

Gradient Station™

This hybrid instrument performs both gradient forming and fractionation.

The Gradient Station™ is two distinct instruments combined into one compact, fully functional hybrid. One forms density gradients and the other fractionates them after centrifugation. The performance of these two elements is identical to the original instruments, the Gradient Master™ and the Piston Gradient Fractionator™, which are described detailed below.

The Gradient Station™ Base unit is provided without tube holders. The tube holders for gradient forming and fractionation have to be purchased separately. For each tube size a separate tube holder is required.

Gradient Station™ Base Unit (article no.: B153-002)



Single Units:

Gradient Master™

The Gradient Master™ forms 6 identical linear density gradients in 1-2 min using a technique called tilted tube rotation. The gradient forming process involves layering the two end point solutions (i.e. 5% and 30% sucrose) directly in the centrifuge tube. The tube is capped to lock in the solutions, placed in a holder and rotated at a high tilt angle for a fixed time and speed. This process is easy, fast and highly reproducible. There is no competing device with this capability.



Piston Gradient Fractionator™ (PGF)

BioComp has patented a unique piston fractionator for resolving fractions from density gradients. The contents of the centrifuge tube are displaced from the top down by a piston that is guided into the tube from above, producing fractions from 10µm to the entire gradient. The most valuable component of the Piston Gradient Fractionator™ is the patented Trumpet Tip™, a tapered funnel, which transfers the bands from a horizontal layer to a fine liquid column without puncturing the tube. Its special shape prevents the destruction of bands by reducing laminar capillary flow to a minimum. Biocomp's PGF offers the highest resolution ever achieved during fractionation. Fractionation can be handled manually to recover visible bands or automatically to produce perfect gradient profiles. Furthermore the system allows cleaning of the tubing by rinsing buffer or blowing air in between the individual fractions, eliminating crosscontamination of consecutive fractions. A newly designed Triax™ Flow Cell, which records UV/VIS spectra during fractionation and if necessary a fraction collector can be implemented (optional).



Gradient Station can be equipped with:

- 1) Fraction Collector
- 2) Triax™ Flow Cell (measuring cell for UV/VIS)
- 3) PC (recording UV/VIS spectra)



Product Details - Gradient Station™

Characteristics

- Gradient Master™ and Piston Gradient Fractionator™ in one instrument
- Interchangeable tube holders (for gradient forming and fractionation)
- Software updates via SD card
- Direct integration of UV/VIS measuring cell (optional)
- Signal output for fraction collector

Technical Data

- Voltage: 220-240V (CE certified)

Dimensions

- Width: 558,8 mm
- Depth: 254 mm
- Height: 558,8 mm
- Weight: 23,6 kg

Needed Accessories for gradient forming

- MagnaBase™ Tube Holder
- Marker Block
- Caps for centrifuge tubes (short/long Caps)

Needed Accessories for fractionation

- PGF Tube Holder
- Piston tip
- Cursor

Included

Combined Gradient Master™ and Piston Gradient Fractionator™ Base Unit, Layering Cannula (x2) & Bubble Level, Gradient List (Run Parameters), SD Card & Reader, Power Cord, Syringe Reservoir (60cc), Syringe (60cc), Philips Screwdriver, Spare Spotlight, Marker (Staedtler Fine Tip), Spare Valve & Tubing, Leveling Feet (x4), Allen Wrenches (1/16", 5/64", 3/32", 9/64", 5/32", 3/16"), Layering Cannula (x2) & Bubble Level, Fraction Collector Cable (2 Wire), Water Adjust Cannula, Wing Screws (6x) & Allen Wrench (1/8"), Teflon Tubing (1/16" x 1m), Valve Cleaning Needle, Tubing Tip, Front, Panel Screws (5x), Valve Repair Kit: O-Rings (002x6 & 003x6) & Valve Balls (7x) & Valve Cap, Ruler, Sample layering Kit, Rinse Adapter, Lab Tape, Box of Seton Tubes, Manual (English)

Our technical support will assist you with individual needs for your application.

Accessories

1. MagnaBase™ Tube Holder, Marker Block, Caps

The **MagnaBase™ Tube Holder** can be magnetically attached to the Gradient Master™ Base Unit. Each tube size requires a separate tube holder.

The **Marker Block** is used to mark the half-full point on the tube for layering of the two end point solutions.

The caps (short or long) retain the gradient during tilted rotation. **Short caps** are used for rate zonal runs where a small sample is needed, and **long caps** are used in isopycnic runs where sample size is less important.



Marker Block, MagnaBase™ Tube Holder, Caps



Short (-R) & Long (-I) Caps

Cat. #	Description	Tube Size	Beckmann	Sorvall	Hitachi
B105-911A-I/R	MagnaBase™ Tube Holder, Marker Block and Caps	11x60mm	SW60Ti	TST-60.4 TLS-55	RPS56T
B105-911B-I/R	MagnaBase™ Tube Holder, Marker Block and Caps	11x34mm	TLS-55	N/A	RP55S
B105-913-I/R	MagnaBase™ Tube Holder, Marker Block and Caps	13x51mm	SW50.1 SW65Ti SW55Ti	AH-650	RPS65T RPS55T-2 RPS50
B105-914A-I/R	MagnaBase™ Tube Holder, Marker Block and Caps	14x89mm	SW41	TH-641	N/A
B105-914B-I/R	MagnaBase™ Tube Holder, Marker Block and Caps	14x95mm	SW40	N/A	RPS40T
B105-916-I/R	MagnaBase™ Tube Holder, Marker Block and Caps	16x102mm	SW27.1 SW28.1	AH-629/17	SRP28SA RPS27-3
B105-925-I/R	MagnaBase™ Tube Holder, Marker Block and Caps	25x89mm	SW27 SW28 SW32	AH-629/38	SRP28SA RPS27 RPS27-2
B105-5xx-06	Caps (Isopycnic)	Diameter xx mm			
B105-4xx-06	Caps(Rate-zonal)	Diameter xx mm			

Each MagnaBase™ Set includes a MagnaBase™ Tube Holder, Marker Block and 6 Caps (short and/or long).

Please note: You can order different types of caps with each holder:

- I 10mm, for isopycnic runs
- R 4mm, for rate-zonal runs
- IR for both sizes

2. PGF Tube Holder, Piston Tip, Cursor



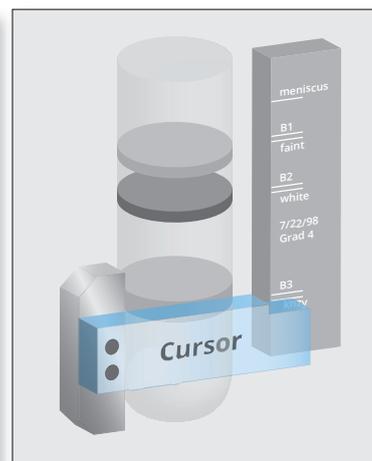
PGF Tube Holder for the SW60 or similar rotors



PGF Tube Holder for the SW41 or similar rotors



Piston Tip



Cursor

For fractionation a tube holder has to be purchased separately. Each tube size requires a separate tube holder.

A cursor is used to mark the dead volume while recovering visible bands through manual fractionation.

The patented Trumpet Tip™, transfers bands from a horizontal layer to a fine liquid column.

Cat. #	Description	Tube Size	Beckmann	Sorvall
B151-125	PGF Tube Holder, Piston Tips, Cursor, Tubes	25x89mm	SW27 SW28 SW32	AH-629/38
B151-116	PGF Tube Holder, Piston Tips, Cursor, Tubes	16x102mm	SW27.1 SW28.1	AH-629/17
B151-114B	PGF Tube Holder, Piston Tips, Cursor, Tubes	14x89mm	SW40	N/A
B151-114A	PGF Tube Holder, Piston Tips, Cursor, Tubes	14x95mm	SW41	TH-641
B151-113	PGF Tube Holder, Piston Tips, Cursor, Tubes	13x51mm	SW50 SW55 SW65	AH-650
B151-111A	PGF Tube Holder, 11mm Piston, Piston Tips, Cursor, Tubes	11x60mm	SW60	TH-660
B151-111B	PGF Tube Holder, 11mm Piston, Piston Tips, Cursor, Tubes	11x34mm	TLS55	N/A

Each tube holder set consist of:

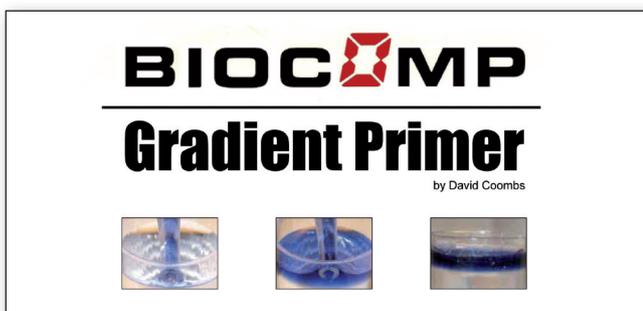
- 2 Piston Tips • PGF Tube Holder
- Cursor • Box of Seton centrifuge tubes

3. Tubes

BioComp highly recommends the Open Top Polyclear or Polyallomer tubes of Seton Scientific. Tubes of other manufactures don't have the dimensional tolerance and roughness and are therefore not compatibel with the fractionator seals.

Cat. #	Tube Size	Material	Beckmann	Sorvall	Hitachi
S7052	25x89mm	Polyclear	SW27 SW28 SW32	AH-629/38	SRP28SA RPS27 RPS27-2
S7042	16x102mm	Polyclear	SW27.1 SW28.1	AH-629/17	SRP28SA RPS27-3
S7031	14x95mm	Polyclear	SW40	N/A	RPS40T
S7030	14x89mm	Polyclear	SW41	TH-641	N/A
S7022	13x51mm	Polyclear	SW50.1 SW65Ti SW55Ti	AH-650	RPS65T RPS55T-2 RPS50
S7011	11x34mm	Polyclear	TLS-55	N/A	RP55S
S7010	11x60mm	Polyclear	SW60Ti	TST-60.4 TLS-55	RPS56T
S5052	25x89mm	Polyallomer	SW27 SW28 SW32	AH-629/38	SRP28SA RPS27 RPS27-2
S5042	16x102mm	Polyallomer	SW27.1 SW28.1	AH-629/17	SRP28SA RPS27-3
S5031	14x95mm	Polyallomer	SW40	N/A	RPS40T
S5030	14x89mm	Polyallomer	SW41	TH-641	N/A
S5022	13x51mm	Polyallomer	SW50.1 SW65Ti SW55Ti	AH-650	RPS65T RPS55T-2 RPS50
S5011	11x34mm	Polyallomer	TLS-55	N/A	RP55S
S5010	11x60mm	Polyallomer	SW60Ti	TST-60.4 TLS-55	RPS56T

Gradient Primer *by David Coombs*



The Gradient Primer is a White-Paper by David Coombs, president of BioComp Instruments. It covers the topics gradient forming and fractionation and the science behind it.

Free download: http://scienceservices.de/media/pdf/BioComp_Gradient_Primer_2_2.pdf



Our technical support will assist you with individual needs for your application.