CO₂ Vaporising

Atmospheric ASCO CO₂ Vaporiser

The atmospheric ASCO 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. The fans are automatically controlled temperature-dependent and only work if a consumer equipment is in operation. As each vaporiser is supplied prepiped and prewired, 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:

- 25 times less energy compared with electrically heated vaporisers
- Designed for continuous and automatic operation (no attendance required)
- Built-in thermostat 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
- Complete unit in various capacities at very reasonable prices, ready for use

Specifications

<table>
<thead>
<tr>
<th>Vaporising capacity (approx.) from liquid CO₂ at 17 bar (247 psi)</th>
<th>length/width/height mm incl. control box</th>
<th>in/out connections outer Ø</th>
<th>net weight kg approx.</th>
<th>power consumption kW</th>
<th>max. operating pressure bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 kg/h SS (440 lb/h)</td>
<td>2’200 × 900 × 1’000 (87 x 35 x 39 in)</td>
<td>1” PN 40</td>
<td>243 kg (536 lb)</td>
<td>1.58 kW (2.12 HP)</td>
<td>25 bar (363 psi)</td>
</tr>
<tr>
<td>300 kg/h SS (661 lb)</td>
<td>3’000 × 900 × 1’000 (118 x 35 x 39 in)</td>
<td>1” PN 40</td>
<td>308 kg (679 lb)</td>
<td>2.37 kW (3.18 HP)</td>
<td>25 bar (363 psi)</td>
</tr>
<tr>
<td>500 kg/h SS (1102 lb/h)</td>
<td>3’000 × 900 × 1’200 (87 x 35 x 47 in)</td>
<td>1” PN 40</td>
<td>342 kg (754 lb)</td>
<td>2.37 kW (3.18 HP)</td>
<td>25 bar (363 psi)</td>
</tr>
<tr>
<td>1’000 kg/h SS (2205 lb/h)</td>
<td>4’200 × 1’000 × 1’450 (165 x 39 x 57 in)</td>
<td>1” PN 40</td>
<td>595 kg (1311 lb)</td>
<td>5.37 kW (7.20 HP)</td>
<td>25 bar (363 psi)</td>
</tr>
</tbody>
</table>

SS = with stainless steel tubes

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

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) (513.43 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.

1'000 kg/h (2'204.62 lb/h) atmospheric ASCO CO₂ Vaporiser: Thermostat

1'000 kg/h (2'204.62 lb/h) Atmospheric ASCO CO₂ Vaporiser: Control box with timer

1'000 kg/h (2'204.62 lb/h) Atmospheric ASCO CO₂ Vaporiser: Air intake side

1'000 kg/h (2'204.62 lb/h) Atmospheric ASCO CO₂ Vaporiser: Two independent coils
Atmospheric ASCO CO₂ Vaporiser: Available standard capacities

**Pos. 001**

**200 kg/h (440.92 lb) atmospheric ASCO CO₂ Vaporiser**  
part no. 901234

With temperature dependent start/stop device  
Cooling circuit made of stainless steel tubes  
400 Volt, 50 Hz, 3 Ph

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>air flow total</td>
<td>3.4 m³/sec (120 ft³/sec)</td>
</tr>
<tr>
<td>coil volume</td>
<td>15 l (4 gal)</td>
</tr>
<tr>
<td>net weight</td>
<td>243 kg (536 lb)</td>
</tr>
<tr>
<td>fan speed</td>
<td>1'330 rpm</td>
</tr>
<tr>
<td>no. of fans</td>
<td>2</td>
</tr>
<tr>
<td>power cons. per fan</td>
<td>0.79 kW (1.06 HP)</td>
</tr>
<tr>
<td>flange connection</td>
<td>1” PN40</td>
</tr>
</tbody>
</table>

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

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**Pos. 002**

**300 kg/h (661.39 lb/h) atmospheric ASCO CO₂ Vaporiser**  
part no. 901232

With temperature dependent start/stop device  
Cooling circuit made of stainless steel tubes  
400 Volt, 50 Hz, 3 Ph

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>air flow total</td>
<td>5.1 m³/sec (180.1 ft³/sec)</td>
</tr>
<tr>
<td>coil volume</td>
<td>22 l (5.8 gal)</td>
</tr>
<tr>
<td>net weight</td>
<td>308 kg (679 lb)</td>
</tr>
<tr>
<td>fan speed</td>
<td>1'330 rpm</td>
</tr>
<tr>
<td>no. of fans</td>
<td>3</td>
</tr>
<tr>
<td>power cons. per fan</td>
<td>0.79 kW (1.06 HP)</td>
</tr>
<tr>
<td>flange connection</td>
<td>1” PN40</td>
</tr>
</tbody>
</table>

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

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**Pos. 003**

**500 kg/h (1'102.31 lb) atmospheric ASCO CO₂ Vaporiser**  
part no. 901235

With temperature dependent start/stop device  
Cooling circuit made of stainless steel tubes  
400 Volt, 50 Hz, 3 Ph

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>air flow total</td>
<td>5.1 m³/sec (180.1 ft³/sec)</td>
</tr>
<tr>
<td>coil volume</td>
<td>41 l (10.8 gal)</td>
</tr>
<tr>
<td>net weight</td>
<td>342 kg (754 lb)</td>
</tr>
<tr>
<td>fan speed</td>
<td>1'330 rpm</td>
</tr>
<tr>
<td>no. of fans</td>
<td>3</td>
</tr>
<tr>
<td>power cons. per fan</td>
<td>0.79 kW (1.06 HP)</td>
</tr>
<tr>
<td>flange connection</td>
<td>1” PN40</td>
</tr>
</tbody>
</table>

Minimum ambient air temperature required +10°C, max. +45°C
Atmospheric ASCO CO₂ Vaporiser: Available standard capacities

**Pos. 004**

1'000 kg/h (2204.62 lb/h) atmospheric ASCO CO₂ Vaporiser  
part no. 901236

- With temperature dependent start/stop device
- Cooling circuit made of stainless steel tubes
- 400 Volt, 50 Hz, 3 Ph

- air flow total: 9.9 m³/sec (349.6 ft³/sec)
- coil volume: 78 l (20.6 gal)
- net weight: 595 kg (1'311 lb)
- fan speed: 890 rpm
- no. of fans: 3
- power cons. per fan: 1.79 kW (2.40 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 (362.59 psi) welding connection  
part no. 4046831

- Consisting of:
  - stainless steel pipe 1" 300 mm (11.81 in)
  - safety valve 25 bar (362.59 psi)
  - vent ball valve stainless steel 1/4"
### Atmospheric CO₂ Vaporisers: Options

#### Pos. 004

**CO₂ flowmeter MF15**

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 - 2205 lb/h) at 22 bar (319.08 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 M12x45, 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. 4062504*

#### Pos. 005

**CO₂ flowmeter MF25**

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 - 5'952 lb/h) at 22 bar (319.08 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 M12x45, 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)

*part no. 4062505*