



Welltech Instrument Co. Ltd

CO2 SCRUBBER FOR HVAC / AHU



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CO2 Scrubber System

Welltech's CO2 Scrubbing System (CSS Series) is designed to integrate with HVAC or AHU system to achieve load reduction purpose and as a consequence to achieve energy & cost saving

Load Reduction -	Energy Saving -	CO2 Reduction -
Reduce Chiller Usage -	Save Money -	Meet IAQ std -

Ability

- Direct CO2 reduction
- Remove TVOC, HCHO, PM2.5, NOx, Ozone, Odour
- Filtering + regeneration: 24 hours non-stop operation
- Meet BS476: Part4, 6; ASHRAE 145.2-2016



CO2 Scrubber System

The existing HVAC and AHU in the market cannot remove the CO2

Welltech's CO2 scrubbing system (CSS series) is a solution for HVAC and AHU unit to tackle the CO2 problem. The CO2 scrubbing system comes with CO2 regenerative catalyst to remove the CO2. The CO2 catalyst life is more than 10 years. With other filter, it can also remove TVOC, HOCO, Benenze, NOx, Ozone, PM2.5 etc.

Working Principle

Filtering

Air passing the scrubber, CO2 will be captured by the CO2 catalyst

Regeneration

During regeneration, high concentrate CO2 will be purged out

When air passing the scrubber, CO2 will be captured. To install it in front of the AHU, CO2 is captured and fresh air intake can be stopped or reduced.

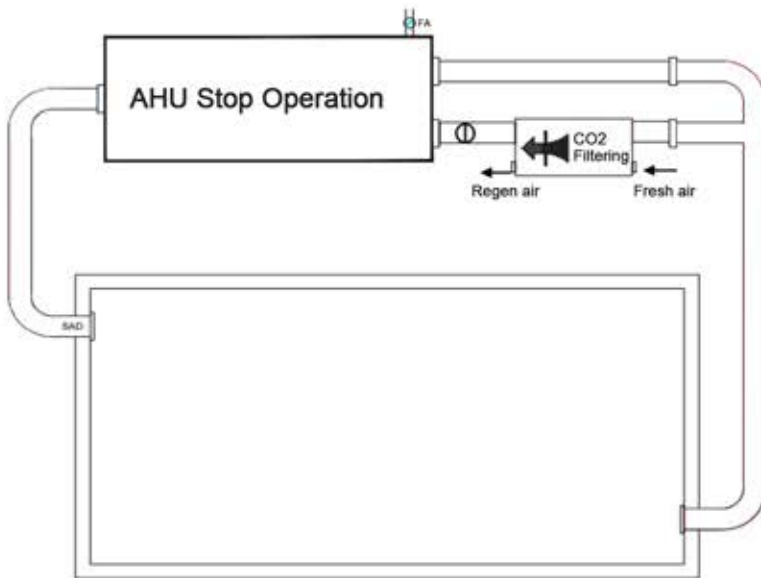
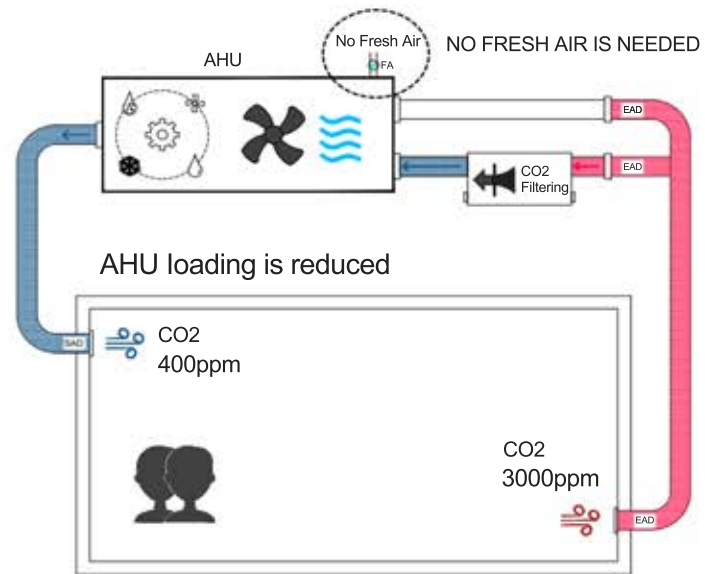
Controller	Siemen PLC & LCD touch screen display
Filtering	Manual mode Time mode CO2 mode
Regeneration	Manual mode Time mode



CO2 Scrubber System

Filtering

The CO2 catalyst mainly capture CO2.
Other filter can capture TVOC, HCHO, PM2.5, Benzene, NOx, Ozone, etc



Regeneration at night time

CO2 and contaminants will be purged out by heating

Control

Display: 7" or 10" LCD touch screen display

The filtering and regeneration process is operated automatically

With data storage for iaq analysis

CO2 Scrubber System

General Information

Model	CSS-2500HV
Installation	Can install in indoor or outdoor
Construction	Powder-coated galvanized steel with 50mm insulation
Filtering Flow Rate	1500 CMM or custom made with larger flow rate
Air flow rate	7-12m/s
Regeneration Flow rate	500CMM
Catalyst Life	+15 years without replacement
External Dimension	Standard 1100×900×2200mm(HxWxL), custom size also available
Ducting Dimension	200×600mm(air inlet and air outlet), 110x245mm(regen outlet)
Power Supply	1P 240Vac 32A or 3P 400Vac 15A
Weight	800kg

System Power Consumption

Model	CSS-2500HV
Installation	Can install in indoor or outdoor
Construction	Powder-coated galvanized steel with 50mm insulation

CO2 Scrubber System

Filtering Ability

➤ Mainly remove CO2

➤ Can also remove TVOC, HOCO, beneze, odor, PM2.5, ozone, NOX

Sensor

CO2 Transmitter	0-20000ppm, +/-10ppm
Temperature sensor	PT100 , +/-0.1C

PLC

➤ Siemen SR30-AE04

Control

➤ LCD touch screen display, 7" display

➤ Manual on/off

➤ Time mode

➤ CO2 mode

Option

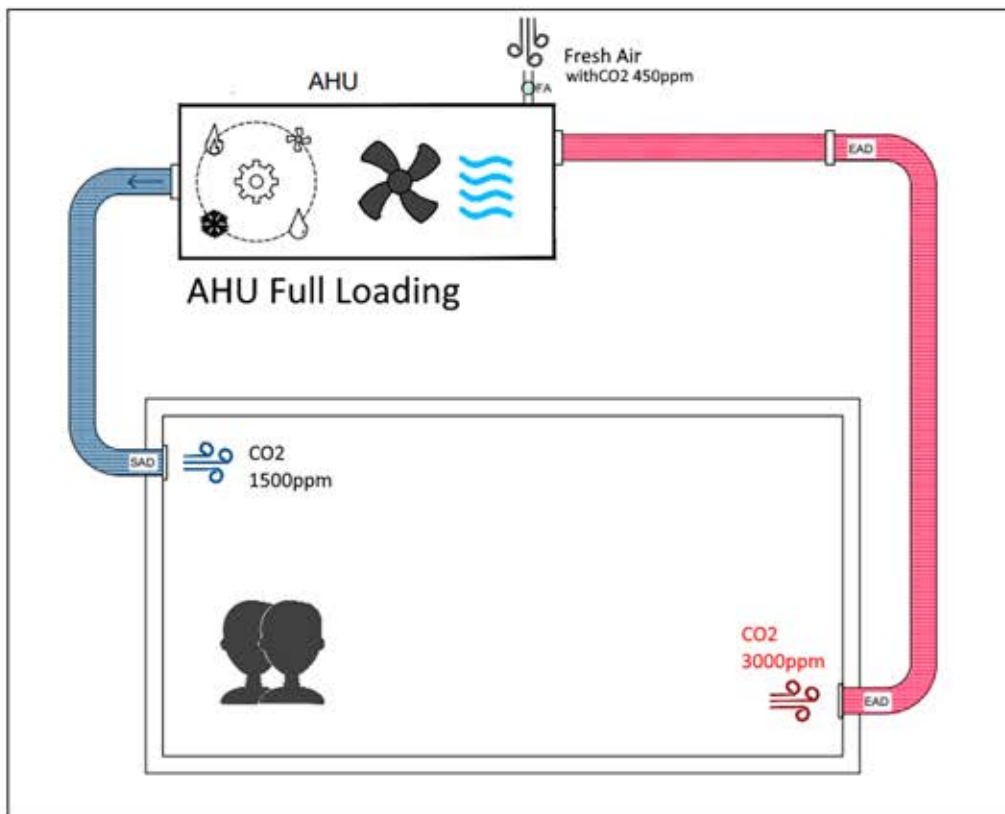
➤ Remote control by mobile through wifi

CO2 Scrubber System

Installation

This CO2 scrubbing system is designed to integrate with the AHU or HVAC system. We also provide standalone CO2 purifier for office use. Visit www.co2-purifier.com for more detail.

Normal AHU Operation (without CO2 scrubber)



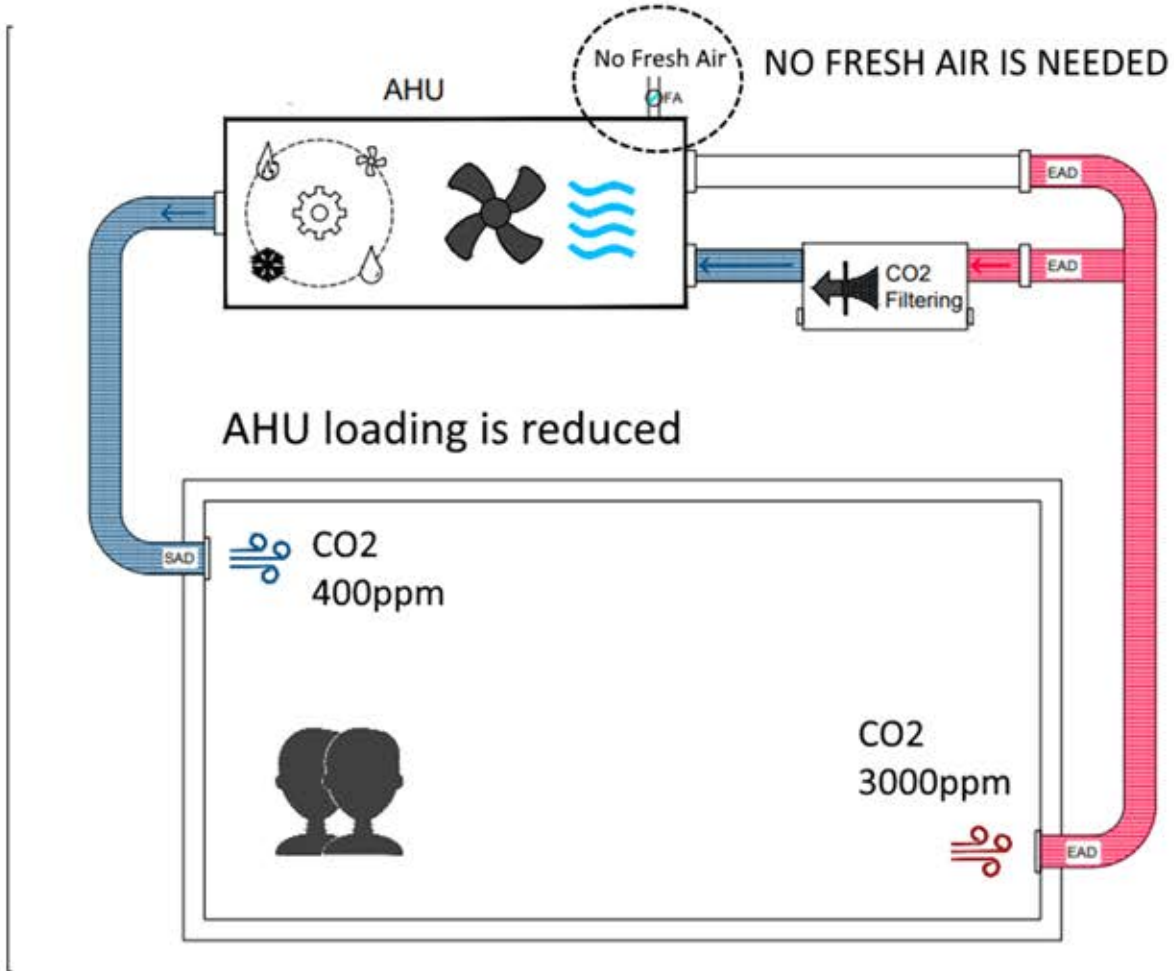
Normal AHU system, the return air and fresh air will pass to the AHU units and then supply back to the building.

Problem: Increase the fresh air intake will increase the loading of AHU

Problem: The CO2 outlet from AHU is still very high

CO2 Scrubber System

AHU + CO2 Scrubbing



To integrate our CO2 scrubbing system in front of the AHU, it will absorb the CO2 before passing into the AHU. As the CO2 level drops, fresh air intake by AHU can be reduced or stopped. And as a result, energy can be saved. Below is the CO2 absorbing ability of the scrubber.

About 60% of the energy and cost can be saved.

CO2 inlet	600ppm	1000ppm	2000ppm	3000ppm	5000ppm
CO2 outlet	90ppm	155ppm	250ppm	400ppm	850ppm

CO2 Scrubber System



Fig. Standard size of model: CSS-2500HV ,
1100×900×2200mm(HxWxL)
Noted: Custom size is available

