

HIGH PRESSURE FREEZING MACHINE HPF COMPACT 02



**“For biological probes
up to 0.2 mm thickness
and 0.6 / 3.9 mm³
volume”**

ENGINEERING OFFICE M. WOHLWEND GmbH

CH-9466 Sennwald / Switzerland
Telephone: 0041 81 7571924
Telefax: 0041 81 7572243
E-mail: martin-wohlwend@bluewin.ch

HIGH PRESSURE FREEZING MACHINE HPF COMPACT 02

Exclusivity

On account of its exceptionally high performance and numerous other innovations, the HPF Compact 02 sets a new standard in high pressure freezing technology.

Excellent cryofixation quality with improved reproducibility

Thanks to the many system improvements made, the quality of the cryofixation and its reproducibility have been significantly increased.

Excellent cooling rate

Samples are cooled from 0 °C to -100 °C in 10 ms.

Smooth high pressure freezing with no pressure surges

The consistent application of pressure to the sample without pressure surges during the entire freezing cycle, and especially during the starting phase, ensures that it is carefully frozen.

Optimal pressure / temperature coordination

A special value (an exclusive feature of this machine) ensures that the sample is only frozen when a pressure of 2045 bar is attained.

Pre-selection of freezing cycle with or without alcohol

By means of push button, an automatic freezing cycle with or without alcohol can be pre-selected (an exclusive feature of this machine).

Cryofixation for electron microscopy without an antifreeze agent

The high pressure freezing machine HPF Compact 02 enables the efficient cryofixation of biological probes of up to 0.2 mm thickness and 0.6 mm³ volume without the need for an anti-freeze agent.

Automatic freezing cycle with / without alcohol

On the HPF Compact 02 the entire freezing cycle is executed automatically. The probe simply has to be inserted in the pressure chamber, which is then locked by means of a quick-release pin. The fully automatic freezing cycle is activated by the touch of a button. Various safety devices exclude any possibility of incorrect operation.

Robust, reliable design

The new HPF Compact 02 has the same robust, reliable design and cooling operation (high pressure intensifier, hydraulic system, controls, etc.) as its predecessors the HPF Compact 01 and PI 32-165, to fulfil the highest technical standards.

Safety

Both customers and official supervisory authorities set strict safety standards for high pressure machines. On account of its 1.4-fold test pressure and design in compliance with TÜV regulations (German Technical Supervisory Association), the high pressure freezing machine HPF Compact 02 fulfils every aspect of these strict safety requirements.

High flexibility in sample preparation

Different sample holders (3 / 6 mm dia. platelets, 0.6 mm copper tubes, 4.5 x 3 mm Omega platelets, sapphire discs, labelled sapphire discs, gold coated copper platelets, holders for light microscopy, etc.) provide the highest flexibility in sample preparation, both before and after freezing (see below specimen holder options). Ask for our consumables list!

Specimen holder and carriers options

Dia. 3 / 6 x 0.5 mm aluminium platelet for freeze substitution

Holder 3 mm	HPF Compact 01 and 02	article no. 290
Holder 3 mm	BAL-TEC	article no. 422
Holder 6 mm	HPF Compact 02	article no. 619
Platelet 3 mm	recesses 0.1 / 0.2 mm	article no. 241
Platelet 3 mm	recess 0.3 mm	article no. 242
Platelet 3 mm	recesses 0.15 / 0.15 mm	article no. 353
Platelet 3 mm *	recesses 0.025 / 0.275 mm	article no. 389
Platelet 3 mm *	recesses 0.05 / 0.25 mm	article no. 390
Platelet 3 mm *	recess 0.3 mm	article no. 479
Platelet 6 mm	recesses 0.1 / 0.2 mm	article no. 610
Platelet 6 mm	recess 0.3 mm	article no. 611
Platelet 6 mm	recesses 0.15 / 0.15 mm	article no. 612
Platelet 3 mm	recesses 0.1 / 0.2 mm (gold coated)	article no. 662
Capillary tube	set (cellulose dia. 0.2 mm)	article no. 505
Sapphire disc *	dia. 3 x 0.05 mm	article no. 405
Sapphire disc	dia. 1.4 x 0.05 mm (Empact)	article no. 454
Sapphire disc	dia. 3 x 0.16 mm	article no. 500
Sapphire disc	dia. 3 x 0.16 mm labelled	article no. 627

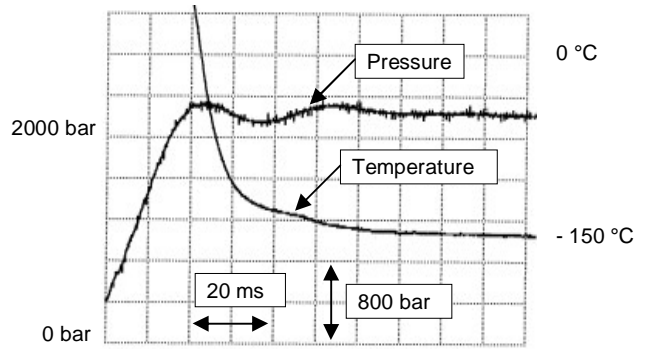
* Special platelets for to use in combination with the sapphire disc.

4.5 x 3 x 0.1 mm copper Omega platelets for freeze-fracturing

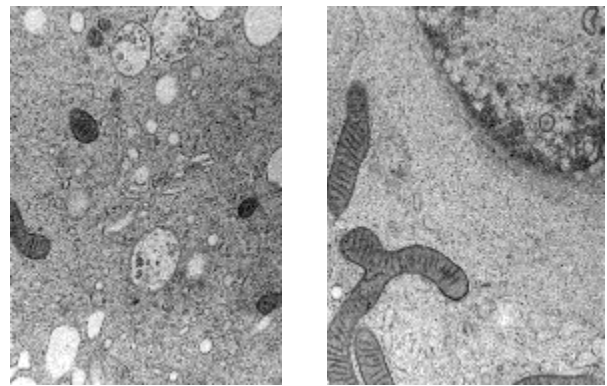
Holder	HPF Compact 01	article no. 402
Holder	BAL-TEC	article no. 421
Platelet	without recess	article no. 403
Platelet	with 0.1 mm recess	article no. 404

Copper tubes, platelets, holder and chucks for cryo-sectioning

Holder	Copper tube 0.6 mm	article no. 762
Copper tube	dia. 0.6 x 9 mm	article no. 730



Pressure-, temperature diagram



Sections of **fibroblast cells** cultivated on sapphire discs that fit into the aluminum planchettes, **high-pressure frozen with the HPF Compact 01**, freeze substituted and thin sectioned. Note the absence of ice crystal segregation patterns.

Technical data

- Maximum operating pressure: 2970 bar (43068 psi)
- Test pressure: 4300 bar (62355 psi)
- The high pressure intensifier is designed according to TÜV regulations.
- Permissible load alternations for pressure intensifier: 100'000
- Cooling time 0 °C to -100 °C: 10 ms
- Freezing cycles possible per hour: 34
- All machine components are electro-thermostatically heated.
- Voltage / frequency: 230 V / 50 Hz
120 V / 60 Hz
- Current drawn: 2 KVA
- Dimensions: 815 x 686 x 1450 (W x D x H)
- Weight: 400 kg

Right of technical modification reserved (7.8.11).

Why not profit from our 30 years of experience in the design and construction of high pressure freezing equipment!

Engineering Office M. Wohlwend GmbH

CH-9466 Sennwald, Switzerland

Telephone: 0041 81 7571924

Telefax: 0041 81 7572243

E-mail: martin-wohlwend@bluewin.ch