

# **Electric Inverter A/C System for TOYOTA PRIUS Hybrid Vehicle**

**Speaker**

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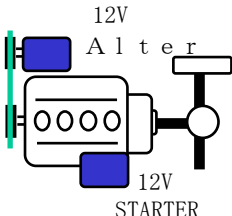
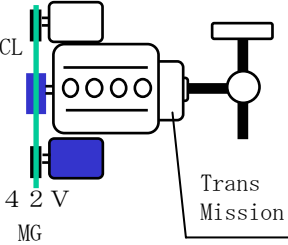
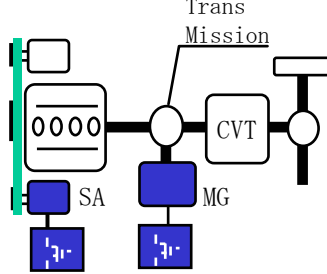
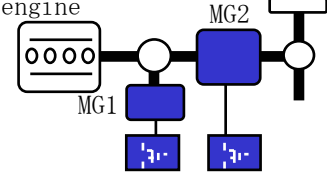
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# **Presentation Outline**

- 1. Development Background**
- 2. Merits of Electrically Driven Compressors**
- 3. Structure of Electric Inverter A/C System**
- 4. Key Technology for Engine Stoppage**
- 5. Conclusions**

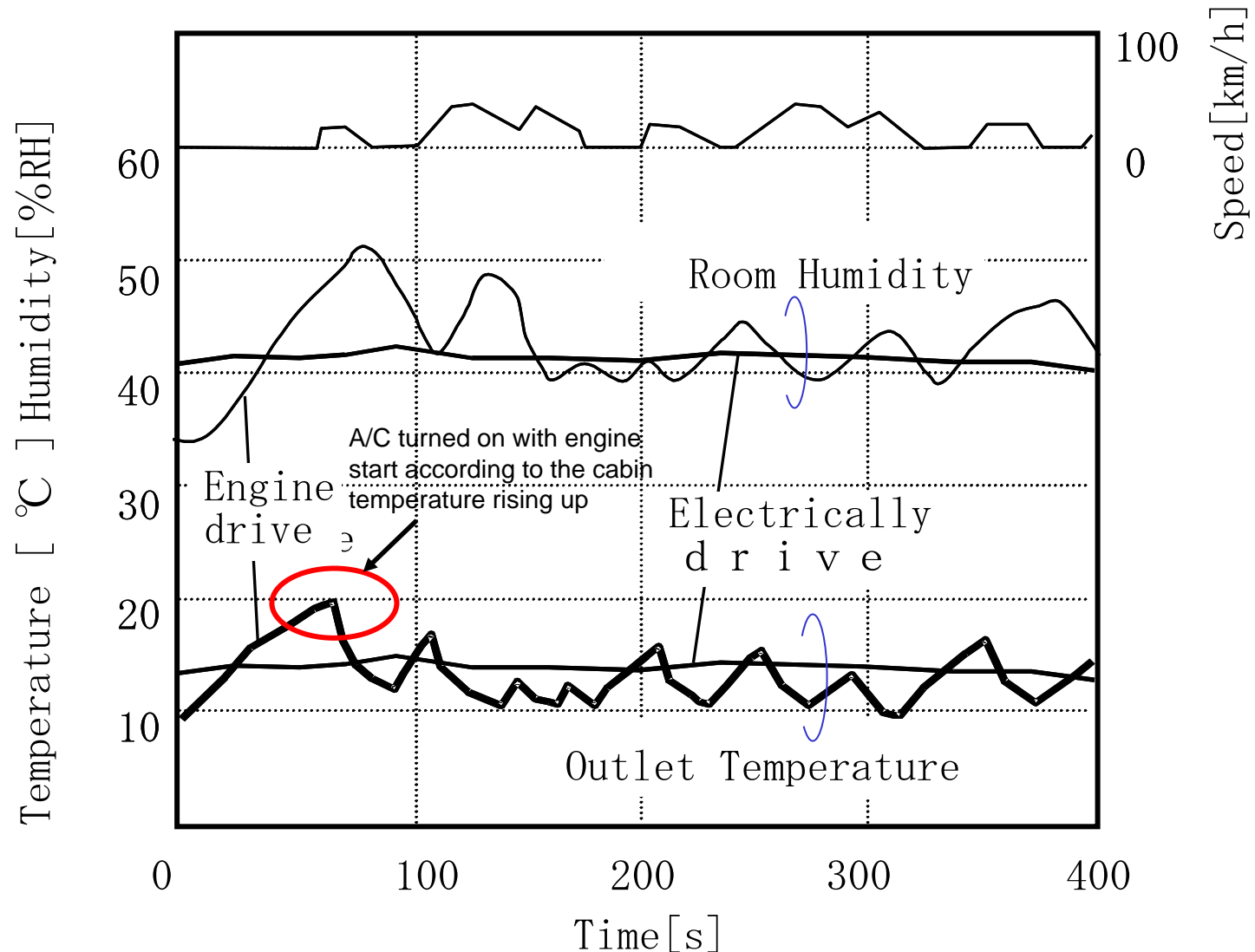
# Development Background

## Air Conditioner Types Confronting Engine Stoppage

	Idle Stop (12V)	MHV (42V)	SHV (202~288V)	
Component Type	Powerful Starter 	Belt driven MG 	1 Motor Generator 	2 Motor Generator (Prius) 
Generation of Electricity	Small	Middle		Large
A/C Type	Cold-Storage	Combined Use of Belt driven and Electrically drive (2 Way Compressor)		Electrically Drive

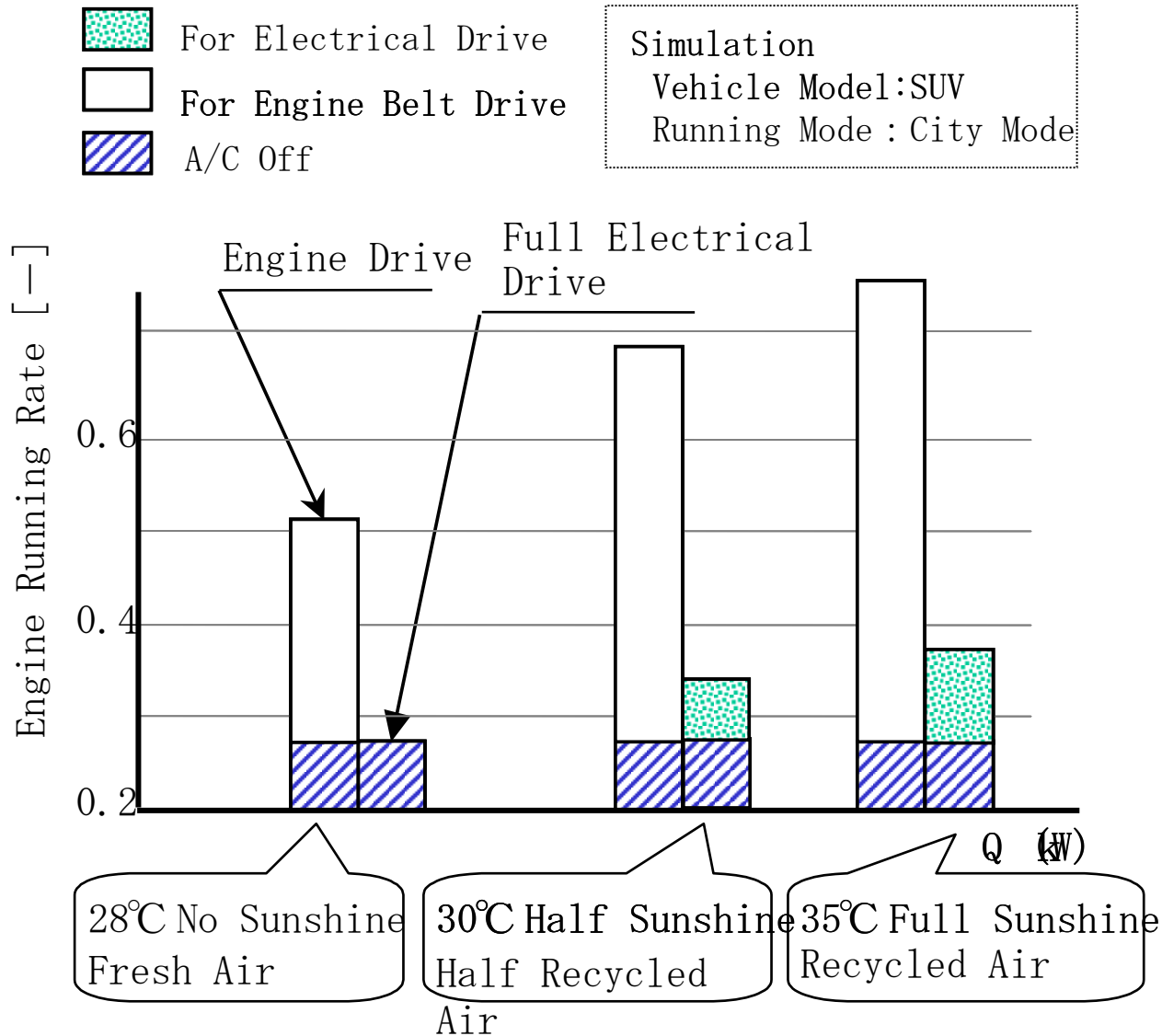
# Merits of Electrically Driven Compressors

## Comparison of Air-conditioning Comfort between Engines Belt and Electrically Driven Compressors



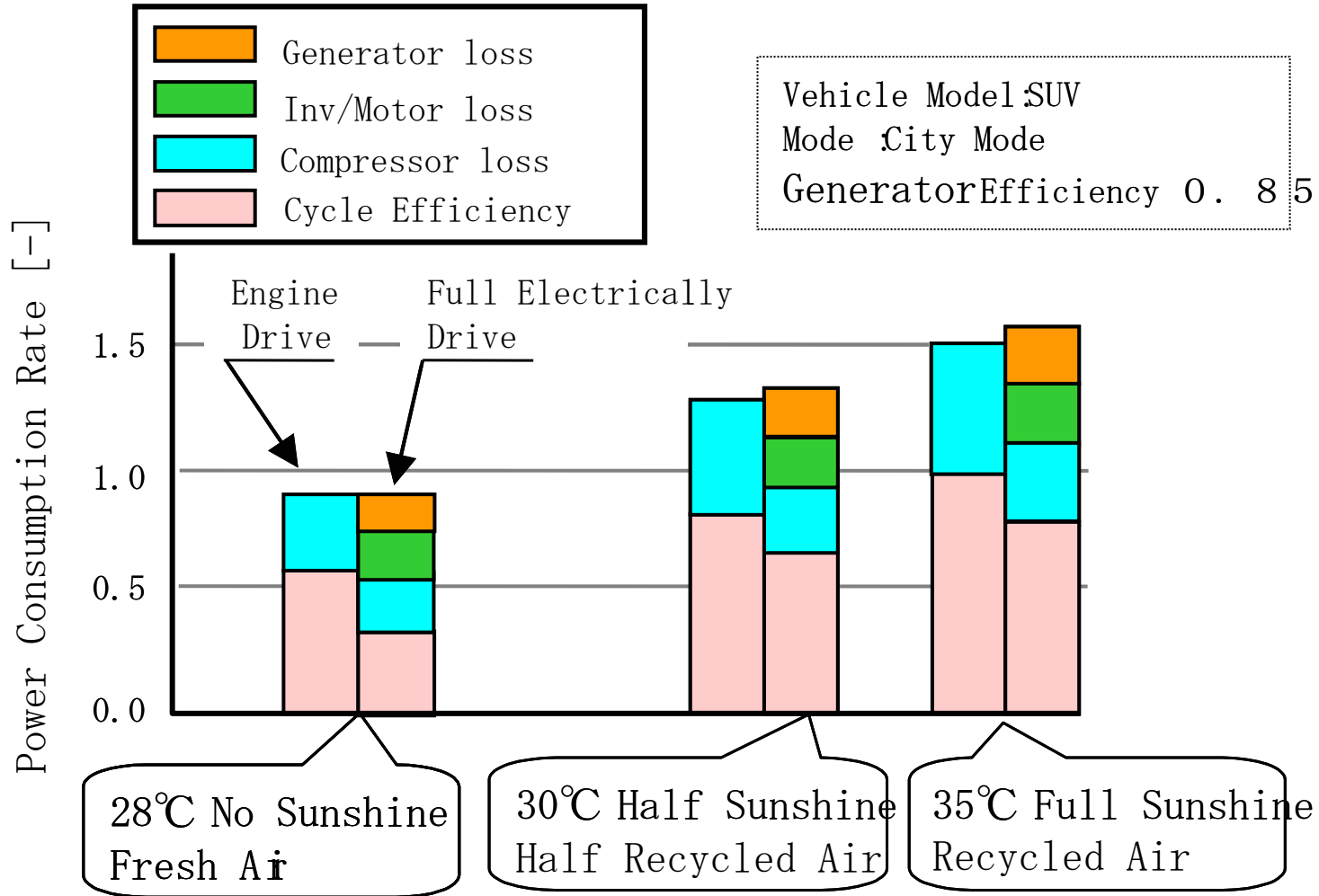
# Merits of Electrically Driven Compressors

## Impact on Fuel Consumption



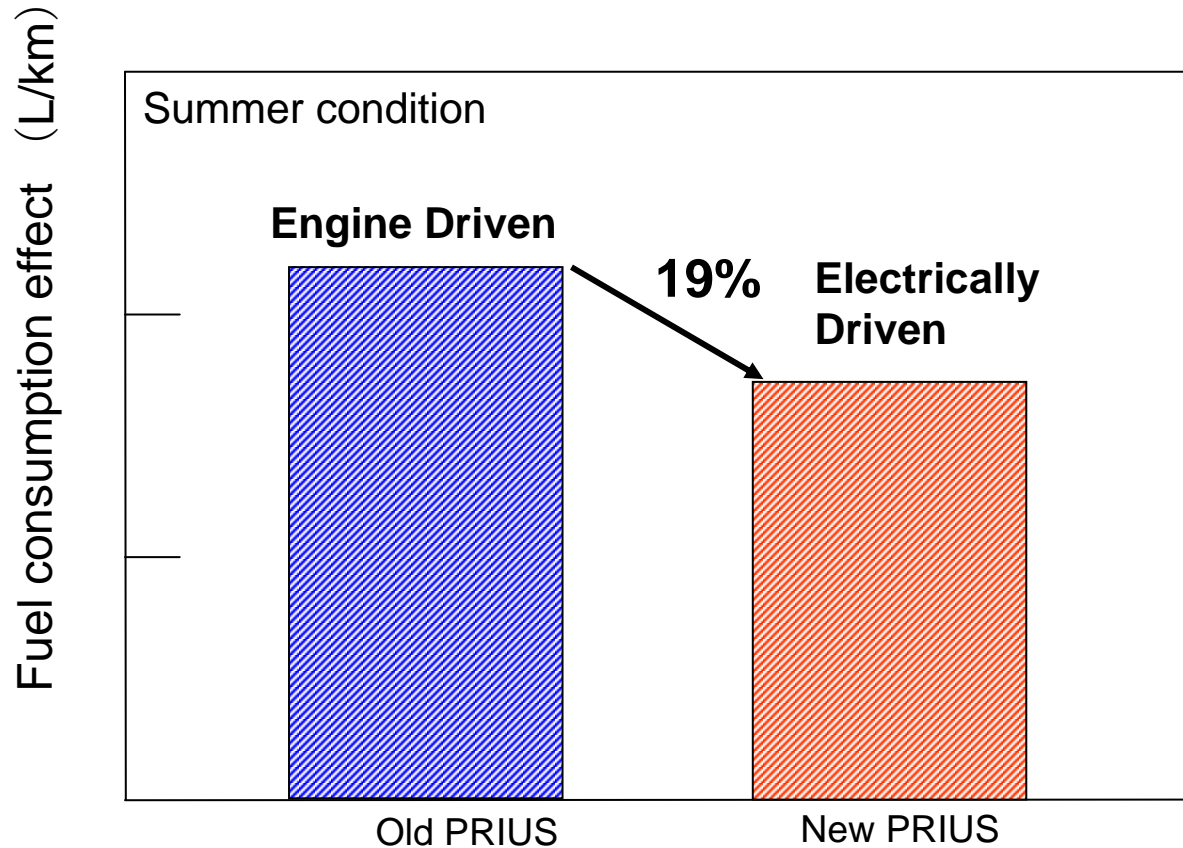
# Merits of Electrically Driven Compressors

## Impact on Fuel Consumption

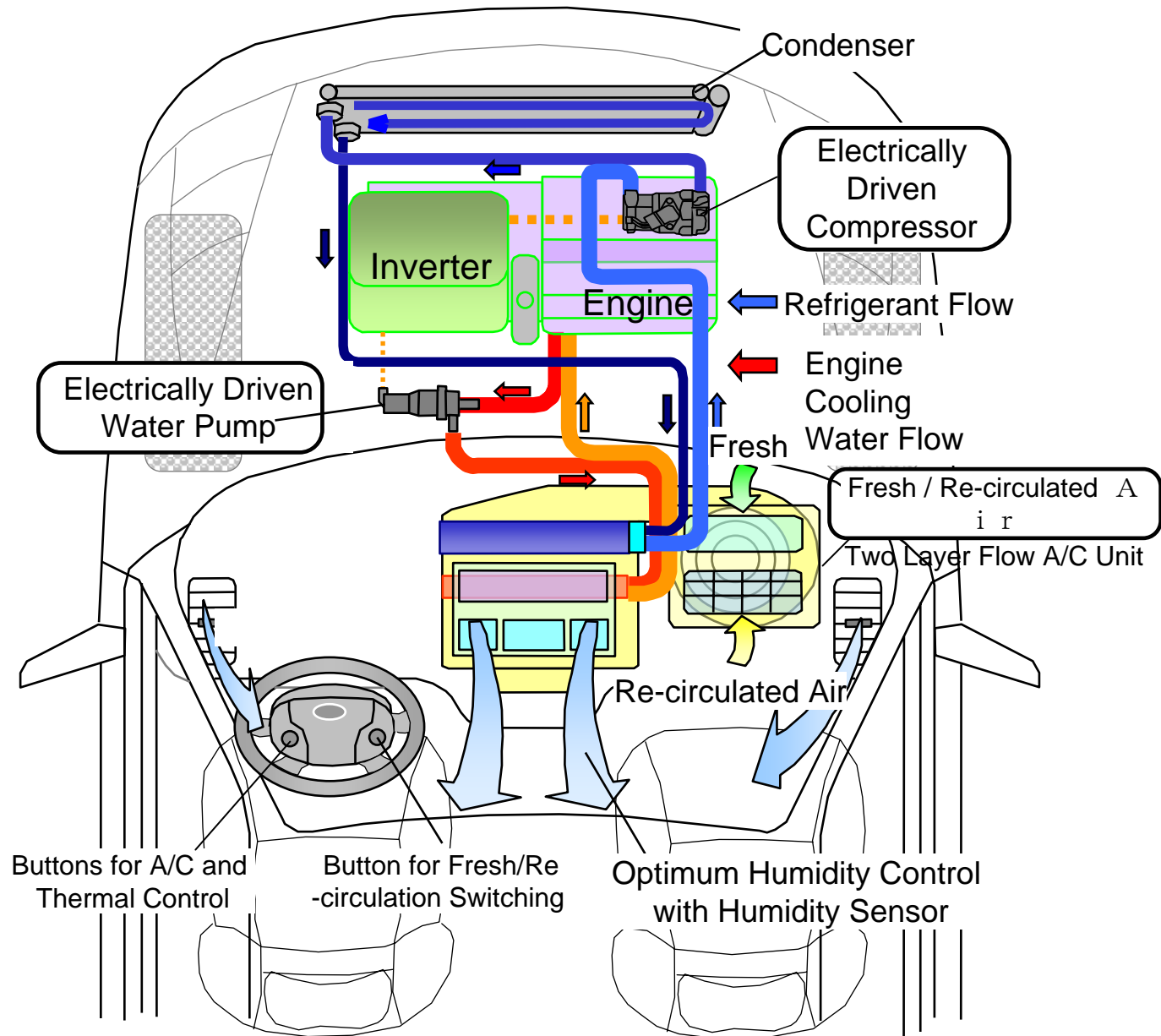


# Merits of Electrically Driven Compressors

## Fuel Consumption Effect



# Structure of Electrical Inverter Air Conditioning System

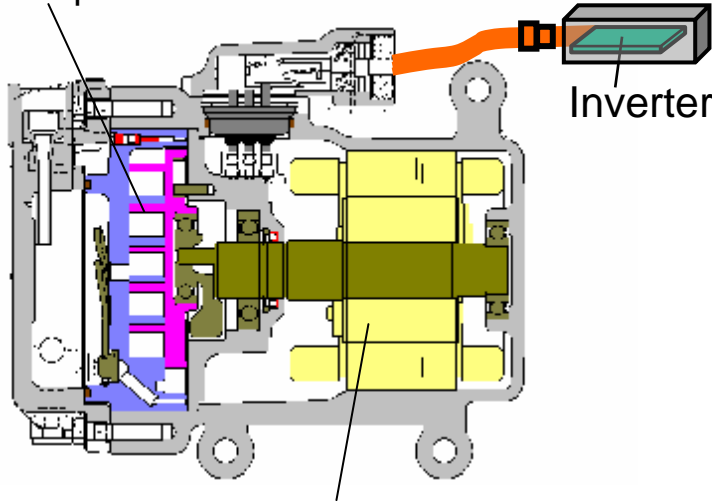




# Structure of Electric Inverter A/C System

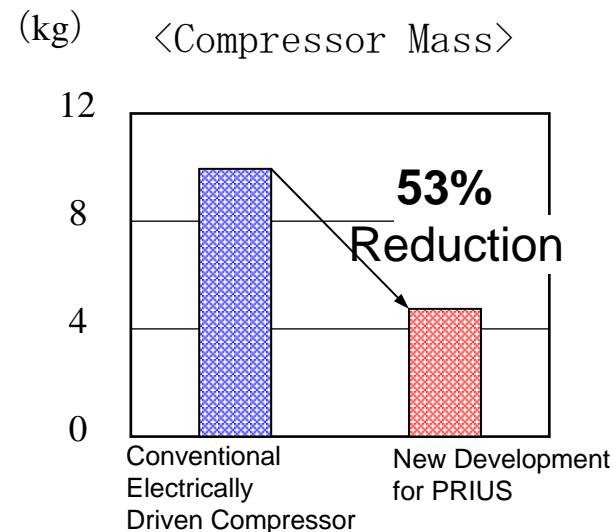
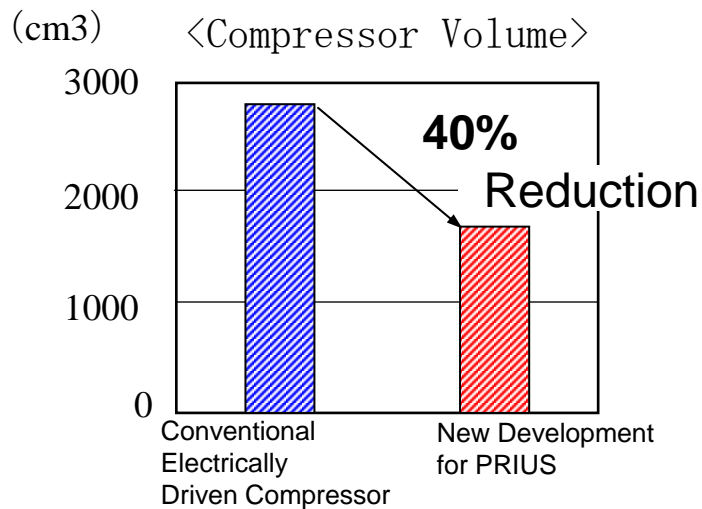
## Compressor Specifications

Compact and Highly Efficient  
Scroll Compressor



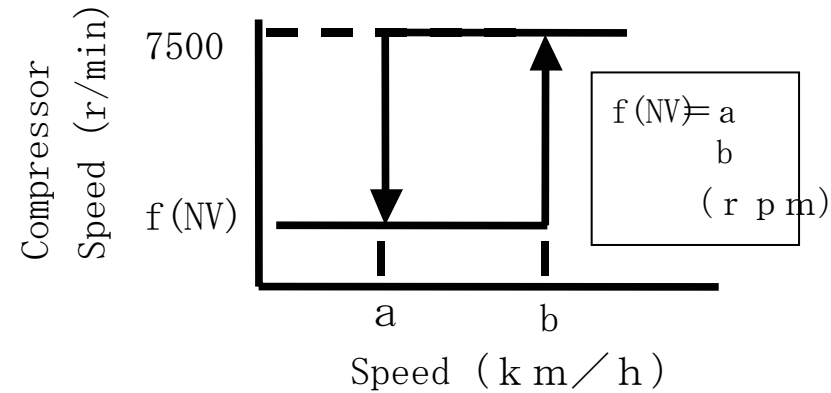
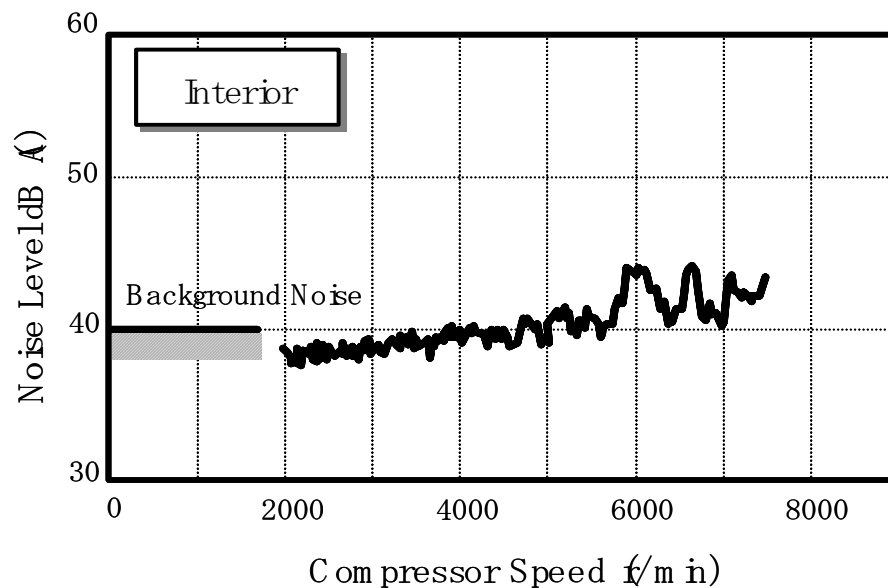
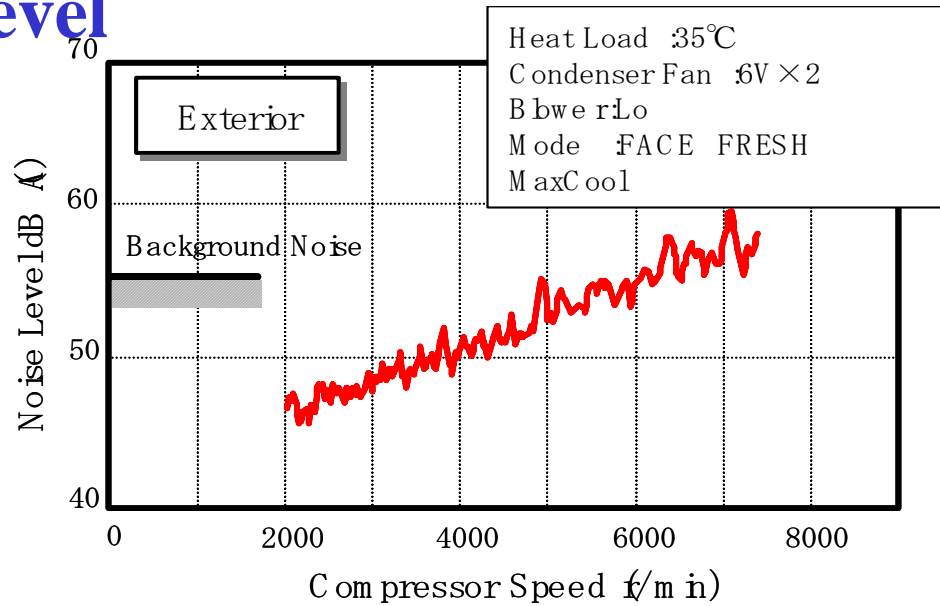
Items	Specifications
Model	ES18 (18 cm <sup>3</sup> /r)
Cooling Performance	3.4kW (at 7500r/min)
Size	φ 109×182 mm
Mass	4.8kg (without inverter)

Compact and Highly Efficient  
DC Brushless Motor



# Key Technology for Engine Stoppage

## Electrically Driven Compressor System Noise Level



## Conclusions

- **Cooling possible even during engine stoppage**
- **Fuel consumption improvements**
- **Adopted for the first time in September 2003**
- **Wide adoption expected in future**