ASCO CO_2 Dosing System

The ASCO CO_2 dosing system was developed to reliably and precisely dose CO_2 in controlled quantities wherever maximum accuracy is required. Typical areas of application include desalination plants and water treatment processes in which CO_2 is used for pH neutralization.

The compact, ready-to-connect system is equipped with a CO_2 pressure reducing valve, filter unit, gas flow meter, control valve, pressure gauges, safety valves, and a fully pre-wired control cabinet. An integrated bypass line allows maintenance work such as filter replacement to be carried out without interrupting operation.

Thanks to its robust stainless steel construction, the system is particularly corrosion-resistant, durable, and easy to maintain—ideal for use in demanding industrial conditions.

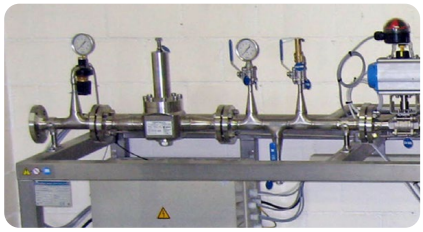
Benefits:

- Precise CO_2 dosing
- Ideal for water treatment
- Maintenance-friendly design
- Robust stainless steel construction

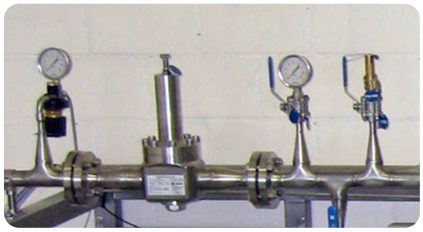
Site conditions

Min. ambient air temperature:	10°C, optional with heater for vaporiser down to 5°C
Max. ambient air temperature:	38°C, optional with air conditioned cabinet up to 50°C
Humidity:	34% to 99%
Wind speed max:	19.03m/s (62ft/s) tank foundation must be recalculated by local civil engineer
Uniform building code:	seismic zone 2A
Temperature treated water:	15 to 35°C
Side stream water pressure:	4bar (58psi)max.

ASCO CO_2 Gas Dosing System: Components



- flanged inlet incl. counter flange
- control cabinet
- all equipment mounted on robust stainless steel frame



- pressure reducing valve for easy adjustment of inlet pressure

- ASCO CO_2 Gas Flowmeter for accurate measuring of the flow rate: provides a 4–20mA output signal which can be processed on the customer's main control

- actuating valve to adjust flow of CO_2 gas

- by-pass-line for manual operation

- filtration unit

Staticmixer /Gas dispersion system

As per customer's requirement, ASCO includes static mixers or a complete gas dispersion system in order to ensure a reliable solubility of the CO_2 gas in the customer's main stream water. This brings the following key benefits:

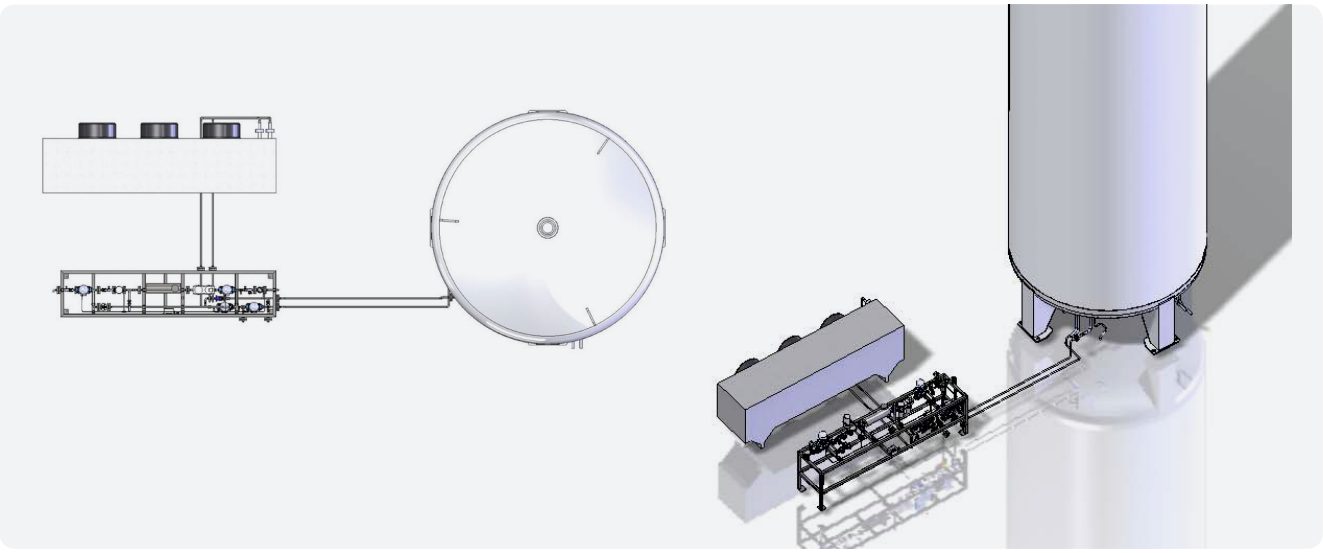
- highly efficient mixing
- low energy consumption
- no moving parts for maintenance free operation
- no direct motive power required

CO_2 feeding via side stream into the main water stream

Reliable solubility of the CO_2 gas thanks to special design of the static mixer

ASCO CO_2 Gas Dosing System: Example layout of a single line

Please note that all systems in this catalogue are only examples. Each system is customised and requires detailed engineering.



Example layout of a complete ASCO CO_2 Gas Dosing System (single line) with CO_2 tank and vaporiser

ASCO supplies a fully preinstalled and pretested system consisting of one storage tank, one vaporiser, one dosing system and, if desired, static mixers or a complete gas dispersion system.

The pipework of the ASCO CO_2 Gas Dosing System is completely welded to minimise installation works on site. Only the connection between storage tank and vaporiser has to be welded directly on site.

All civil related works, like site planning, foundations, electrical supply, installation material, water side stream and installation on site are customer‘s responsibility.

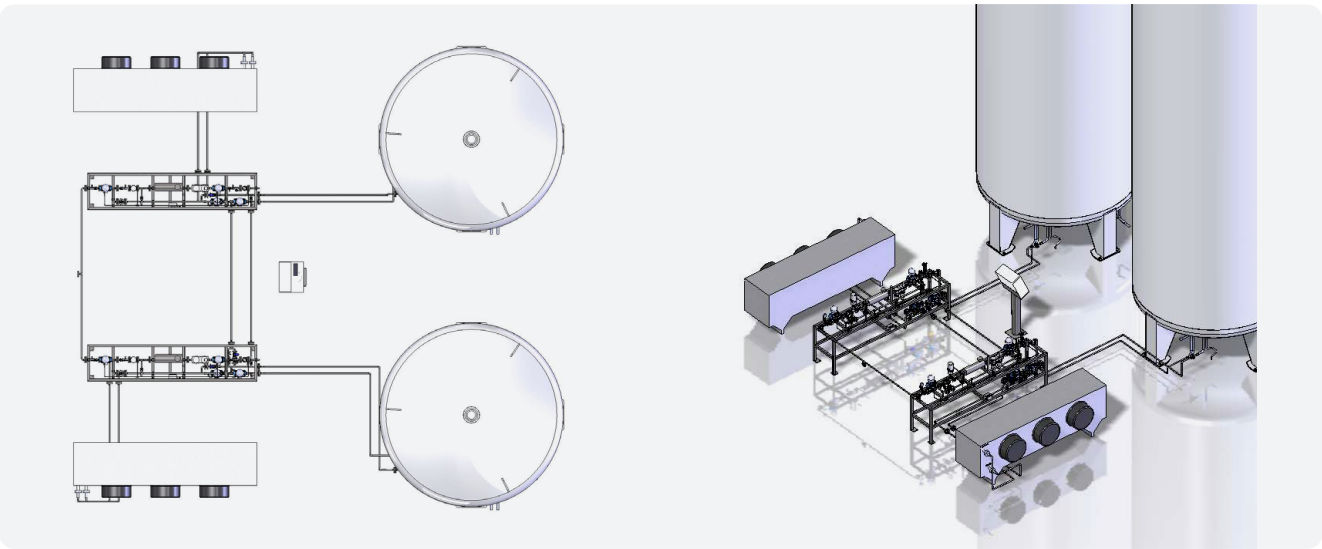
ASCO CO_2 Gas Dosing System: Standard scope of supply (single line)

ASCO supplies a fully preinstalled and pretested system consisting of:

- 1 x ASOC CO_2 Gas Dosing System line consisting of
  - filtration unit
  - flow regulating valve
  - automatic shut off valve
  - pressure reducing valve
  - manual shut off valve
  - safety valves
  - discharge valve
  - control cabinet, prewired
  - all mounted on a stainless steel base frame
- 1 x CO_2 flowmeter including digital display
- 1 x CO_2 storage tank (capacity has to be specified at time of order)
- 1 x atmospheric CO_2 vaporiser (capacity has to be specified at time of order)
- 1 x static mixer or gas dispersion system (capacity has to be specified at time of order)

ASCO CO_2 Gas Dosing System: Example Layout of a redundant dosing system

Please note that all systems in this catalogue are only examples. Each system is customised and requires detailed engineering.



Example layout of a complete redundant ASCO CO_2 Gas Dosing System with CO_2 tanks and vaporisers

ASCO provides a completely redundant system which automatically controls and regulates the CO_2 flow depending on a set point coming from the LCP with integrated HMI.

Depending on the condition of the storage tanks, vaporisers and the dosing systems, the system will detect and decide what parts need to take over the load to guarantee a continuous CO_2 injection into the side stream water. All operating conditions and status information are displayed on the touch panel and are available as data bloc for customers main control.

Redundant ASCO CO_2 Gas Dosing System: Standard scope of supply

ASCO supplies a fully preinstalled and pretested system consisting of:

- 2 x ASCO CO_2 Gas Dosing System lines consisting of
  - filtration unit
  - flow regulating valve
  - automatic shut off valve
  - pressure reducing valve
  - manual shut off valve
  - safety valves
  - discharge valve
  - all mounted on a stainless steel base frame
- 2 x CO_2 flowmeters including digital display
- 1 x control cabinet (PLC)
- 2 x CO_2 storage tanks (capacity has to be specified at time of order)
- 2 x atmospheric CO_2 vaporisers (capacity has to be specified at time of order)
- 1 x static mixer or gas dispersion system (capacity has to be specified at time of order)
- 1 x automatic change over system

ASCO CO_2 Gas Dosing System: Available standard capacities

CO_2 Gas Dosing System 5–50kg/h (11–110lb/h) (single line) Art.-Nr. 900135

Pos. 001

- 1 x ASCO CO_2 Gas Dosing System consisting of
  - filtration unit
  - flow regulating valve
  - automatic shut off valve
  - pressure reducing valve
  - manual shut off valve
  - safety valves
  - discharge valve
  - control cabinet, prewired
  - all mounted on a stainless steel base frame
- 1 x CO_2 flowmeter including digital display

For a running ASCO CO_2 Gas Dosing System following equipment is necessary:
- 1 x CO_2 storage tank (capacity has to be specified at time of order)
- 1 x atmospheric CO_2 vaporiser (capacity has to be specified at time of order)
- 1 x static mixer or gas dispersion system (capacity has to be specified at time of order)

CO_2 Gas Dosing System 30–300kg/h (66–660lb/h) (single line) Art.-Nr. 900136

Pos. 002

- 1 x ASCO CO_2 Gas Dosing System consisting of
  - filtration unit
  - flow regulating valve
  - automatic shut off valve
  - pressure reducing valve
  - manual shut off valve
  - safety valves
  - discharge valve
  - control cabinet, prewired
  - all mounted on a stainless steel base frame
- 1 x CO_2 flowmeter including digital display

For a running ASCO CO_2 Gas Dosing System following equipment is necessary:
- 1 x CO_2 storage tank (capacity has to be specified at time of order)
- 1 x atmospheric CO_2 vaporiser (capacity has to be specified at time of order)
- 1 x static mixer or gas dispersion system (capacity has to be specified at time of order)

CO_2 Gas Dosing System 100–800kg/h (220–1'770lb/h) (single line) Art.-Nr. 900137

Pos. 003

- 1 x ASCO CO_2 Gas Dosing System consisting of
  - filtration unit
  - flow regulating valve
  - automatic shut off valve
  - pressure reducing valve
  - manual shut off valve
  - safety valves
  - discharge valve
  - control cabinet, prewired
  - all mounted on a stainless steel base frame
- 1 x CO_2 flowmeter including digital display

For a running ASCO CO_2 Gas Dosing System following equipment is necessary:

- 1 x CO_2 storage tank (capacity has to be specified at time of order)
- 1 x atmospheric CO_2 vaporiser (capacity has to be specified at time of order)
- 1 x static mixer or gas dispersion system (capacity has to be specified at time of order)