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本书向您提供PSA常压解吸碳分子小型制氮机的技术参数及安装、使用说明。

用户在安装、使用本制氮机之前，必须仔细阅读本操作使用说明书。该设备以独特的设计和卓越的性能优胜于目前国内外传统的制氮技术，是我国目前制氮技术领域更新换代的产品，是各行各业所需制氮设备的最佳选择。

本公司坚持质量第一，信誉第一，用户至上为宗旨，以齐全的品种规格供用户选择，以低廉的价格、完善的售后服务为用户奉献。

The manual provides technical parameters, installation and operation instructions of PSA-Atmospheric Desorption Carbon Molecular Sieve (small nitrogen generator) for our users.

User should carefully and deeply read Operation Instructions before installs and operates this nitrogen generator. This nitrogen generator is superior to traditional nitrogen generation technology existing at home and abroad by relying on its special design and outstanding performance. This equipment is not only the product replacing traditional technology in the field of nitrogen generation

technology, but also the best choice of nitrogen generator required by all walks of life.

Insisting on the aim of “quality first, prestige first and users supreme”, our company provides users with a great variety of goods and specifications for selection and gives our devotion to all users with low price and perfect after-sales service.

## 一、工艺原理与结构

### I Principle and Structure of Process

#### (一) 工艺原理

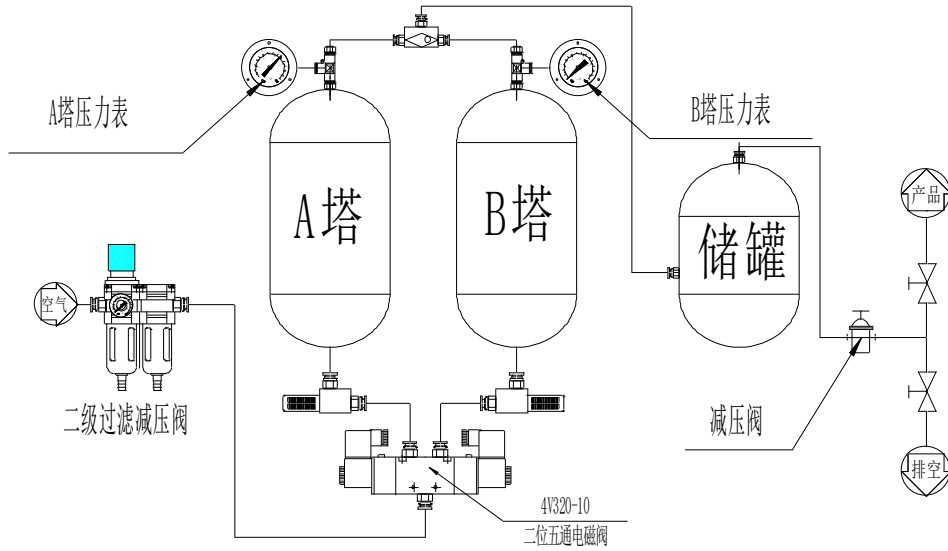
##### 1.Process Principle

本工艺采用空气升压时，氧、氮在碳分子筛上有不同的扩散速率和不同的吸附能力来进行氧、氮分离。空气压缩到0.8~1.0MPa，经干燥、油水分离（过滤器），气源净化后进入变压吸附塔分离，加压时氧分子被扩散和吸附在碳分子筛内，未被吸附的氮气从吸附塔出口排出；降压时，吸附塔内的氧被脱附、排放和冲洗，吸附剂得到再生。

When the process adopts lifting air, oxygen and nitrogen have different diffusion rate and absorptive capacity to separate oxygen from nitrogen on carbon molecular sieve. When air is compressed to 0.8~1.0MPa, air source enters in pressure-swing adsorption tower for separation after being purified through dry and oil-water separation process (filter). Oxygen molecules are diffused and absorbed in carbon molecular sieve under pressure. Non-absorbed nitrogen is discharged from outlet of adsorption tower. Oxygen is desorbed, discharged and purged in adsorption tower under depressurization. Moreover, adsorbent can be recycled.

制氮工艺流程如下图所示：

The process flow of nitrogen generation is showed as following figure:



图一：PSA制氮机工艺流程图

Figure 1: Process Flow Diagram of PSA Nitrogen Generator

(A塔压力表—Pressure Gauge in Tower A    B塔压力表—Pressure Gauge in Tower B  
 流量计—Flowmeter    A塔—Tower A    B塔—Tower B    储罐—Storage Tank  
 二级过滤—Secondary Filtering    减压阀—Pressure Reducing Valve  
 二位五通电磁阀—Two-Position Five-Way Magnetic Valve)