GKS-DX

DX Coil Type
Air Handling Units

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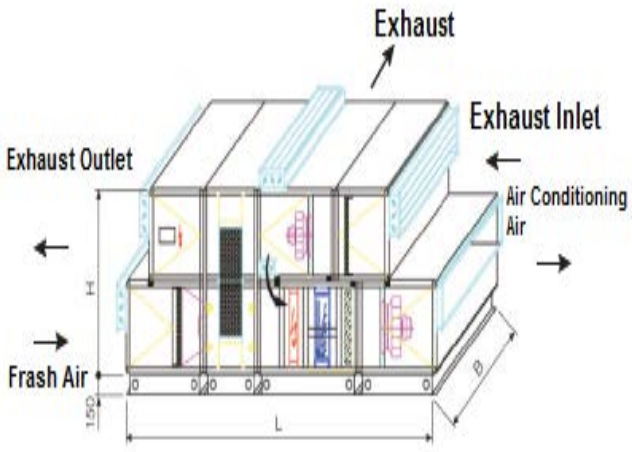
VRF APPLICATION for AIR HANDLING UNIT - GKS-DX



Energy saving Innovative solution GKS-DX&VRF application; Shopping Mall, Office, Banks, etc. places, in parallel with the air conditioning applications with VRF in order to supply fresh air is designed and manufactured. Installation is simple compared to aqueous systems, installation and installation costs are very low. It is a compact system that can be used in the outdoor and indoor environments according to the usage of the consumer thanks to its high level design features.

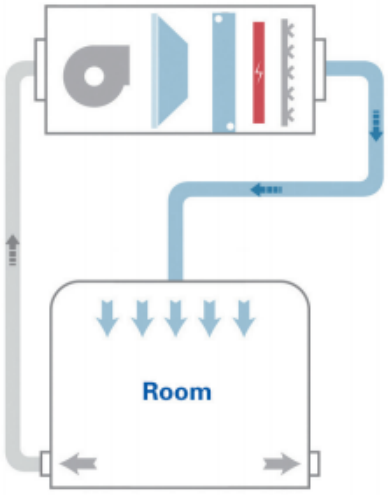
Technical Specifications

TYPE			GKS - DX 609	GKS - DX 699	GKS - DX 901	GKS - DX 911	GKS - DX 1206	GKS - DX 1216	GKS - DX 1609
Ventilator Flow		m^3/h	2000 - 4000	4000 - 5000	5000 - 8000	8000 - 11000	12000 - 15000	15000 - 19000	19000 - 25000
Ventilator Motor Power		kW	4.1	4	5.5	7.5	11	15	18.5
Engine rpm		d/d	2900	3000	1500	1500	1500	1500	1500
Ventilator Fan Type			RH40C	RH35C	RH45C	RH50C	RH56C	RH71C	RH71C
Ventilator Pressure		Pa	400	400	400	400	400	400	400
Aspirator Flow		m^3/h	2000 - 4000	4000 - 6000	6000 - 9000	9000 - 12000	12000 - 15000	15000 - 19000	19000 - 25000
Aspirator Motor Power		kW	2.2	3	4	5.5	7.5	7.5	11
Engine rpm		d/d	3550	3000	1500	1500	1500	1500	1500
Aspirator Fan Type			RH31C	RH35C	RH45C	RH50C	RH56C	RH71C	RH71C
Aspirator Pressure		Pa	400	400	400	400	400	400	400
Front Electric Heater Battery Max. Capacity Outdoor Temp. Max: 3 C Rotor Output Temp .: 14 C			12	18	27	36	45	58	76
DX Battery Max. Cooling Capacity		kW	22 - 44	28 - 56	(42 - 56) (84)	(56 - 84) (112)	(84-112) (112-140)	(84-112) (140 - 168)	(112-168) (196-224)
DX Battery Max. Heating Capacity		kW	25 - 50	31.5 - 63	(47 - 63) (94)	(63 - 94) (126)	(94 -126) (126-157)	(94-126) (157 - 189)	(126-189) (220-252)
DX Battery Circuits of Number		Adet	1 - 2	1 - 2	1 - 2 - 3	2 - 3 - 4	2 - 3 - 4 - 5	2 - 3 - 4 - 5 - 6	4 - 5 - 6 - 7 - 8
Fresh Air Damper			Var	Var	Var	Var	Var	Var	Var
Prefilter			G4	G4	G4	G4	G4	G4	G4
2nd Stage Filter			F7	F7	F7	F7	F7	F7	F7
Heat Recovery Unit (Rotary)			Enthalpy	Enthalpy	Enthalpy	Enthalpy	Enthalpy	Enthalpy	Enthalpy
Panel			included	included	included	included	included	included	included
BMC Exit			included	included	included	included	included	included	included
Total Electric Power		kW/h	20	27	38	51	63	82	107
size and weight	W	mm	1020	1325	1325	1630	1630	1935	1935
	H	mm	1430	1430	2040	2040	2650	2650	3260
	L	mm	4000	4000	4305	4305	4610	4915	5220
	weight	kg	1088	1276	1718	2069	2502	2964	3546

Application System Solution of GMCAIR's DX Products

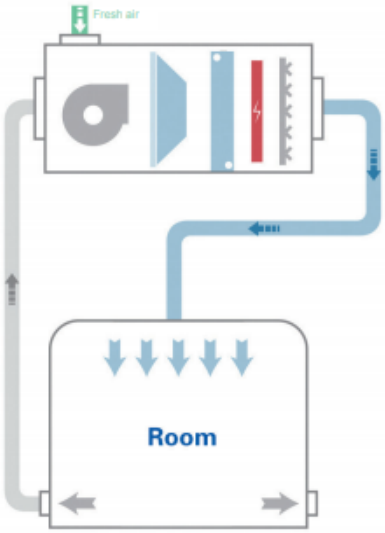
1- Full Air Return Form

Model : Air-cooled purifying type air conditioning unit
Applicable to : Application sites without fresh air

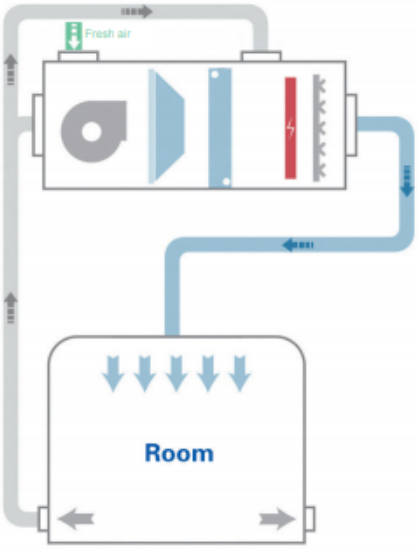


2- Primary Return Air with Fresh Air DX Solution/Secondary Return Air with Fresh Air DX Solution

Model : Air-cooled purifying type air conditioning unit
Applicable to : Application sites with partial fresh air. The primary air return solution applies to the site with a low ventilation frequency; the secondary air return solution applies to the site with a high ventilation frequency or the air flow of selected model far surpassing the nominal air flow.



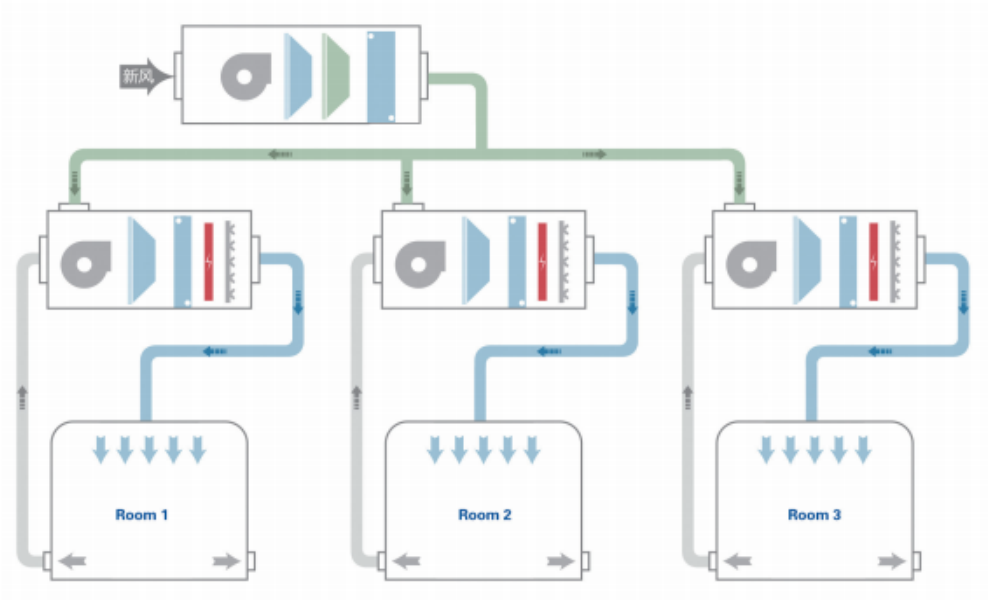
Primary air return



Secondary air return

3- Primary Air Return + Fresh Air Pre-Handling

Fresh air unit : Air-cooled DX all fresh air unit
Circulating air unit : Air-cooled purifying type air conditioning unit
Applicable to : Application sites with a greater fresh air ratio



TECHNICAL SPECIFICATIONS

1- BODY

The air handling unit is EUROVENT certified and tested according to EN 1751: 1988, DIN 1946 Part 4: 2008, DIN EN ISO 5167 Standards.

* Max Deflection for Body Mechanical Strength according to EN 1886: Positive and negative pressure according to EN 1886 D1 (M) Maximum leakage for -400 Pascal: L2, Filter Bypass Leakage: F9, Thermal Conductivity Resistance: T3, Heat Bridge: TB3 class.
* The inner and outer sheets of the body panels are made of dipped galvanized steel and the outer sheet is made of RAL9002 polyester powder coated.
* All panels and doors are double skinned and the thickness of the sheet is; min outer sheet Metal is 1mm, inner sheet metal is 0.8mm.
* All body internal surfaces are completely smooth, smooth, suitable for washing and wiping cleanings and no welded joints are made.
* 50mm thick rockwool is used as insulation material between inner sheet metal and outer sheet metal.
* The installation and disassembly of the power plant panels are completely external.
* Central cell connections are made by external connection elements.

2- HEAT RECOVERY CABIN

It has the feature of working with 100% fresh air. The sorption rotor in the air handling unit provides both sensible and latent heat transfer, eliminating the need for dehumidification in summer conditions and humidification in winter conditions, thus providing energy savings in four seasons. Yields (70-85%). Only heat transferring sensible heat can be done in wheeled or plate type cross-over applications

3- FREE HEATING-FREE COOLING CABIN

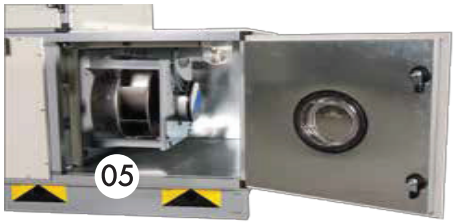
In the case of "free heating-free cooling", the air handling unit works in the most economical mode without mixing the comfort conditions of the environment by mixing 100% mixing dampers and superior automation.

4- DX COIL CABIN

The evaporator of the plant is segmented according to the required Plant capacity and the power of the VRF-VRV models. Expension-battery distribution system is designed to be independent of each section according to the capacity of each section, separate sender bushes DX battery mounted on the wing-curve-suction pipe. The cover of the switchboard is specially designed for this situation. Access for service is made easy, even after copper pipe welding.

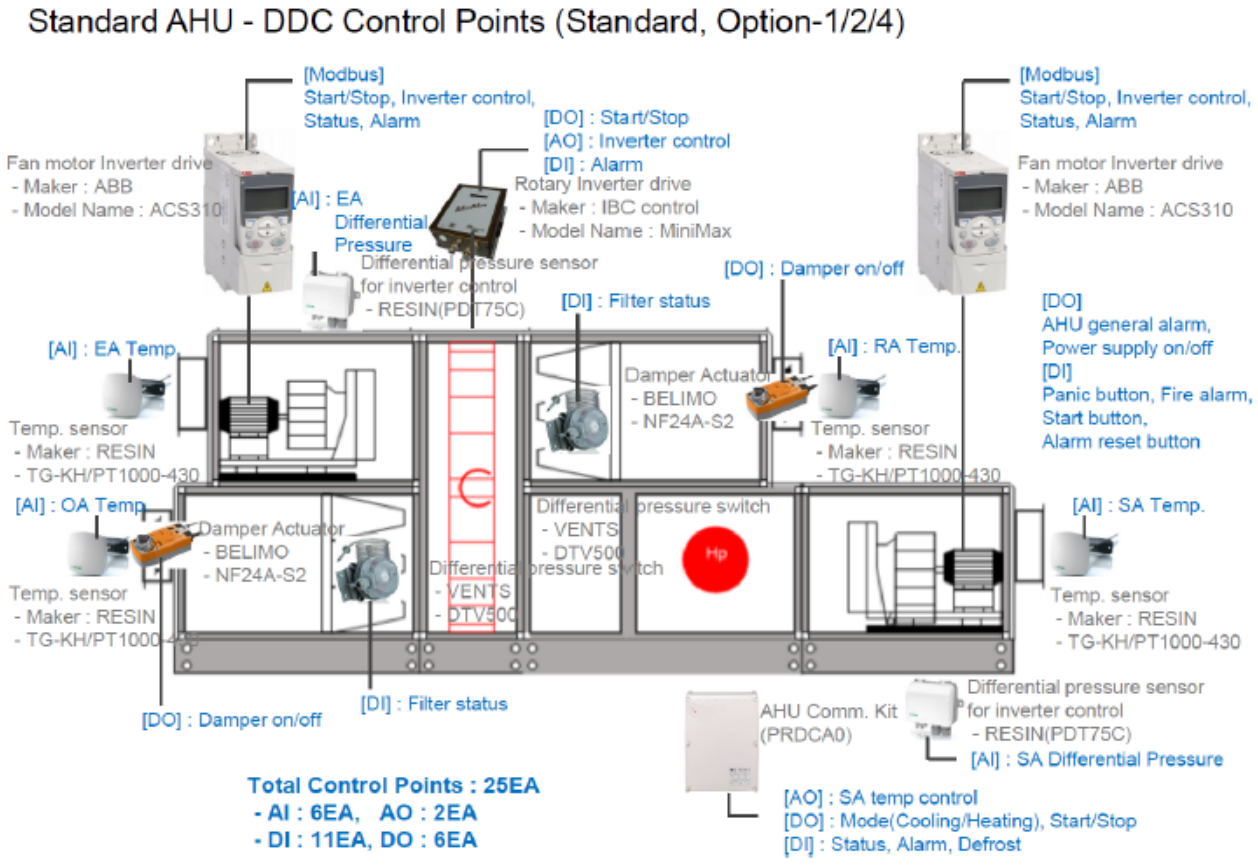
5- ASPIRATOR-VENTILATOR CABIN

EC Plug provides maximum energy saving with fans. Thanks to the EC motor application, the three-phase motor is quieter compared to the frequency inverter option, as well as more efficient, low operating and maintenance cost, low motor losses, small dimensions, easy control, access to the desired operating point in a short time



6- AUTOMATION CABIN

The most important feature of GKS-DX & VRF air handling units is the power and automation system (DDC + MCC) in a separate panel. This eliminates the need for additional automation and cabling, allowing the RS 485 module to be connected to the BMS via the Modbas protocol.

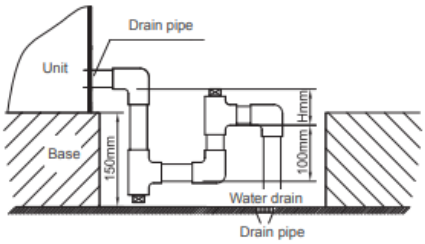


SERVICE

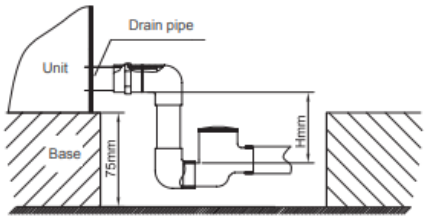
The start-up of the GKS-DX&VRF air handling unit system is carried out by VRF and GMCAIR technicians together. The performance values of the system are checked and the user is trained and the plant is delivered. This provides endless assurance and added value to the mechanical contracting company in the smooth operation and delivery of the system.

Precautions for Unit Installation and Use

Unit Installation



U-shaped water seal installation diagram



Floating ball-type water seal installation diagram

* The air conditioning units of all structure types should be installed on a horizontal base.
* A sufficient space should be reserved around the unit, especially at the access door side of unit pipes, fan and motor, so as to facilitate routine unit inspection and regular maintenance.
* A U-shaped drain pipe must be first connected at the condensate water outlet or a ball-type water seal must be installed before connecting to the external pipe.
* Exert balanced force when connecting the water inlet and outlet pipes of coil. Overexerting may damage the coil.
* The motor of air conditioning unit should be connected to a power supply with overload protection, and provide with grounding protection.
* Flexible connection should be adopted between the air conditioning unit and the external air duct to avoid vibration transmission;

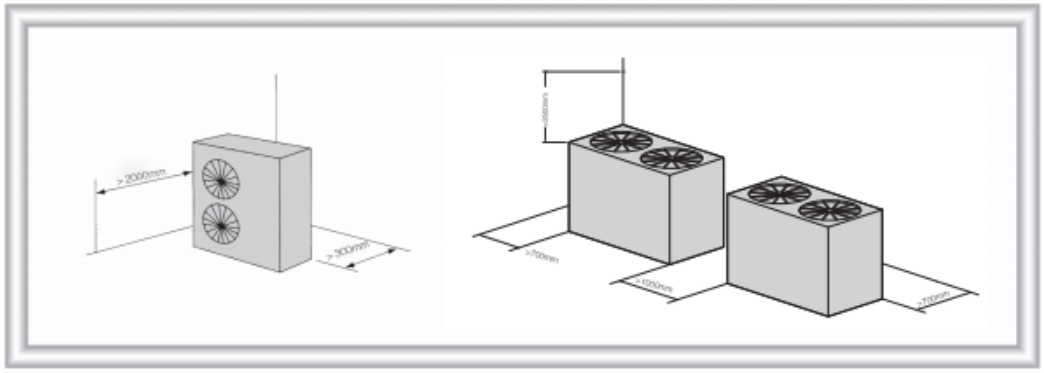
Precautions on IDU Use

* Before starting the unit each time, check all the valves of its water line and air duct, and make them in the normal operation state.
* Check connection, operating and transmission conditions of moving parts such as the fan and motor regularly, and adjust them in time.
* Clean the primary efficiency filter with clean water or cleaning agent according to the fouling degree. The cleaning frequency depends on the environment of application.
* Clean or replace the medium efficiency filter when its resistance rises to two times of the initial resistance.
* Make sure that the steam coil closes the steam valve before the fan stops.
* Make sure that the steam humidifier closes the steam valve before the fan stops.
* When the customer configures an electric control cabinet independently, the electric heater can be started only after the fan starts. It is advised to turn off the electric heater and close the steam valve 5 minutes before the fan stops. The overheat protection switch of electric heater needs to be connected to the electric heating control circuit.
* The three-phase five-wire system is adopted for the unit power cord. When the phase line diameter of electric heater is not greater than 35 mm2, the null line diameter is the same as the phase line diameter; when the phase line diameter is greater than 35 mm2, the null line diameter is 1/2 of the phase line diameter and cannot be smaller than 35 mm2.

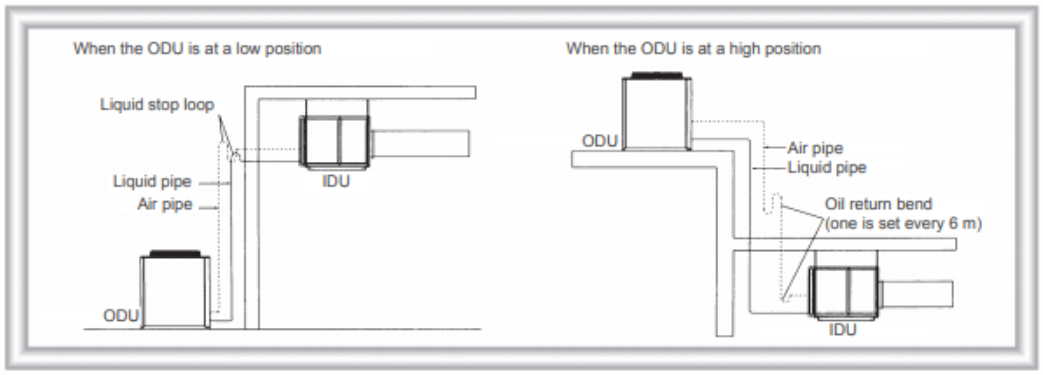
Precautions for ODU Installation

* Make sure that the ODU installation location is far away from the site with flammable and explosive substances, heavy dust, concave, or high temperature.
* Make sure that there is a sufficient space around the unit to facilitate air inlet, air outlet and repair.
* Any obstacle will affect the cooling/heating capacity of the unit and will lead to inconvenience in the future repair and maintenance of the unit.
* For the maintenance space, refer to the figure below

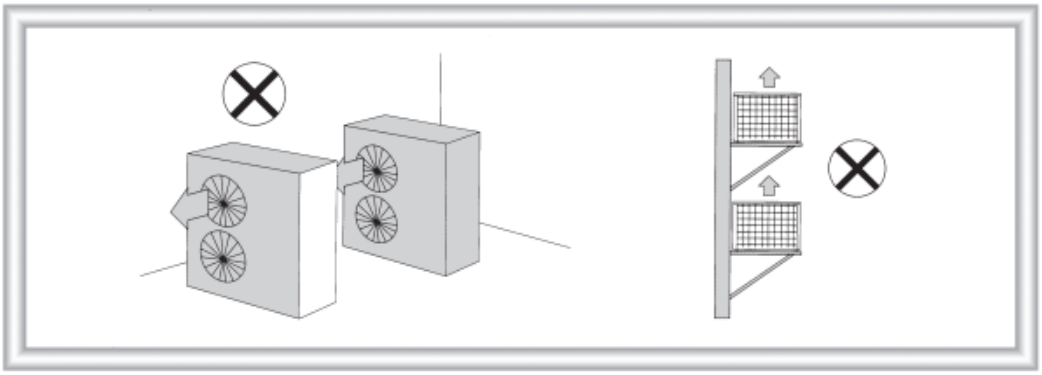
Sufficient space for heat dissipation required for the ODU



Oil return bends must be set on the gas pipe according to different IDU and ODU installation positions.



Short circuit should be avoided in IDU layout



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İnönü Mah, Gebze Plastikçiler OSB, 93. Sk, No:3 Tuzla - Gebze / İSTANBUL

+90 262 502 16 46 +90 262 502 16 45

info@gmcair.com

www.gmcair.com