



## Water Source Heat Pump (Split Type - E Series)

2.6 kW - 21.5 kW (50Hz)  
R410A



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## Mammoth Water Source Heat Pump Unit

- Twelve models from 3/4 to 6 tons
- Energy efficiencies up to 4.3 EER and a 5.2 COP under water loop application
- Fully run tested with water
- Compact size
- CE certified and ARI/ISO 13256-1 rated for capacity and efficiency
- Rotary and scroll compressors
- MGP50 microprocessor-based control system
- Optional geothermal application

## Standard Rating Data Water Loop Application

Unit Size	Item	Airflow m <sup>3</sup> /h	Waterflow m <sup>3</sup> /h	Cooling		Heating	
				kW	EER	kW	COP
L009		530	0.55	2.58	4.3	3.40	5.2
L013		700	0.81	3.75	3.8	4.85	4.9
L016		800	1.02	4.85	4.4	5.77	4.9
L019		1000	1.24	5.80	4.1	6.90	4.7
L024		1250	1.47	6.91	4.2	8.76	4.8
L030		1500	1.82	8.60	4.4	9.70	4.9
L036		1800	1.98	9.20	3.9	11.86	5.0
J043		2100	2.42	11.20	3.9	13.50	4.5
J052		2600	2.93	13.81	4.2	15.88	4.8
J062		2900	3.37	15.67	4.0	19.07	4.5
J072		3300	3.99	18.50	3.9	22.50	4.4
J086		4000	4.67	21.50	3.7	26.00	4.4

Cooling capacity is based on 27°C db, 19°C wb entering air temperature and 30°C entering water temperature.

Heating capacity is based on 20°C entering air temperature and 20°C entering water temperature.

### Model Nomenclature

MSR -    L    016  
           1        2        3

- 1 MSR: Mammoth water source heat pump
- 2 Power: L=220V/1PH /50HZ, J=380V/3PH/50HZ
- 3 Unit Number

### Specification Code

H H E - SPE  
           1 2 3 4

- 1 Unint Type: H=Horizontal concealed indoor unit, K=Cassette type indoor unit
- 2 Temperature Range: H=Standard, L=Low temperature
- 3 Design Vintage: E=E series
- 4 SPE=Compressor unit, SPI = Indoor unit

## Unit Description

Mammoth offers a complete line of high efficiency Split System units from 2.6 kW - 21.5 kW. Each system consists of a compressor unit which can be installed inside or outside the building and an indoor unit. Each unit is run-tested with water in the cooling and heating modes. All units are listed for product safety by CCC & CE.

## Compressor Unit

The compressor unit provides the refrigerant to the indoor unit and includes a compressor and water-to-refrigerant coaxial heat exchanger. The cabinet is constructed of lead-free galvanized steel and is powder-coat painted.

The cabinet is fully insulated with 15mm thick, skin-coated fiberglass/PE. The entire bottom panel is insulated with the same material to prevent condensation and reduce noise transmission. Two large access panels allow service to all major components.

The compressor unit contains a hermetic or scroll type compressor, thermal expansion valve or capillary tube, access valves, lock-out relay, and high/low pressure safety switches.

All units incorporate male NPT copper water connections mounted outside the cabinet for connection of flexible hoses.

All units include factory-mounted hanger brackets with factory-mounted grommets.

## Indoor Unit

The indoor unit includes the air coil, fan assembly, drain pan and control box. The compact, light weight design of the indoor unit enables the easy ceiling installation where the space is limited.

### High Efficiency Coil

The special coil design promotes the mixing of warm and cold air, resulting in high heat exchange efficiency and lower operating costs.

### Quiet Centrifugal Fan Assembly

High efficiency fan assembly minimizes vibration and noise.

### Quality Drain Pan

The extended, positive slope drain pan is removable and is coated with an epoxy finish for easy cleaning to help prevent microbial growth and fight corrosion. The drain pan is insulated with a form-fitted closed cell insulation to prevent condensation build-up on the outside of the drain pan.

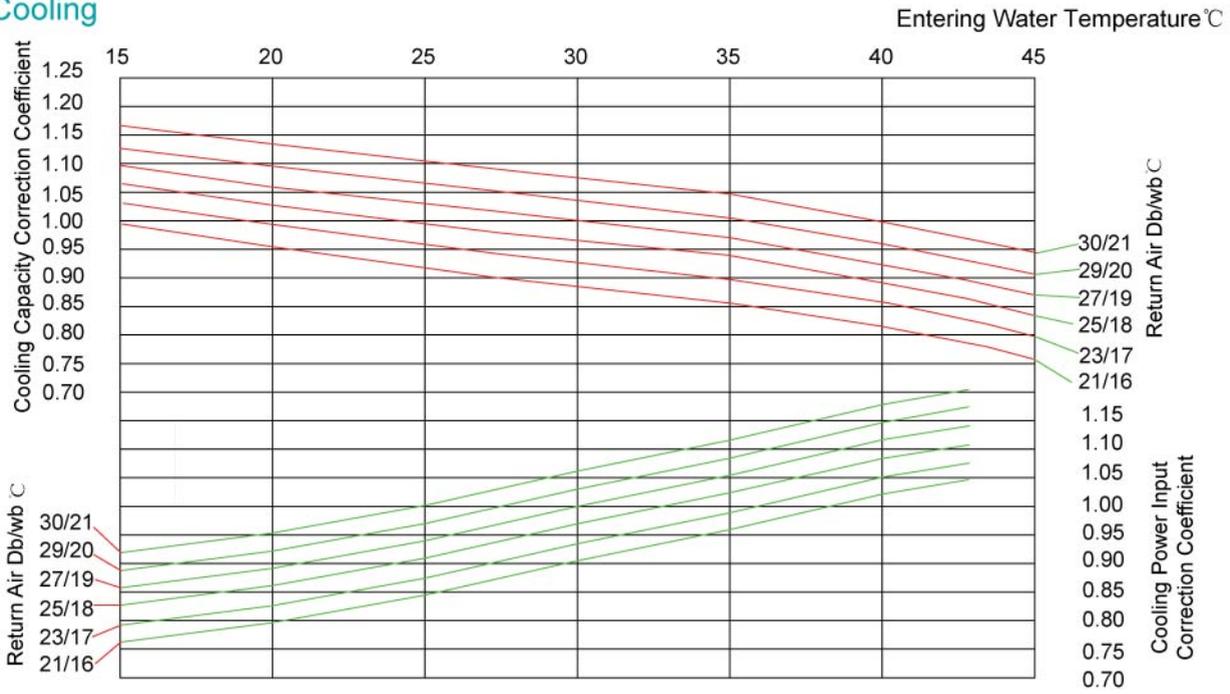
### Optional Return Air Plenum with Filter

The optional return air plenum is available for all indoor units, and the plenum is supplied with a 10mm washable nylon filter in factory mounted filter rack.

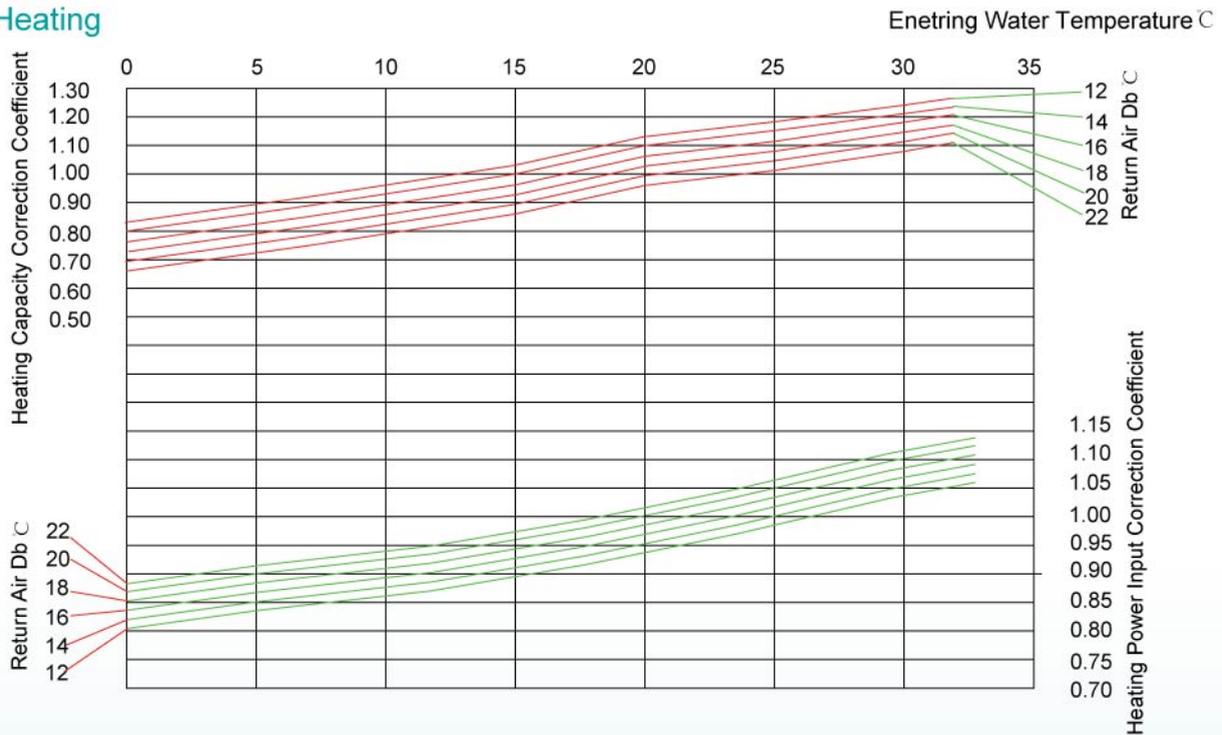
### Field Flexible Piping Connections

Units are easily converted to opposite-hand connection without requiring additional parts or a conversion kit. Units can be ordered with left or right hand piping.

**Cooling**



**Heating**



## Application Limits

	Water Loop Conditions		Ground Loop Conditions		Ground Water Conditions	
	Cooling	Cooling	Cooling	Heating	Cooling	Heating
Rreturn Air Temp.	21~32 C	21~32 C	21~32 C	15~27 C	21~32 C	15~27 C
Entering Water Temp.	20~40 C	20~40 C	10~40 C	-5~25 C	10~25 C	-5~25 C

NOTE: 1. When the source water temperature is too low(Ground loop),please add antifreeze to the source water system.  
 2.It is not recommended to operate under 10~15 C source water temperature. If the source water temperature is below 15 C, please reduce the source water flow to make sure the leaving source water temperature is higher than 25 C.

## Capacity Correction Factors

Methanol	10%	15%	20%
Cooling	1.00	0.99	0.99
Heating	0.99	0.98	0.97

Ethanol	10%	15%	20%
Cooling	1.00	1.00	1.00
Heating	0.99	0.98	0.97

Propylene Glycol	15%	20%	25%
Cooling	0.98	0.97	0.96
Heating	0.96	0.95	0.93

## Electrical Data

Model	Maximum Running Current	Power Source Line		Connection Line			
		Wire Diameter	Quantity	Signal Wire	Quantity	Signal Wire	Quantity
MSR-L009	4.6	1.5mm <sup>2</sup>	3	1.5mm <sup>2</sup>	3	1.0mm <sup>2</sup>	4
MSR-L013	6.7	1.5mm <sup>2</sup>	3	1.5mm <sup>2</sup>	3	1.0mm <sup>2</sup>	4
MSR-L016	8.2	1.5mm <sup>2</sup>	3	1.5mm <sup>2</sup>	3	1.0mm <sup>2</sup>	4
MSR-L019	10.8	2.5mm <sup>2</sup>	3	2.5mm <sup>2</sup>	3	1.0mm <sup>2</sup>	4
MSR-L024	12.4	2.5mm <sup>2</sup>	3	2.5mm <sup>2</sup>	3	1.0mm <sup>2</sup>	4
MSR-L030	15.5	4.0mm <sup>2</sup>	3	4.0mm <sup>2</sup>	3	1.0mm <sup>2</sup>	4
MSR-L036	18.3	4.0mm <sup>2</sup>	3	4.0mm <sup>2</sup>	3	1.0mm <sup>2</sup>	4
MSR-J043	9.0	2.5mm <sup>2</sup>	5	2.5mm <sup>2</sup>	5	1.0mm <sup>2</sup>	4
MSR-J052	10.7	2.5mm <sup>2</sup>	5	2.5mm <sup>2</sup>	5	1.0mm <sup>2</sup>	4
MSR-J062	12.8	2.5mm <sup>2</sup>	5	2.5mm <sup>2</sup>	5	1.0mm <sup>2</sup>	4
MSR-J072	15.3	4.0mm <sup>2</sup>	5	4.0mm <sup>2</sup>	5	1.0mm <sup>2</sup>	4
MSR-J086	17.8	4.0mm <sup>2</sup>	5	4.0mm <sup>2</sup>	5	1.0mm <sup>2</sup>	4

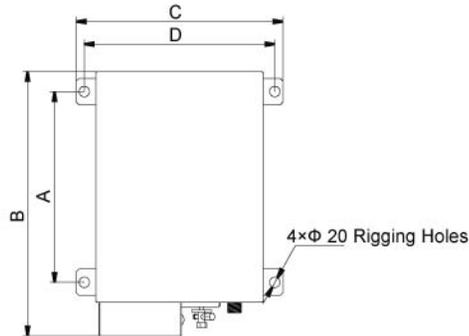
### Remarks:

The power line can be RV - 90 / BVR/UL1015 multi-strand copper conductor, the sectional area shall be selected according to the recommended data on above table for different models.

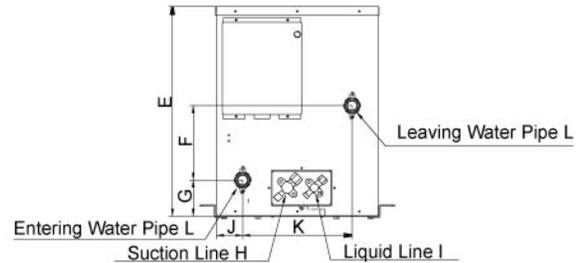
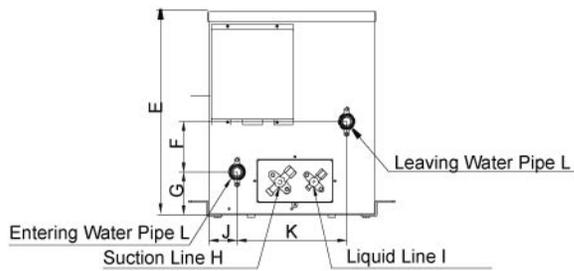
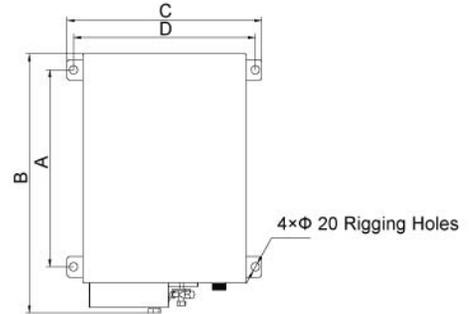
Dimensional Data(All dimensions are millimeters unless noted)

Compressor Unit

MSR-L009~L030



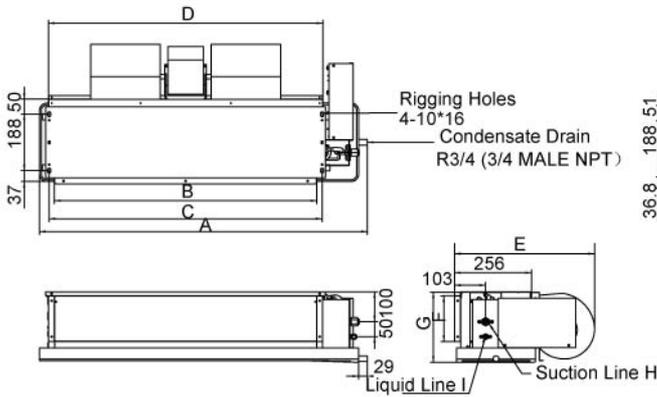
MSR-L036~J086



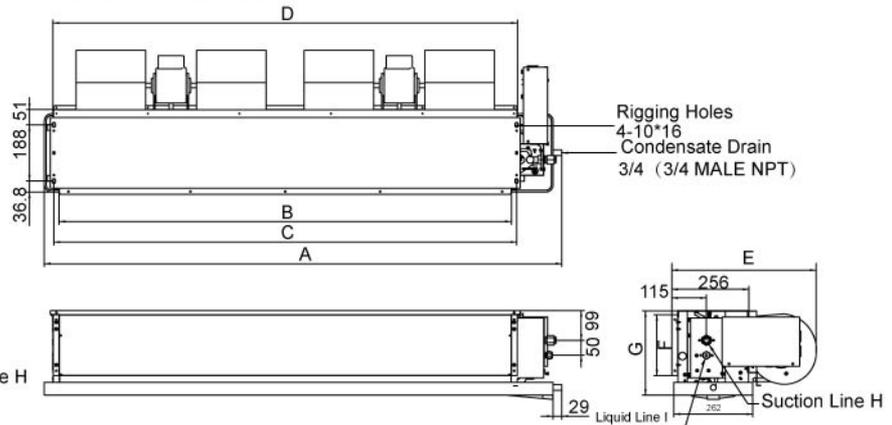
Model	A	B	C	D	E	F	G	H	I	J	K	L	Unit Weight (kg)	Operating Weight (kg)
MSR-L009H-SPE	363	503	396	365	388	68.5	70	Φ9.52	Φ6.35	36	245	R3/4"	40	43
MSR-L013H-SPE	363	503	396	365	388	68.5	70	Φ9.52	Φ6.35	36	245	R3/4"	45	49
MSR-L016H-SPE	363	503	396	365	388	68.5	70	Φ9.52	Φ6.35	36	245	R3/4"	52	56
MSR-L019H-SPE	363	503	396	365	463	96	70	Φ12.7	Φ6.35	54	210	R3/4"	58	64
MSR-L024H-SPE	363	503	396	365	463	107	80	Φ12.7	Φ6.35	42	234	R3/4"	62	68
MSR-L030H-SPE	363	503	396	365	463	107	80	Φ15.88	Φ9.52	42	234	R3/4"	68	73
MSR-L036H-SPE	474	623	472	440	504	118	90	Φ15.88	Φ9.52	78	235	R3/4"	75	82
MSR-J043H-SPE	474	623	472	440	504	137	85	Φ19.05	Φ9.52	48	295	R1"	90	98
MSR-J052H-SPE	474	623	472	440	504	179	85	Φ19.05	Φ9.52	64	265	R1"	100	110
MSR-J062H-SPE	474	623	472	440	504	198	77	Φ19.05	Φ9.52	46	300	R1"	102	113
MSR-J072H-SPE	519	665	472	440	504	198	82	Φ19.05	Φ9.52	48	295	R1"	103	115
MSR-J086H-SPE	519	665	472	440	504	198	82	Φ19.05	Φ9.52	48	295	R1"	112	120

## Indoor Unit

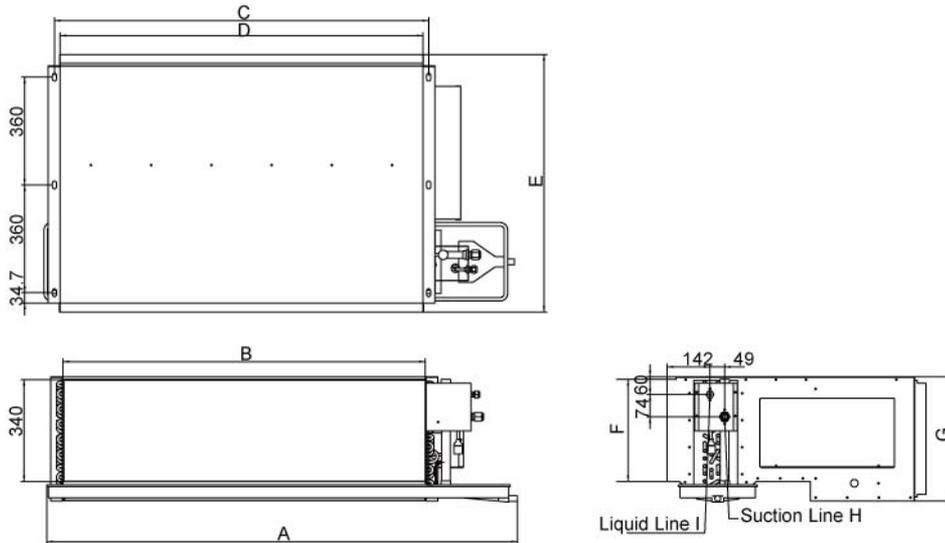
### L009-J043H-SPI



### J052-J062H-SPI



### J072-J086H-SPI



Model	A	B	C	D	E	F	G	H	I	Number	Unit Weight	Operating Weight
MSR-L009H-SPI	669	450	487	492	465	152	231	Φ9.52	Φ6.35	1	22	24
MSR-L013H-SPI	809	590	627	632	465	152	231	Φ9.52	Φ6.35	2	23	25
MSR-L016H-SPI	989	770	807	812	465	152	231	Φ9.52	Φ6.35	2	27	29
MSR-L019H-SPI	989	770	807	812	465	152	231	Φ12.7	Φ6.35	2	28	30
MSR-L024H-SPI	1089	870	907	912	465	152	231	Φ12.7	Φ6.35	2	23	25
MSR-L030H-SPI	1419	1200	1237	1242	465	152	231	Φ15.88	Φ9.52	3	31	34
MSR-L036H-SPI	1519	1300	1337	1342	465	152	231	Φ15.88	Φ9.52	4	35	38
MSR-J043H-SPI	1719	1500	1537	1542	465	152	231	Φ19.05	Φ9.52	4	40	45
MSR-J052H-SPI	1719	1500	1537	1542	490	202	290	Φ19.05	Φ9.52	4	41	46
MSR-J062H-SPI	1719	1500	1537	1542	520	202	290	Φ19.05	Φ9.52	4	43	48
MSR-J072H-SPI	1575	1205	1243	1205	870	338	420	Φ19.05	Φ9.52	2	85	94
MSR-J086H-SPI	1575	1205	1243	1205	870	385	475	Φ19.05	Φ9.52	2	95	105

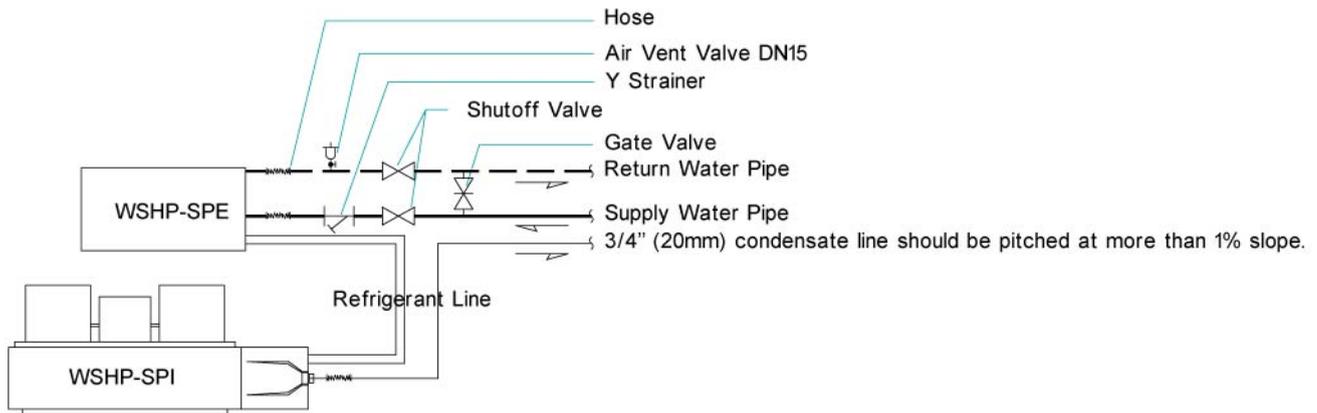
Options Data Table

Performance Data		Model	009	013	016	019	024	030	036	043	052	062	072	086	
Electrical Heating	KW		1.3		3			4			4	6		8	
	KW		3	3.2	5.5	6	7	8.5	9.5	11	13	15	18	20	
Hot-Water Coil	Water Flow Rate m <sup>3</sup> /h		0.3	0.4	0.6	0.85	1	1.15	1.45	1.55	1.75	2.1	2.2	2.3	
	Fittings		RC3/4"MALE NPT												
	Dimensions	Length		669	809	989	989	1089	1419	1519	1719	1719	1719	1575	1575
		Width		553	553	553	553	553	553	553	553	578	620	950	950
Height			231	231	231	231	231	231	231	231	290	290	420	475	

Instructions:

- 1 Hot-water coil is based on db 21°C entering air and 60°C entering water temperature.
- 2 Standard unit water side design pressure is 1.0 MPa.
- 3 Above data are subject to change, please refer to the performance data on the nameplate.

Split System Water Source Heat Pump Piping Diagram



Piping Diagram



**ISO9001 ISO14001 OHSAS18001**

Due to continuous product improvements, we reserve the right to change design and specifications without notice.



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