

**1992 NEWELL**

**OWNER'S MANUAL**

This manual is made available as a resource for owners of Newell Coaches. Each Newell Coach is custom made to the owner's specifications and may have different features and systems.

## **INTRODUCTION**

Your Newell Owner's Manual has been provided to supply you with important, practical information on the care and operation of your Newell. You should review the contents carefully and completely.

This Owner's Manual should be used in conjunction with the detailed manuals and instructions furnished with many of the individual components.

Any questions not covered or requiring further clarification should be referred to Newell Coach by telephone, fax, or mail.

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# **I M P O R T A N T ! ! !**

## **0. EMERGENCY PROCEDURES**

The following information and emergency procedures should be read carefully and reviewed periodically so that you are always familiar with the safety systems furnished with your Newell coach. The correct response to an emergency will minimize the risk of personal injury and property loss.

### **Fire Extinguishers**

Every Newell is equipped with three fire extinguishers, located as follows:

1. One Halon fire extinguisher is located on the wall immediately to the left of the driver's seat below the cab window.
2. One Halon fire extinguisher is located in a rear closet
3. One CO2 fire extinguisher is located on the inside of the right (copilot) side engine compartment door.

The Halon extinguishers cause less damage to interior upholstery and fabric materials than does CO2, and it is less dangerous to use in a closed area. The heavy duty CO2 extinguisher is more suitable for a chassis fire situation.

### **Engine and Generator Fuel Shutoff Valves**

In the event of a fire or if either the generator or the main engine will not shut off using normal procedures, emergency fuel shutoff valves are provided. They are located above the fuel/water separators for the main engine and the generator.

### **DDEC Engine Automatic Shutdown**

If red "stop engine" light comes on during operation, engine will automatically start power reduction followed by automatic engine

shutdown. This procedure is provided to protect the engine from damage and is activated by low coolant level, low oil pressure or high oil temperature.

There is an emergency shutdown override switch located on the instrument panel which may be used to allow engine operation for 30 seconds. This will allow the operator to move the vehicle to a safe location.

Immediately check coolant level and lubricating oil levels, adding fluids as necessary. If engine restarts without activating of "stop engine" light again, observe and confirm for normal engine operation before proceeding. If abnormal engine operation is observed or "stop engine" light is again activated, engine should be serviced by an authorized Detroit Diesel facility.

Further information on the DDEC engine automatic shutdown system is provided in Chapter 1, Engine Operation.

### **Electrical Shutoffs**

The electrical system of your Newell can be shut off quickly and easily in the event of a fire or electrical short.

The 120/240 volt system can be quickly shut off using the generator/shoreline transfer switch on the Electrical Monitoring Panel. The center position of this three position switch is "off."

In an emergency, 120/240 volt electricity can also be shut off by disconnecting the shore cord or stopping the generator, depending on the power source (if necessary, the generator can be turned off from outside the coach using the emergency fuel shutoff valve).

The two 12 volt systems, chassis and house, can be shut off with the battery disconnect switches located on the rear terminal board.

## **1. ENGINE OPERATION**

The Detroit Diesel 92 series engine with DDEC (Detroit Diesel Electronic Controls) is equipped with safety systems to prevent damage to the engine under improper operating conditions. It is important to understand these systems to minimize or prevent inconvenience and engine damage. Please carefully review the Detroit Diesel Owner/Operator Guide supplied with your coach.

### **Before Starting**

1. Check the coolant level in the radiator.
2. Be sure the oil level is at or close to the full mark on the dipstick.
3. Check the fuel supply. Keeping fuel tanks filled will keep water condensation to a minimum.
4. Look for obvious trouble signs such as lube oil, fuel oil and coolant leaks.

### **To Start**

1. Apply the parking brake.
2. Place the transmission shift lever in the neutral position.
3. Turn key to "on" position. The yellow "check engine" and red "stop engine" lights should come on and then go out after 6 - 10 seconds. If the yellow "check engine" light does not go out after 6 - 10 seconds, have the engine serviced at an authorized Detroit Diesel repair facility. Engine can be run with yellow "check engine" light on without damage to engine, but yellow "check engine" light means engine is operating outside recommended guidelines and needs service. If the red "stop engine" light does not go out after 6-10 seconds, do not start engine, as starting engine

may result in costly damage.

4. After yellow and red lights have gone out, you may proceed with cranking of engine. If the engine does not start after 30 seconds of cranking, allow the cranking motor to cool before trying again. Pumping the accelerator before and during cranking will not aid in starting.
5. As soon as engine starts, allow the engine to idle and check the oil pressure gauge to be sure the engine is getting lubrication. As the engine warms up, the high idle speed will decrease to the normal setting. **Warning:** If oil pressure is not indicated within 15 seconds of starting, stop the engine and correct the cause before starting.

### Operating your DDEC engine

Your Detroit Diesel Electronic Controlled engine is equipped with a variety of options designed to warn the operator of an engine malfunction:

1. If yellow "check engine" light comes on during operations, you are operating engine outside recommended guidelines for operation. Engine can continue being run, but it needs to be checked by an authorized Detroit Diesel repair facility.
2. If red "stop engine" light comes on during operation, engine will automatically start power reduction followed by automatic engine shutdown. This procedure may be activated by low coolant level, low oil pressure or high oil temperature. There is a system override switch on the instrument panel which may be used to allow engine operation for 30 seconds. This will allow the operator to move the vehicle to a safe location. Immediately check coolant level and lubricating oil levels, adding fluids as necessary. If engine restarts without activating of "stop engine" light again, observe and confirm for normal engine operation before proceeding. If abnormal engine operation is observed or "stop engine" light is again activated, engine should be serviced by an authorized Detroit Diesel facility.

The engine temperature can usually be lowered by reducing the load on the engine through less throttle, reducing road speed, and, if possible, changing to a lower gear (do not exceed 2200 rpm). The turbo boost gauge reading is a direct indication of engine load and can be used as a guide while reducing the throttle. Backing out of the throttle to reduce boost pressure about five psi will often reduce engine operating temperatures sufficiently to allow the coach to proceed without stopping to cool the engine. The coolant level in the radiator should be checked periodically. There is a glass sight gauge in the radiator top tank behind the hinged rear grill.

### **Radiator Cleaning**

The rear-mounted radiator of your Newell requires periodic cleaning to insure full airflow and proper cooling performance. A high-pressure wand used in a car wash does an excellent job removing dirt and road film from the radiator. The radiator is best cleaned from the back of the coach, spraying through the core toward the engine. Particular attention must be paid to radiator cleaning if the coach engine or transmission has any fluid leaks, which will gum the radiator and collect dirt quickly.

### **Fuel/Water Separators**

The engine fuel system (as well as generator fuel system) is equipped with a fuel/water separator located in front of the propane tank behind an exterior compartment door. These should be checked from time to time and any water visible in the glass sight bowl drained from the separator.

If excessive water exceeding the capacity of the fuel/water separators is introduced into the fuel system, the engine fuel filters will become plugged with water. The engine will first lose power, eventually stopping completely if the condition is not corrected and the fuel filters changed immediately. Spare fuel filters are included in the Newell Spare Parts Kit furnished with the coach for this purpose.

### **Engine Coolant Preheater**

To assist in cold weather starting, your Newell Detroit Diesel engine is

equipped with a coolant preheater incorporated in the Primus heating system. To be effective, the preheater must be turned on for a few hours prior to engine start. Information on the operation of the engine preheater is contained in Chapter 11.

### **Cold Engine Starts**

When a cold engine is first started, it should be allowed to idle for a few minutes to allow the lubricating oil to warm up and circulate through the engine. "Fast idle" should be avoided on cold engine. Once underway, full throttle should be avoided until the engine has reached the lower range of normal operating temperature, about 160 degrees Fahrenheit.

The engine will normally operate at approximately 60 psi of oil pressure after reaching normal operating temperature of 160 to 200 degrees Fahrenheit. However, it is a characteristic of this model engine and no cause for concern to show very little oil pressure at idle.

### **Air System**

The dash includes two air pressure gauges, one gauge for the main supply system and one gauge with two indicators for the dual brake system. Both the main supply and brake system will vary from approximately 90 to 120 psi. The vehicle should not be driven when loss of air pressure from the main supply or either of the brake systems is not immediately replenished by the engine air compressor.

Due to the complexity of the Newell air system and the number of fittings and air accessories, a moderate amount of air loss is normal when the vehicle engine is not operating. The optional 120 volt air compressor is installed to counteract normal air loss conditions. However, if rapid air loss is observed, the cause should be immediately identified and corrected.

## 2. AIR SUSPENSION AND LEVELING SYSTEM

Your Newell is equipped with full air suspension which provides a comfortable, well controlled ride. While driving, the ride height of the coach is maintained automatically by a single height control valve on the front axle and two height control valves on the rear drive axle.

### Tag Axle

The tag axle air suspension is controlled by an air pressure regulator with a pressure gauge. The regulator and pressure gauge are located inside the curb side engine compartment door on the forward bulkhead. The tag axle air pressure should be set at approximately 25 pounds. Higher pressure settings will overload the tag axle tires and also cause the coach ride quality to deteriorate.

### Leveling System

Comfortable use of your Newell, as well as proper operation of the refrigerator, requires that the coach be reasonably level while it is parked. Your Newell is equipped with an exclusive leveling system which operates off the coach air bag suspension system to independently raise or lower each of the four corners of the coach. **Warning:** Do not drive the coach at road speed with the leveling system on. Do not move the coach even a short distance if the leveling system has been used to lower the coach and the tires have insufficient clearance from the body. A red light on the dash and a chime warn if the leveling system is on and the ignition system is also turned on.

The leveling system is controlled with electrically operated switches located on the instrument panel console. There is a leveling system on-off switch, a tag axle air pressure release switch, and four up/down switches, one for each corner of the coach.

To level while parked, turn the leveling system on. Air can now be added or bled from the air bag suspension at each corner of the coach. If you wish to lower the rear suspension on a coach equipped with a tag axle, air pressure must first be released from the tag axle suspension using the switch labeled "tag."

If the coach can be leveled by a moderate amount of movement, we recommend that the high corners of the coach be brought down to level. This will keep the entry door step at a comfortable height.

If more than downward movement is needed to achieve satisfactory level, air pressure is needed to raise one or more corners of the coach. Since the air pressure stored in the coach air system will be quickly depleted if the leveling system is used to raise the coach, the coach engine should be running on fast idle any time you wish to raise the coach with the leveling system. The engine air compressor will then resupply additional air pressure as the levelers are being used.

### **Maximum Leveling**

To obtain the maximum adjustment available from the leveling system, first raise all four corners of the coach to the highest point possible while running the coach engine using the fast idle switch to rapidly replenish the air supply. Once the coach is at maximum height, lower the appropriate corner(s) to achieve the desired position. The use of leveling blocks under the tires to increase the amount of adjustment available is possible, but seldom necessary.

When the leveling system is turned off and the engine is started, the coach automatically assumes proper driving height at all four corners.

### 3. WHEEL AND AXLE ALIGNMENT AND TIRE ROTATION

The handling and driving ease of your Newell have been carefully engineered to the highest standards. A few basic fundamentals should be observed in order to maintain the fine handling of your coach, as well as maximize the tread life of your tires.

#### Front Axle Alignment

Normal front wheel alignment adjustments include castor angle, camber angle, and toe-in. Unlike passenger cars, the castor angle and the camber angle of a Newell are determined and fixed by the front axle casting at the time the axle is manufactured.

Prior to delivery of your new coach, castor and camber angles are verified and the toe-in is properly set. The only situations that can subsequently result in castor or camber misalignment are an accident or an alignment shop deliberately bending the axle. Normal driving will not affect the castor and camber alignment of a Newell.

**Warning:** Many truck alignment shops routinely recommend bending front axles to new settings, regardless of the alignment settings on the vehicle. An alignment shop should not be allowed to bend a Newell front axle. Such action will void the warranty on the axle. It will also probably result in front axle settings which deviate from those Newell has developed and approved through many years of experience with this chassis. If an accident has bent the axle out of alignment, the axle should be replaced rather than bent. If you suspect an alignment problem other than toe-in, contact Newell Coach before taking any action.

Toe-in should be checked periodically and adjusted as necessary, especially if uneven front tire wear is noticed. Correct toe-in for a Newell is 1/32 inch. For absolute accuracy, we recommend either Hunter computer alignment equipment or the simple bar and scribe method be used to set toe-in. The common alignment machines using light projectors do not have adequate accuracy to set toe-in to the close tolerances we recommend.

## Rear Axle Alignment

Rear axle alignment is very important for proper handling and driving comfort on a large, long wheelbase vehicle. The rear axle of your Newell was aligned at the factory to very close tolerances. The rear axle should not require further alignment unless the coach is involved in an accident that damages the frame, suspension, or rear axle.

## Tires

Radial truck tires, including Goodyear, Bridgestone and Michelin brands, mounted on the steer (front) axle sometimes establish uneven wear patterns ("cupping" or "river erosion"). It is important to monitor front tire tread wear carefully during the first 5,000 to 15,000 miles of tire use.

If uneven tread wear is observed, rotate the front tires to the drive axle, bringing two tires broken-in on the drive axle forward to the front axle. The tires should be mounted so they rotate in the same direction as in their previous location. The uneven wear will gradually disappear, while the previously broken-in tires now mounted forward should wear evenly.

Tire manufacturers often will not warranty tires for "cupping" or "river erosion" because proper tire rotation will eliminate the condition before tires are badly damaged.

#### **4. 120/240 VOLT ELECTRICAL SYSTEM**

Your Newell 120/240 volt, two leg electrical system is a high capacity power distribution network designed to be able to operate the entire coach at any electrical load level that could be reasonably anticipated. The primary limiting factor when shore power is being used is the capacity of the shore power circuits supplying the coach.

The electrical system will operate at full design capacity from a 50 amp, 240 volt (12,000 watt) AC source. The gauges in the coach Electrical Monitoring Panel are furnished so that electrical consumption can be checked against supply circuit capacity. The standard equipment diesel generator, rated at 12,500 watts, also operates the electrical system at full capacity.

##### **Two Leg Electrical System**

The Newell electrical system divides the coach electrical loads into two separate circuits, or legs. A 50 amp, 240 volt shore power source actually consists of two separate 120 volt legs of power, totaling 100 amps at 120 volts.

Both legs in the coach can also be fed electrical power from a single 120 volt circuit through the splitter cord described below. The total electrical capacity is then limited to the capacity of the single 120 volt source being used, generally 15, 20 or 30 amps.

##### **50 Amp Shore Power Hookup**

A 50 amp, 240 volt shore power source can commonly be identified by its female receptacle matching the four-prong male receptacle attached to the end of the Newell shore power cord (see Figure 4.1). The power source should also be equipped with a 50 amp breaker.

##### **Two Power Source Hookup**

The Newell electrical system can also be operated from two separate 120 volt power circuits. The splitter cord furnished loose with every new coach can be used for this purpose. To achieve any advantage from

plugging into two shore power sources, each source must be supplied by separate breakers.

While plugged into two independent circuits, the coach can take advantage of each circuit separately. For example, if a coach utilizing the splitter is plugged into one 30 amp, 120 volt circuit and one 20 amp, 120 volt circuit, a total of 50 amps at 120 volts is available.

### **30/20/15 Amp Shore Power Hookups**

If only a single electrical source of 30 amps or less is available, the splitter cord is designed to interconnect the coach's two legs by plugging one side of the splitter cord into the other side of the splitter. The single remaining male cord end is then plugged into the single source (see Figure 4.1). Please note that if the splitter cord's two male ends are connected backwards, only one leg of electricity will be live and only one voltmeter will register voltage.

When using a single, 120 volt source of shore power, it is especially important to remember that your total coach electrical consumption is limited to the capacity of the shore power circuit. To prevent electrical overload, tripped circuit breakers and possible damage to electrical devices, use the 120 volt AC ammeters in the coach's Electrical Monitoring Panel to guide you in keeping electrical loads under the capacity of the circuit into which you are plugged.

For example, if you are using a single, 20 amp circuit, the load registered on your two ammeters should not exceed a total of 20 amps. Table 4.1 indicates typical electrical consumption for selected components. **Warning:** Do not operate 120 volt components in your coach if the electrical power is more than 130 volts or is less than 110 volts, as indicated by the two voltage meters on your coach Electrical Monitoring Panel.

### **Limiting Electrical Consumption**

It is sometimes necessary to turn off selected 120 volt electrical devices for periods of time in order to operate desired appliances and devices within limited shore power sources. In these circumstances, consider turning off unnecessary electric heaters, including the hot water

heater, the 120 volt icemaker or the battery converter/charger. The refrigerator can also be switched from 120 volt operation to LP gas operation by using the controls located on the front of the refrigerator.

### **Coach Storage**

We recommend that the coach be stored with shore power connected, preferably to a full 50 amp, 240 volt circuit. This keeps the house batteries fully charged. To keep the engine batteries charged while connected to shore power, the battery merge switch on the instrument panel should be engaged.

Since the coach can be fully heated electrically, a proper electrical hookup eliminates the need to winterize. If not available locally, weatherproof 50 amp electrical boxes for your parking and storage area are available from Newell Coach. A licensed electrician is required to install this electrical box.

### **Electrical Monitoring Panel**

For quick visual reference, your coach is also equipped with two sets of electrical indicator lights, one set on the Electrical Monitoring Panel and one set on the metal electrical box in the shoreline compartment behind the left rear wheels.

Indicator lights labeled "120 volts" will light on each panel if 120 volt power is being fed to each respective power leg. Lights labeled "240 volts" will light only if 240 volt power is available. The "polarity reversed" light warns of an improperly wired source of power. **Warning:** Immediately unplug the coach from any power source which causes the "polarity reversed" warning indicator to light. Otherwise, dangerous shocks can result.

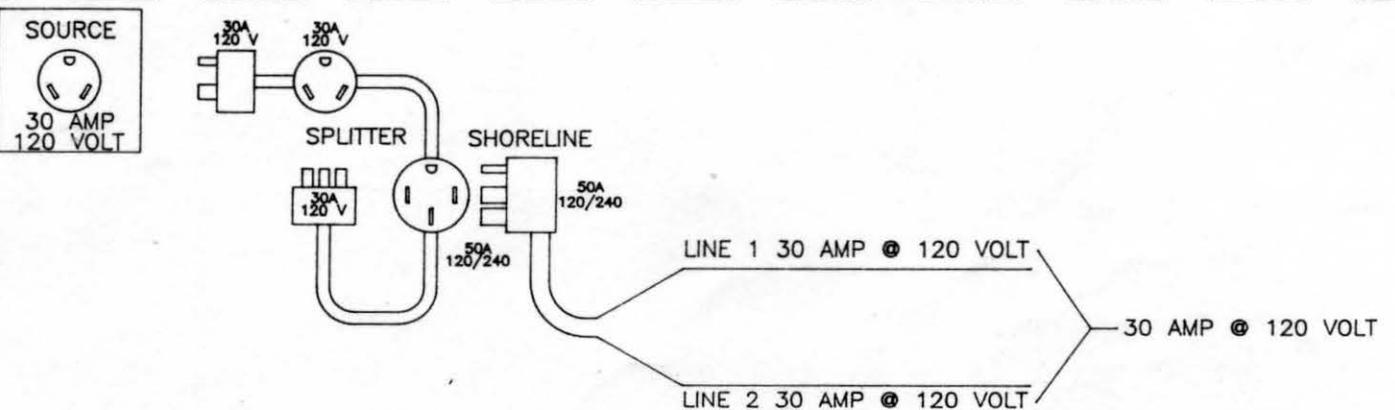
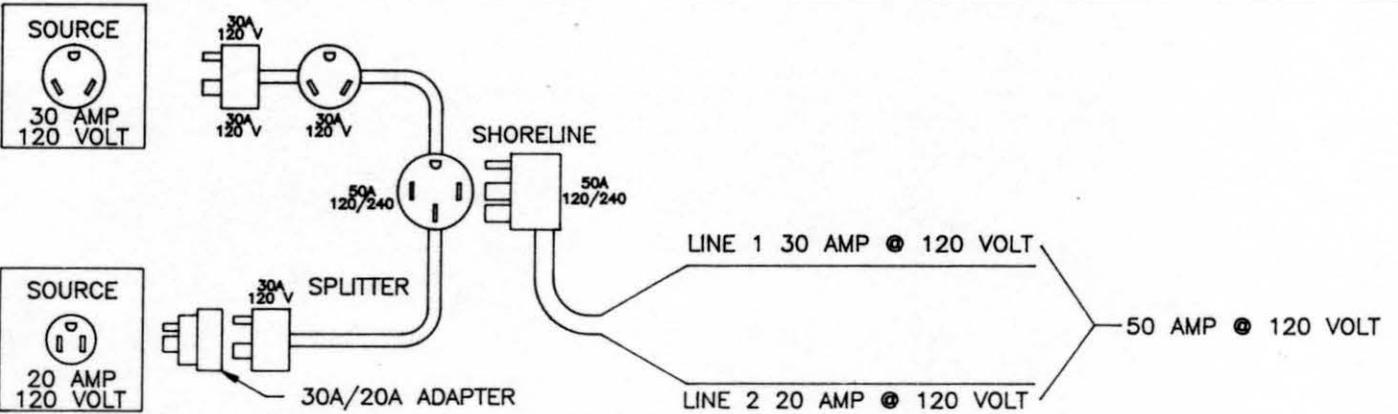
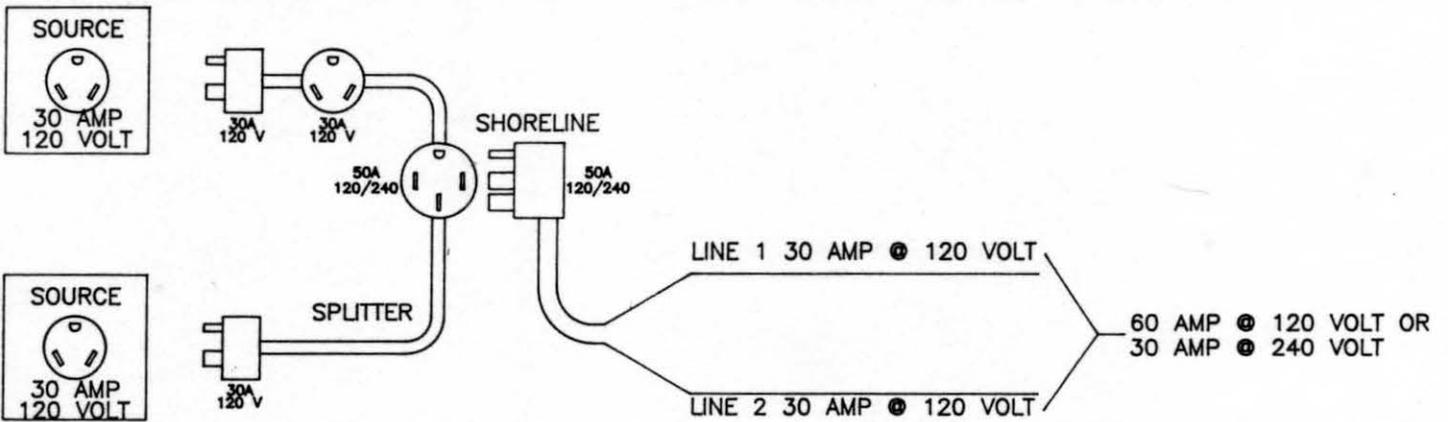
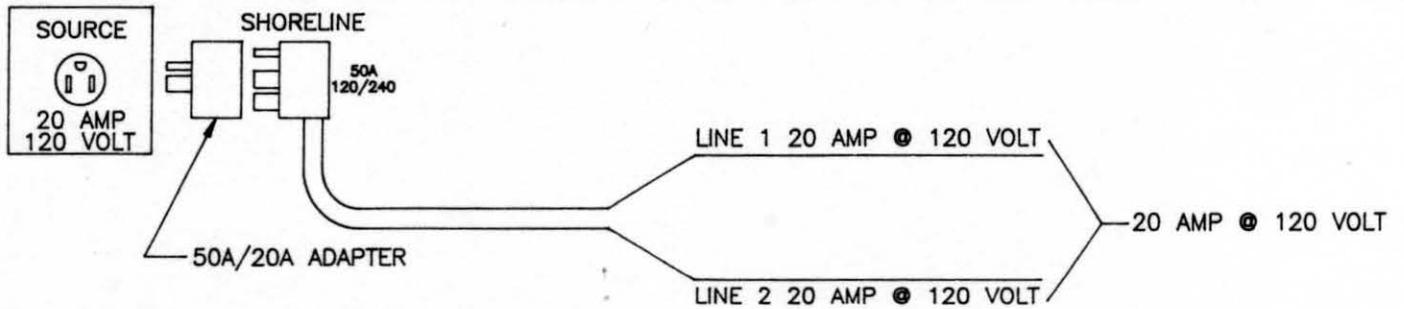
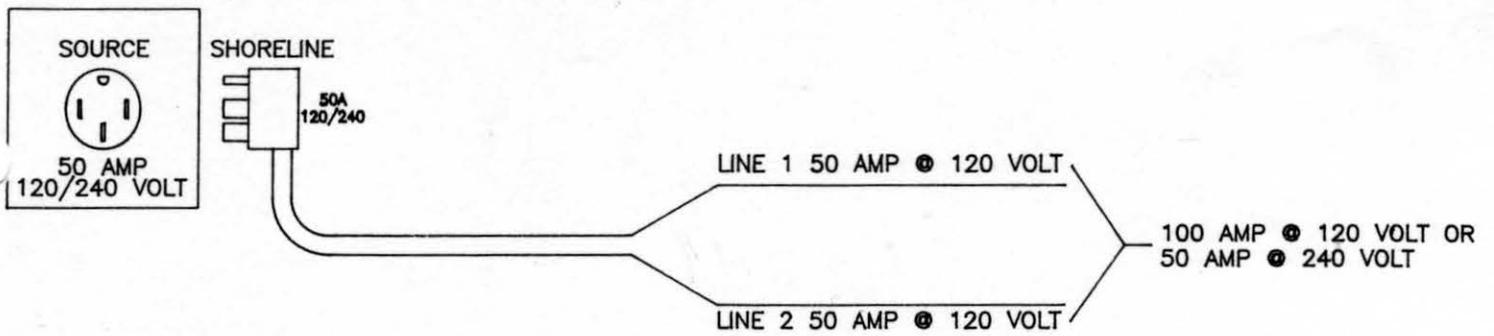
### **Electrical Breaker Panel**

The 120/240 volt breaker panel is located in a cabinet on the driver's side in the forward area of the rear bedroom or the back of the wardrobe.

**TABLE 4.1**  
**ELECTRICAL CONSUMPTION OF SELECTED COMPONENTS**

<b>COMPONENT</b>	<b>DRAW</b>
Air conditioner, each unit	16 amp
Fan only	2 amp
Battery converter/charger (at full load)	12 amp
Refrigerator	3 amp
Icemaker, 120 volt, compressor running	2 amp
Hot water heater	10 amp
Coffee maker	8 amp
Electric heater, each unit	12.5 - 18 amp
Television	1 amp
Norcold refrigerator/freezer, compressor running	3 amp
Microwave oven	11 amp
Instant hot water	8 amp
Electric cooktop, each element	8 amp
ComboMatic washer/dryer	8 amp
Wash cycle	8 amp
Dry cycle	16 amp
Frigidaire washer/dryer	20 amp

FIGURE 4.1  
120/240 VOLT SHORELINE CONNECTIONS FROM VARIOUS SOURCES



## **5. DIESEL GENERATOR**

The Kohler diesel generator provided as standard equipment in the Newell will supply 120/240 volt electrical energy up to the full capacity of the coach electrical system, 12,500 watts. The generator is designed for continuous duty operation. If desired, it can be run without interruption other than the observation of the recommended 150 hour service intervals.

### **Generator Air Slide**

The generator on a Newell coach is installed on an air powered slide out tray. To operate the air slide for access to the generator, a safety catch must be released before the air valve control is opened. Both the safety catch release and the air valve control are located behind the air intake door immediately ahead of the right front tire.

### **Generator Starting**

The generator "on/off" switch is located on the Electrical Monitoring Panel, along with the "preheat" switch for cold weather starting and the three position transfer switch for selecting generator, shore power, or no power source. To start or stop the generator, the transfer switch should be in the shore power or no power position, as starting or stopping the generator under load is not recommended. In cold weather, the preheat switch should be engaged for approximately 15 seconds prior to attempting to start the generator.

The generator starting circuit is equipped with a 15 amp, "slow blow" fuse. This fuse will blow if the generator is cranked continuously for more than about ten seconds without starting or if the generator starter is engaged using discharged (under about ten volts) batteries. The fuse is located on the controller, a rectangular box mounted behind the generator engine. To reach this fuse for replacement, the generator must be rolled forward on the service rack. Replace this fuse only with another 15 amp, "slow blow."

### **Generator Cooling**

The Newell generator hush box uses a high capacity, electric squirrel

cage fan located in the compartment ahead of the right front tire to force cooling air through the generator compartment. The air exits the hush box by passing through the radiator and down the air plenum sealed to the forward side of the radiator, discharging under the coach.

Proper cooling of the generator depends on a minimum amount of air leaking out the hush box other than through the radiator. **Warning:** Do not operate generator with hush box open, as overheating will occur and generator may be damaged.

### **Automatic Shutdown**

The generator is equipped with an automatic overheat shutdown switch. If the generator should run above normal operating temperature or should the overheat shutdown activate, the generator door and the hush box should be examined for air leaks. The generator radiator must be periodically washed to insure full airflow and proper cooling.

### **Buddy Plug**

Your Newell is equipped with a buddy plug, a 50 amp receptacle in the shoreline compartment. With it, you may furnish power from your generator to another coach. When using your buddy plug, care must be taken to keep the total electrical consumption under 100 amps and the draw on each leg under 50 amps. The Electrical Monitoring Panel ammeters of the "host" coach should be used to identify potential overload conditions.

## 6. 12 VOLT ELECTRICAL SYSTEM

Your Newell has two separate 12 volt DC electrical systems, one for chassis operation and one for house systems operation.

### Fuse and Circuit Breaker Location

The fuse panel for the chassis system is located behind a removable panel in front of the copilot seat. The main circuit breaker panel for the house system is located in a cabinet on the driver's side in the forward area of the rear bedroom or the back of the wardrobe. A secondary breaker panel for the house system is located on the rear wall of the large straight-through, storage compartment, driver's side. Each of these panels is indexed by number and wire color. See Chapter 12 for indexes, as well as indexes posted in the coach at each location.

Some accessories are equipped with in-line fuses located close to the component. These items include the Primus heating system, with fuses located in the engine compartment, the propane sniffer under the sofa, the closed circuit rearview TV monitor, and the optional remote control spotlight.

### Chassis Rear Terminal Board

A central terminal board for the chassis electrical system is located behind an exterior access door under the right taillight. The circuits use color-coded wires indexed in Chapter 12. Solenoids for the battery merge system, starter and emergency override are located on this board.

The coach engine can be started using controls on the rear terminal board. **Warning:** Starting the coach from the rear terminal board bypasses the neutral safety switch, so the coach can be started in gear. Starting the coach in gear is dangerous and should normally be avoided. However, if the transmission shifter malfunctions so that the neutral safety switch prevents the coach from starting from the driver's seat, the coach may be started, even in gear, from the rear. The parking brake must be set for safety before any attempt is made to start the coach in gear.

## Battery Merging

A solenoid automatically merges the two 12 volt systems when the ignition key is on except while operating the starter. Therefore, both the chassis battery system and the house battery system are charged automatically from the engine alternator while the coach is driven.

The house battery system is also charged by a converter/charger located in the back of the shoreline compartment any time 120 volt power is available (generator or shoreline). To charge the chassis battery system from the converter/charger or to get extra battery power for engine starting, the two battery systems must be manually merged using a switch on the dashboard labeled "battery merge." This switch has two "on" positions, either up or down, so that it has power to function even if one battery system is dead. Further detailed information on the converter/charger is included in Chapter 6.

## Voltmeters

Voltmeters are provided to indicate the state of charge for both battery systems. The voltmeter for the chassis is located on the instrument panel. It should indicate a minimum of approximately 12 volts and a maximum of between 13.8 to 14.5 volts while being charged. The voltmeter for the house system is located on the Electrical Monitoring Panel. It should indicate a minimum of approximately 11 volts, below which the batteries should be recharged, and a maximum of 13.8 to 14.5 volts while being charged.

## Batteries

The battery systems are located on either side of the main engine in covered, recessed compartments. Both the chassis and the house systems utilize "wet," type 8D batteries which must have water added periodically.

When batteries are replaced after more than a year of service, all the batteries of that system (chassis or house) should be replaced together to insure compatibility and proper performance.

## Battery Disconnect Switches

Each battery system has a battery disconnect switch. The two disconnect switches are located on the rear terminal board.

If it is necessary to store the coach for more than two or three days without an electrical hookup, we recommend that the battery disconnects be used for the house and engine batteries, as various coach accessories will gradually deplete the batteries.

## Battery Capacity

The house batteries will store only a finite amount of electrical energy. The amount of time that they can be used before recharging is absolutely dependent upon the rate at which electrical energy drawn from these batteries.

Time between recharging can easily be extended through minimizing the use of high draw components, such as the optional 12 volt/120 volt Norcold freezer and the optional inverter systems. Using an inverter to power the television receivers has a relatively low current draw and need not be a concern under normal battery conditions. The total amperage draw on the house system can be checked and managed by using the 12 volt ammeter located on the Electrical Monitoring Panel.

Dometic or Norcold refrigerators are included in most Newell coaches. They are designed to operate on 12 volt power supplied by the engine alternator any time the engine is running. This is normally very satisfactory. However, the refrigerator consumes up to 23 amps while operating on 12 volts. The rated capacity of the standard Newell alternator is 160 amps. If the total 12 volt load on the alternator reaches or exceeds this rated capacity, the voltage indicated on the dashboard voltmeter will not remain within the ideal range (a minimum of approximately 12 volts, building to 13.8 to 14.5 volts while the engine alternator is operating).

If you suspect that your 12 volt usage is reaching or exceeding alternator capacity, a switch mounted on the exterior of the refrigerator can be used to disable the 12 volt alternator powered mode of refrigerator operation. When this switch is in the "off" position, the refrigerator will always

select 120 volt operation when 120 volt power is available and select propane operation when no 120 volt power is available. The 23 amp, 12 volt load from the refrigerator will thus be avoided.

## **7. TELEVISION ANTENNA SYSTEM**

As standard equipment, the Newell is equipped with a Winegard amplified television antenna as standard, selected for its excellent fringe area reception. In addition, a cable television connection is located in the tankage compartment.

### **Antenna/Cable Switch**

A selector switch box to choose between the coach TV antenna and the cable connection is located in the front overhead compartment. This control box also contains a pilot light and switch for the signal amplifier which may be left on due to its very low power draw.

### **Raising and Rotating the Antenna**

To operate the Winegard antenna, turn the crank to raise the antenna off the coach roof. Once in the fully raised position, the antenna may then be rotated into the best receiving position by pulling down on the knurled collar under the antenna crank, unlocking the antenna, and then rotating the collar (and the antenna) until the best reception is achieved.

A red warning light on the instrument panel and warning chime are automatically activated any time the ignition key is turned on with the television antenna up.

## 8. PLUMBING SYSTEM

### Freeze Protection

The tankage compartment of your Newell is heated to prevent freezing. Two Primus convectors, one for each heating loop, heat the tankage compartment any time the coach interior is being heated. In addition, a Primus power convector operating from the front loop and controlled by an adjustable thermostat provides additional freeze protection for the tankage compartment. Detailed information regarding operation of the Primus heating system is contained in Chapter 11. **Warning:** The temperature in the tankage compartment should not be allowed to drop below freezing at any time, or severe damage can result.

The water system can be drained and antifreeze added for cold weather storage, but we do not recommend this. We suggest that the coach be stored where it can be provided with sufficient electrical power to heat the interior and tankage compartments with electricity. If sufficient electric power is not available, heating with propane is recommended, although the propane level must be checked periodically.

### Electric Odor Control

Your Newell has a single, large waste holding tank equipped with an electric odor-control system. Using conventional 12 volt DC electrical power, odor control does not mask odors but actually controls them. Electrodes located in the holding tank spread low voltage current through the waste to kill odor-causing bacteria on contact.

The maintenance-free odor control system is easy to operate. A built-in timer automatically activates at predetermined intervals of about 15 minutes once per hour to keep odor under control.

During those short periods that the system is operating, the tankage level monitor panel indicators will glow, activated by the electrical current from the odor control system. During this time, it is not possible to get separate level readings from the fresh water tank unless it has a higher level than the waste tank; when the fresh water tank level is below the holding tank level, and the odor control is in the "on" cycle, the system will cause the holding tank level to light the indicator lights.

With odor control, toxic holding tank chemicals are not recommended, further reducing fumes, odors, and poisons that could be harmful.

### **Add Salt**

The odor control system requires some salt in the liquid waste to work most effectively. Although holding tank waste generally contains some salt, a teaspoon of table salt added after every time the tank is emptied will insure proper operation.

### **Hot Weather Operation**

The odor control system may not be fully effective in hot weather conditions. We suggest more frequent dumping of the holding tank in hot weather, possibly a minimum of twice a week.

### **Coach Storage**

If the holding tank will be out of use for an extended period, empty the tank and rinse it out with fresh water. Add and leave several gallons of fresh water to the tank.

### **Long Term Hookup**

When hooked up to a sewer connection, do not leave your main holding tank shutoff valve open unless you are using the grey water bypass valve described below. Toilet tissue and other solids will gravitate to the bottom and form a mass that will not pass through the exit. These solids can build up and plug the outlet drain. Because of this, keep the sliding shutoff valve closed except when actually draining. This allows the waste holding tank contents to remain suspended for better flow when the valve is opened. We also recommend that approximately five gallons of fresh water be added to the holding tank every time the tank has been emptied.

### **Grey Water Bypass System**

The grey water bypass system can be used when connected to a sewage hookup or when it is safe and legal to allow grey water to pass directly out of the coach to the ground. To use the bypass system, open the main

slide valve (the valve closest to the cap) and close the slide valve closest to the tank. With the valves in these positions, all liquid discharged from the galley sink, lavy sink, and shower will drain from the coach, while all liquid discharged from the stool will be held in the waste tank.

### **Air Operated Dump Valve**

Many Newells are equipped with an optional holding tank drain outlet ahead of the right rear wheels. The slide valve for this drain is controlled by switches located inside the tankage compartment and at the driver's seat. Please exercise caution and courtesy - - never dump your holding tank where it will be a health threat or offensive to anyone else. Also, most holding tank chemicals are harmful to the environment and also are detrimental to some sewage treatment systems.

### **Auxiliary Water Pump**

A second fresh water pump is available on Newell coaches. This allows quick, convenient restoration of water pressure should one pump fail. The pumps are equipped with valves to shut off the water supply to a pump if the pump develops an internal leak. Normally, the valves should be left open to both pumps so either pump may be selected for use.

### **Pressure Accumulator Tank**

A pressure accumulator tank is incorporated on the fresh water system to reduce surging action as the water pump cycles on and off. It may be necessary to repressurize this tank with air if surging is noticed as the pump cycles.

## 9. DRIVING CONTROLS

### Headlights and Marker Lights

The side marker lights are operated separately from the main headlight switch by the rocker switch labeled "marker" on the shift console to the driver's left. The headlight and marker lights must both be operated at night

### Parking Brake

The parking brake is engaged and released by the push-pull knob located to the left of the steering column just below the main dash cluster. **Warning:** Always release the parking brake before proceeding to move the coach. The engine has sufficient power and the parking brake has enough strength to result in a broken rear axle ring gear if an attempt is made to drive the coach while the parking brake is engaged.

### Cruise Control

Operation is similar to that of a passenger car system. Because most drivers have driven with cruise control at one time or another, it takes very little time to check out a driver on how to operate the cruise control on a Newell.

The system is turned on by depressing the "on" switch; a switch indicator light confirms the system is on. With vehicle speed greater than 20 - 30 mph (depending upon the vehicle), the set switch can be pushed in. The set speed will automatically be maintained.

**RESUME FEATURE.** If the driver wishes to resume the previously set speed after a brake application, he presses the resume switch; the system responds, automatically accelerating the vehicle to the previously set speed.

**COAST FEATURE.** If a lower set speed is desired, the set switch is held in until the vehicle coasts down to the desired speed; releasing the switch establishes a new set speed.

**ACCEL FEATURE.** The accel feature can be used to establish a higher set speed. Simply engage and hold the resume switch and the vehicle speed will increase. When the desired speed is reached, the switch is released, establishing a new set speed.

Cruise control saves fuel. Used consistently, it will provide increased fuel mileage.

### **Jacobs Engine Brake (Jake Brake)**

Your Newell is equipped with a Jacobs engine brake which uses engine compression to retard road speed. The Jake brake is activated with a switch labeled "Jake" located on the shift console of the dash. When activated, the Jake will function any time the throttle is released while the vehicle is moving unless the cruise control is engaged. The Jake brake is an effective and important safety feature, especially while descending long grades. It reduces the use, and consequently the heat buildup and fading, of the vehicle service brakes.

## **10. MISCELLANEOUS NOTES AND SELECTED OPTIONAL EQUIPMENT**

### **Fuel Tank Merge Valve**

Newells equipped with two fuel tanks supply fuel to the main engine from the larger tank and fuel to the generator from the smaller auxiliary tank. The two fuel tanks can be merged to draw down together by opening a ball valve in the line connecting the two tanks. The valve is located behind one of the exterior compartment doors on the driver's side of the coach ahead of the straight-through storage compartment.

### **Exterior Paint**

Your Newell exterior has been furnished with high quality DuPont Imron polyurethane materials. It should be periodically washed using mild detergent and a soft, clean mitt or a soft, clean brush. Grit in the mitt or brush will scratch the finish. Polishing or waxing is seldom necessary, except to remove minor scratches.

### **Electric Step**

With the ignition key "off," the electric step can be turned "on" or "off" with a switch located forward of the entry door. For convenience while parked, the step may be locked in the extended position with this switch. When the ignition switch is "on," the step will always operate automatically as the main entry door is opened and closed.

### **Automatic Propane Shutoff**

The propane system of your coach is equipped with a safety device which automatically closes a valve and shuts off the propane supply to the coach if the sensor detects a leak in the coach. If your propane appliances cease functioning for no apparent cause and you have confirmed you have propane in the tank, reset the automatic shutoff by depressing the reset button on the shutoff device. It is typically located under the cooktop end of the galley or under the refrigerator. This reset procedure will also be required after 12 volt power has been disconnected, as this also activates the automatic propane shutoff.

## Alarm System

Your Newell alarm system is designed to protect the coach and, if occupied, persons inside the coach. Protection is accomplished by the automatic or manual activation of an electric horn in a constant series of short blasts which continue until the system is turned off. Activation of the alarm horn in this manner will encourage an unwanted intruder to flee and also operate as a help wanted signal.

The alarm must be armed to operate in automatic mode by turning on both the interior and exterior alarm switches. The interior alarm arming switch is located inside the upper cabinet just aft of the main entry door. The exterior alarm arming switch is a keyed switch located on the exterior surface of the storage compartment door just forward of the entry door.

**If you are leaving the coach unoccupied and wish to arm the alarm system:** first, set the interior switch; after exiting the coach, close the main entry door and then set the exterior switch. The alarm will now automatically sound any time the main entry door is opened. Reverse the procedure to disarm the alarm.

**If you are occupying the coach and wish to arm the alarm system:** first, set the exterior switch; after entering the coach, close the entry door and then set the interior switch. The alarm will automatically sound any time the main entry door is opened. Reverse the procedure to disarm the alarm.

**If you are inside the coach and wish to immediately activate the alarm to warn off an intruder or call for help:** engage the switch labeled "Alarm" located on the control panel in the bedroom or rear lounge.

### Intercom with Door Station (Optional)

The three interior intercom stations are numbered "1," "2," and "3" from the front of the coach to the rear. To call another station, press the appropriate number on the intercom you are using. **Important safety feature:** The intercom system may be used for two-way communication to the entry door station by pressing "6" at any other station.

### **Oil Metering Valve and Reservoir (Optional)**

Oil should not be added to the engine until the level is down to the "add" mark on the dipstick, measured after the engine has not been running for at least 15 minutes (one to two quarts of oil circulate up into the engine when running). The "add" mark indicates four (4) quarts low.

To add oil from the oil reservoir, first, close the pressure release valve located at the fill spout. **Warning:** Failure to close this valve will result in a messy oil spill. Then, open the valves on the oil output line to the engine and the air pressure input lines. Dial the number of quarts needed on the meter and pull the trigger. Air pressure will transfer the selected quantity of oil and then the metering valve will stop automatically. The valves on the oil output line and the air pressure input line should be closed first, and then the pressure release valve opened slowly.

### **Tag Axle Air Pressure Release (Tag Axle Optional)**

When attempting to start the coach moving in poor traction conditions such as snow, ice, or mud, the drive axle traction can be significantly improved by releasing air pressure in the tag axle suspension. First, insure that the coach suspension has achieved normal road height by idling the engine with the leveling system in the "off" mode. Then, release the air pressure in the tag axle by turning "on" the switches marked "tag" and "leveling" located with the coach leveling system controls. The coach should not be driven more than a short distance in this mode.

### **12 Volt to 120 Volt Inverter (Optional)**

An inverter may be used to operate a television and VCR from the coach house battery system. The resulting electrical draw on the batteries is relatively light. When a larger inverter is furnished which can also operate other electrical components, items other than a television and VCR should only be operated from the inverter when the house batteries are fully charged or the engine alternator is functioning. Heavy inverter loads should never be induced against low battery power or the batteries or inverter may be damaged. In addition, care should be taken not to

exceed the total inverter rating.

Inverter operation of the icemaker on coaches so equipped is automatic. The inverter will furnish power to the icemaker only when the ignition key is on.

Any time the house batteries are disconnected, the inverter must be reset when power is reconnected. The inverter is usually located beneath the bed. Move the power/reset switch on the front of the unit to "off", then to "on" to reset the inverter.

### **Norcold 12 Volt/120 Volt Freezer (Optional)**

The Norcold freezer will automatically switch to 12 volt operation if 120 volt power is not available. Freezer operation on 12 volt power will significantly decrease the time between the need for recharging house batteries.

### **120 Volt Air Compressor (Optional)**

The 120 volt air compressor provides a source of air pressure for the entire coach air system when the engine air compressor is not operating. The compressor is equipped with a water separator which must be drained periodically. **Warning:** Failure to drain the water separator can cause water to be introduced into the coach air system. This may result in brake failure or considerable damage to the air system and air driven components.

## 11. PRIMUS HEATING SYSTEM

Your Newell coach is equipped with the Primus ("PREE-mus") heating system. Primus uses circulating antifreeze and water to achieve a consistent, quiet source of heat for the coach interior, tankage compartment, domestic hot water, and engine preheat. The Primus system is powered by LPG, 240 volt electricity, or motor aid (heat drawn from the main engine cooling system).

### Double System

The Primus system consists of two totally independent heating loops. The primary loop heats the front half of the coach. The secondary loop heats the rear half of the coach. The rear, secondary loop also provides domestic hot water heating and main engine preheating. Both loops provide heating to the tankage compartment for freeze protection. Each loop has its own LPG boiler and electric immersion heater.

There is a control panel for each loop. The front, primary loop control panel is located on the electrical monitoring panel in the driver's area of the coach. The rear, secondary loop control panel is located in the bedroom or rear lounge area.

### LPG Operation

Each of the Primus loops has an LPG boiler located in the rear area of the coach chassis. To heat the coach interior with LPG, set the rotary temperature control knob on each control panel to point toward the + sign. The + sign on the thermostat is approximately 70 degrees. Depress the first, left button (marked with the flame symbol) on each control panel.

A green light above the flame symbol on the control panel indicates LPG boiler operation. The light will go completely out when the thermostat senses that the set temperature has been achieved. As the coach achieves the set temperature, the temperature knob may be adjusted to find the exact comfort level. Domestic hot water is being heated any time the secondary (rear) loop is in operation.

## 240 Volt Electric Operation

The coach may be heated electrically if plugged to a 50 amp, 240 volt shore power connection or if the generator is being operated. Each loop of the Primus system has a 240 volt electric immersion heater to heat the circulating fluid. The Primus system as installed in your Newell will not provide heating from a 120 volt shore power connection.

The Primus system operates at 1000 watts when the fourth button (marked with a single arrow symbol) is depressed. The system operates at 2000 watts when both the fourth button, single arrow symbol, and third button, double arrow symbol, are depressed. Depressing only the third button, double arrow, will not activate any heating. Electric operation of the primary (front) system also heats domestic hot water.

### Motor Aid Heating

Off-engine, motor aid heats the bedroom or rear lounge of the coach interior, domestic hot water, and tankage compartment through operation of the secondary loop. To operate motor aid heat, depress the fourth (far right) button (marked with a single arrow) of the rear Primus control panel and turn on the motor aid/preheat switch on the instrument panel. The rotary thermostat knob also controls the temperature in this mode of operation.

Set the winter/summer switch on the instrument panel to the appropriate position. In summer (warm) weather when using motor aid to heat domestic water but no heat is desired to the rear of the coach, set this switch on summer position. In cooler weather, when desiring to heat the rear of the coach in addition to domestic hot water, set this switch to winter position.

### Multiple Heat Sources

LPG, electric, or motor aid heat sources may be combined for faster heating response time. Once the coach interior reaches the desired temperature, a single heat source will probably perform very satisfactorily.

## Engine Preheating

To assist in starting the Detroit Diesel engine in cold weather (below approximately 40 degrees), engine preheating may be accomplished any time the secondary (rear) loop is operating on LPG or electric. To preheat the engine, the switch marked "preheat" on the instrument panel must be turned on in conjunction with operation of the secondary loop. Allow several hours of operation to preheat the engine in cold weather.

## Tankage Compartment Heating

The tankage compartment is heated automatically with power convectors any time either the primary or secondary loops are heating the interior. The thermostat, located in the tankage compartment, should be set so that the tankage thermometer located on the galley monitor panel never reads below approximately 45 degrees.

## Summer Domestic Water Heating

Heating domestic hot water from the Primus system in the summer without heating the coach interior requires the second button on the rear control panel, marked with the faucet symbol, to be depressed. Either the first button, marked with the flame for LPG operation, or the fourth button, single arrow for motor aid, must also be depressed. Set the summer/winter switch on the instrument panel to summer.

**Warning:** Never depress the second button, marked with the faucet symbol, during wintertime use, as this by-passes the interior thermostat and the inside temperature cannot be controlled. When heating the interior, always leave the second button unlatched.

## Fault Lights

The Primus system is equipped with fault lights located on the left side of each control panel within the triangle symbol. The fault light indicates an interruption of LPG or a drop in voltage below 9 volts. Activation of the fault light shuts down the LPG boiler. The reason for the fault should be determined and corrected. The LPG boiler can be reset by resetting the boiler button (marked with the flame symbol).

## Fuse Protection

Both the primary and secondary loops are each protected with two 12 volt circuit breakers, or four breakers in total. These breakers are located on an electrical junction box on the forward firewall of the engine compartment, copilot side. If either the primary or secondary loop fail to operate, check these circuit breakers and reset if necessary. If they continue to trip, the cause of the problem must be determined and corrected.

## 12. GENERAL MAINTENANCE

### Insertion Checklist

- 12.2 (✓) Lower Compartment Circuit Breaker Panel
- 12.3 (✓) Front Terminal Board
- 12.4 (✓) Chassis Fuse Panel
- 12.5 (✓) Rear Fuse Panel
- 12.6 (✓) Rear Terminal Board
- 12.7 (✓) Trailer Plug Diagram
- 12.8 (✓) Spare Parts List
- 12.9 (✓) Engine/Transmission Maintenance Data
- 12.10 (✓) Service and Maintenance Checklist

LOWER COMPARTMENT CIRCUIT BREAKER PANEL

1. Water Pump - 10 amp
2. Water Pump - 10 amp
3. Compartment Lights - 20 amp
4. Sanitron - 4 amp
5. Deep Freeze - 10 amp
6. Air Dump - 6 amp
7. Macerator - 20 amp
8. Primus Heater - 6 amp

NOTE: All breakers are automatic reset

LOCATION: Rear wall of large, straight-through storage bay, driver's side

FRONT TERMINAL BOARD  
8V92TA/102"/3-AXLE/43'6"  
COACH NUMBER 281

1. Oil Pressure - Blue w/1 Red
2. Water Temperature - Blue w/1 Black
3. Brake Lights - Yellow w/1 Blue
4. Ignition Fuel Valve - #12 Orange
5. High Beam Indicator - Green
6. Headlights - White
7. Right Rear Turn - Red
8. Left Rear Turn - Black
9. Front Park Lights - Purple
10. Taillights - Green
11. Left Front Turn - Black
12. Right Front Turn - Red
13. Emergency Flasher - Brown
14. Starter - Red w/1 Black
15. Amp Meter - Red
16. Tachometer - White w/1 Red
17. Auxiliary Fuel - Red
18. Transmission Temperature - Green w/1 Black
19. Brake Lights - Black w/1 White
20. Marker Lights - White
21. Washers - White w/1 Black
22. Low Air - Yellow w/1 Black
23. Battery Merge - White w/1 Orange
24. Backup Lights - Brown
25. Flasher - Blue
26. Rear Heater - Blue
27. Left Defogger - Black
28. Right Defogger - Yellow
29. Tachometer - White w/1 Red
30. Main Fuel - Red w/1 White
31. Speedometer - White w/1 Blue
32. Speedometer - White w/1 Green
33. Automotive Heat Pump - Blue w/1 Yellow
34. Spare
35. Automotive Air - Orange w/1 Yellow
36. Jake Brake - Purple
37. Fog Lights - Blue (Optional)
38. Compartment Heat - Green
39. Spare - Black w/1 Yellow
40. Amp Meter - Red

LOCATION: On fire wall in front of copilot seat, behind removable panel.

CHASSIS FUSE PANEL  
 8V92TA/102"/3-AXLE/43'6"  
 COACH NUMBER 281

1. Horn - Yellow  
Lighter - Brown
2. Electric Shift - Blue  
Fog Lights - Blue (Optional)  
H.W.H. Leveling - Red (Optional)
3. Brake Lights - Yellow w/1 Blue  
Emergency Flasher - Brown
4. Marker Lights - White
5. Air Horns - White w/1 Green  
Leveler Ignition - Red  
Heater Ignition - Black
6. Air Dryer - Orange w/1 Black  
Compartment Heat - Green
7. Backup Lights - Brown  
Rearview Television Monitor - Red  
H.W.H. Leveling - Yellow (Optional)
8. Low Air - Green w/1 Red  
Instrument Ignition - Orange  
Chime Ignition - Orange
9. Defoggers - Orange  
Refrigerator - Green w/1 Yellow
10. Auto Merge - Red w/1 White  
Docking Lights - Black
11. Flasher - Blue  
Spotlight - Orange (Optional)
12. Wiper Switch - Black  
Electric Step - Yellow
13. Auxiliary Fan - Blue w/1 Yellow  
Mirror Heat - Yellow  
Mirror - Black
14. Wiper Relay - Blue  
H.W.H. Leveling - Brown (Optional)  
Recaro Seat Ignition - Yellow w/1 Red
15. Dump Valve - Gray w/1 Yellow  
Rear Heat - Blue
16. Jake Brake - Purple  
Radar Detector - Purple w/1 Yellow
17. Engine Battery - Red w/1 White  
Battery Merge - Red w/1 White
18. Auxiliary Battery - Orange w/1 Black  
Levelers - Orange w/1 Black
19. Clock - White w/1 Red  
Spare - White w/1 Red
20. Map Lights - Red  
Cellular Phone - Red w/1 White
21. Intercom - Orange w/1 White
22. Radio - Gray w/1 Red
23. Radio Amp - Orange
24. CB - Gray w/1 Yellow

LOCATION: On fire wall in front of copilot seat, behind removable panel.

UNSER, JR.

REAR FUSE PANEL  
8V92TA/102"/3-AXLE/43'6"  
COACH NUMBER 281

12 VOLT CIRCUIT BREAKERS

1. Bath/Shower & Aisle Lights - 20 amp
2. Ceiling Lights - 20 amp
3. Cove Lights - 20 amp
4. Cabinet & Closet Lights/Inverter - 20 amp
5. Yard Light - 20 amp
6. Down Light (Front) - 20 amp
7. Down Light (Front) - 20 amp
8. Kool-0-Matic - 10 amp
9. Refrigerator - 25 amp
10. Alarm/Step Lights - 5 amp
11. Radio/Time/Temperature - 5 amp
12. Exhaust Fans/Step Slide - 20 amp
13. Spare - 3 amp
14. Map Lights/12 Volt TV Booster - 6 amp
15. LP Heat - 10 amp
16. LP Heat - 10 amp

12 Volt Fuses

1. DC Voltmeter, Electrical Monitoring Panel
2. DC Voltmeter, Electrical Monitoring Panel

110 VOLT CIRCUIT BREAKERS

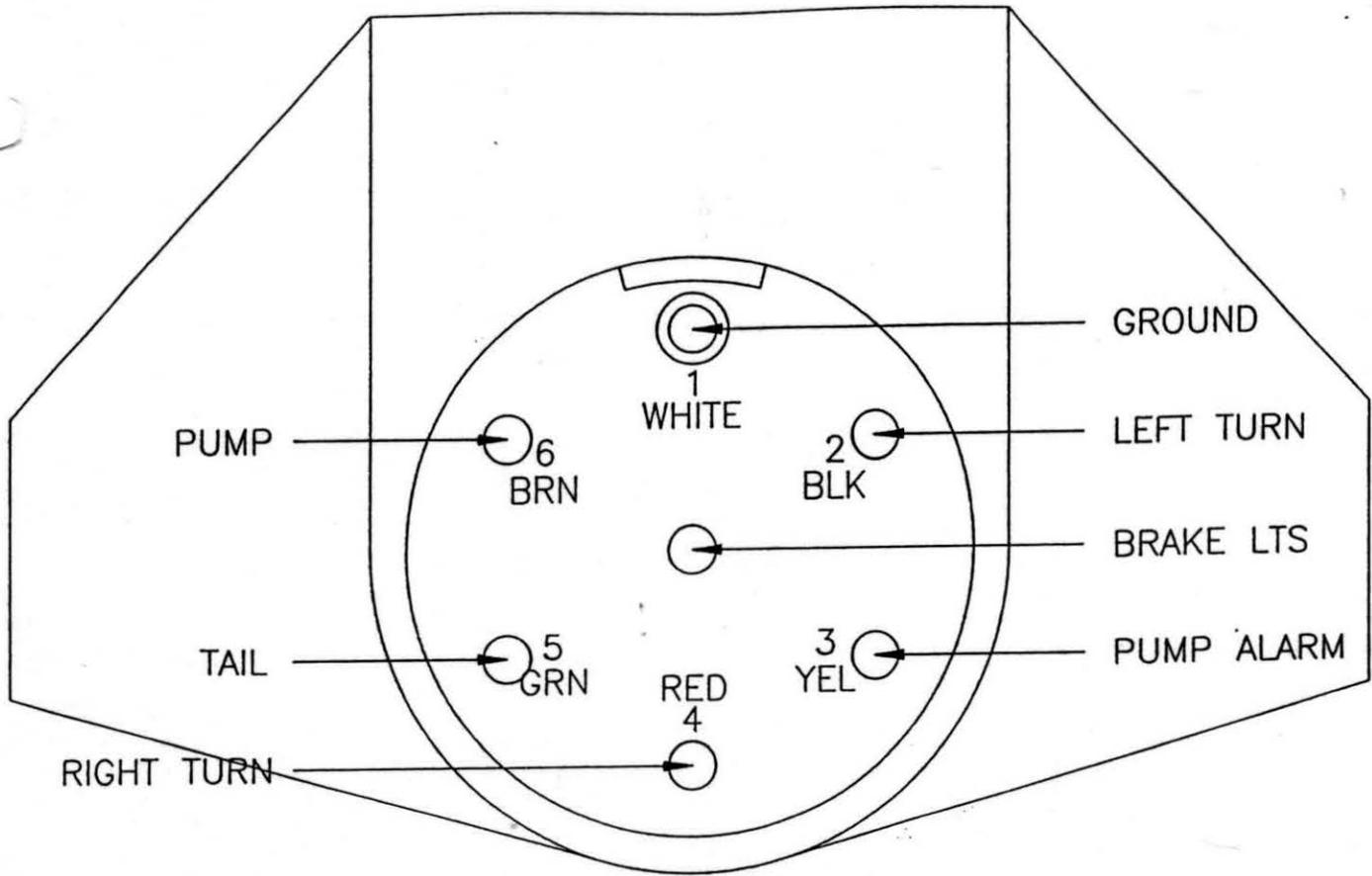
- |  |  |
|--|--|
| 1. Front Air/Heat                                | 2. Top - Icemaker                                |
| 3. Middle Air                                    | Bottom - TV/VCR/Lavy Lights/<br>Bath Heat        |
| 5. Middle Rear Air/Compartment Heat              | 4. Top - Dinette Receptacle/<br>Vacuum Sweeper   |
| 7. Rear Air/Heat                                 | Bottom - Rear Galley/NuTone<br>Food Center       |
| 9. Top - Front Galley                            | 6. Top - Microwave                               |
| Bottom - Hot Water Heater                        | Bottom - Sofa Receptacle/<br>Compartment Freezer |
| 11. Top - Bath & Compartment<br>Receptacle       | 8. Main  |
| Bottom - Refrigerator                            | 10. Main   |
| 13. Top - Future Washer/Dryer                    |  |
| Bottom - Bed Receptacle/<br>Block Heat           |  |
| 15. Top - Converter/Disposal                     |  |
| Bottom - Air Compressor/Game<br>Table Receptacle |  |

LOCATION: Forward area of rear bedroom or lounge, driver's side.

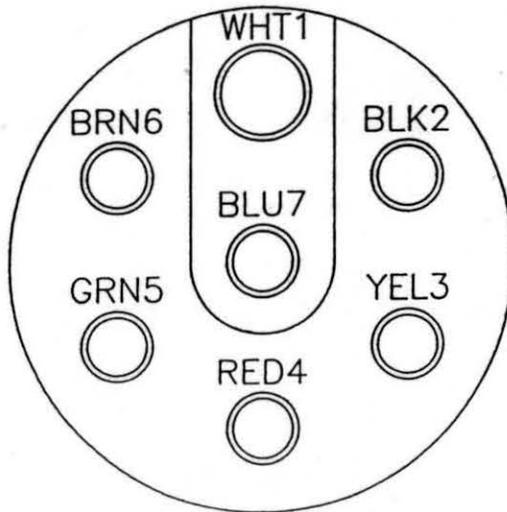
REAR TERMINAL BOARD  
8V92TA/102"/3-AXLE/43'6"  
COACH NUMBER 281

1. Oil Pressure - Blue w/1 Red
2. Water Temperature - Blue w/1 Black
3. Transmission Temperature - Green w/1 Black
4. Ignition Fuel Valve - #12 Orange  
Voltage Regulator - #12 Brown
5. Battery Merge - White w/1 Orange
6. Tachometer - White w/1 Red
7. Tachometer - White w/1 Red
8. Speedometer - White w/1 Blue
9. Speedometer - White w/1 Green
10. Spare - Gray w/1 Blue
11. Amp Meter - #8 Red
12. Amp Meter - #8 Red
13. Brake Lights - Blue
14. Starter - Red w/1 Black
15. Automotive Heat Pump - Blue w/1 Yellow
16. Auxiliary Battery Check - #12 Orange w/1 Black
17. Brake Relay - Black w/1 White
18. Taillights - Green
19. Right Turn - Red
20. Left Turn - Black
21. Backup Lights - Brown
22. Marker Lights - White
23. Jake Brake - Purple
24. Engine Battery Check - Red w/1 White

LOCATION: Behind exterior door, copilot side of main engine radiator.



FEMALE END



MALE END

# TRAILER PLUG

SPARE PARTS FURNISHED WITH NEW COACHES

Part #	Item Description	Quantity	Location of Use
Newell			
6177	Lug Wrench T-10	1	
6178	Hydraulic Jack, 12 Ton	1	
6338	Circuit Breaker	1	Terminal Board, Right Rear of Coach
6445	20 Amp Minibreaker	1	Terminal Board, Right Rear of Coach
6450	Bulb Light #57	2	Dash Lights
6451	Bulb Light #67	2	Compt. Lights
6452	Bulb Light #1157	2	Cornering Light
6453	Bulb Light #1141	2	Yard Light
6461	Fuse AGC-20	5	Front Fuse Panel
6463	Fuse AGC-30	5	Elec. Seat Base
6551	Stancor Relay	1	Terminal Board, Right Rear of Coach
PH-6624	Hubbell Connector	1	Shoreline Compt.
PH-7440	Hubbell Boot	1	Shoreline Compt.
8906	Generator Oil Filter	1	Generator
8907	Generator Fuel Filter	1	Generator Fuel
9169	Filter Fuel TP-916	1	Engine Fuel
9172	Filter Fuel T-915	1	Engine Fuel
9433	Solenoid C/H 24106	1	Terminal Board, Right Rear of Coach
10135	Wheel Saver Ring	1	
10463	Lug Wrench Handle	1	
11127	Warning Triangle Kit	1	
11761	Fuse AGC-5	1	Various
14062	Everpure Cartridge 9601-31	1	Water Purifier
14063	Everpure Cartridge 9601-32	1	Water Purifier
14402	Fuse MDL-10 Slo-Blo	1	Gen. Controller
14827	Wrench Filter KD2394	1	
15249	Bulb TL-194	1	Marker Light
15447	Breaker-mini, 10 Amp	1	Water Pump
	Breaker Assortment, 3 each	3	Rear Coach Fuse Panel

ENGINE/TRANSMISSION MAINTENANCE DATA  
8V92 DETROIT DIESEL ENGINE/ALLISON TRANSMISSION

ENGINE BELTS

Air Conditioner: 2 each - 17400 Dayco  
Engine Drive: 3 each - 17540 Dayco

ENGINE HOSES

Upper Radiator: 2 each - 82191 Dayco  
Lower Radiator: 2 each - 71004 Dayco  
Block Heater: 1 each - 26405 Gates  
Block Heater: 1 each - 26401 Gates

ENGINE FILTERS

Primary Fuel: 1 each - T-915 AC  
Secondary Fuel: 1 each - TP-916 AC  
Engine Spin on Oil: 1 each - PF-911 AC

TRANSMISSION FILTERS

Internal Transmission: 1 each - 6839945 Allison  
External Transmission: 1 each - HD223 AC

AIR CLEANER

Air Cleaner: 1 each - C-62891-3 Ecolite

GENERATOR FILTERS

Oil Filter: 1 each - 129150-35150 Yanmar  
1334 Napa  
Fuel Filter: 1 each - 129100-55650 Yanmar

SHOCKS

Front Shocks: 90C-1867 Koni  
Rear Shocks: 90C-1868 Koni

## LUBRICANT RECOMMENDATIONS

Due to their superior operating performance and uniform high quality, Newell Coach recommends Mobil synthetic lubricants.

Engine and Generator Lubricating Oil:	First choice Mobil Delvac 1
	Second choice Recognized Brand Name API designation CD-II Main engine - SAE 40 Generator - SAE 10W-40
	<b>Other than Mobil Delvac 1, multigrade oils are not recommended for use in Series 92 engines</b>
Transmission Fluid:	First choice Mobil SHC Automatic Transmission Fluid
	Second choice Dextron or Dextron II
Gear Lubricant:	Mobil SHC Gear Lubricant
Grease:	Mobil SHC Universal Grease
Factory Service Center:	The recommended Mobil products are used unless other requested

## Service and Maintenance Checklist

te \_\_\_\_\_ Mileage \_\_\_\_\_

Customer Name \_\_\_\_\_ Repair Order No. \_\_\_\_\_

WORK ORDERED (X) OPERATIONS COMPLETED (X)

- ( ) As Required
- ( ) Check Tire Pressure  
 ( ) Check Engine Oil  
 ( ) Check Transmission Oil  
 ( ) Check Coolant (use sight glass, not recovery tank tube)  
 ( ) Check Battery Water (except sealed batteries)  
 ( ) Wash Radiator with Pressure Sprayer  
 ( ) Clean Air Filters on 120 Volt Air Conditioners

- ( ) Every 5,000 Miles ( ) Oil Analysis Samples (Delvac 1 Users)

- ( ) Every Six Months (not to exceed 15,000 miles)
- ( ) Clean Air Compressor Filter  
 ( ) Adjust Brakes or Check Slack Adjusters  
 ( ) Rotate Tires, Front to Back, Same Side, If Uneven Wear  
 ( ) Retorque Lug Nuts on Aluminum Wheels (400-500 ft. lbs.)  
 ( ) Change Engine Oil and Filters  
 ( ) Replace Fuel Filters  
 ( ) Lubricate Chassis and Drive Shaft  
 ( ) Drain Water from Fuel Tank  
 ( ) Add Bacteria Eater to Fuel Tanks  
 ( ) Clean Engine Air Conditioning Condenser  
 ( ) Drain Air Box Vent Oil Canister  
 ( ) Plus "As Required" Items  
 Very Important at First 10,000 Miles  
 ( ) Fill Oiler For All Air Cylinders

- ( ) Every 150 Hours ( ) Change Generator Oil and Filter, Service per Manufacturer's Maintenance Recommendations

- ( ) Every Twelve Months (not to exceed 25,000 miles)
- ( ) Inspect Propane Furnaces and Clean as Necessary  
 ( ) Service Engine Air Conditioning System  
 ( ) Service Transmission and Change Filters  
 ( ) Change Differential Lube (first year only)  
 ( ) Clean and Tighten Electrical Grounds  
 ( ) Check Battery Cables and Clean Terminals  
 ( ) Load Test Batteries  
 ( ) Install New Battery Merge Solenoid  
 ( ) Check Antifreeze Protection  
 ( ) Clean Refrigerator Burner  
 ( ) Change Water Filter  
 ( ) Clean Electric Heaters  
 ( ) Change Filter in Power Steering Reservoir  
 ( ) Change Flexible Exhaust Hose in Generator Hush Box  
 ( ) Service Central Air Conditioning  
 ( ) Check Air Dryer (service as required)  
 ( ) Plus "As Required" and "Every Six Months" Items  
 ( ) Rebuild Shifter Motor

- ( ) Every 25,000 Miles
- ( ) Check Toe-in, Front Axle  
 ( ) Check Air Filter (replace if needed)  
 ( ) Review Engine Manufacturer's Maintenance Recommendations and Perform Required Items  
 ( ) Clean, Inspect, and Repack Wheel Bearings  
 ( ) Retorque Overhead Air Conditioners  
 ( ) Change Differential Lube  
 ( ) Retorque Ridewell Bolts (ONE TIME ONLY)

I Decline Recommended Periodic Maintenance I Request Work Indicated Above Accelerators only)

Initials \_\_\_\_\_

Initials \_\_\_\_\_