

Product Specification

SGCO-3500™

Clip-On Two Speed Generator Set



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Product Specifications

GENERAL	
MANUFACTURER	THERMO KING CORPORATION
Construction	<ol style="list-style-type: none"> 1. The generator set is designed for mounting to the upper front structure of an ISO container. 2. The design incorporates a quick connection to the upper container corner castings and/ or steel pin-mounting clamps for mounting to container top. 3. Additional attaching points on the container vertical structural members provide a secure mounting arrangement. 4. These lower mounting bolts are retained by a steel plate, stainless steel hinge, and positive ¼ turn latch. 5. A bolt storage tube is welded to the frame to secure the bolt between trips. 6. The rotor washer clip to prevent spinning off during normal use positively retains the lower mounting bolt/plate washer assembly. Provision tube for mounting bolt when not in use. 7. The Genset envelope considered the need to access the refrigeration unit control box while mounted on all common refrigeration units from Thermo King, Carrier, StarCool, Daikin, Kluge for either standard or high-cube containers 8. Genset components (filters, hoses, wire harness, etc.) are installed and securely fastened to ensure dependable, long-term operation and ease of serviceability. 9. All wires, hoses, tubes etc. are fastened properly to protect integrity and prevent wire chafing. 10. Ring terminals or crimps / set screws are used on all high voltage connections.
Structural Design	<ol style="list-style-type: none"> 1. The Genset is designed to withstand & operate satisfactorily in over-the-road trucking, and railway operations. 2. The Genset is rated to withstand all shock and vibrations experienced over the life of the Genset.
Structural Frame	<ol style="list-style-type: none"> 1. Structural steel frame is cleaned through a 3-stage solvent pretreatment and a 4-stage chemical pretreatment with a multi-metal iron phosphate passivation, and coated with black polyester TGIC powder (2.5 – 4.0) mils. 2. All steel is commercial quality hot or cold rolled.
Corrosion Protection	<p>Salt Spray test</p> <p>After 1000 hours exposure: using test methods: ASTM B-117 ; ASTM D-1654 (Proc A, Method 2) ; ASTM D-1735, 7.9 & 7.9.1 (Water Borne); ASTM D-714/ASTM D-610</p> <ul style="list-style-type: none"> • Maximum of 3/32" creep total from scribe • No blisters, and No rust
Panels and Doors	<ol style="list-style-type: none"> 1. Panels and doors are chemically cleaned through a 3-stage solvent pretreatment and a 4-stage chemical pretreatment with a multi-metal iron phosphate passivation and coated with black polyester TGIC powder (2.5 – 4.0) mils. 2. Door material: aluminum, 0.100" (2.5mm) thick. 3. Panel material: aluminum, 0.063" (1.60 mm) thick.
Hardware	<ol style="list-style-type: none"> 1. All hardware (screws, washers, nuts & clamps) are stainless steel for maximum protection from salt-water corrosion.

	2. This excludes hardware supplied by original equipment manufacturer suppliers.
Nameplate	English and Spanish language operating instructions.
Sound Pressure	70 dBA. 3-point average at 1m 45 degrees from the exhaust

GENSET CAPACITY

Maximum Power Output	15kW/18.75kVA (PF 0.8) at 45°C as per ISO1496
Ambient Temperature Range	Structure: -40°C to 50°C (-40°F to 122°F) Starting: -29°C to 50°C (-20°F to 122°F) Running: -40°C to 50°C (-40°F to 122°F)

CERTIFICATION

Emissions compliance	EPA Tier IV Final NRMM Stage V CARB (7Year)
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MEASUREMENTS

Dimensions	<p>Width: 2321 mm (91.3 in) Height: 1181 mm (46.5 in) Depth: 763 mm (30 in)</p> 
Weight	<p>852kg (1,879 lbs.) – Total Weight with 120-gallon tank, including Genset oil, coolant, and battery 1,234kg (2,719 lbs.) – Total Weight with 120-gallon tank filled with fuel, including Genset oil, coolant, and battery</p>

ENGINE

Type	Compression ignition
Emission	EPA Tier IV Final and NRMM Stage V
Cylinders	4 cylinders
Fuel injection	Direct Injection
Displacement	2.1 liter
Horsepower	24.4HP (18.2kW) @ 1800rpm
Torque	95Nm @ 1800rpm
Protection	Oil temperature, Oil pressure, Coolant level
Serviceability	Oil filter, Fuel filter, Starter motor, Air Cyclonic Filter mounted on front side of engine
Oil Capacity	Dry fill: 13.2 liters (14 quart) Wet fill: 12 liters (12.7 quart)
Coolant Capacity	6.7 liters (7.08 quarts)

ENGINE LUBRICATION SYSTEM

Oil Type	API CK4 grade or better Use multi-weight oils appropriate for the ambient temperature (delivered with 10W30 oil)
Oil Change Interval	Consult applicable service manual
Oil Filter	Thermo King Part # 132072

FUEL SYSTEM

Fuel	Fuel Diesel fuel Ultra Low Sulfur (ULSD) CFR 1065.703; max. 2,000ppm sulfur; ASTM D 975 No 2 Diesel. B1 – B20 with standard maintenance interval
Fuel cap	Held with 200 lb. tension chain.
Fuel Filters	Fuel filter including integrated water separator fuel filter Thermo King Part # 119964
Fuel tank	120-gallons
Anti-Siphon	Fill rate at 30GPM
Fuel Tank Drainage	Supplied with a drain plug in the bottom of the tank for purging contaminants

HOSES

Intake Air Hose	High temperature structural EPDM
Coolant Hoses	High temperature structural EPDM

RADIATOR

Protection	E-coat coating for corrosion resistance or equivalent
Structure	Round fin tube
Core Surface Area	0,206m ² (2.22ft ²)
Core Dimensions	580.4 mm x 355.6 mm x 66 mm 22.85 in x 14 in x 2.598 in
Tube Material	Copper
Fin Material	Aluminum
Configuration	Counter flow
Coolant	COOLANT-EXTENDED LIFE

GENERATOR TYPE

Type	Synchronous type generator consisting of a 4-pole alternator wound field design with brushless exciter
Maximum Temperature Rise	105°C in accordance with NEMA Standard MG 1-22.40
Varnish Treatment – Generator Stator & Exciter Stator	Double Vacuum Pressure Impregnated with polyester resin, top coated with EG43 grey varnish. Exposed windings brushed with black poly-butylene
Rear Bearing	Single bearing, 6307 Double contact sealed, including a medium fill of Mobil 28 grease
Insulation	Class H per NEMA Standard MG-1-1.65
Method of Cooling	Drive disc radial fan
Varnish Treatment - Rotor	Double Vacuum Pressure Impregnated with polyester resin, top coated with EG43 grey varnish
Engine Flywheel Housing	Cast steel housing. Cast surfaces are machined for the mounting bolts

GENERATOR RATNG (NOMINAL)

Output Power	15kW/18.75 kVA at 60Hz ISO
Power Factor	0.8
RPM	1800
Voltage	400VAC /460VAC
Phases	3
Frequency	50/60Hz

ELECTRICAL POWER RECEPTACLE

Type	IEC 60309
Current Limit	32 Amps
Voltage	3ph 460V
Protection	Spring loaded protection cover

STARTER BATTERY

Type	Maintenance free 12 VDC
BCI Group	31
Cold Cranking Amps	925A at -18°C (0°F)
Terminal Posts	Post terminals and standard battery cable connections are provided
Dimensions	330 x 173 x 238 mm (13 x 6.8 x 9.4 in)

BATTERY CHARGER

Type	12 VDC
Recharging	Solid-state battery charging 22A output
Protections	Short circuit Over current Over voltage Over temperature

SG-3500 GENSET CONTROLLER

The SG-3500 GENSET CONTROLLER is a one-piece self-contained microprocessor for diesel generator sets. This system automatically controls the generator set operation by providing:

- CAN bus communication
- Ability to operate at variable speeds for enhanced fuel consumption
- Automatic unit pre-heat and engine start-up during initial start-up or unattended restart
- Variable glow plug preheat time
- Automatic pre-trip capability
- Provides unit shutdown protection due to high engine coolant temperature, low engine oil pressure, low engine oil level, fuel relay feedback failure or 230/460V alternator overload
- Automatic unit restart attempt 20 minutes after:
 - High engine water temperature
 - Engine failure to start
 - 230/460V alternator overload
 - Fuel relay feedback failure
 - Low engine oil pressure
- Exterior USB downloading port with protective cap provided
- Delayed alternator excitation for 2 minutes
- Internal self-checking and diagnostic capability
- Hour meter
- Multi language menu capability

TELEMATICS (Product option)

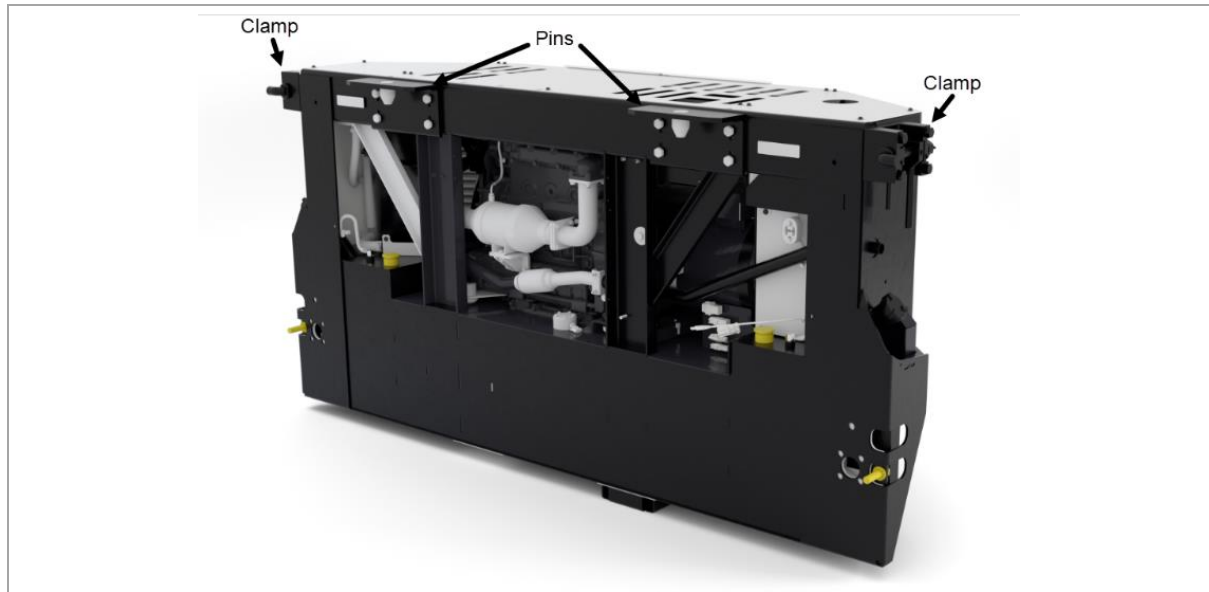
Power	12V DC Nominal
Antenna	GSM & GPS
Internal backup battery	Consumed when genset is powered off
Internal backup battery life	180days @ 1 report per day
Communication	RS485 to controller
Features (genset off)	GPS, fuel level, battery voltage
Features (genset on)	GPS, fuel level, genset controller parameters, hourmeter, alarms

FUEL SENSOR (Product option)

Power	12VDC nominal (Genset battery)
Communication	RS232 to telematics module
Features	Fuel level (genset On or Off) Tilting & sloshing compensation

Product options

CONTAINER MOUNTING
062444 – PIN MOUNT
OR
062445 – CLAMP MOUNT
OR
062446 – DUAL MOUNT



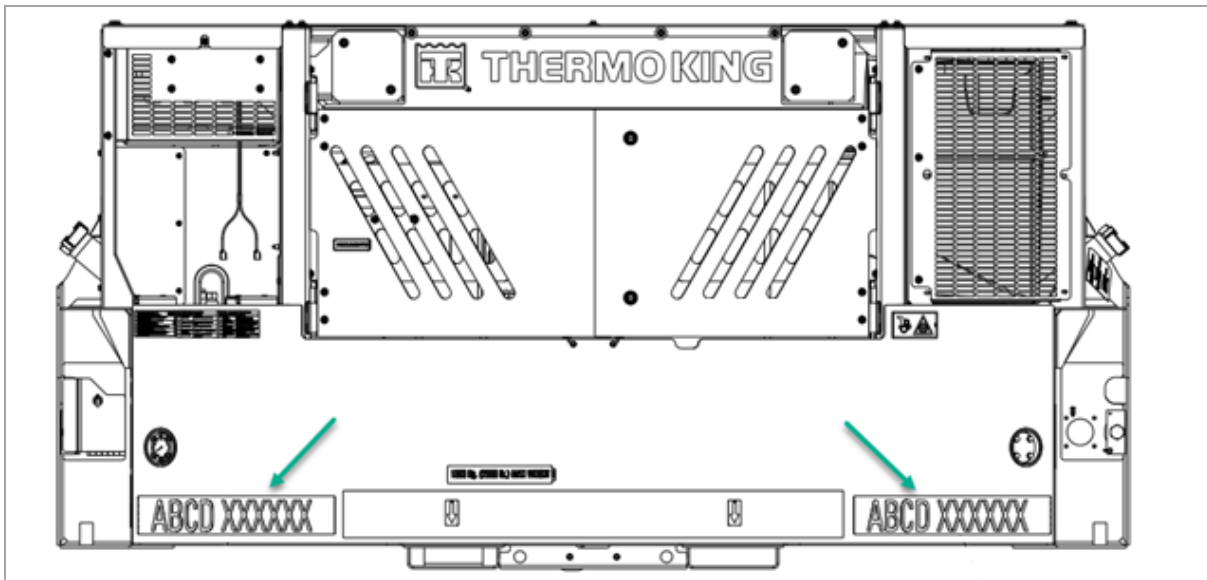
098912 – Telematics option



098913– Telematics fuel sensor



098914 – Customer asset ID decal





For more Product options queries please contact your Thermo King Sales or Service representative.