

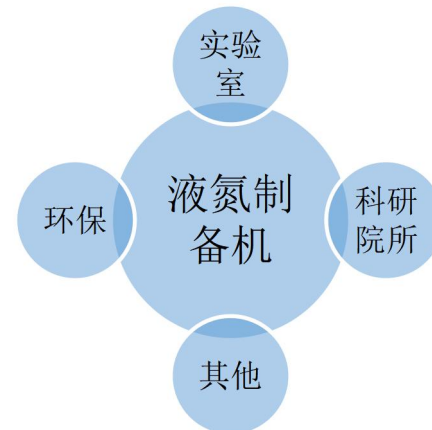
# 液氮制备机组

小型实验室或其他工艺经常使用少量液氮，但是液氮冲装不方便，购买费用高、使用操作繁琐、不安全等因素；我们利用氮气的物化性质，定制开发利用工业纯净氮气（99.9%以上）经过加压降温液化成液氮，使用后再收集会氮气制备液氮周而复始，循环利用氮气-液氮-氮气-液氮流程，降低氮气的消耗量，节省能耗，操作简便。

## 设备特点：

- 1: 氮气加压采用无油泵二级加压，无需消耗电力资源，能耗极低；
- 2: 制冷采用自复叠制冷方式，运转噪音低，能耗小；
- 3: 储备也淡装置采用定制高真空绝热液氮罐，降低液氮气化速率，节省能耗；
- 4: 氮气资源获取简单，只需采购定量的氮气，循环使用，消耗量低，节约成本；
- 5: 氮气制备简单，需要氮气只需提前开启机组即可获取；
- 6: 设备故障率低，维护维修方便，基本无需更换耗材，运行费用极低；

## 应用行业图谱：



### 型号定义:

DC/LN ①-② ③ / ④ / ⑤ / ⑥ / ⑦

### 型号说明:

DC/LN: 蒂珀克®液氮制备机组;

备注: ①~⑤为基础型号, ⑥~⑦为扩展型号;

例如: DC/N1-10/10/05/W/300/3

DC/LN	1	2	3	4	5	6	7	8	说明
蒂珀克									蒂珀克®液氮制备机组;
制冷原理	1								单机自覆叠
制液氮量 (L/H)		05							01: 表示制氮量1L/H; 10: 表示制氮量10L/H, 依此类推;
储液罐容量 (L)			10						10: 表示容量10L; 依此类推;
机组名义功率 (HP):				03					03表示3P; 依此类推;
冷凝方式				W					水冷
				F					
系统电压 (V)					2				系统电压220V
					3				
压缩机形式						S			半封闭压缩机
						T			
储气罐总容量 (*10L):						30			30~300L (30*10) ; 03: ~30L (3*10) ; 以此类推;
DC/LN	1	2	3	4	5	6	7	8	说明

# Liquid Nitrogen Preparation Unit

Small laboratories or other process always use a small number of liquid nitrogen. However, there are some unfavourable factors e.g. inconvenient filling of nitrogen, high purchasing cost, complex operation and unsafe etc.; Our company has customized and developed the liquid nitrogen liquefied by industrial pure nitrogen (99.9% about ) through pressurization and temperature reduction due to nitrogen's physical property, and then recollected the waste nitrogen for preparing the liquid nitrogen so as to realize a cyclic utilization process from nitrogen to liquid nitrogen to nitrogen to liquid nitrogen, as well as reduce nitrogen consumption and minimize energy consumption with a simple operation.

## Equipment Feature:

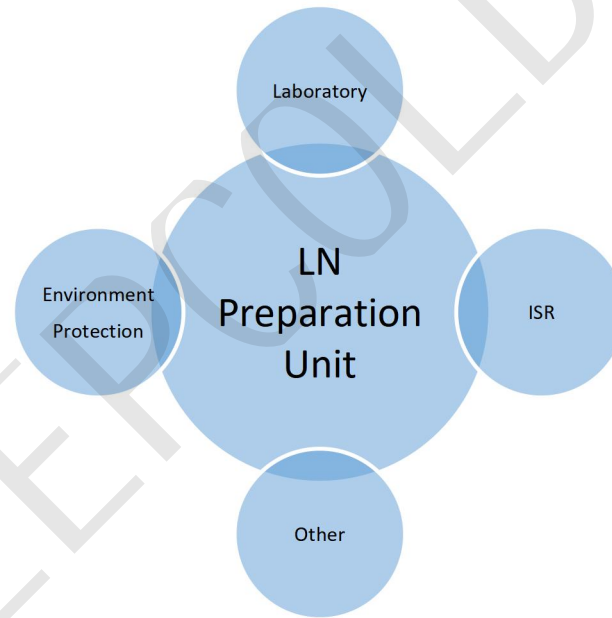
- 1: Nitrogen pressurization applies the secondary compression of oilless pump to consume no power resource with an extremely low energy consumption;
- 2: It adopts ARC technology refrigeration technology; the equipment volume is reduced.
- 3: Nitrogen storage device applies the customized high-vacuum insulation nitrogen tank to reduce the gasification rate of liquid nitrogen minimize save energy consumption;
- 4: Due to the simple acquisition of nitrogen resource, you only need to purchase certain amount of nitrogen for a cyclic

utilization with a low energy consumption and cost saving;

5: Due to the simple preparation of nitrogen, you can acquire nitrogen by simply turning on the unit in advance;

6: Low equipment failure rare and operation cost, convenient maintenance without changing the consumable materials;

**Equipment Feature:**



**Model Definition:**

DC/LN ① - ② ③ / ④ / ⑤ / ⑥ / ⑦

Model Definition:

DC/LN: Deepcold® Liquid Nitrogen Preparation Unit

Remarks: ① ~ ⑤ are basic models, ⑥ ~ ⑦ are expanding model;

For example: DC/LN1-10/10/05/W/300/3

DC/LN	1	2	3	4	5	6	7	8	Remarks
Deepcold									Deepcold®Liquid Nitrogen Preparation Unit Furnace
Ref. Prin.	1								ARC
Preparation Capacity of Liquid Nitrogen		05							For example:0.1-1L/H;10-10L/H; and so on;
Capacity of Liquid Storage Tank: (L)			30						For example:30-30M <sup>3</sup> ;08-8M <sup>3</sup> ;and so on;
Unit Nom. Power(HP):				03					For example: 03 indicates 3HP; 15 indicates 15HP, and so on;
Condensation Mode					W				Water Cooling
					F				Forced-air Cooling
System Voltage (V)						2			220Vac
						3			380Vac
Compressor Mode							S		Semi-Hermetic Compressor
							T		Total-Hermetic Compressor
Total Capacity of Gas Storage Tank (*10L)								30	For example:30 ~ 300L; 03~30L ; and so on;
DC/LN	1	2	3	4	5	6	7	8	Remarks

## 配置说明： Configuration Table

型号 Model	DC/LN1-01/03	DC/LN-02/05	DC/LN-03/07	DC/LN-05/10	DC/LN-10/15
液氮产量(L/N) Preparation Capacity of LN	1	2	3	5	10
压缩机功率 (HP) Compressor power	3	5	7	10	15
制冷温度 (°C) Ref. Temp.	-150°C				
氮气消耗量(M3) (标方) Nitrogen Consumption (Standard Cubic Feet)	0.65	1.3	1.94	3.23	6.46
储气罐容量(M3) (标方) Capacity of Gas Storage Tank(Standard Cubic Feet)	0.25/0.02	0.5/0.04	0.5/0.06	0.75/0.08	0.75/0.08
增压比 (I, II) Boost Ratio	5, 8	5, 8	6, 10	6, 10	6, 10
总功率 (KW) Total Power	3	4.5	6.5	9	12
冷却水管径(inch)Cooling water pipe diameter	1/2		3/4	1	1 1/2
冷却水流量(L/min) Cooling water flow	9	12	30	35	50
预冷时间(min) Precooling time	≤30				
控制系统 Control system	西门子PLC+HMI/Deepecold开发专用控制器+HMI (选一) Siemens PLC+HMI controls OR Controlling system professionally developed by Deepecold				
数据记录 Data record	温度实时曲线记录、温度历史曲线记录、报警记录、设备运行状态记录，远程控制； Optional :Temperature historical curve record, parameter setting, alarm record, equipment operation state record; Remote control, formula setting;				
安全防护 Safety Protection	相序错相断相保护、压缩机内保护、过载保护；压力保护，过热保护装置、冷凝温度保护、传感器故障保护等多种安全保障功能 Configured with various safety protection functions e.g. phase sequence, phase dislocation, open-phase protection, electric leakage protection, compressor inner protection, overload protection, overheat protection device, sensor failure protection etc.; Configured with various safety protection functions e.g.				
电器指标 Electrical indicators	AC220V/AC380V	AC380V*3PH*50/60Hz			

DEEPCOLD