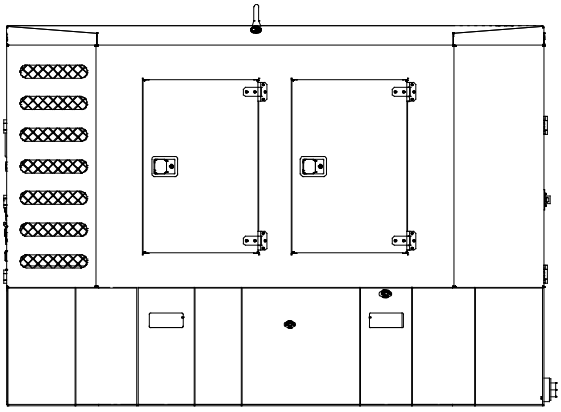
Industrial Generator Set - 150REOZJ4

208-600 V Diesel

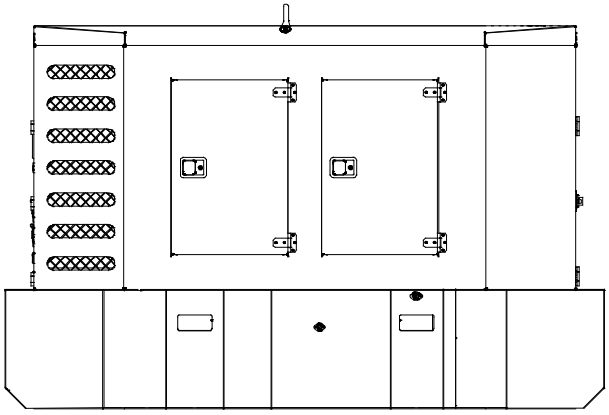
Tier 4 Final EPA-Certified for Stationary Emergency and Non-Emergency Applications

Ratings Range

		60 Hz
Standby:	**kW**	106-150
	kVA	106-187.5
Prime	**kW**	106-139
	kVA	106-174



Standard Skid Model



Field Draggable Skid Model

Standard Features

- Rehlko provides one-source responsibility for the generating system and accessories.
- Approved for use with certified renewable Hydrotreated Vegetable Oil (HVO)/Renewable Diesel (RD) fuels compliant with EN15940/ASTM D975.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- The 60 Hz generator set offers a UL 2200 listing.
- The generator set accepts rated load in one step.
- The 60 Hz generator set meets NFPA 110, Level 1, when equipped with the necessary accessories and installed per NFPA standards.
- A one-year limited warranty covers all generator set systems and components. Two- and five-year extended limited warranties are also available.
- Alternator features:
  - The unique Fast-Response® X excitation system delivers excellent voltage response and short-circuit capability using a rare-earth, permanent magnet (PM)-excited alternator.
  - The brushless, rotating-field alternator has broadrange reconnectability.
- Engine features:
  - The generator set engine is certified by the Environmental Protection Agency (EPA) to conform to Tier 4 Final nonroad emissions regulations.
  - Heavy-duty air cleaner with air restrictor indicator.
  - Lockable battery disconnect switch.
- Other features:
  - Rehlko designed controller for one-source system integration and remote communication. See Controller on page 3.
  - The low coolant level shutdown prevents overheating.
  - Durable steel, sound-attenuating housing with quiet operation of 71 dB(A) log average @ 7 m (23 ft.) with full load at the prime rating.
  - Stainless steel hinges and lockable latches on doors.
  - 125% environmental containment basin for oil and coolant.
  - 110% secondary containment tank for fuel.
  - UL 142 listed subbase fuel tank for 24-hour run time with full load at the prime rating (minimum).
  - Fuel fill and Diesel Exhaust Fluid (DEF) fill with lockable caps.
  - Customer connection panel with main circuit breaker, remote start connection, and emergency stop switch.

Generator Set Ratings

				130°C Rise Standby Rating		105°C Rise Prime Rating	
Alternator	**Voltage**	**Ph**	**Hz**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**
4S12X	120/208	3	60	150/187	520	139/174	482
	120/240	3	60	149/186	448	135/169	406
	120/240	1	60	106/106	442	106/106	442
	277/480	3	60	150/187	225	139/174	209
	347/600	3	60	150/187	180	139/174	167

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor. *Standby Ratings:* The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Prime Power Ratings: 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 and ISO-3046-1. For limited running time ratings, consult the factory. Obtain technical information bulletin (TIB-101) for ratings guidelines, complete ratings definitions, and site condition derates. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

Discovery Energy, LLC
200 Twin Oaks Road, Kohler, WI 53044 USA
For the nearest sales and service outlet in the US and Canada, phone 1-800-544-2444 - powersystems.rehlko.com

Alternator Specifications

Specifications	Alternator
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Rare-Earth Permanent-Magnet
Leads: quantity, type	12, Reconnectable 6, 600 Volt
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H
Temperature rise	150°C, Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Voltage regulation, no-load to full-load	±0.5%
One-step load acceptance	100% of Rating
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
480 V 4S12X (12 lead)	480

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and dripproof construction.
- Windings are vacuum-impregnated with epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.
- The unique Fast-Response® X excitation system delivers excellent voltage response and short-circuit capability using a rare-earth, permanent magnet (PM)-excited alternator.

Application Data

Engine

Engine Specifications	
Manufacturer	John Deere
Engine model, type	6068HG550 4-Cycle, Turbocharged, Charge Air Cooled
Cylinder arrangement	6 Inline
Displacement, L (cu. in.)	6.8 (415)
Bore and stroke, mm (in.)	106 x 127 (4.19 x 5.0)
Compression ratio	17.2:1
Piston speed, m/min. (ft./min.)	457.2 (1500)
Main bearings: quantity, type	7, Replaceable Insert
Rated rpm	1800
Max. power at rated rpm, kWm (BHP)	180 (241)
Cylinder head material	Cast Iron
Crankshaft material	Forged Steel
Valve material:	
Intake	Silicon-Chrome stem with Inconel head (NiCr)
Exhaust	CrMo Alloy
Governor: type, make/model	Electronic
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±0.5%
Frequency	Fixed
Air cleaner type, all models	Dry

Exhaust

Exhaust System	
Exhaust manifold type	Dry
Exhaust flow at rated kW, m^3/min. (cfm)	23.4 (826)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	403 (757)
Allowable back pressure, kPa (in. Hg)	14 (4.1)
Back pressure available after losses due to exhaust aftertreatment system, kPa (in.Hg)	2.7 (0.8)
Exhaust outlet size at user connection point, mm (in.)	76.2 (3.0)

Engine Electrical

Engine Electrical System	
Battery charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	24
Ampere rating	60
Starter motor rated voltage (DC)	24
Battery, recommended cold cranking amps (CCA):	
Quantity, CCA rating each	Two, 400
Battery voltage (DC)	12

Fuel

Fuel System	
Fuel supply line, min. ID, mm (in.)	8 (0.31)
Fuel return line, min. ID, mm (in.)	4.8 (0.19)
Max. lift, fuel pump: type, m (ft.)	Electronic, 1.8 (6.0)
Max. fuel flow, Lph (gph)	147.5 (38.6)
Max. return line restriction, kPa (in. Hg)	40 (11.8)
Fuel prime pump	Automatic
Fuel filter	
Primary	2 Microns
Recommended fuel	ASTM D975 or EN 590 Ultra Low Sulfur Diesel (ULSD) with sulfur content <15mg/kg (15 ppm)/RD/HVO

Lubrication

Lubricating System	
Type	Full Pressure
Oil pan capacity, L (qt.) §	27.5 (29.1)
Oil pan capacity with filter, L (qt.) §	28.5 (30.1)
Oil filter: quantity, type §	One, Cartridge
Oil cooler	Water-Cooled
Oil type §	API CJ-4 or ACEA E6-E9

§ Rehlko recommends the use of Rehlko Genuine oil and filters.

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Application Data

Cooling

Radiator System	
Ambient temperature at standby rating, °C (°F)	40 (104)
Ambient temperature at prime power ratings °C (°F)	45 (113)
Engine jacket water capacity, L (gal.)	11.9 (3.2)
Radiator system capacity, including engine, L (gal.)	35.6 (9.4)
Engine jacket water flow, Lpm (gpm)	416 (110)
Heat rejected to cooling water at standby rated kW, dry exhaust, kW (Btu/min.)	113 (6432)
Heat rejected to charge air cooler at standby rated kW, dry exhaust, kW (Btu/min.)	32 (1821)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	746 (29.4)
Fan, kWm (HP)	2.8 (3.8)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.125 (0.5)

Operation Requirements

Air Requirements	
Radiator-cooled cooling air, m^3/min. (scfm)†	297 (10500)
Combustion air, m^3/min. (cfm)	11.4 (403)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	26 (1480)
Alternator, kW (Btu/min.)	21.3 (1212)

† Air density = 1.20 kg/m^3 (0.075 lbm/ft^3)

Fuel Consumption**

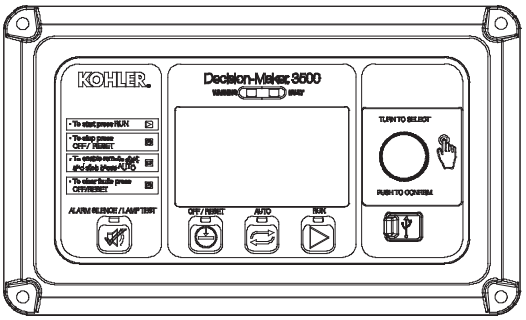
Diesel, Lph (gph) at % load	Standby Rating
100%	42.4 (11.2)
75%	32.2 (8.5)
50%	22.3 (5.9)
25%	13.2 (3.5)
Diesel, Lph (gph) at % load	**Prime Rating**
100%	38.6 (10.2)
75%	29.1 (7.7)
50%	20.4 (5.4)
25%	12.1 (3.2)

** Volumetric Fuel consumption is up to 4% higher when using HVO/RD than #2 ULSD.

Sound Enclosure

- Durable steel, sound-attenuating housing with quiet operation of 71 dB(A) log average @ 7 m (23 ft.) with full load at the prime rating.
- Internal-mounted silencer and flexible exhaust connector.
- Fade-, scratch, and corrosion-resistant Power Armor™ automotive-grade textured finish.
- Stainless steel hinges and lockable latches on doors.
- Acoustic insulation that meets UL 94 HF1 flammability classification and repels moisture absorption.
- 110% environmental containment basin for fuel, oil, and coolant.

Controller

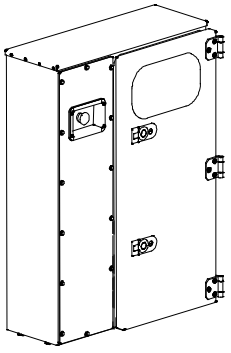


Decision-Maker® 3500 Paralleling Controller
Provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility.

- Paralleling capability with bus sensing, first-on logic, synchronizer, and (isochronous, droop, and external controlled) load sharing
- Digital display with adjustable contrast and menu control provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or serial configuration
- Controller supports Modbus® protocol
- Integrated hybrid voltage regulator with ±0.5% regulation
- Potted circuitry for protection from vibration and debris
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability

Modbus® is a registered trademark of Schneider Electric.

Customer Connection Panel



- Viewable generator set controller with security cover
- Emergency stop switch
- Main line circuit breaker
  - Reconnectable models: Rating 600 amps, field adjustable based on voltage selected
  - 600 Volt models: Rating 250 amps, field adjustable
- Power connections for Available Options (battery charger and battery heater)
- Remote start connection

Fuel and DEF Tanks

- Subbase fuel tank for 24-hour run time with full load at prime rating (minimum).
- Fuel tank includes the fuel level gauge, fuel fill with lockable cap, and normal/emergency vents.
- The secondary containment tank's construction protects against fuel leaks or ruptures. The inner (primary) tank is sealed inside the outer (secondary) tank. The outer tank contains the fuel if the inner tank leaks or ruptures.
- DEF tank with DEF quality sensor.

Tank Specifications	
Diesel tank. capacity	923 L (244 gal.)
DEF tank. capacity	44.2 L (11.7 gal.)
Recommended DEF	AUS 32 according to ISO 22241-1

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Standard Features

- Alternator Protection
- Batteries, Battery Rack, and Cables
- Integral Vibration Isolation
- Local Emergency Stop Switch
- Oil and Coolant Drain Extension
- Operation and Installation Literature

Tier 4 Final Technologies Applied

- Diesel Oxidation Catalyst (DOC)
- Diesel Particulate Filter (DPF)
- High Pressure Common Rail (HPCR)
- Selective Catalytic Reduction (SCR)
- Variable Geometry Turbocharger (VGT)

Available Options

Approvals and Listings

❑ CSA Certified
❑ UL 2200 Listing (requires standard skid)

Controller

❑ 15-Relay Dry Contact
❑ Remote Annunciator Panel

Electrical System

❑ Battery Chargers (qty. 2)
❑ Battery Heater
❑ Block Heater; 1800 W, 120 V, 1 ph.
Required for ambient temperature below 0° (32°F).

Fuel System

❑ Two-Way Fuel Valve
(for connection of a user-supplied external fuel tank)

Skid

❑ Fuel Tank
❑ Draggable Fuel Tank
(heavy gauge steel skid with integrated drains and pull bars)

Miscellaneous

❑ Engine Fluids Added

Literature

❑ General Maintenance
❑ NFPA 110
❑ Overhaul
❑ Production

Warranty

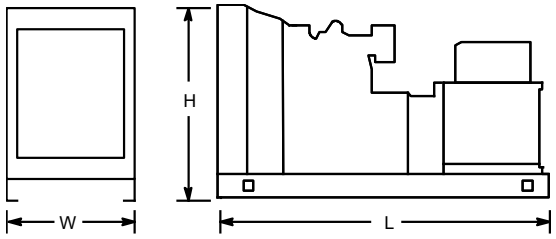
❑ 2-Year Basic Limited Warranty
❑ 2-Year Prime Limited Warranty
❑ 5-Year Basic Limited Warranty
❑ 5-Year Comprehensive Limited Warranty

Other Options

❑ _____
❑ _____
❑ _____
❑ _____

Dimensions and Weights

Overall Size, L x W x H, mm (in.):	3531 x 1191 x 2276
Fuel Tank	(139.0 x 46.9 x 89.6)
Weight, with engine fluids (no fuel), kg (lb.):	3532 (7787)
Overall Size, L x W x H, mm (in.):	3835 x 1191 x 2276
Draggable Fuel Tank	(151.0 x 46.9 x 89.6)
Weight, with engine fluids (no fuel), kg (lb.):	3601 (7938)



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

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