

CO₂ Gas Dosing for Water Neutralisation

ASCO CO₂ Gas Dosing Systems



ASCO CO₂ Dosing System (single line)

Wherever you need to have an exact quantity of CO₂ gas to be dosed, the **ASCO** CO₂ Gas Dosing System is ideal! Typically, the **ASCO** CO₂ Gas Dosing System is used together with water desalination plants.

The system is equipped with a CO₂ pressure reducing valve, filtration unit, CO₂ gas flowmeter, CO₂ regulating valve, pressure gauges, safety valves and a completely pre-wired control cabinet.

In case of maintenance the system provides a manual by-pass line, which also can be monitored by the flowmeter. Herefore, changing a filter cartridge or doing any other service work on the system is quick and easy!

As raw and fitting material **ASCO** uses mainly stainless steel. This makes the system very resistant and extends the products life cycle.

Advantages of an ASCO CO₂ Gas Dosing System:

- easy to install
- very accurate
- 4-20mA output signal
- robust stainless steel construction
- no auxiliary equipment like air compressor needed, only power supply is required

Site conditions

Min. ambient air temperature:	10 °C, optional with heater for vaporiser down to 4 °C
Max. ambient air temperature:	38 °C, optional with air conditioned cabinet up to 50 °C
Humidity:	34 % to 99 %
Wind speed max:	19.03 m/s (62 ft/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:	4 bar (58 psi) max.

ASCO CO₂ Gas Dosing System: Components



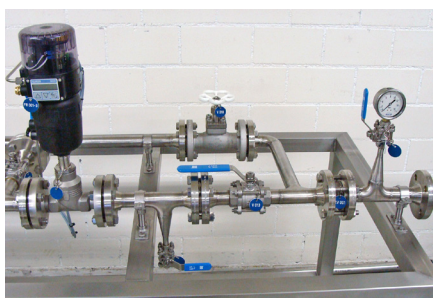
- flanged inlet incl. counter flange
- control cabinet
- all equipment mounted on robust stainless steel frame



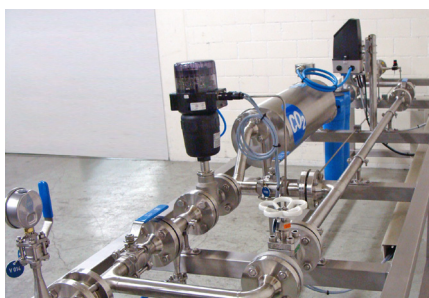
- pressure reducing valve for easy adjustment of inlet pressure



- **ASCO CO₂ Gas Flowmeter** for accurate measuring of the flow rate
- provides a 4-20 mA output signal which can be processed on the customer's main control



- actuating valve to adjust flow of CO₂ gas



- by-pass-line for manual operation



- filtration unit

Static mixer / 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 CO₂ gas in the customer's main stream water. The used components feature the following key benefits:

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



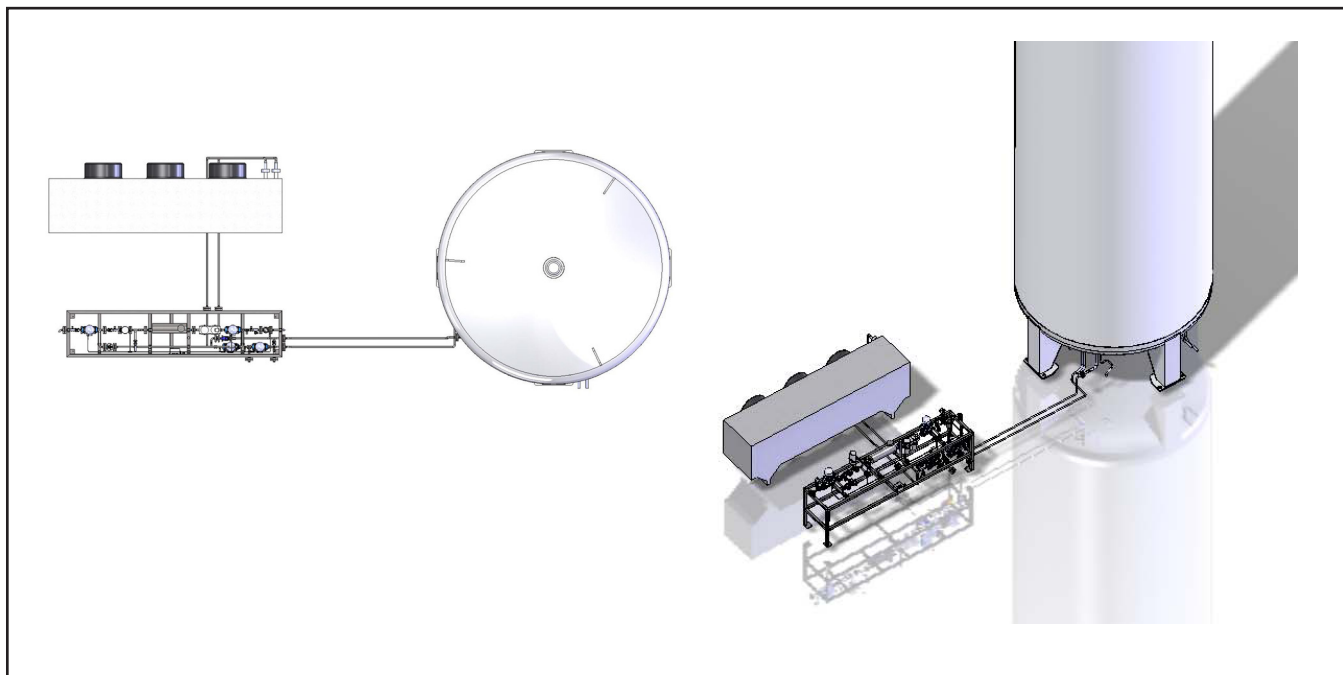
CO₂ feeding via side stream into the main water stream



Reliable solubility of the CO₂ gas thanks to special design of the static mixer

ASCO CO₂ 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** CO₂ Gas Dosing System (single line) with CO₂ 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** CO₂ 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.

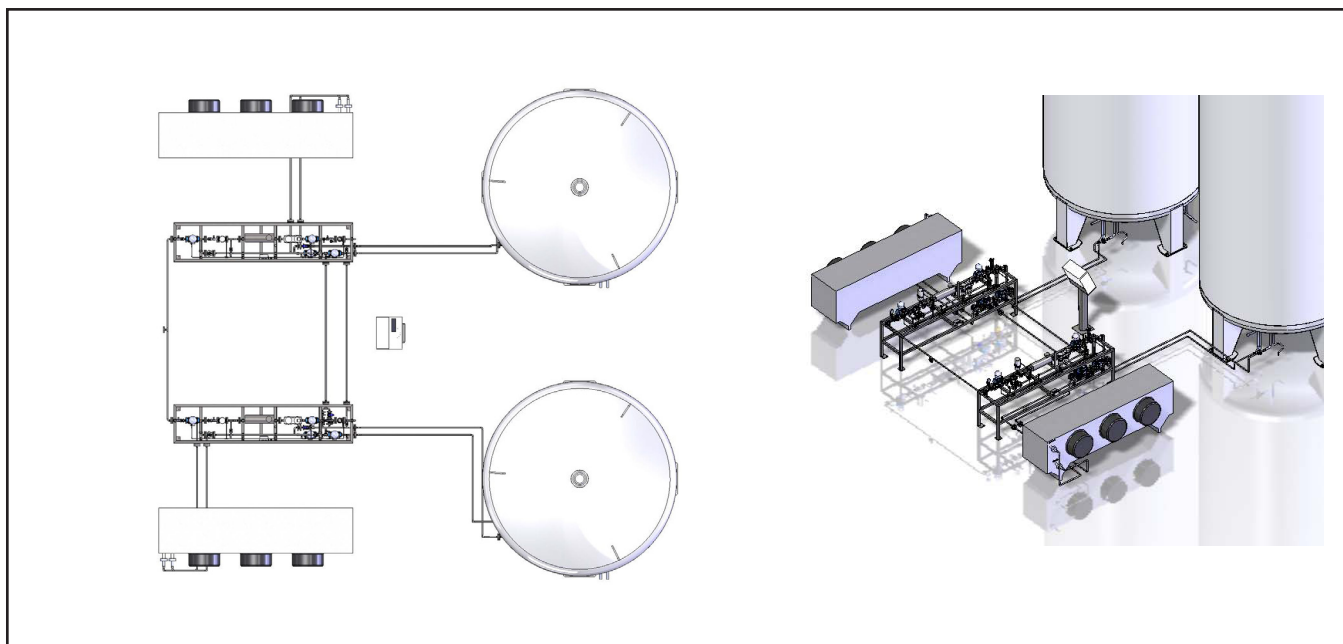
ASCO CO₂ Gas Dosing System: Standard scope of supply (single line)

ASCO supplies a fully preinstalled and pretested system consisting of:

- 1 × **ASOC** CO₂ 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 × CO₂ flowmeter including digital display
- 1 × CO₂ storage tank (capacity has to be specified at time of order)
- 1 × atmospheric CO₂ vaporiser (capacity has to be specified at time of order)
- 1 × static mixer or gas dispersion system (capacity has to be specified at time of order)

ASCO CO₂ 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** CO₂ Gas Dosing System with CO₂ tanks and vaporisers

ASCO provides a completely redundant system which automatically controls and regulates the CO₂ 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 CO₂ 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 CO₂ Gas Dosing System: Standard scope of supply

ASCO supplies a fully preinstalled and pretested system consisting of:

- 2 x **ASCO** CO₂ 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 CO₂ flowmeters including digital display
- 1 x control cabinet (PLC)
- 2 x CO₂ storage tanks (capacity has to be specified at time of order)
- 2 x atmospheric CO₂ 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 CO₂ Gas Dosing System: Available standard capacities

Pos. 001

CO₂ Gas Dosing System 5 - 50 kg/h (11 - 110 lb/h) (single line)

part no. 900135

- 1 × **ASCO** CO₂ 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 × CO₂ flowmeter including digital display

For a running **ASCO** CO₂ Gas Dosing System following equipment is necessary:

- 1 × CO₂ storage tank (capacity has to be specified at time of order)
- 1 × atmospheric CO₂ vaporiser (capacity has to be specified at time of order)
- 1 × static mixer or gas dispersion system (capacity has to be specified at time of order)



Pos. 002

CO₂ Gas Dosing System 30 - 300 kg/h (66-660 lb/h) (single line)

part no. 900136

- 1 × **ASCO** CO₂ 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 × CO₂ flowmeter including digital display

For a running **ASCO** CO₂ Gas Dosing System following equipment is necessary:

- 1 × CO₂ storage tank (capacity has to be specified at time of order)
- 1 × atmospheric CO₂ vaporiser (capacity has to be specified at time of order)
- 1 × static mixer or gas dispersion system (capacity has to be specified at time of order)



Pos. 003

CO₂ Gas Dosing System 100 - 800 kg/h (220-1'770 lb/h) (single line)

part no. 900137

- 1 × **ASCO** CO₂ Gas Dosing System consisting of
 - filtration unit
 - flow regulating valve
 - automatic shut off valve
 - pressure reducing valve
 - manual shut off valve
 - safety and discharge valves
 - control cabinet, prewired
 - all mounted on a stainless steel base frame
- 1 × CO₂ flowmeter including digital display

For a running **ASCO** CO₂ Gas Dosing System following equipment is necessary:

- 1 × CO₂ storage tank (capacity has to be specified at time of order)
- 1 × atmospheric CO₂ vaporiser (capacity has to be specified at time of order)
- 1 × static mixer or gas dispersion system (capacity has to be specified at time of order)

