Pecol™

Innovations In Green Energy (since 1968)

Free HOT WATER from our Hybrid Products*

We're Here Today To Help You Save For Tomorrow

Established since 1968, Pacific Engineering Sdn Bhd has continuously improved on its innovations bringing you hybrid environmentally and eco friendly products. Using our products help you contribute to a safe and clean environment everyday.

COMMERCIAL HEAT PUMP

Hot Water Technology

CFC

ENVIRO FRIENDLY R134a

CENTRALISED HOT WATER

Advantages of Using PECOL Commercial Heat Pump

- ☑ Economical, 75% savings on heating bills
- ☑ Meets international quality and safety standards
- ☑ Reliable in-house before and after service
- ☑ Minimum maintenance
- ☑ Reliable and efficient
- ☑ Free cold air
- ☑ Pollution free
- ☑ Built to last
- ☑ Manufacturer warranty

ECO Thermal Water Solution by 2018

Reuse of energy

Reduce carbon foot print

Reduce cost

Power Brand 2011

RENEWABLEENERGY

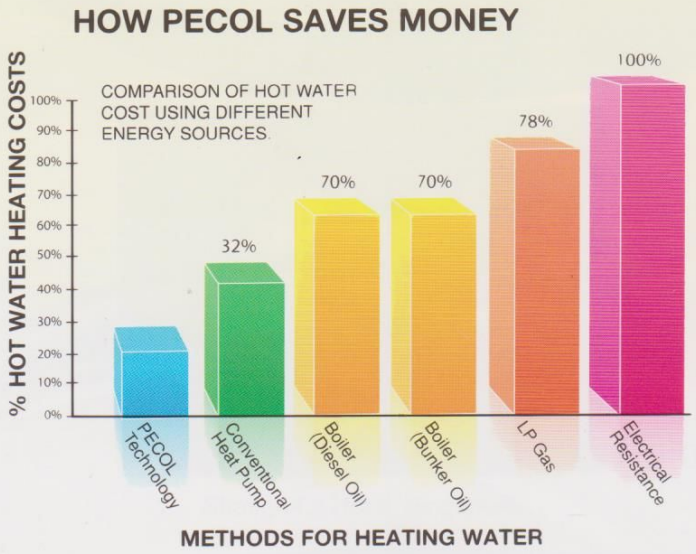
PECOL Heat Pump technology can be put to your advantage.. ... Pay less than one third of your heating bill by using the modern, reliable, economical, and pollution free method of heat production.

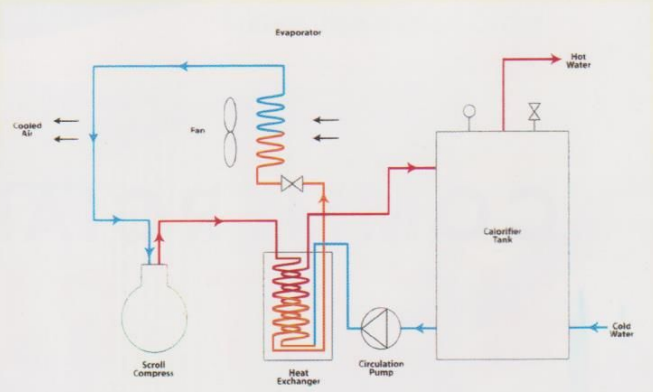
Pecol Heat Pumps are the most cost effective method to heat water when compared with all other alternatives.

What is PECOL Technology?

PECOL Heat Pump technology is a reverse refrigeration technology that reaches a high level of efficiency and high hot temperature of hot water.

PECOL Heat Pump absorbs heat from the surroundings and raises it to usable temperature for heating. This principle enables a quantity of heat at source to be multiplied several times at no additional cost.





Benefits Of Using the PECOL Heat Pump

1. Lowest Operating & Hot Water Costs

For the same amount of water to be heated the PECOL Heat Pump provides the MINIMUM OPERATING & WATER HEATING COST by transferring the surrounding heat instead of generating heat by electric resistance, gas and oil.

2. Pollution Free & Safer

PECOL Heat Pump does not run on hazardous fuel such as Natural Gas, LP Gas or Diesel. Hence it is very safe to operate. PECOL Heat Pump eliminates the need for fire proof room construction or installation of gas or oil supply pipes. Thus, it eliminates all danger of back drafting.

3. Practically Maintenance Free

PECOL Heat Pump is fully automatic and requires minimal maintenance.

4. Free Cold Air

PECOL Heat Pump generates a lot of cold air with no extra cost. This large amount of cold air can be channelled to cool the laundry room, lift motor room, kitchen, or for any other purpose.

5. Space Flexibility

The wide ranges of PECOL Heat Pumps provide space flexibility to ease installation at constrained areas.

Designing For Maximum Coefficient Of Performance (COP) And Trouble Free Maintenance

The COP of a heat pump depends on a number of factors:-

i) The temperature range of the heat pump
ii) The type of refrigerant used
iii) The temperature approach of evaporator and condenser
iv) The power gearing of the compressor

In designing a heat pump for a particular application all the above factors are carefully considered.

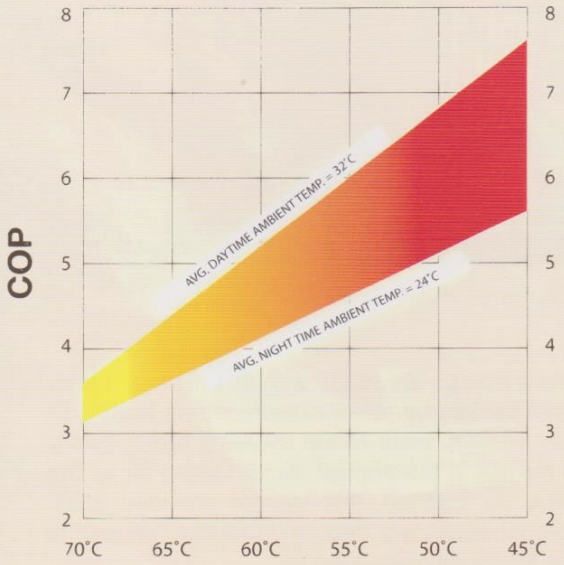
Class	Range of Temperature Difference	COP
I	18°C	5.0 - 8.0
II	33°C	3.3 - 5.0
III	43°C	3.0 - 3.5

As a general rule, the higher the temperature range the lower the COP

Specifications - Pecol Heat Pump

Model	Compress Rating		Power Supply	Dimension (mm) L x W x H	Weight (kg)	Output Rating BTU/HR		
	KW	HP				Class I COP=5	Class II COP=4	Class III COP=3
PHM 3	2.25	3	Three Phase, 415V, 50Hz	1067 x 890 x 483	160	38385	30708	23031
PHM 5	3.75	5	Three Phase, 415V, 50Hz	1220 x 1169 x 724	210	63975	51180	38385
PHM 7.5	5.62	7.5	Three Phase, 415V, 50Hz	1220 x 1169 x 724	260	95878	76702	57526
PHM 10	7.50	10	Three Phase, 415V, 50Hz	1372 x 1169 x 800	300	127950	102360	76770
PHM 15	11.25	15	Three Phase, 415V, 50Hz	1372 x 1169 x 800	330	191925	153540	115155
PHM 20	15	20	Three Phase, 415V, 50Hz	1372 x 1169 x 800	400	255900	204720	153540

Note: Special capacities and dimensions other than shown above can be made to requirement



*** HOT WATER OUTLET TEMPERATURE**

Note: COP of heat pumps may vary with different systems and conditions.

The PECOL calorifier performs three important functions

1. Allow the system to meet periods of high peak hot water demand.
2. Provides hot water temperature stratification required by the heat pump for effeicnt operation.
3. Properly sized capacity with correct thermostat differential setting prevents short cycling.

PECOL Commercial Calorifier

Adequate storage capacity is critical to maximize the PECOL Hat Pump water heater system performance. water is circulated between the storage tank and the heat pump unit by the built-in PECOL circulating pump.

The water is heated averagely 8°C each time it passes through the heat pump units. The tank temperature gradually rises until the set point of the thermostat control is reached and the heat pump automatically shuts off.

Calorifier Capacity

Model	Capacity Litre (Gal.)	Outer Container Dimension (mm)	Empty Weight (kg)	Loaded Weight (kg)
PACHM100	454 (100)	ø700 x 1700	142	597
PACHM200	908 (200)	ø1000 x 1800	256	1165
PACHM300	1362 (300)	ø1000 x 2500	331	1695
PACHM400	1816 (400)	ø1400 x 1900	408	2226
PACHM500	2270 (500)	ø1400 x 2300	464	2736
PACHM600	2724(600)	ø1400 x 2700	531	3258
PACHM700	3178 (700)	ø1700 x 2000	602	3784
PACHM800	3632 (800)	ø1700 x 2400	649	4285
PACHM900	4086 (900)	ø1700 x 2600	696	4787
PACHM1000	4540 (1000)	ø1700 x 2800	753	5298
PACHM1200	5448 (1200)	ø2000 x 2500	1130	6585
PACHM1500	6810 (1500)	ø2000 x 3000	1270	8088
PACHM2000	9080 (2000)	ø2000 x 3800	1951	11042

*Note: Special capacities and dimensions other than shown above can be made to order.

Energy Saving Conscious Establishments

Sheraton Hotel, Subang

Sama-sama, KLIA

Subang Jaya Medical Centre

Shangri-La Hotel, Singapore

The Ascott Hotel, Kuala Lumpur

The actual components of the heat pump used in the hot water system with air as the heat source consist of the following:-

a) Heat absorbing unit
b) Compressor and accessories unit
c) Calorifier

There is great flexibility in the installation of the heat pump. The major components; a) Heat absorbing unit b) Compressor and accessories unit, and c) Calorifier can be located anywhere within reasonable distance of each other and are connected by interconnecting refrigerant copper piping. This enables the heat pump components to be located in different rooms should there be space constraints from putting them together in a single room or restricted area.

The model to be selected depends on the class and capacity. For example, for hot water systems in the tropics the final temperature required may be up to 60˚C and water at ambient temperature is 27˚C. The rise in temperature is 33˚C and thus a Class II heat pump is required. The capacity of the compressor depends on the rate of recovery required which also depends on the storage capacity.

PECOL Heat Pumps are made with this highest quality components backed by major manufacturers from USA and Japan. PECOL Heat Pump systems are specially designed for use in the tropical climate using air as the heat source. In addition, this system provides much valued cold air absolutely free, and this can be used to reduce the air conditioning load.

PECOL Heat Pump systems have been proven efficient and reliable. All our systems are backed by excellent after-sales services and our technical team is ready to serve you anytime.

We are the water heating specialist and using heat pumps to heat water is just one our specialities.

We will be happy to assist you in any projects with respect to hot water system designs and other forms of heating and give you a quotation obligation free.

*Specifications are subject to alteration without prior notice.

Pecol™

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