

Improving your maximum potential



VAN  **CA technology**
AMERONGEN

VPSA N₂ Generator

Durable and energy efficient

- Injection and circulation
- Compact and ultra silent
- Low maintenance level
- Lower maintenance costs
- Guarantee N₂ purity
- Regeneration via vacuum pump
- 100% Van Amerongen



Fruit respire; it takes in oxygen (O₂) and gives off carbon dioxide (CO₂). A N₂ generator lowers the oxygen in the cold store with the goal to lower respiration rates and increase the storage duration. VPSA technology (Vacuum Pressure Swing Absorption) is based on an energy-efficient, low

pressure technique. The oil-free blower ensures that the active carbon is not contaminated by residual oil, doubling its life expectancy. Furthermore, the active carbon filter is cleaned by using a vacuum technique, which prevents dirt and moisture.

Type	(injection) Capacity (Sm ³ /h) 3% res. O ₂	(circulation) Capacity (Sm ³ /h) circ. mode	Power (kW / Hp)	Noise level (dB)	Dimensions W x D x H (cm)	Weight (kg)	PVC connection (50 mm) at 3% CO ₂	CO ₂ removal kg / (hx100 t)
VPSA6	4 - 6	6	2.6 / 3.5	73	100 x 85 x 195	350	50	8
VPSA11	7 - 11	11	2.6 / 3.5	75	100 x 85 x 195	410	50	15
VPSA16	11 - 16	16	3.6 / 4.9	75	100 x 85 x 195	520	50	20
VPSA21	15 - 21	21	5.4 / 7.3	76	145 x 120 x 208	700	50	30
VPSA28	19 - 27	27	6.4 / 8.7	77	145 x 120 x 208	775	50	35
VPSA40	27 - 39	39	9.8 / 13.3	81	145 x 120 x 215	830	50	50
VPSA60	40 - 58	58	13.9 / 18.9	82	150 x 120 x 215	1.295	50	80
VPSA85	55 - 85	85	22 / 29.9	87	192 x 155 x 215	2.300	75	105

PSA N₂ Generator

Ready for dynamic storage

- Switch: 1.0 or 0.3 residual O₂
- Compact and ultra silent
- Low maintenance
- Optimal fixation of active carbon
- Guarantee N₂ purity
- Includes carbon filter with oil sat. indicator
- 100% Van Amerongen



Fruit respire; it takes in oxygen (O₂) and gives off carbon dioxide (CO₂). A N₂ generator lowers the oxygen in the cold store with the goal to lower respiration rates and increase the storage duration. PSA (Pressure Swing Absorption) is

ideal for projects that require large volumes of nitrogen at high pressure. Simultaneous pull-down in multiple rooms is possible.

Type	Capacity Sm ³ /h ⁻¹	Residual O ₂ (%)	Voltage (VAC) Europlug	Noise (dB)	dimensions W x D x H (cm)	Weight (kg)	N ₂ output connection (mm)	Air compressor (optional)		
								Required air quantity	Power (KW)	Plug
PSA17	20 - 17	1.0 - 0.3	230 V / 50 Hz	73	110 x 120 x 215	450	20 pillar hose	940 l / 8 bar	5,5	16 A 5 poles
PSA25	30 - 20	1.0 - 0.3	230 V / 50 Hz	77	152 x 141 x 213	850	20 pillar hose	1320 l / 8 bar	7,5	16 A 5 poles
PSA40	46 - 39	1.0 - 0.3	230 V / 50 Hz	78	141 x 141 x 221	1010	32	2000 l / 8 bar	11	32 A 5 poles
PSA50	57 - 41	1.0 - 0.3	230 V / 50 Hz	78	141 x 141 x 223	1140	32	2860 l / 8 bar	15	32 A 5 poles
PSA70	82 - 70	1.0 - 0.3	230 V / 50 Hz	80	166 x 161 x 230	1705	32	4060 l / 8 bar	22	63 A 5 poles
PSA100	115 - 90	1.0 - 0.3	230 V / 50 Hz	80	220 x 170 x 245	2350	50	5530 l / 8 bar	30	63 A 5 poles
PSA150	165 - 137	1.0 - 0.3	230 V / 50 Hz	80	215 x 205 x 225	3400	50	7000 l / 8 bar	37	Direct
PSA180	200 - 137	1.0 - 0.3	230 V / 50 Hz	80	251 x 287 x 225	4850	50	10140 l / 8 bar	55	Direct
PSA210	240 - 190	1.0 - 0.3	230 V / 50 Hz	80	215 x 287 x 225	4850	50	1200 l / 8 bar	75	Direct

VA CO₂ Scrubber

- One-tank system (instead of two-tank systems from other suppliers)

Unique system of sieve and distribution plates

- Minimal oxygen addition via the lung system



Fruit respire: it uses oxygen (O₂) and produces carbon dioxide (CO₂). A CO₂ scrubber removes the carbon dioxide (also referred to as carbonic acid) that forms from your storage cells in order to prevent concentrations from getting too high and causing damage to your fruit.

Type	Capacity (kg) CO ₂ 24h-1 at 3%	Voltage (VAC)	Current (Amps)	Power (kW)	Dimensions W x D x H (cm)	Weight (kg)	Content lung (m ³)
VA100	70	230	4,0	1,1	115 x 115 x 180	450	3
VA150	100	230	4,0	1,1	115 x 135 x 180	655	3
VA200	150	230	5,0	1,1	115 x 145 x 180	775	4
VA350	200	230	5,0	1,1	115 x 155 x 195	840	6
VA500	250	400	4,0	2,6	115 x 170 x 220	1.295	10
VA600	325	400	4,0	2,6	115 x 170 x 220	1.285	10
VA900	450	400	5,0	2,6	120 x 180 x 220	1.330	10
VA1000	550	400	5,0	3,1	125 x 185 x 220	1.455	10
VA1200	650	400	6,8	3,1	140 x 195 x 220	1.755	12
VA2000	800	400	10,0	5,0	140 x 120 x 220	1.810	2 x 10
VA2500	900	400	11,0	5,5	140 x 120 x 237	1.960	2 x 10

Ethylene decomposer

- Maximum cooling of air, via top quality heat exchanger (Porcelain honeycomb)
- High catalytic value via high platinum aluminium granules (0.6 g kg-1)
- Low optimum combustion temperature of 250°C
- A temperature difference between ingoing and outgoing air of <5°C.



Fruit varieties (under CA conditions) that are sensitive to ethylene, such as kiwi fruit, demand ethylene removal for long-term storage. A Van Amerongen catalytic combustion-based ethylene decomposer removes ethylene in cold stores to levels as low as 20 ppb. The Swing Term™ principle, basically a heat-exchanging

system, minimizes the rise in temperature of the returned air, therewith avoiding moisture loss. Fruit are inert for end-products of ethylene combustion (mainly CO₂). The ethylene converter comes with three standard capacities. Other capacities can also be delivered on request.

Type	Ton kiwi fruit under CA conditions	Output Nm ³ h ⁻¹	Voltage (VAC)	Current (Amps)	Power ventilators (kW)	Power heating elements (kW)	T Catalyst during operation °C	T return °C	Dimensions W x D x H (cm)	Weight (kg)
ESO200	200-300	200	380-400	10	1.1	4	250-300	5	175 x 150 x 190	1000
ESO600	600-900	600	380-400	17	5.5	6	250-300	5	190 x 190 x 180	2000
ESO1200	1200-1800	1200	380-400	25	5.5	12	250-300	5	235 x 245 x 180	2500
ESO1800	1800-2700	1800	380-400	40	7.5	18	250-300	5	301 x 261 x 183	3000

VPSA or PSA?

VPSA

Injection and Circulation

Low pressure output: 1-1.5 bar

Oil-free blower

Regeneration via vacuum pump

Suction and return pipe (double)

Lower maintenance costs

Longer life expectancy active carbon

PSA

Only injection

High pressure output: 7.5-8 bar

Oil-lubricated compressor

Regeneration via pressure balancing and addition of N₂

Only injection pipe

Lower installation costs

Very high volumes possible (250 m³/h)

CO₂ Scrubber

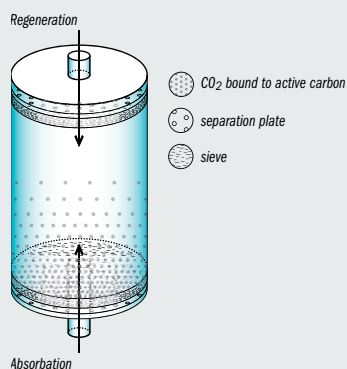


figure 1

The use of the counter-flow principle whereby, during regeneration (cleaning), air is pumped in the opposite direction to the direction used during absorption (of CO₂); this leads to a shorter cycle because the active carbon is cleaned more quickly and thus has a greater capacity.

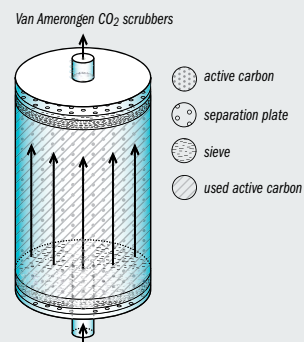


figure 2

A unique system of sieves and separation plates leads to the air being evenly distributed through the active carbon and resulting in a capacity increase of up to 30%.

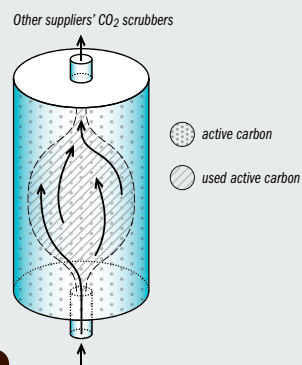
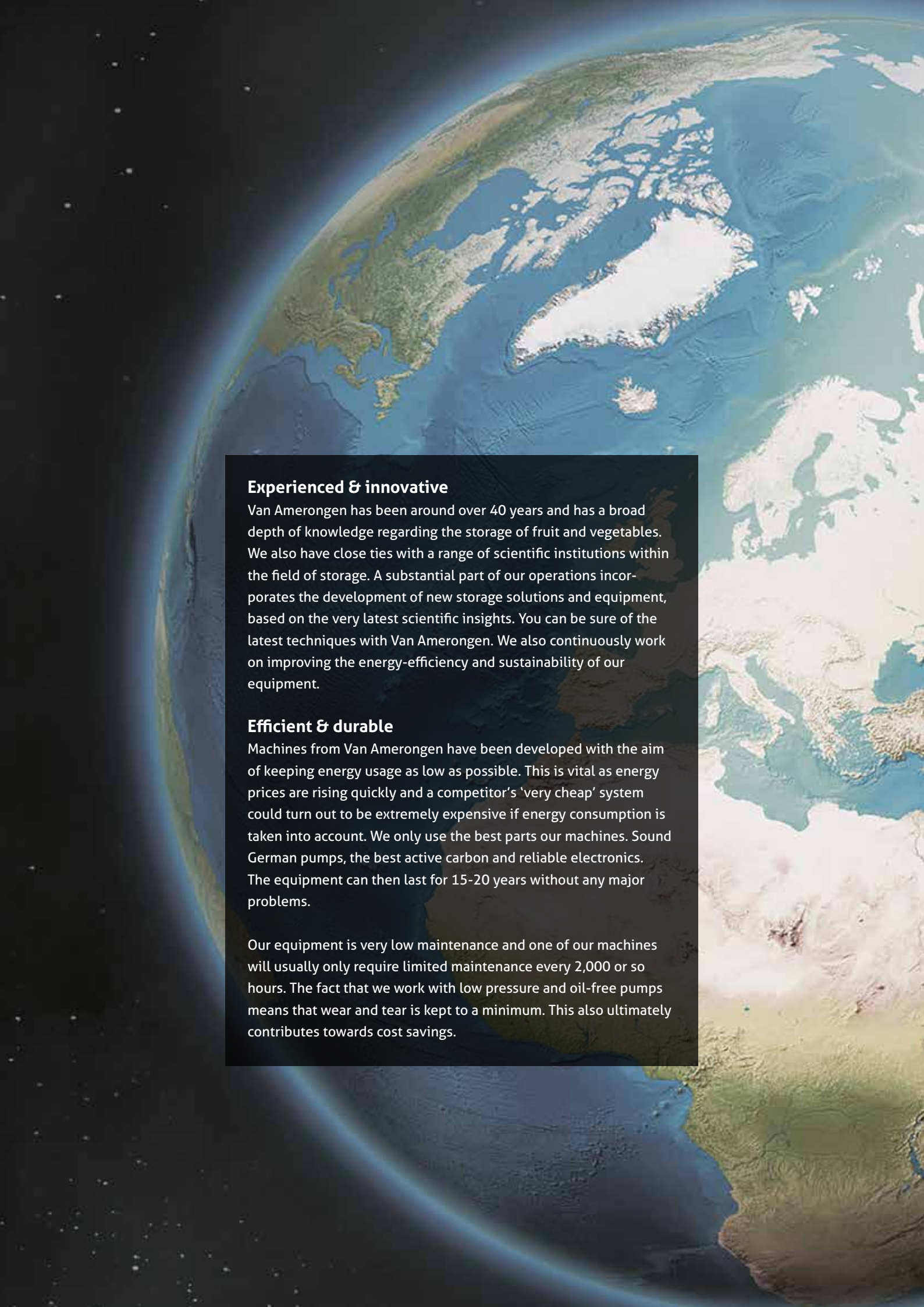


figure 3

Competitors do not produce the active carbon tanks themselves. As a result, a significant volume of active carbon is not used for the absorption of CO₂.



Experienced & innovative

Van Amerongen has been around over 40 years and has a broad depth of knowledge regarding the storage of fruit and vegetables. We also have close ties with a range of scientific institutions within the field of storage. A substantial part of our operations incorporates the development of new storage solutions and equipment, based on the very latest scientific insights. You can be sure of the latest techniques with Van Amerongen. We also continuously work on improving the energy-efficiency and sustainability of our equipment.

Efficient & durable

Machines from Van Amerongen have been developed with the aim of keeping energy usage as low as possible. This is vital as energy prices are rising quickly and a competitor's 'very cheap' system could turn out to be extremely expensive if energy consumption is taken into account. We only use the best parts our machines. Sound German pumps, the best active carbon and reliable electronics. The equipment can then last for 15-20 years without any major problems.

Our equipment is very low maintenance and one of our machines will usually only require limited maintenance every 2,000 or so hours. The fact that we work with low pressure and oil-free pumps means that wear and tear is kept to a minimum. This also ultimately contributes towards cost savings.



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