Model: 1500ROZD-4

KOHLER POWER SYSTEMS

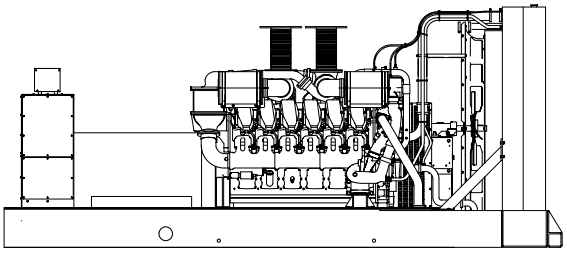
380–4160 V

4 Cycle Diesel

ISO 9001 KOHLER POWER SYSTEMS NATIONALLY REGISTERED

Ratings Range

		60 Hz	50 Hz
Standby:	**kW**	1160–1500	1200–1320
	kVA	1450–1875	1500–1650
Prime:	**kW**	1050–1360	1088–1200
	kVA	1313–1700	1360–1500



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.
- At 60 Hz the generator set accepts rated load in one step.
- The generator set complies with ISO 8528-5, Class G3 requirements for transient performance.
- The 60 Hz generator set engine is certified by the Environmental Protection Agency (EPA).
- A one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended warranties are also available.
- Generator features:
  - The brushless, rotating-field generator has broadrange reconnectability.
  - The pilot-excited, permanent-magnet generator (PMG) provides superior short-circuit capability.
- Other features:
  - Controllers are available for all applications. See controller features inside.
  - The low coolant level shutdown prevents overheating. (Standard on radiator models only.)
  - The generator set-to-skid mounting options are either integral vibration isolation or direct mounting with spring isolators.
  - An electronic, isochronous governor delivers precise frequency regulation.
  - Electronic engine controls and a generator microprocessor controller combine to deliver one of the most advanced control systems in today's generator market.

Generator Ratings

				150°C Rise Standby Rating		130°C Rise Standby Rating		125°C Rise Prime Rating		105°C Rise Prime Rating	
Generator	**Voltage**	**Ph**	**Hz**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**
7M4050	220/380	3	60	1160/1450	2203	1160/1450	2203	1050/1313	1994	1050/1313	1994
	240/416	3	60	1410/1763	2446	1370/1713	2377	1280/1600	2221	1240/1550	2151
	277/480	3	60	1500/1875	2255	1500/1875	2255	1360/1700	2045	1360/1700	2045
	220/380	3	50	1248/1560	2370	1200/1500	2279	1136/1420	2157	1088/1360	2066
	230/400	3	50	1308/1635	2360	1248/1560	2252	1188/1485	2143	1136/1420	2050
	240/416	3	50	1308/1635	2269	1228/1535	2130	1188/1485	2061	1116/1395	1936
7M4052	220/380	3	60	1480/1850	2811	1480/1850	2811	1340/1675	2545	1340/1675	2545
	240/416	3	60	1500/1875	2602	1500/1875	2602	1360/1700	2359	1360/1700	2359
	277/480	3	60	1500/1875	2255	1500/1875	2255	1360/1700	2045	1360/1700	2045
	220/380	3	50	1320/1650	2507	1320/1650	2507	1200/1500	2279	1200/1500	2279
	230/400	3	50	1320/1650	2382	1320/1650	2382	1200/1500	2165	1200/1500	2165
	240/416	3	50	1320/1650	2290	1280/1600	2221	1200/1500	2082	1160/1450	2012
7M4174	220/380	3	60	1500/1875	2849	1500/1875	2849	1360/1700	2583	1360/1700	2583
7M4176	220/380	3	60	1500/1875	2849	1500/1875	2849	1360/1700	2583	1360/1700	2583
7M4290	347/600	3	60	1500/1875	1804	1500/1875	1804	1360/1700	1636	1360/1700	1636
7M4368	2400/4160	3	60	1500/1875	260	1500/1875	260	1360/1700	236	1360/1700	236
	1905/3300	3	50	1320/1650	289	1320/1650	289	1200/1500	262	1200/1500	262
7M4370	2400/4160	3	60	1500/1875	260	1500/1875	260	1360/1700	236	1360/1700	236
	1905/3300	3	50	1320/1650	289	1320/1650	289	1200/1500	262	1200/1500	262

RATINGS: All three-phase units are rated at 0.8 power factor. *Standby Ratings:* Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. *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, BS 5514, AS 2789, and DIN 6271. 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. GENERAL GUIDELINES FOR DERATION: *ALTITUDE:* Derate 1.5% per 305 m (1000 ft.) elevation above 1006 m (3300 ft.). Maximum altitude capability is 3048 m (10000 ft.) on 60 Hz and 6096 m (20000 ft.) on 50 Hz. *TEMPERATURE:* Derate 0.4% per 5.5°C (10°F) temperature above 25°C (77°F).

Alternator Specifications

Specifications		Generator
Type		4-Pole, Rotating Field
Exciter type		Brushless, Permanent-Magnet Pilot Exciter
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% 60 Hz, 150% 50 Hz
Voltage regulation, no-load to full-load (with <0.5% drift due to temp. variation)		3-phase sensing, ±0.25%
Unbalanced load capability		100% of Rated Standby Current
One-step load acceptance at 60 Hz		100% of Rating
Peak motor starting kVA:		(35% dip for voltages below)
480 V, 416 V	7M4050 (4 bus bar)	4500 (60 Hz), 3600 (50 Hz)
480 V, 416 V	7M4052 (4 bus bar)	5500 (60 Hz), 4700 (50 Hz)
380 V	7M4174 (4 bus bar)	4200 (60 Hz)
380 V	7M4176 (4 bus bar)	5400 (60 Hz)
600 V	7M4290 (4 bus bar)	5700 (60 Hz)
4160 V, 3300 V	7M4368 (6 lead)	4900 (60 Hz), 2900 (50 Hz)
4160 V, 3300 V	7M4370 (6 lead)	5500 (60 Hz), 3000 (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 generator 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	12V4000 (T123-7K36)	12V4000 (T123-7K16)
Engine: type	4-Cycle, Turbocharged, Intercooled	
Cylinder arrangement	12V	
Displacement, L (cu. in.)	49 (2975)	
Bore and stroke, mm (in.)	165 (6.5) x 190 (7.5)	
Compression ratio	13.7:1	
Piston speed, m/min. (ft./min.)	684 (2244)	570 (1870)
Main bearings: quantity, type	—	
Rated rpm	1800	1500
Max. power at rated rpm, kWm (BHP)	1640 (2200)	1465 (1965)
Cylinder head material	Cast Iron	
Crankshaft material	Forged Steel	
Valve (exhaust) material	High Alloy Steel	
Governor: type, make/model	DDEC 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 flow at rated kW, m^3/min. (cfm)	341 (12030)	269 (9490)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	450 (842)	520 (968)
Maximum allowable back pressure, kPa (in. Hg)	5.1 (1.5)	
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):		
Qty., CCA rating above 0°C (32°F)	4, 950	
Qty., CCA rating below 0°C (32°F)	8, 1250	
Battery voltage (DC)	12	

Fuel

Fuel System	60 Hz	50 Hz
Fuel supply line, min. ID, mm (in.)	25 (1.0)	
Fuel return line, min. ID, mm (in.)	19 (0.75)	
Max. lift, engine-driven fuel pump, m (ft.)	—	
Max. fuel flow, Lph (gph)	942 (249)	888 (235)
Max. fuel pump restriction with new/used filter, kPa (in. Hg)	20 (6)/41 (12)	
Fuel filter	2, Secondary	
Recommended fuel	#2 Diesel	

Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, L (qt.)	200 (211)	
Oil pan capacity with filter, L (qt.)	220 (232)	
Oil filter: quantity, type	4, Spin-On	
Oil cooler	Water-Cooled	

Application Data

Cooling Systems

Radiator System	60 Hz	50 Hz
Ambient temp., standby rating, °C (°F)	45 (113)	
Ambient temp., prime rating, °C (°F)	45 (113)	50 (122)
Engine water capacity, L (gal.)	160 (42.3)	
Radiator system capacity, including engine, L (gal.)	609 (161)	
Engine jacket water flow, Lpm (gpm)	1416 (374)	1060 (280)
Charge cooler water flow, Lpm (gpm)	469 (124)	530 (140)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	565 (32120)	570 (32415)
Heat rejected to charge cooling water at rated kW, dry exhaust, and at innercooler coolant inlet temperature <57°C (135°F), kW (Btu/min.)	464 (26400)	328 (18668)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	1829 (72)	
Fan, kWm (HP)	59 (79)	49 (65)
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 temp., standby rating, °C (°F)	50 (122)	—
Engine water capacity, L (gal.)	160 (42.3)	—
Radiator system capacity, including engine, L (gal.)	568 (150)	—
Engine jacket water flow, Lpm (gpm)	1416 (374)	—
Charge cooler water flow, Lpm (gpm)	469 (124)	—
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	565 (32120)	—
Heat rejected to charge cooling water at rated kW, dry exhaust, and at innercooler coolant inlet temperature <57°C (135°F), kW (Btu/min.)	464 (26400)	—
Water pump type	Centrifugal	—
Fan diameter, including blades, mm (in.)	2057 (81)	—
Fan, kWm (HP)	61 (82)	—
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.125 (0.5)	—

Remote Radiator System*	60 Hz	50 Hz
Exhaust manifold type	Dry	
Connection sizes:	Class 150 ANSI Flange	
Water inlet, mm (in.)	191 (7.5) Bolt Circle	
Water 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)	

City Water Cooling (CWC) System	60 Hz	50 Hz
Exhaust manifold type	Dry	
Connection sizes:		
Water inlet, mm (in.)	*	
Water outlet, mm (in.)	*	

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

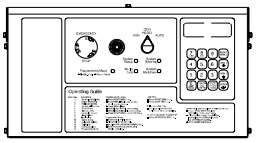
Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m^3/min. (scfm)†	1770 (62500)	1660 (58600)
High ambient radiator-cooled cooling air, m^3/min. (scfm)†	2013 (71100)	—
Cooling air required for gen. set when equipped with CWC or remote radiator, based on 14°C (25°F) rise and ambient temp. of 29°C (85°F), m^3/min. (cfm)	487 (17200)	456 (16100)
Combustion air, m^3/min. (cfm)	137 (4824)	110 (3874)
Heat rejected to ambient air:		
Engine, kW (Btu/min.)	56 (3300)	52 (2948)
Generator, kW (Btu/min.)	74 (4208)	72 (4081)

† 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%	382.8(101.1)	339.0 (89.5)
75%	284.3 (75.1)	254.4 (67.1)
50%	215.8 (57.0)	174.0 (45.9)
25%	108.6 (28.7)	91.8 (24.2)
Diesel, Lph (gph) at % load	**Prime Rating**	
100%	346.0 (91.4)	307.8 (81.3)
75%	258.5 (68.3)	229.8 (60.7)
50%	177.2 (46.8)	157.2 (41.5)
25%	101.4 (26.8)	84.6 (22.3)

Available Controllers



Decision-Maker™ 550 Controller
Audiovisual annunciation with NFPA 110 Level 1 capability.
Programmable microprocessor logic and digital display features.
Generator safeguard circuit protection.
12- or 24-volt engine electrical system capability.
Remote start, remote annunciation, and remote communication options.
Refer to G6-46 for additional controller features and accessories.

Decision-Maker™ 3+, 16-Light Controller
Audiovisual annunciation with NFPA 110 Level 1 capability.
Microprocessor logic, AC meters, and engine gauge features.
12- or 24-volt engine electrical system capability.
Remote start, prime power, and remote annunciation options.
Refer to G6-30 for additional controller features and accessories.

KOHLER CO., Kohler, Wisconsin 53044 USA
Phone 920-565-3381, Fax 920-459-1646
For the nearest sales and service outlet in the
US and Canada, phone 1-800-544-2444
KohlerPowerSystems.com

Kohler Power Systems
Asia Pacific Headquarters
7 Jurong Pier Road
Singapore 619159
Phone (65)264-6422, Fax (65)264-6455

Standard Features and Accessories

Additional Standard Features

- Alternator Protection (standard with Decision-Maker™ 550)
- Electronic, Isochronous Governor
- Oil Drain Extension
- Operation and Installation Literature
- Pilot-Excited, Permanent-Magnet Generator (PMG)

Accessories

Enclosed Unit

❑ Sound Enclosure and Subbase Fuel Tank Packages
❑ Weather Enclosure and Subbase Fuel Tank Packages

Open Unit

❑ Exhaust Silencer, Critical (60 Hz kits: PA-361601, PA-361617)
❑ Exhaust Silencer, Critical (50 Hz kits: PA-361600, PA-361618)
❑ Exhaust Silencer, Hospital (kits: PA-361602, PA-361619)
❑ Exhaust Silencer, Industrial (60 Hz kits: PA-361607, PA-361623)
❑ Exhaust Silencer, Industrial (50 Hz kits: PA-361606, PA-361624)
❑ Exhaust Silencer, Residential (60 Hz kits: PA-361605, PA-361621)
❑ Exhaust Silencer, Residential (50 Hz kits: PA-361604, PA-361622)
❑ Flexible Exhaust Connector, Stainless Steel

Cooling System

❑ Block Heater
❑ City Water Cooling
❑ High Ambient Radiator
❑ Radiator Duct Flange
❑ Remote Radiator Cooling

Fuel System

❑ Flexible Fuel Lines
❑ Fuel Filter
❑ Fuel Pressure Gauge
❑ Subbase Fuel Tank with Day Tank

Electrical System

❑ Battery
❑ Battery Charger, Equalize/Float Type
❑ Battery Heater
❑ Battery Rack and Cables

Engine and Generator

❑ Air Cleaner, Heavy Duty
❑ Air Cleaner Restriction Indicator
❑ Bus Bar Kits (standard on 7M generators, 380–600 volt only)
❑ Generator Strip Heater
❑ Line Circuit Breaker (NEMA type 1 enclosure)
❑ Line Circuit Breaker with Shunt Trip (NEMA type 1 enclosure)
❑ NFPA 110 Literature
❑ Optional Generators
❑ Rated Power Factor Testing
❑ Safeguard Breaker (not available with Decision-Maker™ 550)
❑ Integral Vibration Isolation Mounting
❑ Direct Mounting
❑ Spring Isolators

Paralleling System

❑ Load-Sharing Module
❑ Reactive Droop Compensator
❑ Remote Speed Adjust Potentiometer/Electronic Governor
❑ Voltage Adjust Potentiometer
❑ Voltage Regulator Relocation Kit

Maintenance

❑ General Maintenance Literature Kit
❑ Overhaul Literature Kit

Controller

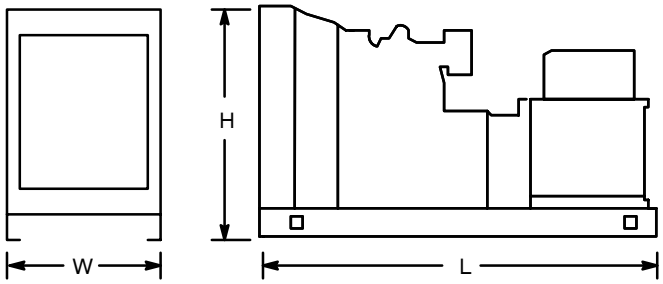
❑ Common Failure Relay Kit
❑ Communication Products and PC Software (Decision-Maker™ 550 controller only)
❑ Customer Connection Kit
❑ Dry Contact Kit (isolated alarm)
❑ Engine Prealarm Sender Kit
❑ Prime Power Switch
❑ Remote Annunciator Panel
❑ Remote Audiovisual Alarm Panel
❑ Remote Emergency Stop Kit
❑ Remote Mounting Cable
❑ Run Relay Kit

Miscellaneous Accessories

❑ _____
❑ _____
❑ _____
❑ _____

Dimensions and Weights

Overall Size, L x W x H, mm (in.):	5782 x 2232 x 2509 (227.65 x 87.88 x 98.80)
Weight (radiator model), wet, kg (lb.):	13698 (30200)



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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