aspiration energy

HEAT PUMP CATALOGUE

India's first 90°C Heat Pump

Brief Introduction

Aspiration Energy is an innovative Solar Energy Services company, providing decentralized solar thermal systems and hyper-efficient heat pumps for industrial process heating. For industries that adopt to green energy initiatives, we offer heating solutions that provide long term predictable low-energy costs on a unique monthly performance-based energy payment.

We avoid expensive and dirty fossil fuels by adopting proven technologies to both unutilized space and complex applications in the industry. Our Sustainable Heating Solutions find applications across several manufacturing industries for industrial processes that require a temperature range 40-90°C.

Aspiration energy is promoted by the co-founders of Aspire Systems, a profitable, 1700 people, ISO 9001:2008 certified, software services company. We are supported and seed-funded by the Renewable Search program (RE: Search) jointly administered by IIM Ahmedabad's (IIMA) Centre for Innovation Incubation and Entrepreneurship (CIIE) and Ministry of New and Renewable Energy (MNRE).

Company History

2009
The Company is established and launched its services in renewable energy sectors.

2010
First Solar Thermal project (630 kW) was commissioned at Wheels India, Padi which was the Asia's largest Solar Thermal installations.

2015
R & D of Heat Pump was started and developed high temperature Heat Pumps.

2016
First Heat Pump (28 kW) was commissioned at Ashok Leyland, Hosur – 90°C.

2017
Presented about Aspiration Energy Heat Pumps in Heat Pump Energy Summit in Germany.

2018
The Largest Heat Pump capacity of 360 kW was commissioned in TVS Motors, Hosur.

Awards and Recognitions

Aspiration Energy was awarded Pari Vartan awards in the category "Innovation in Business Model" for successfully rolling out ETC technology as heat based **'Energy as a service'** model.

Aspiration Energy was chosen for incubation and mentoring by **CIIE (Centre for Innovation Incubation and Entrepreneurship)** setup by IIM Ahmedabad with support from the Government of India and Gujarat Government.

Aspiration Energy was chosen by the **German Agency for International Co-Operation** (GIZ) and **GFI Institute of Solar Thermal systems** for the SOPPRO India project. GIZ also chose Aspiration for one-month business exchange program in Germany.

Aspiration Energy was recognized by CII (Confederation of Indian Industry) as the "Most Innovative Energy Saving Product".

Aspiration Energy was the National award winner from MNRE – UNDP for implementing large scale Solar Thermal ESCO projects through their "Pay-as-you-save" scheme.

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Pioneer of low carbon age

Heat from 15°C TO 60°C – Costs Comparison

	Hot Water Boiler	Electrical Heater	AEPL Heat Pump
Energy Source	Oil / Gas	Electricity	Electricity
Risk	High	Medium	Low
Environmental Impact	Heavy pollution	Non-pollution	Non-pollution
Life Span	5- 8 years	5-8 years	10-12 years
Floor Space	Large	Small	Medium
Safety Performance	Flammable, Explosive goods	Heating pipe aging, leakage	Safe and reliable
Noise	Loud	Nil	Low
Control Way	2 – 3 technicians	Automatic	Automatic
Maintenance Cost	High	Medium	Low
Other Cost	Annual examine & approve costs	Annual examine cost	No
Fuel Costs	Rs. 70 approx / kg	Rs. 8 approx / kW	Rs.8 approx / kW
Operating Costs / kW	Rs. 8	Rs. 8	Rs. 3.2

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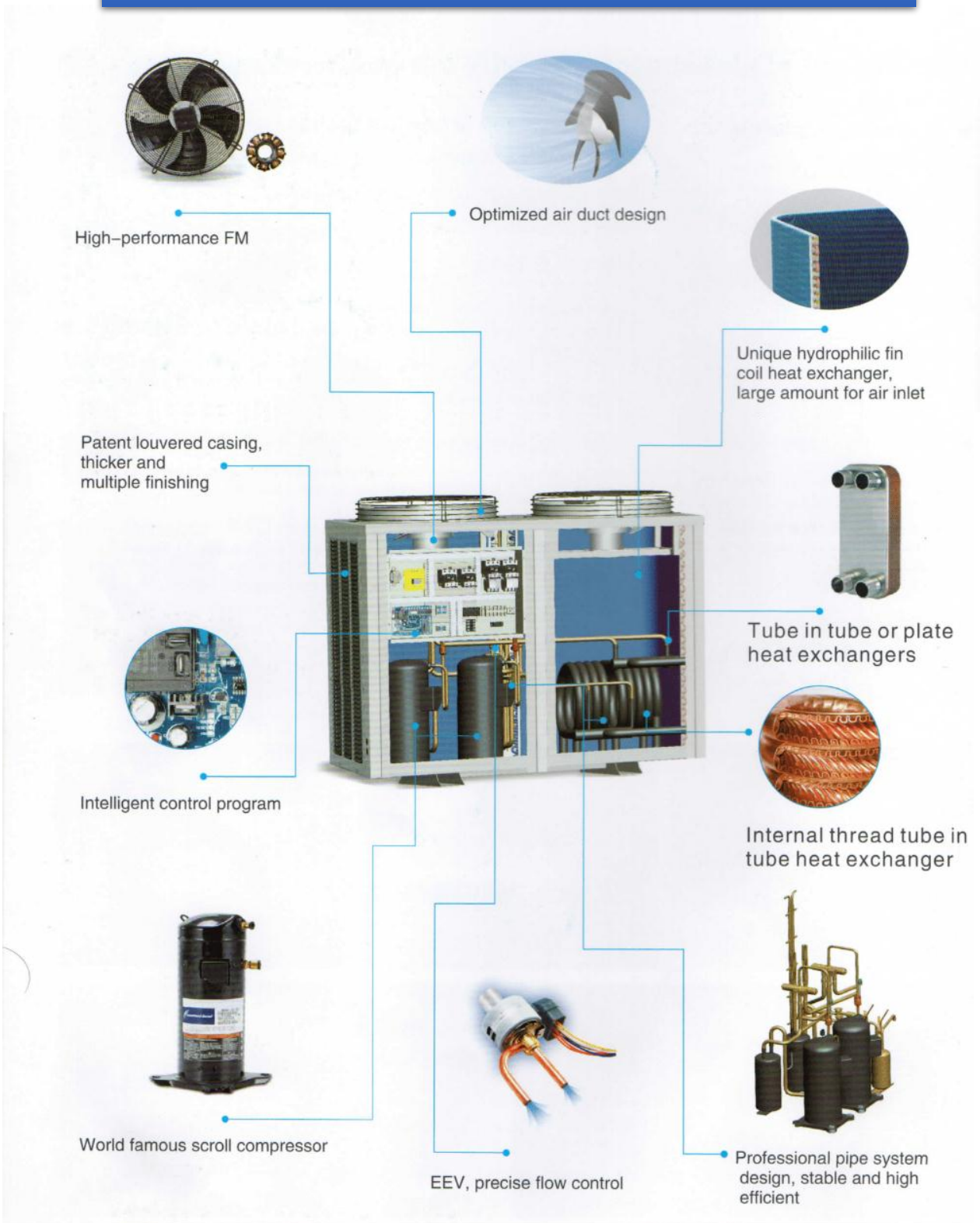
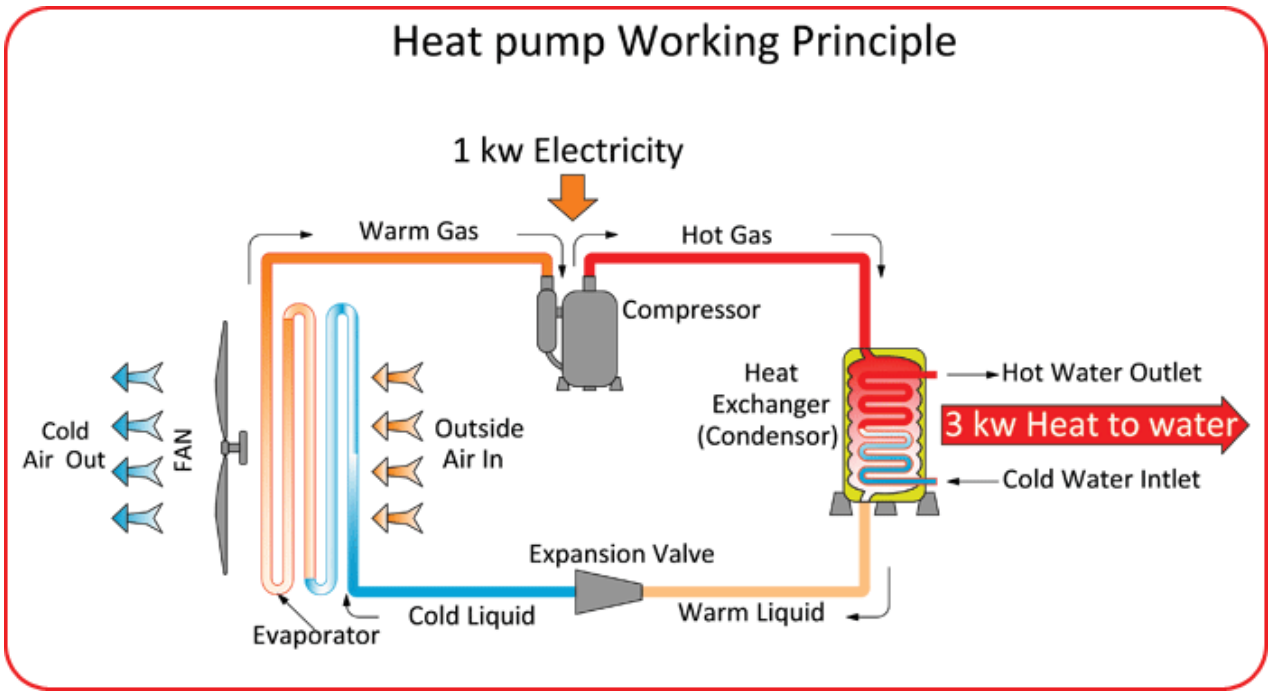
MAIN PARTS OF HEAT PUMP



WORKING THEORY



Safety

Not used hidden troubles created by electric heat pipes and combustible gas, eliminate safety hidden trouble, reassure to bath. Safety is the greatest wealth in our life.

Energy Conservation

Utilize the air source energy to heat water, use little electricity to get much energy, save electricity and money. Saving energy is the responsibility of every citizen.

Comfort

24 hours constant temperature water supplied, water is sufficient, enjoy bath in any time you want. Comfortable share is to provide a high-quality life.

Environmental Protection

Heat comes from air, no exhaust gas produced. Protecting our environment is social morality.

INDUSTRIAL PRETREATMENT APPLICATIONS

Thermagen2X (Air Source)	9014 A	9028 A	9064 A
Cabinet	Galvanized steel with anti-rusting powder coating		
Compressor	High Temp Scroll Compressor		
Refrigerant	Eco friendly High Temperature Refrigerant		
Condenser	High efficient tube in tube heat exchanger		
Expansion Valve	Electronic Expansion Valve (EEV)		
Control System	Single System	Double System	
Set Access Power Line	$3*4mm^2+2*2.5mm^2$	$3*6mm^2+2*2.5mm^2$	$3*10mm^2+2*4mm^2$
Heating Capacity (kW)	14	28	64
Input Power (kW)	4.8	9.2	22.5
Rated Current (A)	9.8	26	38
COP	2.8	2.8	2.8
Power Supply (V/Ph/Hz)	380-415V/50Hz		
Hot Water Yield (LPH)	203	401	917
Max. Hot Water Outlet (°C)	85/90	85/90	85/90
Ambient Temp (°C)	5 - 43	5 - 43	5 - 43
Electric Shock Protection Rating	I	I	I
Protection grade	IPX4	IPX4	IPX4
Circulating Water Pipe Diameter	DN40	DN40	DN50
Unit Dimension (mm)	755x730x920	1510x730x1250	1850x1000x1950
N.W. (Kg)	156	293	690
Noise (dB(A))	≤56	≤62	≤70
Advised Water Flow (m^3/hr)	2.6	5.2	12

* Test condition ambient temperature DB 20℃ / WB15℃, to heat initial water temperature 15℃ - 55℃.

Thermagen2X (Water Source)	9013 W	9030 W	9068 W
Cabinet	Galvanized Steel with anti rusting powder coating		
Compressor	High Temp Scroll Compressor		
Refrigerant	Eco friendly High Temperature Refrigerant		
Condenser	High efficient tube in tube heat exchanger		
Evaporator	316L Plate heat exchanger		
Expansion Valve	Electronic Expansion Valve (EEV)		
Control System	Single System	Double System	
Set Access Power Line	$3*4mm^2+2*2.5mm^2$	$3*6mm^2+2*2.5mm^2$	$3*10mm^2+2*4mm^2$
Heating Capacity (kW)	13	30	68
Input Power (kW)	5.05	11.2	25.5
Rated Current (A)	8.9	22.5	48
COP	2.6	2.68	2.67
Power Supply (V/Ph/Hz)	380-420V/50Hz	380-415V/50Hz	
Hot Water Yield (LPH)	186	430	974
Max. Hot Water Outlet (°C)	85/90	85/90	85/90
Ambient Temp (°C)	5 - 43	5 - 43	5 - 43
Electric Shock Protection Rating	I	I	I
Protection grade	IPX4	IPX4	IPX4
Heat source inlet temperature (℃)	15	20	20
Heat source outlet water temp(℃)	10	10	10
Heat circulation water flow (m^3/H)	2.7	5.7	12.4
Circulating Water Pipe Diameter (mm)	DN40	DN40	DN50
Unit Dimension (mm)	810x635x1000	1350x850x1150	1750x1120x1160
N.W. (kg)	135	286	620
Noise (dB(A))	≤55	≤65	≤68
Advised Water Flow (m^3/hr)	2.6	5.2	12

* Test condition ambient temperature DB 20℃ / WB15℃, to heat initial water temperature 15℃ - 55℃.

INDUSTRIAL P PARTS WASHING APPLICATION

Thermagen2X (Air Source)	8014 A	8028 A	8064 A
Cabinet	Galvanized steel with anti-rusting powder coating		
Compressor	High Temp Scroll Compressor		
Refrigerant	R134A		
Condenser	High efficient tube in tube heat exchanger		
Expansion Valve	Electronic Expansion Valve (EEV)		
Control System	Single System	Double System	
Set Access Power Line	3*4mm^2+2*2.5mm^2	3*6mm^2+2*2.5mm^2	3*10mm^2+2*4mm^2
Heating Capacity (kW)	14.2	28	64
Input Power (kW)	5	10.1	22.5
Rated Current (A)	9	25	38
COP	2.8	2.8	2.8
Power Supply (V/Ph/Hz)	380-420V/50Hz		
Hot Water Yield (LPH)	203	401	917
Rated/ Max. Hot Water Outlet (°C)	75/80	75/80	75/80
Ambient Temp (°C)	5 - 43	5 - 43	5 - 43
Electric Shock Protection Rating	I	I	I
Protection grade	IPX4	IPX4	IPX4
Circulating Water Pipe Diameter	DN40	DN40	DN50
Unit Dimension (mm)	755x730x920	1510x730x1210	1850x1000x1950
N.W. (Kg)	156	293	690
Noise (dB(A))	≤56	≤62	≤70
Advised Water Flow (m^3/hr)	2.6	5.2	12

* Test condition ambient temperature DB 20℃ / WB15℃, to heat initial water temperature 15℃ - 55℃.

Thermagen2X (Water Source)	8014 W	8028 W	8065 W
Cabinet	Galvanized steel with anti-rusting powder coating		
Compressor	High Temp Scroll Compressor		
Refrigerant	R134A		
Condenser	High efficient tube in tube heat exchanger		
Evaporator	Plate Heat Exchanger		
Expansion Valve	Electronic Expansion Valve (EEV)		
Control System	Single System	Double System	
Set Access Power Line	$3*4mm^2+2*2.5mm^2$	$3*6mm^2+2*2.5mm^2$	$3*10mm^2+2*4mm^2$
Heating Capacity (kW)	14.8	29	65
Input Power (kW)	5.2	10.3	23
Rated Current (A)	9.2	25.6	39.4
COP	2.85	2.82	2.83
Heat Source Inlet Water Temp (°C)	15	15	15
Heat Source Outlet Water Temp (°C)	10	10	10
Power Supply (V/Ph/Hz)	380-420V/50Hz		
Hot Water Yield (LPH)	212	416	931
Rated/ Max. Hot Water Outlet (°C)	75/80	75/80	75/80
Ambient Temp (°C)	5 - 43	5 - 43	5 - 43
Electric Shock Protection Rating	I	I	I
Protection grade	IPX4	IPX4	IPX4
Circulating Water Pipe Diameter	DN40	DN40	DN50
Unit Dimension (mm)	810x635x1000	1350x850x1150	1750x1120x1160
N.W. (Kg)	135	286	572
Noise (dB(A))	≤54	≤60	≤64
Advised Water Flow (m^3/hr)	2.6	5.2	12
* Test condition ambient temperature DB 20℃ / WB15℃, to heat initial water temperature 15℃ - 55℃.			

BATHING & HAND WASHING APPLICATION

Themagen2X (Air Source)	6010 A	6018 A	6021 A	6037 A	6042 A	6084 A
Cabinet	Galvanized steel with anti rusting powder coating					
Compressor	Scroll Compressor					
Refrigerant	R417a (R410a for option)					
Heat Exchanger	Co-axial heat exchanger (tube in tube)					
Expansion Valve	Electronic Expansion valve					
Heating Capacity (kW)	9.7	18	21	37	42	84
Input Power (kW)	2.19	4.08	4.76	8.39	9.5	18.5
COP	4.43	4.41	4.41	4.41	4.42	4.54
Input Current (A)	10.0	7.3	8.5	15.0	17.0	32
Max. Input Power (kW)	3.6	6.9	7.2	12.8	14.5	28
Max. Input Current (A)	16.5	13.5	13.8	25.5	26.0	52
Power Supply (V/Ph/Hz)	220-240/1/50	380-420/3/50				
Hot Water Yield (LPH)	209	387	451	795	903	1806
Rated/ Max. Hot Water Outlet (°C)	55/60					
Ambient Temp (°C)	5 - 43					
Exhaust Gas Pressure (MPa)	≤3.0					
Electric Shock Protection Rating	I					
Waterproof Rating	IPX4					
Pipeline Water Pressure (MPa)	≤0.7					
Circulating Water Pipe Diameter	DN25	DN40	DN40	DN40	DN40	DN50
Unit Dimension (mm)	752x729x916			1503x723x1208		2047x1112x1841
N.W. (Kg)	96	150	158	293	310	690
Noise (dB(A))	≤56	≤58	≤58	≤62	≤62	≤70
Advised Water Flow (m^3/hr)	1.8	3.6	4.1	6.6	7.9	15
* Test condition ambient temperature DB 20℃ / WB15℃, to heat initial water temperature 15℃ -55℃.						

SWIMMING POOL APPLICATION

Thermagen2X (Air Source)	4521A	4543A	4551A	45100A
Cabinet	Galvanized steel / Anti rusting stoving varnish / white			
Compressor	High Temp Scroll Compressor			
Refrigerant	R417A			
Condenser	High efficient tube in tube heat exchanger			
Expansion Valve	Electronic Expansion Valve (EEV)			
Defrosting	Auto-defrosting (reversing)			
Heating Capacity (kW)	21	43	51	100
Input Power (kW)	4.15	8.5	9.8	19.5
Rated Current (A)	8.8	16.0	18.0	39.5
COP	5.1	5.1	5.2	5.1
Power Supply (V/Ph/Hz)	380-420/3/50			
Max Input Power (kW)	6.9	12.2	13.8	20.7
Max Input Current (A)	13.5	22.7	26.2	39.3
Max Output water temp (℃)	45℃			
Design Pressure (Mpa)	less than or equal to 3.0			
Electric Shock Protection Rating	I	I	I	I
Protection grade	IPX4	IPX4	IPX4	IPX4
Water pressure drop (Kpa)	12	14	15	16
N.W. (Kg)	145	293	690	690
Noise (dB(A))	≤58	≤62	≤70	≤70
Advised Water Flow (m3/hr)	9	18	22	32
* Test condition ambient temperature DB 24℃ / WB19℃, inlet water temp- 27℃, outlet water temp - 32℃.				

Our Clients

Awards and Accolades

Climate Solver Award from WWF - India

Most Innovative Energy Saving Product

Chosen for incubation and mentoring

National Award Winner for implementing large ESCO

Chosen for international CO-Operation (GIZ)

Sustainability Leadership Award

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