

Compressor Units for Pneumatically Driven Cold Heads and Pumps, Water Cooling

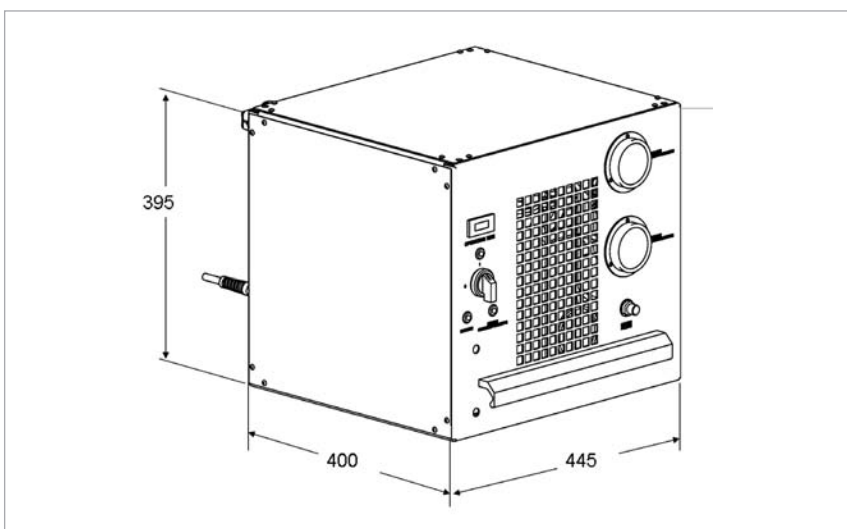
COOLPAK 2000/2200



Compressor unit COOLPAK 2000 (2200 is similar)

Advantages to the User

- High efficiency and increased performance for cryogenic pumps and refrigerators
- High long-term reliability due to long-life and highly efficient components and improved oil management
- Very quiet and low vibration operation through the innovative horizontally suspended scroll compressor
- Simple installation and operation
- Global mains voltage compatibility
- Perfect integration within complex systems due to the 24 V Sub-D interface
- Simple adsorber replacement, otherwise maintenance-free
- Small footprint
- Low cost of ownership



Dimensional drawing of the COOLPAK 2000/2200

Technical Data**COOLPAK 2000 (50 Hz)****COOLPAK 2200 (60 Hz)**

Number of electrical connections for cold heads		1	1
Helium system filling pressure at room temperature	barg	15	14
Ambient temperature	°C (°F)	+5 to +40 (+41 to +104)	+5 to +40 (+41 to +104)
Cooling water consumption	l/min	< 5	< 5
Cooling water feed temperature	°C (°F)	+5 to +25 (+41 to +77)	+5 to +25 (+41 to +77)
Mains voltage (single phase)	V	230 ± 10%	208 ± 10%
Operating current			
with cooled down cold head	A	9.5 to 10.5	11.5 to 12.5
with warmed up cold head	A	12.0	13.0
Electric power consumption			
with cooled down cold head	kW	2.2	2.3
with warmed up cold head	kW	2.4	2.5
Remote control through interface	V DC	24	24
Helium connections self-sealing fittings			
high-pressure side (outside thread)		1/2" ¹⁾	1/2" ¹⁾
low-pressure side (outside thread)		1/2" ¹⁾	1/2" ¹⁾
Water connections	DN	10	10
Noise level (at a distance of 1 m (3.5 ft))	dB(A)	< 55	< 55
Dimensions (W x H x D)	mm (in.)	445 x 395 x 400 (17.52 x 15.55 x 15.74)	445 x 395 x 400 (17.52 x 15.55 x 15.74)
Weight, approx.	kg (lbs)	69 (152.32)	69 (152.32)

Ordering Information**COOLPAK 2000 (50 Hz)****COOLPAK 2200 (60 Hz)**

	Part No.	Part No.
Compressor unit	840000V2000	840000V2200
Accessories, optional		
Tool-Kit	E20004779	E20004779
Spare parts		
Adsorber CPS-V8	E 840001973	E 840001973

¹⁾ Series 5400 from Aeroquip, coupling size "-8", or compatible types.

Compressor Units for Pneumatically Driven Cold Heads and Pumps, Water Cooling COOLPAK 6000 H/6200 H/6000 HD



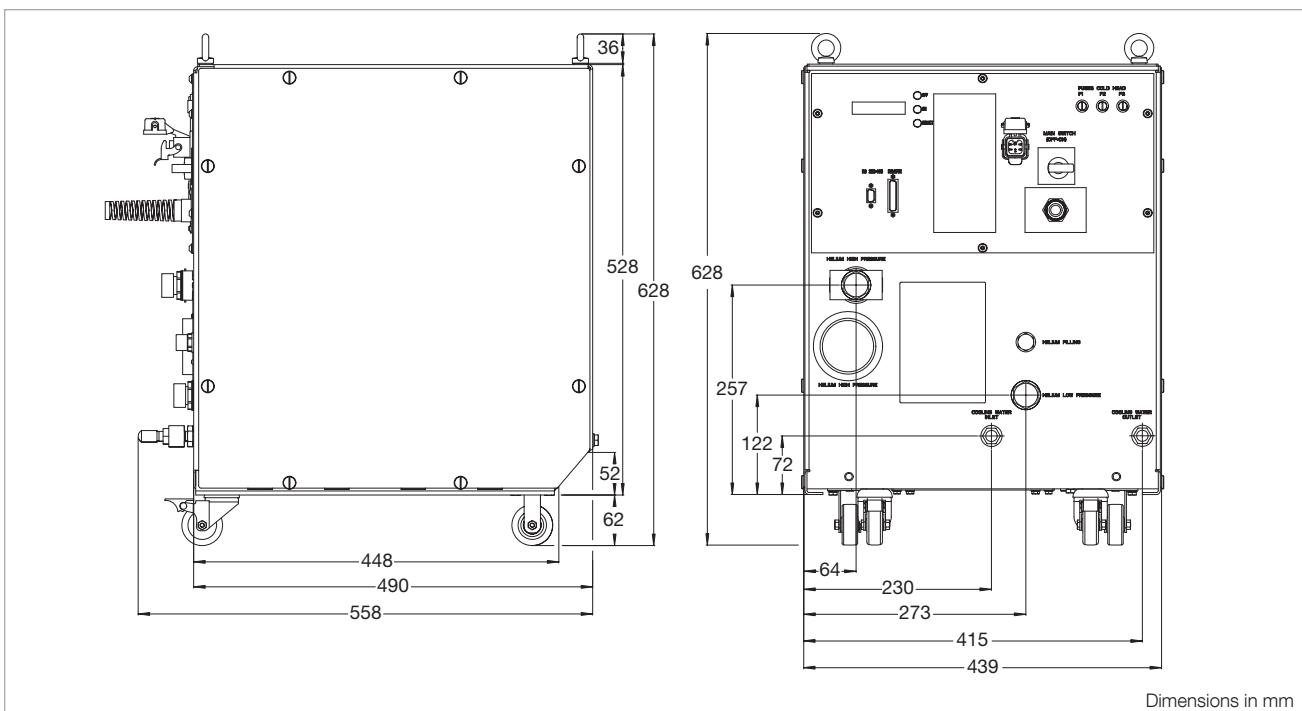
Compressor units COOLPAK 6000 H/6200 H/6000 HD

Used to drive cold heads with pneumatically driven displacer pistons, i.e. for individual operation of the COOLPOWER cold heads 140 T and 5/100, but also older cold heads such as the RGS 120, RGD 580 and 1245, as well as the multiplexing of COOLPOWER cold heads 50 and 7/25.

In addition, these compressors are used to operate COOLVAC cryo pumps with integrated cold heads of these types.

Advantages to the User

- Highly effective and even more powerful when connected with Leybold cryo pumps and refrigerators
- Excellent long-term reliability owing to the modular design and the long life components
- Silent and low vibration operation through scroll compressors
- Simple installation and operation
- Global power supply compatibility
- Easy integration in complex systems due to 24 V DC or RS 232 C interfaces
- Almost maintenance-free
- Small footprint
- Low cost of ownership



Dimensional drawing for the COOLPAK 6000 H/6200 H/6000 HD

Technical Data

COOLPAK

	6000 H / 6000 HD		6200 H		
	50 Hz	60 Hz	50 Hz	60 Hz	
Number of electrical connections for cold heads	1 / 2		1		
Helium system filling pressure at room temperature	barg	17	16	15	14
Ambient temperature	°C (°F)	+5 to +40 (+41 to +104)			
Cooling-water consumption ¹⁾	l/min	5			
Cooling-water entry temperature	°C (°F)	+5 to +25 (+41 to +77)			
Main voltage (3 phase)					
upon delivery	V	400 ± 10%	–	230 ²⁾ + 1% / -10%	230 ± 10%
alternative setting	V	–	470 ± 10%	200 ± 10%	200 ± 10%
Operating currents					
with cooled down cold head	A	10 to 12	–	20 to 22	–
with warmed up cold head	A	11 to 13	–	22 to 25	–
Electrical power consumption					
with cooled down cold head	kW	6.5 to 7.5	7.0 to 8.0	6.5 to 7.5	7.0 to 8.0
with warmed up cold head	kW	7.0 to 8.0	7.5 to 8.5	7.0 to 8.0	7.5 to 8.5
Remote control via interface		24 V DC or RS 232 C			
Helium connections					
Self-sealing couplings					
High pressure connection (outside thread)			1/2" ⁴⁾		
Low pressure connection (outside thread)			1/2" ⁴⁾		
Water connections		Hose nozzle DN 10 / G 1/2" outside thread			
Sound level (at 1 m (3.5 ft) distance)	dB(A)	60			
Dimensions (W x H x D)	mm (in.)	440 x 589 x 558 (17.32 x 23.19 x 21.97)			
Weight, approx.	kg (lbs)	104 (230)			

Ordering Information

COOLPAK

	6000 H / 6000 HD		6200 H	
	50 Hz	60 Hz	50 Hz	60 Hz
	Part No.	Part No.	Part No.	Part No.
Compressor unit				
without power supply cable				
Connection for 1 cold head (CP ... H)		840000V6001		840000V6201
Connection for 2 cold heads (CP ... H)		840000V6004		–
Power supply cable				
CEE plug, 32 A/6h, 3-pol +N+PE, 3.5 m (12.25 ft)	893 95	–		–
NEMA plug, L 16-20 P, 20 A/480 V, 3-pol +PE (AWG 12), 3.5 m (12.25 ft)	–	893 96		–
- with end splice (AWG 10), 10 m (35.0 ft)		840 111		840 111
- with end splice (AWG 10), 20 m (70.0 ft)		840 112		840 112
Accessories				
Tool-Kit		E 20004779		E 20004779
Water cooling discharge throttle		E 840000133 ³⁾		–
Spare parts				
Adsorber CP6000H		E 840002863		

¹⁾ At a cooling water entry temperature of 25 °C (77 °F).

²⁾ At 14 barg filling pressure.

³⁾ Only for COOLPAK 6000 HD.

⁴⁾ Series 5400 from Aeroquip, coupling size "-8", or compatible types.

Compressor Units for Mechanically Driven Cold Heads and Pumps, Water Cooling COOLPAK 6000 HMD/6200 HMD



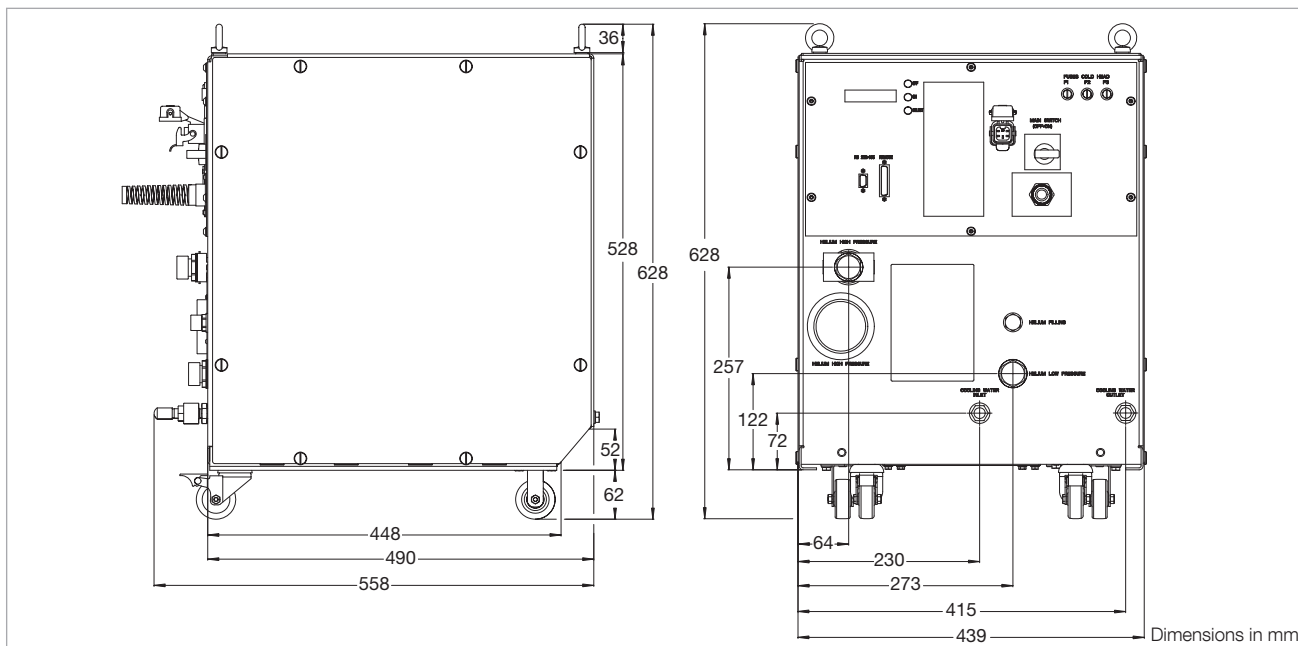
Compressor unit COOLPAK 6000 HMD/6200 HMD

Serves the purpose of individually driving the cold heads with mechanically driven displacers; i.e. COOLPOWER 250 MD and 10 MD.

In addition, these compressor units are also used for operating the COOLVAC cryo pumps 30000 BL LN₂ and COOLVAC 60000 BL LN₂.

Advantages to the User

- Highly effective and even more powerful when connected with Leybold cryo pumps and refrigerators
- Excellent long-term reliability owing to the modular design and the long life components
- Silent and low vibration operation through scroll compressors
- Small footprint
- Simple installation and operation
- Global power supply compatibility
- Easy integration in complex systems due to 24 V DC or RS 232 C interfaces
- Variable cold head motor speed, adjustable using keys on the power module or RS232C interface
- Long maintenance-free period of operation



Dimensional drawing for the COOLPAK 6000 HMD/6200 HMD

Technical Data

COOLPAK

		6000 HMD		6200 HMD	
		50 Hz	60 Hz	50 Hz	60 Hz
Mains voltage (3 phase)	V	400 ± 10%	460 ± 10%	200 ± 10%	200 - 230 ± 10%
Helium system filling pressure at room temperature	barg	15	14	14	13

For all other Technical Data, see COOLPAK 6000 H and 6200 H

Ordering Information

COOLPAK

	6000 HMD	6200 HMD
	Part No.	Part No.
Compressor type		
400 V/3-ph. 50 Hz or		
460 V/3-ph. 60 Hz ± 10%	840000V6002	-
200 V/3-ph. 50 Hz or		
200 - 230 V/3-ph. 60 Hz ± 10%	-	840000V6202
Flexible pressure line (for operating mechanically driven cold heads)		
9 m (31.5 ft) (High-pressure)		
FL9 HP-DN 20 (8f/8f)	840 217	
9 m (31.5 ft) (Low-pressure)		
FL9 LP-DN 32 (8f/8f)	840218V0032	
20 m (75.0 ft) (High-pressure)		
FL20 HP-DN 20 (8f/8f)	840230V2020	
20 m (75.0 ft) (Low-pressure)		
FL20 LP-DN 32 (8f/8f)	840231V2032	
Connection cable for the cold heads		
COOLPOWER 250 MD, 10 MD		
9,0 m (31.5 ft)	842 110	
20,0 m (75.0 ft)	842 112	
Power supply cable		
CEE plug, 32 A/6h, 3 pol+N+PE,		
3,5 m (12.25 ft)	893 95	-
NEMA plug, L 16-20 P, 20 A/480 V,		
3 pol+PE (AWG 12), 3,5 m (12.25 ft)	893 96	-
10 m (35.0 ft) with end splice (AWG 10)		840 111
20 m (70.0 ft) with end splice (AWG 10)		840 112
Accessories		
Tool-Kit		E 20004779
Water cooling discharge throttle		E 840000133
Spare parts		
Adsorber CP6000H		E 840002863

General Accessories for Compressor Units COOLPAK 2000, 6000 H

Technical Data	Length	Connections on both sides (inside thread)	
		High pressure line (HD)	Low pressure line (ND)
Flexlines ^{1), 2)}			
FL 4.5 (1/2", 1/2") (= 1 Set)	4.5 m (14.76 ft)	1/2"	1/2"
FL 9.0 (1/2", 1/2") (= 1 Set)	9,0 m (29.53 ft)	1/2"	1/2"
FL 18.0 HP (1/2") (= single high pressure line)	18 m (59.06 ft)	1/2"	-
FL 18.0 LP (1/2") (= single low pressure line)	18 m (59.06 ft)	-	1/2"

Accessories for Flexlines	Connections (m = Outside thread, f = Inside thread)	
	High pressure line (HD)	Low pressure line (ND)
Adaptor for flexlines		
AD (1/2" m, 3/4" f)	1/2" m	3/4" f
AD (1/2" f, 3/4" m)	3/4" m	1/2" f
90°-Elbow 1/2" for flexlines	1/2" m	1/2" f
Coupling 1/2" for interconnecting two 1/2" flexlines	1/2" m	1/2" m
Coupling 3/4"	3/4" m	3/4" m

	Gas Distributors (required quantity)	Gas Manifold – Connections At the compressor (Inside thread)	At the cold head (Outside thread)
	Gas manifold (1 piece each)		
GD 2 (for dual operation) ²⁾	2	1/2"	2 x 1/2"
GD 4 (for up to quad operation) ²⁾	2	1/2"	4 x 1/2"

Ordering Information

General Accessories

	Part No.
Flexlines ^{1), 2)}	
FL 4.5 (1/2", 1/2") (= 1 Set)	892 87
FL 9.0 (1/2", 1/2") (= 1 Set)	892 88
FL 18.0 HP (1/2") (= single high pressure line)	840 203
FL 18.0 LP (1/2") (= single low pressure line)	840 204
Adaptor for flexlines	
AD (1/2" m, 3/4" f)	892 89
AD (1/2" f, 3/4" m)	892 90
90°-Elbow 1/2" for flexlines	891 73
Coupling 1/2" for interconnecting two 1/2" flexlines	891 71
Gas manifold (1 piece each)	
GD 2 (for dual operation) ²⁾	840 253 (2x)
GD 4 (for up to quad operation) ²⁾	840 254 (2x)
Connection cable for linking cold head and compressor unit ²⁾	
Power supply cable 4.5 m (14.76 ft)	E400 000 323
Power supply cable 18 m (59.06 ft)	840 002 964V0018
Extension cable for linking cold head and compressor unit ²⁾	
EL 4.5 (4.5 m / 14.76 ft)	893 74

All flexible pressure lines, adaptor pieces, bends, isolating pieces, line couplings and gas manifolds are equipped with self-sealing Aeroquip fittings and filled in the factory with high-purity helium gas (purity: 99.999%). The filling pressure is 16 barg.

¹⁾ Minimum bending radius: 30 cm (11.81 in.).

²⁾ Only suited for pneumatically driven cold heads and cryo pumps.