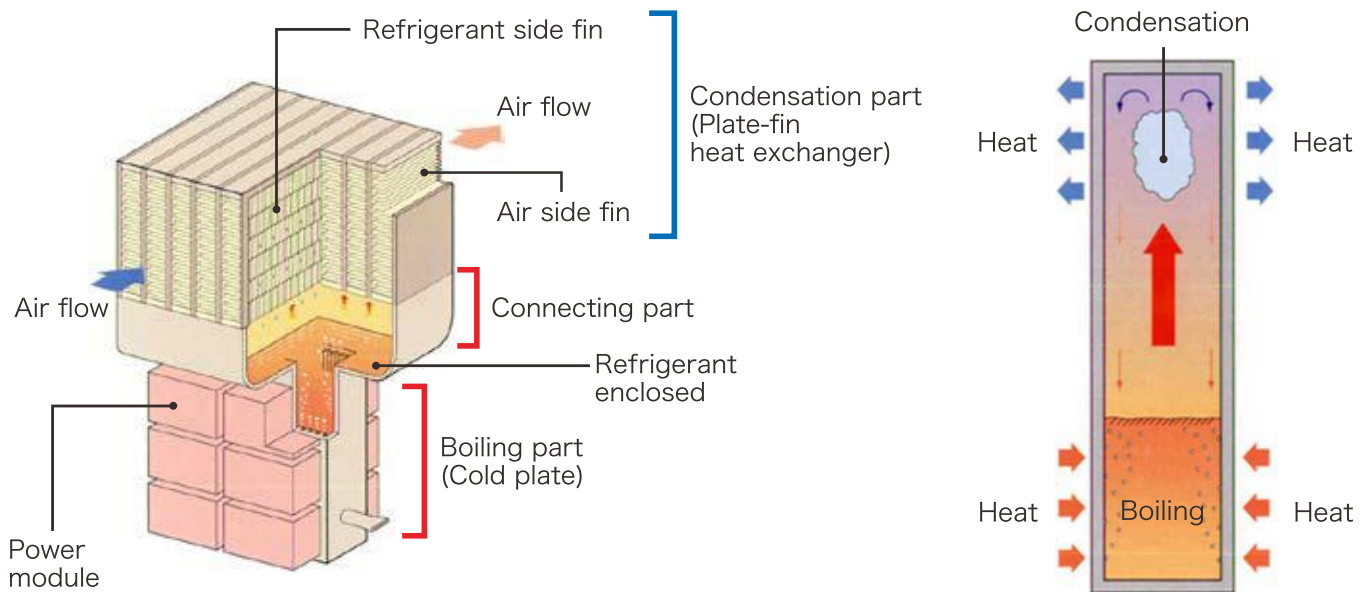


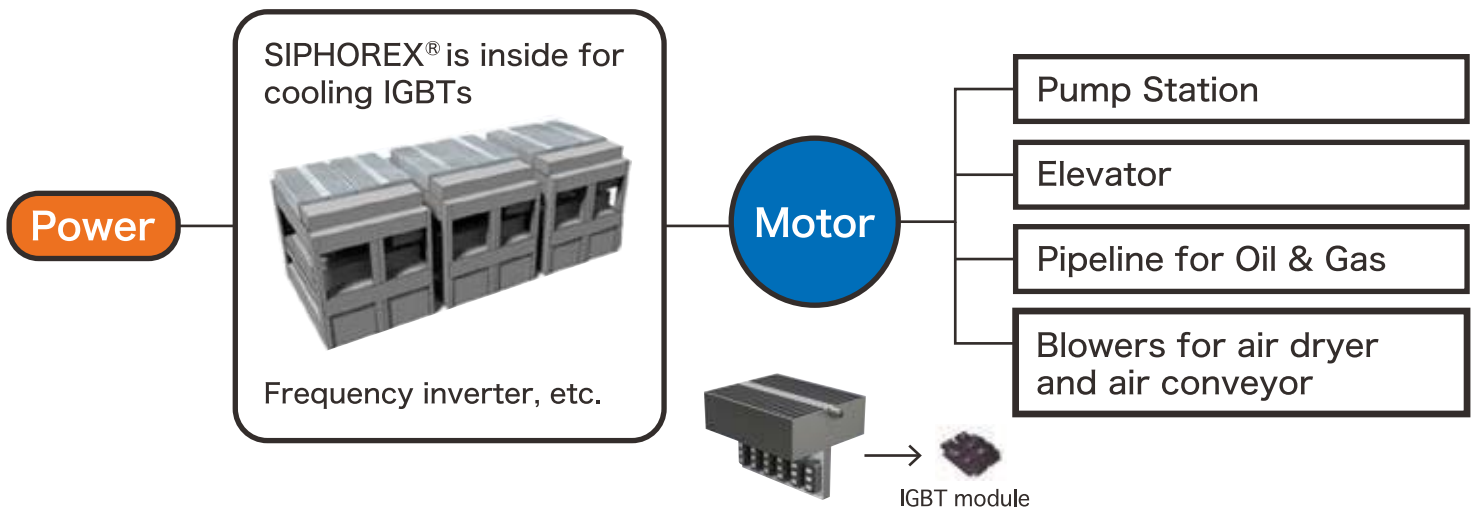
2-phase cooler, "SIPHOREX[®]"

Basic structure

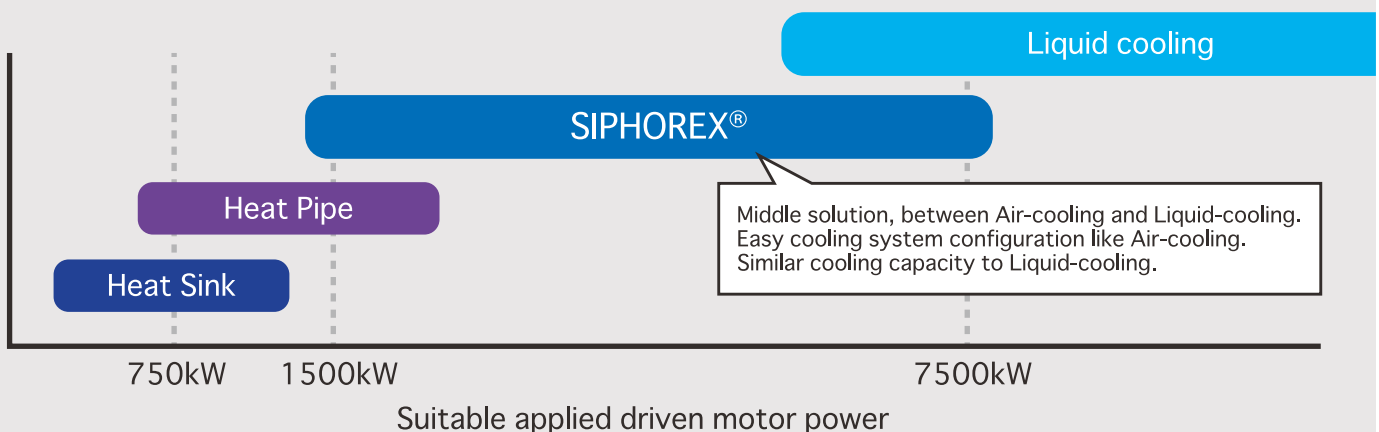


Applications in industrial fields

Sales number more than 400,000 since 1995



Suitable range of "SIPHOREX[®]" for frequency inverters



2-phase cooling solution, as easy as heat sink

Your benefits

If you are using Air cooling..

- Higher cooling capacity.
- Large heat loss is allowable.
- Lower air flow and blower noise.
- Works until about -45°C.

If you are using Liquid cooling..

- Simple. No pump and piping.
- Total cooling system will be compact.
- Lower maintenance cost.
- No risk of water leakage.

Other Features

- Better cooling than Heat-pipe / Heat-sink by larger boiling & condensing surface.
- Temperature distribution is almost uniform at whole surface, by boil & condensation.
- Typical life is more than 20 years.

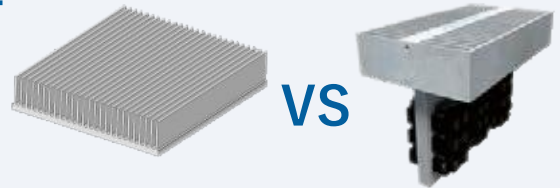
Heat sink vs. SIPHOREX®

Calculation condition

Air flow condition: Total Heat loss:

50 m³/min
60 °C

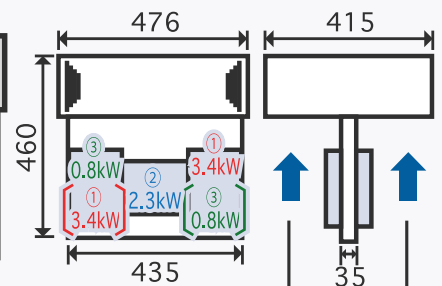
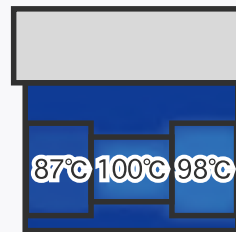
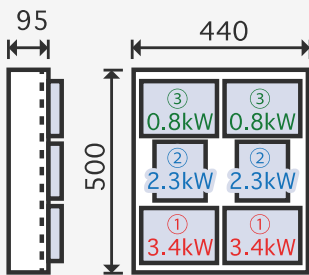
13kW



Result of extrusion Heat sink

Result of SIPHOREX®

170°C 80°C



Cooling surface temperature

Air flow
50 m³/min
60 °C

Air ΔP : 750Pa
Weight: 26kg

Air flow
50 m³/min
60 °C

Air ΔP : 280Pa
Weight: 33kg

| | Heat loss from each modules | Heat sink | | SIPHOREX® | |
|---|-----------------------------|-------------------|------------|-------------------|------------|
| | | Max. Temp. (degC) | R θ (K/kW) | Max. Temp. (degC) | R θ (K/kW) |
| ① | 2 x 3.4kW | 175 | 33.7 | 98 | 11.3 |
| ② | 2 x 2.3kW | 159 | 43.0 | 100 | 17.3 |
| ③ | 2 x 0.8kW | 110 | 62.7 | 87 | 33.5 |

SIPHOREX® achieves more than half heat resistance R θ

Sumitomo Precision Products Co., Ltd.

Heat exchangers Sales & Marketing Department
Sumitomo Corporation Takebashi Bldg 4th floor,
1-2-2 Hitotsubashi, Chiyoda-ku, Tokyo 100-0003, Japan

+81-3-3217-2812

WEB <http://www.spp.co.jp/netstu/en/>
FAX +81-3-3217-2822 E-mail netu-sales@spp.co.jp