



SECTION 24A PERIODIC MAINTENANCE AND LUBRICATION

PERIODIC MAINTENANCE

MOTOR GENERATOR MAINTENANCE INTERVALS

Regularly scheduled maintenance is the key to lower operating costs and longer service life for the

unit. The following schedules (figures 1 and 2) can be used as a guide. However, actual operating conditions under which a unit is run should be the determining factor in establishing a maintenance schedule. When operating in very dusty or dirty conditions, some of the service periods may have to be

SERVICE THESE ITEMS	AFTER EACH CYCLE OF INDICATED HOURS						
	8	100	200	400	500	1000	1500
General Inspection	4,000/6,000 watt						
Check Oil Level	4,000/6,000 watt						
Change Crankcase Oil		4,000/6,000 watt (1)					
Clean Air Cleaner		4,000/6,000 watt (1)					
Check Spark Plugs		4,000/6,000 watt					
Fuel Filter—Check				4,000 watt (2)	6,000 watt (2)		
Check Breaker Points		4,000 watt 6,000 watt(2)					
Clean Cooling Fins			4,000/6,000 watt (1)				
Change Oil Filter			4,000/6,000 watt (1)				
Replace Breaker Points			4,000 watt				
Replace Air Cleaner			4,000 watt (1)		6,000 watt (1)		
Remove Carbon From Heads			4,000 watt		6,000 watt		
Adjust Tappets				4,000 watt	6,000 watt		
Check Generator Brushes						4,000 watt	6,000 watt
Complete Reconditioning (If Required)						4,000 watt	6,000 watt

(1) Perform more often in extremely dusty conditions.

(2) Replace if necessary.

Figure 1—Onan Motor Generator Maintenance Schedule

SERVICE THESE ITEMS	AFTER EACH CYCLE OF INDICATED HOURS			
	8	50	100	200
General Inspection	X			
Check Oil Level	X			
Change Crankcase Oil (1)		X		
Clean Air Cleaner Element		X		
Replace Air Cleaner Element			X	
Check Spark Plugs			X	
Clean Cooling Fins				X
Check Breaker Points				X
Replace Fuel Filter			X	
General Tune-Up				X

(1) Initial oil change after 5 operational hours.

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Figure 2-Kohler Motor Generator Maintenance Schedule

reduced. Check the crankcase oil, the filters, etc., frequently until the proper service time periods can be established.

Additional information about the items on this schedule may be found later in this section.

LIVING AREA WATER PUMP BELT

Check the living area water pump belt for wear and adjust tension as necessary every 3 months or 3,000 vehicle miles, whichever occurs first. See "Living Area Water System" Section 24J for adjusting information.

WINTERIZATION

When traveling in winter it is recommended that the water tank not be filled until the destination is reached. This will ensure that the vehicle has

thoroughly warmed up. The water and holding tank systems should be drained before leaving for home.

Also, an approved plastic pipe non-toxic, non-flammable antifreeze should be put in the sink and shower traps. If equipped with a recirculating toilet the standard winterization is to replace one-half of the charge water with an approved plastic pipe non-toxic, non-flammable antifreeze. This antifreeze added to the holding tank will help keep the tank contents from freezing.

See "Vehicle Storage" for additional information.

CAUTION: *If the vehicle is equipped with a Thermasan waste destruction system, it is especially important that flammable cleaning agents, solvents or other highly combustible materials never be allowed to enter the holding tank via the kitchen or bathroom sinks, toilet or shower drains. These materials could create an explosion hazard in the vehicle exhaust system.*

VEHICLE STORAGE

The Motor Home may be stored for considerable lengths of time provided the following steps are performed:

1. SHORT TERM STORAGE - UP TO 60 DAYS AND ABOVE 32° F.

a. Fill fuel tanks to reduce excessive build-up of moisture in the fuel tanks.

b. Park Motor Home as level as possible, end for end and side to side.

c. Wash Motor Home. If exposed to road salts the exterior and underside should be thoroughly washed and flushed.

d. Check to make sure battery boost switch is left in the "BAT NORMAL" position. If left in the "BAT BOOST" position for extended periods, battery discharge will occur.

e. Remove all perishables, leave refrigerator door open. Be sure controls are turned off.

f. Ventilate the living area, drawers, cabinets, closets, etc.

g. Drain the holding tank, toilet and living area water system as described earlier in this section. Be sure the water pump and water heater are turned off.

h. Turn off LP gas at tank valve.

i. Make sure furnace manual valve and thermostat are set at "OFF," range/oven burners at "OFF," oven at "PILOT OFF" and gas/electric refrigerator control at "GAS OFF."

j. Plug or tape all drains to retard evaporation of residual moisture in drain traps.

k. Tape over vents to prevent insects from entering. Be sure to remove tape before operating LP gas appliances to help avoid poisoning by carbon monoxide.

l. Check Motor Home weekly to ensure that undesirable conditions are not forming (water seepage, mold, odors, etc.). Household air deodorizers or disinfectants in aerosol cans may be used as required, however, do not spray directly on any surface.

m. Maintain tire pressure of 60 psi.

n. Crack one window for ventilation, close all others as well as roof vents.

o. Check batteries (main, auxiliary and motor generator, if equipped) for charge. Specific Gravity reading of 1.255 is required to prevent deterioration. Add colorless, odorless drinking water, if necessary.

p. Turn off radio, exterior lights, and interior lights.

q. If Motor Home is to be moved, run engine at least two minutes with the transmission selector in "PARK."

r. Start and run engine for approximately 15 minutes weekly. Check engine, transmission and motor generator oil levels. Dipsticks should always be properly seated on tubes to prevent moisture from entering.

2. LONG TERM STORAGE – 60 DAYS OR MORE AND ABOVE 32° F.

a. Perform all of the above steps except for Step r.

b. Motor Homes without automotive air conditioning; remove spark plugs and squirt each cylinder

with "Super Engine Oil Supplement" available at your GMC Motor Home service outlet. Replace spark plugs.

c. Motor Homes with automotive air conditioning; run engine approximately 15 minutes with automotive air conditioning controls turned to "ON" position. Perform this operation every 30 days.

d. Treat all bright metal and rubber surfaces with a wax emulsion applied with a brush. A good liquid floor wax or equivalent is satisfactory.

e. Disconnect batteries, and check Specific Gravity every 30 days.

3. WINTER STORAGE – BELOW 32° F.

a. While many of the steps in preparing your Motor Home for storage when temperatures go below 32° F. are the same as preparing for storage above 32° F., freezing temperatures present an additional hazard.

b. Fill fuel tanks to reduce excessive build-up of moisture in the fuel tanks.

c. Check coolant level and add antifreeze if required, to protect to the lowest expected temperature during storage (at least – 35° F.).

d. Change engine oil as shown on the recommended S.A.E. Viscosity Chart to aid cold weather starting.

e. Park Motor Home as level as possible, end for end and side to side.

f. Wash Motor Home. If exposed to road salts, the exterior and underside should be thoroughly washed and flushed.

g. Check to make sure battery boost switch is left in "BAT NORMAL" position. If left in the "BAT BOOST" position for extended periods, battery discharge will occur.

h. Remove all perishables and anything which may freeze (canned goods, medicine, etc.). Leave the refrigerator door open. Be sure controls are turned off.

i. Ventilate the living area, drawers, cabinets, closets, etc.

j. Drain the holding tank, toilet and living area water system as described earlier in this section. Be sure the water pump and water heater are turned off.

k. Turn off LP gas at tank valve.

l. Make sure furnace manual valve and thermostat are set at "OFF," range/oven burners at "OFF," oven at "PILOT OFF," and gas/electric refrigerator control at "GAS OFF."

m. Add recreational non-toxic, non-flammable antifreeze (1/2 cup) to the kitchen, bathroom, and shower drains.

n. Tape over drain openings (except toilet) to prevent evaporation if storage is lengthy (6 months or more).

o. Crack one window for ventilation, close all other as well as roof vents.

p. Start and run engine weekly for approximately 20 minutes. If very low temperatures are expected the batteries should be removed and stored in a warmer area.

q. Check engine transmission and motor generator (if equipped) for evidence of oil leaks.

r. Maintain tire pressure of 60 psi.

s. Remove accumulations of snow as often as possible.

t. Turn off radio, exterior lights, and interior lights.

u. Tape over vents to prevent possible entry of snow. Be sure to remove tape before operating LP gas appliances, to help avoid poisoning by carbon monoxide.

v. Before moving, run engine at least two minutes with the transmission selector in "PARK" position.

ONAN MOTOR GENERATOR STORAGE

If the motor generator will be out of service for more than 30 days, the following steps should be taken to protect the unit.

1. Run the unit until thoroughly warm.

2. Disconnect fuel supply and run until unit stops.

3. Drain oil from crankcase while still warm. Refill and attach a warning tag stating oil viscosity used.

4. Remove each spark plug. Pour one ounce of rust inhibitor (or S.A.E. 50 oil) into each cylinder. Crank engine several times. Install spark plugs.

5. Service air cleaner.

6. Clean governor linkage and protect by wrapping with a clean cloth.

7. Plug exhaust outlet to prevent entrance of moisture, dirt, bugs, etc.

8. Wipe entire unit with a clean cloth. Coat rustable parts with a light film of grease or oil.

KOHLER MOTOR GENERATOR STORAGE

If the motor generator will not be used for an extended period of time, follow this procedure:

1. Drain oil from crankcase (while hot), then flush with clean light oil. Refill crankcase after flushing.

2. Drain fuel from sediment bowl and carburetor.

3. Clean exterior of plant, then spread a light film of oil on unpainted metal surfaces.

4. Remove spark plug and pour a tablespoon of oil (S.A.E. 30) into spark plug hole, turn engine over several times. Spark plug should be reinstalled.

5. Service air cleaner.

6. Plug exhaust outlet to prevent entrance of moisture, dirt, bugs, etc.

LUBRICATION

ONAN MOTOR GENERATOR

SERVICE INTERVALS

For service intervals refer to the Maintenance Chart provided earlier in this section.

CHECKING OIL LEVEL

Check the oil level daily, or at least every eight hours of operating time. Check more often on a new unit as oil consumption is generally higher until piston rings seat properly.

CHANGING OIL

Initial oil change should be made after the first 25 hours of operation; change every 50 to 100 hours after that. If operating in extremely dusty or cold weather conditions, change oil more frequently.

The 4KW Model has an oil capacity of 3 quarts, 3 1/2 quarts if replacing oil filter.

The 6KW Model has an oil capacity of 4 quarts; 4 1/2 quarts if replacing oil filter.

Do not mix brands or grades of motor oil. Use a good quality oil with the designation SE/CC. If necessary to add oil between changes, use the same brand and grade of oil.

Use the following chart as a guide for the proper oil according to temperature ranges:

Temperature	Recommended Oil
Above 30°F. 0°F. to 30°F. Below 0°F.	SAE 30 SAE 5W30 or 10W40 SAE 5W30

NOTE: Fill engine with oil through dipstick tube.

The oil drain plug is located on the bottom side of the engine oil pan. Unit must be pulled out on its slide rail to gain access.

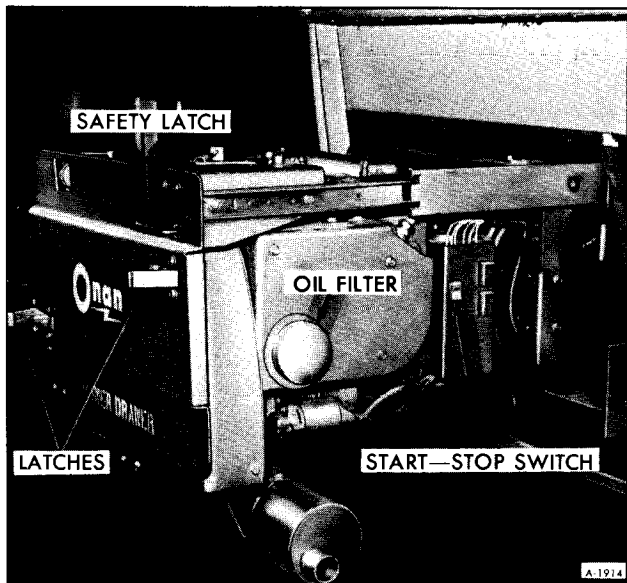


Figure 3—Onan Motor Generator

OIL FILTER (FIGURE 3)

Change the crankcase oil filter at least every 200 hours on the 4KW Model and every 100 hours on the 6KW Model. The filter is located on the right side of the unit (facing the compartment). Remove by turning counterclockwise with a filter wrench. Before installing new filter, coat the gasket on the filter's base with a light film of new oil. Install by turning clockwise until a light friction is noted, then turn an additional 1/4 to 1/2 turn.

CAUTION: Do not over-tighten filter as damage may occur to rubber gasket which will cause filter to leak. Be sure to install sealing ring around filter; this ring is an air seal to prevent cooling air loss.

KOHLER MOTOR GENERATOR

SERVICE INTERVALS

For service intervals refer to the Maintenance Chart earlier in this section.

CRANKCASE OIL (FIGURE 4)

The oil level should be checked every time the unit is operated. The unit must not be operated if the oil level is above the "F" mark, or below the "L" mark on the dipstick. The oil level should not be checked when the unit is running as oil may splash from the dipstick opening.

Use a good quality detergent oil that meets the A.P.I. (American Petroleum Institute) Service Designation SE/CC. use the proper SAE oil for expected temperature conditions.

Temperature	Recommended Oil
Above 30°F. 0°F. to 30°F. Below 0°F.	SAE 30 SAE 10W-30 SAE 5W-20

NOTE: Fill engine through dipstick tube.

IMPORTANT: The initial oil change should be at the end of 5 operational hours.

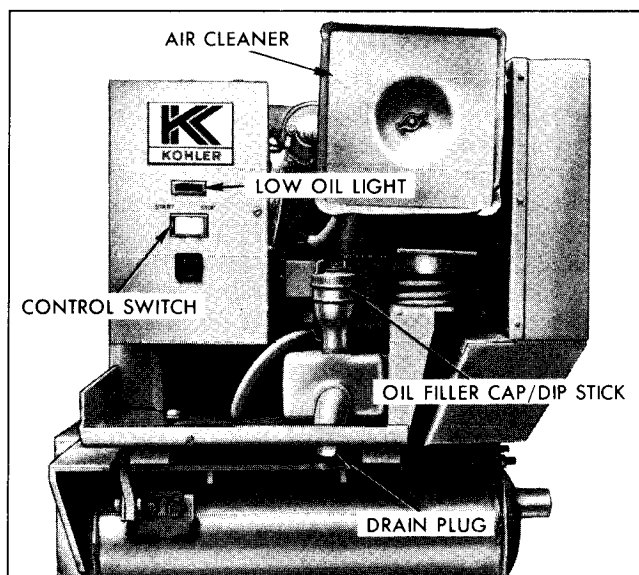


Figure 4-Kohler Motor Generator

The oil change interval is every 50 operational hours, or every 6 months, whichever comes first. If possible, change the oil while it is hot. The crankcase capacity is 3 quarts. The oil drain plug is located under the oil filler cap shown in Figure 4.