

Warranty Flat Rates/ Failure Codes

Residential/Commercial 5–22 kW Generator Sets
and Transfer Switches



KOHLER®

POWER SYSTEMS

9001
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POWER SYSTEMS
NATIONALLY REGISTERED

TP-6045 2/05b

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This manual provides flat rates and failure codes for 5–22 kW residential/commercial generator sets and associated engines, transfer switches, and accessories.

Note: For 20–2000 kW industrial generator set models, refer to TP-5178, Industrial 20–2000 kW Generator Sets Warranty Flat Rates/Failure Codes, and TP-5180, Warranty Policies and Procedures, Industrial Generator Sets including Transfer Switches and Switchgear.

A flat rate is the maximum time allowed for making warranty repairs. The manufacturer assigns a flat rate number to each flat rate. The manufacturer sets flat rates using facilities and equipment that any service shop should have available. You must write the flat rate number on the warranty claim form (K-1500) in the space marked “Flat Rate Number.”

Note: Each flat rate time includes troubleshooting, test, and cleanup time.

In addition to the flat rate number, use a failure code. Find the appropriate code in the following list. Enter the code on the Warranty Claim Form (K-1500) in the space marked “Failure Code.” The failure code applies to the primary failed part and helps to determine the mode of failure.

If you make a repair that is not listed in the flat rates, please provide the following information on the warranty claim form:

1. Write a description of the work done in the space marked “Work Performed” on the warranty claim form.
2. Write the appropriate failure code in the space marked “Failure Code.”
3. Write the actual time in the space marked “Misc. Labor Hours.”

If you exceed an allowable flat rate time because of unforeseen circumstances, enter the actual time and the flat rate number with an explanation of the causes in the Work Performed area. Do not put extra time under Misc. Labor Hours. If you need additional space for an explanation, continue it on the back of the form or on a separate sheet. The Warranty Department reviews and approves each claim.

Note: Refer to TP-6046, Warranty Policies and Procedures, Residential/Commercial Generator Sets and Transfer Switches, for additional warranty claim information and instructions.

Failure Codes

Electrical

EA	Electrically Out of Adjustment
EC	Connection Defect
EH	High Voltage
EL	Low Voltage
EO	Open
ES	Shorted
EU	Unstable Voltage
HO	High Output
LO	Low Output
NV	No Voltage
OU	No Output
PN	Pinched/Crimped
WI	Wired Incorrectly from Factory

Mechanical

BD	Binding
BT	Bent
CD	Casting Defect
CK	Cracked
LP	Loose Parts
MA	Assembled Improperly
MB	Mechanically Broken
ML	Leaking
MN	Noisy
MO	Out of Adjustment
MV	Vibration
NS	Not Sealing
PL	Plugged
ST	Sticking
SZ	Seized
TW	Twisted

Paint

PA	Adhesion
PC	Corrosion (Oxidation, Rust)
PE	Peeling Paint
PO	Overspray
PR	Runs, Sags

Packaging

CN	Concealed Damage
PM	Material

Miscellaneous

FC	Field Campaign *
FF	Fast Fax *
FM	Foreign Material
IN	Intermittent
IP	Incorrect Parts Supplied
IS	Incorrect Shipment
MP	Missing Parts
RE	Product Recall *
SB	Service/Parts Bulletin *

* When utilizing this failure code, the warranty claim must contain the corresponding number of the service bulletin, field campaign, fast fax, or product recall.

Engine Cross-Reference

Section 3 lists different flat rates for Ford, Kohler, and Yanmar engines. Look at the generator set engine to determine the engine manufacturer, or use the following chart as a guide. The model designations of generator sets with diesel engines include the letter “O”. Example: 6ROZ.

Engine Cross-Reference Chart	
Generator Set	Engine Manufacturer
Diesel-fueled 6-15 kW	Yanmar
Gas-fueled 5-8.5, 11 kW 10, 12-22 kW	Kohler Ford

Section 1 Generator Set Accessory Flat Rates

1.1 Battery Chargers

Flat Rate Description	Flat Rate Number	Flat Rate Hours	Comments
Float/Equalize Battery Charger, 12/24 VDC, 10 A			
AC or output cables	4575	1.00	Replacement of wall-mounted units Main or alarm, includes calibration Each, AC or DC
Ammeter or voltmeter	4565	1.25	
Charger R & R*	4577	1.50	
Circuit board	4569	1.50	
Circuit board connector	4573	1.00	
Fuse holder	4567	1.00	
Lamps/bulbs	4566	1.00	
Power resistor	4571	1.50	
Replace wiring	4576	1.25	
SCR module	4568	1.50	
Terminal strip	4574	1.25	Each
Transformer	4572	1.75	
Trickle-Type Battery Charger			
AC or DC cord	4587	1.00	
Ammeter	4578	1.25	
Charger R & R*	4589	1.25	
Circuit breaker	4581	1.00	
Diodes/resistors	4583	1.50	
Fuse holder	4580	1.00	
Lamp/holder	4579	1.00	
Replace wiring	4588	1.00	
Rheostat	4584	1.50	
Switch	4585	1.25	
Terminal strip	4586	1.00	
Transformer	4582	1.75	
* R & R means remove and replace.			

Note: The 6/3 A, 12/24 VDC float/equalize battery charger is not serviceable.

1.2 Fuel Tanks (6-15ROY/ROZ)

Flat Rate Description	Flat Rate Number	Flat Rate Hours	Comments
Day Tanks†			
Control board	4591	1.50	
Control relay wiring	4593	1.25	
Float switch	4592	1.25	
Motor or pump	4590	1.50	
Subbase Fuel‡ and Day Tanks†			
Control relay or wiring	4596	1.25	
Float switch	4595	1.25	
Gauge sender	4597	1.25	
Motor or pump	4594	1.50	
† Supply the day tank serial number in the description of repair on the warranty claim.			
‡ See the engine fuel system for subbase fuel tank R & R.			

Section 2 Transfer Switch Flat Rates

G120 Transfer Switch

Flat Rate Description	Flat Rate Number	Flat Rate Hours		Comments
		100 Amps	200 Amps	
Auxiliary, microswitches	4553	1.00	1.00	R & R*
Contactor assembly	4555	2.00	2.00	
Contactor coil	4556	1.50	1.50	
Contactor wire harness	4557	1.50	1.50	
Exerciser clock switch	4561	1.00	1.00	
Main controller board	4559	2.00	2.00	
NR/ER relays	4562	1.50	1.50	
Rectifier	4558	1.00	1.00	
Three-phase voltage sensing module	4560	1.50	1.50	
* R & R means remove and replace.				

Section 3 Engine Flat Rates

3.1 Ford Engines

Flat Rate Description	Flat Rate Number	Flat Rate Hours	Comments
Air Intake and Exhaust			
Air cleaner assembly	4121	0.40	Standard
Air cleaner assembly	4120	1.00	Heavy duty
Air cleaner element	4122	0.10	
Exhaust manifold, dry	4123	0.75	Each
Exhaust manifold, wet	4124	1.25	Each
Exhaust silencer	4125	1.25	
Exhaust stack pipe	4126	0.25	
Flexible exhaust connector	4127	1.25	
Intake manifold	4128	0.75	
Camshaft, Timing Gear			
Camshaft R & R*	4129	3.00	
Cooling			
Block heater element or tank	4130	1.25	Complete kit or block heater assembly Each
Block heater R & R*	4131	1.75	
Coolant hoses	4132	0.80	
Cooling fan	4133	1.50	
Heater cord or thermostat	4134	1.25	
Radiator	4135	2.50	
Radiator, repair	4136	1.50	
Thermostat housing	4137	1.00	
V-belt	4138	0.50	
Water pump, coolant	4139	1.75	
Crankshaft, Mains, Flywheel			
Crankshaft and main bearing	4140	3.80	
Crankshaft damper	4141	0.90	
Crankshaft flywheel seal	4142	2.70	
Crankshaft front cover seal	4143	3.00	
Flywheel R & R*	4144	0.30	
Cylinder Block, Liners, Pistons, Rods			
Pistons and/or rings	4145	7.00	All
Cylinder Head, Valves			
Cylinder head or gasket R & R*	4146	3.70	Each head
Cylinder head retorque	4147	1.00	
Valve cover gasket or breather	4148	0.20	
Valve, grind or replace	4149	1.80	Each head
Valve spring or stem seal R & R*	4150	1.80	All
Valve tappet, adjust	4151	0.50	
Engine Electrical			
Battery charging alternator	4152	1.80	
Engine wiring harness	4153	1.50	
Gauge senders/shutdown switch	4154	1.50	
* R & R means remove and replace.			

Ford Engines, continued

Flat Rate Description	Flat Rate Number	Flat Rate Hours	Comments
Engine Mounting			
Engine R & R*	4155	3.00	Per pair
Skid base	4156	3.00	
Vibration isolators	4157	1.50	
Fuel System			
Carburetor, adjust	4158	0.30	Includes adjustment
Carburetor fuel shutdown	4159	0.90	
Carburetor R & R*	4160	1.10	
Carburetor, rebuild	4161	1.75	Includes choke adjustment
Electric choke R & R*	4162	0.90	
Flexible fuel lines R & R*	4163	0.50	
Fuel filter	4164	0.50	Test and adjustment
Fuel pump R & R*	4165	1.25	
Gas fuel regulator/vaporizer R & R*	4166	1.50	
Governor			
Governor actuator	4168	1.25	Mechanical governor
Governor, adjust	4169	0.50	
Governor controller	4170	1.50	
Governor R & R*	4171	1.50	Mechanical governor; includes adjustment
Magnetic pickup	4172	1.50	
Ignition			
Ignition coil R & R*	4173	1.40	DIS or distributor type
Ignition module	4174	1.50	Electronic ignition
Ignition timing	4175	0.40	Distributor type ignition
Spark plug wires R & R*	4176	0.25	
Spark plugs, replace and cap	4177	0.25	
Lubrication			
Oil filter R & R*	4178	0.25	
Oil pan or gasket	4179	1.60	
Oil pump R & R*	4180	1.90	
Rebuild			
Major overhaul	4181	8.00	Includes valve service
Minor overhaul	4182	7.00	Excludes valve service
Short block R & R*	4183	4.00	R & R*
Starting			
Starter drive R & R*	4184	0.90	Testing
Starter motor R & R*	4185	1.40	
Starter, rebuild	4186	1.90	Includes R & R*, testing
Starter relay	4187	1.25	
* R & R means remove and replace.			

3.2 Kohler Engines

Flat Rate Description	Flat Rate Number	Flat Rate Hours			Comments
		5-6.4 kW	6.5-7.4 kW	7.5-11 kW	
Air Intake and Exhaust					
Air cleaner	4054	0.30	0.30	0.30	
Manifold intake/exhaust	4055	—	0.30	0.75	
Camshaft, Timing Gear					
Camshaft gear R & R*	4056	—	1.25	2.00	
Camshaft R & R*	4057	3.40	3.00	3.00	
Cooling					
Coolant hose	4749	—	—	0.25	Each
Idler pulley	4748	—	—	1.00	
Radiator	4750	—	—	1.00	
Thermostat/housing	4751	—	—	0.50	
V-belt	4752	—	—	0.25	
Water pump R & R*	4753	—	—	2.00	
Crankshaft, Mains, Flywheel					
Balance gear R & R*	4064	3.20	—	—	
Crankshaft, flywheel seal	4065	1.70	2.00	2.00	
Crankshaft and main bearing R & R*	4066	3.20	3.00	5.00	
Crankshaft, PTO seal	4067	0.50	0.80	1.50	
Crankshaft and rod	4068	3.20	3.50	6.00	
Flywheel R & R*	4069	1.00	1.00	2.00	
Cylinder Block, Liners, Pistons, Rods					
Connecting rod	4070	2.20	3.50	3.50	One
Piston and/or rings	4071	2.20	3.50	3.50	
Cylinder Head, Valves					
Cylinder head and/or gasket R & R*	4072	1.00	0.60	1.50	Includes valve adjustment
Cylinder head, retorque	4073	0.30	0.70	0.50	
Shrouds only R & R*	4074	0.40	0.50	—	
Valve cover gasket, breather	4075	0.50	0.50	0.50	
Valve, grind	4076	1.40	1.70	2.00	
Valve guide, replace	4077	1.70	1.70	2.00	
Valve R & R* (no grinding)	4078	1.20	1.50	4.00	
Valve spring, replace	4079	1.20	1.50	1.00	
Valve tappet, adjust	4080	0.60	1.00	1.00	
Engine Electrics					
Shutdown switch/gauge sender	4081	1.50	1.50	1.50	
Wiring harness, DC	4082	1.50	1.50	1.50	
Engine Mounting					
Generator skid base	4083	2.00	2.00	2.25	
Vibration isolators	4084	1.25	1.25	1.25	
* R & R means remove and replace.					

Kohler Engines, continued

Flat Rate Description	Flat Rate Number	Flat Rate Hours			Comments
		5-6.4 kW	6.5-7.4 kW	7.5-11 kW	
Fuel					
Carburetor R & R*	4085	0.50	0.50	0.50	Includes adjustment
Carburetor, rebuild	4086	1.50	1.50	1.50	Includes R & R*, adjustment
Carburetor , adjust	4087	0.20	0.20	0.20	
Electric choke R & R*	4088	0.50	0.50	0.50	Includes adjustment
Electric fuel solenoid	4089	1.00	1.00	1.00	
Flexible fuel line	4090	0.50	0.50	0.50	
Fuel drip tank R & R*	4091	—	—	1.00	
Fuel pump R & R*	4092	0.30	0.60	0.60	Includes R & R*
Fuel pump, rebuild	4093	0.80	1.00	1.00	
Gas fuel regulator	4094	1.00	1.00	1.50	
Governor					
Adjustment	4095	0.50	1.00	1.00	Includes adjustment
Electronic component	4760	1.50	1.50	1.50	
Mechanical R & R*	4096	3.70	—	—	
Ignition					
Ignition coil R & R*	4097	0.30	0.30	—	Includes timing adjustment Includes flywheel R & R* Distributor cap, end cap, points, condenser, and rotor—each Replace and adjust All; includes adjustment Battery Magneto ignition
Ignition module	4732	0.50	0.50	0.50	
Ignition timing	4098	0.30	0.50	0.50	
Magneto	4099	—	—	1.00	
Magneto coil, test and replace	4100	1.00	1.00	—	
Magneto components	4101	—	—	0.25	
Points and/or condenser	4102	0.50	0.50	—	
Spark plug R & R*	4103	0.20	0.40	0.60	
Spark plug wire	4104	0.20	0.40	—	
Spark plug wire	4105	1.00	0.40	0.40	
Lubrication					
Oil pan and/or gasket R & R*	4106	0.50	0.50	2.00	
Oil pressure adjustment	4107	—	0.40	0.25	
Oil pressure gauge	4108	—	—	0.25	
Oil pump R & R*	4109	—	3.00	3.00	
Rebuild					
Bare block	4110	—	7.00	—	Includes valves
Engine R & R* from generator set	4111	1.00	2.00	3.00	
Major overhaul	4112	5.50	8.00	8.00	
Miniblock	4113	3.70	—	—	Excludes valves Includes all adjustments
Minor overhaul	4114	4.20	7.00	4.00	
Short block	4115	3.20	5.00	6.00	
Starting					
Starter drive R & R*	4116	0.80	0.50	1.00	Includes R & R*
Starter motor, Bendix type R & R*	4117	0.50	1.00	0.50	
Starter, rebuild	4118	1.00	1.00	1.00	
Starter relay	4119	1.50	1.50	1.50	
* R & R means remove and replace.					

3.3 Yanmar Engines

Flat Rate Description	Flat Rate Number	Flat Rate Hours	Comments
		6-15 kW	
Air Intake and Exhaust			
Air cleaner assembly	4189	0.30	R & R*
Air cleaner element	4188	0.60	
Exhaust silencer	4192	1.25	
Exhaust stack or rain cap	4193	0.25	
Flexible exhaust connector	4191	1.25	
Intake/exhaust manifold	4190	1.00	
Camshaft, Timing Gear			
Camshaft bearings	4195	6.00	
Camshaft gear	4197	3.50	
Camshaft or tappets	4194	6.00	
Crankshaft timing gear	4196	3.50	
Cooling			
Block heater assembly	4207	1.25	Tank assembly only
Block heater cord/thermostat	4206	1.25	Complete kit
Block heater kit	4205	2.00	
Cooling fan	4204	2.25	
Cooling system hose	4202	0.80	Each
Drain cooling system	4209	0.75	Excludes R & R*
Radiator	4203	2.00	
Radiator, repair	4208	2.00	
Thermostat/gasket	4199	0.40	
Water pump R & R*	4198	2.60	Includes belt guard R & R*
Water pump V-belt	4200	0.50	
Water pump internal components	4201	3.00	
Crankshaft, Mains, Flywheel			
Crankshaft and/or main bearing	4210	10.00	Includes alternator R & R*
Flywheel	4214	4.50	
Oil seal, flywheel end	4211	4.00	
Oil seal, front	4212	3.00	
V-belt drive pulley	4213	0.80	
Cylinder Head, Valves			
Cylinder head R & R*	4215	2.50	Includes cylinder head R & R*
Cylinder head gasket	4216	2.40	
Push rod	4224	0.50	
Rocker arms	4225	0.50	Check and/or adjust Intake or exhaust Each additional Intake or exhaust with lapping Each additional Intake or exhaust Each additional
Valve clearance	4223	0.60	
Valve guide R & R*	4221	3.20	
Valve guide R & R*	4222	0.40	
Valve, replace	4217	2.00	
Valve	4218	0.40	
Valve spring, replace	4219	0.80	
Valve spring	4220	0.30	
* R & R means remove and replace.			

Yanmar Engines, continued

Flat Rate Description	Flat Rate Number	Flat Rate Hours	Comments
		6-15 kW	
Cylinder Block, Liners, Pistons, Rods			
Connecting rod or crank pin bearing	4227	6.00	Each additional
Connecting rod or crank pin bearing	4228	0.30	
Cylinder block	4226	15.00	
Piston, piston ring, pin bushing	4229	6.00	Each additional
Piston, piston ring, pin bushing	4230	0.30	
Engine Electrical			
Battery charging alternator	4234	1.60	Engine DC harness
Engine wiring harness	4233	1.50	
Fuel rack solenoid	4232	1.50	
Shutdown switches/senders	4231	1.50	
Engine Mounting			
Skid base	4236	2.25	Each pair
Vibration isolators	4235	1.25	
Fuel			
Bleed fuel system	4244	0.40	Each additional
Flexible fuel line(s)	4246	0.30	
Fuel feed pump	4243	0.50	
Fuel injection pump delivery valve	4238	0.30	
Fuel injection pump plunger/barrel	4239	1.00	
Fuel injection pump plunger/barrel	4240	0.30	
Fuel injection pump R & R*	4237	0.50	
Fuel injection valve w/case	4241	0.60	
High pressure fuel pipe	4242	0.50	
Injection pump timing	4245	1.00	
Subbase fuel tank	4247	4.00	
Lubrication			
Lube oil control valve assembly	4249	0.50	Includes oil pan R & R*
Lube oil inlet pipe	4251	0.60	
Lube oil strainer/filter	4250	0.30	
Oil drain valve	4253	1.00	
Oil pan	4252	0.50	Includes front cover R & R*
Oil pump	4248	5.50	
Starting			
Battery cables	4257	0.30	
Battery rack	4258	0.40	
Starter motor R & R*	4254	0.60	
Starter motor internal components R & R*	4255	1.50	
Starter relay	4256	1.25	
* R & R means remove and replace.			

Section 4 Generator Flat Rates

All Models

Flat Rate Description	Flat Rate Number	Flat Rate Hours				Comments
		5-6.4 kW	6.5-7.4 kW	7.5-11 kW	12-22 kW	
Accessories						
Generator strip heater	4009	0.75	0.75	0.75	0.75	
Rodent guard	4010	2.00	2.00	2.00	2.50	
Weather housing latch	4006	1.50	1.50	1.50	1.50	
Weather housing roof	4007	0.50	0.50	0.50	0.50	
Weather housing front and rear	4008	1.00	1.00	1.00	1.00	
AC Generator						
Alarm horn components	4011	1.25	1.25	1.25	1.25	Each additional Includes R & R end bracket
Circuit breaker	4012	1.75	1.75	1.75	1.75	
Current transformer	4013	1.75	1.75	1.75	1.75	
Current transformer, additional	4014	0.30	0.30	0.30	0.30	
End bearing	4015	2.50	2.50	2.50	2.50	
End bracket	4016	2.00	2.00	2.00	2.00	Includes R & R rotor, stator, end bracket, exciter field, and end bearing
Exciter field	4017	3.00	3.00	3.00	3.00	
Generator adapter	4018	5.25	5.25	5.25	5.25	
Generator fan	4019	5.25	5.25	5.25	5.25	
Heat sink assembly	4020	3.50	3.50	3.50	3.50	
Junction box	4021	1.00	1.00	1.00	1.00	Includes photo board
LED board	4022	1.75	1.75	1.75	1.75	
Photo transistor board	4023	3.50	3.50	3.50	3.50	
Rotor and assembly	4024	5.00	5.00	5.00	5.00	
Rotor rectifier module	5291	3.00	3.00	3.00	3.00	
Speed sensor	4026	1.25	1.25	1.25	1.25	Includes R & R stator, end bracket, exciter field, and end bearing
Speed sensor actuator cup	4027	2.00	2.00	2.00	2.00	
Stator	4028	4.00	4.00	4.00	4.00	
Voltage regulator	4029	2.00	2.00	2.00	2.00	
* R & R means remove and replace.						

All Models, continued

Flat Rate Description	Flat Rate Number	Flat Rate Hours				Comments
		5-6.4 kW	6.5-7.4 kW	7.5-11 kW	12-22 kW	
Controller						
AC interlock board	4030	1.00	1.00	1.00	1.00	
Control relays	4031	1.25	1.25	1.25	1.25	
Controller	4033	1.00	1.00	1.00	1.00	
Controller terminal strip	4034	0.50	0.50	0.50	0.50	
Cycle crank board	4035	1.25	1.25	1.25	1.25	
Dry contact kit	4036	1.50	1.50	1.50	1.50	
Fuse holder/DC circuit	4037	1.25	1.25	1.25	1.25	
Fuses	4038	0.50	0.50	0.50	0.50	
Gauges/meters	4039	1.25	1.25	1.25	1.25	
Hourmeter	4040	1.25	1.25	1.25	1.25	
Main control board	4041	1.50	1.50	1.50	1.50	
Meter scale/fault lamps	4042	0.50	0.50	0.50	0.50	
Overvoltage board	4043	1.00	1.00	1.00	1.00	
Panel lights	4044	0.50	0.50	0.50	0.50	
Remote annunciator	4045	1.50	1.50	1.50	1.50	
Ribbon cable	4046	0.80	0.80	0.80	0.80	
Selector switch, volt/amp	4047	1.75	1.75	1.75	1.75	
Start/indicator panel	4048	1.50	1.50	1.50	1.50	
Switches	4049	1.25	1.25	1.25	1.25	
Transformer	4051	1.75	1.75	1.75	1.75	
Voltage, adjust rheostat	4052	1.00	1.00	1.00	1.00	
Wattmeter/transducer	4053	1.50	1.50	1.50	1.50	

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