

HIGH PRESSURE FREEZING MACHINE

HPF COMPACT 01



Why not profit from our 20 years of experience in the design and construction of high pressure freezing equipment
M. Wohlwend GmbH

TECHN  **TRADE**
INTERNATIONAL

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HIGH PRESSURE FREEZING MACHINE HPF COMPACT 01

Exclusivity

On account of its exceptionally high performance and numerous other innovations, the HPF Compact 01 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.

High flexibility in sample preparation

Different sample holders (3 mm dia. platelets, 0.6 - 0.9 mm dia. alum. Tubes, 4.5 x 3 mm Omega platelets, sapphire discs and gold meshes) provide the highest flexibility in sample preparation, both before and after freezing (see below specimen holder options).

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 01 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 01 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.

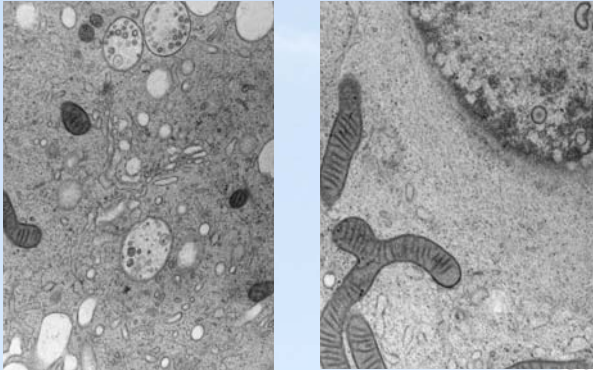
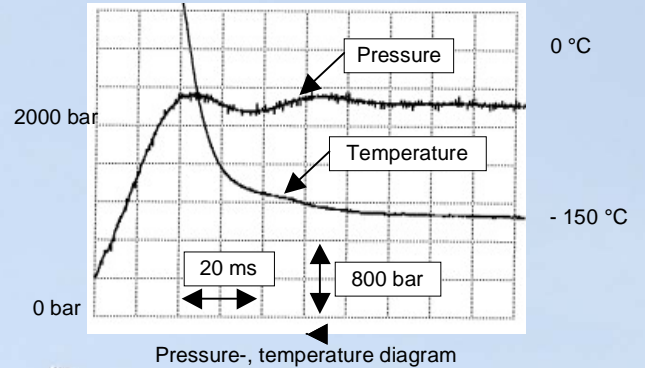
Robust, reliable design

The new HPF Compact 01 has the same robust, reliable design and cooling operation (high pressure intensifier, hydraulic system, controls, etc.) as its predecessor the 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 01 fulfils every aspect of these strict safety requirements.

HIGH PRESSURE FREEZING MACHINE HPF COMPACT 01



Sections of **fibroblast cells** cultivated on sapphire discs that fit into the aluminum planchettes, **high-pressure frozen with the new HPF-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: 3 x 208 / 60 Hz
- Current drawn: 2 kVA
- Dimensions: 686 x 815 x 1,435 (LxWxH in mm)
- Weight: 400 kg

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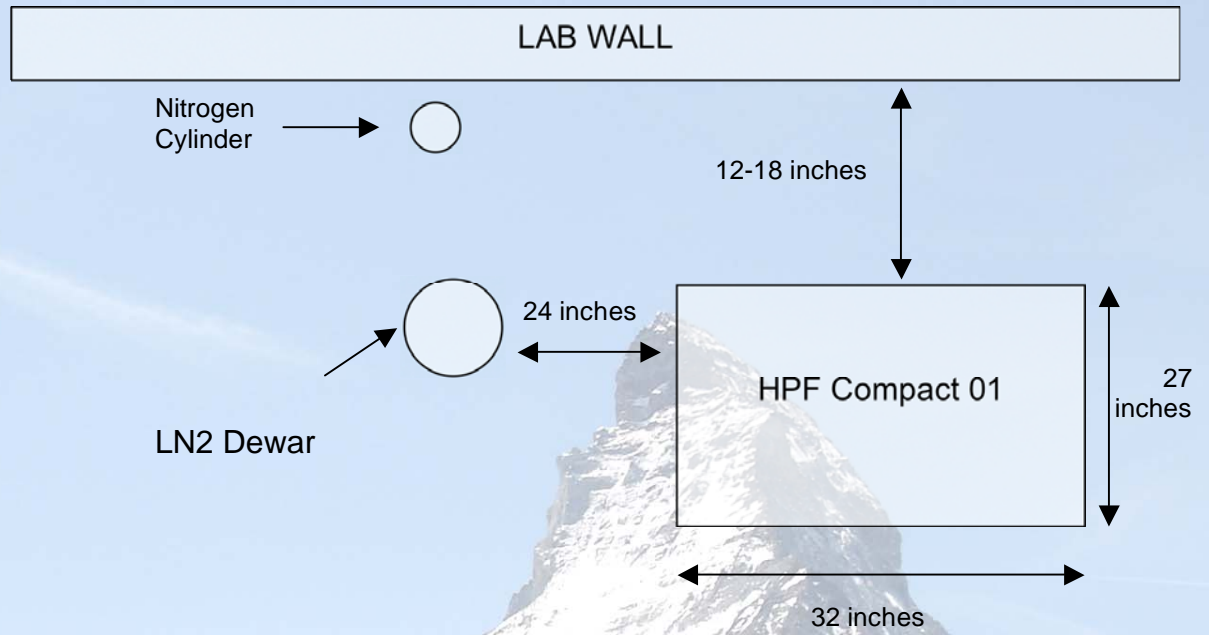
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HPF COMPACT 01 FLOOR PLAN AND PRE-INSTALLATION INFORMATION



Location: Machine must be removed from crate and placed in location.

Power: 208 VAC, 3 Phase, 4 Wire, (3 hot and ground), 30 Amp with disconnect box mounted within 10 feet of machine.

Gases: For Operation: 1 Cylinder of compressed Nitrogen gas, PP grade

For Installation: 1 Cylinder, high pressure (6000psig) of Nitrogen, PP grade, special order from local vendor.

For Safety: Safety Harness for Compressed Gases Tank

Liquid Nitrogen: 99.8% pure with no particulates and 50 liter minimum tank size with a delivery pressure between 0.5 and 1 bar.

Alcohol: 99.8% pure either IPA or Ethanol

Room: Dry with a temp range of 15°C and 40°C.

Consumable Price List

Wohlwend HPF Compact 01, BAL-TEC HPM 010, LEICA

Holders and 3 X 0.5mm Ø standard aluminum platelets and sapphire discs for freeze substitution

Part #	Description	Qty.	US \$ Sell
290	Holder HPF Compact 01	1	760.00
127	Holder Leica	1	875.00
422	Holder BAL-TEC	1	875.00
241-10	Platelet recesses 0.1 / 0.2 mm	10	24.50
241-50	Platelet recesses 0.1 / 0.2 mm	50	105.00
241-200	Platelet recesses 0.1 / 0.2 mm	200	340.00
242-10	Platelet recess 0.3 mm	10	21.00
242-50	Platelet recess 0.3 mm	50	90.00
242-200	Platelet recess 0.3 mm	200	300.00
353-10	Platelet recesses 0.15 / 0.15 mm	10	24.50
353-50	Platelet recesses 0.15 / 0.15 mm	50	105.00
353-200	Platelet recesses 0.15 / 0.15 mm	200	340.00
389-10	Platelet recesses 0.025 / 0.275 mm	10	52.00
389-25	Platelet recesses 0.025 / 0.275 mm	25	112.25
389-100	Platelet recesses 0.025 / 0.275 mm	100	365.00
390-10	Platelet recesses 0.05 / 0.25 mm for sapphire disc	10	52.00
390-25	Platelet recesses 0.05 / 0.25 mm for sapphire disc	25	112.50
390-100	Platelet recesses 0.05 / 0.25 mm for sapphire disc	100	365.00
405-10	Sapphire disk Ø 3 X 0.5 mm	10	78.00
405-25	Sapphire disk Ø 3 X 0.5 mm	25	166.25
405-100	Sapphire disk Ø 3 X 0.5 mm	100	550.00

Holders and 4.5 X 3X 0.1 mm copper Omega platelets and 3 X 3 mm gold mesh for freeze fracture

Part #	Description	Qty.	US \$ Sell
402	Holder HPF Compact 01	1	980.00
246	Holder Leica	1	980.00
421	Holder BAL-TEC	1	980.00
403-10	Platelet w/o recess	10	34.50
403-25	Platelet w/o recess	25	78.00
403-100	Platelet w/o recess	100	265.00
404-10	Platelet with 0.1 mm recess	10	34.50
404-25	Platelet with 0.1 mm recess	25	78.00
404-100	Platelet with 0.1 mm recess	100	265.00
427	Mesh gold 3 X 3 mm	50	140.00

**Holders and 0.6 / 0.9 / 4.5 mm aluminum tubes
for cryo-sectioning**

Part #	Description	Qty.	US \$ Sell
393	Holder HPF Compact 01	1	980.00
423	Holder Leica	1	980.00
425	Holder BAL-TEC	1	980.00
397	Tube 0.6 / 0.2 / 4.5 mm	10	112.50
399	Tube 0.9 / 0.2 / 4.5 mm	10	112.50

Special Sapphire disk package,			
consisting of:			1,250.00
Specimen Holder		1	
Sapphire Disks (405)		100	
Platelets Alu (390)		100	

O-Ring Specimen Head HPM 010 BAL-TEC

T771	O-Ring, same as B 8010 077 71	1	1.50
T771-10	O-Ring, Pkg=10	1	12.00