

# Liquid Nitrogen Tank Solution

By Antech Scientific

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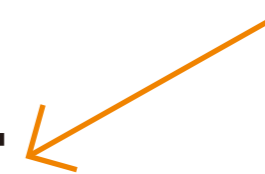
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**ANTECH**

*Quality Instruments, Lifetime Care*

# CryoMatrix Series Introduction

CryoMatrix series high-efficiency vapor phase liquid nitrogen storage system provides the most ideal storage conditions for biological samples. The whole series realize  $-190^{\circ}\text{C}$  vapor phase storage. Supported by LN2 automatic filling system and temperature & LN2 level monitoring system, CryoMatrix freezers provide all-round protection to precious sample, assisting life science research and cell therapy applications. Based on the actual needs of users, Antech has innovatively optimized the performance, structure and control system of the vapor-phase cryogenic freezer to meet the user's highest standard of large-capacity vapor-phase cryogenic storage requirements.



## Why CryoMatrix?

### High density storage

Compared with similar products, CryoMatrix freezers have a small footprint and can store a large number of samples. It truly realizes high-density storage, which not only saves space, but also reduces the storage cost per sample. Both horizontal and vertical rack systems available.

### Excellent temperature uniformity

Vacuum insulated stainless steel tank structure, high vacuum coverage, to ensure excellent thermal insulation performance. When samples are stored at vapor phase, top level sample temperature is lower than  $-180^{\circ}\text{C}$ .

### Stable opening temperature

The innovative lid and vacuum insulated neck design reduce LN2 evaporation. Even when the lid is opened for up to 48 hours, the inner temperature can remain stable.

### Advanced temperature monitoring system

The monitoring system based on microprocessor and platinum temperature probe can display the maximum and minimum temperature inside the tank in real time with an accuracy of  $\pm 1^{\circ}\text{C}$ . The user can set the alarm point by himself, with the option of alarm mute.

### Automatic LN2 filling & level monitoring system

The liquid level monitoring system based on high-precision differential pressure sensor displays the liquid level in real time to ensure the safety and reliability of the automatic filling of liquid nitrogen. The color touch screen can display: top temperature, bottom temperature, liquid level height, daily liquid nitrogen consumption and other parameters.

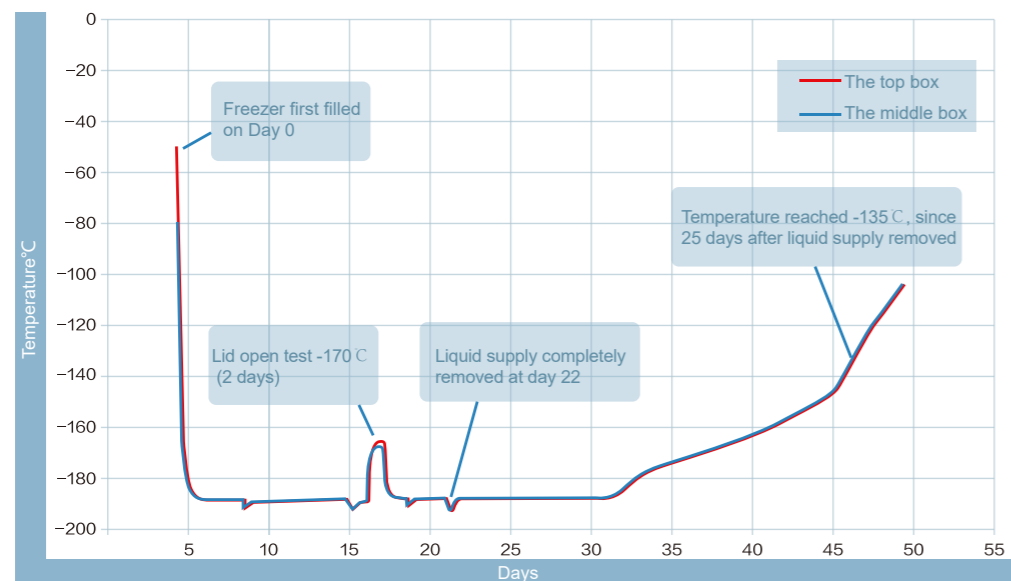
### Hot gas bypass

The hot gas bypass design can remove the high temperature nitrogen (gas) in the pipeline before the liquid nitrogen is injected, so as to ensure that only ultra-low temperature liquid nitrogen is injected into freezer, which avoids the temperature fluctuation in the freezer & thermo shock to samples during filling process, protecting the safety of samples.

# Key Features

- 1 Multiple capacity freezers, from 370L to 1800L, 2.0ml vials storage capacity from 15,600 to 94,500.
- 2 Excellent temperature uniformity and stability, enabling samples to be stored at -180°C vapor phase environment.
- 3 Excellent vacuum performance and structural design ensure minimum liquid nitrogen consumption and lower storage costs.
- 4 Advanced temperature, liquid level monitoring and alarm system, enable remote monitoring.
- 5 Automatic supply of liquid nitrogen, safe and labor-saving.
- 6 The liquid nitrogen supply system is controlled by multiple solenoid valves, which can effectively prevent the overflow of liquid nitrogen and sample contamination caused by high LN2 level.
- 7 Manual filling available under special circumstances.
- 8 Compatible with vapor phase and liquid phase storage modes, users can choose according to their needs.
- 9 The optimized mechanism design realizes high-density storage to save space.

# Temperature Test Graph

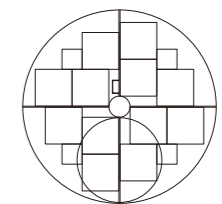


# CryoMonitor 3000 Intelligent control system

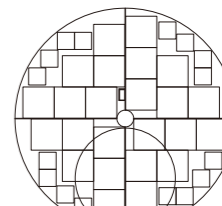
- 1 HMI human-machine interactive touch screen, display temperature, liquid level, temperature curve and alarm information.
- 2 Important events such as temperature, alarm, liquid nitrogen fill, can be checked, and can also download through USB disk.
- 3 Various alarms, and the alarm information can be stored and downloaded through the USB disk.
- 4 Operating data, such as temperature and liquid level, can be stored for up to 10 years.
- 5 Optimized structure design to achieve the best sample storage density and save space.



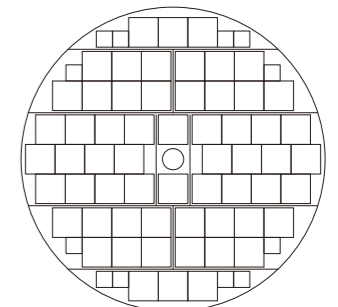
# RackLayouts



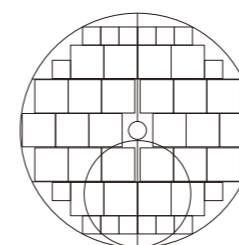
Cryomatrix 15k/19K



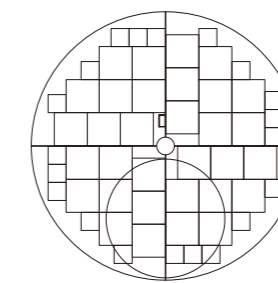
Cryomatrix 28k/39K



CryoMatrix 94K



CryoMatrix 42k



CryoMatrix 55K

# Humanized Design



- 1 Automatic defogging function, make it easier to find samples and shorten lid opening time.
- 2 After 48 hours of opening the lid, the temperature in the tank remains below -150 °C (according to the factory test standard).
- 3 The remote alarm interface can be connected to the central alarm system.
- 4 Standard automatic charging backup battery to ensure the normal operation of the system for a period of time after power failure.

# Racks for CryoMatrix Freezers



Slim rack/ Vertical rack



Square rack/ Horizontal rack

Slim rack/ Vertical rack	Description	Vial	Dimension, W×D×H(mm)
VR-4-2	4 layer, for 100/81-well boxes	1.2/2ml	138*58*575
VR-5-2	5 layer, for 100/81-well boxes	1.2/2ml	138*58*710
VR-6-2	6 layer, for 100/81-well boxes	1.2/2ml	138*58*845

Square rack/ Horizontal rack	Description	Vial	Dimension, W×D×H(mm)
HR-12-2	12 layer, for 100/81-well boxes	1.2/2ml	139*139*694
HR-12-2M	12 layer, for 25-well boxes	1.2/2ml	81*81*694
HR-13-2	13 layer, for 100/81-well boxes	1.2/2ml	139*139*751
HR-13-2M	13 layer, for 25-well boxes	1.2/2ml	81*81*751
HR-14-2	14 layer, for 100/81-well boxes	1.2/2ml	139*139*808
HR-14-2M	14 layer, for 25-well boxes	1.2/2ml	81*81*808
HR-15-2	15 layer, for 100/81-well boxes	1.2/2ml	139*139*865
HR-15-2M	15 layer, for 25-well boxes	1.2/2ml	81*81*865

# Technical Specification

Model CryoMatrix 15K CryoMatrix 19K CryoMatrix 28K CryoMatrix 39K CryoMatrix 42K CryoMatrix 55K CryoMatrix 94K

Vials Capacity, Square Rack							
1.2 & 2 ml vials (internally threaded)	15,600	19,500	28,000	39,200	42,000	55,500	94,500
Qty of rack (100-cell box)	12	12	24	24	26	32	60
Qty of rack (25-cell box)	4	4	16	16	16	20	12
Number of shelves per rack	12	15	10	14	14	15	15

LN2 Capacity							
LN2 capacity, L	370	460	550	800	800	1000	1800
LN2 capacity at vapor platform, L	55	55	133	133	133	200	295

Dimensions & Weight							
Neck opening, mm	320	320	445	445	445	500	635
Usable internal height, mm	680	875	600	780	780	870	870
Inner diameter, mm	730	730	980	980	980	1130	1390
Overall Height, mm	1400	1450	1505	1605	1605	1680	1685
Liftover height	920	1118	1052	1052	1052	1118	1118
Door width requirement	815	815	1090	1090	1090	1300	1565
Weight empty, kg	258	283	310	355	358	580	805
Weight full, kg	559	657	418	1006	1009	743	2270

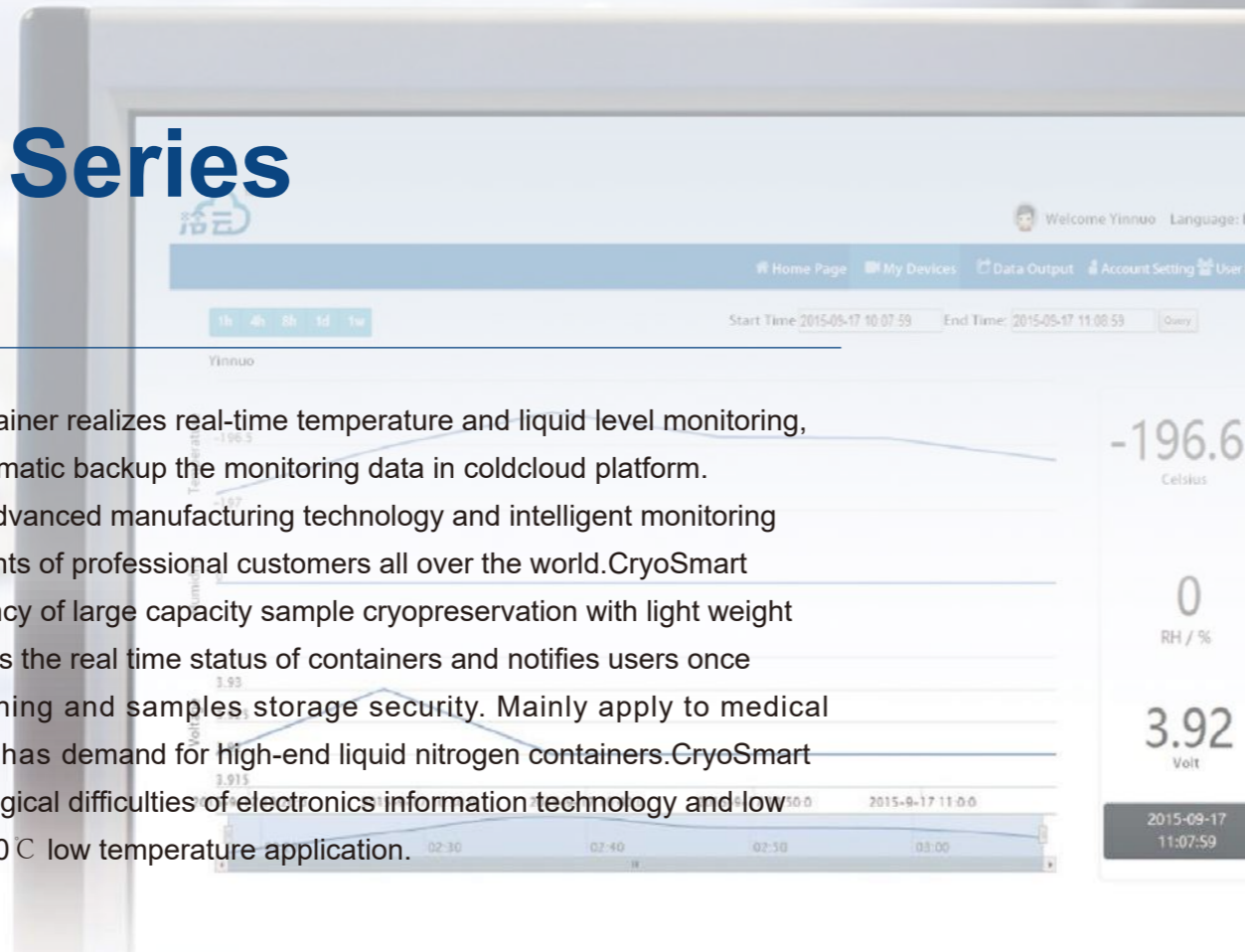
Functions							
Controller	Touch screen	Touch screen	Touch screen	Touch screen	Touch screen	Touch screen	Touch screen
Temperature /liquid level diagram	Standard	Standard	Standard	Standard	Standard	Standard	Standard
USB port/ data download	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Password access	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Automatic filling	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Backup battery	Standard	Standard	Standard	Standard	Standard	Standard	Standard

Blood bag qty / rack layer/ rack qty							
791 OS/U (25ml)	1224/6/204	1836/9/204	2490/6/415	3320/8/415	3184/8/398	4160/8/520	6432/8/804
4R9951 (50ml)	768/6/128	1024/8/128	1488/6/248	1736/7/248	1687/7/241	2528/8/316	3920/8/490
4R9953 (250ml)	416/4/104	520/5/104	812/4/203	812/4/203	768/4/192	1320/5/264	2010/5/402
4R9955 (500ml)	304/4/76	380/5/76	608/4/152	608/4/152	576/4/144	1000/5/200	1550/5/310
DF200 (200ml)	236/4/59	295/5/59	496/4/124	496/4/124	488/4/122	780/5/156	1230/5/246
DF200 (700ml)	/	/	/	256/4/64	264/4/66	440/5/88	680/5/136

# CryoSmart Series

## Introduction

CryoSmart Series liquid nitrogen container realizes real-time temperature and liquid level monitoring, remote monitoring, alarming and automatic backup the monitoring data in coldcloud platform. CryoSmart Series combine with the advanced manufacturing technology and intelligent monitoring technology to meet unique requirements of professional customers all over the world. CryoSmart Series containers provide high efficiency of large capacity sample cryopreservation with light weight and small space occupying. It monitors the real time status of containers and notifies users once any issue occur ensuring stable running and samples storage security. Mainly apply to medical field and samples bank users who has demand for high-end liquid nitrogen containers. CryoSmart Series completely solved the technological difficulties of electronics information technology and low power consumption technology in  $-190^{\circ}\text{C}$  low temperature application.



## Key Features

- 1 Intelligent temperature real time monitoring
- 2 Intelligent liquid level real time monitoring
- 3 Intelligent remote alarm
- 4 Running data intelligent backup
- 5 Low power consumption
- 6 Replaceable battery
- 7 Ultra less liquid nitrogen consumption
- 8 Innovative overall appearance
- 9 Dual-lock construction
- 10 5 year vacuum warranty

## Products Details

### Steady and Plump Appearance

Professional industrial design, strong elements feature, plump line reflect the stable of device while ensuring the tank structure strength. Reasonable stiffener layouts make the tank more robust and straight.

1. Strong art element features
2. Reasonable stiffener layouts





### Professional Functional Design

Unique temperature/liquid level monitor and real-time alarm functions, real-time running data backup ensure more stable. Combining professional intelligent function tank creates perfect user experience.

- 3. Integrated OLED Intelligent connected functional module
- 4. Equipped with Intelligent connected locking lid

### Ergonomic Experience

Meet the operational needs of professional users and completely eliminate the inconvenience in use. Integrate ergonomics into the design to create overall first-class ergonomic experience.

- 5. Comfortable operational experience

### Perfect Details Design

Extreme demanding design requirement, adopting art processes and standards to carve products, every detail is crafted. Touching user hearts is our ultimate goal.

- 6. Art texture outer lid processing
- 7. Dual-lock stainless steel lock

## Products Details

Roller base

YSC-30-4W

YSC-175-4W



## Technical Specification

Model	CryoSmart 2400	CryoSmart 3000	CryoSmart 3600	CryoSmart 4800	CryoSmart 6000
<b>Maximum storage capacity</b>					
Square Canisters (EA)	6	6	6	6	6
1.2&2ml Vials (100/box)	2400	3000	3600	4800	6000
Number of Boxes per Rack (EA)	4	5	6	8	10
5ml Vials (36/box)	648	864	1080	1296	1728
Number of Boxes per Canister (5ML*EA)	3	4	5	6	8
25ml blood bag	60	90	120	120	150
Number of Racks	30	30	30	30	30
No. of Blood bags Per Rack	2	2	3	4	5
50ml blood bag	60	60	90	120	150
Number of Racks	30	30	30	30	30
No. of Blood bags Per Rack	2	2	3	4	5
<b>Performance</b>					
Liquid Nitrogen Capacity (L)	65	95	115	140	175
Static Evaporation (L/day)*	0.79	0.81	0.83	0.87	0.87
Capacity (L)	55	85	105	130	165
Working Duration (whole day)**	44	66	80	94	126
<b>Unit Dimensions</b>					
Neck Diameter (mm)	216	216	216	216	216
Overall Height (mm)	710	726	796	910	1026
External Diameter (mm)	681	681	681	681	681
Weight Empty (kg)	27.5	34.5	38.5	42.5	55
Weight Liquid Full* (kg)	80.8	112.4	132.8	157.3	198.5

★ Static evaporation rate and static holding time are nominal. Actual rate and holding time will be affected by the nature of container use, atmospheric conditions, and manufacturing tolerances.

★★ Normal Working Duration is an arbitrary reference, to estimate container performance under normal operating conditions. Actual working time may vary due to current atmospheric conditions, container history, manufacturing tolerances and individual patterns of use. Divide static holding days by 1.6, and you get empirical value.

## Smart Cap



# CryoMaster Series

## Introduction

CryoMaster Series liquid nitrogen containers combine with the advantages of low liquid nitrogen consumption and medium range storage capacity to meet unique requirements of professional customers all over the world. CryoMaster Series containers provide high efficiency of large capacity sample cryopreservation with light weight and small space occupying. The racks and lockable lids are standard to assure the safety of samples. Mainly apply to medical field/bio-bank/laboratory field.



## Key Features

- 1 Racks and boxes included
- 2 Dual-lock construction
- 3 Durable aluminum construction
- 4 Larger storage capacity, less liquid nitrogen consumption
- 5 Compatible with main brands standard storage boxes
- 6 Liquid level monitoring system (optional)
- 7 Mobile roller bases (optional)
- 8 5 year vacuum warranty





## Real-time Temperature Monitor

Real-time temperature monitor continuously monitors the temperature inside the container. The real-time temperature monitor matches all CryoMaster models, optimal choice for long time monitoring of samples storage. It realizes reminding users to add liquid nitrogen timely too. There are two models, CryMonitor 1000 and Smart Cap.

Crymonitor 1000 real-time monitor

This system with real-time temperature display:

1. High/low temperature alarm
2. Sensor fault audible and visual alarm



## Smart Cap

The Smart Cap is a liquid nitrogen level sensor with a highly integrated IoT module that monitors the liquid nitrogen tank level (0~650mm) and the tank mouth temperature (-200°C~150°C).

Ultra-low power consumption: The built-in power supply works independently for more than two years.



## Ultra Low-power Consumption Liquid Level Monitoring System



Biological samples liquid nitrogen storage Intelligent data collection module Smart Sensor (wireless sensor)

Intelligent data transfer module Black Box -- (1+n Mode)

Data storage platform Cold Cloud -- (More safety)

Monitoring Temperature: +150°C~ -200°C  
Usage: Sensor put into cabinet, device attached outside cabinet by magnetism. No external power supply.

# Technical Specification

Model	CryoMaster 600	CryoMaster 750	CryoMaster 900
<b>Maximum Storage Capacity</b>			
1.2 & 2ml Vials (25/box)	600	750	900
Number of Racks	6	6	6
Boxes Per Rack	4	5	6
25ml blood bag	25ml blood bag	36	36
	Number of Racks	18	18
	No. of Blood bags Per Rack	2	2
<b>Performance</b>			
LN2 Capacity (L)	30	35	50
Static Evaporation Rate (L/day)	0.33	0.36	0.36
Static holdover time (day)	90	97	115
<b>Unit Dimensions</b>			
Neck Opening (mm)	125	125	127
Overall Height (mm)	705	748	754
Outer Diameter (mm)	461	461	416
Weight Empty (kg)	12.9	14.2	15.2
Weight Full (KG)	37.5	42.9	53.74

Model	CryoMaster 2400	CryoMaster 3000	CryoMaster 3600	CryoMaster 4800	CryoMaster 6000	
<b>Maximum Storage Capacity</b>						
1.2 & 2ml Vials	1.2 & 2ml Vials (100/box)	2400	3000	3600	4800	6000
	Number of Racks	6	6	6	6	6
	Boxes Per Rack	4	5	6	8	10
25ml blood bag	25ml blood bag	60	90	120	120	150
	Number of Racks	30	30	30	30	30
	No. of Blood bags Per Rack	2	2	3	4	5
50ml blood bag	50ml blood bag	60	60	90	120	150
	Number of Racks	30	30	30	30	30
	No. of Blood bags Per Rack	2	2	3	4	5
<b>Performance</b>						
LN2 Capacity (L)	65	95	115	140	175	
Static Evaporation Rate (L/day)	0.78	0.97	0.94	0.96	0.95	
Static holdover time (day)	83	98	122	146	184	
<b>Unit Dimensions</b>						
Neck Opening (mm)	216	216	216	216	216	
Overall Height (mm)	765	790	870	960	1060	
Outer Diameter (mm)	681	681	681	681	681	
Weight Empty (KG)	38.3	41.3	42.3	48.9	53.8	
Weight Full (KG)	91.6	119.2	136.6	163.7	197.3	

★ Static evaporation rate and static holding time are nominal. Actual rate and holding time will be affected by the condition of container usage, atmospheric conditions, and manufacturing tolerances.

★★ Normal Working Duration is an arbitrary reference, applying to estimate container performance under normal operating conditions. Actual working time may vary due to atmospheric conditions, container usage history, manufacturing tolerances and individual patterns of usage. Divide static holding days by 1.6, and you get empirical value.

# CryoMajor Series Introduction

CryoMajor Series liquid nitrogen containers are economical small and medium size liquid nitrogen containers for long term static state storage. CryoMajor Series include two types, large capacity and long shelf life. CryoMajor Series are made of high strength and light-weight aluminum alloy. There is multilayer superior performance thermal insulation inside.

Various accessories are optional. Mainly apply to animal husbandry and laboratories.

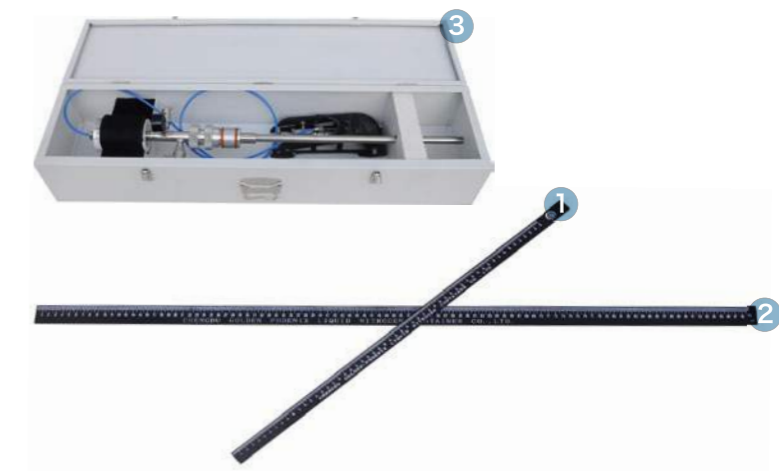


## Key Features

- 1 High strength and light-weight aluminum construction
- 2 Ultra-low evaporation loss
- 3 Numbered index location points for canisters(optional)
- 4 Mobile roller bases (optional)
- 5 Lockable lid
- 6 Straw storage
- 7 LN<sub>2</sub> pump (optional)
- 8 5 year vacuum warranty

## Important Accessories

- 1. 600mm Liquid Level Ruler
- 2. 1000mm Liquid Level Ruler
- 3. LN<sub>2</sub> Dispenser



# Technical Specification

Model	CryoMajor 2/35	CryoMajor 3/50	CryoMajor 6/50	CryoMajor 10/50	CryoMajor15/50
<b>Maximum Storage Capacity</b>					
Number of Canisters	3	6	6	6	6
Number of Straws (0.5ml)	165	792	792	792	792
Number of Straws (0.25ml)	330	1788	1788	1788	1788
<b>Performance</b>					
Liquid N2 Capacity(L)	2	3	6	10	15
Static Evaporation(L/D)	0.08	0.12	0.12	0.12	0.11
Static Holdover time(Day)	24	26	52	86	134
<b>Unit Dimensions</b>					
Neck Diameter (mm)	35	50	50	50	50
Overall Height(mm)	428	435	482	552	591
External Diameter (mm)	204	223	300	300	394
Canister Diameter(mm)	25	38	38	38	38
Canister Height (mm)	120	120	120	120	120
Weight Empty (KG)	2.6	3.1	4.8	5.9	8.5
Weight Full (KG)	4.2	5.6	9.7	14.1	18.2

Model	CryoMajor13/50L	CryoMajor 20/50 CryoMajor 20/50L	CryoMajor 20B/50	CryoMajor 25/50 CryoMajor 25/50L	CryoMajor 30/50 CryoMajor 30/50L
<b>Maximum Storage Capacity</b>					
No. of Canister	6	6	6	6	6
No. of Straws (1-level Canister)	0.5ml	—	792	792	792
	0.25ml	—	1788	1788	1788
No. of Straws (2-level Canister)	0.5ml	1284	1284	1284	1284
	0.25ml	2832	2832	2832	2832
<b>Performance</b>					
Liquid Nitrogen Capacity (L)	13	20	20	25	31.5
Static Evaporation (L/day)	0.12	0.12	0.20	0.14	0.12
Static Holdover time(Day)	108	166	101	180	254
<b>Unit Dimensions</b>					
Neck Opening (mm)	50	50	50	50	50
Overall Height (mm)	623	672	672	700	705
External Diameter (mm)	310	394	394	394	462
Canister External Diameter (mm)	38	38	38	38	38
Canister Height (mm)	276	120/276	120/276	120/276	120/276
Weight Empty (kg)	6.3	9.5	9.5	10.7	12.9
Weight Liquid Full (kg)	16.7	22.3	22.3	30.7	38.1

# Technical Specification

Model	CryoMajor 30B/50	CryoMajor 30/80L	CryoMajor 30/125	CryoMajor 35/50 CryoMajor 35/50L	CryoMajor 35B/80	CryoMajor 35/80L
<b>Maximum Storage Capacity</b>						
No. of Canister	6	6	6	6	6	6
No. of Straws (1-level Canister)	0.5ml	792	—	—	792	2244
	0.25ml	1788	—	—	1788	5022
No. of Straws (2-level Canister)	0.5ml	1284	3624	9048	1284	3624
	0.25ml	2832	8460	19944	2832	8460
<b>Performance</b>						
Liquid Nitrogen Capacity (L)	31.5	31.5	31.5	35.5	35.5	35.5
Static Evaporation (L/day)	0.2	0.21	0.35	0.12	0.30	0.12
Static Holdover time(Day)	159	147	90	286	119	286
<b>Unit Dimensions</b>						
Neck Opening (mm)	50	80	125	50	80	50
Overall Height (mm)	705	710	705	750	753	750
External Diameter (mm)	462	462	462	462	462	462
Canister External Diameter (mm)	38	63	97	38	63	38
Canister Height (mm)	120/276	120/276	120/276	120/276	120/276	120/276
Weight Empty (kg)	12.9	13.1	12.9	14.2	14.5	14.2
Weight Liquid Full (kg)	38.1	38.3	38.1	42.2	42.5	42.2

Model	CryoMajor35/125 CryoMajor35/125L	CryoMajor47/127L	CryoMajor47/127T CryoMajor47/127TL	CryoMajor50B/50 CryoMajor50B/50L	CryoMajor50B/125L
<b>Maximum Storage Capacity</b>					
No. of Canister	6	6	10	6	6
No. of Straws (1-level Canister)	0.5ml	5124	—	8540	792
	0.25ml	11640	—	19920	1788
No. of Straws (2-level Canister)	0.5ml	9048	9048	15080	1284
	0.25ml	20760	19944	33240	2832
<b>Performance</b>					
Liquid Nitrogen Capacity (L)	35.5	47	47	50	50
Static Evaporation (L/day)	0.41	0.36	0.36	0.23	0.45
Static Holdover time(Day)	86	130	130	213	110
<b>Unit Dimensions</b>					
Neck Opening (mm)	125	125	127	50	125
Overall Height (mm)	748	718	718	811	818
External Diameter (mm)	462	508	508	462	462
Canister External Diameter (mm)	97	104	72	63	97
Canister Height (mm)	120/276	120/276	120/276	120/276	120/276
Weight Empty (kg)	14.6	15	15	15.2	15.4
Weight Liquid Full(kg)	43.0	53.54	55.6	55.4	56.2

Remark:  
 1. Model number end without "L" are supplied with 110mm or 120mm length canister. One layer of straws can be loaded.  
 2. Model number end with "L" are supplied with 260mm or 276mm length canister. Two layers of straws can be loaded.  
 3. For example, CryoMajor30/50 is supplied with canister height 120mm, while CryoMajor 30/50L is supplied with canister height 276mm.

# New Products and Canes



(CryoMajor 35/125T)

CryoMajor Series will be also used to store 0.5ML-5ML vials with cane. The storage quantity shown in the table below:

# Technical Specification

Canister Model		Length 120mm, Diameter 38mm(50 neck opening)				Length 276mm, Diameter 38(50 neck opening)			
Vials Model	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	
0.5ml	5	3	15	90	5	6	30	180	
1.5ml	5	3	15	90	5	6	30	180	
2ml	5	3	15	90	5	6	30	180	
3ml	5	3	15	90	5	6	30	180	
5ml	5	1	5	30	5	3	5	90	

Canister Model		Length 120mm, Diameter 63mm(80 neck opening)				Length 276mm, Diameter 63(80 neck opening)			
Vials Model	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	
0.5ml	16	3	48	288	16	6	96	576	
1.5ml	16	3	48	288	16	6	96	576	
2ml	16	3	48	288	16	6	96	576	
3ml	16	3	48	288	16	6	96	576	
5ml	16	1	16	96	16	3	48	288	

Canister Model		Length 120mm, Diameter 72mm(127 neck opening)				Length 276mm, Diameter 72(127 neck opening)			
Vials Model	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	
0.5ml	21	3	63	630	21	6	126	1260	
1.5ml	21	3	63	630	21	6	126	1260	
2ml	21	3	63	630	21	6	126	1260	
3ml	21	3	63	630	21	6	126	1260	
5ml	21	1	21	210	21	3	63	630	

Canister Model		Length 120mm, Diameter 97mm(125 neck opening)				Length 276mm, Diameter 97(125 neck opening)			
Vials Model	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	
0.5ml	40	3	120	720	40	6	240	1440	
1.5ml	40	3	120	720	40	6	240	1440	
2ml	40	3	120	720	40	6	240	1440	
3ml	40	3	120	720	40	6	240	1440	
5ml	40	1	40	240	40	3	120	720	

Canister Model		Length 120mm, Diameter 104mm(127 neck opening)				Length 276mm, Diameter 104(127 neck opening)			
Vials Model	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	
0.5ml	---	---	---	---	---	---	---	---	
1.5ml	46	3	138	828	46	6	276	1656	
2ml	46	3	138	828	46	6	276	1656	
3ml	46	3	138	828	46	6	276	1656	
5ml	46	1	46	276	46	3	138	828	

# CryoTrans Series

## Introduction

CryoTrans Series is designed for storage and short-distance transportation of small amount liquid nitrogen. It is equipped with rubber protection rings and prefixed bottom pad for safety.

Stainless steel roller base is optional for convenient transportation. CryoTrans series is widely used in animal husbandry and laboratories.



## Key Features

- 1 Strong, lightweight aluminum construction
- 2 Low liquid nitrogen evaporation
- 3 Unique liquid nitrogen transportation design
- 4 CE Certificate
- 5 5-year vacuum warranty

## Important Accessories

1. Liquid nitrogen level ruler
2. Liquid Nitrogen Dispenser
3. Roller base



## Technical Specification

Model	CryoTrans3	CryoTrans6	CryoTrans10	CryoTrans20	CryoTrans30	CryoTrans35	CryoTrans 35B/80	CryoTrans 35B/125	CryoTrans50	CryoTrans 50B/125
<b>Performance</b>										
Capacity (L)	3	6	10	20	30	35	35	35	50	50
Neck Diameter (mm)	50	50	50	50	50	50	80	50	50	125
Static Evaporation Rate (L/day)	0.12	0.12	0.12	0.20	0.20	0.20	0.30	0.41	0.24	0.45
<b>Unit Dimensions</b>										
Overall Height (mm)	435	482	552	672	706	749	753	748	810	818
External Diameter (mm)	223	300	300	394	462	462	462	462	462	462
Weight Empty (KG)	3.1	4.8	6.1	9.5	12.9	14.2	14.5	14.6	17.2	17.3
Weight Full (KG)	5.56	9.72	14.1	25.9	37.5	42.9	43.2	43.3	56.4	56.5

# CryoCarrier Series

## Introduction

CryoCarrier Series is the dry shipper containers. It is designed for biology, livestock breeding, research and medical fields. CryoCarrier Series enables the biological samples, straws, Cryo-vials and blood bags to transport under  $-150^{\circ}\text{C}$  environment. There is liquid nitrogen absorbent materials placed in the inner tank, avoids the risk of outflow of liquid nitrogen. The CryoCarrier dry shipper liquid containers meet the IATA standard and protect your valuable samples in safe condition for both customers and shipper during transportation.



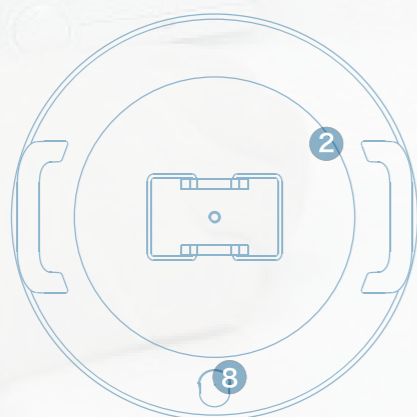
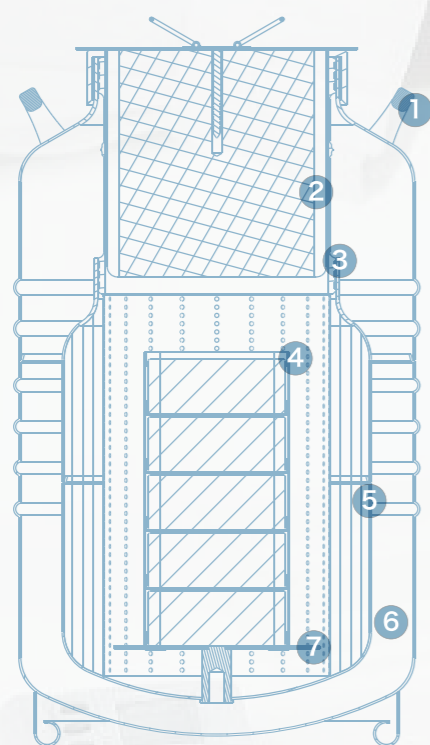
## Key Features

- 1 Vapor phase cryogenic storage
- 2 Robust and durable aluminum construction
- 3 Lockable lids
- 4 No spillage of liquid nitrogen
- 5 Available for biological samples straws, cryovials and blood bags
- 6 3 years vacuum warranty



# Advantages

- 1 Reliable absorption material, rapid absorption of liquid nitrogen
- 2 Meet the standards of IATA (The international Transport Association)
- 3 Excellent construction and superior vacuum performance to ensures the maximum storage time
- 4 Unique stainless steel screen construction ensure samples storage space clean
- 5 Liquid level monitor(optional)



1. Handles
2. Cap Plug
3. Neck Tube
4. Canister
5. Liquid Nitrogen Absorption Layer
6. Vacuum Jacket
7. Stage
8. Vacuum Sealing Joint

# Technical Specification

Model		CryoCarrier 3	CryoCarrier 6	CryoCarrier 8	CryoCarrier 10L	CryoCarrier 15R	CryoCarrier 25L
		CryoCarrier 3L			CryoCarrier 10R		CryoCarrier 25R
<b>Maximum Storage Capacity</b>							
Straws	Number of Canister	1	1	1	1	1	1
	Number of Straws (0.5ml)	132/264	374	374	854	—	3536
	Number of Straws (0.25ml)	298/596	837	837	1940	—	7840
Vials	No. of Rack	—	—	—	1	1	1
	Layer of Rack	—	—	—	4	3(10X10)	5(10X10)
	1.2ml/2ml Vials	—	—	—	100	300	500
Blood Bags (25ml)	No. of Rack	—	—	—	1	1	1
	Layer of Rack	—	—	—	2	1	3
	Number of 25ml bags	—	—	—	6	15	45
Blood Bags (50ml)	No. of Rack	—	—	—	1	1	1
	Layer of Rack	—	—	—	1	1	2
	Number of 50ml bags	—	—	—	3	15	30

<b>Performance</b>						
Capacity (L)	3	7.5	8.0	10	10	25
Static Evaporation Rate (L/Day)	0.16	0.20	0.22	0.43	0.43	0.84
Static holdover time (Day)	20	37	35	23	23	29

<b>Unit Dimensions</b>						
Neck Diameter (mm)	50	80	80	125	125	216
Overall Height (mm)	428	487	509	555	555	678
External Diameter (mm)	223	300	300	300	300	394
Canister Diameter (mm)	38	63	63	97	—	195
Canister Height (mm)	120/276	120	120	276	—	276
Weight Empty (KG)	3.2	4.9	6.2	5.9	5.9	11.2
Weight Full (KG)	4.3	7.3	9.0	8.7	8.7	19.0

★ Static evaporation rate and static holding time are nominal. Actual rate and holding time will be affected by the condition of container usage, atmospheric conditions, and manufacturing tolerances.

★★ Normal Working Duration is just an arbitrary reference, applying to estimate container performance under normal operating conditions. Actual working time may vary due to atmospheric conditions, container usage history, manufacturing tolerances and individual patterns of usage. Divide static holding days by 1.6, and you get empirical value.

# CryoCenter Series

## Introduction

CryoCenter Series tanks are the latest high performance cryogenic liquid phase storage container which mainly used for liquid nitrogen storage in central laboratories. It introduces low amount of liquid vaporization to generate pressure, providing pressure for the tank to discharge liquid, thereby supply liquid nitrogen for other containers. Stainless wheel construction ensures them to be used in most rigorous environment for long time. Compared with traditional welded insulated cylinder, it largely reduces liquid nitrogen evaporation loss.

The CryoCenter Series tanks include pressure raising valve, drip valve, drain valve and manometer. The CryoCenter 200 and above tanks equip with rupture disk and muffler to provide customers with goods user's experience. In addition, CryoCenter Series tanks equip with four robust castor for easy use and move to different area. Mainly apply to laboratory and chemical enterprises in need of storing and supplying liquid nitrogen automatically.



## Key Features

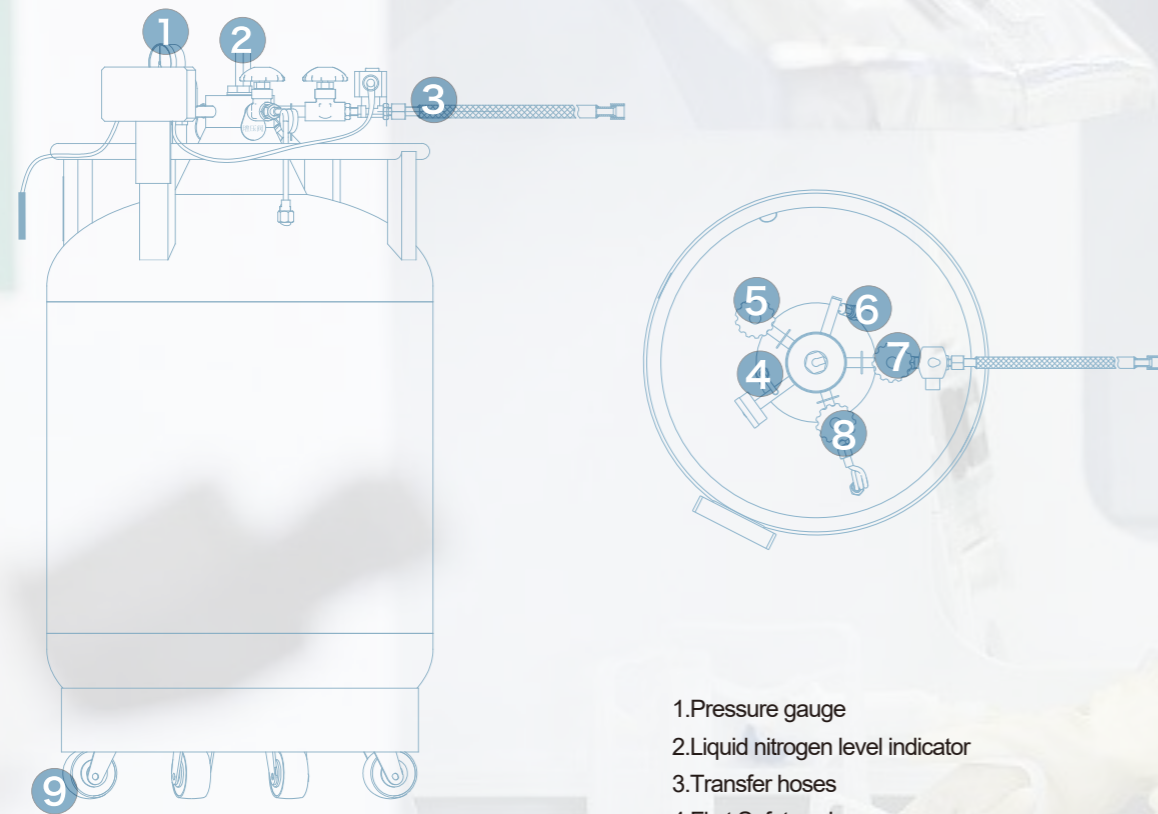
- 1 5 years vacuum warranty
- 2 Stainless steel tanks
- 3 Lockable casters
- 4 Low liquid nitrogen evaporation
- 5 Safety design and mutual or automatic protection
- 6 Electrical level meter and float level meter(optional)





# Back-up System

The CryoCenter series is a reliable device for liquid nitrogen storage and transportation. Its professional design reduces the liquid nitrogen evaporation consumption and guarantee users' safety. It can be optional for the solenoid valve, inner temperature monitor and liquid nitrogen level indicator to realize the auto supply of liquid nitrogen.



1. Pressure gauge
2. Liquid nitrogen level indicator
3. Transfer hoses
4. First Safety valve
5. Pressure relief valve
6. Second Safety valve
7. Fill and withdraw valve
8. Pressure building valve
9. Mobile castors.

Remarks:  
One CryoCenter tank supplying to more than one tank is available.

# Technical Specification

Model	CryoCenter 30	CryoCenter 50	CryoCenter 100 CryoCenter 100E
<b>Performance</b>			
Liquid Nitrogen Capacity (L)	30	50	100
Static Evaporation (%)*	2.5	2	1.3
Infusion Volumes (L/min)	3	3	4
<b>Unit Dimensions</b>			
Overall Height (mm)	879	991	1185
External Diameter (mm)	454	506	606
Weight Empty (kg)	32	54	75
Weight Liquid Full* (kg)	56.6	95	157
Standard Working Pressure (mpa)	0.05		
Highest Working Pressure (mpa)	0.09		
Primary Relief Value Opening Pressure (mpa)	0.099		
Secondary Relief Value Opening Pressure(mpa)	0.15		
Pressure Gauge Indicating Range (mpa)	0~0.25		

Model	CryoCenter 200 CryoCenter 200E CryoCenter 200S	CryoCenter 240E CryoCenter 240S	CryoCenter 300 CryoCenter 300E CryoCenter 300S	CryoCenter 500 CryoCenter 500E CryoCenter 500S
<b>Performance</b>				
Liquid Nitrogen Capacity (L)	200	240	300	500
Static Evaporation (%)*	1.2	1.2	1.1	1.1
Infusion Volumes (L/min)	8	8	8	10
<b>Unit Dimensions</b>				
Overall Height (mm)	1265	1347	1459	1576
External Diameter (mm)	758	758	857	1008
Weight Empty (kg)	130	155	202	255
Weight Liquid Full* (kg)	294	375	448	665
Standard Working Pressure (mpa)	0.05			
Highest Working Pressure (mpa)	0.09			
Primary Relief Value Opening Pressure (mpa)	0.099			
Secondary Relief Value Opening Pressure(mpa)	0.15			
Pressure Gauge Indicating Range (mpa)	0~0.25			

★ Static evaporation rate and static holding time are nominal. Actual rate and holding time will be affected by the condition of container usage, atmospheric conditions, and manufacturing tolerances.

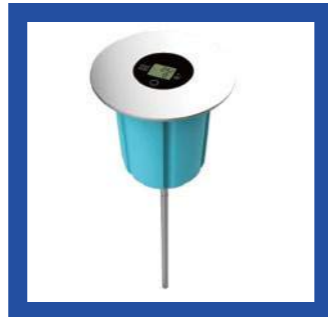
# Accessories and Cryogenic Protection



CryoMonitor 3000



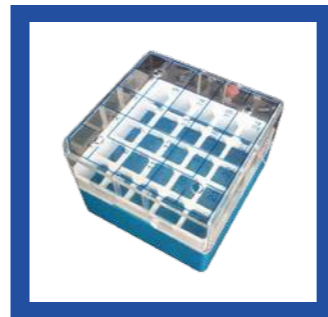
CryoMonitor 1000



Smart Cap



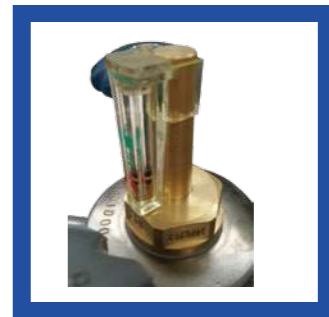
Rack



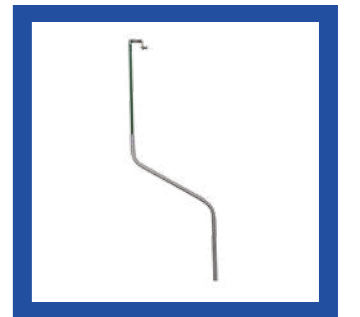
Box



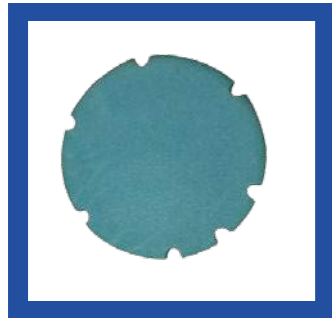
Electrical Level Meter



Float Level Meter



Probe Holder



Extra Slot



Level Ruler



Liquid Nitrogen Dispenser,  
Foot Press



Canisters



Roller Base



Roller Base



Shipping Case



LN2 transfer line



Aluminum Cane



Cryogenic Protection



Goggles with Face Shield



Cryogenic Apron



Cryogenic Apron



Cryogenic Clothes



Accessories



Blood Bag Rack