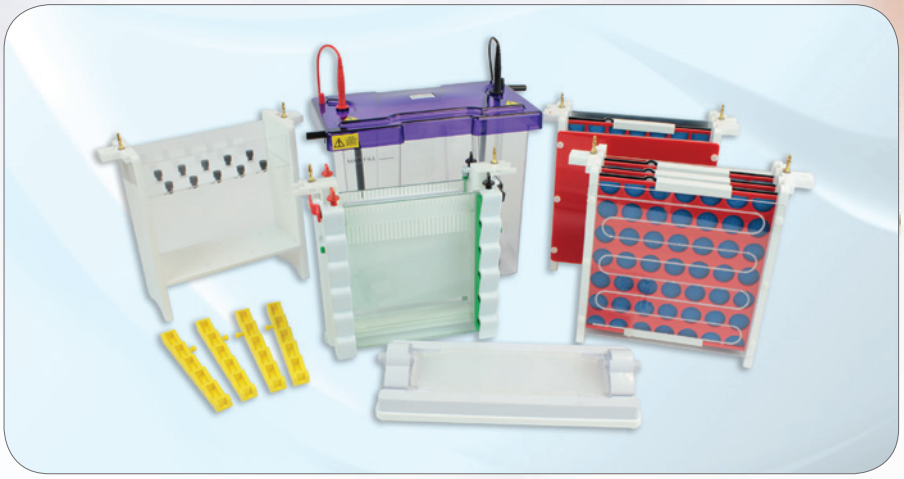
NEW

Cleaver's new VS20 'WAVE' Maxi Vertical Electrophoresis System



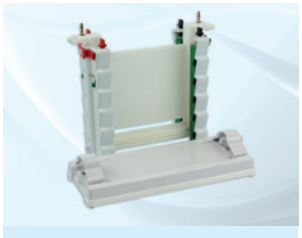
Faster Set Up

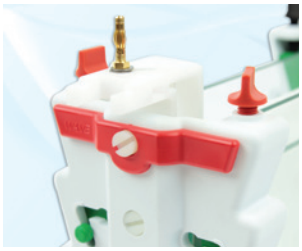
- Fewer Screws – novel vertical screw-clamp technology reduces the number of screws required for set up compared to traditional large-format systems, dramatically reducing assembly time
- No Top Tank Assembly - A built-in inner buffer chamber within the PAGE insert allows set up to be completed without inclusion of a top tank or upper buffer chamber

The new VS20 'WAVE' Maxi System is Cleaver Scientific's latest product innovation for large-format vertical gel electrophoresis. 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 electroblotting, the VS20 WAVE is one of the most versatile maxi vertical systems available.

By introducing innovative, new vertical screw-clamp technology within the PAGE insert only four screws are now necessary to secure as many 20x20cm gels. This gives the VS20 WAVE Maxi the selective advantage of a much faster set up speed compared to competitor products whose traditional clamping configurations require as many as 24 screws to secure just two glass plates. In addition, the WAVE's vertical screw-clamp configuration distributes pressure evenly along the height of the gel rather than in the centre to eliminate plate bowing and gel compression, but still maintains a leak-proof seal during casting; while the ergonomic wave-like design of the PAGE insert aids both handling and set up.

Whatever your requirements are the WAVE can be made to meet them. Regardless of whether it is running 2 or 4 gels, electroblotting, and IEF using capillary tube gels or IPG strips, all of these techniques may be performed using the same omni-purpose unit while retaining the benefits of large format electrophoresis, such as extended separation distances, greater sample throughput and superior resolution.





Versatility and Adaptability

- **More Gels** – run 2-4 gels simultaneously in standard 2-gel WAVE and 4-gel WAVE TETRAD systems
- **Customise your system** – for second-dimension runs with 18cm IPG strips and gels using the IEF conversion kit
- **Utilise modular inserts** – with the same universal tank and lid to extend the application of your standard WAVE unit to create a complete 2-D or blotting system:
  - WAVEC2DS with capillary tube gel insert for 2-D electrophoresis;
  - WAVECBS and WAVETETRAD-CBS for 2- and 4-gel electroblotting

Reproducible Separations

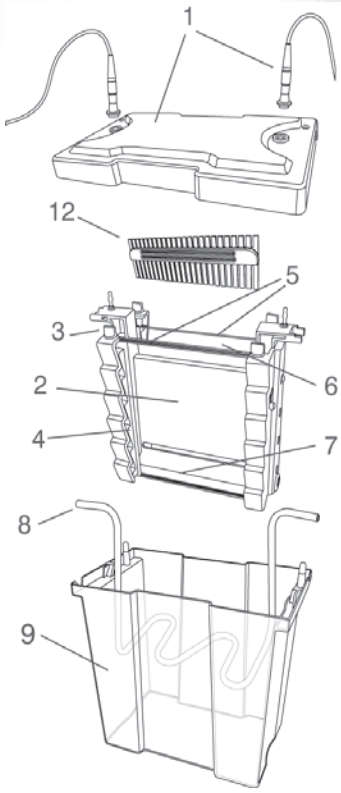
- Vertical screw-clamps distribute pressure evenly along the height of the gel to prevent plate bowing and gel compression
- Glass plates compress gently against a flat, level gasket to prevent current leakage from the inner buffer chamber during electrophoresis
- Detachable inner cooling coil connects to the laboratory water supply or a recirculating chiller to provide uniform, smile-free electrophoresis, while allowing runs to be performed at higher voltage
- Deep gel tank with adequate clearance beneath the glass plates to allow a magnetic stirrer to maintain buffer recirculation and uniform pH

Casting Advantages

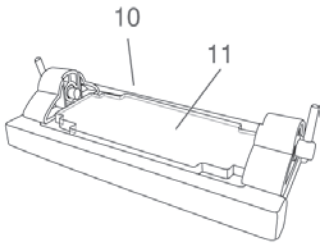
- Dual purpose PAGE insert eliminates time-consuming transfer of glass plates between separate casting and running modules
- Ground glass plates with bonded injection moulded spacers consistent with comb thickness ensure ‘clean’ well formation, as well as the correct alignment for leak-free casting; also eliminate the need for easily mislaid and awkward to use spacer aligners
- Very forgiving, ultra-soft silicone mat within cam-caster compensates for glass plate misalignment to ensure leak-free casting

Other Benefits

- Notched glass plates with bonded spacers supplied with WAVETETRAD systems allow gel capacity to be doubled from 2 to 4, while dummy plate allows single gels to be run
- Bonded spacers and combs colour coded for thickness
- Widest selection of combs allow separation of up to 192 samples
- Robust 4-mm-thick glass plates
- Asymmetric lid design and colour-coded screw pins in PAGE insert prevent polarity reversal
- All parts injection moulded using durable industrial-grade plastic to guarantee longevity and reliable and consistent performance



WAVE Maxi vertical component parts
1. Lid and power cables
2. PAGE insert
3. Vertical screw-pin
4. Clamping bars
5. Glass plates
6. Inner buffer chamber
7. Gasket
8. Detachable cooling coil
9. Outer tank
10. Cam-pin caster
11. Ultra-soft casting mat
12. Combs



Leak-free Casting with Vertical Screw-Pin Technology

The vertical screw-clamp technology of the VS20 WAVE PAGE insert facilitates fast, leak-proof gel casting.

Assemble each gel cassette on a flat level surface, by placing the plain glass plate down with the spacers facing upwards followed by the notched glass plate.

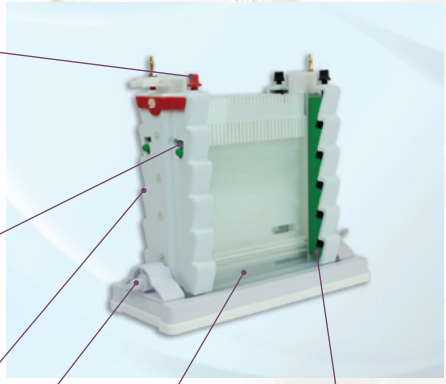
Loosen the vertical screw-pins in the PAGE insert to release the locking mechanism, allowing the gel clamps to sit in the resting slots.

Insert a gel cassette into each side of the inner buffer chamber in the PAGE insert, and begin tightening the vertical screw-pins.

Continue to tighten the screw-pins until the gel clamps glide out of the resting slots and fix firmly against the glass plates pushing them upright.

Check the bottom of the glass plates to ensure that they are flush together, and place the PAGE insert on the casting base; make sure that the cams are facing downwards.

Insert cams and turn until tightened, drawing the PAGE insert onto the casting to form a leak-proof seal.



Vertical screw-pins, colour-coded to prevent polarity reversal, push gel clamps out of the resting slots to secure glass plates firmly within the PAGE insert

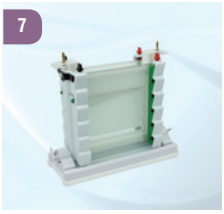
Resting slots allow the gel clamps to sit conveniently out of the way, to aid hindrance-free loading of the cassettes into the PAGE insert

Ergonomic 'wave' design of PAGE insert provides convenient finger grips for easy handling

Cam pins lock PAGE insert onto the ultra-soft silicone mat within the casting base to provide leak-free seal

Flat, level gasket prevents current leakage from inner buffer chamber

Sliding gel clamps available in two thicknesses to accommodate single- and double-gel cassettes



Pour in the gel solution, insert the combs and allow the wells to polymerise.

Transfer the PAGE insert to gel the tank. Fill the inner and outer buffer chambers before loading samples.

Replace the lid, connect to the power supply and run.

Technical information

Number of gels	1-4	Total Volume Inner Buffer Chamber	640mL
Handcast gels	Using VS20 glass plates and combs	Total buffer Volume for 2 gels	5.3L
		Total buffer volume for 4 gels	4.8L
Plate dimensions (W x H x T)	20x20x0.4cm	Standard run time for SDS-PAGE Without Cooling With Cooling	 4-5 hours 3-4 hours
Standard Spacer Dimensions (W x H)	2x20cm	Recommended power supplies	EV233 for IEF; CS-500V for PAGE; CS-3AMP for blotting
IPG Spacer Dimensions (W x H)	0.6x20cm	Unit Dimensions (W x D x H) Weight	30x18x27cm 2.5Kg

VS20WAVESYS	VS20 WAVE Maxi, 20 x 20cm Dual with Glass Plates with bonded 1mm thick spacers, 2x 24 sample combs, cooling coil, dummy plate and Casting Base
VS20WAVESYS-CU	VS20 WAVE Maxi, 20 x 20cm Dual, 2 sets of Glass Plates, 1mm thick bonded Spacers, 2 x 24 sample, 1mm thick combs, cooling coil, dummy plate; includes caster and External casting upstand
VS20WAVE-EC	VS20 WAVE External Casting Stand - No Casting Base
VS20WAVECAST	20 x 20cm Dual Casting Base
VS20DCASTM	Replacement Silicone Mat for 20 x 20cm Casting Base
VS20WAVEDIRM	PAGE insert
VS20WAVE-CC	Detachable Cooling Coil
VS20-x –LG	Loading guides for omniPAGE maxi combs, x = comb well number
VS20NG	20 x 20cm Notched Glass Plates 4mm thick (pk/2)
VS20PG	20 x 20cm Plain Glass Plates 4mm thick (pk/2)
VS20NGS0.75	20 x 20cm Notched Glass Plates with 0.75mm Bonded Spacers (pk/2)
VS20PGS0.75	20 x 20cm Plain Glass Plates with 0.75mm Bonded Spacers (pk/2)
VS20NGS1	20 x 20cm Notched Glass Plates with 1mm Bonded Spacers (pk/2)
VS20PGS1	20 x 20cm Plain Glass Plates with 1mm Bonded Spacers (pk/2)
VS20PGS1.5	20 x 20cm Plain Glass Plates with 1.5mm Bonded Spacers (pk/2)
VS20PGS2	20 x 20cm Plain Glass Plates with 2mm Bonded Spacers (pk/2)
VS20DP	Dummy Plate, 20 x 20cm
VS20S0.75	20cm Spacers - 0.75mm (pk/2)
VS20S1	20cm Spacers - 1mm thick (pk/2)
VS20S1.5	20cm Spacers - 1.5mm thick (pk/2)
VS20S2	20cm Spacers - 2mm thick (pk/2)
VS20WAVE-IEFKIT	IEF Conversion for 18cm IPG strips and tube gels, includes: 1 set of plain glass plates with bonded spacers, 0.6x20cm (WxH); and 2x 2-D combs with one 3.5mm marker lane and one 18cm preparatory well
RPW-0.2100	Replacement Platinum Wire - 0.2mm, 100cm

MC = multichannel pipette compatible

Comb Specification

Code	Description	Sample Volume per well	Code	Description	Sample Volume per well
VS20-1-0.75	Comb 1 Prep, 1 Marker, 0.75mm thick	1100µl	VS20-1-1.5	Comb 1 Prep, 1 Marker, 1.5mm thick	2200µl
VS20-5-0.75	Comb 5 sample, 0.75mm thick	160µl	VS20-5-1.5	Comb 5 sample, 1.5mm thick	320µl
VS20-10-0.75	Comb 10 sample, 0.75mm thick	80µl	VS20-10-1.5	Comb 10 sample, 1.5mm thick	160µl
VS20-18MC-0.75	Comb 18 sample MC, 0.75mm thick	40µl	VS20-18MC-1.5	Comb 18 sample MC, 1.5mm thick	80µl
VS20-24-0.75	Comb 24 sample, 0.75mm thick	30µl	VS20-24-1.5	Comb 24 sample, 1.5mm thick	60µl
VS20-30-0.75	Comb 30 sample, 0.75mm thick	25µl	VS20-30-1.5	Comb 30 sample, 1.5mm thick	50µl
VS20-36MC-0.75	Comb 36 sample MC, 0.75mm thick	20µl	VS20-36MC-1.5	Comb 36 sample MC, 1.5mm thick	40µl
VS20-48-0.75	Comb 48 sample, 0.75mm thick	15µl	VS20-48-1.5	Comb 48 sample, 1.5mm thick	30µl
VS20-1-1	Comb 1 Prep, 1 Marker, 1mm thick	1500µl	VS20-1-2	Comb 1 Prep, 1 Marker, 2mm thick	3000µl
VS20-5-1	Comb 5 sample, 1mm thick	200µl	VS20-5-2	Comb 5 sample, 2mm thick	400µl
VS20-10-1	Comb 10 sample, 1mm thick	100µl	VS20-10-2	Comb 10 sample, 2mm thick	200µl
VS20-18MC-1	Comb 18 sample MC, 1mm thick	50µl	VS20-18MC-2	Comb 18 sample MC, 2mm thick	100µl
VS20-24-1	Comb 24 sample, 1mm thick	40µl	VS20-24-2	Comb 24 sample, 2mm thick	80µl
VS20-30-1	Comb 30 sample, 1mm thick	35µl	VS20-30-2	Comb 30 sample, 2mm thick	70µl
VS20-36MC-1	Comb 36 sample MC, 1mm thick	25µl	VS20-36MC-2	Comb 36 sample MC, 2mm thick	50µl
VS20-48-1	Comb 48 sample, 1mm thick	20µl	VS20-48-2	Comb 48 sample, 2mm thick	40µl

Combs, spacers and accessories also available in 0.5mm MC = multichannel pipette compatible

Cleaver Scientific Ltd

WolfLabs

Pricing on any accessories shown can be found by keying the part number into the search box on our website.

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct.
If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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