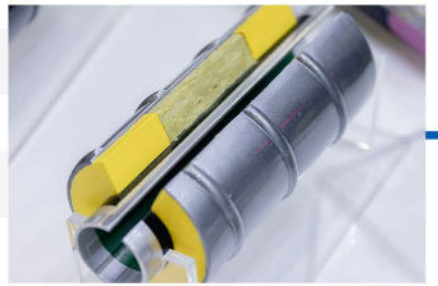
SunForce™ Thermal Insulator for CDU of AI Server Cooling

Easy-to-assemble and more efficient thermal insulator to prevent condensation

Why SunForce?

1. **Reducing Number of Insulator Parts** by using a mold
2. **Easier & Accurate Assembly** compared to using EPDM/PU foam
3. **Design Flexibility** by steam chest molding
4. **Low Water Absorption** compared to using cut PU sponge by hand
5. **UL94 V-0** necessary for AI server locations



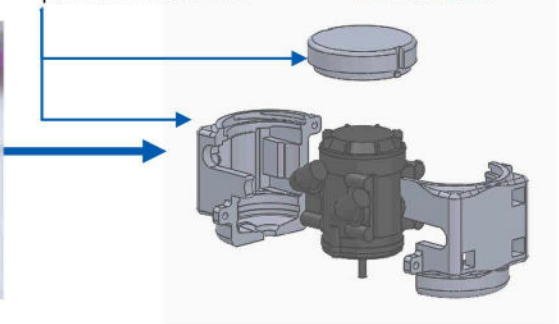
Cut Foam

EPDM/PU

particle foam beads

SunForce™

moldable



Easier Assembly and
Improved Assembly Accuracy

AsahiKASEI

Patent Pending

Fitted Thermal Insulator

Insulation that contributes to improved thermal management efficiency, condensation prevention, higher productivity, and assembly accuracy

Advantages

① **Condensation Prevention**

Improved thermal management efficiency

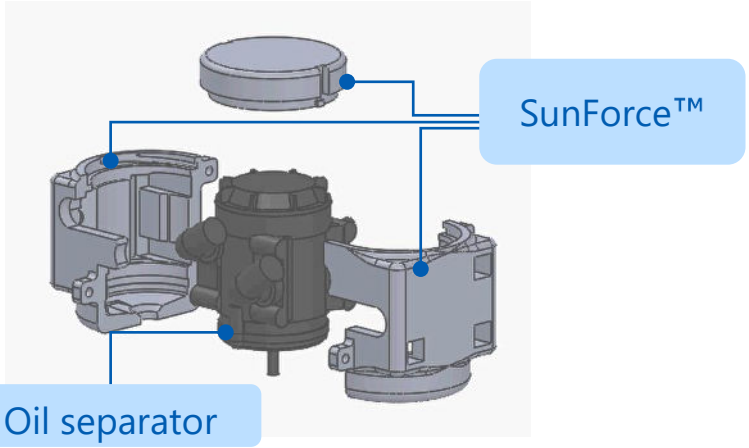
② **Shape Flexibility**

Thin and complex parts formable

③ **Easy Assembly**

Improving productivity and accuracy

Examples of SunForce™ Insulator



Comparison of SunForce™ with other General-Purpose Foam Materials

Foam Type	SunForce™	EPS (Expanded Polystyrene)	EPP (Expanded Polypropylene)	Urethane Foam Sheet
Forming Method	**In-mold foaming**	In-mold foaming	In-mold foaming	Extrusion foaming
Formability	+++	++	++	-
Thin-wall Forming	++	-	-	-
Heat Resistance (DTUL)	++	-	-	-
Flame Retardancy	**UL94 V-0**	Flammable	Flammable	Flammable

Intended use

All applications requiring high performance and high safety

- Water cooling parts for data centers and AI servers
- Cooling components for 5G/6G communication equipment and power conditioners for solar cells
- Engine oil separators for agricultural machinery
- Ducts for air conditioning, etc.

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Patent Pending

Thermal Insulating ducts

Ventilation cover that contributes to lower component temperatures
by maximizing the cooling effect of convection

Advantages

① Reducing component temperatures

by controlling internal air convection

② Reducing Component Numbers

Enabling functional integration with surrounding components

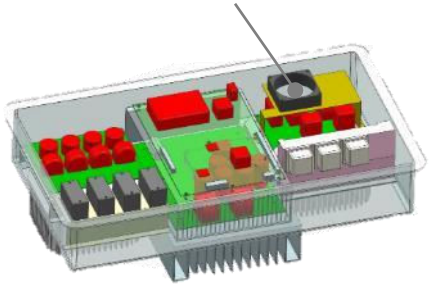
③ Reducing Internal Air Temperature

high thermal insulation allows the consolidation of heat from components

Case Study of PCS for Solar Power Generation

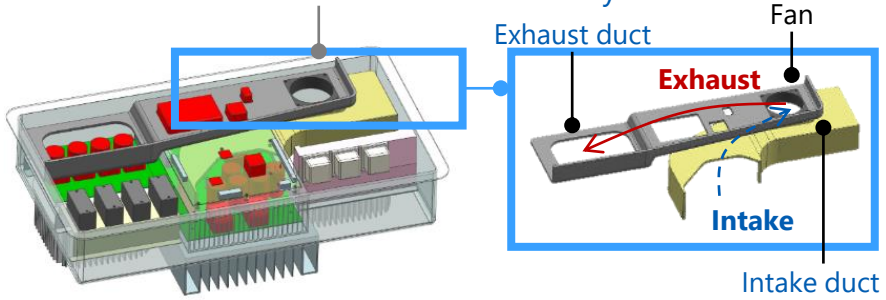
Original design

Fan to circulate interior airflow



Improved design with SunForce™

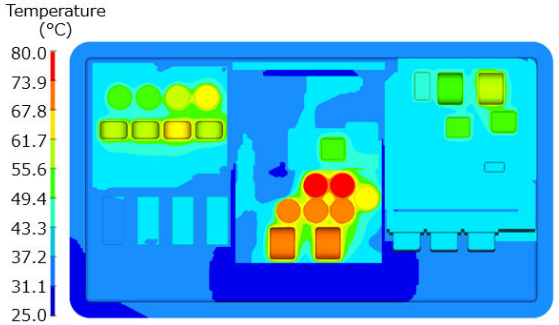
SunForce™ ducts added to fan assembly



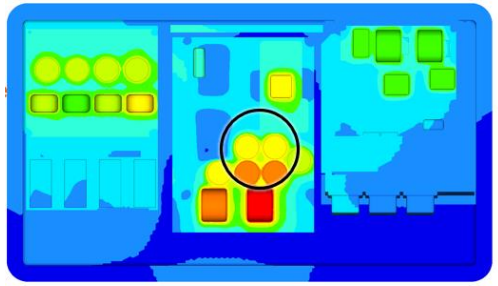
Simulated temperature distributions within the PCS unit

- The possibility of reducing component temperatures by creating airflow through ventilation ducts was confirmed.

Original design



Improved design



○: Regions of particularly significant temperature reduction

*Results based on our simulation

Maximum temperature reduced by **12.4 °C**