Model: 2000REOZDD

KOHLER. Power Systems

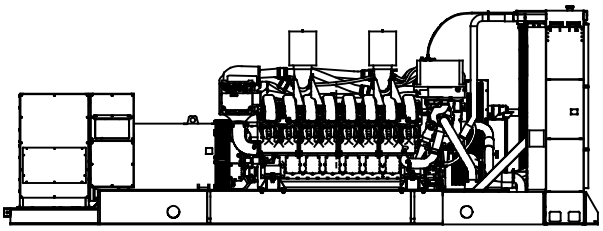
380–4160 V **Diesel**

ISO 9001 KOHLER POWER SYSTEMS NATIONALLY REGISTERED

Tier 2 EPA-Certified for Stationary Emergency Applications

Ratings Range

		60 Hz	50 Hz
Standby:	**kW**	1590–2060	1500–1800
	kVA	1988–2575	1875–2250
Prime:	**kW**	1440–1850	1380–1656
	kVA	1800–2313	1725–2070



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.
- 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 standard one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended warranties are also available.
- Alternator features:
  - The pilot-excited, permanent magnet (PM) alternator provides superior short-circuit capability.
  - The brushless, rotating-field alternator has broadrange reconnectability.
  - Additional alternator voltages are available including 12.47 kV, 13.2 kV, and 13.8 kV medium voltages. Contact your local distributor for more detailed information.
- Other features:
  - Kohler designed controllers for guaranteed system integration and remote communication. See Controllers on page 3.
  - The low coolant level shutdown prevents overheating (standard on radiator models only).
  - An electronic, isochronous governor delivers precise frequency regulation.
  - Multiple circuit breaker configurations.

Generator Set Ratings

				150°C Rise Standby Rating		130°C Rise Standby Rating		125°C Rise Prime Rating		105°C Rise Prime Rating	
Alternator	**Voltage**	**Ph**	**Hz**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**
7M4054	220/380	3	60	1590/1988	3020	1590/1988	3020	1440/1800	2735	1440/1800	2735
	240/416	3	60	1840/2300	3192	1840/2300	3192	1800/2250	3123	1680/2100	2915
	277/480	3	60	2000/2500	3007	2000/2500	3007	1820/2275	2736	1820/2275	2736
	220/380	3	50	1588/1985	3016	1528/1910	2902	1500/1875	2849	1400/1750	2659
	230/400	3	50	1628/2035	2937	1540/1925	2778	1480/1850	2670	1428/1785	2576
	240/416	3	50	1608/2010	2790	1500/1875	2602	1500/1875	2602	1380/1725	2394
7M4056	220/380	3	60	1850/2313	3513	1790/2238	3400	1680/2100	3191	1630/2038	3096
	240/416	3	60	2000/2500	3470	1950/2438	3383	1820/2275	3157	1780/2225	3088
	277/480	3	60	2060/2575	3097	2060/2575	3097	1850/2313	2782	1850/2313	2782
	220/380	3	50	1800/2250	3419	1788/2235	3396	1656/2070	3145	1648/2060	3130
	230/400	3	50	1800/2250	3248	1800/2250	3248	1656/2070	2988	1656/2070	2988
	240/416	3	50	1800/2250	3123	1740/2175	3019	1656/2070	2873	1568/1960	2720
7M4058	220/380	3	60	2060/2575	3912	1950/2438	3703	1850/2313	3513	1790/2238	3400
	240/416	3	60	2060/2575	3574	2060/2575	3574	1850/2313	3209	1850/2313	3209
	277/480	3	60	2060/2575	3097	2060/2575	3097	1850/2313	2782	1850/2313	2782
	220/380	3	50	1800/2250	3419	1748/2185	3320	1656/2070	3145	1608/2010	3054
	230/400	3	50	1800/2250	3248	1800/2250	3248	1656/2070	2988	1656/2070	2988
	240/416	3	50	1800/2250	3123	1800/2250	3123	1656/2070	2873	1628/2035	2824
7M4176	220/380	3	60	2060/2575	3912	2060/2575	3912	1820/2275	3457	1820/2275	3457
7M4292	347/600	3	60	2000/2500	2406	2000/2500	2406	1850/2313	2225	1850/2313	2225
7M4374	2400/4160	3	60	2050/2563	356	2050/2563	356	1850/2313	321	1850/2313	321
	1905/3300	3	50	1748/2185	382	1600/2000	350	1600/2000	350	1448/1810	317

RATINGS: All three-phase units are rated at 0.8 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 and continuous 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.

Alternator Specifications

Specifications	Alternator
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Permanent-Magnet
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H, Synthetic, Nonhygroscopic
Temperature rise	130°C, 150°C Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Rotor balancing	125%
Voltage regulation, no-load to full-load (with <0.5% drift due to temp. variation)	3-phase sensing, ±0.25%
One-step load acceptance at 60 Hz	100% of Rating
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
480 V, 416 V 7M4054 (4 bus bar)	7000 (60 Hz) 6500 (50 Hz)
480 V, 416 V 7M4056 (4 bus bar)	7200 (60 Hz) 5200 (50 Hz)
480 V, 416 V 7M4058 (4 bus bar)	11000 (60 Hz) 8400 (50 Hz)
380 V 7M4176 (4 bus bar)	5400 (60 Hz) — (50 Hz)
600 V 7M4292 (4 bus bar)	4250 (60 Hz) — (50 Hz)
4160 V, 3300 V 7M4374 (6 lead)	6200 (60 Hz) 3750 (50 Hz)

- 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.
- Superior voltage waveform from two-thirds pitch windings and skewed stator.
- Digital solid-state, volts-per-hertz voltage regulator with ±0.25% no-load to full-load regulation.
- Brushless alternator with brushless pilot exciter for excellent load response.

Application Data

Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	Detroit Diesel/MTU	
Engine: model	16V4000G43	16V4000G23
Engine type	4-Cycle, Turbocharged, Intercooled	
Cylinder arrangement	16V	16V
Displacement, L (cu. in.)	76.27 (4654)	
Bore and stroke, mm (in.)	170 x 210 (6.7 x 8.3)	
Compression ratio	16.5:1	
Piston speed, m/min. (ft./min.)	756 (2480)	
Rated rpm	1800	1500
Max. power at rated rpm, kWm (BHP)	2280 (3058)	1965 (2635)
Cylinder head material	Cast Iron	
Crankshaft material	Forged Steel	
Valve (exhaust) material	High Alloy Steel	
Governor: type, make/model	ADEC Electronic Control	
Frequency regulation, no-load to full-load	Isochronous	
Frequency regulation, steady state	±0.25%	
Frequency	Fixed	
Air cleaner type, all models	Dry	

Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust manifold type	Dry	
Exhaust flow at rated kW, m^3/min. (cfm)	456 (16103)	348 (12290)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	480 (896)	485 (905)
Maximum allowable back pressure, kPa (in. Hg)	8.5 (2.5)	
Exhaust outlet size at engine hookup, mm (in.)	2 @ 254 (10)	

Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Battery charging alternator:		
Ground (negative/positive)	Negative	
Volts (DC)	24	
Ampere rating	70	
Starter motor rated voltage (DC)	Dual, 24	
Battery, recommended cold cranking amps (CCA):		
Quantity, CCA rating each	Four, 1150	
Battery voltage (DC)	12	

Fuel

Fuel System	60 Hz	50 Hz
Fuel supply line, min. ID, mm (in.)	20 (0.79)	
Fuel return line, min. ID, mm (in.)	20 (0.79)	
Max. fuel flow, Lph (gph)	1020 (269.5)	
Min./max. fuel pressure at engine supply connection, kPa (in. Hg)	-10/50 (-3/14.8)	
Max. return line restriction, kPa (in. Hg)	50 (14.7)	
Fuel filter	One, Secondary	
Recommended fuel	#2 Diesel	

Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, dipstick mark max., L (qt.)	240 (254)	
Engine oil capacity, initial filling, L (qt.)	300 (317)	
Oil filter: quantity, type	4, Spin-On	
Oil cooler	Water-Cooled	

Application Data

Cooling

Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F)*	40 (104)	45 (113)
Engine water capacity, L (gal.)	225 (59)	
Radiator system capacity, including engine, L (gal.)	623 (165)	
Engine jacket water flow, Lpm (gpm)	1350 (357)	1142 (302)
Charge cooler water flow, Lpm (gpm)	592 (156)	500 (132)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	840 (47770)	730 (41550)
Heat rejected to charge cooling water at rated kW, dry exhaust, kW (Btu/min.)	610 (34690)	320 (18215)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	2057 (81)	
Fan, kWm (HP)	81 (108)	44 (59)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.125 (0.5)	

High Ambient Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F)*	50 (122)	
Engine water capacity, L (gal.)	225 (59)	
Radiator system capacity, including engine, L (gal.)	767 (203)	
Engine jacket water flow, Lpm (gpm)	1350 (357)	1142 (302)
Charge cooler water flow, Lpm (gpm)	592 (156)	500 (132)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	840 (47770)	730 (41550)
Heat rejected to charge cooling water at rated kW, dry exhaust, kW (Btu/min.)	610 (34690)	320 (18215)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	2743 (108)	
Fan, kWm (HP)	84 (112)	46 (62)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.125 (0.5)	

* Enclosure with enclosed silencer reduces ambient temperature capability by 5°C (9°F).

Remote Radiator System†	60 Hz	50 Hz
Connection sizes:	Class 150 ANSI Flange	
Water inlet/outlet, mm (in.)	191 (7.5) Bolt Circle	
Intercooler inlet/outlet, mm (in.)	152 (6.0) Bolt Circle	
Static head allowable above engine, kPa (ft. H_2O)	149 (50)	

† Contact your local distributor for cooling system options and specifications based on your specific requirements.

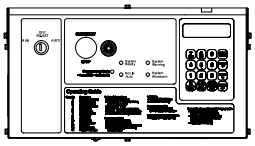
Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m^3/min. (scfm)‡	2033 (71800)	1693 (59800)
High ambient radiator-cooled cooling air, m^3/min. (scfm)‡	2676 (94500)	2050 (72400)
Cooling air required for generator set when equipped with CWC or remote radiator, based on 14°C (25°F) rise, m^3/min. (scfm)‡	661 (23400)	
Combustion air, m^3/min. (cfm)	182 (6441)	138 (4873)
Heat rejected to ambient air:		
Engine, kW (Btu/min.)	90 (5100)	
Alternator, kW (Btu/min.)	95 (5403)	

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

Fuel Consumption	60 Hz	50 Hz
Diesel, Lph (gph) at % load	Standby Rating	
100%	559.9 (147.9)	443.0 (117.1)
75%	428.0 (113.1)	335.8 (88.7)
50%	300.1 (79.3)	235.5 (62.2)
25%	170.9 (45.2)	131.7 (34.8)
Diesel, Lph (gph) at % load	Prime Rating	
100%	488.9 (129.2)	407.6 (107.7)
75%	382.8 (101.1)	310.5 (82.0)
50%	265.9 (70.2)	217.6 (57.5)
25%	153.2 (40.5)	123.1 (32.5)

Controllers

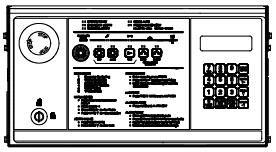


Decision-Maker® 550 Controller

Provides advanced control, system monitoring, and system diagnostics with remote monitoring capabilities.

- Digital display and keypad provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or modem configuration
- Controller supports Modbus® protocol
- Integrated voltage regulator with ±0.25% regulation
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability

Refer to G6-46 for additional controller features and accessories.



Decision-Maker® 6000 Paralleling Controller

Provides advanced control, system monitoring, and system diagnostics with remote monitoring capabilities for paralleling multiple generator sets.

- Paralleling capability with first-on logic, synchronizer, kW and kVAR load sharing, and protective relays
- Digital display and keypad provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or modem configuration
- Controller supports Modbus® protocol
- Integrated voltage regulator with ±0.25% regulation
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability

Refer to G6-107 for additional controller features and accessories.

KOHLER CO., Kohler, Wisconsin 53044 USA
Phone 920-457-4441, Fax 920-459-1646
For the nearest sales and service outlet in the
US and Canada, phone 1-800-544-2444
KOHLERPower.com

Kohler Power Systems
Asia Pacific Headquarters
7 Jurong Pier Road
Singapore 619159
Phone (65) 6264-6422, Fax (65) 6264-6455

Standard Features

- Alternator Protection
- Closed Crankcase Breather System
- Customer Connection
  (standard with Decision-Maker® 6000 controller only)
- Local Emergency Stop Switch
- Low Coolant Level Shutdown
- Alternator Strip Heater (standard on 3300 volt and above)
- Oil Drain Extension
- Operation and Installation Literature
- Radiator Core Guard

Available Options

Approvals and Listings

❑ CSA Approval
❑ IBC Seismic Certification
❑ UL 2200 Listing

Enclosed Unit

❑ Sound Enclosure/Fuel Tank Package
❑ Weather Enclosure/Fuel Tank Package

Open Unit

❑ Exhaust Silencer, Critical (60 Hz kit: PA-361625)
❑ Exhaust Silencer, Hospital (60 Hz kit: PA-361627)
❑ Flexible Exhaust Connector, Stainless Steel

Fuel System

❑ Flexible Fuel Lines
❑ Fuel/Water Separator

Controller

❑ Common Failure Relay
❑ Communication Products and PC Software
❑ Customer Connection
  (Decision-Maker® 550 controller only)
❑ Decision-Maker® Paralleling System (DPS)
  (Decision-Maker® 6000 controller only)
❑ Dry Contact (isolated alarm)
❑ Prime Power Switch
❑ Remote Audiovisual Alarm Panel
❑ Remote Emergency Stop
❑ Remote Mounting Cable
❑ Remote Serial Annunciator Panel
❑ Run Relay

Cooling System

❑ Block Heater; 12000 W, 208 V, 1 Ph
❑ Block Heater; 12000 W, 240 V, (Select 1 Ph or 3 Ph)
❑ Block Heater; 12000 W, 380 V, 3 Ph
❑ Block Heater; 12000 W, 480 V, (Select 1 Ph or 3 Ph)
  Recommended for Ambient Temperatures Below 15°C (60°F)
❑ High Ambient Radiator
❑ Remote Radiator Cooling Setup

Electrical System

❑ Alternator Strip Heater (available up to 600 volt)
❑ Battery
❑ Battery Charger, Equalize/Float Type
❑ Battery Heater
❑ Battery Rack and Cables
❑ Line Circuit Breaker (NEMA type 1 enclosure)
❑ Line Circuit Breaker with Shunt Trip (NEMA type 1 enclosure)

Paralleling System

❑ Manual Speed Adjust
  (Decision-Maker® 550 controller only)
❑ Remote Voltage Adjust Control
  (Decision-Maker® 550 controller only)
❑ Voltage Sensing (Decision-Maker® 6000 controller only)

Miscellaneous

❑ Air Cleaner, Heavy Duty
❑ Air Cleaner Restriction Indicator
❑ Centrifugal Oil Filter (Prime Power only)
❑ Engine Fluids (oil and coolant) Added
❑ Rated Power Factor Testing
❑ Spring Isolators

Literature

❑ General Maintenance
❑ NFPA 110
❑ Overhaul
❑ Production

Warranty

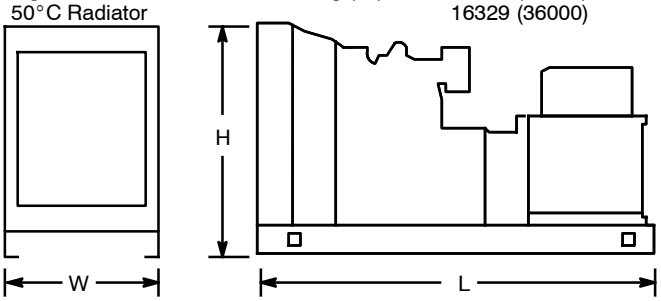
❑ 2-Year Basic
❑ 2-Year Prime
❑ 5-Year Basic
❑ 5-Year Comprehensive
❑ 10-Year Major Components

Other Options

❑ _____
❑ _____
❑ _____

Dimensions and Weights

Overall Size, L x W x H, max., mm (in.):
40°C Radiator 6905 x 2232 x 2564 (271.9 x 87.9 x 100.9)
50°C Radiator 6946 x 2766 x 3138 (273.5 x 108.9 x 123.5)
Weight 40°C Radiator, wet, max., kg (lb.): 15876 (35000)
50°C Radiator 16329 (36000)



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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