

» 高纯氮设备 High purity nitrogen plant

1、产品说明 Product Description

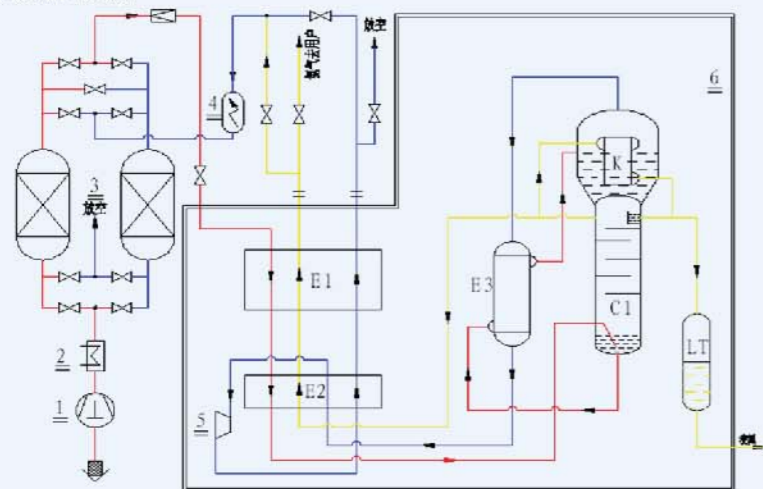
High purity nitrogen plant, Process uses molecular sieve adsorption, gas bearing expander expansion refrigeration, single-column distillation.

We can choose different processes according to customer's request, So that could produce different levels of nitrogen pressure to meet the user's needs and achieve the lowest energy consumption. This plant also could produce liquid nitrogen gas based on user requirements.

The purity of nitrogen is more than 99.99%. client's request acceptable.

2、工艺流程示意图 (返流膨胀制冷流程)

Flow chart



- 1空压机 1.Air compressor
- 2 预冷机 2.Pre-cooler system
- 3 吸附器 3.Purification system
- 4 电加热炉 4.Elec-heater
- 5 膨胀机 5.Trubo-expander
- 6 分馏塔 6.Fractionating column
- E1 主换热器 I E1.Heat exchanger
- E2 主换热器 II E2.Subcooler
- E3 过冷器 E3.Subcooler
- C1 下塔 C1.Lower column
- K 主冷凝蒸发器 K.Main evaporator condenser
- LT液氮量筒 L.Liquid nitrogen measuring cylinder

3、产品选型技术参数表 Model

产品型号 Type	KDN-100	KDN-300	KDN-500/20y	KDN-800/30y	KDN-1000/40y	KDN-1500/50y	KDN-2000/60y	KDN-3000/80y	KDN-5000/100y	KDN-8000/200y
氮气产量 m ³ /h G.nitrogen output	100	300	500	800	1000	1500	2000	3000	5000	8000
液氮产量 L/h L.nitrogen output	—	—	20	30	40	50	60	80	100	200
产品纯度 ppmO ₂ Product purity	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5

注：1) 系统操作压力和产品氮气出塔压力需按照用户氮气使用条件确定；

2) 单位制氮能耗与工艺流程选择有关，一般返流工艺流程制氮，单位能耗约0.3 kW·h/m³N₂；正流工艺流程制氮，单位能耗约0.25 kW·h/m³N₂；全低压双塔工艺流程制氮，单位能耗约0.2 kW·h/m³N₂。

3) 是否生产液氮产品可根据用户要求设计；如需要液氮，产量大小也可以根据用户要求设计。

» 全液体制氧制氮设备 Liquid oxygen and nitrogen plant

1、产品说明 Product Description

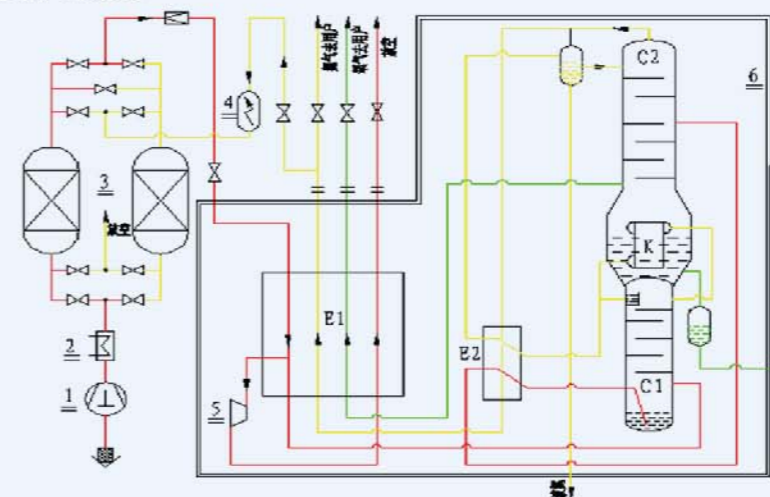
The gas output from this plant is liquid. liquid oxygen and nitrogen is Convenient for storage and transport

The whole system operating prossure is less than 0.7Mpa,Process uses molecular sieve adsorption,gas bearing expander positive flow expansion refrigeration,single twoers distillation.The purity of liquid oxeyn is more than 99.6%,

The purity of liquid nitrogen is more than 99.99%.The flow and purity of liquid oxygen and nitrogen could be produced according to user's request .

2、工艺流程示意图

Flow Chart



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- 4 电加热炉 4.Elec-heater
- 5 膨胀机 5.Trubo-expander
- 6 分馏塔 6.Fractionating column
- E1 主换热器 E1.Heat exchanger
- E2 过冷器 E2.Subcooler
- C1 下塔 C1.Lower column
- C2 上塔 C2.Upper column
- K 主冷凝蒸发器 K.Main evaporator condenser

3、产品选型技术参数表 Model

产品型号 Type	KDO(N)-50	KDO(N)-100	KDO(N)-150	KDO(N)-200	KDO(N)-300	KDO(N)-400	KDO(N)-500	KDO(N)-800	KDO(N)-1000
液氧产量 Nm ³ /h L.oxygen output	50	100	150	200	300	400	500	800	1000
液氧纯度%O ₂ L.oxygen purity	≥99.6	≥99.6	≥99.6	≥99.6	≥99.6	≥99.6	≥99.6	≥99.6	≥99.6
液氮产量 Nm ³ /h L.nitrogen output	50	100	150	200	300	400	500	800	1000
液氮纯度 ppmO ₂ L.nitrogen purity	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5

注：1) 表中的液体产品产量是指在不同时生产液氧液氮时，液氧和液氮的最大产量，具体液氧液氮量的分配可根据用户要求具体设计；

2) 表中流量单位Nm³/h是液体产品转换为0℃，101.325kPa状态下的气态流量；

3) 为了尽量降低运行能耗，根据液体产量的大小，工艺流程会按照实际情况进行调整，以上所附工艺流程图仅做参考。