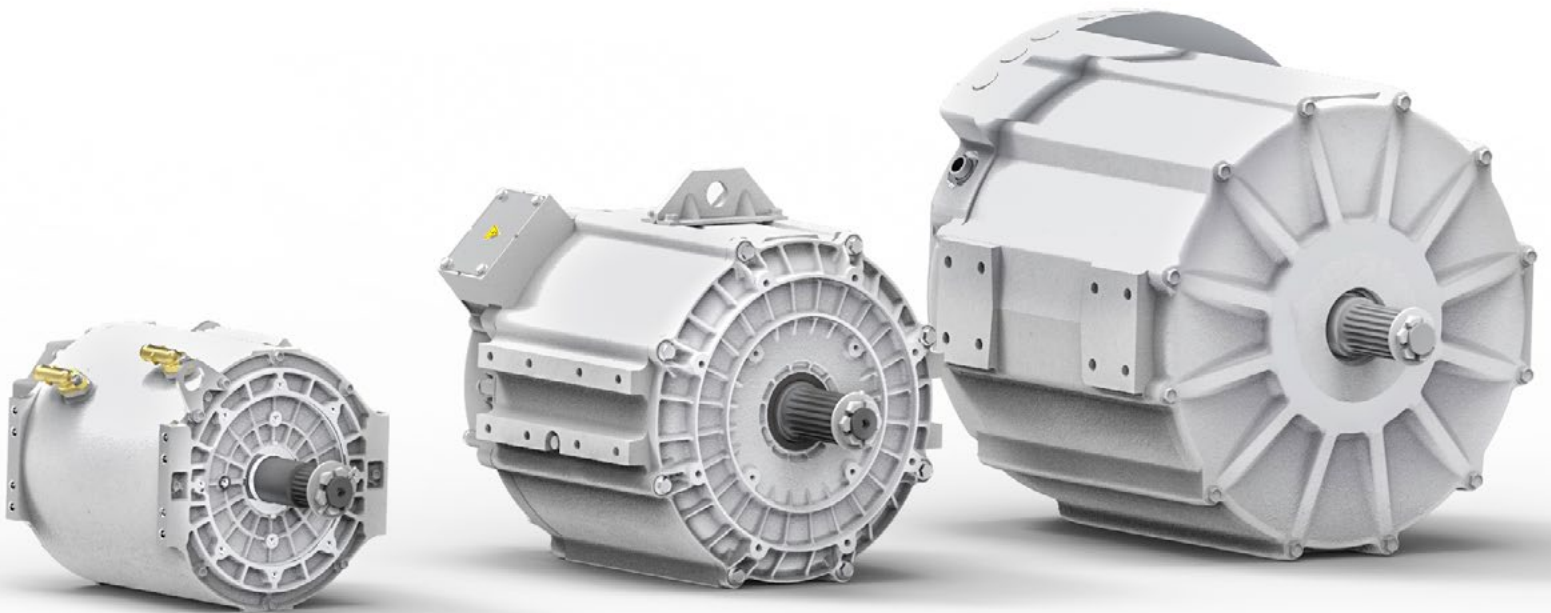




TM4 SUMO™ Family **Motor / Inverter Systems**





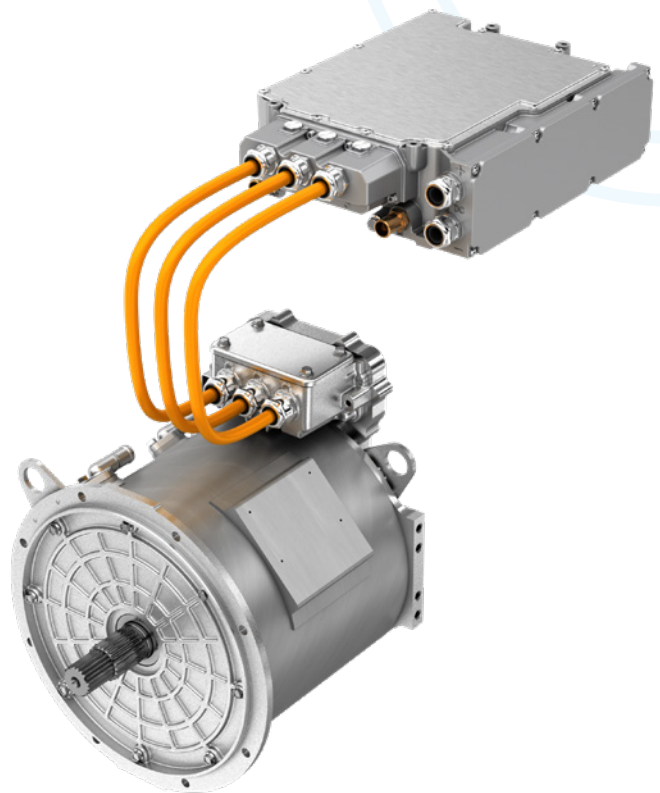
TM4 SUMO™ LD Motor / Inverter System

Features

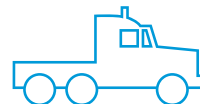
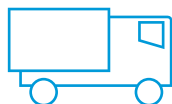
- Peak power: Up to 250 kW
- Peak torque: Up to 1,200 Nm
- Max operating speed: 8,600 RPM

Benefits

- High torque/low speed internal permanent magnet motor and inverter combinations
- Designed and validated as per axle mount requirements
- Seamless integration into Dana axles (example: eS9000r, eS6200r)



Ideal for Light Commercial Vehicles, Mini Buses, Medium-Duty Trucks, Medium Buses, and in e-Axles for Heavy-Duty Trucks.



TM4 SUMO™ LD Motor / Inverter System

The TM4 SUMO LD systems are designed to interface directly with standard rear differentials and/or gearboxes and/or e-Axles. It makes this series perfect for light commercial vehicles and light bus platforms.

Motor Features

- 3-phase permanent magnet motor
- High torque and power density
- Low electro-magnetic audible noise
- Low-cogging and ripple torque for better NVH
- Thermal protection

Standards

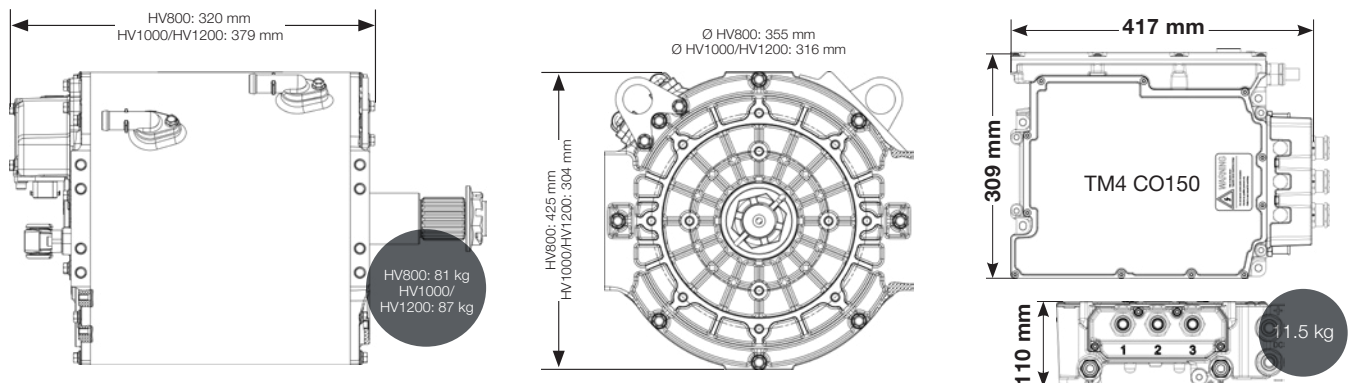
- Operating voltage: up to 800 Vdc
- System protection: IP 6K9K
- Shock and vibration standards: GMW3172 Sprung masses
- Max coolant inlet temperature: 65°C
- Coolant type: 40/60 water-glycol
- Toxic materials and flammability: ROHS, ELV, UL94-V0
- External corrosion resistance: Salt mist, chemical products

Inverter Features

- 3-phase high voltage inverter
- Variable switching frequency
- Reflex™ gate driver technology for high power and current densities
- EMI Filter
- Best-in-class power density

SYSTEM	Peak power	Continuous power	Peak torque	Continuous torque	Max operating speed
TM4 SUMO LD MV800*	250 kW	115 kW	775 Nm	430 Nm	6,500 RPM
TM4 SUMO LD HV800	250 kW	140 kW	950 Nm	480 Nm	8,600 RPM
TM4 SUMO LD HV1200	200 kW	100 kW	1200 Nm	520 Nm	4,500 RPM

600 Vdc, 30 seconds, 45°C (*350 Vdc, 30 seconds, 45°C)
Specifications are subject to change



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Application Policy

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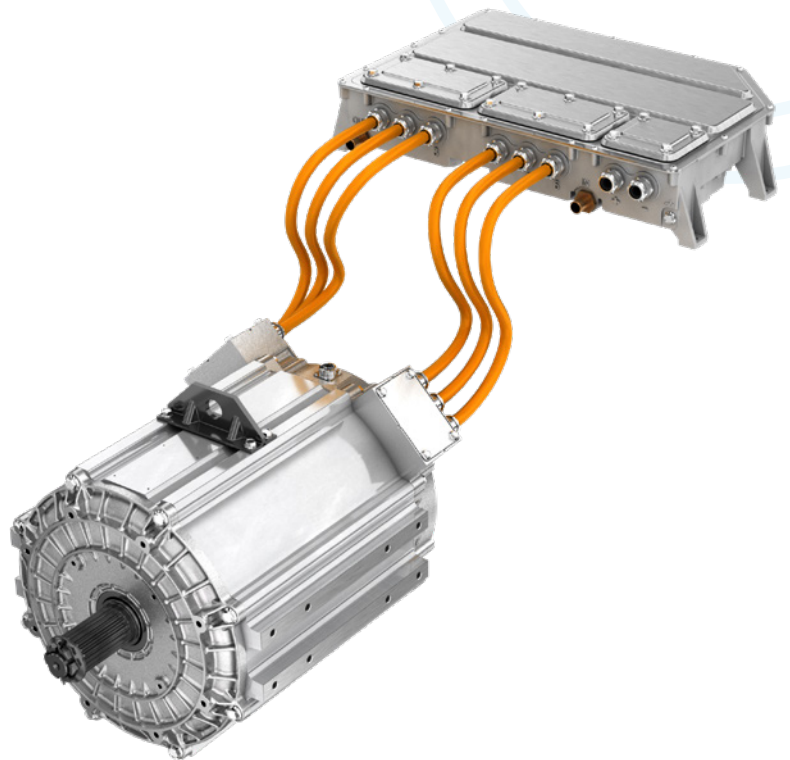
TM4 SUMO™ MD Motor / Inverter System

Features

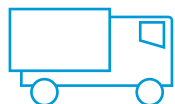
- Peak power: Up to 265 kW
- Peak torque: Up to 3,255Nm
- Max operating speed: 3,700 RPM

Benefits

- High torque/low speed permanent magnet motor and inverter combinations
- Designed to interface with standard differentials and/or gearboxes and/or e-axes
- Seamless integration into Dana products



Ideal for Class 2 to 6 Commercial Vehicles, Light to Medium Bus Platforms and Off-Highway Applications.



TM4 SUMO™ MD Motor / Inverter System

The TM4 SUMO MD systems are designed to interface directly with standard rear differentials and/or gearboxes and/or e-Axles. It makes this series perfect for class 2 to 6 commercial vehicles and light to medium bus platforms.

Motor Features

- Proven permanent magnet technology for optimal efficiency
- Outer rotor topology for maximum torque density
- Low electro-magnetic audible noise
- Low-cogging and ripple torque for better NVH
- Four-quadrant operation
- Double-ended shaft option available on some models

Inverter Features

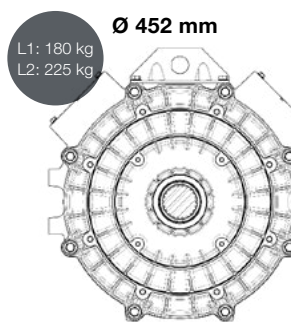
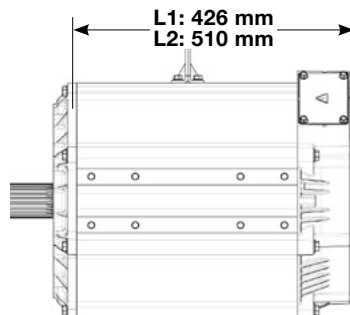
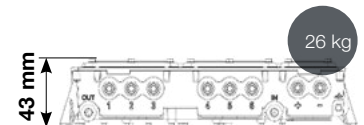
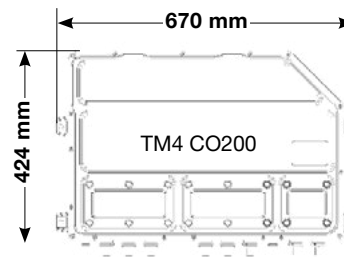
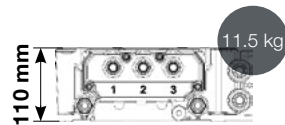
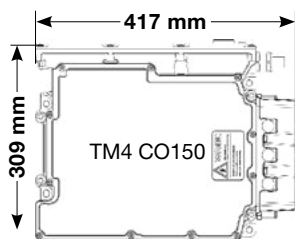
- 3-phase or 6-phase high voltage inverter
- Variable switching frequency
- Reflex™ gate driver technology for high power and current densities
- EMI Filter
- Best-in-class power density
- High efficiency

Standards

- System protection: IP 6K9K
- Automotive components: AEC-Q100/AEC-Q101/AEC-Q200
- Electromagnetic compatibility EMC: Main automotive intl standards
- Shock and vibration standards: GMW3172 Sprung masses
- Max coolant inlet temperature: 65°C
- Coolant type: 40/60 water-glycol

SYSTEM	Casing size	Inverter	Peak power	Continuous power	Peak torque	Continuous torque	Max operating speed
SUMO MD HV1500-3P	L1	CO150	162 kW	100 kW	1590 Nm	680 Nm	3250 RPM
SUMO MD HV1800-3P	L1	CO150	170 kW	100 kW	1775 Nm	680 Nm	3250 RPM
SUMO MD HV2200-3P	L2	CO150	215 kW	145 kW	2430 Nm	1275 Nm	2700 RPM
SUMO MD MV2500-6P	L2	CO200	230 ¹ kW	115 kW	2500 Nm	1140 Nm	3000 RPM
SUMO MD HV2100-6P	L1	CO200	250 kW	130 kW	2150 Nm	685 Nm	3500 RPM
SUMO MD HV3000-6P	L2	CO200	235 kW	145 kW	3100 Nm	1055 Nm	3000 RPM
SUMO MD HV2400-6P	L1	CO200	240 kW	120 kW	2300 Nm	605 Nm	3500 RPM
SUMO MD HV2200-6P	L2	CO200	255 kW	190 kW	2355 Nm	990 Nm	3700 RPM
SUMO MD HV2600-6P	L2	CO200	265 kW	155 kW	2760 Nm	970 Nm	3500 RPM

600 Vdc, 30 seconds, 45°C / 1350 Vdc, 30 seconds, 45°C
Specifications are subject to change



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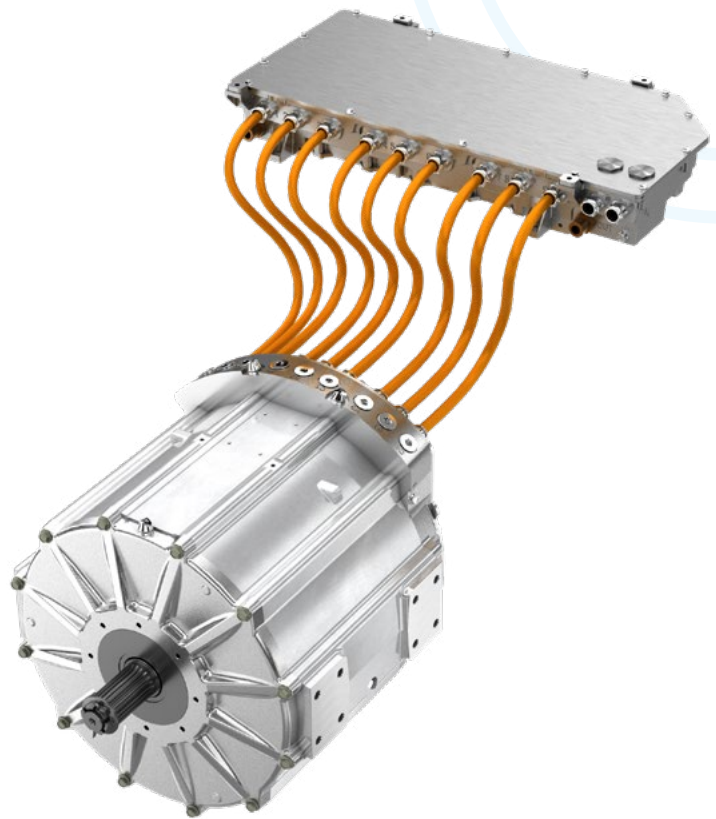
TM4 SUMO™ HD Motor / Inverter System

Features

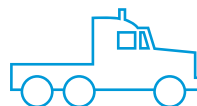
- Peak power: Up to 350 kW
- Peak torque: Up to 3,500 Nm
- Max operating speed: 3,400 RPM

Benefits

- High torque/low speed permanent magnet motor and inverter combinations
- Designed to interface with standard differentials and/or gearboxes and/or e-axles
- Seamless integration into Dana's products



Ideal for Heavy-Duty Platforms, Commercial Vehicles and Off-Highway Applications.



TM4 SUMO™ HD Motor / Inverter System

The TM4 SUMO HD systems are designed to interface directly with standard rear differentials and/or gear-boxes and/or e-Axles. Its direct drive/gearless approach makes it the perfect match for any heavy-duty platforms and commercial vehicles applications.

Motor Features

- Proven permanent magnet technology for optimal efficiency
- Outer rotor topology for maximum torque density
- Low electro-magnetic audible noise
- Low-cogging and ripple torque for better NVH
- Four-quadrant operation
- Thermal protection

Inverter Features

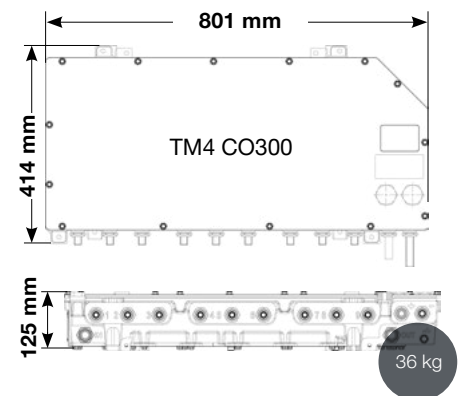
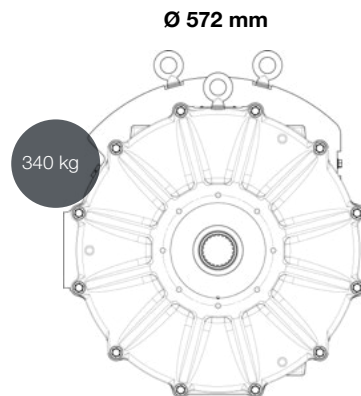
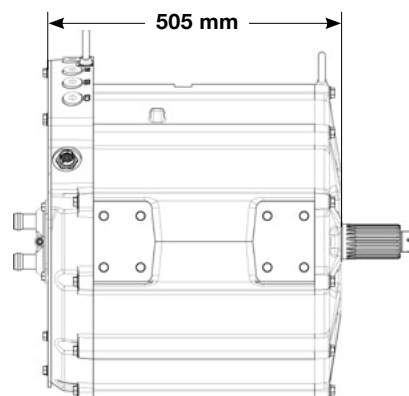
- 9-phase high voltage inverter
- Variable switching frequency
- Reflex™ gate driver technology for high power and current densities
- EMI Filter
- Best-in-class power density
- High efficiency

Standards

- System protection: IP 6K9K
- Automotive components: AEC-Q100/AEC-Q101/AEC-Q200
- Electromagnetic compatibility EMC: Main automotive intl standards
- Shock and vibration standards: GMW3172 Sprung masses
- Max coolant inlet temperature: 65°C
- Coolant type: 40/60 water-glycol
- Toxic materials and flammability: ROHS, ELV, UL94-V0
- External corrosion resistance: Salt mist, chemical products

SYSTEM	Phases	Peak power	Continuous power	Peak torque	Continuous torque	Max operating speed
SUMO HD HV2700-9P	9	250 kW	195 kW	2700 Nm	2060 Nm	3375 RPM
SUMO HD HV3400-9P	9	250 kW	195 kW	3400 Nm	2060 Nm	2450 RPM
SUMO HD HV3500-9P	9	370 kW	260 kW	3445 Nm	1970 Nm	3400 RPM

600 Vdc, 30 seconds, 45°C
Specifications are subject to change



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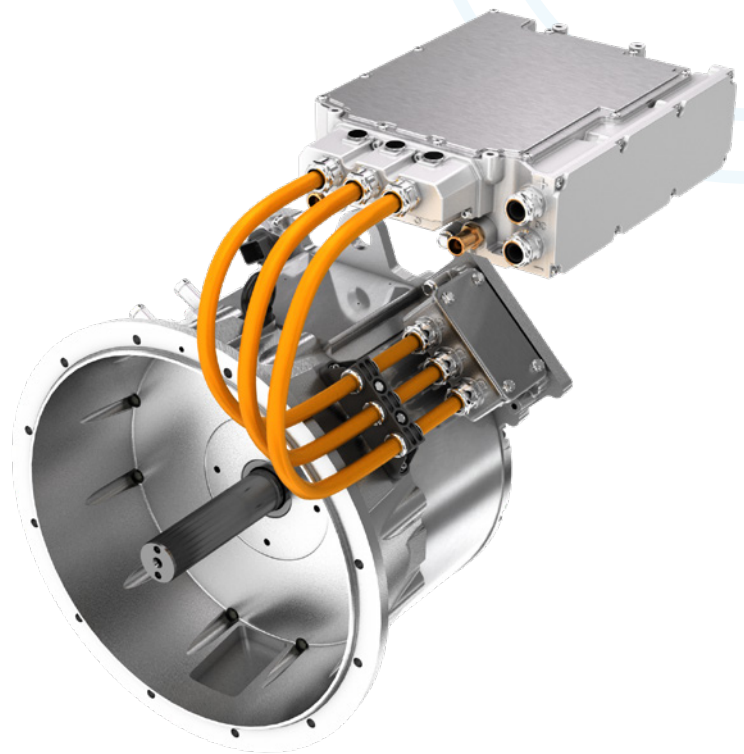
TM4 SUMO™ HP Motor / Inverter System

Features

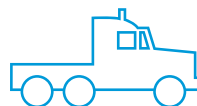
- Peak power: Up to 540 kW
- Peak torque: Up to 2500 Nm
- Max operating speed: 4500 RPM

Benefits

- High power permanent magnet motor/ generator and inverter combinations
- Seamless integration into Dana's products
- Control algorithms optimized for parallel hybrid or generation applications.



Ideal for High-Power Applications.



TM4 SUMO™ HP Motor / Inverter System

The TM4 SUMO HP consists of electric powertrains dedicated to high-power applications.

Motor Features

- Proven permanent magnet technology for optimal efficiency
- Low electro-magnetic audible noise
- Low-cogging and ripple torque for better NVH
- Four-quadrant operation
- Double-ended shaft option available on some models
- Thermal protection

Inverter Features

- 3-phase high voltage inverter
- Variable switching frequency
- Reflex™ gate driver technology for high power and current densities
- EMI Filter
- Best-in-class power density
- High efficiency

Standards

- System protection: IP67/IP 6K9K
- Automotive components: AEC-Q100/AEC-Q101/AEC-Q200
- Electromagnetic compatibility EMC: Main automotive intl standards
- Shock and vibration standards: GMW3172 Sprung masses
- Max coolant inlet temperature: 65°C
- Coolant type: 40/60 water-glycol
- Toxic materials and flammability: ROHS, ELV, UL94-V0
- External corrosion resistance: Salt mist, chemical products

SYSTEM	Inverter	Peak power	Continuous power	Peak torque	Continuous torque	Max operating speed
SUMO HP HV1000-3P	CO150	215 kW	170 kW	1000 Nm	625 Nm	3800 RPM
SUMO HP HV2500-6P	CO200	470 kW	360 kW	2450 Nm	1865 Nm	4000 RPM

650 Vdc, 30 seconds, 45°C
Specifications are subject to change

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