COOL™ DXS

Swegon

Efficient and economical comfort cooling with the new **COOL**™ DXS

COOL DXS is a new cooling unit for comfort cooling, to be used together with Swegon's GOLD air handling unit. The cooling unit is available in several sizes and capacities and can also be used in Central and Southern Europe.

COOL DXS is a plug and play type unit that is connected to the supply air duct after the GOLD unit. Other than this, all that is required is to connect the power supply and control cable. The controls for the cooling unit, including communication, are fully integrated with the advanced control equipment in GOLD.

The cooling unit can be used with all types of GOLD units (RX, CX, PX and SD), although capacity-wise it is adapted for GOLD RX with a hygroscopically coated rotary heat exchanger.

The rotary heat exchanger recovers cooling energy during the summer just as effectively as it recovers heat from the extract air during the winter months. This dramatically reduces the required cooling capacity and cooling energy.

- Extremely fast and simple installation.
- Built-in control equipment and communication via GOLD.
- Saves installed capacity and provides lower energy consumption.

Economy

COOL DXS and GOLD provide a number of unique economic benefits as regards comfort cooling:

Cooling Energy Recovery

Together with the hygroscopically coated rotary heat exchanger, it is possible to save as much as 50% installed capacity and 30% energy consumption for cooling.

Fan electricity energy

The air cooler in COOL DXS is installed at an angle, which produces a larger surface and fewer tube rows. This reduces the pressure drop over the cooler, which is also achieved by the condenser not being located in the exhaust air. The saving in specific fan electricity capacity for the air handling unit is approximately SFP_v 0.2. (SFP = specific fan power)

Energy efficiency

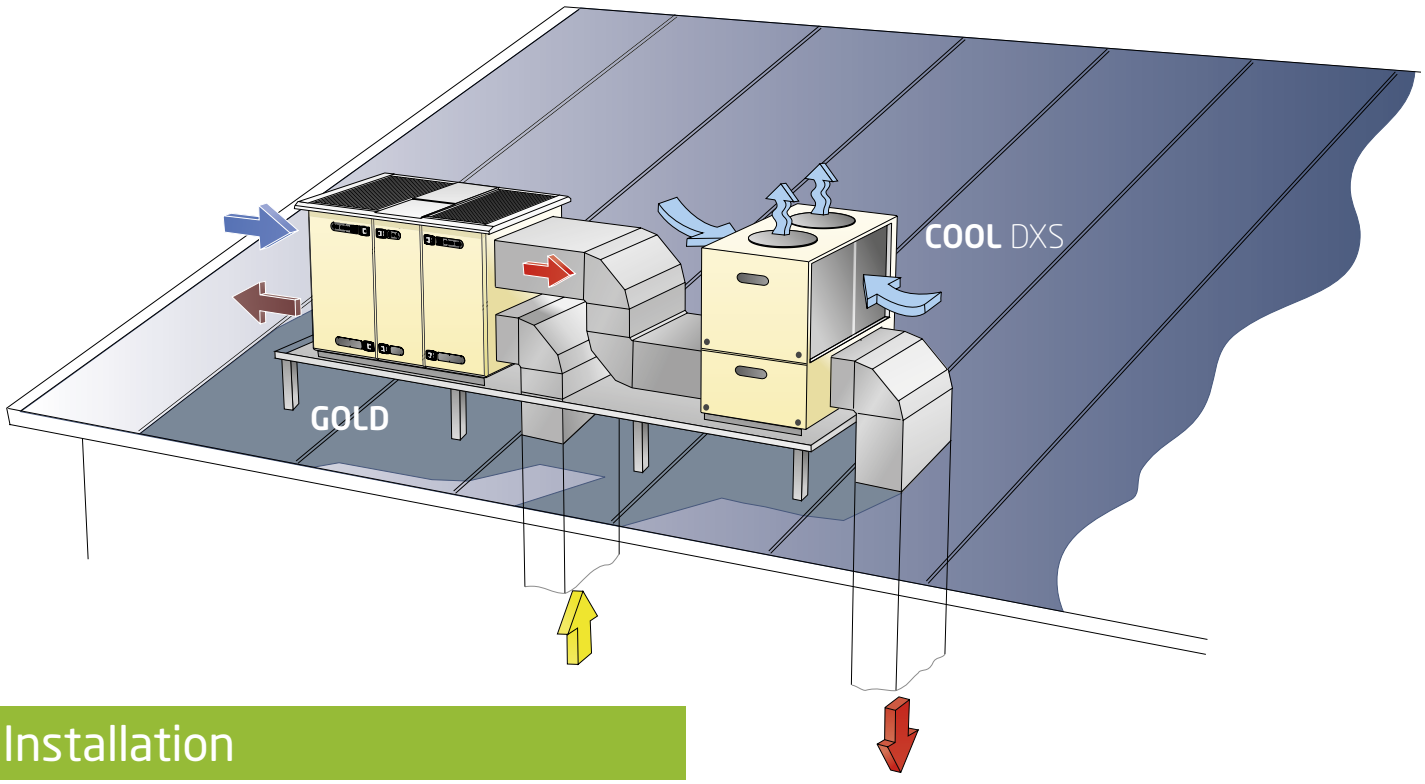
The energy efficiency for COOL DXS is up to EER 3.2, which is an excellent value for a cooling unit. (EER = energy efficiency ratio)

Economical Control Functions

GOLD has a number of cooling functions that are ready to activate. Several of these are energy efficient, such as Cooling BOOST, where an increase in the airflow is used to convey more cooling energy.

Fast, simple installation

Installation is extremely fast and simple. In addition to pure time savings, the simplicity means that the risk of installation faults is minimised.



Installation

COOL DXS must be located outdoors. The GOLD unit can also be placed outdoors with accessories for outdoor installation. It is also possible to install the GOLD unit indoors and simply route the supply air duct out to the cooling unit.

COOL DXS is internally fully wired, refrigerant is filled and the unit is test operated. Installation is therefore very simple:
– Place the cooling unit in position.
– Connect supply air ducts.
– Connect condensate drain.
– Connect power supply.
– Connect the control cable between GOLD and COLD DXS.

And that's it – Plug and Play!

Outdoor air | Supply air | Extract air | Exhaust air | Condenser cooling

Technology

The cooling machine has an air cooler installed at an angle in the lower section. The cooling compressors are located in a separate space in front of the air cooler. The sight glass and the expansion valve are also located here, where they are easily accessible for service.

The cooling compressors are fully hermetic and of the scroll type, which means a low sound level and a high level of efficiency. Each cooling unit has two or three compressors, which are connected to a common refrigerant circuit. The heat-transferring surfaces is thus used fully, even with partial loads, which produces a high annual energy efficiency ratio.

The machine is filled at the factory with R410A, a highly efficient HFC refrigerant, which does not have any impact on the ozone layer. (HFC = hydro fluoro carbons)

In the upper section there are double condenser coils. One or more rpm-controlled axial fans draw air from the surroundings, through the condenser coils and then blow it upwards.

In the upper section there is also an electrical equipment cubicle containing all electrical and control equipment. All the equipment is easily accessible for servicing and inspections.

Technical Data

Design air condition (at nominal supply airflow):

Capacity variant 1: Inlet air temperature in cooling unit 27°C/50% RH and cooling to 16°C, Ambient air temperature 35°C.

Capacity variant 2: Inlet air temperature in cooling unit 29°C/50% RH and cooling to 15°C, Ambient air temperature 35°C.

The cooling unit can be operated at full capacity at ambient air temperatures up to 45°C, with nominal supply airflow and for an inlet air temperature in the cooling unit as specified above.

The cooling unit is selected according to the required capacity and can be combined freely with GOLD, e.g. COOL DXS size 30 with GOLD size 40. The air recirculation section for GOLD can be used.

COOL DXS 12/1 to 30/1 have two identical compressors and the cooling capacity is regulated between 0-60-100%.

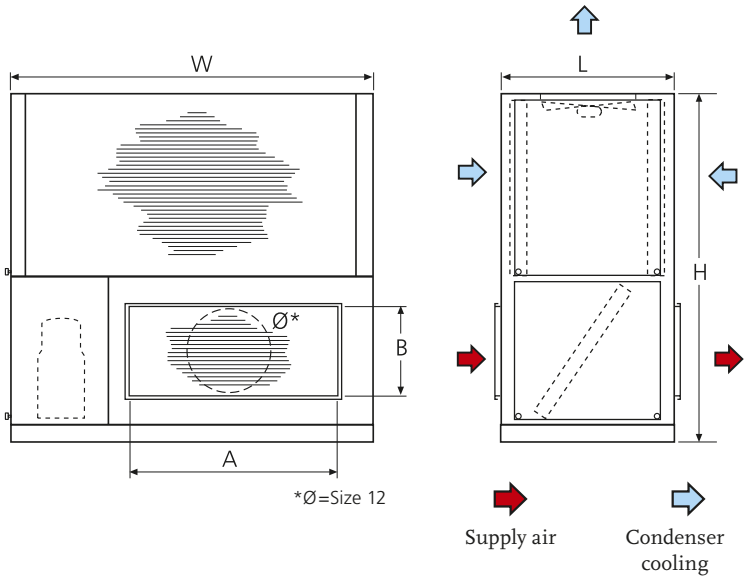
COOL DXS 30/2 to 60/1 have two compressors of different sizes, 60/2 to 80/2 have three identical compressors. The cooling capacity is regulated between 0-50-75-100%.

The data are intended to provide an overview; exact values are obtained through computer calculations.

Size	Capacity variant	Cooling capacity kW	Min. airflow m^3/h (m^3/s)	Nominal airflow m^3/h (m^3/s)	Max. airflow m^3/h (m^3/s)	Power supply	Refrigerant filling kg	EER* (energy efficiency ratio)
12	1	18.5	2 520 (0.7)	3 960 (1.1)	6 840 (1.9)	3-phase, 400V, 25A	3,9	2.9
12	2	28.5	2 880 (0.8)	3 960 (1.1)	6 840 (1.9)	3-phase, 400V, 32A	6,1	3.1
20	1	29	2 880 (0.8)	6 120 (1.7)	9 720 (2.7)	3-phase, 400V, 32A	6,1	3.2
20	2	43	3 600 (1.0)	6 120 (1.7)	9 720 (2.7)	3-phase, 400V, 40A	9,0	3.1
30	1	44	4 320 (1.2)	9 000 (2.5)	13 680 (3.8)	3-phase, 400V, 40A	9,5	3.0
30	2	62	3 600 (1.0)	9 000 (2.5)	13 680 (3.8)	3-phase, 400V, 50A	11,0	3.1
40	1	61	3 960 (1.1)	12 600 (3.5)	19 080 (5.3)	3-phase, 400V, 50A	12,4	3.0
40	2	89	4 680 (1.3)	12 600 (3.5)	19 080 (5.3)	3-phase, 400V, 80A	18,3	3.1
60	1	88	5 400 (1.5)	18 000 (5.0)	26 280 (7.3)	3-phase, 400V, 80A	18,3	3.0
60	2	129	6 840 (1.9)	18 000 (5.0)	26 280 (7.3)	3-phase, 400V, 110A	30,6	3.0
80	1	127	8 280 (2.3)	25 200 (7.0)	37 080 (10.3)	3-phase, 400V, 110A	30,6	3.0
80	2	179	9 720 (2.7)	25 200 (7.0)	37 080 (10.3)	3-phase, 400V, 145A	42,2	3.1

* At nominal airflow, ambient air temperature 35°C, inlet air temperature in cooling unit 27°C (capacity variant 1) respectively 29°C (capacity variant 2).n

Size	Capacity variant	L	W	H	A x B
12	1	1162	1954	1540	Ø500
12	2	1162	1954	1540	Ø500
20	1	1162	1954	1540	1000x400
20	2	1162	1954	1690	1000x400
30	1	1162	2163	1814	1200x500
30	2	1162	2163	1814	1200x500
40	1	1162	2413	1899	1400x600
40	2	1162	2413	2299	1400x600
60	1	1162	2861	2355	1600x800
60	2	1162	3308	2355	1600x800
80	1	1162	3756	2599	1800x1000
80	2	1162	3756	2599	1800x1000



COOL DX for lower cooling capacity

COOL DX is a plug and play cooling unit for GOLD with reduced cooling capacity. COOL DX can also be installed indoors and is docked directly with the GOLD unit. See www.swegon.com.

COOL DXS can be ordered in right or left-hand versions. The dimensional drawings show the right-hand version.

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