Hi-FLEXi

Central Air Conditioning
Heat Recovery System

R Series

TECHNOLOGICAL HISENSE

Hisense is a large electronic information industry corporation of China founded in 1969 and owns Hisense Appliance and Hisense Kelon Appliance these two listed companies. Furthermore, Hisense is the only enterprise group in China which has three well-known trademarks as Hisense, Kelon and Ronshen at the same time.

Hisense adheres to the development strategy as "Technology Support, Steady Operation" and sustains healthy development by taking optimized industrial structure as the base, technological innovation as the drive force, capital operation as a leverage. In the 21st century, with powerful R&D strength and excellent internationalized management team, Hisense has speeded up the pace of industrial expansion and formed an industrial structure including digital multimedia, home appliances, communications, intelligent information systems, modern real estate and service.

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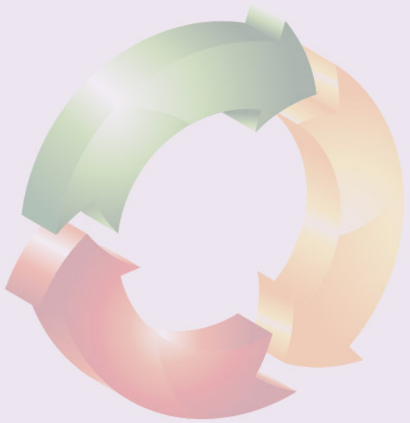


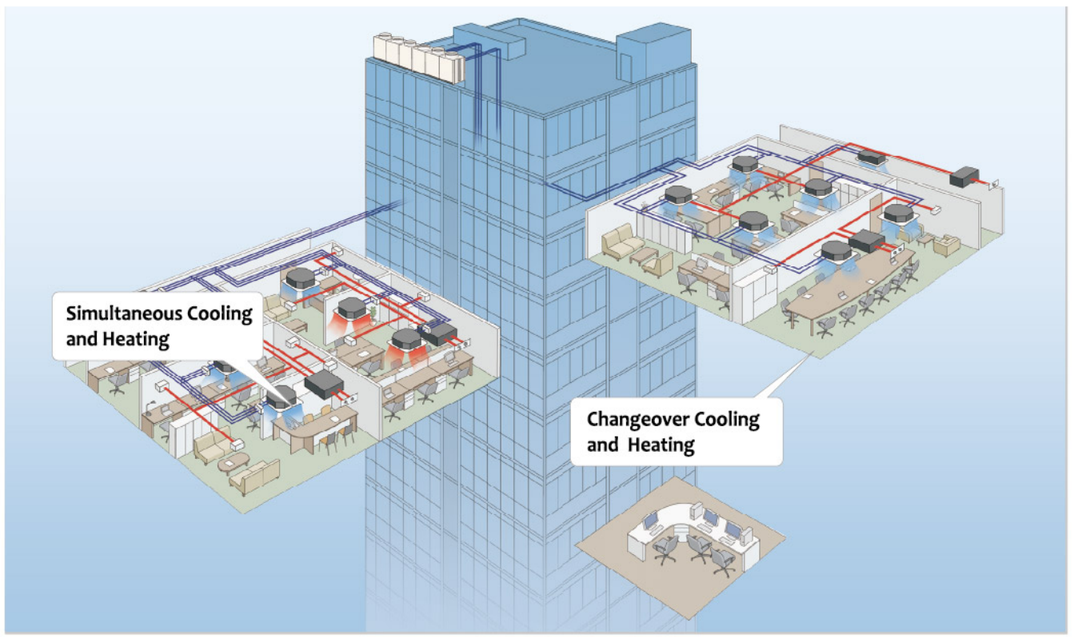
High technology quality

Multi Air-conditioning Heat Recovery System Introduction

Hisense Hi-Flexi R Series heat recovery air conditioning systems realize simultaneous cooling and heating operation within one refrigerating system, which not only contributes to energy conservation but also meets various requirements of different customers. Because rooms generate varying thermal loads according to building orientation or local hot or cold spots, the space where cooling is required all year round and space where cooling and heating should be changed over seasonally coexist in the same building. Also, air conditioning needs vary from person to person, from room to room, especially at the turn of seasons. Under these circumstances, Hisense heat recovery system debuted. Besides, from the viewpoints of application and environmental protection, Hisense introduce a comprehensive air-conditioning management system that makes it easier for users to conduct air-conditioning monitoring and control according to usage status.

Heat Recovery Green Design, Environmentally Friendly, High Efficiency and Energy Saving

Heat Recovery Multi-split Air Conditioning System realizes simultaneous cooling and heating through perfect combination of DC inverter technology and heat recovery technology, which results in a 20% energy saving compared with traditional air conditioning. At the same time, the extended scope of application and high quality that users experienced have been offered on the basis of effective running cost reduction.

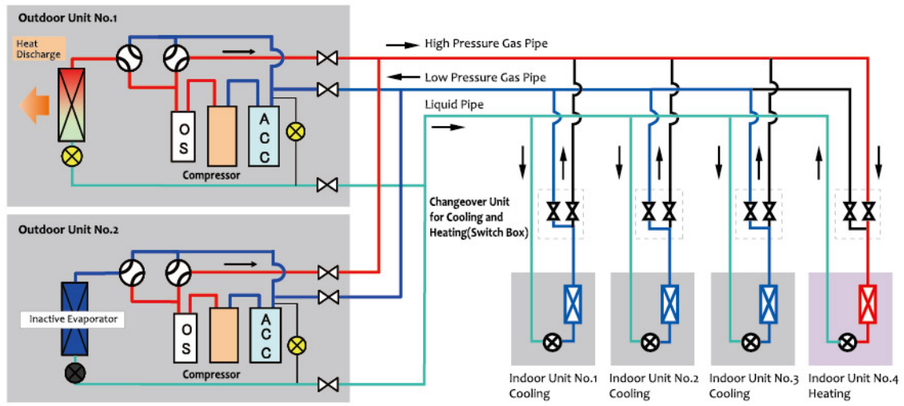


Principle Introduction

The refrigerant piping system of Hi-Flexi R series consists of liquid pipe, high pressure gas pipe and low pressure gas pipe. By the use of Switch Box changeover unit which is regulated by microcomputer, low pressure gas pipe and high pressure gas pipe can be used alternately, consequently, Cooling/Heating Simultaneous Operation works.

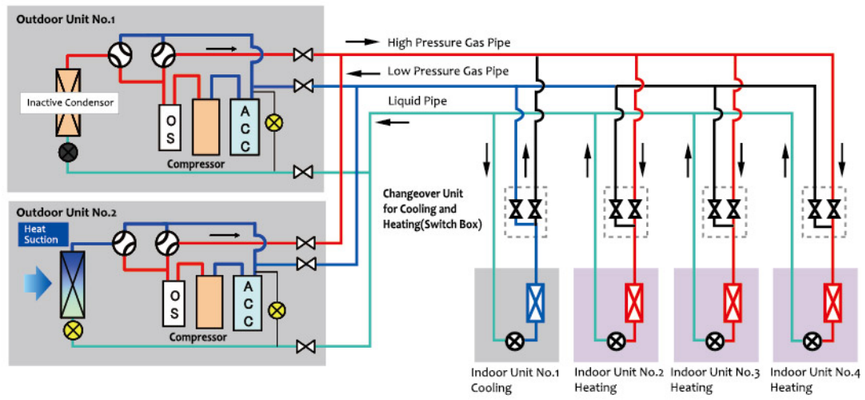
Operation Modes of Heat Recovery System

Cooling Domination Mode



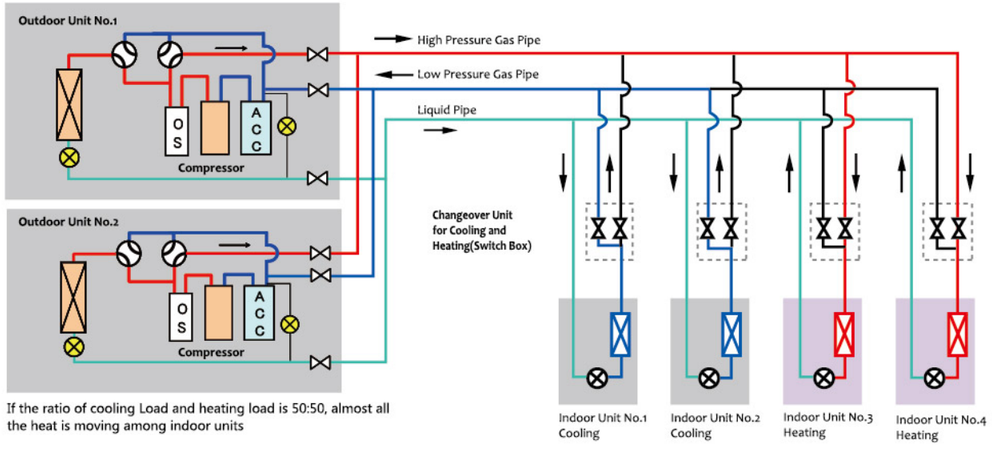
When total indoor heating load is less than cooling load, heat is being transferred from cooling room to heating room, part of heat exchanger is used as condenser to exhaust the redundant heat.

Heating Domination Mode



When total indoor heating load is more than cooling load, heat is being transferred from cooling room to heating room, part of heat exchanger is used as evaporator to compensate the required heat.

Cooling/Heating Equilibrium Mode

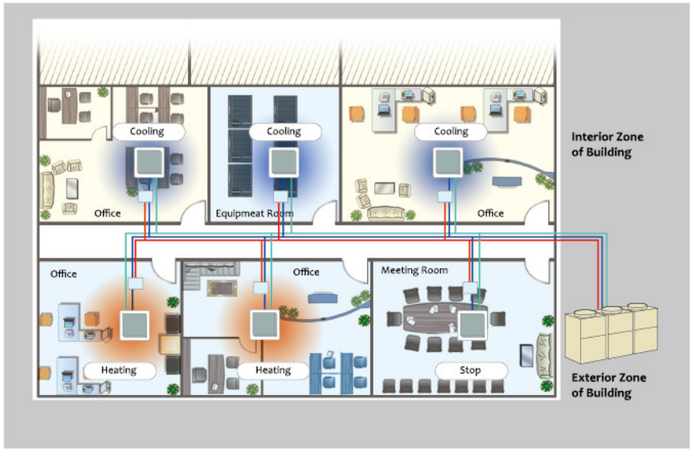


If the ratio of cooling Load and heating load is 50:50, almost all the heat is moving among indoor units

Cooling/Heating Changeover Mode

When all indoor units are running in the same operation mode (cooling or heating), Heat Recovery System can operate as traditional air conditioning system, only two pipes needed.

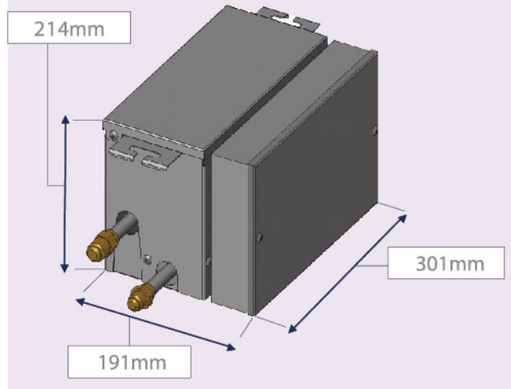
Humanized Design, Flexible Response to the Change of Demand



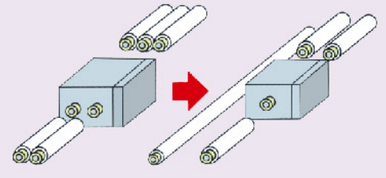
Meeting various requirements of consumers who are sensitive to temperature and diverse space with different function from the perspective of humanity especially at the turn of the season, like the complex of equipment rooms and offices, or the guest rooms and dining hall in the same hotel etc.

The latest heat recovery multi-split system achieves indoor units cooling and heating at the same time and being switched between two modes individually,which flexibly satisfies personalized need of different users.

Switch Box(Heat recovery system only)



- Changeover box for heat recovery application
- Compact and light design
- Minimized unit and less suspension bolts facilitate installation and handling methods

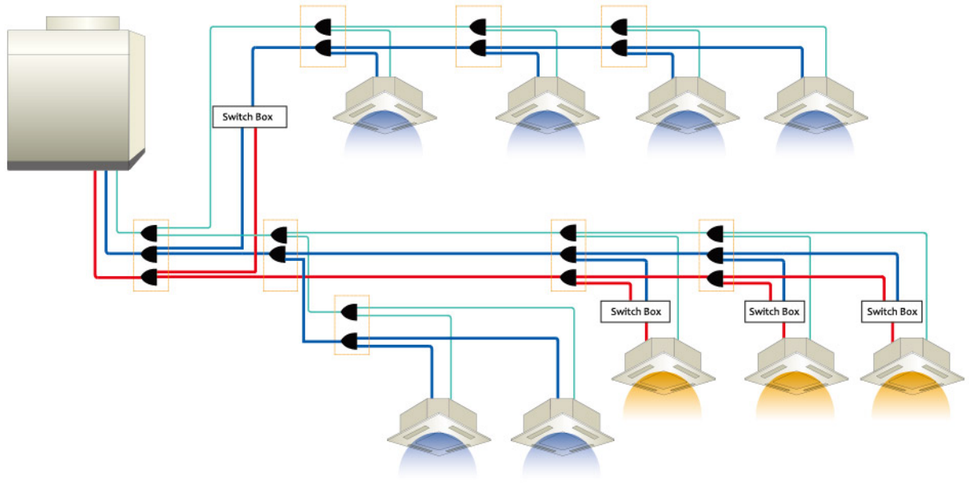


Model	Specifications		Indoor Unit Connection	
	Dimension W × D × H (mm)	Net Weight (kg)	Total HP	Number of Indoor Units *
HCH-160D	301 × 214 × 191	7	6HP≥	1~7
HCH-280D			6.1HP to 10HP	1~8

* When multiple indoor units are connected to the same CH unit, they are controlled with the same operation mode.

Configuration of Heat Recovery Operation System

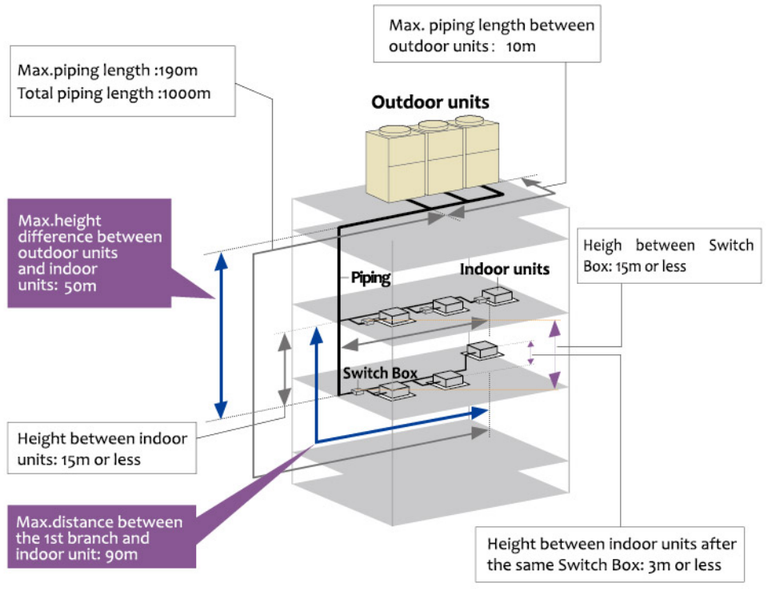
Hi-Flexi R Series heat recovery operation system is composed of heat recovery outdoor unit, indoor unit, switch box, multi-kits and refrigerant pipes. One switch box unit could connect to one or multiple indoor units. The indoor units equipped with a same switch box unit will keep the same operation mode. The indoor units connecting directly to the refrigerant liquid pipe and the low pressure gas pipe instead of via switch box unit will stick to cooling only operation.



High Flexible Design and installation

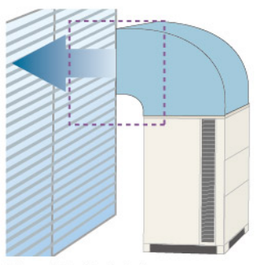
More Flexible Refrigerant Piping Work

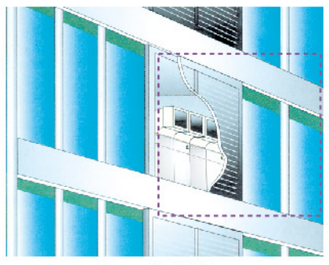
- Actual piping length: *165m*
- Max. equivalent piping length: *190m*
- Height difference between the highest and lowest indoor units: *15m or less*
- Max.height difference between outdoor and indoor units: *50m* (when outdoor units are higher than indoor units)
- Max.height difference between outdoor and indoor units: *40m* (when outdoor units are lower than indoor units)

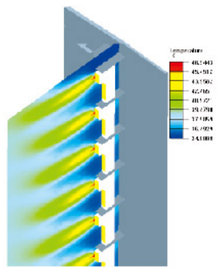


Layered Placement for Highrise Buliding

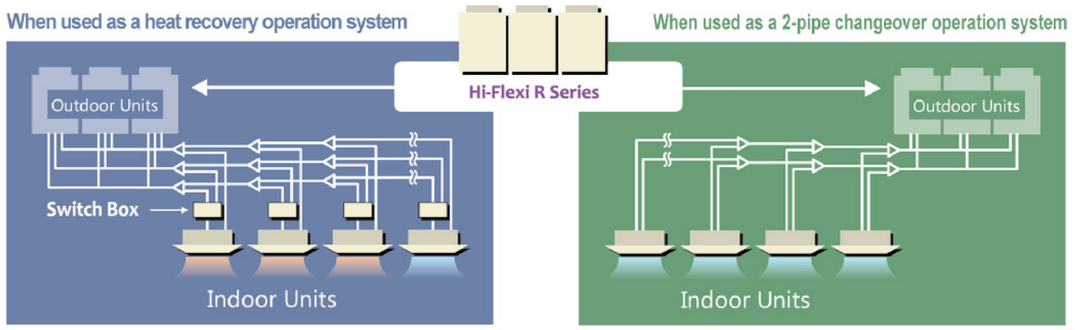
The use of exhaust duct allows layered installation of outdoor units. Outdoor fan motor can provide a higher external static pressure and a long distance air supply, which prevents air return from short-cut in an effective way, then ensures a sound ventilation and heat transfer.


Exhaust Duct Installation


Layered Installation


Air Distribution

Heat Recovery and 2-pipe Changeover Operations Selectable for Outdoor Units



Common outdoor units are applicable to the heat recovery operation system as well as the 2-pipe changeover operation system. This eases the burden of review work when designing the equipment layout, while reducing the workload of installation on site.

Connectable to 64 Indoor Units Max

The number of connectable indoor units has been increased to 64 maximum. Thus, the system can be used in buildings where there are many indoor units to be connected.

Connection Capacity: 50 to 130%

Mode	AVWT-76F*	AVWT-96F*	AVWT-114F*	AVWT-136F*	AVWT-154F*	AVWT-170F*	AVWT-190F*	AVWT-212F*
Max. Number of Connectable Indoor Units	13	16	19	23	26	26	33	36

Mode	AVWT-232F*	AVWT-250F*	AVWT-272F*	AVWT-290F*	AVWT-308F*	AVWT-324F*	AVWT-340F*	AVWT-364F*
Max. Number of Connectable Indoor Units	40	43	47	50	53	56	59	64

Mode	AVWT-382F*	AVWT-398F*	AVWT-420F*	AVWT-438F*	AVWT-454F*	AVWT-476F*	AVWT-494F*	AVWT-510F*
Max. Number of Connectable Indoor Units	64	64	64	64	64	64	64	64

Outdoor Units Parameter

Item \ Outdoor Units														
HP			8HP	10HP	12HP	14HP	16HP	18HP	20HP	22HP	24HP	26HP	28HP	30HP
Model Power Supply	AC3Φ 380~415V/50Hz		AVWT-76FESR	AVWT-96FESR	AVWT-114FESR	AVWT-136FESS	AVWT-154FESS	AVWT-170FESS	AVWT-190FESZ	AVWT-212FESZ	AVWT-232FESZ	AVWT-250FESZ	AVWT-272FESZ	AVWT-290FESZ
Combination									AVWT-76F* + AVWT-114F*	AVWT-76F* + AVWT-136F*	AVWT-96F* + AVWT-136F*	AVWT-114F* + AVWT-136F*	AVWT-136F* + AVWT-136F*	AVWT-136F* + AVWT-154F*
Cooling Operation	Rated Capacity	kW	22.4	28.0	33.5	40.0	45.0	50.0	56.0	61.5	69.0	73.0	80.0	85.0
		kBtu/h	76.5	95.5	114.3	136.5	153.5	170.6	190.8	213.0	232.0	250.8	273.0	290.0
	Power Consumption	kW	5.65	7.65	10.18	12.25	13.74	16.60	15.83	17.90	19.90	22.43	24.50	25.99
Heating Operation	Rated Capacity	kW	25.0	31.5	37.5	45.0	50.0	56.0	63.0	69.0	77.5	82.5	90.0	95.0
		kBtu/h	85.3	107.5	128.0	153.5	170.6	191.1	213.3	239.0	261.0	281.5	307.0	324.1
	Power Consumption	kW	5.81	7.76	10.12	11.30	12.60	15.30	15.93	17.11	19.06	21.42	22.60	23.90
Air Flow Rate		m3/h	9300	10200	10500	11700	11700	11700	19800	21000	21900	22200	23400	23400
Outer Dimension (H×W×D)		mm	1720×950×750	1720×950×750	1720×950×750	1720×1210×750	1720×1210×750	1720×1210×750	1720×(950+950)×750	1720×(950+1210)×750	1720×(950+1210)×750	1720×(950+1210)×750	1720×(1210+1210)×750	1720×(1210+1210)×750
Net Weight		kg	210	212	215	298	312	318	210+215	210+298	212+298	215+298	298+298	298+312
Comperessor Quantity			1	1	1	2	2	2	2	3	3	3	4	4
Condenser Fan Quantity			1	1	1	1	1	1	2	2	2	2	2	2
Cabinet Color			Ivory white						Ivory white					
2-Pipe Heat Pump Operation System	Gas Line	mm	Φ19.05	Φ22.2	Φ25.4	Φ25.4	Φ28.6	Φ28.6	Φ28.6	Φ28.6	Φ28.6	Φ31.75	Φ31.75	Φ31.75
	Liquid Line	mm	Φ9.53	Φ9.53	Φ12.7	Φ12.7	Φ12.7	Φ15.88	Φ15.88	Φ15.88	Φ15.88	Φ19.05	Φ19.05	Φ19.05
Heat Recovery Operation System	Liquid Line	mm	Φ9.53	Φ9.53	Φ12.7	Φ12.7	Φ12.7	Φ15.88	Φ15.88	Φ15.88	Φ15.88	Φ19.05	Φ19.05	Φ19.05
	Lower Pressure Gas Line	mm	Φ19.05	Φ22.2	Φ25.4	Φ25.4	Φ28.6	Φ28.6	Φ28.6	Φ28.6	Φ28.6	Φ31.75	Φ31.75	Φ31.75
	Higher Pressure Gas Line	mm	Φ15.88	Φ19.05	Φ22.2	Φ22.2	Φ22.2	Φ22.2	Φ22.2	Φ25.4	Φ25.4	Φ25.4	Φ28.6	Φ28.6
Refrigerant Piping			Flare-nut Connection(With Flare Nuts)						Flare-nut Connection(With Flare Nuts)					
Hight Difference	Between Outdoor and Indoor Units	m	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)
	Between Indoor Units	m	15	15	15	15	15	15	15	15	15	15	15	15
Noise		dB(A)	58	58	60	62	62	63	62	63	63	64	65	65
Operation Range	Cooling	℃ DB	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43
	Heating	℃ WB	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5

NOTES:

1. The nominal cooling capacity and heating capacity are based on following conditions:
   Cooling Operation Conditions
   Indoor Air Inlet Temperature: 27℃ DB(80°F DB), 19.0℃WB(66.2°F WB)
   Outdoor Air Inlet Temperature: 35℃ DB(95°F DB)
   Piping Length: 7.5 Meters Piping Litt: 0 Meter
   Heating Operation Conditions
   Indoor Air Inlet Temperature: 20℃ DB(68°F DB),
   Outdoor Air Inlet Temperature: 7℃DB(45°F DB), 6℃WB(43°F WB)

2. The sound pressure is based on the following conditions.1 Meter from the unit service cover surface, and 1.5 Meter from floor level. The above data is based on the cooling mode. In case of heating mode, the sound pressure level increases by approximately 1~2dB. The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

3. Except for the specified combination in the table, there is no other combination of the base unit.

4. The width of outer dimension, it is the value when each distance between the base outdoor units is specified to 20mm.

Outdoor Units Parameter

Item \ Outdoor Units														
HP			32HP	34HP	36HP	38HP	40HP	42HP	44HP	46HP	48HP	50HP	52HP	54HP
Model Power Supply	AC3Φ 380~415V/50Hz		AVWT-308FESZ	AVWT-324FESZ	AVWT-340FESZ	AVWT-364FESZ	AVWT-382F6SZ	AVWT-398FESZ	AVWT-420FESZ	AVWT-438FESZ	AVWT-454FESZ	AVWT-476FESZ	AVWT-494FESZ	AVWT-510FESZ
Combination			AVWT-154F* + AVWT-154F*	AVWT-154F* + AVWT-170F*	AVWT-170F* + AVWT-170F*	AVWT-114F* + AVWT-114F* + AVWT-136F*	AVWT-114F* + AVWT-114F* + AVWT-154F*	AVWT-114F* + AVWT-114F* + AVWT-170F*	AVWT-114F* + AVWT-136F* + AVWT-170F*	AVWT-114F* + AVWT-154F* + AVWT-170F*	AVWT-114F* + AVWT-170F* + AVWT-170F*	AVWT-136F* + AVWT-170F* + AVWT-170F*	AVWT-154F* + AVWT-170F* + AVWT-170F*	AVWT-170F* + AVWT-170F* + AVWT-170F*
Cooling Operation	Rated Capacity	kW	90.0	95.0	100.0	109.0	112.0	118.0	125.0	132.0	136.0	140.0	145.0	150.0
		kBtu/h	307.0	324.1	341.2	365.1	382.1	399.2	421.4	438.4	455.5	477.7	494.7	511.8
	Power Consumption	kW	27.48	30.34	33.20	32.61	34.10	36.96	39.03	40.52	43.38	45.45	46.94	49.80
Heating Operation	Rated Capacity	kW	100.0	106.0	112.0	118.0	125.0	132.0	140.0	145.0	150.0	155.0	160.0	165.0
		kBtu/h	341.2	361.7	382.2	409.5	426.6	447.1	472.6	489.7	494.7	510.2	552.8	573.3
	Power Consumption	kW	25.20	27.90	30.60	31.54	32.84	35.54	36.72	38.02	40.72	41.90	43.20	45.90
Air Flow Rate		m3/h	23400	23400	23400	32700	32700	32700	33900	33900	33900	35100	35100	35100
Outer Dimension (H×W×D)		mm	1720×(1210+1210)×750	1720×(1210+1210)×750	1720×(1210+1210)×750	1720×(950+950+1210)×750	1720×(950+950+1210)×750	1720×(950+950+1210)×750	1720×(950+1210+1210)×750	1720×(950+1210+1210)×750	1720×(950+1210+1210)×750	1720×(1210+1210+1210)×750	1720×(1210+1210+1210)×750	1720×(1210+1210+1210)×750
Net Weight		kg	312+312	312+318	318+318	215+215+298	215+215+312	215+215+318	215+298+318	215+312+318	215+318+318	298+318+318	312+315+315	318+318+318
Comperessor Quantity			4	4	4	4	4	4	5	5	5	6	6	6
Condenser Fan Quantity			2	2	2	3	3	3	3	3	3	3	3	3
Cabinet Color			Ivory white											
2-Pipe Heat Pump Operation System	Gas Line	mm	Φ31.75	Φ31.75	Φ31.75	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1
	Liquid Line	mm	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05
Heat Recovery Operation System	Liquid Line	mm	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05	Φ19.05
	Lower Pressure Gas Line	mm	Φ31.75	Φ31.75	Φ31.75	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1
	Higher Pressure Gas Line	mm	Φ28.6	Φ28.6	Φ28.6	Φ28.6	Φ31.75	Φ31.75	Φ31.75	Φ31.75	Φ31.75	Φ31.75	Φ31.75	Φ31.75
Refrigerant Piping			Flare-nut Connection(With Flare Nuts)					Flare-nut Connection(With Flare Nuts)						
Hight Difference	Between Outdoor and Indoor Units	m	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)	50 (40)
	Between Indoor Units	m	15	15	15	15	15	15	15	15	15	15	15	15
Noise		dB(A)	65	66	66	66	66	66	67	67	67	67	67	67
Operation Range	Cooling	℃ DB	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43	-5~43
	Heating	℃ WB	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5

NOTES:

1. The nominal cooling capacity and heating capacity are based on following conditions:
   Cooling Operation Conditions
   Indoor Air Inlet Temperature: 27℃ DB(80°F DB), 19.0℃WB(66.2°F WB)
   Outdoor Air Inlet Temperature: 35℃ DB(95°F DB)
   Piping Length: 7.5 Meters Piping Lift: 0 Meter
   Heating Operation Conditions
   Indoor Air Inlet Temperature: 20℃ DB(68°F DB),
   Outdoor Air Inlet Temperature: 7℃DB(45°F DB), 6℃WB(43°F WB)

2. The sound pressure is based on the following conditions.1 Meter from the unit service cover surface, and 1.5 Meter from floor level. The above data is based on the cooling mode. In case of heating mode, the sound pressure level increases by approximately 1~2dB. The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

3. Except for the specified combination in the table, there is no other combination of the base unit.

4. The width of outer dimension, it is the value when each distance between the base outdoor units is specified to 20mm.