

HERMETIC COMPRESSORS SELECTED FOR MEDICAL COLD CHAIN SOLUTIONS

10
YEARS

SECCP



MEDICAL
APPLICATIONS



DC-POWERED
APPLICATIONS



°CCD®
VARIABLE SPEED DRIVE



NATURAL
REFRIGERANTS

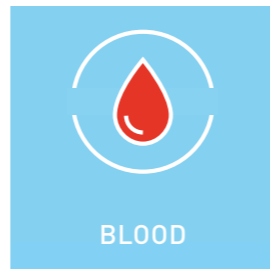


BIOMEDICAL COOLING EQUIPMENT

Biomedical companies, laboratories, medical storage centers, hospitals, and medical facilities store, process, and transport highly sensitive substances. This includes pharmaceuticals, vaccines, cells, genes, blood, etc. The reliability of their cooling equipment is essential to ensure the quality and usability of the stored assets. Refrigerated equipment is also required to maintain very constant temperatures. Even small deviations in temperature can affect the storage life and effectiveness of the medical substances.

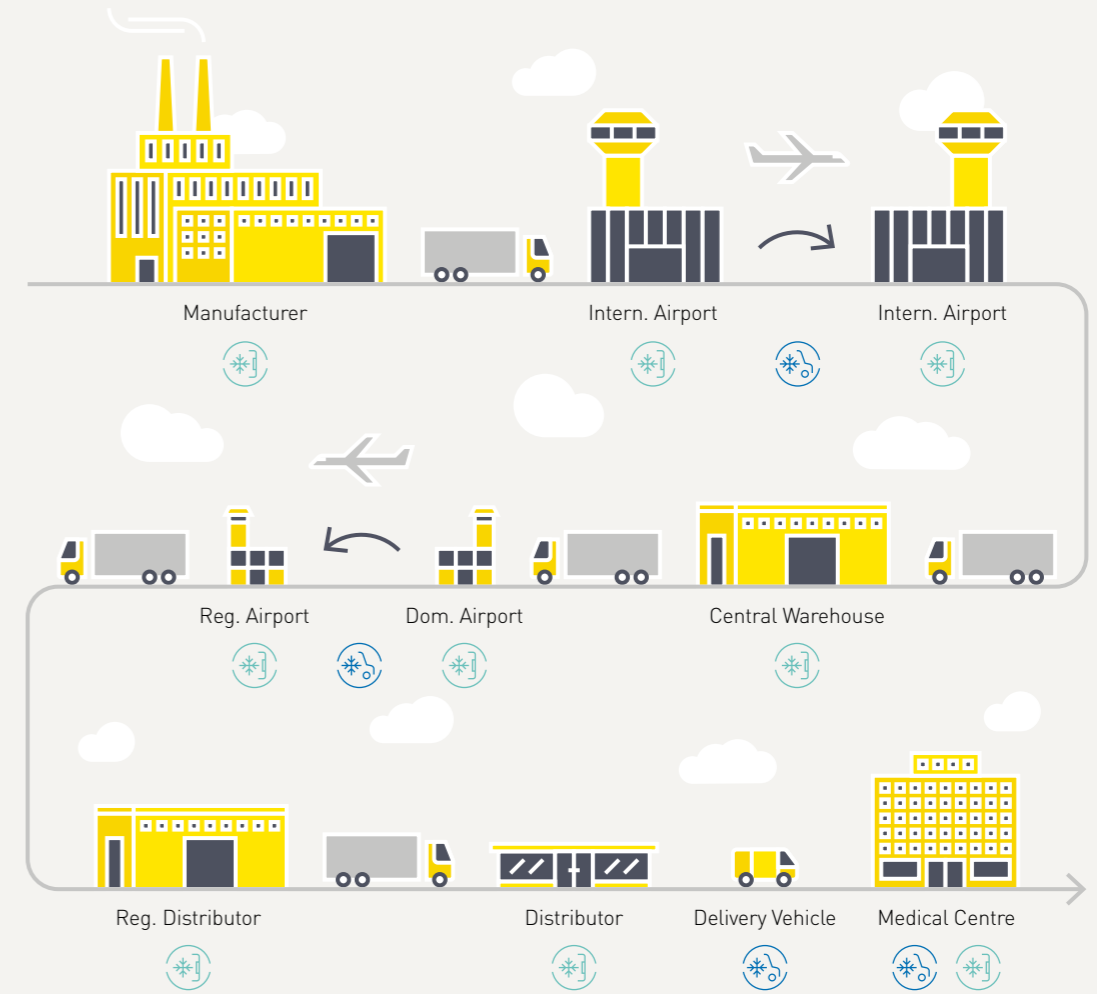
Our compressors and electronic controls provide the principal components required to precisely preserve highly valuable biomedical goods. These components are used in a broad range of applications and temperature levels inside the world-wide supply chain of biomedical processing, transport, and storage. Low energy consumption, in combination with Secop's commitment to natural refrigerants, provides a sustainable solution for the many different demands in temperature conditions and sizes of these medical appliances. The compressor families D-, N-, and S-Series perform on a superior level in these critical applications. This can be taken to an even higher level when combined with our CCD[®] variable speed drive controls.

The ability to adapt the cooling capacity brings other benefits, including protection when used in regions that contain unstable voltage supply.



VACCINE COLD CHAIN

MOBILE COOLING | STATIONARY COOLING



The medical and vaccine cold chain requires storage and transport at different temperature levels: +2°C to +8°C, -20°C down to -70°C. Stability is key to guarantee safe product delivery up to the last mile temperature.

Our compressor and control electronic solutions in different applications are officially certified by WHO (World Health Organization) to support global access to vaccines. With the SDD (Solar Direct Drive) solution, we are able to support the






distribution of vaccines in regions with a limited electricity grid, even in severe ambient conditions.

New highly effective mRNA-based vaccines for COVID-19, Ebola, and CGTs require an ultra low storage and transportation temperature for all phases of the cold chain. Our stationary and mobile solutions make us a reliable partner for leading companies supporting the development of a global ULT (ultra low temperature) supply chain.

SECOP PORTFOLIO FOR MEDICAL APPLICATIONS



COMPRESSOR SERIES

COMPRESSOR SERIES	MEDICAL REFRIGERATOR/FREEZER +2°C to +8°C / -20°C to -40°C						BIO MEDICAL FREEZER -40°C to -60°C						ULTRA LOW TEMPERATURE FREEZER -60°C to -80°C			
	MOBILE			STATIONARY			MOBILE			STATIONARY			MOBILE	STATIONARY		
	Capacity (Volume in l)						Capacity (Volume in l)						Capacity (Volume in l)			
	20→40	50→150	200→400	20→200	300→500	600→800	20→40	50→150	200→400	20→200	300→500	600→800	200→400	20→200	300→500	600→800
BD-P 	BD35F BD35K BD50F	BD50K BD80F BD80CN	BD100CN				BD35F BD35K BD50F	BD50K BD80F BD80CN	BD100CN				BD100CN			
T-Series D-Series DLV 				TL4CN TL5CN	DLE4.8CN	DLV4.0CN			TL4CN TL5CN	DLV4.0CN DLE4.8CN DLV5.7CN DLE5.7CN	DLE7.5CN		DLV4.0CN DLE6.5CN			
N-Series NLV 					NLE10CN	NLV12.6CN				NLE10CN NLV12.6CN			NLE10CN NLE12.6CN	NLV12.6CN		
S-Series SLVE 						SCE18CNLX					SCE21CNLX			SCE18CNX SCE21CNLX	SLVE18CN	
G-Series 																GS26CLX GS34CLX

Compressors indicated for the temperature range -20°C to -80°C are recommended models. For systems that work outside the approved envelope of these compressors, the specific working conditions in the application must be evaluated and the compressor use approved.

Secop is working on a new dedicated range of compressors approved beyond the standard envelope and conditions already guaranteed today, more information for the new range will be released shortly.

TECHNICAL DATA



VARIABLE SPEED COMPRESSORS

Compressor	Displacement [cm³]	Voltage/Frequency (Mains)	Refrigerant	Application	Cooling Capacity	
					(ASHRAE LBP)	(ASHRAE MBP)
BD35F	2	12-24 V DC, 110-115 V/50 Hz, 115-127 V/60 Hz, 220-240 V/50 Hz, 208-230 V/60 Hz	R134a	LBP/MBP/HBP	51	125
BD35K	3	12-24 V DC	R600a	LBP/MBP/HBP	49	108
BD50F	2.5	12-24 V DC, 110-115 V/50 Hz, 115-127 V/60 Hz, 220-240 V/50 Hz, 208-230 V/60 Hz	R134a	LBP/MBP/HBP	72	160
BD50K	3	12-24 V DC	R600a	LBP/MBP/HBP	57	131
BD80F	3	12-24 V DC	R134a	LBP	227	
BD80CN	2	12-24 V DC, 110-115 V/50 Hz, 115-127 V/60 Hz, 220-240 V/50 Hz, 208-230V/60 Hz	R290	LBP/MBP	89	182
BD100CN	2	12-24 V DC	R290	LBP/MBP	120	221
DLV4.0CN	4	110-115 V/50 Hz, 115-127 V/60 Hz, 220-240 V/50 Hz, 208-230 V/60 Hz	R290	LBP/MBP	280	537
DLV5.7CN	5.7	110-115 V/50 Hz, 115-127 V/60 Hz, 220-240 V/50 Hz, 208-230 V/60 Hz	R290	LBP/MBP	447	795
NLV12.6CN	12.55	110-115 V/50 Hz, 115-127 V/60 Hz, 220-240 V/50 Hz, 208-230 V/60 Hz	R290	LBP/MBP	938	1675
SLVE18CN	17.69	220-240 V/50 Hz, 208-230 V/60 Hz	R290	LBP/MBP	1192	2146

FIXED SPEED COMPRESSORS

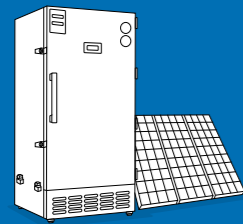
Compressor	Displacement [cm³]	Voltage/Frequency (Mains)	Refrigerant	Application	Cooling Capacity	
					(ASHRAE LBP)	(ASHRAE MBP)
TL4CN	3.86	220-240 V/50 Hz	R290	LBP/MBP	146	265
TL5CN	5.08	220-240 V/50 Hz	R290	LBP/MBP	205	367
DLE4.8CN	4.8	115-127 V/60 Hz, 220-240 V/50 Hz	R290	LBP/MBP	243	420
DLE5.7CN	5.7	115-127 V/60 Hz, 220-240 V/50 Hz	R290	LBP/MBP	301	512
DLE6.5CN	6.5	115-127 V/60 Hz, 220-240 V/50 Hz	R290	LBP/MBP	318	554
DLE7.5CN	7.5	220-240 V/50 Hz	R290	LBP/MBP	366	643
NLE10CN	10.09	115-127 V/60 Hz, 220-240 V/50 Hz	R290	LBP/MBP	491	881
NLE12.6CNL	12.55	220-240 V/50 Hz	R290	LBP	614	
SCE18CNLX	17.69	115-127 V/60 Hz, 220-240 V/50 Hz, 208-230 V/60 Hz	R290	LBP	793	
SCE18CNX	17.69	220-240 V/50 Hz	R290	LBP/MBP	809	1525
SCE21CNLX	20.95	115-127 V/60 Hz, 220-240 V/50 Hz, 208-230 V/60 Hz	R290	LBP/MBP	956	
GS26CLX	26.3	220-240 V/50 Hz, 208-230 V/60 Hz	R404A	LBP	1323	
GS34CLX	33.8	220-240 V/50 Hz	R404A	LBP	1917	



OVERVIEW OF MAIN MEDICAL EQUIPMENT

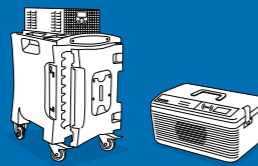


MOBILE COOLING



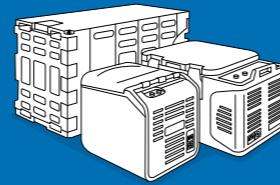
Solar Powered Medical Fridges
-40°C to -20°C/+2°C to +8°C

BD35F	BD50K
BD50F	BD80CN
BD35K	



Medical Cooling Transport Boxes
-40°C to -20°C/+2°C to +8°C

BD35F	BD50K
BD50F	BD80CN
BD35K	BD100CN



Medical Cooling Container
-40°C to -20°C/+2°C to +8°C

BD100CN

In DC (direct current) applications, our BD-Series compressors provide world-wide safe transport of sensitive biomedical goods. Our cutting-edge controls enable cooling solutions to be directly powered by solar panels (SDD, solar direct drive) in remote areas without stable electricity grids. BD compressors are also used universally in AC/DC mode for both transport and storage. Secop's active BD-compressor cooling provides significant benefits including the avoidance of wasted vaccines while also not generating carbon dioxide emissions that occur with passive dry ice cooling solutions.

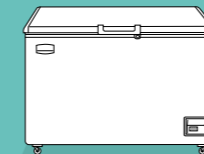
Secop developed innovative technologies to support distribution down to -80°C, exploiting the advantages of an active compressor box versus a passive dry ice solution.

Secop is a pioneer in battery-driven active solutions for mobile applications which offers various benefits compared to passive dry ice solutions:

- Precise cooling control of target temperature
- Perfect for vaccine transportation with no risk of wasting precious vaccines
- Reliable system with low TCO life cycle
- Robust design suitable for remote areas with adverse ambient conditions and limited availability of dry ice
- Variable speed solution optimized for energy consumption
- Green solution with low GWP refrigeration able to save huge quantities of CO₂ waste with passive options

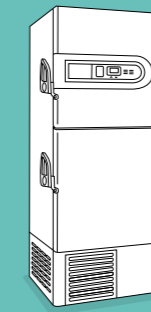


STATIONARY COOLING



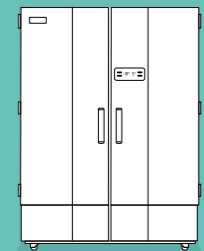
Biomedical Freezers
-60°C

DLV4.0CN		
DLE6.5CN		
NLE10CN	NLV12.6CN	
NLE12.6CNL		
	SCE18CNLX	SLVE18CN
	SCE21CNLX	



ULT Freezers
-86°C

DLV4.0CN		
DLE6.5CN		
NLE10CN	NLV12.6CN	
NLE12.6CNL		
	SCE18CNX	SLVE18CN
	SCE21CNLX	
		GS26CLX
		GS34CLX



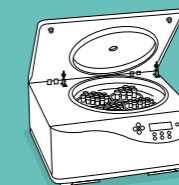
Biomedical Freezers
-40°C/-30°C

TL4CN	DVL4.0CN	
TL5CN	DLE4.8CB	DLE7.5CN
	DLV5.7CN	
	DLE5.7CN	
	NLE10CN	NLV12.6CN
		SCE18CNL



Medical Fridges
+2 °C to +8 °C

TL4CN	DLE4.8CN	
TL5CN		
	NLE10CN	NLV12.6CN
		SCE18CNLX



Centrifuge Coolers/Freezers
-10 °C to +40 °C

DLE4.8CN	
NLE10CN	NLV12.6CN

In AC (alternating current) applications, our T-, D-, N-, S-, G-Series compressors, for stationary biomedical appliances focused on natural refrigerants, enable cooling circuits in ULT freezers to reach temperatures as low as -86°C. The standard temperature cooling levels of +2°C to +8°C are used in centrifugal coolers to process and preserve all types of vaccines, blood, plasma, and other temperature-sensitive biomedical goods.

SECOP GROUP: AROUND THE WORLD

10
YEARS

SECOP

12

international
partner for
advanced
developments

33

laboratories
located in Austria,
Germany, Slovakia,
China, US, and
Turkey

180

R&D engineers
and technicians

440

patents globally

50+

countries with
customer support







1,350

employees



Secop is the expert for advanced hermetic compressor technologies and cooling solutions in commercial refrigeration. We develop high performance stationary and mobile cooling solutions for leading international commercial refrigeration manufacturers and are the first choice when it comes to leading hermetic compressors and electronic controls for refrigeration solutions for light commercial and DC-powered applications.

Secop was formerly known as Danfoss Compressors and is one of the founding fathers of modern compressor technology with years of experience that goes back to the beginning of the 1950s.

- | | |
|---|---|
|  Flensburg: Sales and R&D |  Zlaté Moravce: R&D, Logistics and Manufacturing |
|  Torino: Sales |  Tianjin: Sales, R&D, Logistics and Manufacturing |
|  Gleisdorf: R&D |  Atlanta: Sales, R&D and Logistics |

6,000,000
compressors produced annually



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