

CO₂ Vaporising

Atmospheric CO₂ Vaporisers



The **ASCO** Atmospheric CO₂ Vaporiser has been developed to drastically reduce CO₂ vaporisation costs. Ambient air, which is available at no cost, is used to achieve energy savings of over 95 % compared to standard electric vaporisers. In most cases electric (or steam) savings can pay for a new atmospheric vaporiser in less than one year.

As each vaporiser is supplied prepped and prewired, installation can be made within minutes. Bases for the mounting on the floor or on the ceiling are included in the delivery.

Advantages of an atmospheric CO₂ vaporisers:

- 25 times less energy compared with electrically heated vaporisers
- Simple and fast installation, only electric power and CO₂ required
- Designed for continuous and automatic operation (no attendance required)
- Vaporisers with tubes in stainless steel or copper available
- Built-in thermostat to prevent liquid CO₂ from flowing through
- Complete unit in various capacities at very reasonable prices, ready for use
- 2 coil system to ensure safe defrosting with built in solenoid valves

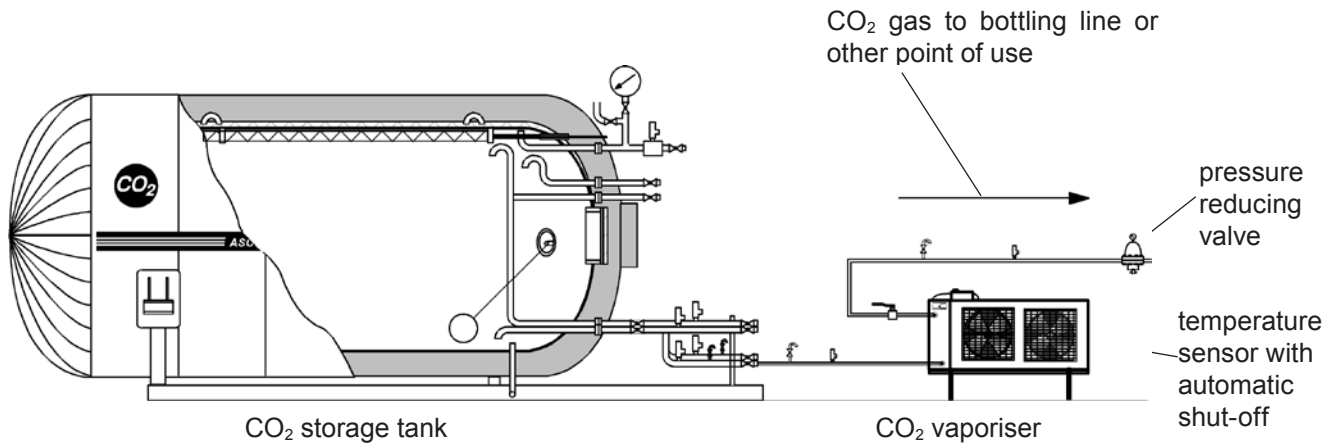
Specifications

Vaporising capacity (approx.) from liquid CO ₂ at 17 bar	length/width/height mm incl. control box	in/out connections outer diameter	net weight kg approx.	power consumption	max. operating pressure
200 kg/hr CU	2'200 × 900 × 1'000	1" PN 40	126 kg	1.58 kW	25 bar
200 kg/hr SS	2'200 × 900 × 1'000	1" PN 40	126 kg	1.58 kW	25 bar
300 kg/hr CU	3'000 × 900 × 1'000	1" PN 40	260 kg	2.37 kW	25 bar
300 kg/hr SS	3'000 × 900 × 1'000	1" PN 40	260 kg	2.37 kW	25 bar
500 kg/hr CU	3'000 × 900 × 1'200	1" PN 40	320 kg	2.37 kW	25 bar
500 kg/hr SS	3'000 × 900 × 1'200	1" PN 40	320 kg	2.37 kW	25 bar
1'000 kg/hr CU	4'200 × 1'000 × 1'450	1" PN 40	510 kg	5.37 kW	25 bar
1'000 kg/hr SS	4'200 × 1'000 × 1'450	1" PN 40	510 kg	5.37 kW	25 bar

CU = with copper tubes, SS = with stainless steel tubes

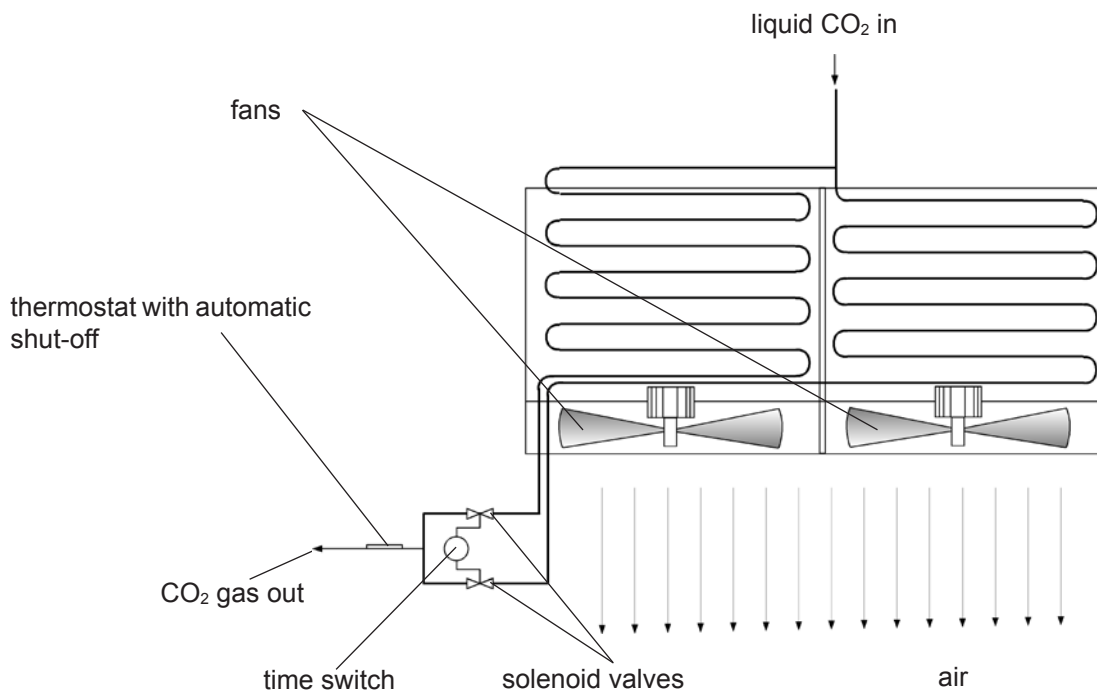
Ambient air temperature: min. +10°C, max. +45°C

Description of Atmospheric CO₂ Vaporisers:



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 air blowers remain in continuous operation.

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.



Description and Installation of Atmospheric CO₂ Vaporisers:

Description

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

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

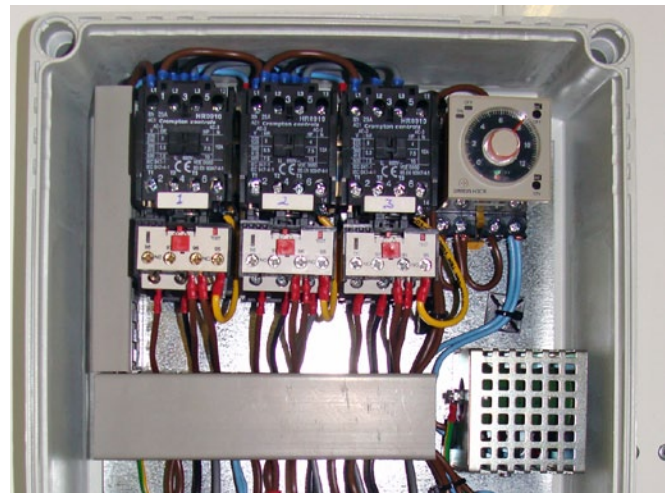
Air is forced through the heat exchanger by fans. Any condensate dropping from the tubes is collected by an aluminium tray mounted on the bottom of the unit, and an outlet pipe can be connected to drain. The unit also includes solenoid valves and a complete control box. A temperature sensor is also incorporated 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.



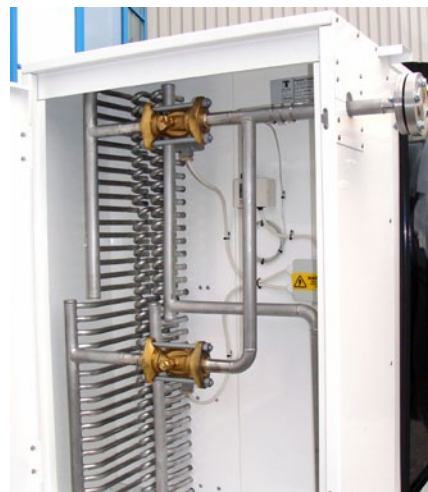
1'000 kg/hr Atmospheric CO₂ Vaporiser
Thermostat



1'000 kg/hr Atmospheric CO₂ Vaporiser
Control box with timer



1'000 kg/hr Atmospheric CO₂ Vaporiser
Air in take side



1'000 kg/hr Atmospheric CO₂ Vaporiser
Two independent coils

Available standard Atmospheric CO₂ Vaporiser capacities:

Pos. 001

200 kg/hr Atmospheric CO₂ Vaporiser

(minimum ambient air temperature required +10 °C, max. +45 °C)
with copper or stainless steel tubes
400 Volt, 50 Hz, 3 Ph

- air flow total: 3.4 m³/sec
- coil volume: 15 l
- net weight: approx. 126 kg
- fan speed: 1'330 rpm
- no. of fans: 2
- power cons. per fan: 0.79 kW
- flange connection: 1" PN40

CU = copper
SS = stainless steel

CU part no. 908004.2
SS part no. 908005.2



Pos. 002

300 kg/hr Atmospheric CO₂ Vaporiser

(minimum ambient air temperature required +10 °C, max. +45 °C)
with copper or stainless steel tubes
400 Volt, 50 Hz, 3 Ph

- air flow total: 5.1 m³/sec
- coil volume: 22 l
- net weight: approx. 260 kg
- fan speed: 1'330 rpm
- no. of fans: 3
- power cons. per fan: 0.79 kW
- flange connection: 1" PN40

CU = copper
SS = stainless steel

CU part no. 908006.2
SS part no. 908007.2



Pos. 003

500 kg/hr Atmospheric CO₂ Vaporiser

(minimum ambient air temperature required +10 °C, max. +45 °C)
with copper or stainless steel tubes
400 Volt, 50 Hz, 3 Ph

- air flow total: 5.1 m³/sec
- coil volume: 41 l
- net weight: approx. 320 kg
- fan speed: 1'330 rpm
- no. of fans: 3
- power cons. per fan: 0.79 kW
- flange connection: 1" PN40

CU = copper
SS = stainless steel

CU part no. 908008.2
SS part no. 908009.2



Available standard Atmospheric CO₂ Vaporiser capacities:

Pos. 004

1'000 kg/hr Atmospheric CO₂ Vaporiser

(minimum ambient air temperature required +10°C, max. +45°C)
with copper or stainless steel tubes
400 Volt, 50 Hz, 3 Ph

- air flow total: 9.9 m³/sec
- coil volume: 78 l
- net weight: approx. 510 kg
- fan speed: 890 rpm
- no. of fans: 3
- power cons. per fan: 1.79 kW
- flange connection: 1" PN40

CU = copper
SS = stainless steel

CU part no. 908010.2
SS part no. 908011.2



Options for Atmospheric CO₂ Vaporisers:

Pos. 001

Dome Loaded Pressure Reducing Valve C31

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

part no. 914250



Pos. 002

Dome Loaded Pressure Reducing Valve C2-K32

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

part no. 914006



Pos. 003

Line Safety Assembly 1"- 25 bar welding connection

Consisting of:

- stainless steel pipe 1" 300 mm
- safety valve 25 bar
- vent ball valve stainless steel 1/4"

part no. 914343



Options for Atmospheric CO₂ Vaporisers:

Pos. 004

CO₂ Flowmeter M1

Mass flow sensor type M1 (fully calibrated) assembled to process pipe DN 15, PN 40 with flange connection DIN 2635.

Measuring range: 0 - 1'200 kg/hr (depends on pressure)

The flow computer (on wall bracket) is equipped with digital display of current CO₂ flow rate in kg/hr 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)

part no. 910200



Pos. 005

CO₂ Flowmeter M2

Mass flow sensor type M2 (fully calibrated) assembled to process pipe DN 25, PN 40 with flange connection DIN 2635.

Measuring range: 0 - 3'000 kg (depends on pressure)

The flow computer (on wall bracket) is equipped with digital display of current CO₂ flow rate in kg/hr 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 (item no. 110151)

part no. 910400

