

Warranty Flat Rates/ Failure Codes

Marine Generator Sets



KOHLER[®]
POWER SYSTEMS

9001
S **KOHLER**
POWER SYSTEMS
NATIONALLY REGISTERED

TP-5177 9/05b

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

If you make a repair that is not listed in the flat rates, please do the following:

- Enter a description of the work performed in the Work Performed area on the warranty claim form.
- Give the appropriate failure code.
- Enter the actual time in the space marked Misc. Labor Hours on the claim form.

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. These claims will be reviewed individually and are subject to approval by the Warranty Department.

Note: Refer to Marine Generator Sets Warranty Policies and Procedures Manual (TP-5182) for applicable Warranty Policies and Procedures.

In addition to the flat rate number, use a failure code. Find the appropriate code in the Failure Code list following. Enter this code on the Warranty Claim Form (K-1500) in the space marked Failure Code. This failure code applies to the primary failed part and assists us in determining the mode of failure.

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

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

Use the following chart to determine the engine manufacturer for models in kW size ranges.

Marine Engine Cross-Reference Chart	
Fuel/kW Size Range	Engine
Diesel engines*	
4-32 kW	Yanmar
33-65 kW	John Deere
Gas engines	
3.5-6.5 kW	Honda
4-7 kW	Kawasaki
7.5 kW	Kohler
8-12.5 kW	Ford

*Diesel-fueled generator sets include an "O" in the model number (Example: 9EOZ).

Notes

Section 1 Engine Flat Rates

1.1 Ford 8-12.5 kW

Flat Rate Description	Flat Rate Number	Flat Rate Hours	Comments
Air Intake and Exhaust			
Air cleaner	1484	0.20	Each
Exhaust manifold	1483	1.25	
Exhaust muffler	1485	0.75	
Intake manifold	1482	0.75	
Exhaust mixer elbow	2816	0.75	
Camshaft and Timing Gear			
Camshaft gear and chain	1455	1.80	
Camshaft R&R	1454	2.50	
Cooling			
Coolant hoses	1459	0.80	Each
Heat exchanger	1463	1.50	
Mixing elbow	1464	0.75	
Seawater/freshwater impeller	1462	0.50	
Seawater/freshwater pump	1461	1.00	
Thermostat/housing	1458	1.25	
V-belt	1465	0.75	
Water pump, coolant	1460	1.50	
Seawater pump pulley	2790	0.50	
Crankshaft, Mains, and Flywheel			
Balancer R&R	1452	1.60	
Crankshaft and main bearings	1448	3.80	
Crankshaft damper	1451	0.40	
Crankshaft flywheel seal	1450	1.50	
Crankshaft front cover seal	1449	1.60	
Flywheel R&R	1453	4.30	
Cylinder Block, Liners, Pistons, and Rods			
Pistons and/or rings	1478	5.20	All
Cylinder Head and Valves			
Cylinder head or gasket R&R	1476	1.80	All valves
Cylinder head retorque	1477	1.00	
Valve cover gasket or breather	1475	0.20	
Valve grinding or replacement	1472	1.80	
Valve push rod	1473	0.30	
Valve spring or stem seal R&R	1474	1.50	
Valve tappet adjustment	1471	0.70	
Engine Electrics			
Shutdown/gauge senders	1965	1.25	
Wiring harness, DC	1964	1.50	
Engine Mounting			
Engine R&R	1492	4.00	Each pair
Mounting tray	1491	2.50	
Vibration isolators	1490	1.25	

NOTE: R&R means remove and replace

Ford 8-12.5 kW, continued

Flat Rate Description	Flat Rate Number	Flat Rate Hours	Comments
Fuel			
Carburetor adjustment	1442	0.30	
Carburetor fuel shutdown solenoid	1445	0.90	
Carburetor R&R	1443	1.10	Includes adjustment
Carburetor rebuild	1441	1.75	
Electric choke R&R	1444	0.90	Includes choke adjustment
Fuel filter	1447	0.50	
Fuel pump R&R	1446	1.25	
Governor			
Governor actuator	1468	1.25	Electronic
Governor adjustment	1466	0.75	Mechanical or electronic
Governor controller	1469	1.50	Includes adjustments
Governor replacement	1467	1.50	Mechanical governor
Magnetic pickup	1470	1.00	
Ignition			
Crankshaft position sensor	1440	1.00	DIS system
Ignition coil R&R	1437	1.40	DIS or distributor type
Ignition module	1438	1.50	Electronic
Ignition timing	1439	0.25	Distributor-type ignition
Spark plug wires	1436	0.25	Replacement
Spark plugs replacement and cap	1435	0.25	
Lubrication			
Oil pan or gasket	1457	1.60	
Oil pump replacement	1456	0.50	
Oil filter R&R	2799	0.25	
R&R			
Generator set R&R from boat	2365	6.00	
Rebuild			
Major overhaul	1480	7.40	Includes valve service
Minor overhaul	1481	6.40	Excludes valve service
Short block R&R	1479	4.00	
Starting			
Starter drive R&R	1487	0.90	
Starter motor	1486	1.00	
Starter rebuild	1488	1.80	Includes R&R
Starter relay	1489	1.25	

1.2 Honda 3.5-6.5 kW

Flat Rate Description	Flat Rate Number	Flat Rate Hours	Comments
Air Intake and Exhaust			
Air cleaner assembly	1370	0.30	
Air cleaner case	1371	0.30	
Air cleaner element	1369	0.20	
Air intake hose	1372	0.20	
Crankcase breather	1376	1.00	
Exhaust elbow	1375	0.60	
Exhaust manifold or hose	1373	1.00	One
Exhaust manifolds/hoses	1374	1.30	Both
Camshaft and Timing Gear			
Camshaft	1379	1.60	
Camshaft drive pulley	1380	0.50	
Camshaft or seal	1381	0.60	
Engine timing pulley	1383	1.60	
Timing belt	1382	1.60	
Timing belt cover	1384	0.80	
Cooling			
Cooling fan	1385	1.00	Flywheel mounted
Cooling hose	1389	0.80	Each
Seawater pump	1390	1.10	
Heat exchanger clean	1387	1.50	
Heat exchanger end caps	1388	1.00	
Heat exchanger R&R	1386	1.50	
Thermostat bypass housing	1393	0.90	
Thermostat, housing, or gasket	1392	1.10	
Water pump, engine	1391	1.50	Cooling circulating pump
Crankshaft, Mains, and Flywheel			
Crankshaft R&R	1395	4.90	
Crankshaft bearing/seal	1396	2.75	
Each additional bearing/seal	1397	0.10	
Flywheel or flywheel key R&R	1394	1.50	
Cylinder Block, Liners, Pistons, and Rods			
Balancer weights/bearings	1403	3.20	
Connecting rod/bearing	1399	5.20	One
Connecting rods/bearings	1400	5.50	Both
Cylinder block/crankcase	1398	6.00	
Piston, ring, piston pin	1401	5.10	One
Pistons, rings, piston pins	1402	5.30	Both
Cylinder Head and Valves			
Cylinder head cover or gasket	1406	0.30	
Cylinder head or gasket	1407	3.00	
Rocker arm	1404	1.00	Includes rocker arm, shaft, pivot bolts, each
Rocker arm	1405	1.30	All
Valve guide	1410	3.20	Intake or exhaust
Valve guide	1411	4.10	All
Valve, spring, seal, retainer	1408	3.10	
Valve, spring, seal, retainer	1409	4.00	All

NOTE: R&R means remove and replace

Honda 3.5-6.5 kW, continued

Flat Rate Description	Flat Rate Number	Flat Rate Hours	Comments
Engine Electrics			
Battery charging regulator	1378	1.25	
Battery charging stator	1377	2.00	
Choke thermo switch R&R	1412	1.30	
Shutdown/gauge sender/switch	1413	1.50	
Wiring harness	1979	1.50	
Engine Mounting			
Generator mount base	1971	2.25	
Vibration isolators	1970	1.25	
Fuel			
Carburetor assembly R&R	1415	1.00	Includes R&R
Carburetor rebuild	1419	2.10	
Carburetor shutdown solenoid	1420	1.30	
Choke solenoid or rod	1421	0.90	
Fuel filter R&R	1416	0.20	
Fuel pump R&R	1417	1.25	
Intake manifold	1418	1.00	
Governor			
Antisurge spring	1425	0.20	Includes governor arm shaft, seals, weights, holders or slider, case or gear
Governor arm/rod	1423	0.40	
Governor R&R	1422	2.80	
Governor spring	1424	0.20	
Speed adjust	1426	0.30	
Ignition			
Ignition coil/module	1427	1.50	
Spark plugs	2814	0.50	
Lubrication			
Oil pump drive gear	1428	3.00	Includes crankshaft R&R
Oil pump rebuild	1429	2.80	
Oil filter R&R	2794	0.25	
R&R			
Generator set R&R from boat	2366	4.00	
Rebuild			
Engine long block R&R	1431	6.00	
Engine R&R from generator set	1430	3.00	
Starting			
Starter armature, brushes, etc.	1433	1.75	Includes R&R
Starter R&R	1432	1.50	Replacement
Starter solenoid	1434	1.00	Includes starter R&R

1.3 Kawasaki 4-7 kW

Flat Rate Description	Flat Rate Number	Flat Rate Hours	Comments
Air Intake and Exhaust			
Air cleaner R&R	3537	0.20	
Breather R&R	3538	1.20	
Duct seal, right & left	3558	0.30	
Duct seal, left & right	3559	0.70	
Muffler R&R	3568	0.20	
Camshaft and Timing Gear			
Camshaft or gear R&R	3539	1.40	
Cooling			
Cooling fan R&R	3543	0.50	
Heat exchanger R&R	3544	1.00	
Clean heat exchanger	3545	1.50	
Heat exchanger end caps	3546	1.00	
Cooling hose	3547	0.80	
Seawater pump R&R	3548	1.10	
Engine water pump R&R	3549	1.50	
Thermostat housing or gasket	3550	1.10	
Thermostat bypass housing	3551	0.90	
Crankshaft, Mains, and Flywheel			
Crankcase R&R	3552	4.90	
Crankshaft, oil seal/main bearing R&R	3553	4.10	
Flywheel R&R	3563	1.00	
Cylinder Block, Liners, Pistons, and Rods			
Connecting rod R&R	3542	3.30	
Cylinder bore and hone	3554	5.20	
End case R&R	3561	1.10	
Piston rings or pins R&R	3571	3.30	
Cylinder Head and Valves			
Cylinder head gasket R&R	3555	2.60	
Cylinder head R&R	3556	2.60	
Cylinder head cover R&R	3557	0.20	
Valve clearance adjust	3573	0.50	One/both
Valve, valve seat lapping R&R	3574	2.10	

NOTE: R&R means remove and replace

Kawasaki 4-7 kW, continued

Flat Rate Description	Flat Rate Number	Flat Rate Hours	Comments
Fuel			
Carburetor R&R or adjustment	3540	0.20	
Carburetor float bowl or jet R&R	3541	0.60	
Fuel pump R&R	3564	0.20	
Governor			
Governor adjustment	3565	0.20	
Governor R&R	3566	1.10	
Ignition			
Exciter, pulser, charger R&R	3562	1.20	
Ignition coil R&R	3567	0.20	
Lubrication			
Oil filter R&R	3569	0.20	
Oil pump R&R	3570	1.00	
R&R			
Generator set R&R from boat	4734	4.00	
Rebuild			
Engine R&R from generator set	3575	3.00	
Starting			
Electric start relay	3560	0.50	
Starter solenoid switch R&R	3519	0.30	

1.4 Kohler 7.5 kW

Flat Rate Description	Flat Rate Number	Flat Rate Hours	Comments
Air Intake and Exhaust			
Manifold, intake/exhaust	1185	2.00	
Exhaust mixer elbow	2817	0.75	
Camshaft and Timing Gear			
Camshaft gear R&R	1156	2.00	
Camshaft R&R	1157	3.00	
Cooling			
Circulating pump	1162	2.50	Each
Coolant hoses	1163	0.75	
Heat exchanger cooling tube/gasket	1164	1.75	
Heat exchanger end cap	1165	1.00	
Idler pulley	1166	1.00	
Mixing elbow	1167	0.25	
Seawater pump	1168	1.25	
Thermostat/housing	1169	1.50	
V-belt	1170	1.00	
Crankshaft, Mains, and Flywheel			
Balance gears R&R	1150	—	
Crankshaft and main bearing R&R	1151	5.00	
Crankshaft and rod	1152	6.00	
Crankshaft flywheel seal	1153	3.00	
Crankshaft PTO seal	1154	1.50	
Flywheel R&R	1155	2.00	
Cylinder Block, Liners, Pistons, and Rods			
Connecting rod	1180	3.50	
Piston and/or rings	1181	3.50	
Short block	1182	6.00	
Cylinder Head and Valves			
Cylinder head/gasket, replace	1179	1.00	No grinding
Valve cover gasket/breather	1173	0.50	
Valve grinding	1174	4.00	
Valve guide replacement	1175	2.00	
Valve R&R	1176	4.00	
Valve spring replacement	1177	1.00	
Valve tappet adjustment	1178	1.00	
Engine Electrics			
Shutdown/gauge senders	1977	1.25	
Wiring harness, DC	1976	1.50	
Engine Mounting			
Engine R&R from generator set	1190	3.00	

NOTE: R&R means remove and replace

Kohler 7.5 kW, continued

Flat Rate Description	Flat Rate Number	Flat Rate Hours	Comments
Fuel			
Carburetor, adjust	1144	0.50	
Carburetor R&R	1142	1.00	Includes adjustment
Carburetor rebuild, includes R&R	1143	1.75	Includes adjustment
Electric choke, R&R	1148	1.00	Includes adjustment
Electric fuel solenoid	1149	1.25	
Fuel drip tank, R&R	1147	1.00	
Fuel pump, R&R	1145	1.25	
Fuel pump rebuild, includes R&R	1146	1.50	
Governor			
Governor, adjustment	1171	0.50	
Governor, replacement	1172	1.00	
Ignition			
Ignition timing	1137	0.50	
Magneto	1139	1.00	
Magneto components	1140	0.25	
Points and/or condenser	1138	0.50	Replace and adjust
Spark plug wire (magneto ignition)	1141	0.40	Replace
Lubrication			
Oil pan and/or gasket, replace	1158	2.00	
Oil pressure adjustment	1159	0.25	
Oil pressure gauge	1160	0.25	
Oil pump replacement	1161	3.00	
Oil filter	2795	0.25	
R&R			
Generator set R&R from boat	2367	6.00	
Rebuild			
Major overhaul including valve service	1183	8.00	
Minor overhaul excluding valve service	1184	4.00	
Starting			
Starter rebuild including R&R	1187	2.00	
Starter drive R&R	1186	1.25	
Starter relay	1189	1.25	"C" relay
Starting motor, Bendix type, R&R	1188	1.00	

1.5 Yanmar 4-32 kW

Flat Rate Description	Flat Rate Number	Flat Rate Hours				Comments
		4-5 kW	7-8 kW	9 kW	10-32 kW	
Air Intake and Exhaust						
Air cleaner element R&R	1317	0.30	0.30	0.30	0.30	Includes R&R
Exhaust manifold	1320	1.50	1.50	1.50	1.50	
Intake manifold	1321	0.70	1.00	1.00	1.00	
Turbocharger R&R	1318	—	—	—	1.50	
Turbocharger rebuild	1319	—	—	—	3.00	
Exhaust mixer elbow	2815	0.75	0.75	0.75	0.75	
Camshaft and Timing Gear						
Camshaft bearings	1278	3.60	3.80	6.00	6.00	
Camshaft gear	1280	3.50	3.50	3.50	3.50	
Camshaft or tappets	1277	2.00	3.60	6.00	6.00	
Crankshaft timing gear	1279	3.50	3.50	3.50	3.50	
Gear case bearing	1281	4.60	4.90	—	—	
Cooling						
Coolant circulating pump R&R	1291	1.50	1.50	1.50	1.50	Includes belt guard R&R Each
Cooling system hose	1297	0.50	0.50	0.50	0.50	
Heat exchanger assembly R&R	1294	0.70	0.70	1.00	4.00	
Heat exchanger internal component	1295	1.50	1.50	1.50	1.50	
Mixing elbow	1296	0.30	0.30	0.30	0.30	
Sea/freshwater inlet pipe	1287	0.50	0.50	0.50	0.50	
Seawater pump	1289	1.00	1.00	1.00	1.00	
Seawater pump impeller	1288	0.90	0.90	0.90	0.90	
Seawater pump seal	1290	1.20	1.20	1.20	1.20	
Thermostat/gasket	1292	0.90	0.90	0.90	0.90	
Water pump V-belt	1293	0.50	0.50	0.50	0.50	
						Includes belt guard R&R seawater or circulating pump
Crankshaft, Mains, and Flywheel						
Crankshaft/main bearings	1272	4.60	4.90	10.00	10.00	Includes alternator R&R
Flywheel	1276	4.00	4.00	4.00	4.50	
Oil seal, flywheel end	1273	1.70	1.70	4.00	4.00	
Oil seal, front	1274	2.50	2.50	3.00	3.00	
V-belt drive pulley	1275	0.40	0.40	0.50	0.50	
Cylinder Block, Liners, Pistons, and Rods						
Cylinder block	1310	12.00	14.00	14.00	15.00	
Cylinder liner	1311	3.50	3.70	6.00	8.00	
Each additional liner	1312	0.30	0.30	0.30	0.30	
Piston/piston ring/pin bushing	1315	3.30	3.50	4.50	6.00	
Each additional piston/piston ring/ pin bushing	1316	0.30	0.30	0.30	0.30	
Rod or crank pin bearing	1313	3.30	3.50	4.50	6.00	
Each additional rod or crank pin	1314	0.30	0.30	0.30	0.30	

NOTE: R&R means remove and replace

Yanmar 4-32 kW, continued

Flat Rate Description	Flat Rate Number	Flat Rate Hours				Comments
		4-5 kW	7-8 kW	9 kW	10-32 kW	
Cylinder Head and Valves						
Cylinder head	1298	1.20	1.30	2.00	2.50	Replace
Cylinder head gasket	1299	1.10	1.20	2.00	2.40	Includes cylinder head R&R
Each additional intake/exhaust valve	1301	0.30	0.30	0.30	0.30	
Each additional valve guide	1305	0.40	0.40	0.40	0.40	Intake or exhaust
Each additional valve spring	1303	0.20	0.20	0.20	0.20	
Precombustion chamber/gasket	1309	0.30	0.30	—	—	Each
Push rod	1307	0.40	0.50	0.50	0.50	
Rocker arms	1308	0.40	0.50	0.50	0.50	
Valve clearance	1306	0.40	0.50	0.50	0.60	Check and/or adjust
Valve guide R&R	1304	2.20	2.60	3.00	3.20	Intake or exhaust
Valve replace	1300	2.10	2.40	2.00	2.00	Intake or exhaust w/lapping
Valve spring replace	1302	0.80	0.80	0.80	0.80	Intake or exhaust
Engine Electrics						
Alternator internal component	1323	2.00	2.00	2.00	2.00	Replacement
Battery charging alternator/generator R&R	1322	1.10	1.10	1.10	1.10	
Battery charging voltage regulator	1324	1.25	1.25	1.25	1.25	External regulator
Fuel rack solenoid	1329	0.50	0.50	0.50	0.50	
Shutdown switches/senders	1328	0.50	0.50	0.50	0.50	
Wire harness	1330	1.50	1.50	1.50	1.50	Engine DC harness
Engine Mounting						
Generator mounts	1332	0.75	0.75	0.75	1.00	Each pair
Mounting tray	1331	1.50	1.50	1.75	2.50	
Fuel						
Bleed fuel system	1270	0.50	0.50	0.50	0.50	
Each additional plunger/barrel	1266	0.50	0.50	0.50	0.50	
Fuel feed pump	1269	0.90	0.90	0.90	0.90	
Fuel injection pump delivery valve	1264	0.80	0.80	0.80	0.80	
Fuel injection pump plunger/barrel	1265	2.00	2.00	2.00	2.00	
Fuel injection pump R&R	1263	1.50	1.50	2.00	2.00	
Fuel injection valve	1267	1.10	1.10	1.10	1.10	
High pressure fuel pipe	1268	0.50	0.50	0.50	0.50	
Injection pump timing	1271	1.00	1.00	1.00	1.00	
Fuel filter R&R	2796	0.25	0.25	0.25	0.25	
Lubrication						
Lube oil control valve assembly	1283	0.50	0.50	0.50	0.50	
Lube oil inlet pipe	1285	0.60	0.60	0.60	0.60	Includes oil pan R&R
Lube oil strainer/filter	1284	0.20	0.20	0.20	0.20	
Oil pan	1286	0.50	0.50	0.50	0.50	
Oil pump	1282	3.50	3.50	3.50	3.50	Includes front cover R&R
Oil filter R&R	2797	0.25	0.25	0.25	0.25	
R&R						
Generator set R&R from boat	2368	5.00	6.00	6.00	6.00	
Starting						
Starter motor R&R	1325	1.10	1.10	1.10	1.10	
Start motor internal component	1326	1.75	1.75	1.75	1.75	Replacement
Starter relay	1327	1.25	1.25	1.25	1.25	K20 or "C" relay

1.6 John Deere 33-65 kW*

Flat Rate Description	Flat Rate Number	Flat Rate Hours		Comments
		33-40 kW	50-65 kW	
Air Intake and Exhaust				
Air cleaner R&R	3601	1.00	1.00	
Exhaust silencer R&R	3616	1.25	1.50	
Flexible exhaust connector	3617	1.25	1.50	
Recondition turbocharger	3618	1.80	1.80	
Air cleaner assembly R&R	3619	0.50	0.90	
Air cleaner element R&R	3620	0.20	0.30	
Exhaust manifold with turbo R&R	3621	1.80	2.00	
Exhaust elbow R&R	3622	0.60	0.60	
Exhaust elbow coupling R&R	3623	0.60	0.60	
Intake elbow and gasket	3624	0.60	0.60	
Intake manifold gasket R&R	3625	1.00	1.00	
Turbocharger gasket R&R	3626	0.80	0.80	
Camshaft and Timing Gear				
Camshaft and cam followers	3602	6.50	7.00	
Recondition rocker arm assembly	3627	1.20	1.40	
Camshaft R&R	3628	4.40	5.00	
Rocker arm cover/gasket	3629	0.60	0.60	
Timing gear cover or gasket	3630	2.20	2.40	
Cooling				
Coolant hose	3603	0.80	0.80	
Recondition idler pulley	3631	0.60	0.60	
Recondition water pump	3632	2.00	2.00	
Fan belts R&R	3633	0.60	0.60	
Fan pulley R&R	3634	0.60	0.60	
Thermostat housing R&R	3635	0.60	0.60	
Water pump/gasket R&R	3636	1.00	1.00	
Thermostat, covers, gasket	3637	0.60	0.60	
Seawater pump R&R	3638	1.00	1.00	
Seawater pump impeller R&R	3639	0.90	0.90	
Seawater pump seal R&R	3640	1.20	1.20	
Sea/freshwater inlet pipe	3641	0.50	0.50	
Crankshaft, Mains, and Flywheel				
Crankshaft front oil seal	3604	2.20	2.40	
Crankshaft idler gear/bushings	3642	2.60	2.60	
Crankshaft rear oil seal	3643	0.80	0.80	
Each additional idler gear/bushing	3644	0.40	0.60	
Crankshaft pulley R&R	3645	0.60	0.60	
Crankshaft R&R	3646	6.50	7.00	
Flywheel R&R	3647	0.60	0.60	
Flywheel housing R&R	3648	0.80	0.80	
Flywheel ring gear R&R	3649	1.00	1.00	
Main bearings R&R	3650	2.80	3.60	

* John Deere requires that the distributor/dealer have a factory-trained technician.

NOTE: R&R means remove and replace

John Deere 33-65 kW, continued

Flat Rate Description	Flat Rate Number	Flat Rate Hours		Comments
		33-40 kW	50-65 kW	
Cylinder Block, Liners, Pistons, and Rods				
Cylinder liner packing (first)	3605	6.50	7.00	
Each additional cylinder liner packing	3651	1.00	1.00	
Shortblock assembly R&R	3652	8.00	9.00	
Recondition pistons/rods/liners	3653	11.00	13.50	
Recondition piston/rod/liner crankshaft/camshaft	3654	18.00	21.50	
Recondition pistons/liners/valves	3655	11.50	13.50	
Recondition piston rings/valve	3656	13.50	17.50	
Cylinder block R&R	3657	17.00	19.00	
Cylinder liner R&R	3658	6.50	7.00	
Each additional cylinder liner	3659	1.00	1.00	
Piston R&R	3660	6.00	7.00	
Each additional piston	3661	1.00	1.00	
Piston ring R&R	3662	6.50	7.00	
Each additional piston ring	3663	1.00	1.00	
Piston and rods R&R	3664	8.00	10.00	
Pistons/liners/valves R&R	3665	7.50	9.50	
Rod and main bearing R&R	3666	3.40	4.80	
Rod bearings R&R	3667	1.40	1.60	
Each additional rod bearing	3668	0.20	0.20	
Rod/piston pin R&R	3669	6.50	8.50	
Cylinder Head and Valves				
Cylinder head component	3606	3.20	3.80	
Recondition valves	3670	6.00	7.00	
Recondition valve guides	3671	6.50	8.00	
Cylinder head gasket R&R	3672	2.80	3.80	
Valves R&R	3673	6.50	8.00	
Engine Electrics				
Engine wiring harness	3608	1.50	1.50	
Engine wiring harness R&R	3674	1.50	1.50	
Shutdown/gauge sender/switch	3675	1.50	1.50	
Engine Mounting				
Skid base	3607	3.50	4.00	
Vibromounts	3676	1.50	1.75	
Fuel				
Flexible fuel lines	3609	1.00	1.00	
Fuel shutoff solenoid	3677	0.60	0.60	
Injection pump drive shaft	3678	1.20	1.20	
Recondition injector pump	3679	6.00	6.00	
Recondition nozzle	3680	1.00	1.00	
Recondition each additional nozzle	3681	0.60	0.60	

NOTE: R&R means remove and replace

John Deere 33-65 kW, continued

Flat Rate Description	Flat Rate Number	Flat Rate Hours		Comments
		33-40 kW	50-65 kW	
Fuel, continued				
Fuel filter body R&R	3682	0.60	0.60	
Fuel filter bracket R&R	3683	0.60	0.60	
Fuel filter element R&R	3684	0.60	0.60	
Fuel hose or tube R&R	3685	0.60	0.60	
Fuel transfer pump R&R	3686	0.60	0.60	
Injector line R&R	3687	0.60	0.60	
Each additional injector line	3688	0.20	0.20	
Injector pump R&R	3689	1.40	1.40	
Leakoff lines R&R	3690	0.60	0.60	
Nozzle (first) R&R	3691	0.60	0.60	
Each additional nozzle	3692	0.20	0.20	
Governor				
Governor actuator R&R	3610	1.50	1.50	
Adjust engine speed	3611	0.60	0.60	
Governor controller R&R	3693	1.50	1.50	
Governor housing R&R	3694	0.60	0.60	
Governor magnetic pickup R&R	3695	1.50	1.50	
R&R				
Generator set R&R from boat	3614	6.00	6.00	
Lubrication				
Oil dipstick or tube	3612	0.60	1.00	
Filter elements R&R	3696	0.60	0.60	
Oil filter housing R&R	3697	0.80	0.80	
Oil filter inlet/gasket R&R	3698	1.00	1.20	
Oil pan or gasket R&R	3699	1.00	1.00	
Oil pump R&R	3700	1.40	1.60	
Oil pump R&R and recondition	3701	1.80	2.00	
Recondition oil cooler	3702	1.20	1.20	
Recondition oil regulator	3703	0.80	0.80	
Engine oil cooler R&R	3704	0.60	0.60	
Vent hose or tube R&R	3705	0.60	0.60	
Rebuild				
Install engine shortblock	3613	5.20	8.60	
Engine R&R	3706	3.80	6.50	
Starting				
Recondition starter	3615	2.40	2.40	
Starter R&R	3707	0.60	0.60	
Starter drive assembly R&R	3708	1.60	1.60	
Starter solenoid R&R	3709	0.60	0.60	
Starter relay R&R	3710	1.25	1.25	

Section 2 Generator Flat Rates

2.1 Capacitor-Excited Brushless 3.5-6.5 kW

Flat Rate Description	Flat Rate Number	Flat Rate Hours	Comments
Accessories			
Antisiphon valve	2061	1.50	Kohler supplied only
Sound shield, top	2059	0.50	
Sound shield complete	2060	2.00	
Remote meter panel/components	2063	1.50	
Ship-to-shore switch	2062	1.75	
AC Generator			
End bearing	2050	2.25	
Generator adapter	2051	2.50	
Rotor and fan	2048	3.00	
Stator	2049	2.50	
Rotor board R&R	2753	3.00	
Controller			
AC circuit breaker	2056	1.50	For generator excitation Each
Capacitor	2054	1.00	
Circuit board	2055	1.50	
Control relay	2058	1.00	
Controller R&R	2052	1.00	
Fuse holder/DC circuit breaker	2053	0.75	
Start/stop switch	2057	0.75	
Fuse R&R	2798	0.50	

NOTE: R&R means remove and replace

2.2 Kohler 4-32 kW

Flat Rate Description	Flat Rate Number	Flat Rate Hours			Comments
		4-8.9 kW	9-21 kW	22-32 kW	
Accessories					
Antisiphon valve	2075	1.50	1.50	1.50	Kohler supplied only
Sound shield, complete	2074	2.25	2.25	2.25	Includes base
Remote meter panel/components	2077	1.50	1.50	1.50	
Ship-to-shore switch	2076	1.75	1.75	1.75	Kohler supplied only
AC Generator					
Bearing/end bracket	2080	2.25	2.25	2.50	
Brush collector ring	2086	6.50	9.00	—	Includes rotor R&R and truing of collector rings
Brushes/brush holder	2087	1.75	1.75	—	
Exciter armature	2082	2.00	1.75	1.75	Brushless units
Exciter stator	2083	1.50	1.50	1.50	Brushless
Generator adapter	2081	3.50	4.00	4.50	
Output circuit breaker	2088	1.25	1.50	2.00	
Rectifier module	2085	1.50	3.00	3.00	Brushless
Rotor	2078	4.50	5.00	5.50	
Rotor circuit board	2084	0.75	0.75	0.75	Brushless
Stator	2079	3.50	4.00	4.50	
Voltage regulator, AC	2089	2.00	2.00	2.00	
Voltage regulator setup	2792	0.50	0.50	0.50	
Controller					
AC circuit breaker	2069	1.50	1.50	1.50	
Battery charging rectifier	2071	1.25	1.25	—	
Battery charging transformer	2072	1.25	—	—	
Circuit board	2068	1.25	1.50	1.50	
Control relay	2067	1.25	1.25	1.25	
Controller R&R	2064	1.00	1.00	1.00	
Fuse holder/DC circuit breaker	2066	0.75	0.75	0.75	
Hourmeter	3444	0.50	0.50	0.50	
Rewiring	3445	4.00	4.00	4.00	
Switches	2065	1.25	1.25	1.25	
Voltage regulator, AC	2070	2.00	2.00	2.00	
Voltage regulator setup	2791	0.50	0.50	0.50	
Fuse R&R	2787	0.50	0.50	0.50	Includes troubleshooting
Circuit breaker, DC	2800	0.75	0.75	0.75	

NOTE: R&R means remove and replace

2.3 Kohler 30-100 kW

Flat Rate Description	Flat Rate Number	Flat Rate Hours		Comments
		30-60 kW	61-100 kW	
Accessories				
Antisiphon valve	2075	1.50	1.50	Kohler supplied only
Sound shield, complete	2074	2.25	2.25	Includes base
Remote meter panel/components	2077	1.50	1.50	
Ship-to-shore switch	2076	1.75	1.75	Kohler supplied only
AC Generator				
Bearing/end bracket	2080	2.50	2.50	
Exciter armature	2082	2.00	2.00	Brushless units
Exciter stator	2083	1.50	1.00	Brushless
Generator adapter	2081	5.00	5.50	
Output circuit breaker	2088	2.50	2.50	
Rectifier module	2085	3.00	3.00	Brushless
Rotor	2078	6.00	6.50	Includes rotor board
Rotor circuit board	2084	0.75	0.75	Brushless
Stator	2079	5.00	5.50	Includes rotor, rotor board, and exciter stator
Voltage regulator, AC	2089	2.00	2.00	
Voltage regulator setup	2792	0.50	0.50	
Controller				
AC circuit breaker	2069	1.50	1.50	
Battery charging rectifier	2071	1.25	1.25	
Circuit board	2068	1.50	1.50	
Control relay	2067	1.25	1.25	
Controller R&R	2064	1.00	1.00	
Fuse holder/DC circuit breaker	2066	0.75	0.75	
Hourmeter	3444	0.50	0.50	
Rewiring	3445	4.00	4.00	
Switches	2065	1.25	1.25	
Voltage regulator, AC	2070	2.00	2.00	
Voltage regulator setup	2791	0.50	0.50	
Fuse R&R	2787	0.50	0.50	Includes troubleshooting
Circuit breaker, DC	2800	0.75	0.75	

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