

Standard Features

- Kohler Co. provides one-source responsibility for the generating system and accessories.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- One-year limited warranty covers all systems and components.
- Industrial diesel engine with 24-volt battery charging alternator.
- Single-bearing alternator with insulation class H.
- Unit-mounted radiator with 50°C.
- Subbase fuel tank (8 hrs @ 80% rated load).
- Vibration isolators.
- Dry type air filter with restriction indicator.
- Fuel Water separator.
- Main line breaker.
- Starting battery and cables.
- Sound enclosure with 75dB(A).
- Conveniently located fuel level indication.
- Operation and installation literature.

Generator Set Ratings

Genset	Engine	Alternator	Voltage	PH	Hz	Prime Rating	
						kW/kVA	Amps
KVS630	TWD1643 GE	HCI 544F	415	3	50	504/630	876

RATINGS: All three-phase units are rated at 0.8 power factor.

PRIME POWER RATINGS: Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO-8528/1, overload power in accordance with ISO-3046/1 and BS 5514. For limited running time and base load ratings, consult the factory. Obtain the technical information bulletin (TIB-101) on ratings guidelines for the complete ratings definitions. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

Alternator Specifications

- Alternator meets BS EN 60034 and the relevant section of other international standards such as BS5000, VDE 0530, NEMA MG1-32, IEC34, CSA C22.2 and AS1359.
- Self-ventilated and drip-proof of IP23 construction.
- Superior voltage waveform form a 2/3 pitch wound stator.

Specifications	Alternator
Model	HCI 544F
Type	4 Pole
Exciter type	Brushless
Leads, Quantity type	12, Reconnectable
Voltage regulator	AS440
Insulation	
- Material	Class H
- Temperature rise, Prime	125°C
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	
Voltage regulation	+/- 1%
Voltage rating, V	415
Prime at 125°C, kVA	630
Direct axis subtransient reactance (X"d)	0.09%

Application Data

Engine

Engine specifications

Engine model	TWD1643 GE
Engine type	Turbocharged, Charge Air Cooled
Cylinder arrangement	6, inline
Displacement, L (cu. in.)	16.12 (984)
Bore and stroke, mm (in.)	144 x 165 (5.67 x 6.50)
Compression ratio	16.5:1
Piston speed, m/sec. (ft./sec.)	8.3 (27.1)
Rated rpm	1500
Max. power at rated rpm, BHP	729
Cylinder head material	Cast Iron
Crankshaft material	Forged Steel
Valve material	Nimonic
Governor: type, make/model	Electronic / EMS II
Frequency regulation, no-load to full load	Isochronous
Frequency regulation, steady state	+/- 0.25%
Frequency	Field Convertible
Air cleaner type, all models	Dry

Exhaust

Exhaust System

Exhaust Manifold type	Dry
Exhaust flow at rated kW, m3/min (cfm)	101.6 (3588)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	450 (842)
Maximum allowable back pressure, kPa (in.Hg)	10 (2.95)
Exhaust outlet size at engine hookup, mm (in.)	140 (5.5)

Engine Electrical

Engine Electrical System

Battery charging alternator	24 Volts
Ground (negative/positive)	Negative
Volts, VDC	24
Amps, A	80
Starter motor rated voltage, VDC	24
Battery, recommended cold cranking amps (CCA) :-	
- Qty., CCA rating above 0°C (32°F)	Two, 950
Battery voltage, VDC	12

Fuel

Fuel System

Fuel supply line, min. ID, mm (in.)	9.5 (0.37)
Fuel return line, min. ID, mm (in.)	6.35 (0.25)
Max. lift engine-driven fuel pump, m (ft.)	3 (9.8)
Max. fuel flow, LPH	190 (50.2)
Fuel prime pump	Manual
Max. fuel pump restriction, kPa (in. Hg)	10 (3)
Fuel filter: quantity, type	2, Spin-on
Recommended fuel	# 2 Diesel
Fuel tank capacity, L	990

Lubrication

Lubricating System

Type	Spin-on
Oil pan capacity, L	42
Oil pan capacity with filter, L	48
Oil filter: quantity, type	3, Cartridge
Oil cooler	Plate Type

Application Data

Cooling

Radiator System

Ambient temperature, °C (°F)	50 (122)
Engine jacket water capacity, L (gal.)	33 (8.72)
Radiator system capacity, including engine, L (gal.)	128 (33.81)
Engine jacket water flow, Lpm (gpm.)	378 (83.14)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	208 (11828.5)
Heat rejected to cooling water, CAC radiator at rated kW, dry exhaust, kW (Btu/min.)	116 (6602.68)
Heat rejected to Charge air cooler at rated kW, dry exhaust, kW (Btu/min.)	125 (7108)
Water pump type	Impeller
Fan diameter, including blades, mm (in.)	965 (37.9)
Fan, kWm (HP)	17 (23)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in.H2O)	0.125 (0.5)

Operation Requirements

Air Requirements

Radiator-cooled cooling air, m ³ /min (scfm)	516.6 (18244.2)
Combustion air, m ³ /min (scfm)	43.65 (1541)
Heat rejected to ambient air :	
Engine, kW (Btu/min.)	23 (1309.15)
Generator, kW (Btu/min.)	25 (1422.99)
Air density, kg/m ³ (lbm/ft ³)	1.2 (0.075)

Fuel Consumption

Diesel, Lph (gph) at % load	Prime Rating
100%	125.6 (33.2)
75%	92.4 (24.4)
50%	61.7 (16.3)
25%	34.5 (9.1)

Exhaust Emissions

Per ISO 8178-5 mode cycle	CPCB norms
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Noise Level

Noise level, measured at 1m db(A)	CPCB norms
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Controller



Viewable/Selectable Parameters (May require optional module)

- Voltage: Phase-to-neutral, total voltage
- Runtime hours
- Current
- Frequency
- Power (active/reactive/apparent)
- Power factor
- Engine speed
- Oil pressure
- Coolent temperature
- Battery voltage
- Event log with real-time clock
- Generator set status

Protections:

- Low oil pressure
- Over crank
- Overspeed
- Over & under voltage
- Over & under frequency
- E-stop
- Reverse power
- Short circuit
- Unbalanced voltage/current
- Busbar & generator protection package

Standard Features and Accessories

Standard Features

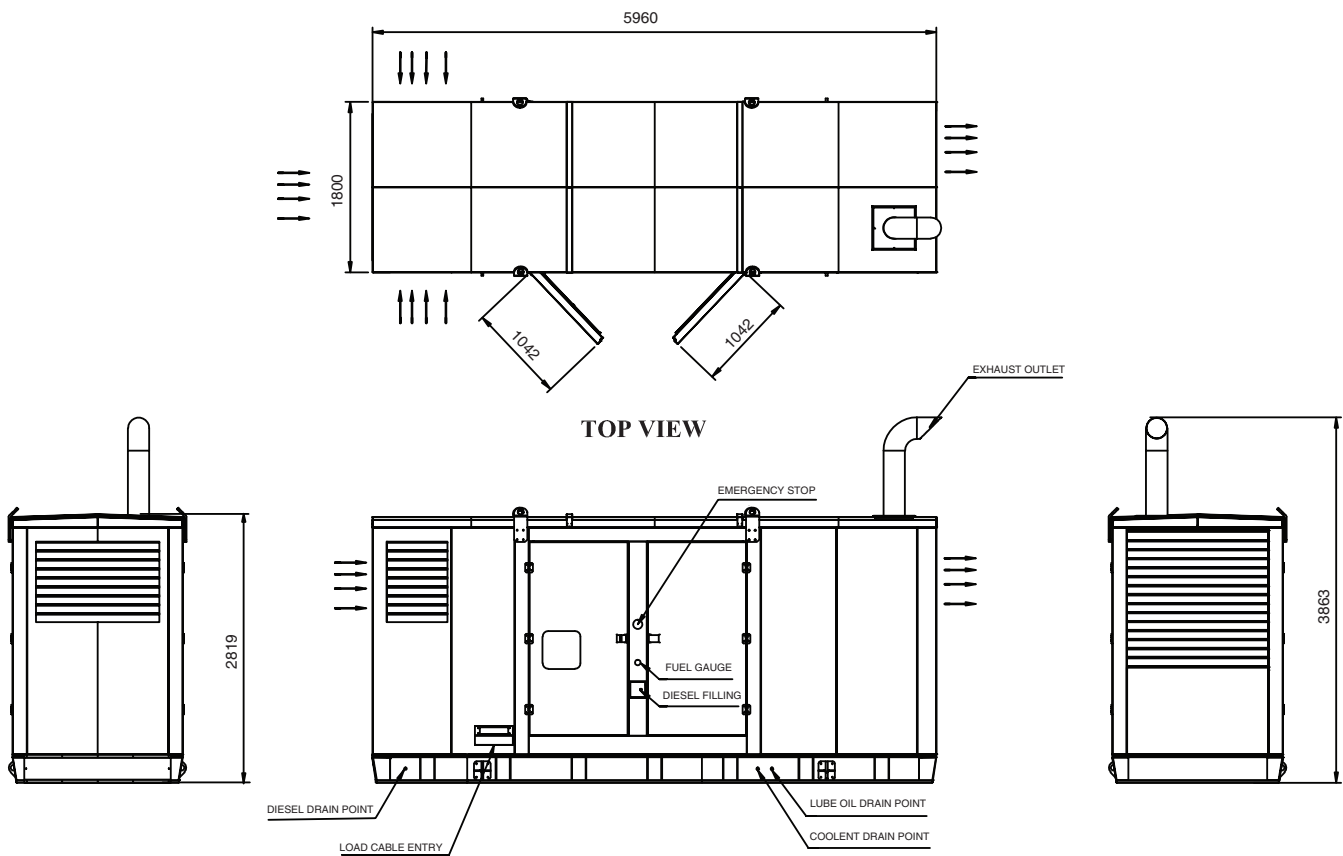
- Push-buttons for start/stop and breaker operations
- Soft key for all operation and ease of use
- Full text LCD display (240 x 128 pixel)
- Operational down to -40°C/F including LCD
- kWh meter
- Operation hours/start/maintenance counters
- Event recorder with real-time clock
- Free PC Utility software for commissioning
- Configurable input/outputs
- User programmable logic

Optional

- Auto load sharing - Auto synchronization panel
- Input/Output module
- Modbus communication via RS-485 as an option

Dimensions and Weights

Overall Size, L x W x H, mm (in.)	5960 x 1800 x 2819 (234.6 x 70.8 x 111)
Total genset weight, Dry, kg (lb.)	7650 (16865.4)
Total genset weight, Wet, kg (lb.)	8633 (19032.5)



NOTE: This drawing is provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.

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