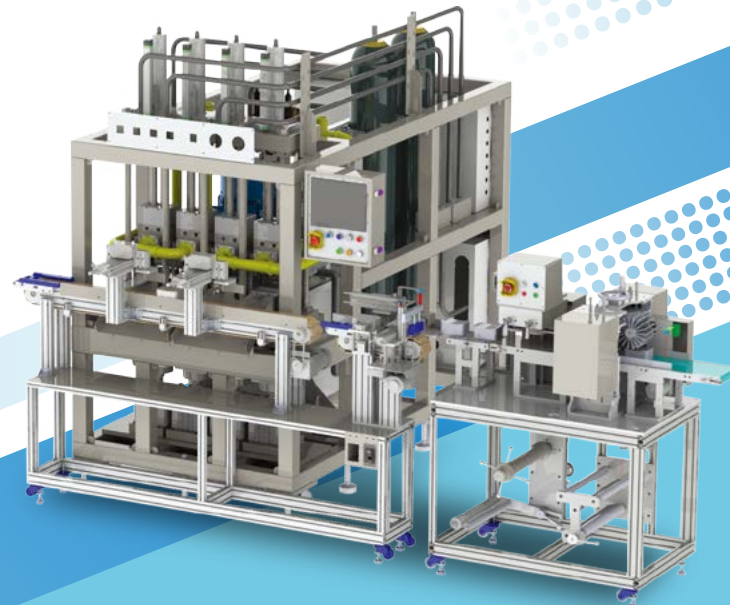




DRY ICE NUGGET MAKER & CO₂ REVERT RECOVERY SYSTEM



 KOREA

 Ministry of SMEs and Startups |  KBIZ Korea Federation of SMEs

 أديبيك
ADIPEC |  ادينوك
ADNOC Host

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Abu Dhabi, United Arab Emirates

Introduction

As the only Dry Ice Nugget Maker manufacturer in Korea,
We have supplied basic and applied technology products about dry ice since 1999



Having lots of patents and applied Technologies about Dry Ice Nugget Maker in Korea



The only one has the certification of new technology about dry ice in Korea



Possessing measuring equipment for maintaining quality



Having the optimization know-how for customization

We have been delivering our products in recognition of the excellence, technical skills, and stability of our products from well known companies.

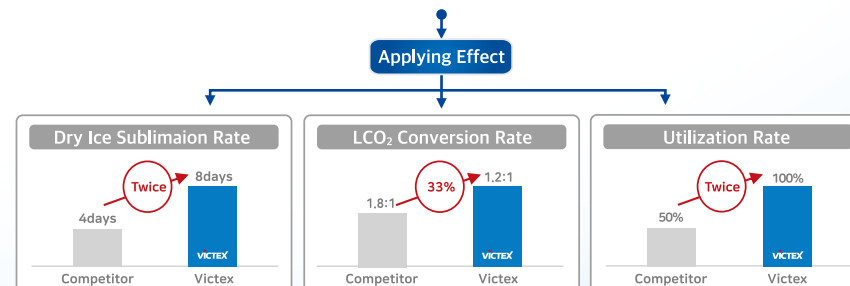


The competitiveness of the VICTEX's Dry Ice Nugget Maker

World's First Dry Ice Nugget Maker to Press Dry Ice Directly in Snow

Victex's Technological Competitiveness = CO₂ Capture and Liquefaction technology

LCO₂ ultra-high pressure mulling technology and vacuum conversion correction technology have been commercialized for the first time in the world and three patents have been registered



Representative fresh food delivery companies such as Coupang, Market Kurly and E-Mart Mall have completed delivery of VICTEX dry ice Nugget makers

Dry Ice Nugget Maker

- Dry Ice Nuggets are manufactured by directly high pressurizing dry ice snow made by spraying LCO₂
- Dry Ice Nuggets are fully automated from production to non-woven packaging
- World's best production efficiency (CO₂ conversion rate) in conjunction with VICTEX CO₂ revert recovery system (Proven CO₂ conversion rate = Dry Ice : LCO₂ = 1:1.25)

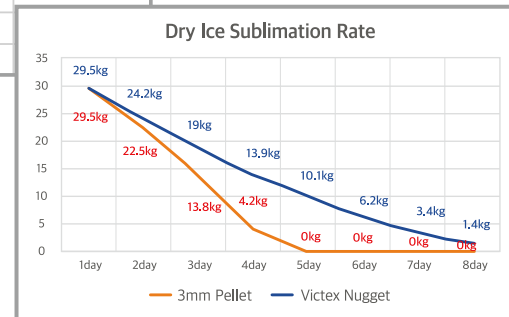


Model Name	SNT-300K-4-3G	SNT-600K-8-3G	SNT-500K-4-6G	SNT-1000K-8-6G
Nugget output	270 kg/hr	540 kg/hr	480 kg/hr	960 kg/hr
Nugget weight	300g	300g	600g	600g
Nugget Dimension	110W×80L×30H	110W×80L×30H	110W×80L×51H	110W×80L×51H
Number of Nugget production / 1 Cycle	4EA	8EA	4EA	8EA
Sec / 1 Cycle	16sec	16sec	18sec	18sec
LCO ₂ Pressure	17 ~ 20 bars			
Nugget Density	More than 1,14 ~ 1,34g/cm ³			
Power Supply	380V, 3 phase, 20A, 20HP			
Noise Level	1m away from the partition, under 65dB			
Warranty period	1 year			

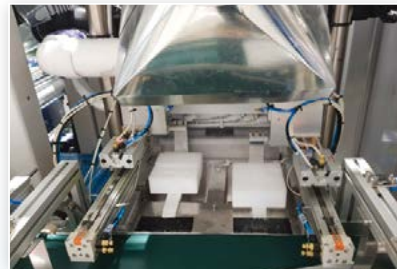
Dry Ice Nugget Maker's Feature

- Dry ice nuggets are made by spraying LCO₂ and pressing snow directly, which is denser and harder than blocks made of 3mm pellets, improving usage time by more than 30%.

Date	3mm Pellet	Victex Nugget	Difference
Day 1	29.5kg	29.5kg	0.00%
Day 2	22.6kg	24.2kg	-6.61%
Day 3	13.8kg	19.0kg	-27.37%
Day 4	4.2kg	13.9kg	-69.78%
Day 5	0.0kg	10.1kg	-100.00%
Day 6	0.0kg	6.2kg	-
Day 7	0.0kg	3.4kg	-
Day 8	0.0kg	1.4kg	-



- Dry ice Nugget's density is very high and constant caused by dense structure from direct press in snow state



Dry Ice Nugget Maker's Feature

- The produced dry ice nuggets are automatically transferred to the conveyor, wrapped in non-woven fabric, and stored in containers
- Option : Automatically pack in a 30kg box using the robot



- Operates as a single switch from start to end of production and operates the equipment protection program in the event of a failure
- Production management system functions computerize production history and minimize maintenance costs



CO₂ Revert Recovery System

- It is a system that collects and reuses more than 90% of the CO₂ gas thrown away from the dry ice nugget maker.
- This CO₂ Revert Recovery system is a modular production type that is easy to install and can be used in multiple dry ice makers.



Compact Type



Detachable Type
(Compressor / Refrigerator)

Specifications	Compact Type	Detachable Type
Power	380 - 415 V AC / 60Hz / 41A	380V / 6P / 60Hz / TEFC (Comp.) 380V / 4P / 60Hz / TEFC (Ref.)
Power Consumption	24 kW	45 kW / 55 kW
Dimension	2,420(L) x 1,370(W) x 1,640(H) (mm)	Custom-made
Weight	1,350 kg	Custom-made
Refrigerant	R404A	R134A
Compressor Oil Type	PAO68 oil (Food grade)	PAO68 oil (Food grade)
Operating temperature	-25°C ~ 40°C	-30°C~40°C
(CO₂)Recovered capacity	< 300kg/hr	≥ 500kg/hr

CO₂ Revert Recovery System's Feature

- Reducing dry ice production costs up to 52% by recovering the normally "lost" CO₂ gas due to vent typical of dry ice manufacturing

[kg]	1st month	2nd month	3rd month	4th month	5th month	6th month
Quarterly Dry Ice Output (1unit)	700,800	700,800	700,800	700,800	700,800	700,800
LCO ₂ Consumption (without Recovery)	1,752,000	1,752,000	1,752,000	1,752,000	1,752,000	1,752,000
LCO ₂ Consumption (with Recovery)	840,960	840,960	840,960	840,960	840,960	840,960
Difference	911,040	911,040	911,040	911,040	911,040	911,040

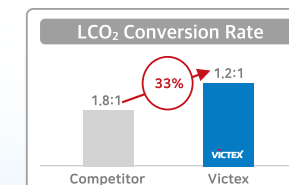
- Equipment cost can be recovered within 5 months
(It can vary depending on the price of LCO₂ gas and Additional expenses such as labor cost and electricity fee are excluded)

[USD]	1st month	2nd month	3rd month	4th month	5th month	6th month
CO ₂ Revert Recovery System Investment	806,452					
LCO ₂ Cost Savings	183,677	183,677	183,677	183,677	183,677	183,677
Net cash flow	(622,774)	183,677	183,677	183,677	183,677	183,677
Accumulated net cash flow	(622,774)	(439,097)	(255,419)	(71,742)	111,935	295,613

[Assumption]

- ⓐ Nugget maker operation : 1unit & 24hr/day & 7days for a week
- ⓑ Dry Ice Output (1unit) : 960kg/hr ⓒ LCO₂ price : 0.2USD/kg
- ⓓ LCO₂ Conversion Rate 2.5:1 (without recovery) / 1.2:1 (with recovery)
- ⓔ Exchange rate : 1,240 KRW/USD

- Dry Ice Nugget Maker with the CO₂ Revert Recovery system can dramatically reduce manufacturing costs by having a 33% higher LCO₂ conversion rate than other companies



- Compatible with every dry ice block maker and pelletizer brands



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