

## Standard Features

- Single-phase generator sets are UL 2200-listed (2F alternators only)
- 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 generator set accepts rated load in one step.
- A one-year limited warranty covers all systems and components. Extended warranties are available.
- Generator features:
  - Kohler's PowerBoost™ voltage regulation system provides instant response to load changes.
- Other features:
  - Low coolant level and high engine temperature shutdowns protect against overheating.
  - Integral vibration isolation eliminates the need for under-unit vibration spring isolators.
  - An electronic, isochronous governor delivers precise frequency regulation.

## Generator Ratings

Voltage	Phase	Hz	17RY				22RY					
			Generator	Standby Rating		Generator	Standby Rating					
				Natural Gas	LP Gas		Natural Gas	LP Gas				
			kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps		
120/240	1	60	2F5	17.0/17.0	71	17.0/17.0	71	2F7	20.0/20.0	83	22.0/22.0	92
120/240	1	60	2G5	13.0/13.0	54	13.0/13.0	54	2G7	15.8/15.8	66	15.8/15.8	66
120/208	3	60	2G5	17.0/21.2	59	17.0/21.2	59	2G7	20.0/25.0	69	22.0/27.5	76
120/240	3	60	2G5	17.0/21.2	51	17.0/21.2	51	2G7	20.0/25.0	60	22.0/27.5	66
127/220	3	60	2G5	17.0/21.2	59	17.0/21.2	59	2G7	20.0/25.0	66	22.0/27.5	72
139/240	3	60	2G5	17.0/21.2	51	17.0/21.2	51	2G7	20.0/25.0	60	22.0/27.5	66
220/380	3	60	2G5	17.0/21.2	32	17.0/21.2	32	2G7	20.0/25.0	38	22.0/27.5	42
277/480	3	60	2G5	17.0/21.2	25	17.0/21.2	25	2G7	20.0/25.0	30	22.0/27.5	33
110/220	1	50	2F5	13.0/13.0	59	13.0/13.0	59	2F7	16.7/16.7	76	18.3/18.3	83
110/220	1	50	2G5	9.0/9.0	41	9.0/9.0	41	2G7	13.2/13.2	60	13.2/13.2	60
110/190	3	50	2G5	13.0/16.2	49	13.0/16.2	49	2G7	16.7/20.9	63	18.3/22.9	70
110/220	3	50	2G5	13.0/16.2	43	13.0/16.2	43	2G7	16.7/20.9	55	18.3/22.9	60
120/208	3	50	2G5	13.0/16.2	45	13.0/16.2	45	2G7	16.7/20.9	58	18.3/22.9	64
220/380	3	50	2G5	13.0/16.2	25	13.0/16.2	25	2G7	16.7/20.9	32	18.3/22.9	35
240/416	3	50	2G5	13.0/16.2	22	13.0/16.2	22	2G7	16.7/20.9	29	18.3/22.9	32

RATINGS: Standby ratings are continuous for the duration of any power outage. No overload capacity is specified at this rating. All single-phase units are rated at 1.0 power factor. All three-phase units are rated at 0.8 power factor. MODEL 17RY DERATION: ALTITUDE: Derate 1.5% per 1000 ft. (305 m) elevation above 3300 ft. (1007 m). TEMPERATURE: No derate required up to 122° F (50°C). MODEL 22RY DERATION: ALTITUDE: Derate 4% per 1000 ft. (305 m) elevation above 500 ft. (153 m). TEMPERATURE: Derate 1% per 10°F (5.5°C) temperature increase above 85°F (29°C). Availability is subject to change without notice. Kohler Co. reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. Contact your local Kohler Co. generator set distributor for availability.

# Alternator Features

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise.
- Self-ventilated and dripproof construction.
- Vacuum-impregnated windings with fungus-resistant epoxy varnish for dependability and long life.
- Superior voltage waveform and minimum harmonic distortion from skewed alternator construction.
- PowerBoost™ voltage regulator with ±2% no-load to full-load regulation.
- Rotating-field alternator with static exciter for excellent load response.

# Alternator Specifications

Specifications		PowerBoost™ 1-Phase 4-Lead	Generator 3-Phase 12-Lead
Manufacturer		Kohler	
Output reconnectable	60 Hz 50 Hz	120/240 110/220	Broadrange Broadrange
Type		Rotating-Field	
Voltage regulator		Solid State	
Insulation: NEMA MG1-1.66			
Material		Class F	
Temperature rise		Class F	
Bearing: quantity, type		1, Sealed	
Coupling		Flexible Disc	
Amortisseur windings		Full	
Voltage regulation, no-load to full-load		±2%	
One-step load acceptance per NFPA 110		100% of Rating	
Peak motor starting kVA (35% dip at voltage shown):		<b>2F</b>	<b>2G</b>
17RY	60 Hz 50 Hz	33 (240 V) 26 (220 V)	54 (480 V) 47 (416 V)
22RY	60 Hz 50 Hz	42 (240 V) 33 (220 V)	69 (480 V) 58 (416 V)

# Application Data

## Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Ignition system	Electronic, Breakerless	
Battery charging system:		
Ground (negative/positive)	Negative	
Volts (DC)	12	
Ampere rating	35	
Starter motor rated voltage (DC)	12	
Recommended battery cold cranking amps (CCA) rating for 0°F	670	
Quantity of batteries	1	
Battery voltage (DC)	12	
Rolling current at 0°C (32°F)	160 amps	

# Application Data

## Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	Ford	
Engine: model, type	VSG-413, 4-Cycle, Naturally Aspirated	
Cylinder arrangement	4 Inline	
Displacement, L (cu. in.)	1.3 (79)	
Bore and stroke, mm (in.)	74.0 x 75.5 (2.91 x 2.97)	
Compression ratio	9.5:1	
Piston speed, m/min. (ft./min.)	543 (1782)	453 (1485)
Main bearings: quantity, type	5, Replaceable Inserts	
Rated rpm	3600	3000
Maximum power at rated rpm, kWm (BHP)	28 (37)	23 (31)
Cylinder head material	Cast Iron	
Piston: type, material	Autothermic Aluminum Alloy	
Crankshaft material	Nodular Cast Iron	
Valves material	Forged Steel	
Governor type	Electronic	
Frequency regulation, no-load to full-load	Isochronous	
Frequency regulation, steady state	±0.5%	
Air cleaner type	Dry	

## Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, L (qt.)	2.8 (2.9)	
Oil pan capacity with filter, L (qt.)	3.3 (3.5)	
Oil filter: quantity, type	1, Cartridge	
Oil drain extension with valve	Standard	

## Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust flow at rated kW, m <sup>3</sup> /min. (cfm)		
17RY	3.4 (145)	2.8 (121)
22RY	6.0 (213)	5.0 (178)
Exhaust temperature at rated kW, dry exhaust, °C (°F)		
17RY	649 (1200)	
22RY	704 (1300)	
Maximum allowable back pressure, kPa (in. Hg)	20.3 (6.0)	
Exhaust outlet size at hookup, mm (in.)	50.8 (2.0)	

## Fuel

Fuel System	60 Hz	50 Hz
Fuel type	LP Gas or Natural Gas	
Fuel supply inlet	3/4 NPT	
Fuel supply pressure, in. H <sub>2</sub> O (oz./in. <sup>2</sup> )	4-11 (3-6)	

# Application Data

## Cooling

Cooling System	60 Hz	50 Hz
Ambient temperature, °C (°F)	50 (122)	
Engine jacket water capacity, L (gal.)	3.5 (0.93)	
Engine jacket water flow, Lpm (gpm)	58.0 (15.3)	47.7 (12.6)
Radiator system capacity, including engine, L (gal.)	11.8 (3.1)	
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)		
17RY	15.1 (860)	12.6 (715)
22RY	19.5 (1110)	16.3 (925)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	356 (14)	
Fan, kW (HP)	2.2 (3.0)	1.9 (2.5)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H <sub>2</sub> O)	0.125 (0.5)	

## Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m <sup>3</sup> /min. (scfm)*	92 (3250)	76 (2700)
Combustion air, m <sup>3</sup> /min. (cfm)	1.6 (58)	1.4 (48)
Heat rejected to ambient air, kW (Btu/min.):		
Engine: 17RY	4.2 (240)	3.5 (200)
22RY	5.5 (312)	4.6 (260)
Generator: 17RY	2.5 (145)	1.9 (110)
22RY	3.3 (187)	2.7 (156)

\* Air density = 1.20 kg/m<sup>3</sup> (0.075 lbm/ft<sup>3</sup>)

Fuel Consumption, m <sup>3</sup> /hr. (cfh)	17RY		22RY	
	60 Hz	50 Hz	60 Hz	50 Hz
<b>Natural Gas, at % load</b>				
100%	8.7 (307)	6.6 (232)	12 (419)	8.2 (290)
75%	7.1 (249)	5.4 (192)	8.2 (290)	6.5 (231)
50%	5.7 (201)	4.5 (160)	6.5 (228)	5.1 (180)
25%	4.5 (158)	3.5 (122)	5.1 (180)	4.0 (143)

LP Gas, at % load	17RY		22RY	
	60 Hz	50 Hz	60 Hz	50 Hz
100%	3.3 (118)	2.6 (92)	4.0 (143)	3.2 (113)
75%	2.8 (100)	2.2 (78)	3.3 (116)	2.7 (94)
50%	2.3 (83)	1.8 (65)	2.7 (95)	2.1 (75)
25%	1.9 (66)	1.5 (55)	2.0 (70)	1.6 (57)

LP conversion factors:  
8.58 cf = 1 lb.  
36.39 cf = 1 gal.

### Minimum Gas Pipe Size Recommendation, in. NPT

Pipe Length, m (ft.)	Natural Gas		LP Gas	
	17RY	22RY	17RY	22RY
Max. Btu/hr.	307,000	419,000	297,000	360,000
6 (20)	1	1	3/4	3/4
15 (50)	1 1/4	1 1/4	1	1
30 (100)	1 1/4	1 1/2	1	1 1/4
46 (150)	1 1/4	1 1/2	1 1/4	1 1/4
61 (200)	1 1/2	1 1/2	1 1/4	1 1/4

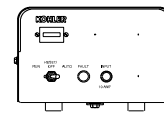
# Sound Data

## Acoustic Test Data (dBA)

Housing	Sound Data Measurement Positions							
	Front	LHF	LH	LHR	Rear	RHR	RH	RHF
Standard	87.4	86.2	83.5	80.8	81.6	80.1	80.6	87.3
Avg. 83.4	max.							
w/Attenuators	84.5	77.3	74.9	79.0	79.2	73.8	74.1	79.6
Avg. 77.8	max.							
Sound Shield	69.1	69.6	68.6	69.8	66.4	69.2	68.4	69.9
Avg. 68.9	min.							

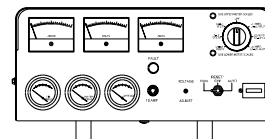
Notes: Tests are performed with the generator set operating at full load. The front is the exhaust end, and the rear is the air intake end. Data is measured in dBA sound pressure (RE: 20 μPa). Microphone distance: 23 ft. (7 m) from enclosure center. Microphone height: 3.28 ft. (1 m)

## Controllers



### Standard Controller

- Type: Decision-Maker™ 1 relay †
- Power source with fuse protection: 12 volts DC
- Cyclic cranking
- Meters:
  - Running time hourmeter
- Switches and controls:
  - Master control switch: run/off-reset/auto (engine start)
  - Local/remote two-wire start control
- Common fault lamp:
  - High engine temperature (red)
  - Low coolant level (red)
  - Low oil pressure (red)
  - Overcrank (red)
  - Overspeed (red)



### Optional Controller

- Type: Decision-Maker™ 1 with engine gauges and AC meters †
- Power source with fuse protection: 12 volts DC
- Cyclic cranking
- Analog meters:
  - AC meters, 64 mm (2.5 in.) volts, amperes, and frequency
  - DC meters, 51 mm (2 in.), DC volts, engine water temperature, and lube oil pressure
  - Running time hourmeter
- Switches and controls:
  - Master control switch: run/off-reset/auto (engine start)
  - Local/remote two-wire start control
- Common fault lamp:
  - High engine temperature (red)
  - Low coolant level (red)
  - Low oil pressure (red)
  - Overcrank (red)
  - Overspeed (red)
- Voltage-adjusting rheostat, front panel mounted
- Selector switch for phase, line voltages and line amperages

† Refer to controller spec sheet G6-31 for additional controller features and accessories.

## Accessories

### Enclosed Unit

- Weather Housing
- Sound Attenuators
- Sound Shield Enclosure

### Cooling System

- Block Heater
- Radiator Duct Flange

### Electrical System

- Battery
- Battery Charger
- Battery Heater

### Engine and Generator

- CSA Certification
- Exhaust Guard and Elbow
- Line Circuit Breaker
- Rodent Guards
- Silencers and Accessories

### Controller

- Common Fault Relay Kit
- Optional Controller with Meters and Gauges
- Run Relay Kit

### Maintenance

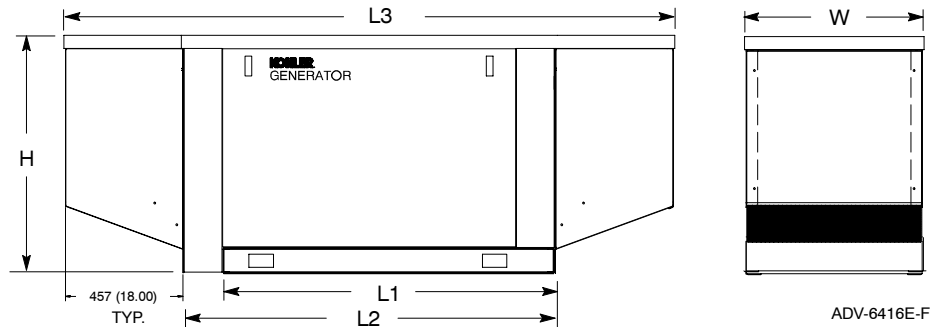
- General Maintenance Literature Kit
- Overhaul Literature Kit, kg (lb.)

### Optional Sound Shield Enclosure



Enclosure weight, kg (lb.): ..... 172 (380)  
 Enclosure size, L x W x H, mm (in.): ..... 1856 x 1067 x 1219  
 (73.1 x 42.0 x 48.0)  
 Construction ..... Corrosion-Protected Galvanized  
 Color ..... Kohler Cream Beige  
 Type ..... Skid-Mounted Dropover

## Weights and Dimensions



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

### Weights:

#### Generator set:

17RY wet, kg (lb.)	294	(650)
shipping, kg (lb.)	327	(720)
22RY wet, kg (lb.)	313	(690)
shipping, kg (lb.)	345	(760)
UL2200 weather housing, kg (lb.)	55	(120)
Sound attenuator kit, kg (lb.)	41	(90)

Unhoused size, L1 x W x H, mm (in.)	1295 x 699 x 927
	(51 x 27.5 x 36.5)
Housed size, L2 x W x H, mm (in.)	1461 x 699 x 927
	(57.5 x 27.5 x 36.5)
With attenuators, L3 x W x H, mm (in.)	2377 x 699 x 927
(attenuators are field-installed)	(93.6 x 27.5 x 36.5)

### DISTRIBUTED BY: