

CO₂ Vaporising

Atmospheric ASCO CO₂ Vaporiser



The atmospheric **ASCO** CO₂ Vaporiser has been developed to drastically reduce CO₂ vaporisation costs. Available ambient air is used to achieve energy savings of over 95% compared to standard electric vaporisers. The fans are automatically controlled temperature-dependent and only work if a consumer equipment is in operation.

As each vaporiser is supplied pre-piped and pre-wired, installation can be made within minutes. Bases for floor mounting are included.

In addition to our standard models, we offer **individual solutions** of modern and easy to maintain CO₂ vaporisers. In accordance with your requirements, we provide you with a suitable CO₂ vaporiser.

Advantages of an atmospheric ASCO CO₂ vaporiser:

- **NEW:** External control cabinet with 10 m connection cable for flexible installation and operation
- 25 times less energy compared with electrically heated vaporisers
- Designed for continuous and automatic operation (no attendance required)
- Built-in temperature sensors PT1000 to prevent liquid CO₂ from flowing through
- 2 coil system to ensure safe defrosting with built in solenoid valves
- With temperature-controlled start/stop device for intelligent power control
- Simple and fast installation, only electric power and CO₂ required
- Vaporisers with tubes in stainless steel or copper available

Specifications

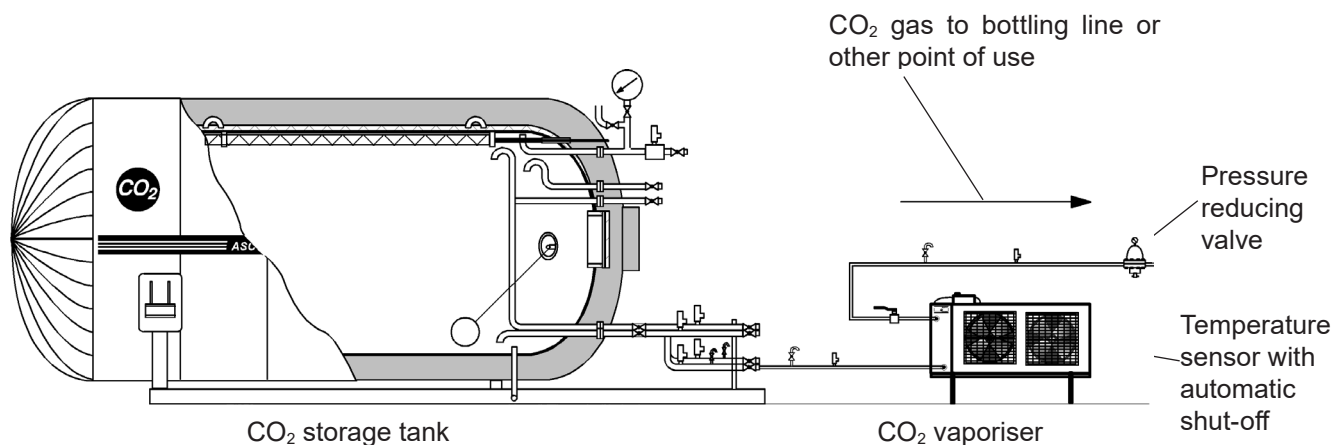
Vaporising capacity (approx.) from liquid CO ₂ at 17 bar (247 psi)	length/width/height mm without control box	in/out connections outer Ø	net weight kg approx.	power consumption	max. operating pressure
200 kg/h SS (440 lb/h)	2'200 × 900 × 1'000 (87 × 35 × 39 in)	1" PN 40	243 kg (536 lb)	1.6 kW (2.1 HP)	25 bar (363 psi)
300 kg/h SS (660 lb)	3'000 × 900 × 1'000 (118 × 35 × 39 in)	1" PN 40	308 kg (679 lb)	2.4 kW (3.2 HP)	25 bar (363 psi)
500 kg/h SS (1100 lb/h)	3'000 × 900 × 1'200 (118 × 35 × 47 in)	1" PN 40	342 kg (754 lb)	2.4 kW (3.2 HP)	25 bar (363 psi)
1'000 kg/h SS (2200 lb/h)	4'200 × 1'000 × 1'450 (165 × 39 × 57 in)	1" PN 40	595 kg (1311 lb)	5.4 kW (7.2 HP)	25 bar (363 psi)

SS = with stainless steel tubes EN 1.4301 / AISI 304

Dimensions external control cabinet (L x W x H): 600 x 250 x 600 mm (24 x 9.8 x 24 in)

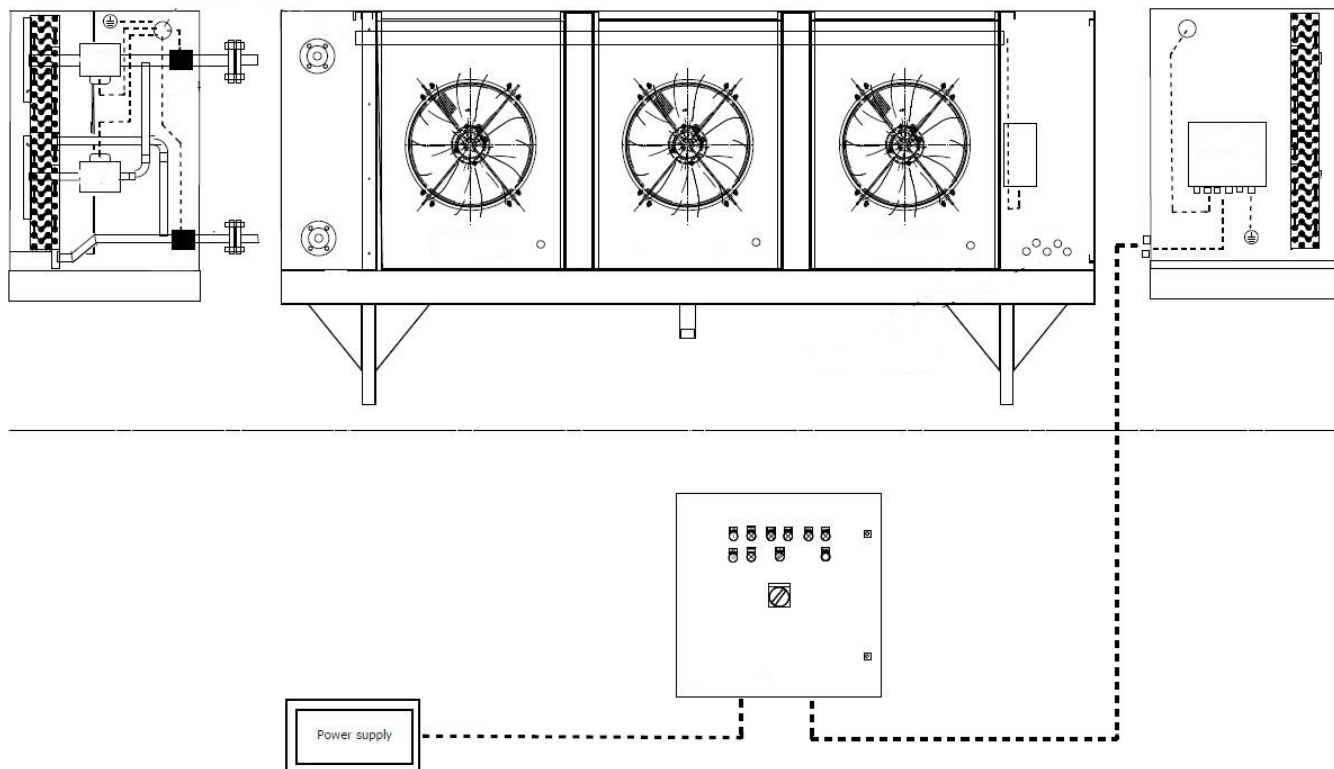
Ambient air temperature: min. +10 °C, max. +45 °C

Atmospheric ASCO CO₂ Vaporisers: Description



Liquid carbon dioxide is taken from a tank, completely evaporated in the vaporiser and fed to the point of use. In order to ensure safe defrosting of the vaporiser, it is equipped with two autonomous coils, which are controlled by a solenoid valve each. While one vaporiser coil is in service, the other is being defrosted. The fans only operate if a consumer equipment is obtaining CO₂ gas and the difference between inlet and outlet in the vaporiser reaches a defined level. This is monitored continuously.

The arrangement shown above permits operation of the vaporiser at air temperatures of max. +45 °C, at least +10 °C and, at reduced capacity as low as +5 °C in order to be able to utilise the vaporiser throughout the year, the unit should be installed inside a building away from the most inclement weather, for example in a boiler room or similar.



Atmospheric ASCO CO₂ Vaporisers: Description and installation

Description

ASCO Atmospheric CO₂ Vaporisers are supplied as one unit, prewired, pretested (incl. pressure test to 35.4 bar) (513.4 psi) and ready for immediate use.

They consist of a special heat exchanger unit with stainless steel tubes and aluminium fins.

Air is forced through the heat exchanger by fans. Any condensate dropping from the tubes is collected by an aluminium tray mounted on the bottom of the unit, and an outlet pipe can be connected to drain. The unit also includes solenoid valves and a complete control box. A temperature sensor is also incorporated to ensure no liquid CO₂ can pass through the vaporiser.

Installation

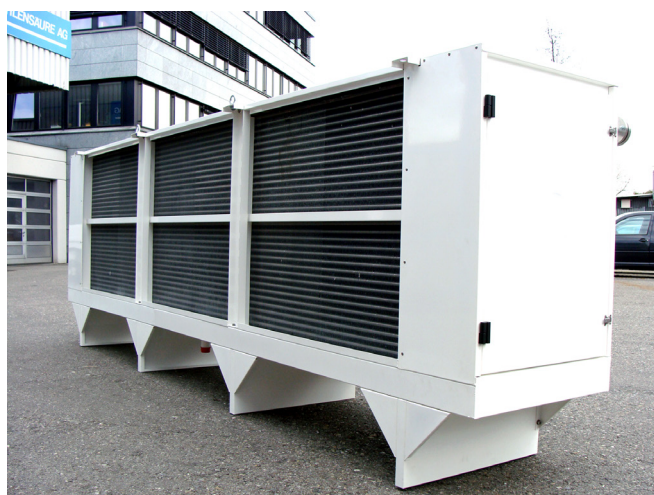
ASCO Vaporisers should ideally be installed in areas such as boiler houses and similar warm rooms (max. temperature of +45 °C). External installation is only recommended where ambient air temperature is above +10 °C and max. +45 °C. They also operate at +5 °C but at reduced capacity.



Terminal box for external control cabinet



External control cabinet with 10 m connecting cable, temperature sensors and cabinet heating



1'000 kg/h (2'200 lb/h) Atmospheric ASCO CO₂ Vaporiser: Air intake side



Two independent coils

Atmospheric ASCO CO₂ Vaporiser: Available standard capacities

Pos. 001

200 kg/n (440 lb/h) atmospheric ASCO CO₂ SS Vaporiser

200 kg/h (440 lb/h atmospheric ASCO CO₂ SS Vaporiser with defrost

part no. 901420

part no. 901491

With temperature dependent start/stop device
Cooling circuit made of stainless steel tubes EN 1.4301 / AISI 304
400VAC ± 5 %/50Hz/3Ph + PE +N
(other voltages and frequencies on request)

air flow total:	3.4 m ³ /sec (120 ft ³ /sec)
coil volume:	15 l (4 gal)
net weight:	243 kg (536 lb)
fan speed:	1'330 rpm
no. of fans:	2
power cons. per fan:	0.8 kW (1.1 HP)
flange connection:	1" PN40

Minimum ambient air temperature required +10 °C, max. +45 °C



Pos. 002

300 kg/n (660 lb/h) atmospheric ASCO CO₂ SS Vaporiser

300 kg/h 660 lb/h atmospheric ASCO CO₂ SS Vaporiser with defrost

part no. 901421

part no. 901491

With temperature dependent start/stop device
Cooling circuit made of stainless steel tubes EN 1.4301 / AISI 304
400VAC ± 5 %/50Hz/3Ph + PE +N
(other voltages and frequencies on request)

air flow total:	5.1 m ³ /sec (180 ft ³ /sec)
coil volume:	22 l (6 gal)
net weight:	308 kg (679 lb)
fan speed:	1'330 rpm
no. of fans:	3
power cons. per fan:	0.8 kW (1.1 HP)
flange connection:	1" PN40

Minimum ambient air temperature required +10 °C, max. +45 °C



Pos. 003

500 kg/n (1100 lb/h) atmospheric ASCO CO₂ SS Vaporiser

500 kg/h (1100 lb/h atmospheric ASCO CO₂ SS Vaporiser with defrost

part no. 901422

part no. 901493

With temperature dependent start/stop device
Cooling circuit made of stainless steel tubes EN 1.4301 / AISI 304
400VAC ± 5 %/50Hz/3Ph + PE +N
(other voltages and frequencies on request)

air flow total:	5.1 m ³ /sec (180 ft ³ /sec)
coil volume:	41 l (11 gal)
net weight:	342 kg (754 lb)
fan speed:	1'330 rpm
no. of fans:	3
power cons. per fan:	0.8 kW (1.1 HP)
flange connection:	1" PN40

Minimum ambient air temperature required +10 °C, max. +45 °C



Atmospheric ASCO CO₂ Vaporiser: Available standard capacities

Pos. 004

1000 kg/n (2200 lb/h) atmospheric ASCO CO₂ SS Vaporiser **1000 kg/h (2200 lb/h atmospheric ASCO CO₂ SS Vaporiser with defrost**

part no. 901423

part no. 901494

With temperature dependent start/stop device
Cooling circuit made of stainless steel tubes EN 1.4301 / AISI 304
400VAC ± 5 %/50 Hz/3 Ph + PE +N
(other voltages and frequencies on request)

air flow total:	9.9 m ³ /sec (350 ft ³ /sec)
coil volume:	78 l (21 gal)
net weight:	595 kg (1'311 lb)
fan speed:	890 rpm
no. of fans:	3
power cons. per fan:	1.8 kW (2.4 HP)
flange connection:	1" PN40

Minimum ambient air temperature required +10 °C, max. +45 °C



Atmospheric CO₂ Vaporisers: Options

Pos. 001

Dome loaded pressure reducing valve C31

part no. 4046817

for gaseous and liquid CO₂
incl. repair kit (diaphragm and O-ring)



Pos. 002

Dome loaded pressure reducing valve C2-K32

part no. 4046644

for gaseous and liquid CO₂
incl. repair kit (diaphragm and O-ring)



Pos. 003

Line safety assembly 1"- 25 bar (363 psi) welding connection

part no. 4046831

Consisting of:

- stainless steel pipe 1" 300 mm (12 in)
- safety valve 25 bar (363 psi)
- vent ball valve stainless steel 1/4"



Pos. 004

CO₂ flowmeter MF15

part no. 4062504

Mass flow sensor Type MF15 (fully calibrated) assembled to process pipe DN 15, PN 40 with flange connection DIN 2635.

Measuring range 0 - 1'000 kg/h (0 - 2200 lb/h) at 22 bar (319 psi)

The flow computer (on wall bracket) is equipped with digital display of current CO₂ flow rate in kg/h as well as totalizer and integrated keyboard.

10 meter connection cable with plug is prewired and connected.

Voltage 115 - 230 V, 50/60 Hz

Accessories included:

- 2 pcs counterflange DN 15/PN40 welding (item no. 910101)
- 8 pcs screw M12 x 45, hex., inox (item no. 100020)
- 8 pcs nut M12, inox (item no. 100022)
- 2 pcs gasket DN15, 2 x 51 x 22 mm (item no. 110150)



Pos. 005

CO₂ flowmeter MF25

part no. 4062505

Mass flow sensor Type MF25 (fully calibrated) assembled to process pipe DN 25, PN 40 with flange connection DIN 2635.

Measuring range 0 - 2'700 kg/h (0 - 5'940 lb/h) at 22 bar (319 psi)

The flow computer (on wall bracket) is equipped with digital display of current CO₂ flow rate in kg/h as well as totalizer and integrated keyboard.

10 meter connection cable with plug is prewired and connected.

Voltage 115 - 230 V, 50/60 Hz

Accessories included:

- 2 pcs counterflange DN 25/PN40 welding (item no. 910301)
- 8 pcs screw M12 x 45, hex., inox (item no. 100020)
- 8 pcs Nut M12, inox (item no. 100022)
- 2 pcs gasket DN25, 2 x 71 x 35 mm (0.08 x 2.80 x 1.38 in) (item no. 110151)

