

FKE-HP Series

Restaurant Fume Heat Recovery, Use Heat Pipe Heat Exchanger



Technical principle:

When the evaporation section of the heat pipe is heated by high-temperature flue gas, the liquid inside the capillary core evaporates. The vapor then moves to the condensation section under a slight pressure difference, where it exchanges heat with the incoming fresh air. The vapor releases heat and condenses back into liquid. This liquid then returns to the evaporation section through gravity or capillary forces, completing a continuous cycle of heat transfer between the flue gas and fresh air.

Product Parameter (Air-to-Air Heat Changers)

Heat pipe model	FKE-HP01H	FKE HP02H	FKE HP03H	FKE HP04H	FKE HP05H	FKE HP01V	FKE HP02V	FKE HP03V	FKE HP04V	FKE HP05V
Adoptable FKE model	01G	02G	03G	04G	05G	One layer	Two layers	Three layers	Four layers	Five layers
Heat Pipe structure	left and right structure					Up down structure (The sealing blind flange needs to be added for installation.)				
Dimension(L*W*H)mm	1370*998*575	1370*1918*575	1370*2840*575	1370*3762*575	1370*4684*575	1370*499*1150	1370*499*2100	1370*499*3450	1370*499*4600	1370*499*5750
Handling Air Volume(m³/h)	4200	8400	12600	16800	21000	4200	8400	12600	16800	21000
Heat Recovery Rate(%)	>60					>60				
Resistance(Pa)	390					390				
Flange Dimensions(mm)	499*575	959*575	1420*575	1881*575	2342*575	499*575	499*1150	499*1725	499*2300	499*2875
Condensate Pipe Dimensions(mm)	DN50					DN50				
Machine Foot Height(mm)	130					130				

* Test result under the (New air: 9.9°C, 44%RH; exhaust air: 45°C, 70%RH) of Heat recovery rate in working conditions; * Requirement of work environment: -40~80°C, 15~99%RH

Product Parameter (Water-to-Air Heat Changers)

Heat pipe model	FKE-HW01	FKE-HW02	FKE-HW03	FKE-HW04	FKE-HW05
smoke volume(m³/h)	4200	8400	12600	16800	21000
Inlet temperature(hot medium)°C	45	45	45	45	45
Output temperature(cold medium)°C	30	30	30	30	30
Inlet water temperature(cold medium)°C	15	15	15	15	15
Base pipe specifications(t/h)	30	30	30	30	30
Finned tubes specifications(DN)	1.2	2.4	3.6	4.8	6
Output water temperature(hot medium)	DN40	DN50	DN50	DN65	DN65
Water volume(mm)	25*2	25*2	25*2	25*2	25*2
Input water pipe diameter(mm)	25*210/2.5/1.2	25*210/2.5/1.2	25*210/2.5/1.2	25*210/2.5/1.2	25*210/2.5/1.2
Hot medium effective length(mm)	500	500	500	1000	1200
Cold medium effective length(mm)	200	200	200	400	500
Effective windward width(mm)	965	1930	2895	2895	2895
Lateral spacing/vertical spacing(mm)	55/48	55/48	55/48	55/48	55/48
Finned tubes quantity(Branch)	204	408	624	624	624
Permutation (derangement)(Row)	12	12	12	12	12
Heat transfer quantity(kw)	21.21	42.42	63.63	84.84	106.05
Area of heat transfer(m²)	95.26	190.53	291.41	600.28	723.84
Exhaust gas flow rate(m/s)	2.5	2.5	2.5	2.5	2.5
Exhaust gas resistance(Pa)	180	180	180	180	180
Dimension(L*W*H)(mm)	1680*1045*860	1680*2010*860	1680*2975*860	1680*2975*1560	1680*2975*1860
Remark	The whole equipment is made of carbon steel, the heat pipe is made of steel and aluminum composite heat pipe, and the water tank side is equipped with a baffle.				