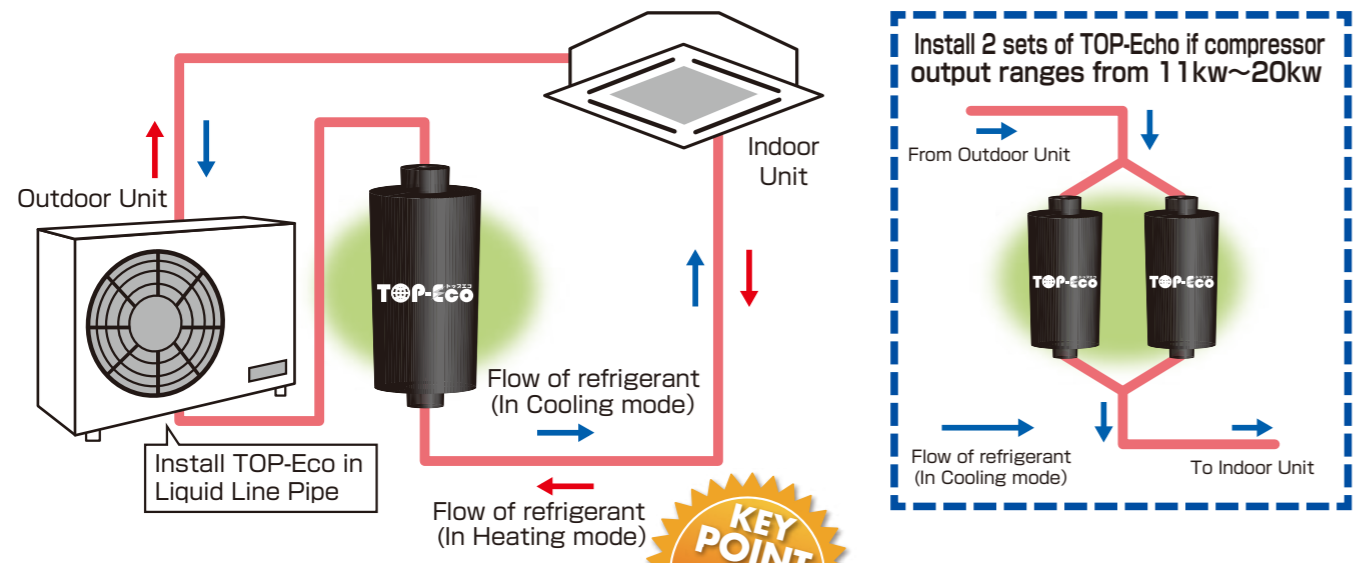


Typical installation of TOP-Echo

Very Easy to install

Maintenance Free

Running Cost Free



Just install TOP-Echo to the Outdoor Unit in-use

※ Any specified Refrigerant and Compressor Oil is usable



Specification

Dimension	approx. L:240 D:Φ90(mm) except copper pipe
Weight	approx.4.5kg
Main material	Steel, Copper
Copper pipe	Φ12.7(mm)

Safety and relevant regulations	
● Refrigeration and air conditioning security rules	● Manufacturing subcontractor ISO9001:2000
● PL insurance bought	● High-pressure gas production facility licensed.

Important reminder

- TOP-Echo is a product for business use air conditioners with compressor output of over 3kw
- Unusable for smaller and domestic use air conditioners.
- 2 sets of Top-Echo needed for air conditioners with compressor output ranges from 11kw~20kw
- Please consult with dealers if your compressor output is over 20kw
- Absorption type refrigerator, Turbo refrigerator, etc. are not applicable.
- Please consult with dealers in case of applying to Freezing and/or Refrigerating equipment, or else.

Energy reduction effect

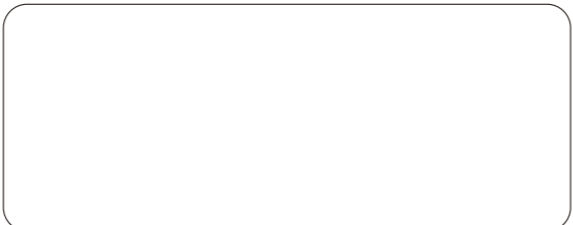
- Longer the age of service or operating time of air conditioner, better the effect documented.
- Air conditioner using fluorocarbon refrigerant is ensured to achieve more than 10% of energy saving effect

Installation environment

- Longer the piping length with more of charged refrigerant, bigger the energy saving effect tends to be.
 - Air conditioners with fewer charged refrigerant, such as a water cooled type or a chiller unit may show smaller energy saving effect.
- ※ No energy saving effect ensured in case the air conditioner is used in the environment exceeding its capacity.

Just Light Technology

46560 Fremont Blvd, Suite 105,
Fremont, CA, 94538
TEL.510-488-3676
<https://justlight.net> contact@justlight.net



Refrigerant Reacting Pipe TOP-Echo トップエコ

Refrigerant works properly

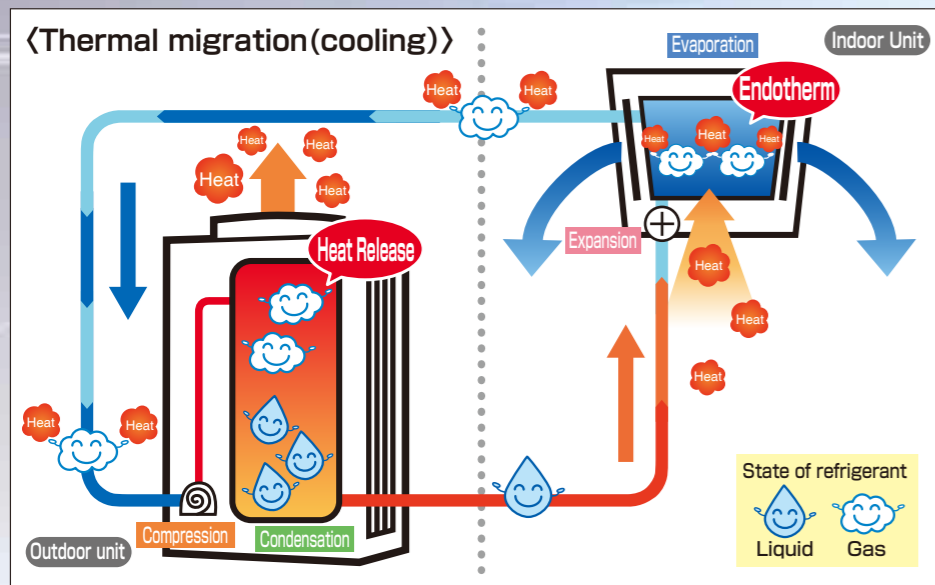
Easy but sure Energy Saving

Air Conditioner works excellent



A key for successful energy saving is to actualize the power saving of Air Conditioner accounting more than 40% of whole power consumption in usual cases.

The performance of refrigerant dominating the efficiency of a refrigeration cycle



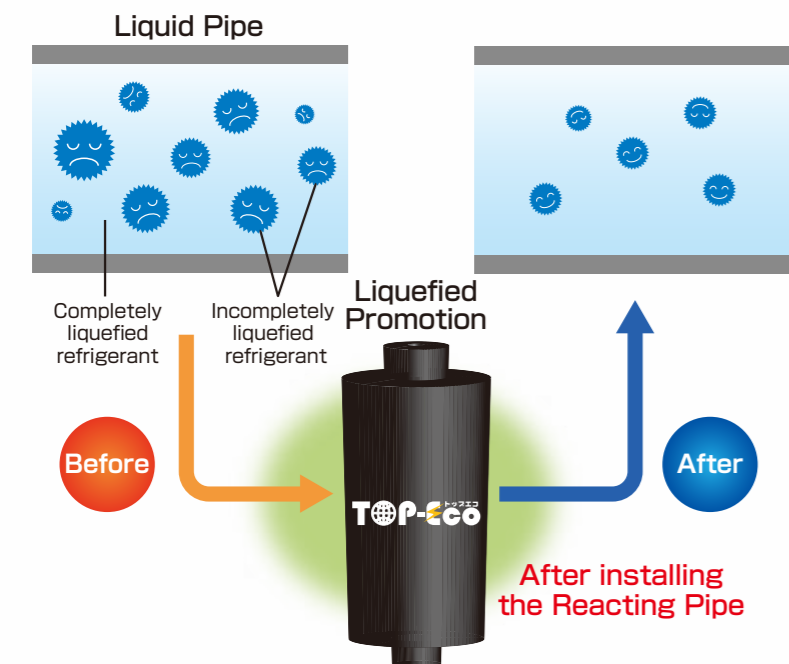
Refrigerant is a very vital substance transferring heat by circulating between Outdoor unit and Indoor unit. The heat transfer is done by changing its state in liquid and gas. The efficiency of an air conditioner is entirely dependent on the heat transferring performance of the refrigerant by liquefying (condensation) and gasification (Evaporation) in proper manner. Usually the refrigerant does not liquefy sufficiently in active air conditioners due to various reasons such as its installation environment, service condition, machinery shape, etc.

Incompletely liquefied refrigerant can not perform adequate heat transfer during the evaporation. This forces the air conditioner into inefficient operation, thus costing wasteful electricity expense.



The Effect of Reacting pipe!! Promotion of liquefaction

An unique internal structure intensely stirs refrigerant and atomizes incompletely liquefied gases. Furthermore the improved uneven thermal distribution promotes the liquefaction of refrigerant



① Improving expansion efficiency

- Improving heat transferring efficiency during evaporation
- Improving air outlet temperature of indoor unit

② Compressor load reduction

- Shorter operation time
- Low currency operation

Patient-free and easy energy saving ensured



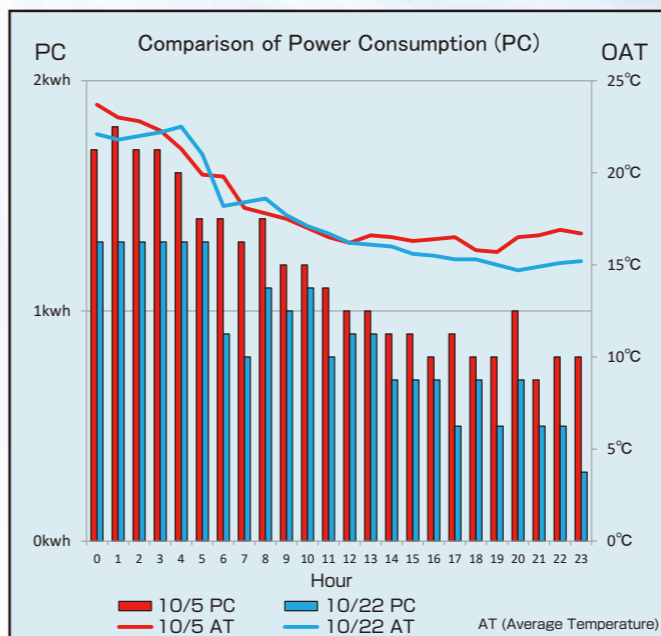
Case study

For any refrigerant

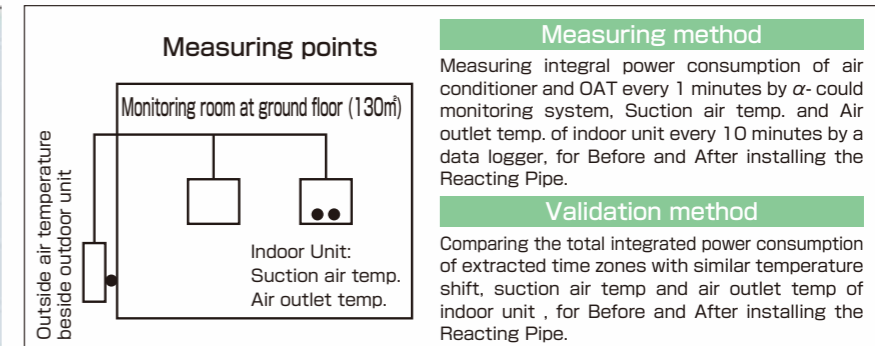
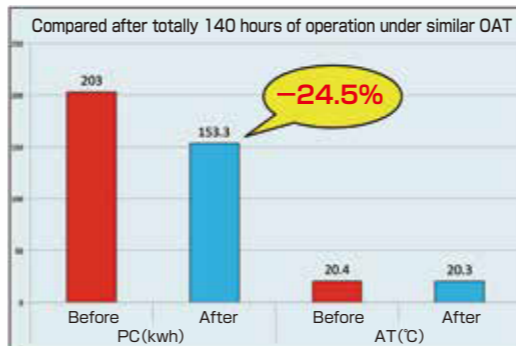
For Cooling Factory monitoring room (area: about 130m²) of a major comprehensive electronics manufacturer

- Installed Air conditioner/Compressor output 5.6kw/ installed in 1994
- Operation condition.24 hours 365 days
- Measured data/ Power Consumption, Outside Air Temperature, Air outlet temperature of indoor unit
- Measuring period/ Before (installing the Reacting Pipe) : Oct.2nd ~Oct. 15. After (installing the Reacting Pipe) : Oct.17~Oct 30

Measurement date	With or without Reacting Pipe	Power Consumption(PC) (kWh)	Saved power(kWh)	Reduction rate (%)	Outside air temperature(OAT) (°C)	Running time(hour)
October 5th	No	27.9	-	-	18.2	24
October 22nd	Yes	21.1	6.8	24.4	17.6	



Time	Bar Graph		Line Graph	
	Power consumption (kWh) 10/5	Power consumption (kWh) 10/22	OAT (°C) 10/5	OAT (°C) 10/22
0	1.7	1.3	23.7	22.1
1	1.8	1.3	23.0	21.8
2	1.7	1.3	22.8	22.0
3	1.7	1.3	22.3	22.2
4	1.6	1.3	21.3	22.5
5	1.4	1.3	19.9	21.0
6	1.4	0.9	19.8	18.2
7	1.3	0.8	18.1	18.4
8	1.4	1.1	17.8	18.6
9	1.2	1.0	17.5	17.7
10	1.2	1.1	17.0	17.1
11	1.1	0.8	16.5	16.7
12	1.0	0.9	16.2	16.2
13	1.0	0.9	16.6	16.1
14	0.9	0.7	16.5	16.0
15	0.9	0.7	16.3	15.6
16	0.8	0.7	16.4	15.5
17	0.9	0.5	16.5	15.3
18	0.8	0.7	15.8	15.3
19	0.8	0.5	15.7	15.0
20	1.0	0.7	16.5	14.7
21	0.7	0.5	16.6	14.9
22	0.8	0.5	16.9	15.1
23	0.8	0.3	16.7	15.2



Installation procedure

