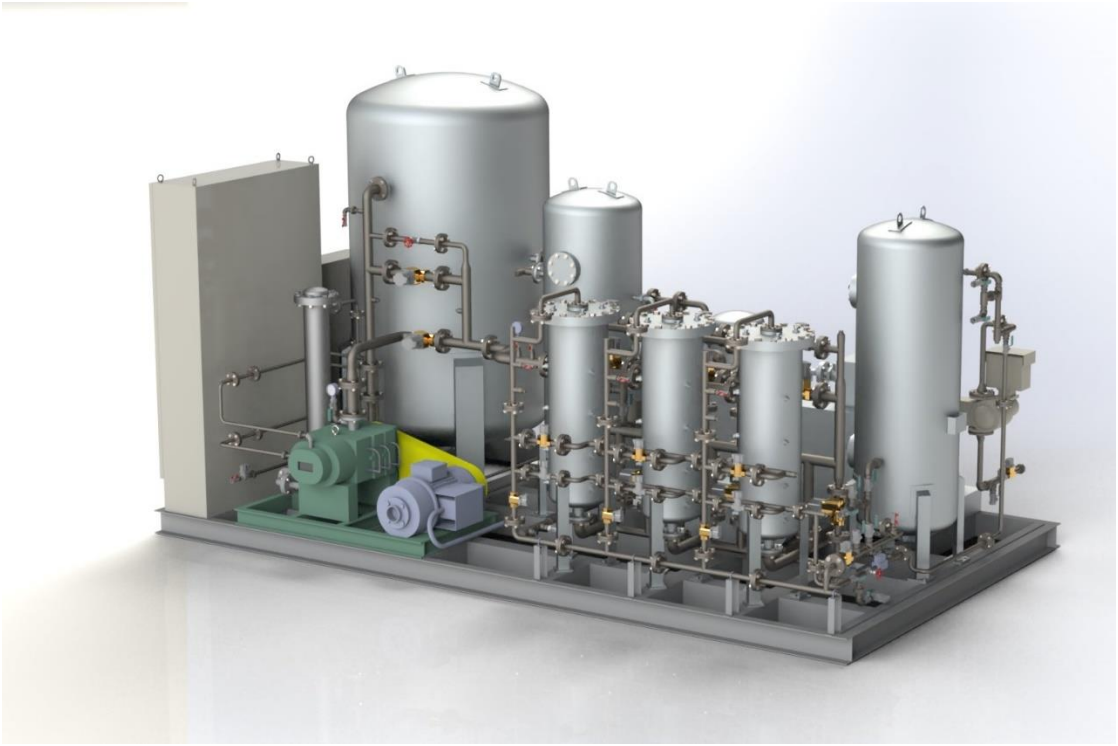
March 31, 2023

CO_2 Recovery Equipment with Capacity for 10 Tons Per Day to be Launched in April Will Help to Realize a Carbon Neutral Society

Taiyo Nippon Sanso Corporation ("TNSC", President Kenji Nagata), a Japanese industrial gas company in Nippon Sanso Holdings Group, announces that it has developed and commercialized PSA (Pressure Swing Adsorption)-type Carbon dioxide (CO_2) recovery equipment which enables recovery of CO_2 at a concentration of 98% or higher from highly concentrated CO_2 emission sources such as lime production furnaces, and will launch sales starting this April.



Exterior view of CO_2 recovery equipment (conceptual image)

Background of Development

There has been an increasing number of inquiries from customers about CO_2 recovery in response to the Japanese government's CO_2 reduction target for FY2030 of 46% compared to FY2013. In order to address these types of requests from customers, TNSC has worked on developing CO_2 recovery equipment by harnessing the gas separation and purification technology it has cultivated up until now. The CO_2 recovery equipment captures CO_2, and the highly concentrated CO_2 can be used as a raw material for carbonates and other materials or for methanation. As a result, TNSC will support customers' efforts to reduce CO_2 emissions and help to realize a carbon neutral society.

Features of the Equipment

The CO_2 recovery equipment developed by TNSC is PSA-type equipment which has adopted absorbents with outstanding properties for separating CO_2 from highly concentrated (20% or higher) CO_2 emission sources (mainly mixed gases composed of N_2 and CO_2) and a control system, based on the knowledge and results TNSC has accumulated in biogas purification and PSA for rare gas recovery. This equipment achieves efficient operation with a narrow range of pressure fluctuation (electric power).

The equipment is designed for small- to medium-scale emission sources (1000 Nm^3/h emission class) and can be easily introduced and installed as a unit, with specifications that can be modified to meet customer needs. Heating is not required for CO_2 concentration and recovery, so highly concentrated CO_2 can be obtained efficiently even from CO_2 emission sources without a heat source.

By combining the developed CO_2 recovery equipment with the technologies of producing and supplying CO_2 we have cultivated, TNSC will contribute to the realization of a carbon-neutral society through the recovery and the utilization of CO_2 by leveraging our gas supply networks.

CO_2 recovery equipment specifications

Recovered CO_2 amount	10 tons per day
Recovered CO_2 concentration	98%
Raw material CO_2 concentration	30%
Equipment dimensions	14.5×5.35×2.75 m

[Company Overview]

Taiyo Nippon Sanso Corporation

Business description: Manufacture and sale of various industrial gases such as oxygen, nitrogen, and argon, LP gas, gas for medical uses, and specialty gases, manufacture and sale of welding equipment and materials, gas-related devices, and, air separation equipment, assembly, processing, inspection of electrical components, and equipment maintenance

Established: October 30, 1910

Incorporated: February 4, 2020

Capital: 1.5 billion yen

Shareholder: Nippon Sanso Holdings Corporation (Investment ratio: 100%)

Revenue: 372.0 billion yen*

*Note: This figure shows the revenue of Gas Business in Japan for Nippon Sanso Holdings Corporation in FYE2022

Taiyo Nippon Sanso Corporation

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