



GOLD, SILVER C AND COMPACT AIR

Energy-efficient, compact and flexible air handling units



**“We create
the best
indoor climate
for people
and the
environment”**

Our GOLD, SILVER C and COMPACT Air air handling unit ranges are built at our facility in Kvänum, Sweden. This is where a number of our key components – fans, casings and rotary heat exchangers – are developed and manufactured. Plus, this is also where we develop our proprietary control system. This unique level of consolidated expertise is what allows us to guarantee the superior quality of our products and ensure that our control system and hardware are fully interoperable.

“Made in Kvänum” is also synonymous with robust support and service expertise underpinned by our proven track record and comprehensive industry insights and know-how to assist you at any stage of a design and build process and for many years beyond.

Our ambition is to think ahead and serve you over the long term with all you need to achieve the ultimate air quality and energy performance!



The perfect air handling unit

Given that each project has unique parameters and caters for different requirements, it follows that there can be no universal, 'one-size-fits-all' unit. This is why Swegon offers an unrivalled range of air handling units. Whether your project is large-scale or small-scale, whether it calls for basic or advanced products, whether the expectations regarding sound levels or space efficiency are tough to meet, we have a solution to match your requirements. In other words, we have the perfect unit for your project!

But how do you know which unit to choose? Because the design of the perfect unit is needs-

based, this brochure starts by outlining the requirements our products cater for. We will be covering every consideration from energy performance to ventilation system planning, through to the solutions that allow you to unlock the full potentials of Swegon's GOLD, SILVER and COMPACT Air product ranges.

Regardless of which product range and variant you choose, you will be benefitting from Swegon's superior quality and energy-efficient solutions for a healthy and comfortable indoor climate - with the lowest operating cost.

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Optimised energy recovery

Good air quality and energy efficient – in any application

Our units are extremely energy-efficient, but their value is not only in energy savings from running the unit itself, but recovery of the energy in the air flow. Thanks to our comprehensive range of heat exchangers with intelligent functions, we offer solutions for efficient handling of different needs and different types of applications, whether you are fitting out energy-rated office premises or a residential high-rise, where you want to prevent odour transmission between flats.

Rotary heat exchanger - RX

Units with rotary heat exchangers allow you to achieve the ultimate in temperature efficiency; our patented heat exchangers with turbulent air flow being uniquely effective. Swegon heat exchangers are available in the standard RECOeconomic version or the RECOsorpTic sorption version for enhanced moisture recovery. RECOsorpTic also offers reduced operational and investment expenditure on cooling and enhanced comfort in the winter season.

Heating and cooling energy recovery are demand-controlled by variable adjustment of the speed of the heat exchanger. Adjusting plates, pressure measurement and purging sector are included as standard. All of this combined with our ingenious Carry Over Control Feature ensures that extract air is not transferred to the supply air.

Counterflow heat exchangers - PX

The RECOflow counterflow heat exchanger, aided by the bypass and heat-exchanger damper, variably adjusts the heat exchanger's heat recovery efficiency automatically for stable supply air temperature and occupant comfort. RECOflow is available in two versions depending on whether priority is given to superior temperature efficiency or low pressure drop. RECOflow has a high air-seal class, which minimises internal leakage, making the GOLD PX an excellent choice for residential properties.

Humid extract air combined with cold weather poses the risk of frost formation. To prevent this, our GOLD PX integrates RECO Frost – the best anti-freeze protection on the market. This unique feature uses the latest data from the unit to provide adaptive and demand-controlled adjustment for optimised energy recovery.

RECO Frost adapts the pressure drop across the heat exchanger in periods when full recovery is not needed, e.g. in spring and autumn. The result is superlative temperature efficiency and energy balance, in any climate.

Coil heat exchangers - CX

Coil heat exchangers use a hydronic circuit to transmit energy between the extract air and supply air. With separate air currents, internal leakage is prevented and results in a very space-efficient installation. The GOLD CX can attain higher air flow capacity than the GOLD PX. The system can be supplied with its hydronic circuit factory pre-filled, vented, calibrated and commissioned ready for use.

Heat recovery efficiency is adjusted variably for optimum occupant comfort, and the circulation pump is demand-controlled for enhanced energy recovery. For cold-weather applications, the GOLD CX/SD features effective anti-freeze protection based on continuous monitoring of the fluid temperature in the exhaust air coils combined with the humidity level of the extract air.





Optimised energy recovery

- 1 Turbulent air flow in the rotor provides high performance
- 2 Smart functionality for leakage detection
- 3 Heat and moisture recovery
- 4 Adaptive demand-controlled defrosting
- 5 Options for optimising installation space

Lowest energy use

Casing - flexible with enhanced leakage protection

Our extensive experience of constructing ventilation units has resulted in a casing design that boasts a high air-tightness class, minimised thermal bridges and high thermal insulation. The mechanical robustness of the unit means that it delivers on our promise long after supply and installation. In other words: one of the best units on the market.

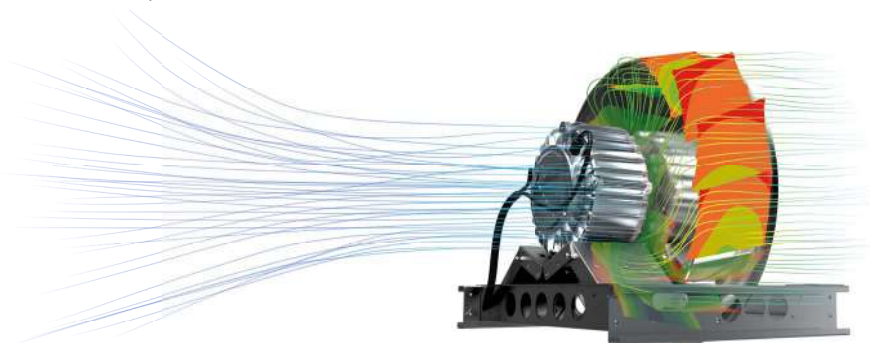
As an add-on, the unit can be supplied in an outdoor version with roof-plate protection for most climates and weathers.



Optimised fans

GOLD is fitted with our proprietary fans, GOLD Wing+, which we are especially proud of! The fans are optimised and manufactured exclusively for Swegon, and in combination with the IQlogic control system, ensure optimum operation and control of the fans and they are also equipped with a system for accurate measurement of air flow. The custom-configured control of the PM/EC motors makes GOLD Wing+ extremely energy efficient, and suited to variable loads and therefore ideal for demand-controlled ventilation.

Swegon's fan impellers and motor are pre-balanced to minimise noise and vibration in operation. Fan vibration is also reduced by anti-vibration mountings and an anti-vibration connection between the fan inlet and the unit wall. This minimises the risk of any noise and vibration being propagated to the unit casing. Last, but not least, the COMPACT Air fans keep the external dimensions of the unit to a minimum.





Lowest energy use

- 1 Highest performance as standard
- 2 High internal and external seal
- 3 High fan efficiency even in response to low air flows
- 4 Large working range
- 5 Fans are designed to prevent noise and vibration

Easily adapted

Modularity – optimised adaptation

Swegon's units allow you to choose the design right from the unit sizing process for purposes of fan siting and air flow direction. Our flexible units also allow for different duct connections, such as at the unit end or top. There is also the option of having the extract air and exhaust air duct connect from the top. In order to facilitate transport, all sizes can be selected in split version.

Thanks to the low noise generation in the surroundings, you also have the option of siting the unit close to building occupants. This then provides alternative options for locating your ventilation unit. The built-in IQlogic control unit with its host of functions allows you to optimise your function for the ultimate in comfort and energy performance, which facilitates customisation to changing needs.

The multi-functional components for the GOLD and SILVER C allow you to customise functionality to your requirements. In spite of the high energy-recovery performance and low energy use, our units have COMPACT Air length, height and width dimensions to allow you to optimise the spaces required for your ventilation installation.





Customisability

- 1** Multiple options for duct connection, fan arrangement and air flow direction
- 2** Low noise for flexible location
- 3** Multi-functional accessory parts for custom configurations
- 4** Easy to modify and functionality to match requirements
- 5** COMPACT Air measurements

Plannability

AHU Design – optimised unit selection software

High-quality hardware and an intelligent control system are the backbone of a superlative ventilation system, but equally important is to identify the ideal product variant for the project at hand.

With the web-based product selection program AHU Design, it is easy to dimension, project and configure your unit. The AHU Design product selection software simplifies the process of sizing and configuring your air handling unit by allowing you to perform advanced energy calculations to ensure that your solution is optimised for the long term too.

GOLD, SILVER C and COMPACT Air are based on standardised designs. This means that all data, such as for pressure drop and air flow, are ready-documented. This in turn means that you have all the input data for your planning phase.

The smart control functions in GOLD are always standardised, which means that each unit is primed to cater for a wide range of applications. Premium performance from the start eliminates the need to invest in costly optional extras and time-consuming retro-fits.

Last, but not least, your Swegon unit also has to blend with other fixtures in the layout of your premises. To cater for this, the AHU Design software permits flexible export via plug-ins of your CAD designs to applications such as Revit and Magicad to aid fast and easy project planning.





Plannability

- 1** AHU Design product selection software to facilitate rapid sizing and configuration
- 2** Standardised design and air flow for ease of planning
- 3** Many applications using standard functionality
- 4** High performance with no optional extras needed
- 5** CAD applications for ease of planning

Usability

An intelligent and intuitive control system as standard

Our proprietary control system ensures that you maximise all the advantages of our units. Besides a comprehensive array of intelligent functions, GOLD is the most user-friendly unit on the market with its intuitive menus and responsive touch screen for assured unit navigation and monitoring. In addition to this, the GOLD control system offers, among other things, commissioning protocols, help texts for all alarms, dynamic flow chart, logging function, built-in operation and maintenance and energy monitoring.

Our ventilation units are used in many different systems and buildings, which requires transparency and accessibility. Units with built-in control functionality can easily communicate and interact with master control and monitoring systems.

GOLD and COMPACT Air are supplied as standard with comprehensive control equipment. In addition, GOLD offers local wireless communication. This allows it to be adapted to local requirements during installation and commissioning or at a later date if the premises come to be used differently.

GOLD and COMPACT Air also contain a built-in online server with an application which, like the hand-held terminal, facilitates operation and monitoring. This solution allows you to manage your unit from any computer, smartphone or tablet connected locally or remotely. To make it even easier to find technical documentation, we have added a QR code on the GOLD unit that you can easily read with your smartphone. A link then leads to the website for downloading technical documentation.





Usability

- 1** Intuitive and user-friendly hand-held terminal
- 2** Integrated online server and communication with other systems
- 3** Complete control equipment as standard
- 4** Standardised assembly and installation
- 5** Access and operation via hand-held terminal, smartphone, tablet or PC

Find the right air handling unit

The GOLD RX/PX/CX are complete air handling units with integrated control systems, direct-driven supply air and extract air fans, supply air and extract air filters and heat exchanger. The units are supplied with a rotary heat exchanger (RX), plate heat exchanger (PX) or coil heat exchanger (CX). The GOLD has built-in control equipment that can be operated from our hand-held terminal with touch screen display.

The GOLD SD supply air/extract air handling units have one direct-driven supply air or extract air fan. Optional filters are available for all sizes. Coil heat exchangers and unmounted pipework packages can be selected for all sizes.



For further information, see the green-highlighted sections on the following pages.


GOLD

The GOLD RX/HC is an air handling unit with a reversible heat pump. In other words: ventilation, heating and cooling in a single COMPACT Air design. All operation of ventilation and conditioning is via the hand-held terminal in the unit.



For further information, see the turquoise-highlighted sections on the following pages.

Cooling and Heating

	GOLD RX	GOLD PX	GOLD CX	GOLD SD
Air flow (m ³ /h) Ecodesign 	290-39180	290-18112	1800-39188	290-39188
Type of unit	Section	Section	Section	Module
Control and system integration	●●●●●	●●●●●	●●●●●	●●●●●
Capacity - air flows	●●●●	●●●	●●●●	●●●●
Outdoor installation (optional extra)	✓	✓	✓	✓
Top connection	✓	✓		
L-concept	✓	✓		
Integrated reversible heat pump				
Option of separated air flows				✓
AHU with integrated room air diffuser				
Customisable for hygienic design	●●●●	●●●●	●●●●	●●●●
High level of general customisation options	●●●●	●●●●	●●●●	●●●●
High-level energy recovery	●●●●●	●●●●	●●●	●●●
High internal air tightness	●●●	●●●●	●●●●	●●●●●

The COMPACT Air units are complete air handling units with direct-driven supply air and extract air fans, supply air and extract air filters, and rotary heat exchanger. The COMPACT Air has built-in control equipment that can be operated from the hand-held terminal with plain-text display.



COMPACT Air

For further information, see the purple-highlighted sections on the following pages.

The SILVER C is a COMPACT Air, air handling unit without an integrated control system, with direct-driven supply air and extract air fans, supply air and extract air filters and a heat exchanger. The units are supplied with a rotary heat exchanger (RX), plate heat exchanger (PX) or coil heat exchanger (CX).



SILVER C

For further information, see the grey-highlighted sections on the following pages.

GOLD RX/HC	COMPACT Air	SILVER C RX	SILVER C PX	SILVER C CX	SILVER C SD
1620-25100	290-1200	290-39180	290-18112	1800-39188	290-39188
Section	COMPACT Air	Section	Section	Section	Module
.....	...				
....
✓		✓	✓	✓	✓
✓	✓	✓	✓		
✓		✓	✓		
✓					
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* Ecodesign data subject to configuration

How do we design the world's best air handling units



A firm foundation – the original forefronting development

The foundation for the current GOLD platform was laid back in the early 1990s, meaning that Swegon has more than 20 years' experience in developing air handling units with integrated controls and functionality. With more than 120,000 GOLD units installed on five continents, we have amassed outstanding insights into the key criteria for excellent performance in any air handling unit. Our development team also ensures that GOLD forefronts development and defines the state of the art. We strive continually to raise the bar for innovation and offer our customers products and systems that do more than conventional solutions. Our well-equipped test centre allows us to experiment with new concepts and innovations and verify the performance of our products.

Swegon has chosen to manufacture a number of the key components for our air handling units at our own plant. This

allows us to adapt components to our air handling units and needs, and to optimise their energy performance for the benefit of your operating costs.

An air handling unit can be manufactured in many ways. But we are confident that the more we invest in production in-house, the higher and more consistent the standard of quality we can supply to our customers. Swegon in Kvänum is one of the most hi-tech facilities in Europe. This is where we produce our GOLD – SILVER C – COMPACT Air ventilation units. As part of our product pledge, all of our air handling units are tested before they ship out to guarantee their quality and function.

A GOLD unit is required not only to provide the ultimate in comfort with maximum energy efficiency, it also has to be easy to plan, install and commission.



The rotary heat exchanger - forefronting development

The GOLD RX is a complete air handling unit with rotary heat exchanger, supply air and extract air fans as well as supply air and extract air filters. The RECOeconomic heat exchanger boasts high temperature efficiency, and depending on the configuration, the RECOeconomic/RECOsorption heat exchanger recovers heating energy, cooling energy and moisture. The GOLD RX features integrated functionality to safeguard leakage flows and minimise the risk of extract air impacting the supply air. The unit, including its heat exchanger component, is COMPACT Air and minimises the installation space required.

Plate heat exchanger - counter-flow

The GOLD PX is a complete air handling unit with counter-flow heat exchanger, supply air and extract air fans and filters. RECOflow offers high temperature efficiency and separated air flows, and is recommended for applications where e.g. odours risk being transferred between the extract and supply air. The GOLD PX is supplied as standard with the unique demand-controlled RECO Frost anti-freeze protection, which optimises the necessary anti-freeze adjustment. This feature is patented.



Coil heat exchanger

The GOLD CX is a complete air handling unit with coil heat exchanger, supply air and extract air fans as well as supply air and extract air filters. The GOLD CX is an extremely space-efficient solution, but the temperature efficiency is somewhat lower than for the rotary heat exchanger and counter-flow exchanger. This unit offers separated air flows and is recommended for applications where odours risk being transferred between the extract and supply air. The system is factory-prefilled and features efficient integrated anti-freeze protection.

Supply air and extract air handling units

The GOLD SD is a complete air handling unit with separate supply and extract air components, supply air and extract air fans as well as supply air and extract air filters. The unit components can also be used as stand-alone supply air fans, extract air fans and for single direction air flow. The unit can be fitted with a coil heat exchanger in which the pipework and shunt unit are available as optional extras.



GOLD benefits

- 1 The original forefronting development
- 2 Different requirements, different solutions
- 3 Ease of commissioning
- 4 Functions for every requirement as standard
- 5 Premium energy performance, construction and components



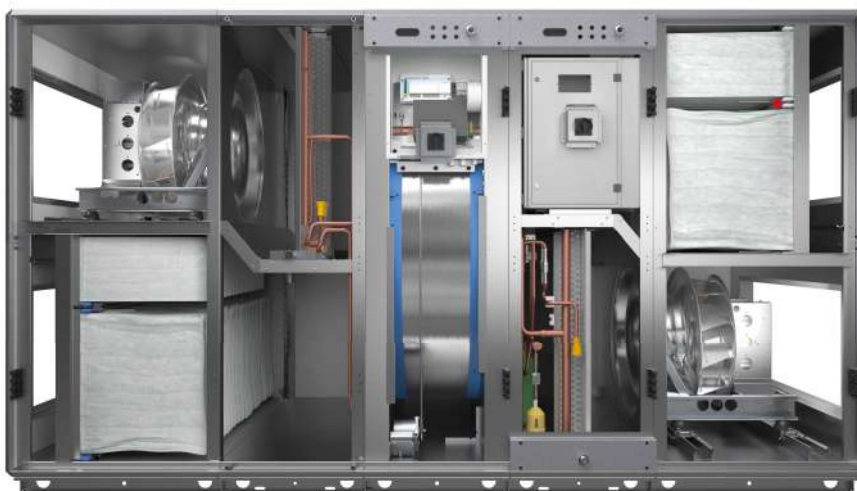
An unbeatable combination for ventilation, heating and cooling

In the GOLD RX/HC, we have combined an air handling unit with a reversible heat pump in one and the same unit. The result is fresh air, heating and cooling in an unbeatable, slimline and energy-efficient design.

Planning is simplified by the fact that we have already done the integration between the heat pump and the air handling unit for you mechanically and in terms of control. The COMPACT Air dimensions also save you valuable space. Installation is simplified if you opt to have the unit factory pre-filled, tested and ready to run.

Commissioning is fast and smooth, as all the functions are controlled directly from the GOLD unit's user-friendly hand-held terminal.

By opting for this package deal, you gain a host of benefits throughout your construction process. The fact that you will be able to optimise operation by further boosting the high energy efficiency and implementing smart comfort functions, will be an added bonus. On the next page we explain how this is done!



Energy efficiency and comfort at every stage

In operating modes where the supply air requires minimal heating or cooling, the GOLD RX/HC starts by running on the rotary heat exchanger. This maximises the efficiency of energy recovery from the extract air. In many climate zones, this covers most of the annual requirement!

When the need for heating increases, the GOLD RX/HC starts the integrated heat pump. The heat pump components are built into the unit, which boosts operating efficiency. The heat pump's coils take up any heat not recovered by the rotary heat exchanger. The GOLD RX/HC also has an exceptionally wide working range, and continues to generate heat even when the outdoor temperature is as low as -25°C .

The GOLD RX/HC offers unique control features that continuously adjust the rotary heat exchanger's speed to the heat pump's output in the lower speed range. Without this feature, there is a risk of a heavy rise or fall in supply air temperature when the heat pump starts or stops.

When the need for heating is replaced by a need for cooling, the GOLD RX/HC reverses the heat pump's circuit so it runs as a chiller. The unit can provide cooling in up to $+35^{\circ}\text{C}$ in outdoor temperature.

Since the heat pump's two coils are located on either side of the rotary heat exchanger, there is also the option of recovering cooling from the extract air, which further reduces energy consumption. Simply a package solution with the market's lowest energy consumption.



GOLD RX/HC benefits

- 1 Ventilation, heating and cooling in one complete package
- 2 Maximum energy efficiency
- 3 Reliable supply air temperature
- 4 Cost-effective service and maintenance
- 5 Flexible planning, installation and commissioning

COOL DX

COOL DX Top



GOLD RX Top



COOL DX

GOLD

Chiller COOL DX/COOL DX Top

The COOL DX/COOL DX Top chiller was designed primarily as an integral component for GOLD air handling units. All equipment is built into the unit, which is docked directly to the GOLD unit or installed as a stand-alone unit connected to the air handling unit. COOL DX provides cooling with a minimum of effort on planning, purchase specifications and installation.

The GOLD air handling unit has ready-to-use cooling functions for controlling and adjusting the COOL DX. This also includes communication with an online interface or master control and monitoring system.

COOL DX is also available in a version tailored to the SILVER C, with a factory-installed control system.

COOL DX benefits

- 1 Fast and simple installation
- 2 Built-in control equipment operated from GOLD
- 3 Readied for communication with other systems
- 4 Duct system connection to end panel or top panel
- 5 Easy sizing with GOLD



SILVER C COMPACT Air air handling unit

The SILVER C is based on the same platform as Swegon's GOLD unit, with the difference that the SILVER C comes without built-in control equipment and integrated functionality. The SILVER C gives you the option of using other solutions depending on your requirements.

The SILVER C is very versatile and can be used in both

small-scale and very large-scale projects. It offers a raft of customisation options for the ultimate in flexibility and quality.

A wide range of accessories are available for the SILVER C to cater for all requirements. The unit is also available in different versions with factory-fitted cabling, wiring terminals etc.

SILVER C benefits

- 1 Custom accessories
- 2 EC/PM technology in fan motors
- 3 Compatible with other-brand controls
- 4 Swegon-proprietary key components
- 5 Factory-tested fans

COMPACT Air



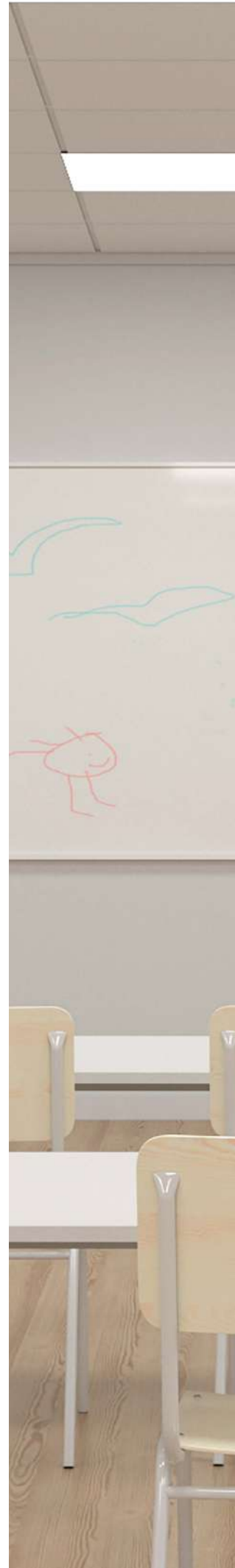
COMPACT Air

The COMPACT Air units are complete air handling units with supply air and extract air fans, supply air and extract air filters, and rotary heat exchanger. All COMPACT Air units have built-in control equipment that can be operated from a hand-held terminal. The integrated control system offers a large number of functions, including an online interface and communication with a master system.

The COMPACT Air units are complete room units designed for comfort ventilation in lecture theatres, nursing homes, conference rooms, small office spaces etc. These units are designed for installation directly in the interior requiring ventilation.

COMPACT Air benefits

- 1 Easy start-up and commissioning
- 2 COMPACT Air measurements
- 3 Extensive functionality as standard
- 4 Several variants to cater for different requirements
- 5 Complete unit for room ventilation





Ocean





Extended functionality

Insulated or uninsulated – we have the accessories to cater for your requirements

Swegon offers a comprehensive range of insulated and uninsulated accessories to meet your requirements.

Our insulated accessories are specially designed to dock directly to the unit, which gives you a complete installation and time savings. Insulated accessories generally ensure lower pressure drops compared to standard uninsulated ducting accessories, thanks to their larger cross-sectional area, which serves to minimise pressure losses and reduce

the fans' energy consumption. Uninsulated accessories come in two different connection dimensions, the larger connection has a larger cross-sectional area and results in lower pressure.

Our range includes accessories such as dampers, air heaters for pre- and post-heating, air coolers, pre-filters and sound attenuators etc.





A long-term partner

Local presence

Swegon has a network of qualified engineers and technicians near you. They carry out ventilation system commissioning, repairs and maintenance. Our spare parts warehouse carries parts and accessories, including for older versions of our products.

Expertise

Swegon's technicians have solid expertise in ventilation, cooling and indoor climate systems. Swegon is committed to maintaining its industry lead, and attaches great importance to training and upskilling our technicians on the latest advances in the industry.

In this way, we always have the right resources and capabilities to assist you in achieving and maintaining dependable systems.

Operation & Maintenance

Our comprehensive services comprise commissioning of GOLD, SILVER, COMPACT Air and diverse system solutions, together with trouble-shooting, repairs and maintenance services. We also offer monitoring of your facility, including software updating and fault prevention services.

After-sales service

Swegon strives to assist its customers, wherever you are located, to identify the right solution for your premises. For refurbishment projects, we can help to propose the ideal solution for you in relation to space, operating costs and building use. Naturally, we can also assist you in both de-installation and installation of new products and solutions. In the unlikely event that any product or service from us fails to perform as expected, you have the peace of mind of our product warranty.

Intelligent products and systems

Demand-controlled ventilation has never been easier than with the new WISE

Internet of things is a generic term for communications between products and people via the Internet. New WISE supports different combinations of indoor climate systems. Combine water-borne and airborne ventilation in your property, right from storey level to zone and room level.

The interactivity of these systems allows you to achieve the right volume of air and the right pressure drop in your system, and creates unique synergies between discrete functions in your air handling unit and indoor climate system.



Swegon Connect

Swegon Connect rationalises monitoring, optimisation, logging, support and maintenance, and will soon prove a profitable investment.

Being able to plan maintenance and employ the right resources in advance, saves both time and money. Swegon Connect gives the user full control irrespective of their geographical location. The GOLD units and their dedicated website combined with Swegon Connect offer unrivalled options for monitoring and remote access to information and operation.

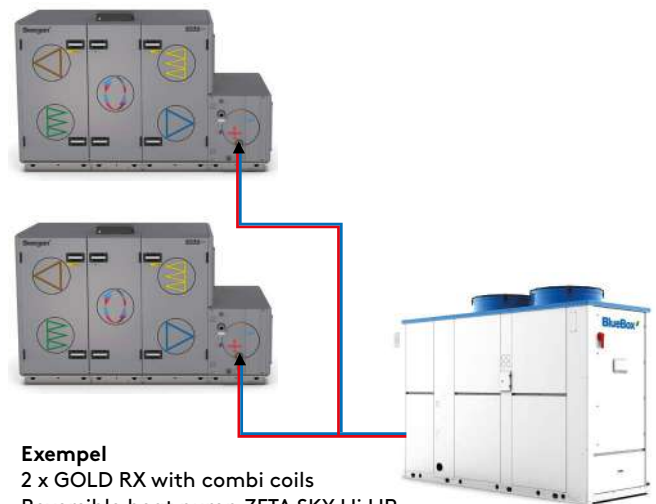


SMART Link+

The SMART Link+ function is intended to join Swegon's water-borne cooling units and heat pumps to the GOLD air handling unit. The function optimises the production of heating and cooling energy.

Communication occurs via Modbus/TCP. All functionality is included in the software for individual products, no extra control equipment is needed. SMART Link+ saves time during installation, saves energy and offers a user-friendly interface.

Up to ten GOLD air handling units can be connected to two heating producers and two cooling producers of the Omicron, Zeta, Tetris, Kappa and Omega. All controls in GOLD for liquid-borne heating and cooling can be freely combined and used in the function. Controls for Xzone, All Year Comfort (AYC) and combi coils are also included. One control sequence can be freely connected to an external heating/cooling producer, for example, district heating or district cooling



Exempel
2 x GOLD RX with combi coils
Reversible heat pump ZETA SKY Hi HP

Swegon's global presence



30 St. Mary Axe, London



BBVA headquarter, Madrid



Stockholm Waterfront



CitizenM Hotel, Glasgow



Scandic Victoria Tower, Stockholm



Elite Perla Palas, Istanbul



Piri Reis Marine University, Istanbul



Silver Mall, Irkutsk



Volkswagen, Dresden

Visit our website or follow us on the social media
www.swegon.com



Feel good **inside**

