



Section VIII Owner Maintenance Data

This section provides general information for use in performing scheduled services as well as preventive and routine maintenance on your Wanderlodge®.

Caution

Cooling fan operation is controlled electrically by a thermostat which senses engine coolant temperature. Any time the engine is running the fan may engage and start to run without warning. The engine must be shut off and the fan stopped before servicing.

Specifications and Data

**Table 8-1
Engine and Chassis Specifications**

Engine	
Caterpillar 3208TA	300 HP
Transmission	ZF 5 HP 500 5 Speed
Chassis GVWR	37,400 lb.
Front Axle	14,600 lb.
Rear Axle	23,000 lb.
Wheelbase	236 in.
Air Brake System	
Front Axle	Self adjusting 16.5 in. × 5 in. brakes
Rear Axle	Self-adjusting 16.5 in. × 7 in. brakes
Air Reservoirs	Three Air Tanks 5,384 cu. in.
Retarder	Transmission Hydrodynamic Brake
Wheels & Tires (6)	Aluminum rim, 12R22.5, 16 PR tubeless steel-belted radial
Tire Inflation	See information plate inside stepwell compartment door (figure 4-1)
Axle Ratio	5.29:1
Leveling Jacks (Hydraulic)	
Front (each)	16000 lb. rating
Rear (each)	16000 lb. rating

A feature of the Wanderlodge® is a swing-out radiator which facilitates engine accessory belt changes.

Caution

Do not swing out radiator with engine running. Fan could start unexpectedly and cause serious injury.

Alternator Belt—	
W/L P/N 0814038—	Gates 9600 matched set
Power Steering Belt & Water Pump—	
W/L P/N 1333061—	Gates 9525 matched set
Air Conditioning Compressor Belt—	
W/L P/N 1396142—	Gates 9463 (1)
Fan Belt—	W/L P/N 1333053—
	Gates 9480 matched set

**Table 8-2
Engine/Chassis Capacities**

Diesel Fuel Tank Capacity	200 gallons
Fuel Additive recommended for use with #2 Diesel Fuel	US Borax Biobor JF
Fuel Additive to Use per 100 gallons	2.8 fl. oz.
Lube Oil System	
Refill Volume with Filter	
Change	20 quarts (dry)
Crankcase Capacity	Low Mark 12 quarts High Mark 16 quarts
Cooling System Capacity	61 quarts (approx. 85 qts. with cockpit & living area heaters)
Specification	low Silicate Ethylene Glycol Base Antifreeze (Formulation Standard GM 6038-M)
Oil Specifications for Engine	
API	CD/SE, CD/SF, CC/SE, or CC/SF
30 degrees to 100 degrees F	SAE 40, SAE 30, SAE 15W-40, or 10W-30
Below 30 degrees F	SAE 10W-30, 15W-40, 5W-20, or SAE 10W
Frequency of Oil Change	
Every 300 engine hours with—	CD/SE or CD/SF oil
Every 200 engine hours with—	CC/SE or CC/SF oil
Frequency of Filter Change	Every oil change
Oil Filter W/L p/n 3743481, CAT-9N6007	IR0714
Power Steering	
Specification	Dextron II
Capacity	4 quarts
Leveling Jacks	
Specification	Dextron II
Capacity	10 quarts



Transmission
 Specification Dexron, Dexron II
 Capacity (including oil cooler) 32 quarts

Table 8-3

Generator Capacities and Specifications

Electrical Rating 120 Vac 8 k.w.
 Fuel Supply
 Diesel: Tee in engine supply line.
 Coolant System Water-cooled
 Crankcase Capacity 4 quarts w/ filter,
 Oil Filter

KABOTA No. DKD-15241-3209-2

Oil Specifications for Generator
 API CC/SE, CC/SF, CD/SC
 CD/SE, or CD/SF
 30 degrees to 100 degrees F . . SAE 10W-30
 0 degrees to 30 degrees F . . . SAE 10W-30
 Below 0 degrees F SAE 5W-20

Table 8-4

Motorhome Capacities and Specifications

Potable Water Tanks 96 gallons
 (92 gallons 35 ft. side bath)
 Holding Tank, Gray Water 62 gallons
 35 ft. side bath
 Holding Tank, Waste 62 gallons
 LPG Tank 148 lbs.-net (43.5 gallons)
 Water Pump 3.5 GPM
 Water Heater 10 gallons
 Batteries
 Engine – (2) 12 Volt Batteries Connected
 Parallel to Provide 1850 CCA
 Coach – (2) 12 Volt Batteries Connected
 Parallel to Provide 400 AH
 Battery Chargers . . 45 amperes max output each
 Air Conditioners*
 Automotive 18,000 BTU
 Roof 13,500 BTU ea.
 Hot Water Circulating Heaters**
 Living Area (3) 50,000 BTU ea.
 Cockpit Area 90,000 BTU
 Gas/Hot Air Heaters*
 Living Area (3) 16,000 BTU ea.
 Electric Heaters
 120 volt (4) 1500 watts ea.

*NEMA Rating
 **SBBMA Rating

**Table 8-5
 Maintenance Schedule Summary**

Item
 — Frequency
 — Type of Service
 and Specification

Transmission

See Section X Diagram, Lubrication Guide for service of other Engine/Chassis components

Batteries

— Every engine oil change
 — Clean & coat coach & engine battery terminals with lubricant

Air Cleaner

— Replace when air cleaner indicator shows red after high power run. Loss of power and black smoke also indicate need for change. W/L P/N 3734191, Donaldson P12-9396

Fuel Filters

— 10,000 to 15,000 miles
 — Replace as required
 — W/L P/N 2236677, CAT 1P-2299
 Racor Filter and Water Separator
 Change when vacuum (Racor) gauge goes to red
 Element W/L P/N 2254035
 (Racor 2040SM)
 Gasket (large) W/L P/N 3747359
 (2) (Racor 11007)
 Gasket (T-handle) W/L P/N 3747342 (Racor 11350)

Air Brakes System

Reservoir Tanks

— Daily or depending on usage (not necessary with air dryer)
 — Drain each reservoir tank of moisture by opening petcock at bottom of tank.

Air Compressor Air Dryer

— 23,000 miles, or every 3 months, or every 900 hours. Refer to Bendix Air Dryer Manual.
 — Check/replace air dryer cartridge W/L P/N 2107753 (Bendix 287313)



Air Suspension System

- 1,000 miles to 3,000 miles, or every month
 - Check air springs for even inflation
 - Check for tightness of nuts, bolts, air connections
 - Check shock absorbers for oil leakage, worn bushings
 - No lubrication is required

Table 8-6
12-Volt Lighting Equipment

Item	Specification (Qty)/Amperes
Automotive Lighting Marker/Clearance/ Identification, bulb # 1895	(16)/4.5
Stoplights, bulb upper & lower # 1157	(4)/8.4
Parking Lights bulb # 1157 & # 194 (front inside)	w/tag (9)/4.5
Turn Signal Lights bulb # 1157	(2)/4.2
Cornering Lights, bulb # 1156	
Side Turn Lights, 2/side, 2 # 1895 bulbs/light Indicator Light W/L P/N 2271955	
Hazard Warning	(6)/12.6
Tag Light, bulb # 168	(1)/.35
Headlights and Taillights (with park & tag)	
Driving Lights, bulb W/L P/N 2126019	(4)/31.2
Instrument Panel—	
Gauges, bulb # 53	(14)/1.7
Spot Light, bulb W/L P/N 2103760	6.8
Stepwell outside, bulb # 53	(1)/.12
Stepwell inside, bulb # 67	(1)/.55
Landing Lights, bulb assy. W/L P/N 2261626	(4)/27.2
Backup Lights, bulb # 1156	(2)/3.8
Rear Parking Halogen	(2)/13.4
Engine Compartment Lights bulb # 1416	(1)/.8
Luggage & Stepwell Compartment Lights bulb # 1416	.8A. ea.
Porch light, bulb # F8T5/CW	(2)/2.2
Interior Lighting	
Reading Spots, bulb # 1383	(15)/1.54 ea.
Front Living, Flush, bulb# F15T8/CW	(8)/14.0
Aisle, Bulb # 53	(3)/.36
Bathroom Mirror bulb # F8T5/CW	(2)/2.2
Bathroom, Flush, bulb# F15T8/CW	(2)/3.5
Shower, bulb # 1141	(1)/1.5

Dinette, Flush, bulb # F15T8/CW . (2)/3.5
 Kitchen, Flush, bulb# F15T8/CW (2)/3.5
 Bedroom Flush bulb # F15T8/CW . . (4)/7
 Ceiling, Flush, bulb # F15T8/CW . (2)/3.5
 Vent Fans, bulb # 912 @ 1.0A. . (3)/4/Vent

Fuses

Electronic equipment fuses are located in 12 volt load centers. See diagrams in Section X.

Radio Privacy Switch — lower front component panel^ASK20.

AM/FM Stereo Tuner/Cassette Player — lower front component panel, ^ASK38.

Radio Memory Circuit — lower front component panel, ^ASK38.

Refrigerator — overhead front load center SK04.

Spot Light Rotation — overhead front load center, SK13.

Burglar Alarm — lower front component panel, ^ASK11.

Turn/Hazard Flasher — Lower front component panel, ^BSK05.

Changing Wheels/Tires

The wheel/tire assemblies used on your motorhome are heavy-duty truck-type. They are **heavy** and may be difficult to handle. If at all possible, changes should be accomplished by a service station equipped to handle truck equipment. However, if a situation arises where no service facilities are available, the following procedures may be used.

Front Axle Wheels

1. Drive motorhome out of traffic lane onto a level surface capable of supporting jack.
2. Turn on hazard flasher and apply parking brakes before leaving coach.
3. Turn off ignition and set transmission selector to **Neutral (N)** position.
4. Remove white plastic wheel saver, jack, lug wrench and handles from front curb side storage compartment.
5. Place wheel chocks against front & rear of tires on opposite side.
6. Place jack under axle and raise slightly until securely in place. See figure 8-1 for location of typical jacking point.



Caution

Bumpers are not designed for lifting and/or towing of the vehicle.



Figure 8-1. Locating Jack

7. Remove spare wheel assembly from mounting and place on ground near work area.
8. Pull off lug nut covers.
9. Install wheel saver.
10. Loosen lug nuts slightly, then jack up coach until tire is clear of ground. Solidly support the vehicle under the main frame rails with jackstands before working under or around the coach.

Caution

Severe injury or death may result. **DO NOT** use the leveling system for changing tires or working under the vehicle. Keep the rear wheels in firm contact with the ground with the parking brake set. With the leveling jacks extended, there is a possibility the vehicle may **move** either toward the front or the rear.

Note

Lug nuts on right side of coach are righthand threaded (turn counterclockwise to loosen, clockwise to tighten); lug nuts on driver's side of coach are lefthand threaded (turn clockwise to loosen, counterclockwise to tighten).

11. Remove lug nuts and wheel assembly.
12. Install spare and replace lug nuts. Tighten progressively in the sequence shown in figure 8-2 starting with # 1 and proceeding to # 10. Final torque will be 450 to 500 foot-pounds.

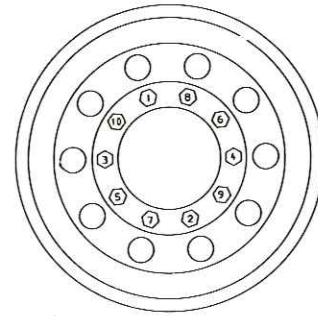


Figure 8-2. Lug Nut Tightening Pattern

13. Snap front hub cover into front wheel opening after front lug nuts have been properly torqued.
14. Place lug nut covers on all lug nuts. Make certain that these nut covers fit snugly. This is accomplished by squeezing the dimpled sides together before installing.
15. Lower coach to ground and remove jack and handle.
16. Replace wheel saver, lug wrench, jack and handles in storage compartment and tie down to prevent road noise. Return damaged wheel/tire assembly to holder and have it repaired as soon as possible.
17. Remove and stow wheel chocks.
18. Turn off hazard flasher before returning to traffic.

Caution

Check lug nuts for tightness every 1,000 miles. Lug nuts should be torqued to 450 to 500 foot-pounds.

Drive Axle Dual Wheels

1. Repeat steps 1 through 10, front axle wheels.
2. Loosen inner lug nuts (studs with square heads), if inner wheel is to be replaced.
3. Remove outer lug nuts from the (5) studs which have lock rings and slide hub cover over remaining lug nuts.
4. Remove the (5) remaining lug nuts and wheel.
5. Remove inner lug nuts and inner wheel, if inner wheel is to be replaced.
6. Install replacement wheel and inner lug nuts. Tighten progressively in the sequence shown in figure 8-2 starting with # 1 and proceeding to



- # 10. Final torque should be between 450 and 500 foot pounds.
7. Install outer wheel (or replacement wheel) and lug nuts over inner lug nuts marked 1, 3, 7, 9 and 6. Torque nuts in the following sequence 1, 7, 6, 3 and 9 to between 450 and 500 foot pounds.
 8. Install hub cover over the (5) lug nuts holding wheel to hub. Place lock rings and lug nuts on remaining inner lug nuts 10, 5, 2, 4 and 8.
 9. Replace wheel saver.
 10. Torque nuts in the following sequence 10, 2, 8, 5 and 4 to between 450 and 500 foot pounds.
 11. Return to step 14 of **Front Axle Wheels** and continue.

Note

When checking torque on dual wheels loosen all outside lug nuts. Check torque on inner lug nuts (studs with square heads) for torque value shown above then torque outer lug nuts to value shown above.

Battery Maintenance

Your motorhome is equipped with separate engine and coach battery systems for greater assurance that there will be sufficient voltage to crank the motorhome engine.

Two batteries are located in the rear engine compartment on the road side. Batteries are also located in the road side front compartment and are used for coach loads.

All batteries are charged from either the engine alternator or battery chargers (when 120 volts ac is available). Note that the generator will supply 120 volt ac to the battery chargers.

Caution

Avoid sparking of any form in the vicinity of the batteries.

Caution

Do not wear metal rings, watches or jewelry when working on or near the batteries, cables, solenoids, or chassis wiring. These can short out electrical wiring and cause injury

To make sure that the batteries are always ready for use, periodically check and charge as

necessary. Check batteries at least every two weeks in freezing weather; at least every four weeks in warmer weather. A fully-charged battery will not freeze under normal circumstances, so it is imperative that the batteries remain charged during winter. It is advisable to have the coach shoreline connected to the 120 volt ac supply so that the batteries remain fully charged.

A dirty battery may eventually dissipate its charge through conductive surface contamination. Clean battery top surface with a damp cloth and dry thoroughly. Check that battery terminals are tight and free of corrosion. To clean terminals, neutralize corrosive deposits with a solution of baking soda, rinse with clear water, and dry. Note that commercial type spray-on battery cleaners are available at automotive supply stores. Use as directed to keep the batteries clean. Spray-on cable and terminal protective coatings are also available, easy to use, and effective.

Exterior Care

Exterior paint finish life can be extended by periodic cleaning and waxing. This will preserve the paint and allow easier removal of dirt and road tars. Use touch-up paint for small areas to keep the coach finish in like-new condition.

Caution

Avoid the use of strong detergents, such as those used in commercial truck washes. These detergents can discolor the aluminum trim on your coach.

Frequent washing of the coach is necessary to prevent corrosion in areas where heavy salt sprays are evident. A clear acrylic spray may be used, with care, to control corrosive effects of salt spray on metal surfaces.

Caution

Avoid spraying water through the refrigerator vent door.

Interior Care

The interior can be kept in good condition with the use of approved cleaning agents for vinyl walls and ceilings, plastic fixtures, stainless steel, formica and so on. Never use abrasive cleaning agents on interior of refrigerators, or on the lavatory, tub/shower, or toilet, as they can cause permanent scratches. Be sure that the cleaning agent will not damage the material. Note that some plas-



tics are incompatible with certain cleaners. Read the directions on the container before using. For the most part, the cleaners and polishes that would normally be used in your home are equally well-suited for use in your motorhome.

Fluid Level Checks

Crankcase Oil Level

The crankcase oil dipstick and oil fill are located inside the left rear side engine compartment access door, attached to the front of the compartment.

The oil level must be checked only with the engine off. Maintain oil level at the proper fill line. If checking oil level immediately after engine has been operating, allow a few minutes for the oil to drain back into the crankcase before checking the oil level reading.

The best time to check the oil is before getting underway because the engine is cool and the reading will be most accurate.

Power Steering Reservoir Fluid Level

Regularly check fluid level in the power steering reservoir. Reservoir is located behind rear engine compartment door to right of radiator. Add Dexron II as necessary to maintain the correct dipstick reading, depending on fluid/engine temperature. (Note that the dipstick is attached to the T-handle plug on top of the reservoir). If the fluid is at normal operating temperature — about 150 degrees, and hot to touch — the dipstick should indicate **FULL** or just below. If engine is cool, fluid level should read about 1/2 way between the **ADD** and **FULL** marks.

Transmission Fluid Level

The transmission dipstick is located inside the left rear engine side access door. It is a "T" handle above left engine valve cover.

Importance of Proper Oil Level

Since the transmission oil cools, lubricates, and transmits power, it is important that the proper oil level be maintained at all times. If it is too low, the converter and clutches will not receive an adequate supply of oil. This can result in poor performance or transmission failure. If the level is too high, the oil will aerate, causing the transmission to overheat. Check the oil level at intervals specified in your vehicle service instructions, or more frequently, if operating conditions indicate.

Oil Check Procedure

For oil check procedure refer to **ZF Ecomat Operating Instructions** Section II operation number 8.

Note

Always clean around the end of the fill tube before removing the dipstick. Dirt or foreign matter must not be permitted to enter the oil system. It can cause valves to stick, cause undue wear of transmission parts, or clog passages. Check the oil level and report any abnormal oil level to your maintenance personnel. Check for abnormal oil level, milky appearance or any trace of coolant in the oil.

Racor Fuel Filter and Water Separator System

Filter/Separator Operation

The three stages of the Racor filter/separator, figure 8-3, work in series to progressively clean the diesel fuel. Because virtually all water and larger particles of solid contamination are removed in the primary and secondary stages, the effective life of the fine micron replaceable element is 2-3 times longer than standard filters.

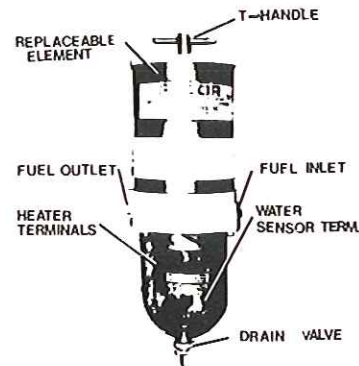


Figure 8-3. Racor Fuel Filter/Separator

Primary Stage (Separation) — In the primary stage, liquid and solid contamination down to 30 microns are separated out by centrifugal action created by the turbine centrifuge. There are no moving parts in this highly efficient design. Because the contamination is heavier than the fuel it falls to the bottom of the clear bowl.

Secondary Stage (Coalescing) — This stage functions when minute particles of liquid contaminants (lighter than the fuel) remain in suspension and flow up with the fuel into the lower part of the



filter/separator shell. Here the minute particles tend to bead on the inner wall of the shell and the bottom of the replaceable cartridge. As the beads accumulate, they become larger and heavier and will eventually fall to the bottom of the filter/separator bowl.

Final Stage (Filtration) — In this stage the fuel enters the replaceable cartridge where the minute solids are removed.

In-Filter Fuel Heater

Internal automatic thermostats turn on the Racor in-filter fuel heater as the fuel temperature drops below 35°F. (1.7°C.)

The in-filter fuel heater operates from the 12-volt battery source, supplying heat to the fuel filter just below the replaceable element. This critical placement provides increased fuel temperature as the fuel passes through the fine micron filtering element.

When the engine is not running and the temperature is below 35°F., the heater is operated by turning on the ignition switch for a maximum of 10 minutes prior to starting the engine. With the diesel fuel temperature above 35°F, there is no waxing or icing of the filter element. The in-filter heater is primarily a cold starting aid. Note that the top two terminals imbedded in the glass filter bowl connect to the internal heater.

Water-In-Filter Alarm

The electronic water sensor alerts the operator when liquid contaminants filtered out of the system should be drained from the collector bowl, thereby maintaining maximum filter/seperator efficiency.

When water reaches a pre-determined level in the collector bowl, sensing probes activate the **Water-In-Filter** alarm circuit. The light illuminates, warning the operator to drain excessive water contamination collected in the bowl. Shut down engine before draining the bowl to avoid sucking air into the system. Note that the bottom two terminals imbedded in the bowl connect to the water sensors.

Maintenance

Filter Element — Routine maintenance of the Racor unit consists of periodic filter replacement and drainage of the moisture collected at the bottom of the bowl. (Engine is off during maintenance.)

Filter Element Replacement — Replace the element as follows:

1. Loosen handle and remove lid.
2. Inspect lid gaskets and replace, if necessary.
3. Remove filter element by grasping bale and lifting upward while rotating.
4. Replace Racor element by positioning over center return tube and twisting downward into place.
5. Top off by pouring clean diesel fuel into filter cylinder until full.
6. Replace lid and hand-tighten handle.

Draining — Drain bowl of accumulated moisture by opening petcock on bottom of bowl. Allow to flow until clean fuel appears.

Fuel Tank Sending Unit Location

The sending unit is located in the center of the coach directly in line with the living room end table. Access is accomplished by pulling up carpet and pad to expose cut out in plywood floor. Remove plywood cover and sheet metal plate to expose sending unit.

Leveling Jacks Reservoir

The leveling jacks oil fill is located beneath the center entry step. Lift up the hinged step top (hinge at door side) and remove the screws attaching the square metal cover plate to gain access to the oil fill to check oil level.

Engine Cooling System Refill

Use of low silicate ethylene glycol base antifreeze (formulation standard GM 6038-M) is recommended for summer or winter operation because of its corrosion inhibition and lubrication properties. A 50-50 solution of antifreeze and water is preferred and it gives freeze protection to about 30°F below zero. Ultimate protection is attained at 68% antifreeze (about 92°F below zero); a higher concentration of antifreeze should never be used. The approximate (dry) cooling system capacities are:

Engine, Radiator, & Engine Hoses	15.25 gallons
Right front heater system	2 gallons
Rear coach heater system	4 gallons
Total	21.25 gallons (85 quarts)



... so the system would require 10.6 gallons of anti-freeze for a 50% solution or 14.5 gallons for a 68% mixture. Final solution should always be tested with a thermo-hydrometer or equivalently reliable testing device to determine actual protection.

If it becomes necessary to completely re-fill the chassis coolant system, the following procedure must be followed. Pure antifreeze can be used initially until prescribed amount has been installed, and then water for final filling.

Engine, Radiator, and Engine Hoses

Locate and close the manual gate valves separating the engine from the heater systems. Both pressure and return valves for the coach heaters are located on the engine with access through the LH engine compartment. Remove the radiator cap and fill to the top. Replace radiator cap and run engine @ 1500 to 2000 RPM for one minute to purge air from the engine water jacket. Shut off engine, carefully remove the radiator cap, re-fill the radiator, and replace the cap.

NOTE

Use extreme care at all times when removing the radiator cap as hot coolant under pressure can cause injury.

Front (Cockpit) Heater and Coach (Chassis) Rear Heater Systems

Air bleeder valves are located on the LH rear bumper bracket for the coach system and on the RH front heater with access through the front access panel (black tubing) for the front heater. Leave the return line gate valves closed and open the pressure line valve for front and coach heaters. Slide the **FRONT HEAT** control (figure 2-9) to warm and the **HEAT SELECTOR** switch (item 1, figure 2-11) to **WINTER**. Press the **AUX. PUMP** switch (item 2, figure 2-11) **ON**.

Set area thermostats to the maximum high temperature position. Using suitable containers to catch coolant, open the bleeder valves and run the engine slightly over 2,000 RPM until a steady flow of coolant passes through the front heater bleed valve. Close front heater bleed valve.

To ensure bleeding of the coach (chassis) heaters, the following additional operations should be performed.

1. Again run the engine slightly over 2,000 R.P.M. until steady flow comes from the bleeder valve on the LH rear bumper bracket.

Note

The radiator must be filled often during bleeding procedures.

2. Close rear bleeder valve and open return gate valve (engine compartment). Refill radiator using coolant recovered from bleeder valves and additional water as necessary.
3. Start and rev engine to maximum governed R.P.M. 2-3 times. Push **HEAT SELECTOR** switch to **SUMMER** and rev engine to max R.P.M. 3-4 times.
4. Return **HEAT SELECTOR** switch to **WINTER** and test heaters to make sure they are blowing hot air.
5. Shut down engine and allow to cool.
6. Fill radiator completely.

Cooling System Additives

Automotive cooling systems are subject to various types of corrosion, rust, pitting and cavitation-erosion. These are common factors which prevent efficient cooling and contribute to engine overheating and higher maintenance costs resulting from replacement of hoses, fittings, filters and cracked heads. The manufacturer of the engine used in your motorhome recommends the use of Nalcool 2000 — a chemically buffered liquid additive which effectively neutralizes the formation of acids caused by dissolved exhaust gases, and inhibits the cooling system against corrosion and scale formation. This additive is compatible with most commercial automotive anti-freeze solutions containing ethylene glycol; however, its use is not recommended in cooling systems using Dow Therm 209. When refilling the coolant system, add four pints of Nalcool before topping off with anti-freeze solution. To ensure constant system protection, replenish Nalcool 2000 additive, periodically, in accordance with manufacturer's instructions.

Windshield Washers

Check reservoir fluid level periodically and use a prepared washer solution if possible. (Note that low reservoir levels are indicated by a dash monitor light.) During freezing weather, use a solution additive, or a solution specifically designed for cold weather usage. The washer reservoir is accessible through the front curb side storage compartment.



Jump-Starting

Proper procedure for jump-starting is as follows:

1. Turn off all main battery-operated accessories in both vehicles — lights, radio, etc.
2. Connect one end of the positive-coded jumper cable to the positive (red) battery terminal, and the opposite end of the cable to the positive (+) terminal on the other battery.
3. Connect one end of the negative-coded jumper cable to the negative (-) terminal on the other battery and the opposite end of the cable to the negative (black) battery terminal.
4. Once the engine of the disabled vehicle is started and brought up to idle, reverse the above procedure to remove the jumper cables. Always remove the jumper cable connected to the Wanderlodge® negative (black) battery terminal first to prevent sparks at the other battery.

Caution

Avoid sparks in the vicinity of a charging battery: the gas produced is explosive.

Generator 8.0 k.w.

Keep the generator operating at peak efficiency by following a regular schedule for inspections and servicing, based on operating hours. Keep an accurate logbook record of maintenance, service and hours of operation, following regular schedules for normal operating conditions, and a more frequent service schedule for operation under dusty or dirty conditions. Check condition of crankcase oil and change air filter frequently until the proper service/time periods can be determined based on your usage.

After the first 15 to 30 hours of operation, arrange to have the following performed at an authorized service center.

- Drain and refill engine oil.
- Replace engine oil filter.
- Check external nuts and bolts for tightness.
- Torque cylinder head nuts.
- Check and adjust valve tappets.
- Check for fuel or lubricating oil leaks.
- Check radiator coolant level and inspect cooling system for leaks.
- Check and adjust water pump belt tension.
- Check mounting tray bolts and vibro mounts for tightness.

- Operate generator set at full or rated load, checking for proper output and governor operation.

Maintenance Schedules

Use the generator maintenance schedule in table 8-7 as a guide for routine and periodic maintenance. Neglecting generator maintenance can result in failures or permanent generator damage. Refer to the generator service manual for detailed repair and maintenance.

**Table 8-7
Generator Maintenance Schedule**

Frequency

— Service

Daily, or before each startup

- Check oil level
- Check coolant level
- Clean radiator intake screen

Every 100 hours, or 6 months, whichever occurs first

- Change lubrication oil
- Change oil filter
- Check engine for oil, water, or fuel leakage
- Check belt tension

Every 200 hours, or 12 months, whichever occurs first

- Check hoses and clamps
- Check and tighten electrical connections
- Check exhaust system for leakage
- Check and tighten mounting bolts
- Check generator brushes, commutator and slip rings
- Replace fuel filter element
- Check electrical system for frayed wires, corroded connections
- Replace air filter

Every 400 hours or 12 months

- Contact authorized service center for tuneup to include:
 - Injector inspection
 - Check and adjust valve tappets
 - Clean slings and inspect brushes
 - Check governor operation and adjust as necessary.

Periodically, perform a complete visual inspection of the generator when operating at full load.



Oil Pressure

Always ensure that with the engine running, oil pressure is registering on the upper dash generator oil pressure gauge.

Pressures do vary according to climatic conditions and even between individual engines, but the oil pressure range at normal working speed and temperature will usually vary between 30 to 60 psi. The pressure will drop while the engine is idling and also a slight drop will be experienced when the oil is hot.

Oil Filters

To ensure cleanliness of the lubricating oil, a sump strainer and a main full flow type of oil filter are used. The sump strainer consists of a gauze wire container which is fitted over the end of the lubricating oil pump suction pipe. All oil must pass through this strainer before it reaches the oil pump.

The main full flow type oil filter is mounted externally on the side of the cylinder block. All the oil passes through this filter after it leaves the pump, but before it reaches the bearings.

The full flow filter is a spinon cartridge in which the element is an integral part. Filter should be replaced at each oil change.

Replacing Oil Filter Cartridge

1. Unscrew the cartridge from the filter head.
2. Check that the threaded adapter is secure in the filter head and discard the old cartridge. Clean the filter head.
3. Using clean engine lubricating oil, lightly oil the top seal of the new cartridge. Prime filter by filling with new oil to bottom of threaded hole.
4. Screw the new cartridge on to the filter head until the seal just touches the head and then tighten by hand a further half of a turn. If the cartridge is overtightened, it may be difficult to remove later on.
5. Since the filter cartridge will normally be changed at the same time as the engine lubricating oil, refill the sump with oil, run the engine and check for oil leaks. Recheck the oil level after running the engine and add oil as necessary.

Oil Check

To be on the safe side, check oil in engine crankcase daily, or before each start, to ensure that the level is in the safe range between the **L** and **F** marks

on the dipstick. Do not operate generator if level exceeds **F** mark, or is below **L** mark.

Caution

Do not check oil level while engine is operating. Engine must be stopped to obtain a true reading, as well as for safety reasons!

Oil Change

On a new engine, change the oil after the first five hours of operation and, thereafter, at 100 hour intervals, or every six months, whichever occurs first. Whenever possible, drain the oil while the engine is still warm. To drain, place a container below the unit, open the oil drain and allow sufficient time for the old oil to drain completely. After draining, close drain plug and tighten securely.

Cooling System

To avoid having the inconvenience of the generator shutting down due to overheating, or becoming damaged as a result of an overheat condition, be sure to keep the cooling air inlets to the compartment clean and unobstructed at all times.

When operating in climates subject to freezing temperatures, make sure that enough antifreeze solution is added to the coolant to prevent system freeze-up. (A drain petcock is provided on the underside of the radiator.)

Check coolant level frequently and add anti-freeze mixture as needed to maintain correct level.

Table 8-8
Anti-Freeze Protection Chart

Anti-Freeze Protects to:	Mixture Proportions (ethylene glycol)
+ 16 degrees F (– 9 degrees C)	20%
+ 3 degrees F (– 16 degrees C)	30%
– 11 degrees F (– 24 degrees C)	40%
– 31 degrees F (– 35 degrees C)	50%

Generator Troubleshooting

Refer to the generator service manual for repair and maintenance data. Generator repairs should be accomplished by a qualified repair agency.

Generator Overloads

If the rated capacity of the generator is exceeded, the safeguard circuit breaker, located in outside compartment just to the rear of the generator compartment, will trip to protect the



generator against damage. This condition could be caused by a short in the coach ac supply circuits, or by operating too many appliances simultaneously, resulting in an overload condition. If the safeguard circuit breaker trips, the generator will continue running but no ac output will be supplied. Before resetting the circuit breakers, turn off some of the coach appliances and lighting to reduce the load to within the operating limits of the generator. If this is done, and the generator breakers still trip, a short circuit is indicated. Turn off the generator, locate and correct the cause of the short circuit.

Storage Procedures

If the generator is to be out of service for a long period of time, perform the following procedures before placing the unit in storage:

1. Drain oil from crankcase (while hot) then flush with clean lightweight oil. Refill crankcase with regular-weight oil after flushing.
2. Clean exterior surfaces of generator set then spread a light film of oil over any unpainted metallic surfaces which could corrode.

Refrigerator

To ensure that your refrigerator will provide trouble-free operation, the following routine maintenance procedures should be performed at least once each year:

1. Inspect all gas connections for leakage, using a solution of soapy water. Tighten, as necessary.
2. See owner's installation and operating instruction manual for periodic maintenance requirements.

Water Pump

Under normal usage, the water pump should require no periodic maintenance other than ensuring that the input water supply is properly filtered of particles that could damage the pump mechanism. Pump failures can generally be tied in to the plumbing system, or to electrical wiring. If the pump fails to operate properly, refer to the general trouble-shooting guide given in table 8-9. Note that detail pump repairs and overhaul should be performed by a qualified repair facility.

A pumpguard filter is provided on the suction side of the water pump. This should be cleaned periodically.

Table 8-9
Water Pump Troubleshooting Guide

Symptom

- Possible Cause
- Corrective Action

Pump operates but no water flows through faucet.

- Low water level in tank.
 - Add water.
- Suction lines or filter clogged.
 - Clear water lines and clean filter.
- Kink in water suction hose.
 - Check water hose connections to tank and straighten or replace, as necessary.
- Air leak in suction line.
 - Replace suction line.

Pump cycles on and off when faucets are closed.

- Water leak in plumbing.
 - Check for signs of leakage and tighten or replace fittings, pipe, etc.
- Defective toilet flush valve.
 - Repair flush valve.

Pump operates roughly and has excessive noise and vibration.

- Intake line is restricted, kink in suction hose or fittings too small.
 - Check input hoses and straighten or replace, as necessary.
- Loosened screws at pulleys and connecting rod.
 - Tighten screws.
- Deformed or collapsed pulsation dampener in pump.
 - Replace dampener.

Pump fails to start when faucet is opened.

- Clogged pressure piping.
 - Blow out water lines with compressed air.
- No voltage to pump.
 - Check input wiring, circuit breaker and switches.

Pump fails to stop when faucets are closed.

- Empty water tank.
 - Add water.
- Insufficient voltage to pump motor.
 - Check battery voltage. If voltage is OK, pump is defective.



Holding Tank Drain Valves

Periodically the drain valve may become hard to open. It is recommended that the (2) two screws in top of mechanism be removed and pull paddle out. After cleaning paddle a coat of vaseline should be added to both surfaces and valve reassembled.

Clock/Thermometer Calibration Procedures

The thermometer section of the Clock/Thermometer indicates either the inside temperature or outside temperature, depending on the position of the panel pushbutton. It may be necessary to recalibrate the unit if there are differences between the actual inside or outside temperatures and the corresponding displays.

Thermometer Calibration

Procedures

1. Place an accurately calibrated thermometer unit next to the outdoor temperature probe (located under metal shield on outside of lower roof rail near refrigerator vent) while the coach is in a protected environment away from direct sunlight, rain, winds, etc. Note the thermometer reading.
2. Press in the outdoor panel switch and compare the digital display reading with the actual outside temperature noted previously. If the reading disagrees sufficiently to require calibration, open the monitor panel so that the rear of the thermometer unit is accessible. (If the readings agree, proceed to step 3.) Adjust the outdoor calibration control, located in the extreme left center of the rear panel, as necessary, to make the display agree with the thermometer reading.
3. Place the calibrated thermometer unit next to the indoor temperature probe and note the thermometer reading.
4. Press the **Indoor** panel switch and compare the digital display reading with the actual inside temperature noted previously. If the readings disagree sufficiently to require calibration, open the monitor panel so that the rear of the thermometer unit is accessible. Adjust the indoor calibration control, located on the lower left-hand side of the rear panel, as necessary, to make the display agree with the thermometer reading. Replace the monitor panel.

User maintenance of this equipment is not recommended.

Tub/Shower Mixing Valve

The water mixing valve used in the tub/shower contains a pressure balancing spool valve, figure 8-4, to make sure there are no sudden temperature changes. Water mineral deposits which can accumulate in the valve body and spool valve will affect the normal operation of the mixing unit. To gain access to the valve body, remove the screws which hold the faceplate to the shower wall. (Water supply must be turned off.) Remove the control knob, then lift off the faceplate.

To remove the spool, unscrew the large center screw and carefully withdraw the spool from the valve body. Inspect O-rings for damage and replace, if necessary. Flush out spool of any foreign material, then replace in valve. Replace faceplate and secure with screws. Replace knob.

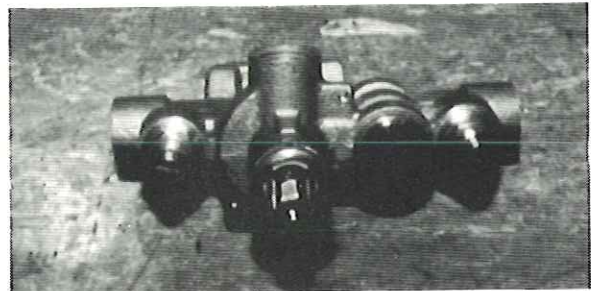


Figure 8-4. Tub/Shower Mixing Valve