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Section I
Introduction

This section of your Owner's Manual contains general hints and recommendations for using your motorhome. Checklists and suggestions are offered which cover just about every phase of motorhome travel.

The remaining sections of this manual, Sections II through XI, describe in detail the operation and use of the individual items and systems which comprise your motorhome. The following paragraphs summarize the contents of these sections:

Section II Operation — Covers driver's instrumentation, operating controls, gauges and indicators.

General data on operation of coach vehicular systems are also covered in this section.

Section III Living Area Facilities — Covers operation of heating and air conditioning systems, use of accessories and appliances and related general coach facilities data.

Section IV Electrical Systems — This section describes operation of coach electrical systems; ac/dc operation and generator switching are also covered.

Section V Water Distribution and Drainage Systems — Covers internal supply and distribution, plumbing, city water hookups, tank fill and sanitizing, holding tank dumping and operation of hot water supply system.

Section VI LPG System — This section describes LPG internal supply and distribution, tank filling procedures, system component locations, and precautions to observe regarding LPG handling.

Section VII Air Brake Systems — This section covers operation of the service brakes and spring brake systems, fail/safe features and general brakes system operation.

Section VIII Owner Maintenance Data — Includes information on maintenance procedures which may be within the scope of the owner. Coverage is provided for preventive maintenance schedules, specifications and system capacities, cold weather operation, storage and winterizing.

Interior/exterior appearance care and emergency maintenance procedures are also described.

Section IX General Information — A list of major components, including model numbers, name and address of manufacturer.

Section X Diagrams — Contains wiring, schematic, piping and general-purpose diagrams to assist in troubleshooting and understanding how these systems function.

Section XI Optional Equipment — This section provides you with information on optional equipment and features used in your motorhome.

We hope that this manual will help answer any questions that may arise about the use, operation and maintenance of your motorhome. Any suggestions or recommendations that you might have for including or expanding on material of interest will be carefully considered for incorporation in periodic supplements. We are always interested in providing our coach owners with the most current and comprehensive information about our product.

Your satisfaction is our assurance that we are fulfilling our responsibilities to our owners.

Checklists

A little preliminary planning will go a long way to help make your trips successful and enjoyable. As an aid to planning your travels, review the following checklists. If there are any additional items that you should be reminded of, add them where you see fit. These lists are only recommendations based on the experience and suggestions of sources well-versed in motor-coach expertise. You will eventually find that a short "walk-around"

the coach, outside and inside, will be adequate and comprehensive enough to ensure that you're ready for travel.

Before You Leave:

- Store valuables and important papers in a safe place.
- Arrange care for your pets.
- Cover all food to keep out mice and insects.
- Store oil, gasoline, matches and other inflammables properly; get rid of newspapers, magazines and oily rags.
- Connect timers to several inside lamps and outside lights; keep some shades open for a lived-in look.
- Discontinue newspaper, milk and other deliveries; store trash cans and outside equipment.
- If weather permits, shut down hot water and heating systems; close main water supply.
- Ask the Post Office to hold your mail.
- Have your lawn, garden and house plants cared for.
- Arrange with the Telephone Company for discontinued or "Vacation Service".
- Lock all windows and doors securely.
- Leave your key with your neighbor; let him know your basic itinerary.
- Notify police.

Checkout Your Coach — Outside:

- Disconnect and stow:
  1. Electrical cord.
  2. Sewer hose (flush out)
  3. Water hose.
- Check all exterior lights for damage.
- Check wheel lug nuts for tightness. (450-500 ft.-lb.)
- Check tires for correct pressure. (See Table 8-1).
- Check that all external compartments and filler openings are properly closed and/or locked.
- Check that items stored on exterior of coach are secured. (Be sure that these items present no clearance problems.

Note

If the trip you are planning will take the coach well past suggested maintenance intervals listed in Section VIII, it may be advisable to perform these procedures before leaving. This may avoid unscheduled stops or interruptions during your trip.

- Check that there are no obstacles to avoid above or under the coach. Be sure that there is sufficient clearance front and rear.

Checkout Your Coach — Inside:

- Turn off water pump switches.
- Close windows and vents.
- Check that cabinet doors and drawers are secured.
- Check that refrigerator door latch is in locked position.
- Check that no heavy item is stored in an overhead cabinet.
- Store large items in base cabinets.
- Check that counter tops, range top, table tops and shelves are clear of unsecured items.
- Turn off interior lights; check that entrance step is retracted.
- Secure and lock the entrance door.
- Adjust exterior and interior mirrors.

Warning

Mirrors provide needed additional driver visibility. To be effectively used mirrors must be properly adjusted for each driver and the driver must be aware of the limitations on viewing area that exist even when mirrors are properly used.

Check Your Automotive Systems:

- Check that fluid levels are normal (oil, power steering, engine coolant, battery electrolyte, windshield washers, transmission, etc.).
- Check generator oil level, coolant level, battery condition.
- Check operation of turn signals, emergency flasher, stoplights and backup lights.
- Check that headlight high- and low-beams operate.
- Check horn operation.
- Check fuel gauge, and top up fuel tank.
- Start engine and check gauges for signs of trouble.
- Check operation of foot brakes, emergency brake. (See that brake pressure builds up and steadies at about 100 to 120 psi.)

And, Before Driving Away:

- Check operation of appliances and special equipment.
- Check that fire extinguishers are fully charged.

- Check operation of interior and exterior lighting.
- Start generator and check 120v ac system and wall outlets.
- Adjust driver's seat so that all controls are within easy reach.
- Make sure that seat is locked in position. Do not adjust driver's seat swivel or foreaft mechanism while vehicle is moving or seat could move unexpectedly, causing a loss of control.
- Check that front passenger's seat is locked in position.
- Fasten seat belts. Belts should be placed as low as possible around the hips. This places the load of the body on the strong hip bone structure instead of around the soft abdominal area and prevents sliding out in case of an accident.

Caution

Child restraint systems are designed to be secured in vehicle seats by lap belts or the lap belt portion of a lap - shoulder belt. Children could be endangered in a crash if their child restraints are not properly secured in vehicle. According to accident statistics children are safest when properly restrained in the center of vehicle and in rear facing seating position, rather than a front facing position.

- Check that warning lights are lit when the ignition key is turned to **on** or **start** position.

Some Items You Might Want to Take Along On Your Trip

Note

You may find that many items taken were not needed and that some items that were needed were overlooked during planning of your last trip. Make notes of these items to prevent duplicating the same errors.

- Adequate supply of prescription medicines.
- Prescription sunglasses or reading glasses.
- Camera equipment and film supply.
- Heating pads, ice bags, etc.
- Stationery, envelopes, stamps.
- Telephone number list.
- Reading material.
- Special pet supplies.
- Extra toilet chemical and toilet articles.
- Spare belts for engine – operated equipment.
- Spare parts for generator: suggested spares include oil filter, fuel pump, air filter, solenoid. Five quarts of approved motor oil.
- A professional-type double-action tire pressure gauge.
- Under the heading of **Emergency Equipment**, it is advisable to consider outfitting your coach with these items:
  1. First aid-kit
  2. Emergency highway flares
  3. Flashlight or lantern (with extra batteries)
  4. Tool kit
  5. Replacement lamp assortment
  6. Replacement fuse assortment
  7. A trouble light with a long cord

And Some Other Thoughts To Consider

- Automobile insurance to cover you and your family.
- Avoid cash. Use traveler's checks and credit cards wherever possible.
- Confirm reservations well in advance of arrival.
- Make a clothing check list for everyone.

Citizen's Band Transceiver

You might also bear in mind that your coach is equipped with a CB unit (Citizen's Band receiver-transmitter). In the event of an emergency situation which requires outside assistance, remember to call for help on Channel 9. This channel is restricted to emergency use only and it is monitored 24 hours per day! Don't hesitate to use your CB if you see someone else in need of assistance.

Hot Weather Operation

Wherever possible, choose a shaded parking site so that the coach will be cooler during the hottest part of the day. The full-length side awning will be especially useful in lowering inside temperature. Air conditioning units are indispensable in hot climates. Keep in mind that their proper operation depends on adequate line voltage. Low voltage causes motors to run hotter and reduces compressor motor life. Supply voltage in some campgrounds may not be as high as necessary, especially when there are heavy loads on the lines from other air conditioners. Check the wall-mounted monitors when in doubt.

Cold Weather Operation

LPG appliances, furnace, and gas refrigerator are designed with sealed combustion areas. This is for

your protection to prevent danger from carbon monoxide or depletion of oxygen. Your motorhome is equipped with a highly accurate and sensitive gas/smoke alarm. Heed alarm indications!

If frost or condensation accumulates in closets or cabinets during long periods of cold weather operation, leave the doors to these areas slightly ajar to provide air circulation. Be sure that roof vents are open when using oven or burners.

Campground Courtesy

Don't forget the "Golden Rule". Being considerate of your neighbors will help make friends. A few of the "Do's" and "Don'ts" are:

- Good housekeeping — put all litter in the proper receptacles and leave your site neat and clean.
- Don't allow your water or sewer hook-ups to leak.
- Respect your neighbor's desire to retire at an early hour. Avoid loud noises and bright lights after dark.
- Drive slowly through camp areas at any hour for the safety of pedestrians.

Insurance

As with your automobile, it is important that you have adequate protection with insurance coverages for personal liability, theft, collision, overturn, property damage, etc.

Canadian and Mexican Insurance

Insurance for travel in Canada can usually be covered by your present U.S. policy for the recreational vehicle, often at no extra cost. Consult your individual company for procedures and be sure of your coverage before entry.

For travel in Mexico (at the present time) there are no U.S. insurance companies that can provide recognized Mexican coverage, with the exception of that required for travel through a narrow strip of Mexican territory in and around ports of entry and the U.S./Mexican border.

Mexican insurance is controlled, and rates are set, by the Mexican government. There are several reliable companies handling Mexican insurance, with similar rates for the necessary coverages. The principal differences between them are the "fringe benefits", received in the form of informational travelogs and other helpful information, such as dining places considered acceptable for sanitary conditions, fuel stations, and so on.

Some insurance services include detailed route maps with "where to stay" recommendations and "things to see" mile-by-mile (or kilometer-by-kilometer post). While the rates set by Mexico may seem quite expensive at first glance, you usually end up not spending quite as much as expected because you can usually arrange to hold your state-side policy in abeyance during the same period you are in Mexico, thus not having to pay unnecessarily for double coverage. In addition, you may be able to obtain substantial refunds on the Mexican collision insurance after your return to the U.S. Be sure to obtain a certification from the park operator at each location in Mexico to certify the dates that your coach was parked there. If your coach is parked for most of the time, instead of constantly traveling, your refund may be a major portion of the original cost. This feature is referred to as the "in-storage" credit. (It is a good idea to always check with your insurance company before taking a trip to find out whether applicable insurance rules and regulations have changed. Keep up to date on your coverage.)

Carry insurance papers at all times!

Safety Considerations

Using LP Gas

Check for leaks at the connections on the LP gas system soon after purchase and initial filling of LP tank; continued periodic checks of the system are recommended. Even though the manufacturer and dealer have already made tests for leakage, this check is advisable because of the vibrations encountered during travel. Apply a soapy water solution to the outside of gas piping connections to find gas leakage (bubbles). Usually, tightening of connections will close leaks. (Be sure to first shut off the gas supply!) If not, ask your authorized dealer service to make the needed repairs.

Liquified Petroleum Gas (LPG) is heavier than air. Leaking gas tends to flow to low places, such as does water. It will sometimes pocket in a low area. LP gas can usually be detected by an identifiable odor characteristic to onions or garlic.

Caution

Never light a match or allow any open flame in the presence of leaking gas!

Be sure that the main LP gas supply valve is closed during refueling to prevent accidental ignition of gas fumes by appliance pilot lights.

Warning

When Coach is to be stored in a confined area, turn off the LPG at the main tank shutoff valve (figure 6-1).

Your Wanderlodge® has been provided with an automatic 80% fill valve to protect you from the dangers of an overfilled LPG tank.

Electrical Systems

Your coach has been engineered and checked for your complete electrical system safety. Circuit breakers and fuses are installed to protect electrical circuits from overloading. Before making modifications or additions to the electrical system, consult your dealer for assistance in obtaining a safe and secure installation.

Do not "jump" circuit protectors!

Built-In Power Cord Adapter

Approved power supply cords supplied with the coach for hookup to external power sources are listed below: Identification

- 50A female to 50A male (1) . . . . . Red Tape
- 50A female to 30A male (1) . . . . . Red Tape
- 30A female to 30A male (2) . . . Yellow Tape
- 30A female to 30A male extension(2) . None
- 30A female to 20A male adapter (2) . . None

Note that each cord has a ground pin which provides proper electrical system grounding. The ground pin is your personal protection from electrical shock hazards. Do not use any adapter, cheater, or extension cord that will break the continuity of the grounding circuit. **Never** remove the grounding pin for convenience of being able to make a connection to a non-grounded receptacle!

The power cord adapter allows connection of two 30 ampere 120 volt lines (from separate external circuits) to the shoreline plug in the rear of your coach. This will permit use of all motorhome appliances without overloading the supply lines.

Never operate your coach with a "hot skin"! If you can feel even a slight "tingling" shock from touching the coach body while standing outside on the ground, immediately disconnect the electrical hookup until the trouble is located. This fault is usually caused by a break in the grounding circuit, which should be continuous from the coach skin or frame to the distribution panel board to the third (ground) pin on the power supply cord, and from there to the park receptacle and earth ground. Your motorhome is equipped with dual polarity-protector monitor panels, located on the galley wall. These panels are for your protection in ensuring against improper grounding or reversed hookups. In 1985 and 1986 model coaches, a second dual powerline monitor is located in the shoreline/utility box.

Emergency Stops

Always carry road flares and/or reflective triangular highway warning markers for emergency warning display. Pull off the roadway as far as possible when changing flats or for other emergency situations. Turn on your hazard warning flashers when parked alongside a roadway, even if only for a short while. Have your coach occupants leave the vehicle and stand clear of the area when parked on the edge of a highway.

Engine Exhaust Gas

Avoid inhaling exhaust gases because they contain carbon monoxide, which by itself is colorless and odorless. Carbon monoxide is a dangerous gas that can cause unconsciousness and is potentially lethal. If at any time you suspect that any exhaust fumes are entering the passenger compartment, have the cause determined and corrected as soon as possible.

The best protection against carbon monoxide entry into the vehicle body is a properly maintained engine exhaust system, body and ventilation system. It is a good practice to have the exhaust system and body inspected by a competent mechanic each time the vehicle is raised for lubrication or oil change. It should also be inspected whenever a change is noticed in the sound of the exhaust system and if the exhaust system, underbody or rear of the vehicle has been damaged.

To allow proper operation of the vehicle's ventilation system, keep ventilation inlets clear of snow, leaves, or other obstructions.

Sitting in a parked vehicle with the engine on for extended periods, without proper ventilation, is not recommended!

More Safety Considerations

- Sanitize fresh water supply system periodically. See Section V.
- Prevent water connection fittings from contacting the ground or drain hose to reduce chances of contamination.
- Consider using a qualified technician for repairing gas or electrical appliances.
- Check fire extinguishers periodically for proper charge.
- Avoid overloading your vehicle.
- Be careful not to cause an improper load distribution which can adversely affect roadability.
- Insure that tires are in good condition and properly inflated at all times. Under-inflated tires overheat and are blowout-prone!
- Check and tighten wheel lug nuts every 1,000 miles (torque to 450-300 ft-lbs.)
- Check brake operation in a safe area — not while traveling on a busy highway!
- Use seat belts!

Emergency Exits

Sliding windows, which can be easily opened, may be used as an emergency exit. Squeeze the screen latch and slide it to the rear enough for access to the window latch. Squeeze the window latch and slide window open. Emergency exit windows are identified by an **EXIT** decal on the glass.

Vehicle Loading

Weight Distribution and Load Rating

The Federal Certification Label, located inside and above the drivers windshield between the sunvisor mounting brackets describes the maximum weight-carrying capacities of your motorhome and for each axle, respectively abbreviated by "GVWR" and "GAWR". A typical identification plate is shown in figure 1-1.

Figure 1-1. Federal Certification Label

The Gross Vehicle Weight Rating (GVWR) is the maximum motorhome weight allowable with all systems filled and with passengers and supplies aboard.

Each axle also has a maximum load-bearing capacity referred to as the Gross Axle Weight Rating (GAWR).

A typical motorhome rating might be as follows:

GVWR	34,000 lbs
GAWR (front)	13,200 lbs
GAWR (rear)	23,000 lbs

Generally, a 31-foot unit will weigh about 27,500 pounds; a 33-foot unit will weigh about 28,500 pounds; and a 35-foot unit will weigh about 29,500 pounds. If optional equipment is installed, add the weight of these items to determine the total weight.

The load capacity is the difference between the GVWR and the actual weight. This means the total weight of all food, clothing, other supplies and passengers, must not exceed the load capacity.

To find the actual weight, with the motorhome fully loaded, drive to a scale and read the weight on the front and on the rear wheels, separately, to determine axle loading. The load on each axle should not exceed its GAWR. If weight ratings are exceeded, move or remove items to bring all weights below the ratings.

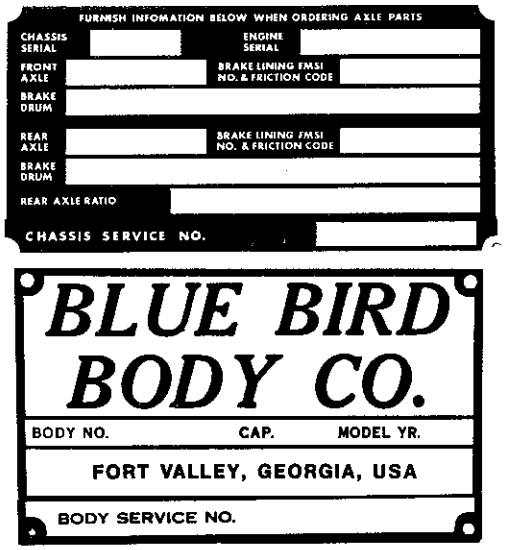


Figure 1-2. Identification Plates

Additional data plates located on the back of the stepwell compartment door provide information useful for identifying your coach if you are planning

on ordering parts. Identification plates, figure 1-2, provide information such as:

1. Body Serial Number
2. Chassis Serial Number
3. Model Year
4. Model Number of Axle (if axle parts are to be ordered)

When loading your motorhome, store heavy gear first, keeping it on or as close to the floor as possible. Heavy items should be stored centrally so as to distribute the weight more or less evenly between the front and the rear axles. Store only light objects on high shelves. Distribute weight to obtain even side-to-side balance of the loaded unit. Secure loose items to prevent weight shifts that could adversely affect the balance and roadability of the vehicle.

Economical Driving

How you drive, where you drive and when you drive — these factors all have an effect on determining how many miles you can get from a gallon of fuel. The careful attention you give your vehicle, as far as maintenance and repairs are concerned, will also contribute to fuel economy.

Stop-And-Start Driving

Frequent stops and starts during a trip diminish miles per gallon. Plan even short shopping trips so you can take advantage of through-streets to avoid the traffic lights. Pace your driving like the professional drivers to avoid unnecessary stops.

Excessive Idling

An idling engine also consumes fuel. If you are faced with more than a few minutes wait, and you are not in traffic, it may be advisable to shut off the engine and re-start later on.

Fuel and Additives

The fuel recommended for your coach is #2 diesel along with a suitable algae inhibiter additive. See section 8 for recommended additive and quantities.

Lubrication and Maintenance

A properly lubricated vehicle means less friction between moving parts. Consult the maintenance schedules in Section VIII for proper lubricants, lubrication intervals and general coach maintenance scheduling.

Air Cleaner

The mixture of fuel and air which powers the engine is taken into the system through the air cleaner. Replace the air cleaner at required intervals to maintain peak engine efficiency.

Excess Weight

Fuel economy is also related directly to the amount of work accomplished by the engine. Heavier loads require more power. Keep excess weight to a minimum.

Tire Inflation

Under-inflation causes needless tire wear and promotes excess fuel consumption. Check tire pressures on a regular basis.

The Federal Certification Label, figure 1-1, shows the cold tire inflation pressures necessary to support the Gross Axle Weight Ratings.

These pressures can be reduced to greatly improve the ride qualities after the actual axle weights have been determined (see previous section on Vehicle Loading).

A Michelin Tire Data Book is included in your Owner's Kit. In the Specifications – Truck Tires (tubeless) section can be found the recommended tire inflation pressures for various axle weights and tire sizes. If any axle weight is on the borderline, always use the higher pressure.

In addition, a tire inflation information plate is located on the inside of the stepwell compartment door, figure 4-3. These are **normal** pressures as long as the axle weights are not in excess of those shown.

Traveling in Your Motorhome

Overnight Stops

There are many modern recreational vehicle parks with good facilities, including State, County and Federal Parks, where electrical, water and sewer connections are readily available. Directories are published which describe these parks in detail and list available services and hookups.

On overnight or short weekend trips, your motorhome has more than adequate holding tanks and water supply capacity in the event that campgrounds or parking sites are not equipped with these facilities.

On longer trips, where sewer connections and utility hookups are unavailable, it will be necessary to stop from time to time to dispose of holding tank wastes and replenish the water supply. Many gas stations (chain and individually-owned) have installed sanitary dumping stations for just this purpose.

When stopping for the night, park the coach in a location that is relatively level and where the ground is firm. This will ensure your comfort as well as the leveling of your refrigerator (for most efficient operation).

Extended Stays

Making a long trip is not very different from making a weekend excursion since everything you need is right at hand and you are home wherever you travel. When packing for an extended trip, try to avoid taking non-essential items.

When planning to stay in the same location for several days, weeks, or even months, be sure to maintain the motorhome level. Use leveling jacks system controls for this purpose.

Hook up to the water supply by attaching the water hose to the commercial water supply inlet.

Plug the electrical cable into the shoreline receptacle. Be sure to observe all grounding and connection precautions!

Connect sewage hookup into the disposal facility.

Winter Traveling

Certain precautions should be taken when traveling in your motorhome during the cold winter months. Keep these suggestions in mind:

- Provide heat in the coach at all times.
- Have a plentiful supply of LPG.
- If your stay is longer than overnight, and you do not use the generator, try to have a shoreline hooked up to outside ac power.
- Minimize your use of electricity if 120v ac is unavailable.
- Leave cabinet doors and wardrobe doors slightly open at night to allow for proper air circulation.
- Freeze protection heaters and heat tapes greatly decrease the chances of frozen water lines **provided the coach is plugged into outside power (one 50A. or two 30A. power cords) or the generator is run continuously during cold weather periods.**

Remember that low temperatures in combination with high winds will cause an equivalent chill temperature much below that indicated by your thermometer. For instance, with an outside temperature of zero degrees, and a wind velocity of 10 miles per hour, the equivalent chill temperature would be –20 degrees F!

There is no substitute for common sense when traveling in cold weather.

General Storage Notes

Drawing draperies will reduce fading of rugs and upholstery. Leaving an air freshener agent will minimize odors from plastics and other materials. Slight opening of windows and vents will allow air circulation without worry of water entering. Covering wheels to eliminate direct rays of the sun on tires will reduce sidewall cracking.

Note

Remove all items from the coach which may freeze, including canned foods, miscellaneous liquids, etc. Remove all contents of the refrigerator/freezer, clean unit and leave doors ajar.

Emergency Assistance

To locate the closest Caterpillar dealer or other authorized repair shop, call toll free (800) 447-4986 except in Illinois call (309) 673-3252.

Section II
Operation

This section provides information on the operation and function of the controls, indicators and gauges located in the pilot/co-pilot compartment that are used in connection with the coach automotive systems. Figure 2-1 illustrates the pilot/co-pilot compartment, high-lighting the instrumentation and panels covered in this section.

Instrumentation

All essential operating controls and gauges used to monitor and control associated engine, generator and coach systems are located conveniently on and adjacent to the electroluminescent dash panel, figure 2-2.

Associated instrumentation, accessible on the bulkhead above the pilot, includes TV, generator ON-OFF switch, altimeter and diesel fuel filter monitors. Controls for CCTV monitor operation are located on the left side bulkhead above the pilot. Refer to figures 2-2 through 2-11 and the following paragraphs for locations and functions of associated operating controls and indicators.

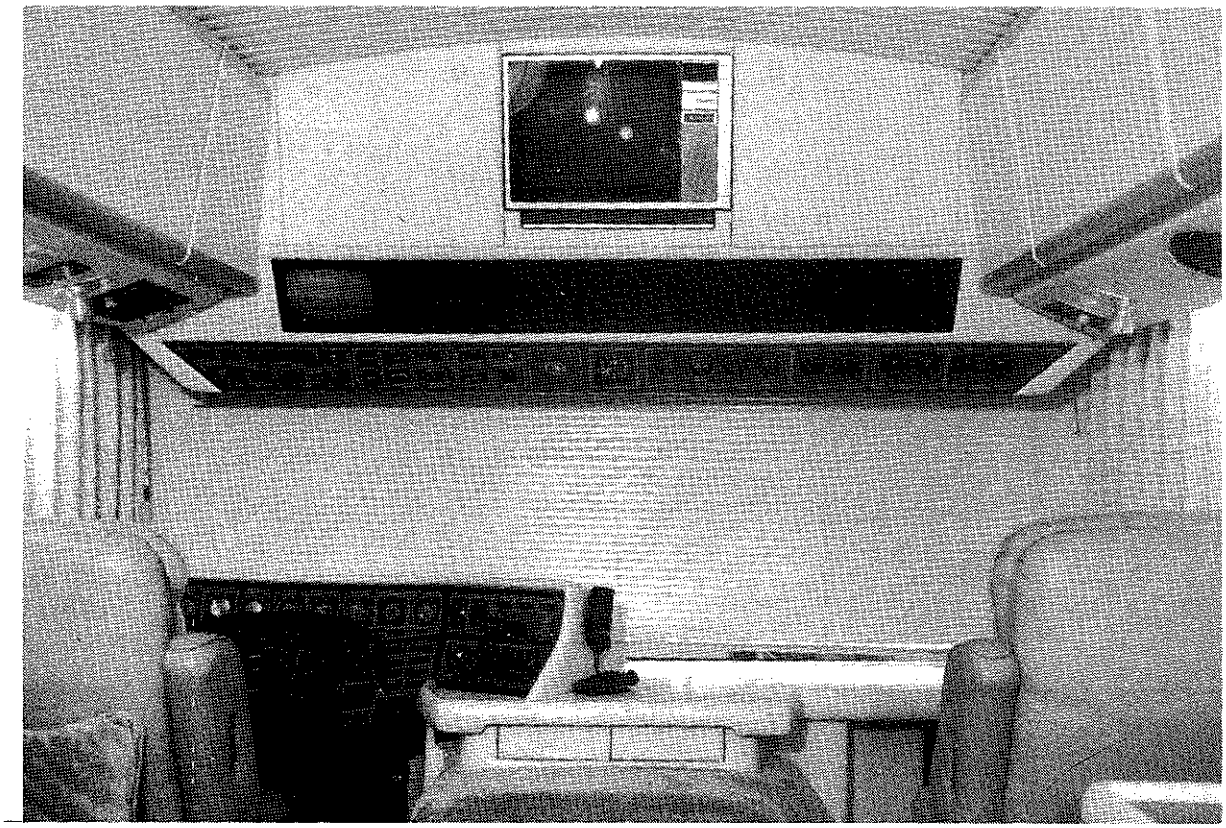


Figure 2-1. Pilot/Co-Pilot Compartment

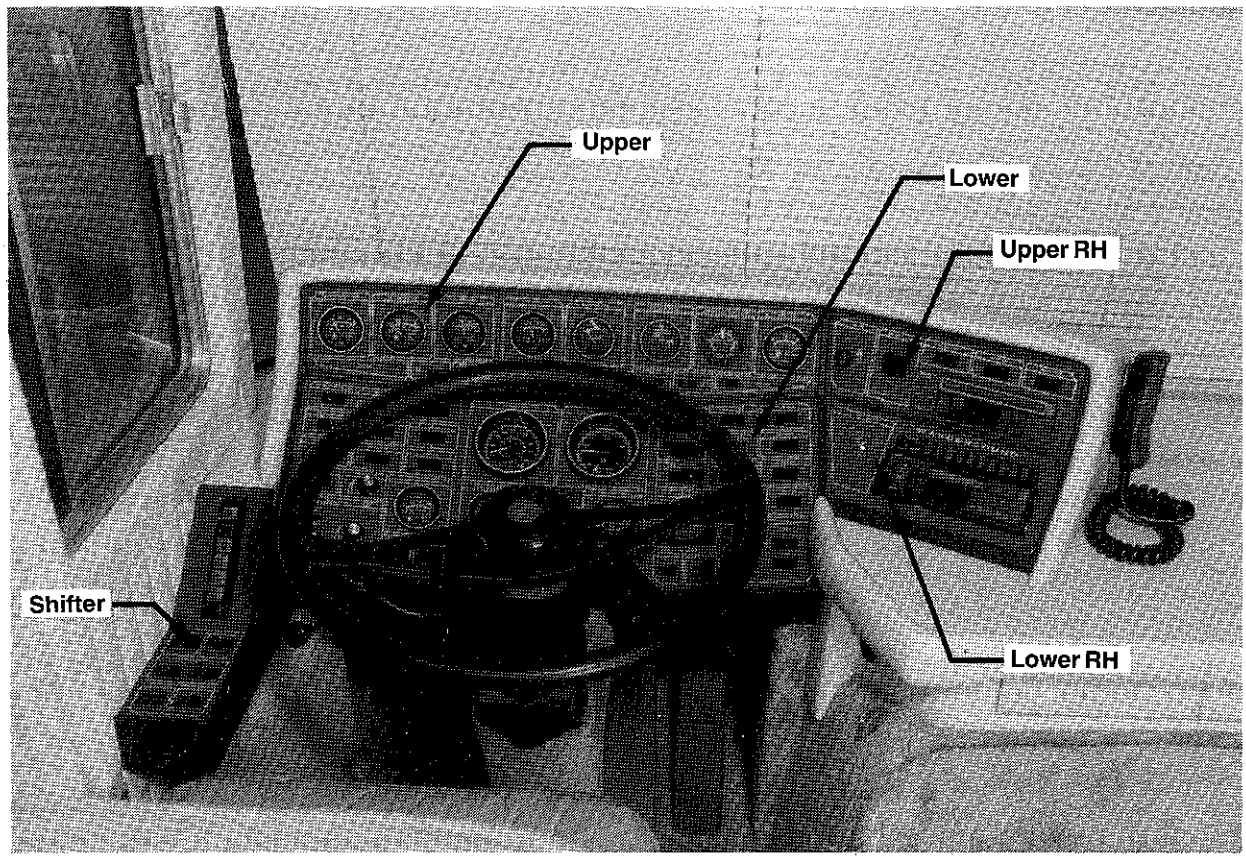


Figure 2-2. Dash

Pilots Control Center

You are now seated in the control center of your new coach. You have control of all engine functions, generator functions as well as all accessory functions at your fingertips.

Our new dash layouts for 1988 were designed for viewing continuity as well as function and beauty. You will notice as you drive that viewing angle changes only slightly from the road to any part of the dash.

The dash is divided into five main panels, (fig. 2-2) which are the upper dash panel, lower dash panel, shifter panel, upper right hand dash panel and lower right hand dash panel. The gauges, switches and warning lights installed in these panels will be explained as far as function and operation in the following text.

Note

Some items operate at all times, some require the 12 volt master to be on, while others need the 12 volt master and the ignition on. Gauges marked with an * require the engine to be at normal operating temperature for correct readings.

Upper Dash Panel – (See Fig. 2-3)

(1) * **ENG. WATER TEMPERATURE** Gauge — Normal water temperature should be between 180° and 205° for safe operation.

Caution

If the Engine Temperature gauge indicates excessively high temperatures, the engine may be over-heating and should be stopped to prevent damage. Allow the engine to cool before checking the radiator coolant level.

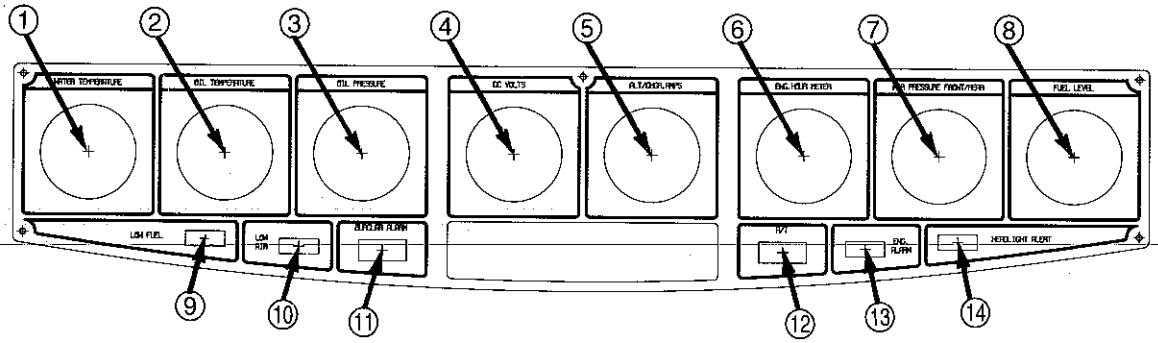


Figure 2-3. Upper Dash Panel

② ***ENG. OIL TEMPERATURE** Gauge — Gives a constant reading of the engine oil in the supply line from the pump. The normal operating temperature is from 200°F to 250°F. If the temperature goes over 250° the engine may be low on oil or there is overheating of the cooling system.

③ ***ENG. OIL PRESSURE** Gauge — Indicates the pressure of the oil, not the amount of oil in the engine reservoir. This gauge will normally read between 40 and 65 psi during cruising speeds; and drop to a minimum of 14 psi when the engine is idling.

Caution

No oil pressure, or low oil pressure readings (below 25 psi) when engine is operating at cruising speeds are trouble indications! Do Not Operate the Engine Under These Conditions!

④ **DC VOLTS** — Registers the actual voltage at the coach batteries. With the engine running, gauge should read 14 volts (+ or − 0.5).

⑤ **ALT. CHARGING AMPS** — Shows total charging current in amperes. With the engine running, total alternator output is shown. When parked, with a source of 120 volt ac, (outside power or generator), the gauge will show total output of the battery chargers.

⑥ **ENG. HOUR METER** — This operates whenever the ignition switch is on. The smallest increment is 1/10 hour or six minutes.

⑦ **AIR PRESSURE FRONT/REAR** Gauge — The Dual Air service Brake Pressure systems are engine operated and supply independent brake system air pressure for front and rear service brakes and the parking brake. During normal operation, each air pressure gauge reading will build up to 100 psi to 120 psi shortly after the engine is started. Note that, as a safety feature, the parking brake cannot be released until air pressure readings are at least 65 psi.

⑧ **FUEL LEVEL** Gauge — Indicates the amount of diesel fuel remaining in the tank. This gauge reads only when the ignition switch is in **ON** or **ACCESSORY** position.

⑨ **LOW FUEL** — When this light comes on it is an indication that the operator should be looking for the nearest refueling station.

⑩ **LOW AIR** Warning Indicator — This light is associated with a buzzer. These warn the driver that there is an insufficient supply of air (65 psi or less) to properly operate the coach. If the air pressure is low, when the ignition key is turned on, the light and buzzer will come on immediately. Both warnings will continue until the air pressure is built back up, or the ignition key is turned off.

⑪ **BURGLAR ALARM** Switch — There are two switches that turn the Burglar Alarm on and off. The switch on the dash is used when you are inside the coach. The weather proof key switch, outside the coach next to the entrance door, is used when you are going to be leaving your coach for awhile.

Note that both switches operate independently of one another. If the Burglar Alarm is turned on at the dash, then it must be turned off at the dash. The outside switch works on the same principle.

⑫ **A/T** Switch — (Anti-Theft) deactivates the starting system for protection against unauthorized cranking and theft.

⑬ **ENGINE ALARM** Indicator — This indicator, along with a Buzzer Alarm, monitors engine operation. If the oil pressure or the coolant level drops too low or if the coolant temperature gets too high, the engine alarm light and buzzer will be activated.

⑭ **HEADLIGHT ALERT** — When the ignition switch is turned off and the headlight switch is on, this red warning light, along with a buzzer, will come on. These will remain on until the headlight switch is turned off or the ignition switch is turned back on.

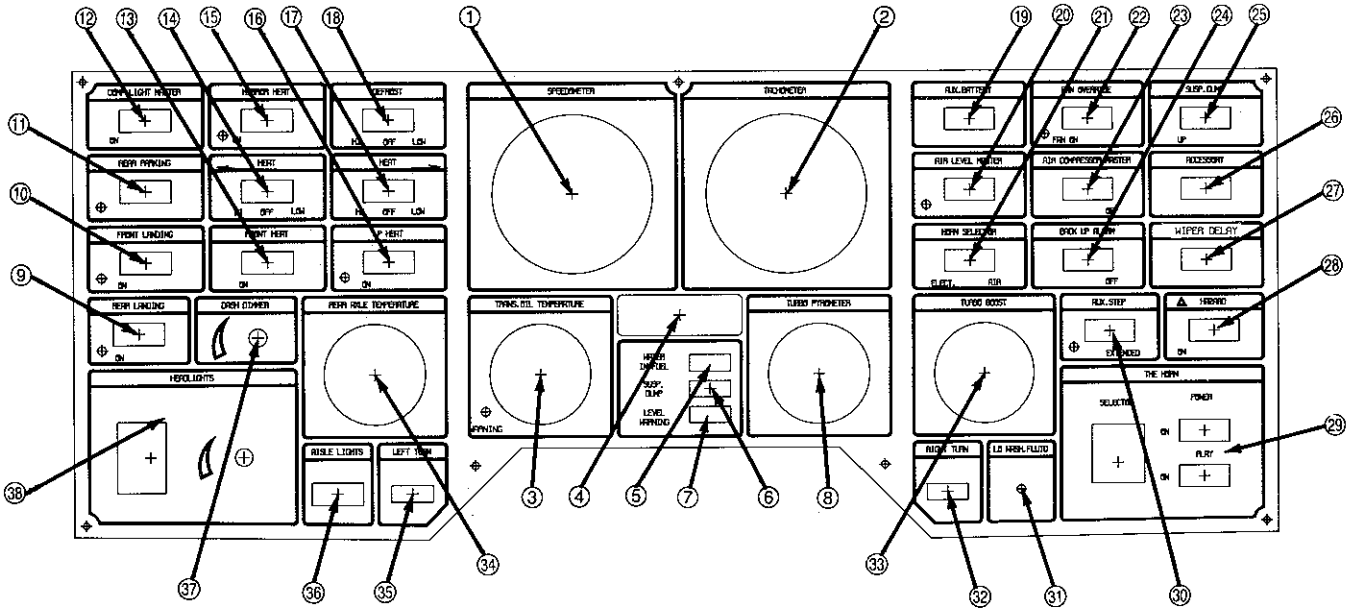


Figure 2-4. Lower Dash Panel

Lower Dash Panel (See Fig. 2-4)

① **SPEEDOMETER** — Indicates speed and accumulated mileage (odometer). This is a solid-state electronic monitor, with an RPM sensor located at the right drive axle brake drum.

② **TACHOMETER** — Indicates actual engine RPM (Revolutions Per Minute) when scale (0-40) reading is multiplied by 100. Idle RPM should be 700 and full load (uphill) 2600 RPM.

③ **TRANS. OIL TEMPERATURE** Gauge — Monitors and gives constant temperature readings of the transmission oil. If the gauge registers a temperature over the 300°F maximum safety range, check for low fluid in the transmission.

④ **HIGH BEAM** Indicator — The Blue Bird logo is illuminated when high beams are selected using steering column switch.

ACCESSORY WARNING Lights — These three (3) warning indicators light to alert you of the following conditions:

⑤ **WATER IN FUEL** — This light comes on when there is an excess of water in the bottom of the fuel tank.

⑥ **SUSP. DUMP** — Light flashes to tell you that the suspension system has little or no air, and that the suspension needs to be pressurized before the coach is driven.

⑦ **LEVEL WARNING** — This light comes on when any of the four (4) leveling jacks is not fully retracted.

⑧ **TURBO PYROMETER** — Registers the temperature of the exhaust gas output of the Turbo. The correct temperature of the exhaust should be around 740°F at maximum power.

⑨ **REAR LANDING** Light Switch — At the **ON** position this switch turns **ON** the landing lights in the front right and left panels just behind the front tires. These lights shine toward the rear of the coach so are called Rear Landing Lights. Note that a small blue indicator lights when the switch is **ON**.

⑩ **FRONT LANDING** Light Switch — To turn on the front Landing lights, located in the rear side panels just in front of the rear wheels, push this switch to the **ON** position. The indicator next to the switch should be lit when the switch is on.

⑪ **REAR PARKING** Light Switch — This switch controls the on-off operation of the rear parking lights (rectangular halogen lights above the rear bumper) when transmission selector lever is in **R**. An indicator next to the switch lights when the rear parking lights are on.

⑫ **COMP. LIGHT MASTER** Switch — This switch in the **ON** position provides power to all of the exterior compartment light switches. As each compartment door is opened, the light automatically comes on; closing the door turns the light off.

⑬ **FRONT HEAT** Switch — Activates a solenoid valve to provide engine coolant flow to the front heater core.

⑭ **HEAT** Switch — To turn on the heater blower for the pilot's area press this switch to either the **HI**— or **LOW** position. Note that when the front heat switch (13) is **OFF**, the heat switches (14) and (17) can be used to provide cool air circulation by turning on the blowers.

⑮ **MIRROR HEAT** Switch — This switch turns on a thermostatically controlled heater in the right and left outside mirrors (convex mirrors excluded). With the switch **ON** the Mirror Heaters will automatically come on to defogg the mirrors.

⑯ **L.P. HEAT** Switch — When in the **ON** position, 12v. power is supplied to the L.P.G. furnaces.

⑰ **HEAT** Switch — To turn on the heater blower for the co-pilot's area press this switch to either the **HI**— or **LOW** position. Note that when the front heat switch (13) is **OFF**, the heat switches (14) and (17) can be used to provide cool air circulation by turning on the blowers.

⑱ **DEFROST** Switch — Turns on the blower for defrosting or defogging the front windshield. Set to **HI**— or **LOW** speed as desired.

⑲ **AUX. BATTERY** Switch — When this switch is pressed, a jumper solenoid connects the generator and coach batteries together (in parallel) to provide extra power for cranking the generator or coach. Releasing the switch immediately isolates the two battery systems.

⑳ **AIR LEVEL MASTER** Switch — Allows you to level the coach to a certain extent using the air suspension. This is an optional system and should only be used for short periods of time.

㉑ **HORN SELECTOR** Switch — Allows selection of the air or electric horns when the steering wheel horn button is depressed.

㉒ **FAN OVERRIDE** — This switch operates the engine cooling fan in the engine compartment. The engine cooling fan is thermostatically controlled, and the activating temperature is 195°. To override the thermostat turn the Fan Override switch on, and the engine cooling fan will operate at any temperature continuously.

㉓ **AIR COMPRESSOR MASTER** Switch — This switch operates the auxiliary air compressor (optional equipment) which is a 120 vac operated back up air compressor.

㉔ **BACK UP ALARM** Switch — This switch turns the back-up alarm buzzer off.

Air Suspension System

Your motorhome is equipped with air suspension bags which **cushion** the front and rear axles. Dumping these air bags when the vehicle is parked allows the rubber bumpers to come together and eliminate vehicle **springiness**. The **SUSP. DUMP** switch controls the dumping and filling of the suspension air bags.

Note

The accessory air tank must contain at least 65 PSI pressure for the air switch to function. The accessory air tank pressure does not register directly on the dash air pressure gauges but when the dash gauges register 65 or above, there is ample pressure.

Moving the **SUSP. DUMP** switch toggle down (to the rear) applies air pressure to three air pilot-operated valves on the suspension system. Two of these valves are located on the rear axle; and one is located on the front axle. The pilot air shifts the valves, cutting off the air supply to the air bags and allows the air in the bags to escape. After the suspension system has been dumped, and the ignition is turned on, a warning pilot light is illuminated on the dash to warn the driver that the system is dumped and not to drive the vehicle until the air switch toggle is set to the up position.

Note

If the leveling jacks are to be used while the coach is parked, the jacks must be lowered to level the vehicle before the air bags are dumped. If the air bags are dumped before the jacks are down, the vehicle is too low for the jacks to unfold into lifting position properly. This could damage the jacks.

㉕ **SUSP. DUMP** Switch — This switch controls the inflation of the air suspension system. Move toggle down (to the rear) to dump the bags. Note that **SUSP. DUMP ACCESSORY WARNING** light is lit: set switch to **UP** position to re-inflate the air bags before driving away. (System air pressure must be at least 65 psi.)

㉖ **ACCESSORY** Position — These **blank** positions may be used for the installation of additional switches and indicator lights for customer add on equipment.

Caution

Use existing panel holes for installation of additional controls or indicators. Drilling new holes will destroy the electroluminescent features.

㉗ **WIPER DELAY** — Knob adjusts wiper speed from 2 to 20 sweeps per minute when intermittent operation is selected at steering column switch lever.

㉘ **HAZARD** Switch — This switch turns on the emergency flashers. When switch is used both turn signals will flash in unison.

㉙ **THE HORN**, Figure 2-4 — This corner of the dash has 3 different switches for use with the musical horn.

The **SELECTOR** switch incorporates 2 thumb-wheels for selecting the tune to be played. Use **The Horn** manual to select a tune. Then set the thumb-wheels to the corresponding numbers or number and letter. Note, that if a tune is playing, making a new selection on the selector switch will not affect the tune playing.

The **POWER** switch provides power to the musical horn. When this switch is turned **ON** the horn will immediately start playing the tune that corresponds to the digits on the selector switch.

The **PLAY** switch (momentary) resets the horn to the beginning of tune chosen by the Selector switch. If the **PLAY** switch is pressed while a tune is playing, that tune will stop instantly and the horn will reset to the beginning of the tune that corresponds to the digits on the **SELECTOR**.

㉚ **AUXILIARY STEP** Switch — An **On-Off** switch that, when set to the **EXTENDED** position, activates a relay automatically locking the outside entry step in the out position. The indicator light comes on when the ignition switch is turned on to remind you that you need to retract the step before proceeding.

㉛ **LOW WASHER FLUID LIGHT** — Light indicates when there is approximately 1/4 contained in the fluid reservoir.

㉜ **RIGHT TURN** Indicator — When the turn signal lever, (steering column control section), is pushed up into the right turn position this indicator flashes in conjunction with the outside directional lights. The right cornering light will come on continuously if the headlights or the parking lights are turned on while the turn signal lever calls for a right turn.

The indicator, along with the left turn indicator and all outside directional lights, flash in unison when the HAZARD switch (item 28) is pressed to the on position.

㉝ * **TURBO BOOST** Gauge — Registers the psi of the Turbo Compressor outlet. The gauge should read a maximum of 15 psi at maximum power.

㉞ **REAR AXLE TEMP** — Indicates the temperature of the oil in the rear axle by degrees fahrenheit.

㉟ **LEFT TURN** Indicator — When the turn signal lever is pulled down into the left turn position, this indicator flashes in conjunction with the outside directional lights.

The left cornering light will come on continuously if the headlights or the parking lights are turned on while the turn signal lever calls for a left turn.

㊱ **AISLE LIGHTS** — This switch allows you to turn on or off the flourescent aisle lights from the pilot's chair.

㊲ **DASH DIMMER** — This control will only operate when the headlight switch is on. The background lighting (electroluminescent) for the dash can be brightened by turning counter-clockwise and dimmed by turning clockwise.

㊳ **HEADLIGHTS** — The Headlight switch serves two functions. Press **P** for parking lights and gauge illumination. Press the bulb symbol for headlights, parking lights and gauge illumination. The dimmer controls brightness of all gauges in dash. Turn counter-clockwise to increase or clockwise to decrease the brightness.

Shifter Panel (See Fig. 2-5)

TRANSMISSION SHIFT SELECTOR — A lighted transmission (6) six pushbutton shift selector. Five forward gears with reverse and neutral.

(See Operating Manual and Owners Maintenance Data Section VIII for further information.)

MARKER LIGHTS Switch — Press this switch to **ON** to turn on the clearance and identification lamps located on the top sides and ends of the coach. This switch may also be flipped on and off to flash the marker lights as a courtesy signal.

DRIVING LIGHTS Switch — Driving lights are recessed in the front bumper. When the Driving Light switch is turned **ON**, the Driving Lights and an indicator next to the switch should come on.

CRUISE CONTROL — These two switches operate in the following manner: The switch on the right turns the cruise control on or off. The switch on the left locks the cruise control in on the desired cruising speed.

Note that the coach must be traveling at least 20 mph before the cruise control will activate. When the desired speed is reached press the **ON-OFF** switch to the **ON** position then press the **SET-RESUME** switch to the **SET** position and hold for 2 seconds before releasing. The coach should automatically remain at that speed.

Note that the accelerator can be used to increase the speed of the coach, but the speed cannot be decreased unless the brake pedal is depressed, or the **ON-OFF** switch is turned **OFF**. If you use the brake to disengage the cruise control, and you would like to pick back up to your original cruising speed, press the **SET-RESUME** switch to the **RESUME** position for 2 seconds. The coach should automatically return to that original speed.

Engine idle speed can be increased, while parked, by means of the cruise control switches, push the **ON-OFF** switch to **ON**; then push and release **RESUME** switch rocker until desired RPM is attained. RPM will return to normal idle speed when:

1. **CRUISE CONTROL ON-OFF** switch is turned off.
2. Transmission selector is moved from **N** position.
3. Parking brake is released.

Note

Pressing on brake pedal will decrease RPM but speed will return to higher setting as soon as pedal is released.

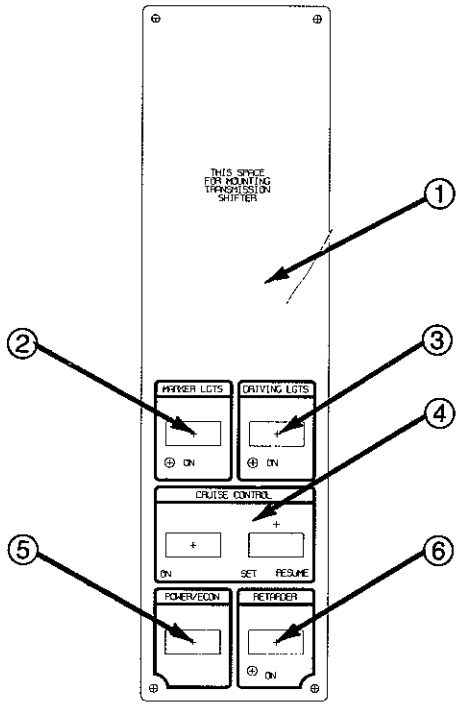


Figure 2-5. Shifter Panel

POWER ECONOMY Switch — changes the shift point in the transmission to increase low end torque (power) or to increase engine efficiency (economy).

RETARDER Switch — Provides power to Retarder controller mounted on transmission gear selector console (see figure 2-12).

Upper Right Hand Dash Panel (See Fig. 2-6)

LIGHTER — Depress to heat the element; pops out when hot.

SECURITY LOCK Switch — Dual switches used to lock and unlock the deadbolt lock on the entrance door. A switch is also located on bedroom control panel.

COLD START — When switch is pressed to on it sends a timed pulse of ether into the air intake of engine to help starting in cold weather.

Caution

Never use switch after engine is running.

LEFT VENT and **RIGHT VENT** Switches — Operate the air cylinder controlled air vents to direct fresh air to the pilot and co-pilot areas.

COMPACT DISC PLAYER — Space available for optional disc player with premium sound system.

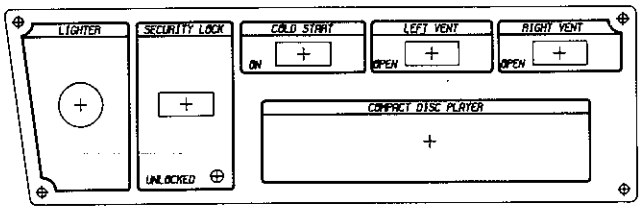


Figure 2-6. Upper Right Hand Dash Panel

Lower Right Hand Dash Panel

(See Figure 2-7)

Ignition Switch — A four-position, standard-type key switch. In **OFF** position (center), ignition and accessory positions are disabled and the key can be inserted or removed. In **ON** position (right) the battery is connected to the engine-run ignition circuits and the key can be advanced to **START** to start the engine, providing that the transmission selector is in neutral **N** position. **ACCESSORY** position (left) allows operation of accessories without activating the engine-run circuits.

Wandersound Stereo — is comprised of a Blaupunkt Lexington AM/FM Tuner/Cassette with four (4) 6 x 9 coaxial Pyle Driver speakers and two (2) 6½ inch coaxial Pyle Driver speakers. The Tuner/Cassette has auto reverse, electronic tuning sensor, Dolby noise reduction and metal tape capabilities.

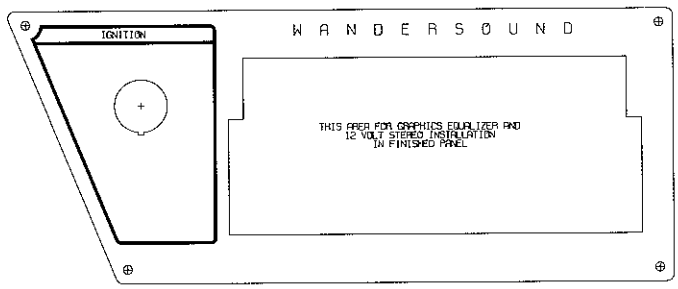


Figure 2-7. Lower Right Hand Dash Panel

The speakers are located four (4) in the living room and two (2) in the bedroom. A privacy switch is located on the overhead panel above the driver's head. The privacy switch turns the livingroom speakers off. Headphone jacks are located on the hood table and in the bedroom. There is a volume control in the bedroom controlling the volume of the bedroom speakers.

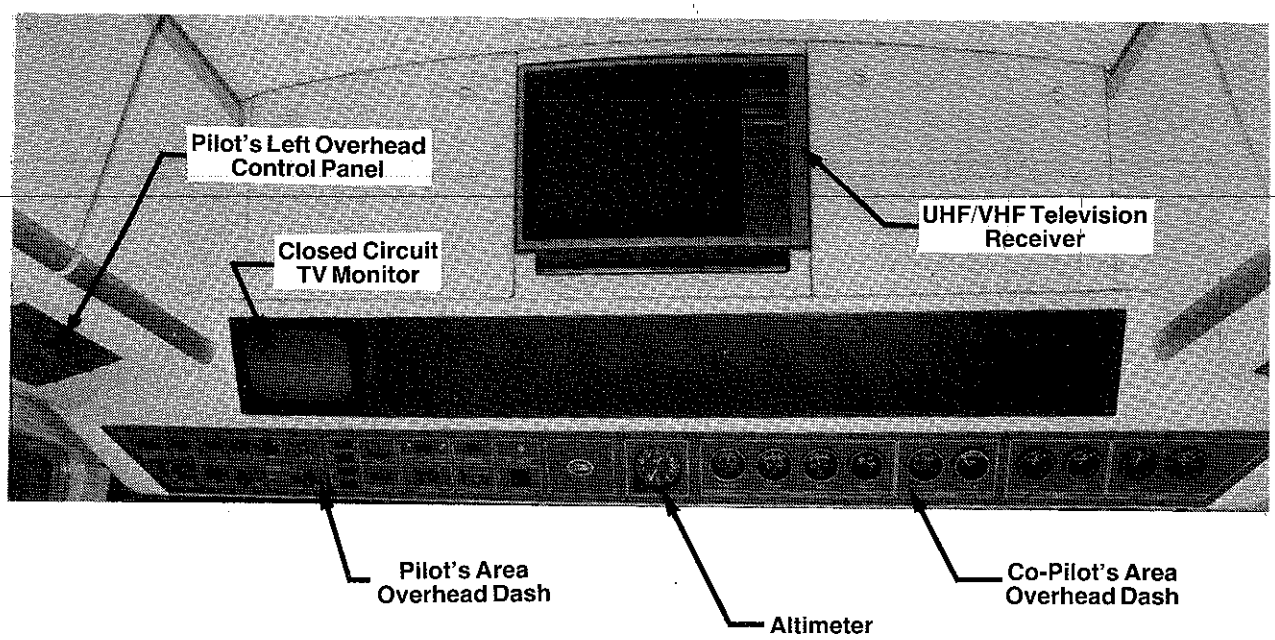


Figure 2-8. Overhead Control Center

Overhead Control Center

(See Figure 2-8)

CLOSED CIRCUIT TV MONITOR — Operation will be covered in conjunction with figure 2-14.

UHF/VHF TELEVISION RECEIVER — Is a standard TV. Operation is covered in the owner's manual supplied with set.

Pilot's Area Overhead Dash

(See Figure 2-9)

① **HEAT SELECTOR** Switch — Operates solenoid valves in engine coolant line to divert coolant flow through hot water heater and chassis heaters when this switch is in **WINTER** position. Setting the switch to **SUMMER** position causes the coolant to flow through the hot water supply heater coil only.

② **AUX. PUMP** Switch — Controls the auxiliary water pump (under floor at road side rear) that boosts the circulation of engine coolant through the water heater heat exchanger and chassis heaters in the bedroom, kitchen and livingroom.

③ **DASH DIMMER** — This control will only operate when the headlight switch is on. The background lighting (electroluminescent) for the upper dash can be brightened by turning counterclockwise and dimmed by turning clockwise.

Remote Spotlight Controls

The optional roof-mounted remote-control high intensity spotlight is operated by the **SPOTLIGHT** controls located in the overhead dash. The spotlight produces 100,000 BCP (beam candle-power) and can be turned on and off, positioned horizontally or vertically at an adjustable rate of speed, and can be used for spot- or flood-lighting. The following controls operate the spotlight:

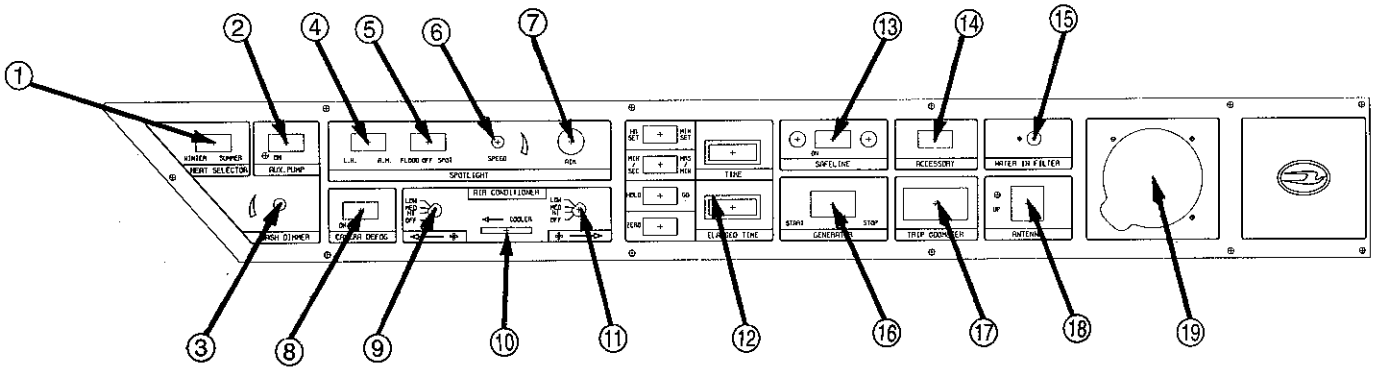


Figure 2-9. Pilot's Overhead Dash

④ **SPOTLIGHT SELECTOR** Switch — Depressing switch, left or right, selects LH or RH light operation. This switch is functional only when dual spotlights are installed.

⑤ **SPOTLIGHT BEAM SELECTOR** Switch — Depressing left side of switch activates **FLOOD** while right side pressure selects **SPOT**. Center position is **OFF**.

⑥ **SPOTLIGHT SPEED** Control — Adjusts speed of light head movement.

⑦ **SPOTLIGHT AIM** Control — Controls horizontal and vertical beam position.

⑧ **CAMERA DEFOG** Switch — Energizes fan in compartment for Closed Circuit TV (CCTV) camera.

⑨ **AIR CONDITIONER LEFT FAN** Switch — Three speed blower for left front area of coach. Left fan switch must be in either **HI**, **MED**, or **LOW** to energize compressor.

⑩ **AIR CONDITIONER** Temperature Selector — Thermostat setting controls temperature by cycling compressor.

⑪ **AIR CONDITIONER RIGHT FAN** Switch — Three speed blower for right front area of coach.

⑫ **CLOCK PANEL** — This panel includes a digital readout. Four switches to the left of the display set clock timing. To set **TIME** display set clock timing. to set **TIME** display, press **HR SET/MIN SET** switch to **HR SET** position and hold until correct hour is displayed; repeat with switch in **MIN SET** position until correct minutes are displayed.

The **ELAPSED TIME** display will show elapsed time in terms of hours and minutes, or in minutes and seconds, depending on the position of the **HRS/MIN - MIN/SEC** switch. Set this switch as desired, press **ZERO** to reset the display to a 00:00 readout, and the elapsed time will count. The **HOLD/GO** switch may be set to **HOLD** position to suspend operation of the elapsed time display; for elapsed time opertion, leave switch in **GO** position.

⑬ **SAFELINE ALARM** — The Safeline alarm operates whenever the shoreline is connected to the coach and the ignition switch is in **ON** position as a reminder to disconnect the shoreline before driving away.

With the Safeline switch **ON**, the alarm is given by buzzer sound and red light. The buzzer can be deactivated in favor of a flashing amber light by turning off the switch.

⑭ **ACCESSORY** Position — See item (26), figure 2-4.

⑮ **WATER IN FILTER** — Light and buzzer alarm.

⑯ **GENERATOR START/STOP** Switch — Provides local control for generator operation. Press this center-off momentary switch to **START** position and hold until generator starts, as indicated by the switch indicator illuminating. If generator does not start within 2 to 5 seconds, release switch, wait 30 seconds, then try again. To shut down the generator, press to **OFF** position and hold until light extinguishes.

Caution

Do not start the generator when a heavy circuit load is on-line, such as the air conditioners. This can cause an excessive strain on the genertor rotating components and may result in equipment damage.

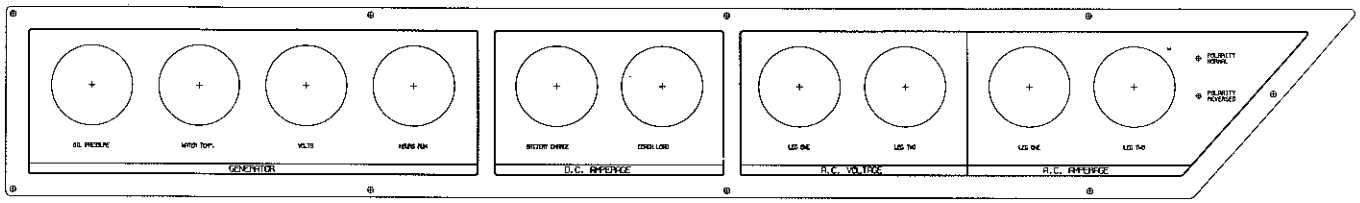


Figure 2-10. Co-Pilot's Overhead Dash

Note

When starting the generator during cold weather, press the switch to STOP position for 15-20 seconds. This activates the glow plugs for easier starting.

⑰ **TRIP ODOMETER** — Depress bar to reset.

⑱ **ANTENNA** Switches — Both switches must be pushed simultaneously to cause raising or lowering of TV antenna. Indicator will light when TV antenna is up from its secured position when ignition switch is turned on.

⑲ **ALTIMETER** — Indicates coach height above sea level. (Zeroing adjustment can be used to calibrate unit at known elevations.)

Co-Pilot's Overhead Dash

(See Figure 2-10)

GENERATOR OIL PRESSURE Gauge — Shows the oil pressure, not amount of oil in the generator enegine reservoir. This gauge will normally read between 30 and 60 psi. Low oil pressure indications are often a symptom of possible generator failure. Oil level should be checked on a regular basis. Note that the generator has a low-oil pressure shut-off switch which operates if the generator oil pressure falls below 15 psi.

GENERATOR WATER TEMP. Gauge — Displays generator engine coolant temperatures from 100 to 240 degrees. Normal operating temperatures vary from 175 to 190 degrees. If consistently high temperatures are indicated, shut down the generator, wait for the engine to cool, then check radiator coolant level. Note that the generator has a high-temperature shut-off switch which operates if the generator temperature reaches 225 degrees F.

GENERATOR VOLTS — Expanded-scale voltmeter, with scale graduations from 10 to 16 volts, shows the condition of the generator battery. Normally, the battery voltage varies from 12 to 13 volts; under starting load it may drop to about 10.5 volts and then rise to about 14.0 when the generator starts and begins charging the battery through the external isolator unit and battery chargers. Battery voltage readings less than 10.5 or more than 15 are usually a symptom of an electrical system failure or impending battery breakdown.

GENERATOR HOURS RUN Meter — Indicates total hours of generator operation.

D.C. AMPERAGE — Ammeter on left (labeled **CHARGE**) shows net current flow to or from batteries. Needle movement from the center of the gauge indicates discharge to the left and charge to the right. When parked, following highway travel, it is normal to see a needle position to the left of center even when plugged into shore power (or running generator). This will gradually diminish and should eventually show some movement to the right with coach loads turned off.

Ammeter on right (labelled **COACH LOAD**) shows current demand of 12 volt load.

A.C. VOLTAGE — Voltmeter on left monitors LEG ONE while that on right monitors LEG TWO of 120 volt alternating current circuits.

Caution

Appliances can be damaged by low voltage. Loads should be balanced so voltage does not drop below 110 volts for either leg. Low campground (shorepower) voltage can be defected quickly from gauge readings. If cause of low campground voltage can not be corrected, generator power will have to be used during periods of high appliance demands.

A.C. AMPERAGE — Ammeters show current flow in LEG ONE (left) and LEG TWO (right) of 120 volt alternating current circuits. **Polarity Normal** indicator (green), lit whenever the shoreline hookup is properly connected and grounded and line polarity is compatible with coach wiring and a **Polarity Reversed** indicator (red) which lights when hookup is reversed.

A faulty ground connection is indicated if none of the LEDs is lighted.

Pilot's Left Overhead Control Panel (See Figure 2-11)

STEREO JACK — For headphone use with AM/FM Stereo Tuner/Cassette Player.

PRIVACY SWITCH — When switch is on power to all stereo speakers in front section of coach is turned off. Use this switch when stereo headphones are used.

LIGHTS — Switch turns the flourescent lights in the pilot's and co-pilot's area on.

AIR CONDITIONING Remote Switches — Permit air conditioning control by the pilot. See Section III for full description.

MONITOR Controls — **CCTV ON/OFF** and **BRIGHTNESS**.

INVERTER — Space for optional inverter controls. See Section XI for information.

C.B. — Jack for headphone listening with volume control.

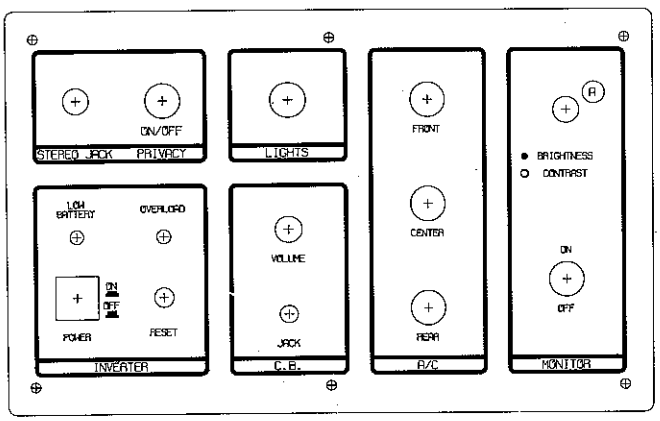


Figure 2-11. Pilot's Left Overhead Control Panel

Steering Column Area (See Figure 2-12)

The steering column area, figure 2-12 includes controls located on the steering column, and under the dash as well as a gauge on the engine cover.

HORN — Operate the horn by pressing in on the center section of the wheel. Select air or electric horn with the **HORN SELECTOR** switch on the dash.

COMBINATION TURN SIGNAL/High BEAM and WASHER/WIPER SELECTOR — Push lever toward dash for right turn signal, pull lever away from dash for left turn signal. Pull lever up toward steering wheel and hold for momentary high beam. When lever is released low beams are activated. Push lever down until switch is activated for high beam operation. Pull lever back toward steering wheel to go to low beam operation. The washer ring is located at the end of the lever and when pushed activates the windshield washer, but only when the wipers are activated. To activate the wiper twist lever from – O – position to I or II for continuous speeds or to INT for intermittent operation. When in INT position the delay of the wipers can be changed by the **Wiper Delay** knob on lower dash (item 27, figure 2-4). Twist lever back to – O – position to turn wipers off.

TILT LEVER — Pull lever up to release lock mechanism. While holding lever up, adjust the steering wheel to a comfortable position and release lever. Move the steering wheel slightly to make sure the column locks into position.

Caution

Always make sure that lever is in the fully locked position in whichever detent setting is used. Do not change the wheel tilt setting while the coach is in motion.

TELESCOPING STEERING WHEEL — to unlock telescoping wheel twist center section of steering wheel counter-clockwise and adjust wheel to comfortable position. While holding steering wheel at desired position with one hand lock it into position by turning the center section of wheel clockwise.

FUEL VACUUM GAUGE — Located in engine cover. Racor fuel filter element should be changed when pointer goes into red!

PARKING BRAKE — The **Parking Brake** control is located under the lower dash, to the left of the fuel vacuum gauge. Note that the parking brake cannot be released unless the system air pressure is at least 65 psi.

12 VOLT MASTER SWITCH — This switch is hidden on an inner dash panel directly in front of (and below) the **Parking Brake** control. Use this switch to shut off 12 volt battery power to all circuits except digital clocks, radio memory, monitoring panel functions, refrigerator control system, and burglar alarm.

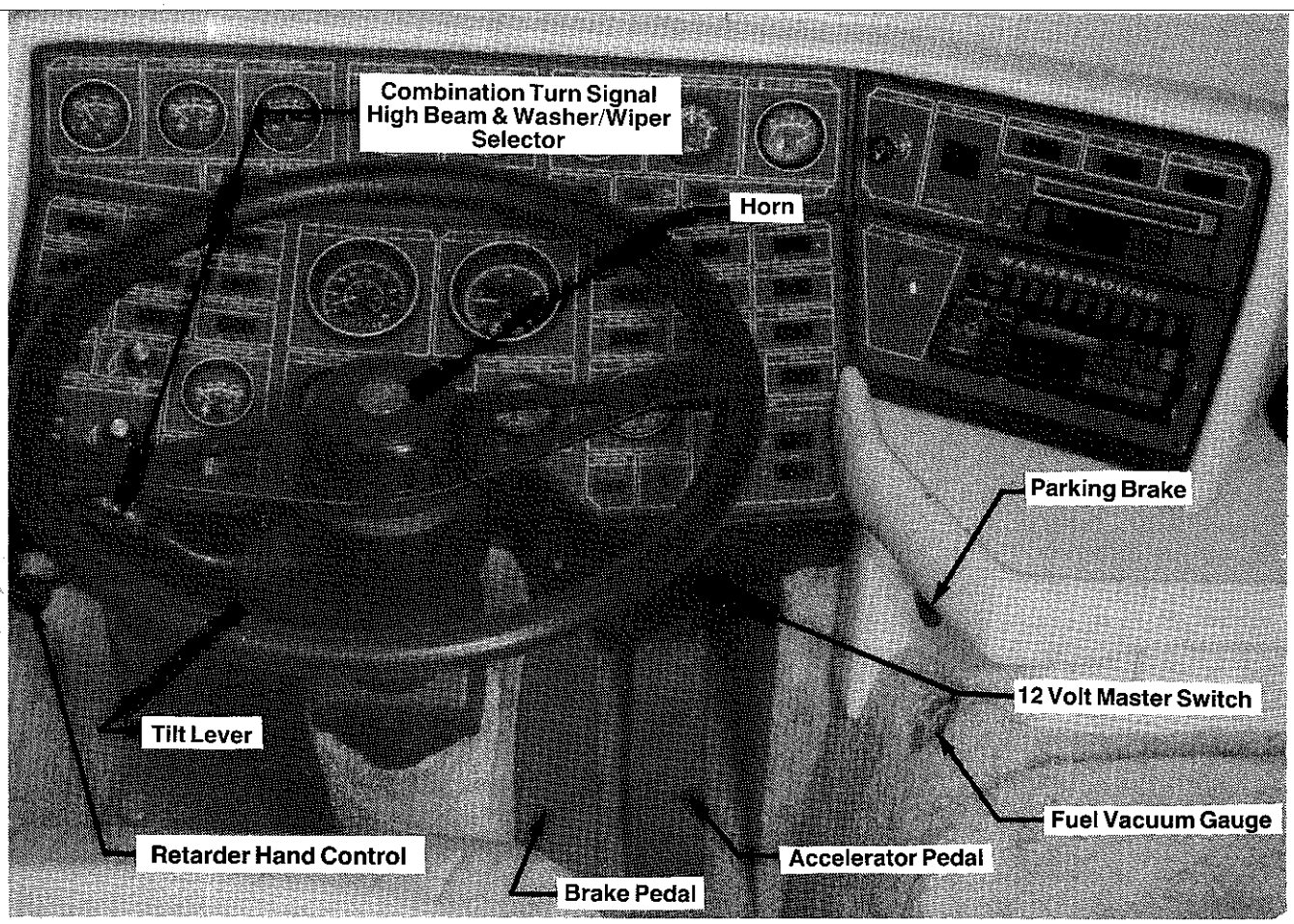


Figure 2-12. Steering Column Area

Floor Controls

AIR HORN FOOT Switch — Operates **highway** horns. Close to steering column.

ACCELERATOR PEDAL — Controls engine fuel flow to select power output. See Diesel Engine/Transmission Operation later in this section for detailed description.

BRAKE PEDAL — The coach is equipped with a dual air brake system which includes independent systems for the front and rear service brakes. A separate reservoir and panel-mounted pressure gauge is provided for each service brake system.

Radar Detector (Not Shown)

A high-sensitivity superheterodyne microwave radar detector is installed as standard equipment on your coach. This unit, is designed to activate when transmissions are received from radar-type speed detection equipment.

Note

Because some states have ruled radar detection equipment illegal, it is the responsibility of the driver or owner to obey the appropriate laws. (There are quick-disconnect features provided which allow for easy removal of the unit.)

CONTROLS AND INDICATORS — See Radar Detector Owner's Manual.

Seat Controls

Electrically and air-operated six-way seat adjustments are built into the pilot's and co-pilot's seats. A typical control panel is shown in figure 2-13.

Three electric **SEAT CONTROLS** are used to control seat bench tilt, up-down and front-back seat movement, and seat back tilt. the **SIDE SLIDE** to disengage the seat slide lock, adjust side-to-side position, then set to **LOCKED** to re-engage lock mechanism. This switch must be kept **LOCKED** to secure the seat during travel.

These seats may be rotated by releasing the lever underneath the seat base on the right side.

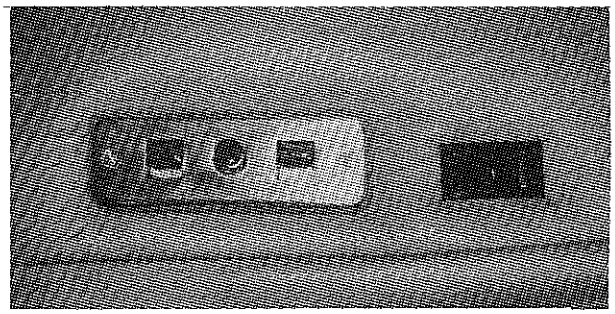


Figure 2-13. Seat Controls

Closed Circuit TV Monitor System

System Components

Besides the TV receiver on the upper panel, the CCTV Monitor receiver system also includes:

- CCTV camera, located in the rear of the coach, figure 2-14.
- Picture brightness, contrast and ON/OFF switch on pilot's left overhead control panel, figure 2-6.

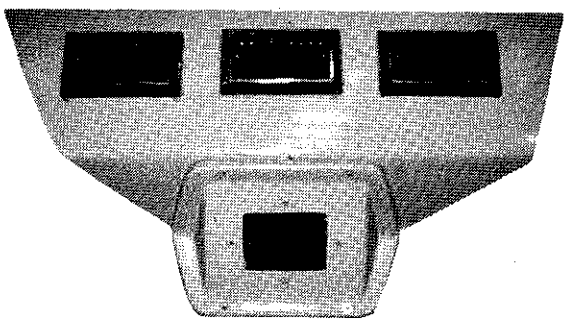


Figure 2-14. CCTV Camera Port

CCTV Operation

The rear-facing CCTV camera transmits images directly to the monitor via coach cabling.

Note that the system requires a brief warmup period before achieving full resolution. CCTV camera contrls are preset and the standard lens supplied with the unit is designed to focus from about two feet to infinity.

TV Antenna and Rotator System

The control components of the antenna and rotator are a hand-held switch-operated rotator, radome-type TV roof antenna, switcher for the antenna or cable inputs and a switch for raising and lowering the antenna.

The **A-C**switch switches antenna **A** or cable **C** input via connections in shoreline compartment at the rear of the coach to the TV receptacles via the VCR (if present).

The antenna rotator controls the position of the TV antenna within the radome. The three-position momentary switch (center **OFF**) provides right/left antenna rotation.

The radome includes an amplifier and rotator mechanism. The remote power supply is designed to operate from either 120 volts ac or 12 volts dc. Low-loss coaxial cable and three-wire rotator control cable interconnect the antenna and power supply.

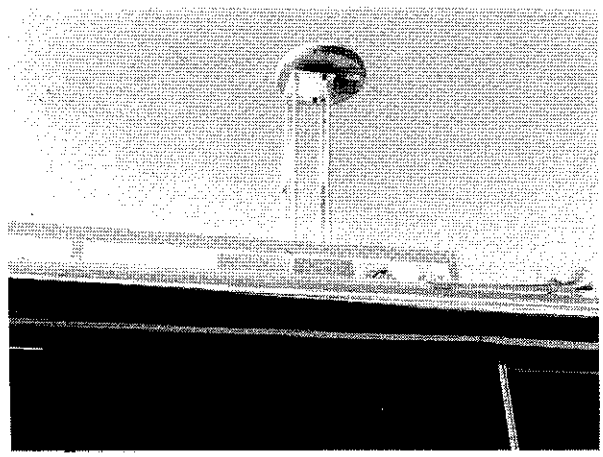


Figure 2-15. Extendable TV Antenna Radome

Note that a .8 ampere fuse is connected in the 12-volt dc supply line to the unit. In the event tha the TV set exhibits problems relating to low antenna input (**ghosts,etc.**) check this fuse before servicing the TV set.

Antenna Operation

With the Tv on and a station tuned in, rotate the antenna by pressing the rocker switch located on the control unit. Press the right side of the switch to turn the antenna clockwise; press the left side to turn the antenna counter-clockwise. Although the actual antenna movement is not visible, the indicator arrow on the control unit lights and shows the direction of movement. When the antenna has made one full turn (360 degrees), the End of Rotation light comes on. Observe the picture while

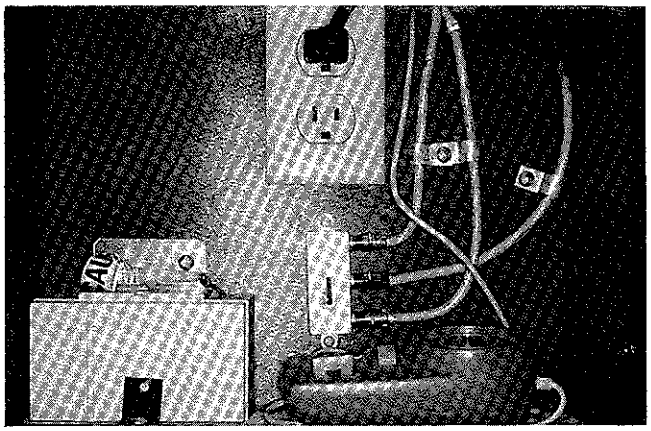


Figure 2-16. Antenna Control Panel

rotating the antenna, first in one direction, then the other, to obtain best picture quality.

The switches for raising or lowering the antenna are located in the Pilot's Area Overhead Dash and Radio Panel, figure 2-9, item 18.

CB Transceiver Unit

The CB transceiver has all the functions in the mike, figure 2-12, while the electronic parts are in the **black box** module mounted in the dash area.

Controls and Indicators — See CB Owners Manual.

Diesel Engine/Transmission Operation

Proper operation and maintenance are key factors in determining the useful life and operating economy of a diesel engine. Follow these directions for trouble-free, economical operation.

To Start Engine

Caterpillar 3208 Engines will start at temperatures above 10 degrees F (– 12 degrees C) without using a starting aid. However, for colder temperatures it may be necessary to activate the engine block heater (120 volt ac-operated). The **ENGINE BLOCK HEATER** switch is located on the wall in front of the engine cover on the co-pilot side. Remember to turn switch **OFF** after starting.

1 Place transmission in **NEUTRAL**.

2 Push the accelerator pedal to the floor one time and release.

3 Turn ignition switch to **START**. Engine should start within 5 seconds. If engine fails to start within 30 seconds, release the starter switch and wait two minutes to allow the starter motor to cool before trying again.

4. As soon as the engine starts, reduce engine speed to low idle. After normal oil pressure is indicated, speed may be increased to bild up air pressure more rapidly.

5. Do not apply a load to the engine or increase engine speed until oil pressure gauge indicates normal.

6. Operate the engine at low load and low rpm unitl the temperafure gague starts to move. Check all gauges during warmup period.

To Stop Engine

Caution

Before stopping the engine, operate at low idle for a minute or so. This will allow hot areas in the engine to cool gradually and extend engine life.

With the vehicle stopped, apply the parking brake and place the transmission shifter in **NEUTRAL**. Turn the ignition switch to the **OFF** position. This shuts off the fuel supply to the engine.

Using the ZF Transmission Retarder

The retarder is a hydrodynamic brake and application is recommended on lengthy gradients or when slowing down from high speeds. This saves wear on the service brakes and in an emergency the full braking effect (no fading) of the service brakes is available.

The system is electrically controlled by operation of the lever on the retarder hand control located on the Transmission Gear Selector Consol (figure 2-12), or by pressure on the brake pedal.

Turn on **RETARDER** Switch. (figure 2-5) and select desired amount of braking action by moving lever from **OFF** to positions 1-4 for progressively

increasing braking action. Any selected setting is on full time. When acceleration is desired move lever to **OFF**.

Important!

If by accident the accelerator is depressed when the retarder is engaged, the retarder automatically disengages. Only when the accelerator has been released does the retarder come back into operation.

To use the brake pedal for retarding, you must have the **RETARDER** switch (figure 2-5) engaged. When the brake pedal is used the retarder and the service brake will engage. When the brake pedal is released the retarder will also disengage.

Caution

Since the RETARDER raises the temperature of the oil, it is possible that the permissible oil temperature will be exceeded. Check transmission oil temperature using dash gauge (item 3, figure 2-4). The green section is normal operating temperature. The yellow section is normal retarder range. If excessive oil temperature is indicated, the vehicle must be slowed with the service brake until a downshift is made into a lower gear. If this precaution is insufficient to lower the oil temperature below the danger zone, the retarder must be switched off completely.

Trailer Hitch

Hitch capacity is 7,500 pounds tow and 750 pounds tongue weight.

Note

Trailer hitch ball capacity is 5,000 pounds, torque nut to 200 ft.-lb.

Towing

Two towing eyes are provided behind the front bumper.

Caution

Do not tow a vehicle equipped with ZF ECOMAT automatic transmission unless the drive shaft has been removed, or the rear wheels raised from the ground. Do not attempt to tow unit by front axle or cross-member. Damage to wiring and/or air lines can result because of proximity of these items to front cross-member. Do not tow by the bumpers. Air pressure is required to release air brakes.

Transmission Operation

The ZF ECOMAT transmission provides five forward ranges and one in reverse. Speed selection is provided through the transmission shift selector located on the SHIFTER PANEL (figure 2-5).

The selector must be in **N** (neutral) position when the engine is started. If the engine can start in any other position, the neutral start switch deficiency should be corrected as soon as possible. Use **D** position for all normal driving conditions so that the coach begins moving in first gear and upshifts automatically into 2nd, 3rd, 4th and 5th gears. As the coach slows, the transmission automatically downshifts to the correct gear. Use a low gear **2**, **3** or **4** when road, load or traffic conditions make it desirable to restrict automatic shifting to a lower range; or use the retarder, as previously described. Use **1** or **2** when pulling through mud and snow or driving up steep grades. The vehicle should be completely stopped before shifting into reverse.

Driving Tips

Accelerator Control

Foot pressure on the accelerator pedal influences the automatic upshifting or downshifting within each driving range. When the pedal is fully depressed against the floor pedal stop, the transmission automatically upshifts near the recommended governed speed of the engine. A partially-depressed position of the pedal causes the upshifts to occur sooner at a lower engine speed. Shift timing is accomplished by using an electronic automatic shift control unit in conjunction with pressure modulation linkage. This throttle-modulation method provides the accurate shift spacing and control necessary for maximum performance.

Transmission Oil Temperature

Extended operation at low vehicle speeds, with the engine at full throttle, can cause excessively high temperature in the transmission. These temperatures may tend to overheat the engine cooling system as well as cause possible damage to the transmission. If excessive temperature is indi-

cated by the engine coolant temperature gauge, stop the vehicle and determine the cause. If the cooling system appears to be functioning properly, the transmission is probably overheated. Shift to **N** and accelerate the engine to 1,200 to 1,500 RPM.

This should reduce the oil sump temperature to operating level within a short time. If high temperatures persist, stop the engine and have the overheating condition investigated by service personnel.

Caution

Do not operate the engine for more than 30 seconds at full throttle with the transmission in gear and the unit stationary. Prolonged operation of this type will cause the transmission oil temperature to become excessively high and may result in severe overheat damage to transmission components.

If the transmission overheats during normal operation, check transmission oil level.

General Information — Caterpillar 3208 Engines

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.

Check crankcase oil level before starting and when refueling. Always check oil level with engine stopped. The dipstick has 2 markings, **FULL** and **ADD**. Maintain oil level between these marks. Do not overfill. Refer to table 8-2 for recommended oil.

- Check (with engine stopped) drive belts for cracks, breaks and frayed edges. While checking belts, look for oil, water or fuel leaks.
- Check (with engine stopped) for water in the fuel. Drain a cupful of fuel from the bottom of the tank to remove water or sediment. Fill fuel tanks after completing a run. Partially-filled tanks will collect moisture if the coach is allowed to sit for an appreciable length of time. Use number 2-D diesel fuel (with a minimum Cetane number of 40). Keep fuel clean. Inspect Racor filter bowl periodically and observe **WATER-IN-FUEL** indications on the dash gauge. Remove and clean filter bowl as necessary.

Number 1-D diesel fuel may be used in cold temperatures or when operating in altitudes above 5,000 feet.

- Check coolant level (with engine cool and off). Fill to the properlevel with water and permanent-type anti-freeze, adding one quart of Nalcool 2000 cooling System conditioner with replenisher coolant. Use clean water that is low in scale-forming minerals, not softened water. Leave space for expansion. (Note that Nalcool 2000 is compatible only with ethylene-glycol base coolants.)

Racor Fuel Filter

A Racor fuel filter/preheater is incorporated in the diesel fuel supply line and processes the fuel supply for maximum purity.

The fuel filter also includes a built-in preheater, which operates from the 12-volt battery supply and a water sensor, which lights a dash indicator when the water level in the filter bowl is high enough to require drainage.

Leveling Jacks Controls

(See Figure 2-17)

The motorhome is optionally equipped with four heavy-duty leveling jacks; one at each corner of the chassis. The jacks are the fold-down type, and cannot be extended until they are unfolded.

Overall system operation is monitored at the leveling jack controls, while each jack is independently operated by one of four respective **EXTEND–RETRACT** levers located on the floor to the left of the driver. A dash indicator and a buzzer (when ignition switch is on) provide visual and audible signals to show that the associated leveling jacks are not stowed to a safe travel position.

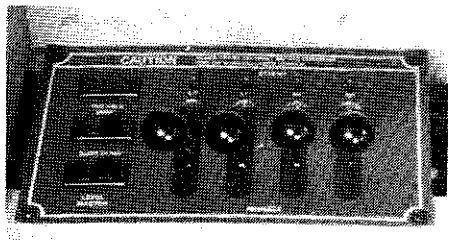


Figure 2-17. Leveling Jack Controls

Warning

Hydraulic leveling jacks are not to be used as service jacks. Under no circumstances should anyone work under or around the coach unless the coach is securely supported at the frame rails.

Use the following procedures to operate the leveling jacks:

Note

12 Volt master switch must be on to operate leveling jacks.

① Set **LEVEL MASTER** switch (see figure 2-17) to **ON** position. Note that the **LEVEL WARNING** indicator will light. **LEVEL SYSTEM** indicators **LF**, **RF**, **LR**and **RR** are lit only when the respective corner of the coach is low.

② Unfold the leveling jacks by setting the floor controls to **EXTEND** position. As soon as the jacks contact the ground, as indicated by the characteristic landing gear **thump**, release the respective control lever to prevent further jack movement.

Note that the red **LEVEL WARNING SYSTEM** indicator will be lit to show that the jacks are no longer in the stowed **(RETRACT)** position.

③ De-pressurize the air suspension system by setting the **SUSP. DUMP** switch to **DUMP** (down).

Caution

Do not dump the coach air suspension system until the leveling jacks are unstowed and vertical or the coach chassis may be too low to permit the jacks to be unstowed.

④ Operate the **EXTEND–RETRACT** levers for the leveling jacks as necessary to level the coach. The blue and **LEVEL SYSTEM** indicators will extinguish when the respective corners are leveled.

⑤ To restow the leveling jacks prior to moving the coach, start engine to initiate air compressor operation, repressurize the air suspension system by setting the **DUMP** switch to the **FILL** (up) position.

⑥ When the air suspension is once again stabilized, pull all four leveling jacks controls back to the **RETRACT** (locked) position. The red warning indicator will extinguish when the jacks are in the stowed position.

⑦ Set **LEVEL MASTER** switch to **OFF** position. This completes one full operating cycle for the leveling jacks system.

Note

If the jacks are not withdrawn before driving away, the buzzer will sound.

Section III
Living Area Facilities

This section provides information on operation of the appliances and systems which contribute to comfortable living within your motorhome.

Sofa

Your **Wanderlodge**® sofa converts into a double bed sleeper. To convert the sofa you must first release 2 latches under the front edge of the sofa seat. Then pull out on the seat until the sofa is fully extended and the back of the sofa is lying in the flat position. To fold the sofa back up into the sitting position pull up on the sofa back with the pull strap stored between the back cushions and at the same time push in on the sofa seat with your knees until the sofa latches **click** into the locked position.

Dinette Area

The dinette area, figure 3-1 includes the area thermostat, door chime and four place bench type dinette, which converts into a 3/4 size bed.

To convert dinette into bed you must first lift up and remove the back cushions from both sides of table, lay these cushions to the side. Next unsnap and slide the bottom cushions toward the back rests. While holding table up, reach underneath the table to unlock and fold leg under table. Raise end of table up to remove table top from wall brackets and lay table top into place on dinette base. Place back cushions in open space on lowered table top and dinette base. To convert back to dinette just reverse order of steps above.

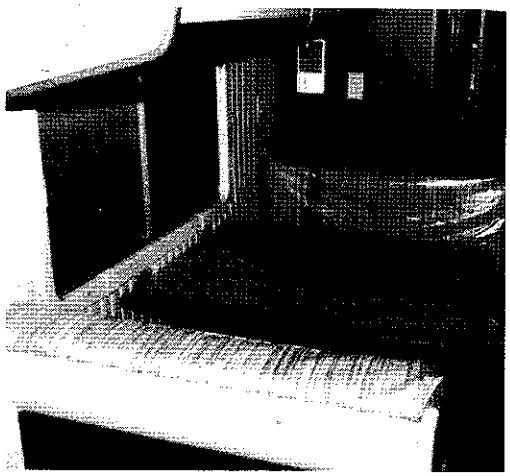


Figure 3-1. Dinette Area

Galley Facilities

The galley, figure 3-2, includes a double sink, food center, refrigerator/freezer, gas cooktop and micro convection oven. The refrigerator operates from the LP gas supply, from the 120 volts ac supply, or from 12 volt alternator output while in transit. The cooktop also operates from the LP gas supply, Operating procedures for these appliances given in the following paragraphs assume that the main LPG valve is on. An LPG leak detector, located below the refrigerator door, continuously monitors the area for LPG leakage, shutting off the LPG supply and sounding an alarm if leaks are detected.

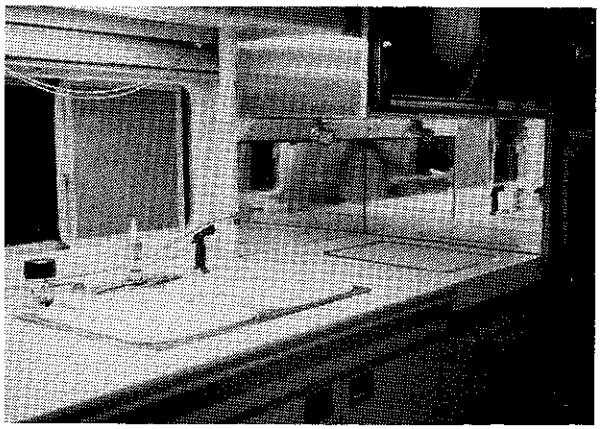


Figure 3-2. Galley Facilities

Refrigerator

Understanding just how the refrigeration process operates will help to explain one of the important reasons why it is necessary to level a parked motorhome. The gas-fired (or electrically-heated) boiler converts the ammonia-water solution to distilled ammonia vapor, which is carried to the finned condenser, where it liquifies. The liquid flows to the evaporator, where it creates a cooling effect by evaporating into a circulating flow of hydrogen gas. If the evaporator coil is not level, the liquid accumulates, forming pockets which do not readily evaporate and impair or block gas circulation, inhibiting the cooling process.

When the coach is parked, it must be leveled to assure comfortable living accomodations. The refrigerator will then also perform well. Place a bubble level (furnished with unit) on the freezer shelf. When the vehicle is moving, the continuous rolling and pitching movement will not affect the refrigerator as long as the movement passes either

side of level; but when the coach is parked, the refrigerator must be level (within 6 degrees).

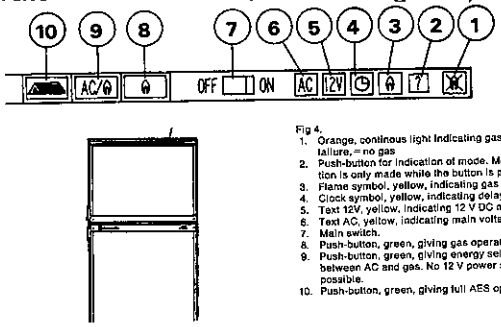


Fig 4.
1. Orange, continous light indicating gas ignition failure, = no gas
2. Push-button for indication of mode. Mode indication is only made while the button is pressed.
3. Flame symbol, yellow, indicating gas mode.
4. Clock symbol, yellow, indicating delay mode.
5. Text 12V, yellow, indicating 12 V DC mode.
6. Text AC, yellow, indicating main voltage mode.
7. Main switch.
8. Push-button, green, giving gas operation only.
9. Push-button, green, giving energy selection between AC and gas. No 12 V power selection possible.
10. Push-button, green, giving full AES operation.

Figure 3-3. Refrigerator Operating Controls

Operation:

Before starting the refrigerator check the gas valve in the piping. Do not forget the valve on the rear of the refrigerator.

1. To start the refrigerator set the switch 7 to position **On**. Lamp shall now be green.
2. Turn the thermostat knob inside the cabinet to suitable setting, e.g. start with normal position.
3. To shut off the refrigerator set the switch 7 to position **Off**.

General Information

This refrigerator is equipped with an Automatic Energy Selector (AES) system. The control system selects the most suitable available energy source. The selection will be made with highest priority to 120 volt AC, second priority to 12 volt DC from the alternator, lowest priority has gas operation. No manual operation is necessary for change of energy source unless desired. The automatic energy control will, when switched on, start up in AES mode. The AES mode follows the above mentioned priority list and will select the best energy source available.

The refrigerator also has a built in battery protection system. With this feature, battery voltage will not be allowed to energize the 12 volt heater coil until there is 13.6 volt at the + terminal of the refrigerator. This means that not only must the ignition switch be on but the alternator must be providing charging voltage to the batteries. This was designed to prevent burnout of a marginally rated alternator with consequent battery discharge and premature travel termination (highway breakdown). If, after starting, there is so much of a coach load that the alternator can't put out 13.6 volt then the refrigerator will not go into the 12 volt mode but run on L.P.G. only.

If the coach was previously plugged into shore power and had the L.P.G. shut off (either at the refrigerator or main valve) then the unit would not operate while in transit. There must be LPG available for refrigeration assurance. Lamp will come on if there is no gas light up. Whenever this light comes on there is no refrigeration as LPG is the lowest priority.

When the alternator provides voltage in excess of 13.6, the unit will operate satisfactorily with the 12 volt heater. If, however, because of some additional load during travel, the voltage should drop below 11.6, then unit will switch to LPG.

See Refrigerator Owner's Manual for complete operating and care instructions.

Gas Cooktop

The gas supply for the cooktop burners, figure 3-4, is provided from the LPG tank. Make sure that the main valve (on tank) is turned **On** before use.

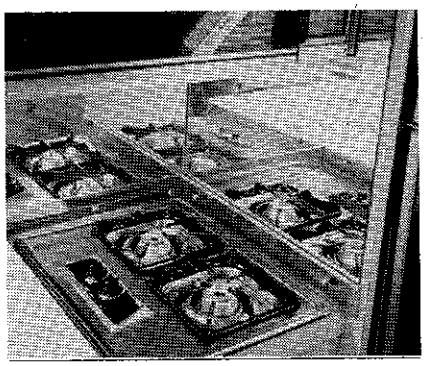


Figure 3-4. Gas Cooktop and Micro Convection Oven

Lighting Cooktop Burner

1. Depress knob and turn counter clockwise to HI position. **Note** — A faint popping noise will be heard during step 1.
2. After burner has lit turn knob a few degrees clockwise until popping stops.
3. Turn knob to desired setting.

Shut Off Cooktop

See Owners Manual for further instructions.

Microwave/Convection Oven

The microwave/convection oven provides programmed microwave cooking, convection operation for crisp, even browning, or a combination of both.

Caution Notes

1. Unlike microwave-only ovens, all microwave/convection ovens have a tendency to become hot on the cabinet and oven door, as do conventional range ovens and convection-only ovens. Be careful when touching parts other than the handle or control panel during or immediately following cooking that uses convection heat.
2. Do not cook eggs in the shell. Steam builds up inside the shell and it may explode from pressure. Shelled hard-cooked eggs should be sliced or cut up before reheating in the microwave oven. You may hard-poach eggs for salads and casseroles.
3. Pop popcorn only in special microwave poppers. following manufacturer's directions. Do not use oil unless specified by the manufacturer, or heat longer than recommended. Never pop popcorn in paper bags or glass utensils.
4. Do not heat oil or fat for deep-frying. The temperature of the oil cannot be controlled and it may overheat.
5. Do not attempt to can in the microwave oven as it reqeuires prolonged high temperatures.
6. Do not operate the oven empty.
7. Remove wire twist-ties from bags before placing in oven.

This oven uses a microprocessor, the electronic brain that provides a wide variety of cooking programs which could not be achieved by conventional control methods. The operation of the oven is controlled by touching the appropriate pads arranged on the surface of the control panel, figure 3-5. The lighted digital readout will display the cooking time, convection temperature, sensor or compu-cook setting, or time of day, and indicators show the variable cooking setting or cooking function you have programmed. See owners manual for operating instructions.

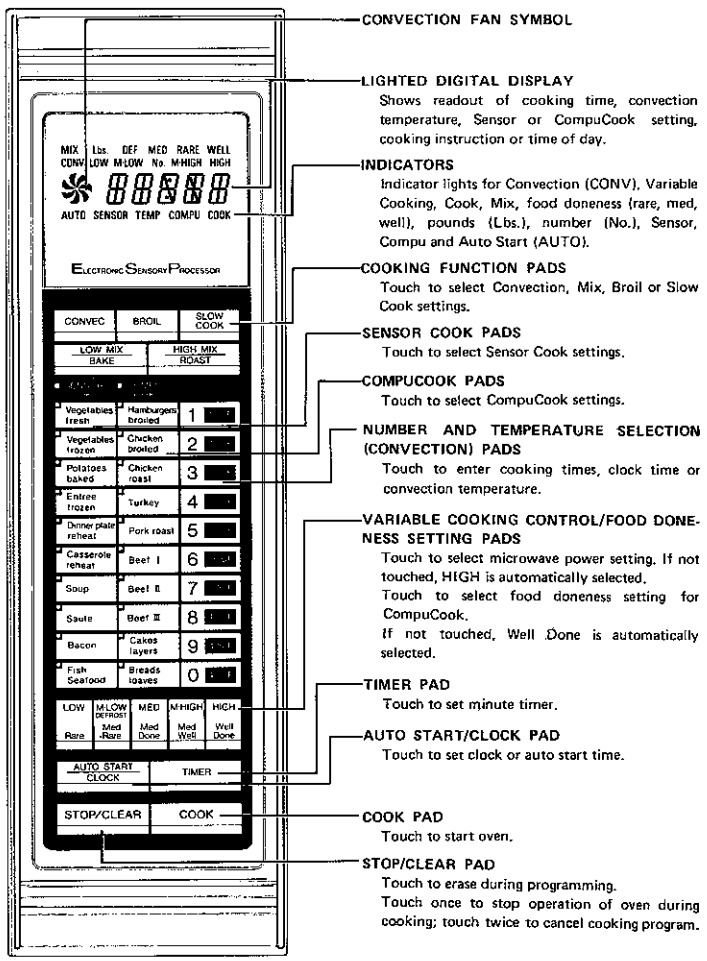


Figure 3-5. Microwave/Convection Oven Control Panel

CORIAN Counter Tops

Even stubborn stains — such as grape or beet juices — wipe off with a damp cloth and household cleanser. Because CORIAN is solid all the way through, it cannot be harmed by abrasive cleansers and normal household cleaners.

CORIAN is strong and tough, but slicing on it with knives can cause scratches. Use a cutting board.

While CORIAN does provide an extra measure of protection (better than ordinary countertops), it is **not** recommended as a hot pad. Do not place hot pots and pans directly on your CORIAN countertop.

Since it's a solid material with color and pattern all the way through, unusual damage such as cigarette burns, scratches, or other surface abuse can usually be removed using ordinary household cleansers or fine sandpaper. If the stain persists, or if the scratch is particularly deep, first use a medium sandpaper (120 or 240 grit) then fine sandpaper (320 or 400 grit) followed by circular motion buffing with a scotch Brite pad to match the gloss of adjacent surfaces. Household cleanser, steel wool or Du Pont No. 7 polishing compound can also be used if higher gloss levels are needed.

Caution

Certain chemicals found in the home — such as paint removers, paint brush cleaners, acid drain cleaners and certain brands of nail polish and polish removers — can harm CORIAN if left in contact even for short periods of time. These materials should be wiped away promptly and flushed with water. Depending on time of exposure, surface damage caused by these materials can sometimes extend too deeply for practical repairs.

Food Center

A built-in variable-speed motor-driven counter unit, figure 3-6, may be used with blending attachments for a large variety of food preparation tasks. The food center is designed for ac operation and is operable only when the generator is on; or when coach systems are connected to an external shoreline hookup.

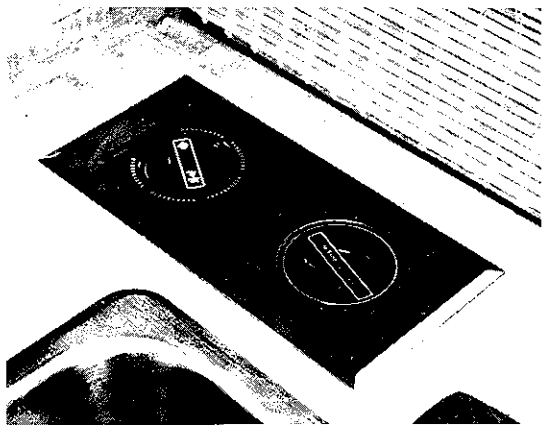


Figure 3-6. Food Center

Toaster

A two slice toaster is placed loose in the coach.

Bathroom

Water Pump Switch

Two **Water Pump On-Off** switch/indicators are provided for separate control of water pump operation. One switch is located on the control panel in the galley area; the second is located in the bathroom. The pump may be operated **On** or **Off** from either location. The associated indicator is lit whenever power is being supplied to the pump. Setting either switch **On** pressurizes the water system, with the pump operating on demand to maintain constant pressure. Continuous or erratic pump operation can indicate an empty water tank, system leakage, or air lock in hot or cold water lines. (Air locks are normally caused by movement of water in the tanks during pump operation.) Since tank water level and water pressure can vary with road movement, leave water pump switch **Off** while the coach is moving. The water pump and air accumulator are located in the bed base cabinet.

Tub/Shower Unit

The combination tub/shower unit, includes a pressure-balancing single mixing valve, tub water spout with shower head diverter button, shower head and drain lever.

Toilet

The toilet, figure 3-7, operates from the fresh water supply, flushing wastes directly into the sewage holding tank. The double-flush foot pedal located at the bottom of the bowl controls the amount of water delivered into the bowl and opens the slid-

ing valve to the tank. After use, depress bowl drain pedal until water swirls, draining wastes into tank, then release pedal. A water-saver feature, consisting of a manually-operated spray hose, is located at the side of the bowl. To raise the level of water in the bowl, press on the small foot pedal. A water shut off valve is located in the supply line to toilet and used to stop water flow to toilet.

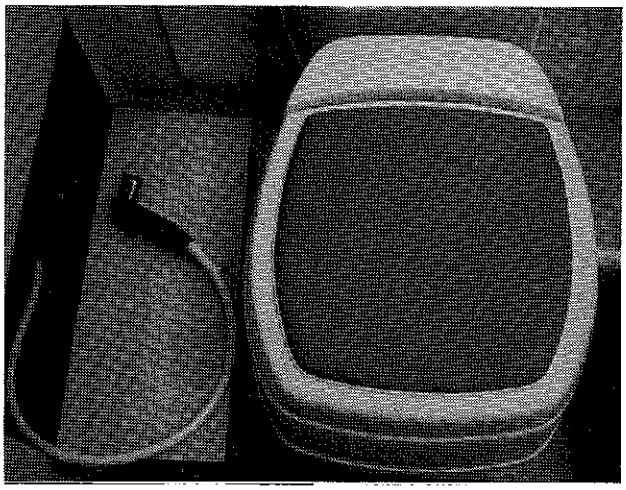


Figure 3-7. Toilet

Vent and Exhaust Fan

Exhaust fans in the livingroom, galley and bath are controlled at the fan housing. The bedroom fan also has a master switch on the bedroom overhead panel.

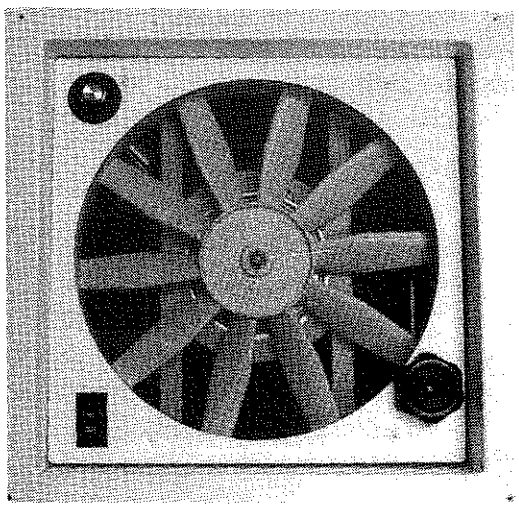


Figure 3-8. Vent and Exhaust Fan

Heating Systems

Three types of comfort heating systems are used in your motorhome: gas/hot air heat; electric heat; and engine hot water circulating heaters.

Three gas/hot air furnaces are used in the coach. Each unit has a separate zone thermostat, figure 3-9.

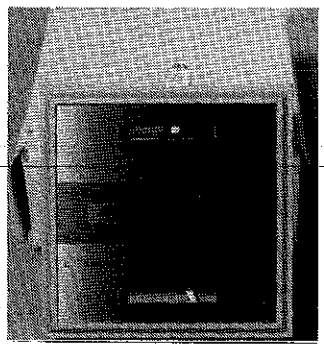


Figure 3-9. Heater Thermostat

One furnace is located in the living room, another is in the galley area, and the third in the bedroom. The living room furnace is also used to supply hot air to the bathroom via a separate duct booster fan controlled by a thermostat in the bathroom. The kitchen furnace supplies hot air to bathroom on 35 foot coaches.

Separate heating can also be provided by circulating hot-water heaters (chassis heaters) when the engine is operating and the **Winter-Summer Heat Selector** switch (located on the pilot's area overhead dash) is in **Winter** position. These heaters share the area thermostat with the L.P.G. furnace.

Four optional electric heaters (120 volt) are located in the bedroom, bathroom (except 35 foot coach), galley area, and living area. **On-Off** thermostat switches are located on each heater. Two freeze-protection heaters (120 volt) are installed to protect plumbing and water supply tanks.

Gas/Hot Air Furnaces

To operate the furnaces, **L.P. HEAT** switch on dash must be **ON**. Proceed as follows:

1. Turn manual gas valve to **ON**.
2. Set thermostat on desired temperature.
3. Allow 24 seconds for ignition to occur.
4. If burner does not light, set thermostat on **OFF** and repeat steps 1 through 3.
5. If after three (3) attempts with no ignition, go to shutdown and contact a qualified service agency. Do not continue to cycle furnace through thermostat in an attempt to get ignition.

When coach temperature drops below the thermostat setting, the internal relay contacts close to operate the main burner. The air flow created by the blower closes an air-actuated switch that, in turn, energizes the main burner gas line solenoid valve which then lights from the electronic ignition.

Caution

Do not store items in or near the burner compartment.

When the coach temperature exceeds the thermostat setting, the relay contacts open. This shuts off the burner gas supply but the blower continues to operate until residual heat within the furnace is dissipated, when a thermostatically-controlled relay turns off the blower. Air for the sealed combustion chamber is pulled in from outside the coach, routed around the heat exchanger, then exhausted through the outside vent. Recirculated fan-forced air blowing across the heat exchanger is used to heat the coach interior.

Switch at bottom of thermostat must be **Off** (to left) if operation of furnace at lower temperatures is not desired.

Hot-Water Heating Systems

Four sources of hot water heating are provided which depend on heat generated from engine operation. One heater (90,000 BTU), which serves the pilot's and co-pilot's area, is controlled by the **Front Heat** switch on the dash. Three chassis heaters, (50,000 BTU) under the dinette seat, living room sofa, and in the bedroom are controlled by the thermostat in that area.
The bathroom chassis heater (15,000 BTU) is controlled by the bathroom thermostat.

The engine coolant is normally routed through the engine cooling system and the water heater, which also can be heated electrically, to provide the hot water supply for the coach. However, by operating the **Winter-Summer Heat Selector** switch, the engine coolant can also be diverted through the previously-mentioned area heaters, via a solenoid valve. The coolant level in the engine radiator should be checked after these valves are opened. A pump is used to circulate hot water through the coolant lines. It is controlled by the **Aux. Pump** switch (located on the upper left pilot's overhead dash).

Chassis heater blower motors (dinette seat, front sofa and bedroom), are controlled by **On-Off Heat** switches adjacent to the heater louvers. **Hi-Lo** blower speed switches are also provided. The front heater is equipped with three squirrel-cage dual-speed blowers, operated from separate dash controls. One blower provides defroster air; one provides air to the pilot's side; the third provides air to the co-pilot's side. Use **Defrost Hi-Off-Low** switch for setting the defroster blower speed; use the left and right **Hi-Off-Low Heat** switches to control air flow to the pilot's and co-pilot's sides, respectively. To supply heat, the dash **Front Heat** switch must be **On**.

Note

If additional defrosting action is needed, turn auto air conditioning temperature control to the warmest position and turn auto air conditioning fans to highspeed. This will circulate additional warm air about the windshield area.

Engine heat is picked up by the engine coolant which is pumped through the heaters inside the coach and back into the engine. A typical heater consists of a heat exchanger, or core, and a fan which moves the air across the core, transferring heat from the engine coolant into the room.

Heating System Operation

Satisfactory performance of the hot-water circulating type of heating system depends on the following conditions:

1. Engine Coolant Temperature — Coolant temperatures vary between 180 and 195 defrees F, during normal engine operation.
2. Coolant Flow — Coolant flow varies with the engine speed. Setting the **Aux. Pump** switch (located on the upper left auxiliary dash) to **On** turns on the auxiliary pump to increase the coolant flow through the system.
3. Proper Fan Operation — All fan motors are two-speed and can easily be checked for proper operation by listening to the motor speed change as the switch is operated.

More heat will be generated by the engine when it is also used to move the coach. Be sure that the engine radiator is full and that all coolant flow

valves are open. Warm engine to operating temperature and set heating system switches as follows:

1) **Winter-Summer Heat Selector** to **Winter** positon;
2) **Aux. Pump** to **On**;
3) **Front Heat** switch to **On**;
4) Left and right **Heat** blower switches to **Hi** or **Low**;
5) Thermostats to desired temperature.

Duct Booster

The duct booster system, installed in the hot air duct between the dinette furnace and bathroom, is controlled by chassis heat thermostat in the bathroom. The hot air vent is located at floor level, below the bath tub seat.

Electric Heaters

Optional electric forced-air heaters (120 volts) are located in the bedroom, bath (standard), galley and living room areas. Each heater is controlled by a combination **On-Off** switch/thermostat. Heater operating voltage is provided from the same switches which control the air conditioners. Air conditioner **On-Off** toggle switches, on the pilot's left overhead control panel control panel above the pilot, must be in **On** position and individual **A/C** switches **Off**.

Freeze Protection Heaters and Heat Tape

Optional freeze protection heaters (120 volts) are thermostatically-operated to turn on and protect the water supply tanks and associated plumbing in the event that temperatures drop below 40°. Two heaters are used; under the kitchen sink and within the bed base cabinet.

Thermostatically controlled heat tape (120 volts) are run on the copper water tubing and then wrapped with insulation. Heat tapes start to heat at 36°F and stop at 43°F.

Note

This freeze protection will greatly decrease the chances of frozen water lines provided the coach is plugged into outside power (one 50A. or two 30A. power cords) or the generator is run continuously during cold weather periods.

Hot Water Supply Heater

See Section V.

Air Conditioners

Two 13,500 BTU roof air conditioners located in the livingroom and bedroom. The 12 volt master **ON/OFF** switches are located on the **Pilots left overhead control panel**. Fan and thermostat controls are located on the roof air conditioners. Each air conditioner is equipped with a 1,000 watt heat strip.

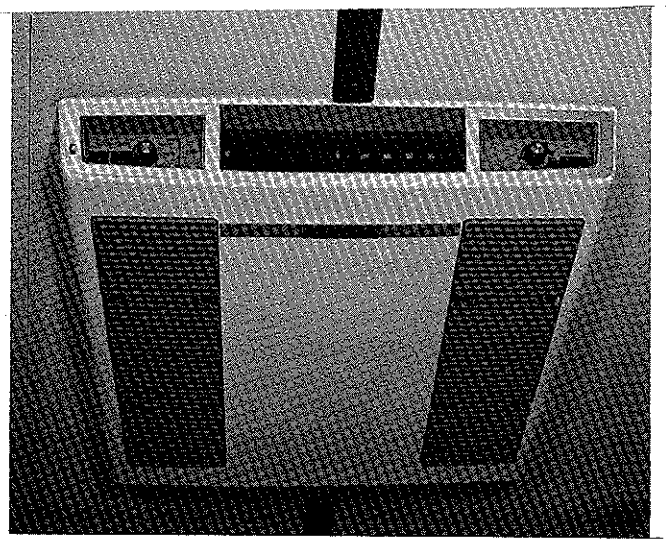


Figure 3-10. Roof Air Conditioner

Fire Extinguisher

A portable, multi-purpose dry chemical Halon type fire extinguisher with gauge, is located behind the companion chair in livingroom on 35 foot coaches. A second fire extinguisher is located in an outside compartment. To use, release the clamp and remove the fire extinguisher from the bracket, pull safety pin from handle, squeeze handle and apply chemical under flame.

Smoke Detector

A smoke detector (now code mandated) is installed in a ceiling location just outside the entrance to the bedroom area. Operator instructions are attached inside the overhead cabinet where the warning label is displayed on the exterior door trim.

It is possible for the smoke detector to be activated by the cold air coming from an Air Conditioner outlet. Slight downward rotation of the outlet louvre is all that is necessary to discontinue activation.

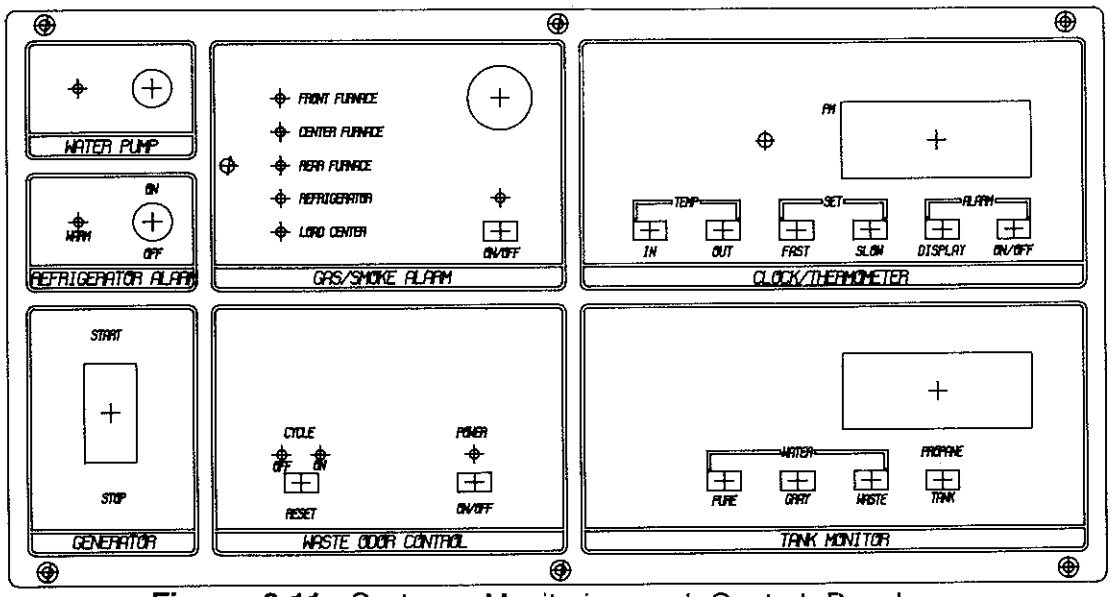


Figure 3-11. Systems Monitoring and Control Panel

Systems Monitoring and Control Panel

The systems monitoring and control panel, figure 3-11, is located above the entrance door. This one panel provides a convenient means of displaying inside and outside temperature, time, level of potable water supply, holding tanks, and LPG supply, as well as other monitoring and alarm functions discussed in the following paragraphs.

Water Pump — The water pump switch is one of two switches that can be used to operate the water pump. The **ON** indicator will be lit when power is being supplied to the pump.

Refrigerator Alarm — When the switch is on the refrigerator temperature is being monitored. Normally, the **ON** indicator is lit; if the refrigerator temperture increases to an unsafe level, the **WARM** indicator lights with an accompanying audible alarm.

Gas/Smoke Alarm — The gas/smoke alarm is a gas leak detector designed to sense dangerous concentrations of LP gar or carbon monoxide within the coach. There are four(4) sensors mounted at floor level (LP gas is heavier than air) for the three furnaces and the refrigerator. One sensor is located above the 120 volt ac distribution panel (load center) to monitor carbon monoxide. Carbon monoxide, of course, is the most deadly of the products of combustion. It will provide an alert in the event of a short circuit, at the load center, causing an electrical fire.

The alarm has been factory calibrated to an alarm point of 2,000 PPM propane for standard conditions (temperature, 20 degrees C +/−2 degrees; relative humidity 65% +/− 5%). This provides for a minimum of false alarms consistent with providing reasonable safety.

To turn on the unit, set **ON-Off** switch to **On** and observe that **Power On** indicator is lit. Excessive propane PPM conditions are indicated by the sounding of the audible alarm and lighting of an indicator associated with the danger area. The alarm, if left turned off for a period of time, has a warmup period of about one minute. During this time, the alarm may sound. This is a normal response and should stop once the unit is warm.

Clock/Thermometer — The clock/thermometer provides, on demand, a digital display of inside and outside temperature, digital time display, and an alarm function. Operate the panel controls as follows:

1. Monitor inside or outside temperature (°F) by pressing the **Temp In** or **Temp Out** buttons. There is an internal adjustment, at the rear of the unit, which may be used to calibrate the temperature readings. (Calibration of this unit is described in Section VIII.)
2. Set the clock by depressing the **Fast** or **Slow Set** button until the correct time is shown. **PM** is indicated by lighted dot in the upper left corner. The dot in the center of the display marks the seconds.

3. Set alarm as follows: depress **Alarm Display** button then depress the **Fast** or **Slow** button to set the alarm time. Dot in upper left corner will light when alarm is set for **PM**. After setting the alarm, release **Alarm Display** button to return to the normal time mode. To activate the alarm feature, depress **Alarm On/Off** button to **On**; to shut off the alarm, depress **Alarm On/Off** button and release so it pops out to **Off**.

Note

When 12 V. power has been interrupted (batteries disconnected or Electronic Master switch turned off) clock display will flash "12:00". Reset clock to eliminate flashing. Alarm will also have to be reset.

Tank Monitor — The Tank Monitor panel provides an illuminated readout of the content level of the pure water, gray and waste water tanks, and the LPG tank level. When full, each of these tanks has the following capacity: pure water supply, 96 gallons (See Table 8-4); gray water holding tank, 56 gallons ; body waste tank, 50 gallons; and LPG tank, 43.5 gallons (148 lb.). Use the features of this panel as follows:

1. Monitor **Pure**, **Gray** or **Waste Tank** levels by depressing the respective button. The content level remaining in the tank is indicated by five sets of lit readings. The E lamp, at the left of the display, is lit all the time; if the next indicator is lit, the level is approximately 1/4 tank; if the center indicator is lit, tank level is between 1/2 and 3/4 full; if the 3/4 indicator is lit, tank level is between 3/4 and full; and if the F indicator is lit, tank level is full. If only the E indicator is lit, the tank level is between empty and 1/4.
2. LPG tank level can be monitored in the same manner as the water tank level by depressing the **Propane Tank** button. Note that this display is pre-calibrated. However, if it is necessary to recalibrate the display, this can be done when the tank is full by setting a rear-panel adjustment. Note that the display will read **Full** when the LPG tank float reads 80% because the remaining 20% volume is needed for expansion.

Waste Odor Control Panel — This panel controls the cycling and electrolysis action of two pairs of stainless steel electrodes contained within the body waste holding tank. A 12-volt current is passed between each pair of electrodes for a 16-minute **On** period (green LED); and switched off for a 48-minute **Off** period (red LED). For each cycle, the current is reversed so that the electrolytic action does not excessively erode the steel electrodes.

As current flows through the waste liquid, it oxidizes the organics and eliminates associated odor. To increase odor control effectiveness, a tablespoonful or two of salt may be added through the toilet if desired.

The electrodes (probes) are replaceable.

Generator Switch — The generator **Start-Stop** switch provides the same features as the generator switch located above the driver. Press switch to **Start** position and hold until generator starts as shown by the switch indicator light. Press switch to **Stop** to shut-down the generator (light extinguished). In cold weather the separate preheat switch, (located on generator), can be used

LP Gas Leakage Detector

The gas leakage detector, figure 3-12, is located below the refrigerator door. In the event of an LP leak, the unit sounds an alarm and closes down the main LPG supply by activating the leak detector solenoid shutoff valve located in the gas line just after the low pressure regulator. If it is necessary to reset the solenoid (red band is visible inside clear plastic valve housing), open the outside refrigerator vent compartment door, remove plastic housing by gripping locking levers and lifting upward, push valve plunger down until it remains down, then replace the cover. For continuous operation of the leak detector, set **Off-On** switch **On**; to test alarm operation, press the test switch located on top of the detector unit. Alarm must sound for at least 15 seconds before the shutoff valve will be activated.

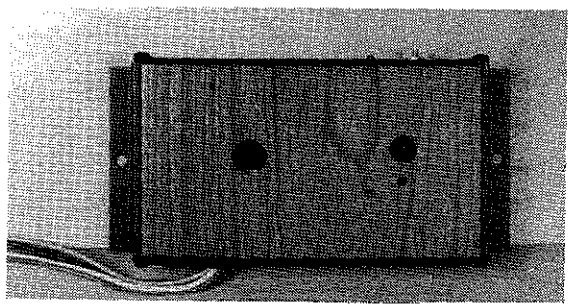


Figure 3-12. LP Gas Leakage Detector

Electronic Door Chime

The door chime, figure 3-13, is located behind companion chair in livingroom on 35 foot coaches and on rear wall over right twin bed on 35 foot rear bath coaches.

The door chime can be preset to play any one of 60 different tunes when the doorbell button is pressed. As shown, all controls for tune selection, volume, tone and tempo are easily accessible. Tunes may be selected as follows:

1. Refer to tune index, at bottom of chime, and note the code number for the desired tune. For example, "William Tell Overture" is identified by D8.
2. Press in the left-hand tune selector button and move it to position D.
3. Press in right-hand button and move it to position 8.
4. Press test button to play selected tune and adjust volume, tone and tempo as desired. Note that tunes identified with an asterisk (*) will play longer if the button remains depressed.

Caution

Do not use a lighted door button with this chime or chime may be inadvertently activated.

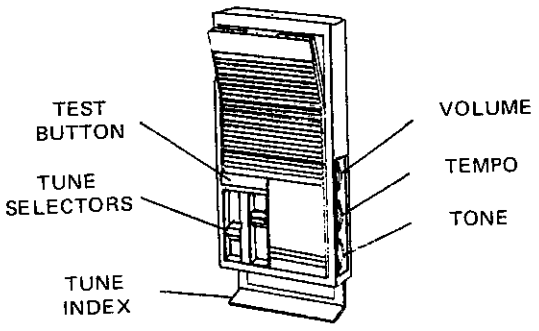


Figure 3-13. Electronic Door Chime

Portable Fan

The portable oscillating fan is shown in figure 3-14. The 12-volt hookup cable is coiled within the base section when the fan is not in use. This will supply air circulation within the coach when it is too cool for air conditioning.

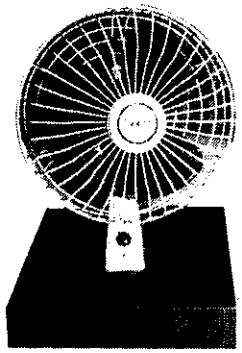


Figure 3-14. Portable Oscillating Fan

Security Timer

The **Watchdog** security timer, figure 3-15, is a randomly-switched electrical timer which can be used to control the on-off operation of an appliance, light, etc., to give your coach that 'lived-in' look when it is unoccupied. The three-position switch may be set to **Off**, to shut off the controlled appliance; to **On**, for manual control; or to **Security**, for random operation.

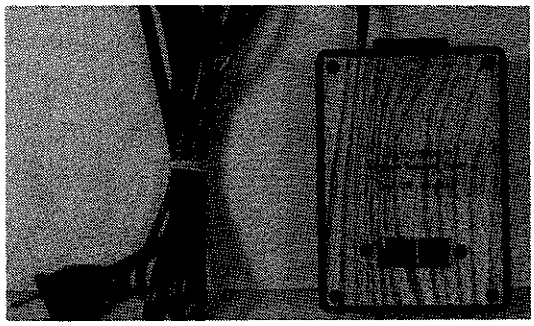


Figure 3-15. Security Timer

Burglar Alarm/Anti-Theft Features

The security of your motorhome and contents are assured by an intruder alarm system which protects windows and entry door. Each window is protected by a magnetic proximity switch which triggers an alarm if the window is opened. The entry door uses a door jamb switch which operates when the door is opened. When the system is **secured** it may be activated from outside the coach by a key-switch adjacent to the entry door. From inside the coach, a master burglar alarm switch may be operated at the front instrument panel.

In addition to the alarm system, an anti-theft switch for the ignition circuits (A/T switch on dash) can be operated so that the unit cannot be started. Lastly, the 12 volt **Master** switch (hidden behind the right side of the dash) can be operated to turn off all but essential 12 volt circuits.

Bedroom Overhead Panel

The bedroom panel, figure 3-16, is directly above the head of the bed. It contains the following:

Generator switch — is used to start or stop generator.

Lights switches — **Night** switch controls the aisle lights and **Flour** controls the flourescent lights in bedroom only.

Alarm Clock — See Systems Monitoring and Control Panel.

Security switches — **Lock** switch controls the deadbolt entrance door lock. **Light** switch illuminates front and rear landing lights, driving lights and rear halogen parking lights.

Fan switch — supplies power to optional vent fan in bedroom.

Stereo — the **Jack** is used for privacy headphone use and **Volume** controls the sound level.

Drape switch — opens or closes the drapes on side of bedroom pointed to, when optional electric drapes are used.

Stepwell Area

The stepwell cover is hand operated and is retained in the upright (stowed) position by two latches.

The **Step** and **Step Light** switches are accessible after opening the door of the electrical change over switch compartment, figure 4-3.

The **Step Light** switch makes it possible to turn off the step lights if the step is to remain in the extended position for a time.

If it is desirable for the step to be left in the extended position, for repeated trips into the coach, the **Step** switch may be used.

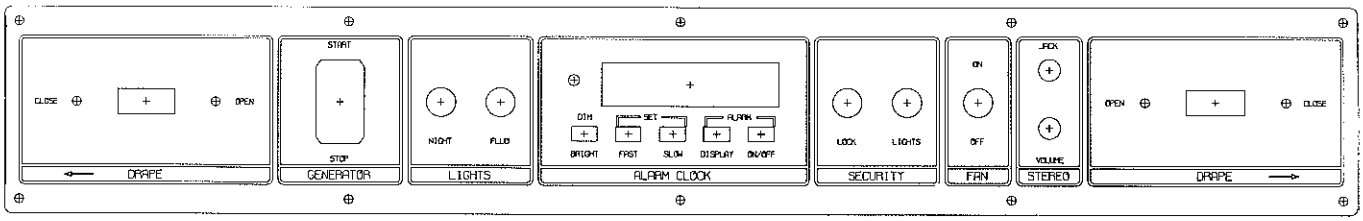


Figure 3-16. Bedroom Overhead Panel

Section IV
Electrical Systems

There are actually two interrelated electrical systems used in your motorhome: the 12 volt dc supply system; and the 120 volt ac supply system. The 12 volt dc supply system is divided into several branches, or zones, each functioning from the common 12-volt battery source. One branch provides the 12 volts required for the automotive starting, ignition and lighting systems; remaining branches supply those motorhome circuits and appliances which require 12 volts dc for operation.

The 120 volt ac system includes those motorhome appliances which require 120 volts for their operation, supplied from either the internal generator; or from the external 120 volt ac (or a split 240 volt ac) supply, via the shoreline hookup. An optional inverter supplies 120 volt ac from the batteries to selected circuits.

12-Volt DC Supply System

Wiring diagrams of the 12-volt supply and distribution system are included in Section X.

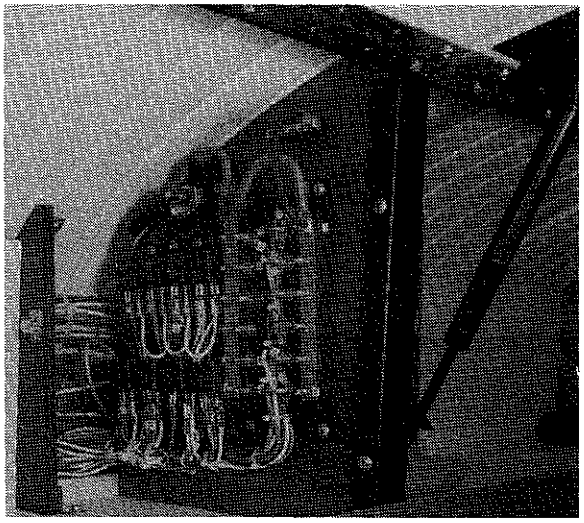


Figure 4-1. Typical Load Center

The 12 volts supplied to all motorhome appliances, outlets and accessories is routed from the batteries through a main 12 volt master switch and routed through busses to the individual branches, or zones, that are serviced from this supply. Circuit breakers are located behind the access panel at the top front left side of the coach, lower front load center (behind left headlight panel) and at each of the zones. The circuits supplied and fuse or circuit breaker protection at each zone are shown on diagrams included in Section X. A typical load center is shown in figure 4-1.

Battery Heaters

120 volt ac battery heater pads provide faster engine starts during cold weather conditions by increasing the available cold cranking power. Heaters operate only from the ac supply line via the 120 volt load center circuit breaker.

Note

To avoid premature deterioration of the batteries, heaters should be used only when the temperature is below 32°F.

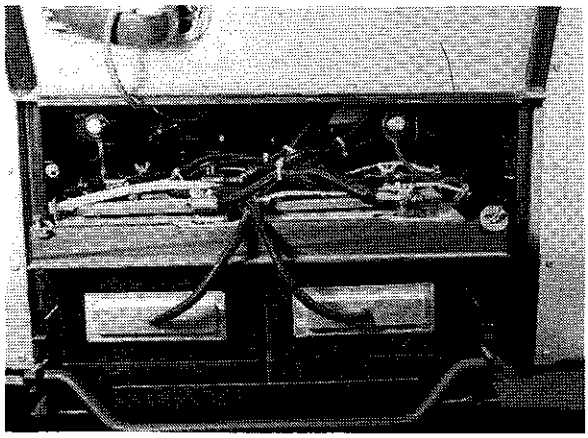


Figure 4-2. Battery Compartment

Battery Chargers

The 12 volt coach battery supply, figure 4-2, and the generator battery are maintained fully-charged by either the engine alternator (when engine operates); or by battery charger/converter, located in the midship roadside compartment, behind the close out panel. The automatic electronic battery charger operates whenever a source of 120 volts ac is supplied to the coach circuits.

Batteries can become discharged because of coach 12 volt loads, while parked, without a 120 volt ac source. For overnight stops this presents no problem, with judicious use of 12v. service, because the engine alternator will recharge the batteries rapidly during the next day's travel. When operating from shoreline or generator power, the batteries obtain the major portion of the charge during "sleeping" time, while coach loads are low, so that the battery chargers can "top off" the batteries.

Figure 4-3. Stepwell Compartment

If it is planned to leave the coach parked without exterior power for two days or longer turn off the **Electronic Master** switch in overhead cabinet adjacent to left front load center. This will ensure that there is no drain from the circuits which remain on when the **Master** (under dash) switch is **Off** (clock, memory and LPG leak detector).

DC Supply Monitors

The **ALT/CHGR METER**, located on the lower dash, indicates the total current flow from the charging source (engine alternator or battery chargers).

The **BATTERY CHARGE** ammeter, located on the co-pilot's overhead dash, shows the current flow to or from the coach batteries.

The **COACH LOAD** ammeter, also located on the co-pilot's overhead dash, shows the load drawn by coach circuits.

ENG. VOLT METER, located on lower dash, shows voltage at the batteries.

While in transit, this should reflect an alternator regulated setting of 14v. When parked, with 120v. source supplied, this should read between 12.5 and 14.0v. depending upon load. When parked, without 120v. source, do not permit voltage to drop below 11.5.

After a trip, **CHARGE** ammeter may show some discharge reading, even when 120v. source is supplied, if there is a load on the 12v. coach circuits. The **Float** type battery charger allows a voltage of 12.5-13 when there is a load.

AC Supply System

Motorhome ac-operated appliances are supplied from either an external shoreline hookup or from the on-board generator. Selection of shoreline or generator power source is determined by a four-position ac power selector switch located in the stepwell compartment, figure 4-3. Set this switch to either **Gen, Shore 50A, Shore 30A** or **Off,** depending on the power source availability. Leave this switch in **Off** position to completely disconnect the motorhome 120-volt ac circuits normally supplied by these inputs.

Power Line Monitors

A dual power line monitor, on the monitor panel displays the voltage in both legs of the ac shoreline supply (or generator supply). The monitors have polarity and ground detector circuits to indicate possible electrical hazards due to incorrect hookups.

A second power line monitor is located in the Utility Box (figure 5-1). You will know immediately if there is reversed polarity or an unsatisfactory ground in the shoreline source.

AC Circuit Breaker Panel (Distribution Panel)

The main ac circuit breaker panel, located in the curb-side curio cabinet base in the stepwell area. In optional rear bath model coach the panel can be found in the bathroom, above the toilet on the roadside of the coach..

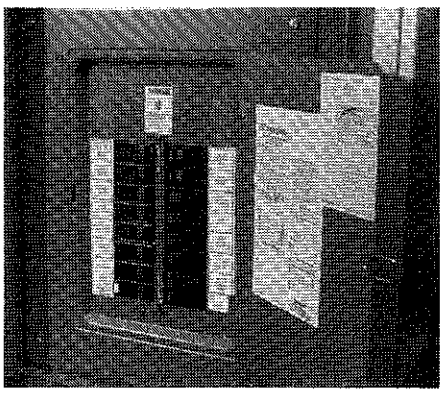


Figure 4-4. Load Center Circuit Breakers

Generator Operation

The generator plant has its own 12-volt starting battery so that it can be started independently of the coach 12-volt batteries.

The generator can be started and stopped from either of three locations within the coach: at the driver's instrument panel; at the systems Monitor Panel, or at the bedroom panel. In addition, the generator can also be started in the generator compartment.

To start the generator, push the **Generator** switch to the **Start** position and hold until the generator starts, as indicated by the generator **On** indicator light. **Do not hold switch on for longer than 5 seconds at a time!** If the generator does not start the first time, wait a minute and try again. Release the switch when the indicator light in the switch glows. The generator may be stopped at any time, by holding the switch to the **Stop** position until the generator stops (light in switch extinguishes).

In cold weather, it is necessary to activate the cylinder glow plugs before starting. Push **Start-Stop** switch to **Stop** position and hold for 14 to 20 seconds.

It is not advisable to start the generator under a heavy load, expecially with the high current demands made by the air conditioners. This may cause hard starting and possible damage to the generator electrical system. It is a good practice to remember to set the **Main Selector** switch to **Off** (figure 4-3) before turning on the generator so there will be no electrical load on the line. Also, remember to set the selector switch to **Gen** position when the generator is being used; and to reset the switch to either **Off** or **Shore** position, as appropriate.

Shoreline Operation (Commercial Power)

Set the power selector switch, figure 4-3, to **Off** position **before** the motorhome electrical system and external supply are joined.

Caution

Your motorhome has been wired in accordance with the National Electrical Code. All 120 volt ac wiring is two-wire service with ground; all 240 volt wiring is three-wire service with ground. If the motorhome is connected to an external hookup which has only a two-wire circuit, ground the third wire on the adapter to the external supply metal junction box or conduit. For personal safety, check the polarity detector indicators on the power line monitors to be sure that lines are properly connected and grounded.

For purposes of safety, observe all precautions when making these connections. First, connect the shoreline to the coach **(rotate plug clockwise to assure firm connections).** The coach receptacles are located in the same compartment as the water hookup, in the rear pilot's side, figure 5-1. Connect the other end of the shoreline to the power source. Set the power selector switch to the appropriate **Shore** position. Poor grounding or incorrectly-wired receptacles can cause personal harm as well as equipment damage or fire hazards. Check power line monitors on Systems Monitor Panel to verify correct supply voltage, polarity and grounding of hookup.

In many instances, the shoreline hookups will not be rated to operate all electrical appliances in your coach. Check with facility personnel to determine the maximum current capability of the hookup. Sometimes, only one air conditioner may be operated. The current ratings for appliances designated for standard or optional usage in your coach are listed in table 4-1.

Table 4-1. Electrical Ratings for Motorhome Appliances

Item	Current Rating (Amperes)
Air Conditioners	
14,500 BTU	(Start) 19.0
Water Heater	10.0
Television Receivers	
Black-and-white	.5
Color	1.0
Battery Chargers (depends on battery condition/load) each	0 to 14.0
Engine Block Heater	10.0
Electric Heaters	
* "Cheater Heater"	12.5
Battery Heaters	1.2
Heat Tapes	3 watts/ft
Microwave Oven	14.0
Food Center	4.0
Vacuum Cleaner System	9.0
Refrigerator	2.7
* Ice-Maker	Start 15 Run 2.5
* Washing Machine/Dryer	25.0
* Instant Hot Water	6.5

* Optional Item

Shoreline Operation — Troubleshooting

Your coach is designed and tested to make sure the 120v. ac **Neutral** (white) wire and the **Ground** (bare copper or green) are not tied together (no continuity). This will prevent any danger of a "hot skin" if the source of power has reversed polarity (red LED lit).

Problem
— Probable Cause
— Corrective Action

Green LEDs lit - Normal (desired)

Red LEDs lit
— Reversed Polarity at power source.
— Convince park management to correct or change lot assignment.

Neither red or green LED lights
— No ground connection with park service
— Use jumper lead from ground pin on shore cord to service box.

Power source (park) circuit breaker trips.
— Reversed polarity in park (or incorrect connections in power cord) along with coach neutral and ground tied together.
— Use on-board generator until qualified electrician can correct coach problem. (Generator polarity is correct).

Green LED's lit plus Red LED's glow when additional load is turned on (Air Conditioner or Water Heater).
— Poor ground connection at park (floating ground).
— Make sure shoreline plug is fully engaged twist locked (clockwise) at coach.

Safeline Alarm

Your coach is equipped with a shoreline disconnect alarm, which is located on the upper left auxiliary dash. This device will provide an audible or visual alarm whenever the shoreline is left connected to the coach at the same time that the ignition switch is turned **On**. This assures that the coach is not inadvertently driven away while still connected to the shoreline hookup.

Audio System Wiring

Low-voltage audio system wiring is run throughout the coach between the stereo radio, speakers, headphone jacks, volume controls and stereo amplifiers. These interconnections are shown on wiring diagrams provided in section X.

Electronic Master Switch

Most of the electronic circuits are de-energized when the main **Master** switch (behind dash) is turned **Off** (relay action). Circuits that still receive power when the **Master** switch is off serve the monitor panel, clocks, radio memory, and LPG leakage detector. If coach is to be stored for a week or more without external power, the **Electronic Master** switch in overhead adjacent to left front load center should be turned off.

Battery Jumper Terminals

For your convenience and safety when jump starting (usually someone else's vehicle), terminal posts are provided at the top front of the battery compartment, figure 4-2. Utilization of these terminal posts is described in Section VIII.

Battery Storage in Freezing Weather

Batteries that are not kept full-charged must be given protection against freezing. Partially-charged batteries will freeze at low temperatures,

so batteries must either be left charged or removed from the vehicle and stored in a warm location.

The motorhome can be left connected to the shoreline ac supply and the coach battery chargers will keep all batteries charged. Note that even in a warm location it is advisable to keep the batteries charged to prevent deterioration. The main coach batteries should be checked for proper electrolyte level: add water, as required. The battery used for the generator is a sealed battery.

Section V
Water Distribution and Drainage Systems

Your motorhome is equipped with a completely self-contained water system which includes piping, heating and drainage facilities similar to those used in home installations. The water supply and distribution system includes three networks: (1) a potable water supply system, which includes the water tanks, pump, air accumulator, pressure switch, water purifier and input supply lines; (2) water heater and interior hot water heating systems; and (3) waste, winterizing, quick drain and sewage drainage systems. Refer to Section X for potable water system and plumbing drainage system piping diagrams.

Water Supply and Distribution System

As shown in figure 5-1, the dual purpose **Tank Water Fill/Commercial Water** inlet connection is located in the rear utility compartment. The **Tank Fill On-Off** switch controls a solenoid-actuated water valve to divert the commercial water input to fill the pure water storage tank(s). Located beneath the rear bed(s), the tank(s) are non-pressurized types so that system water pressure is developed by pumping action directly into the supply lines, rather than by tank pressurization. A bacteriostatic water purifier system purifies the cold-water supply to the cold-water taps in the galley sink and bathroom lavatory, ice-maker and Konstant Hot water tap.

Commercial Water Hookup

When facilities are available, the **Commercial Water** hookup can be used to supply all coach water system requirements. In this manner, the coach water tank and pump system is automatically bypassed by the supply line check valve and water pressure is developed by the external connection. Water input pressure is regulated to 40 psi by a valve which is part of the combination city (commercial) water fill, check valve, and regulator shown in figure 5-1.

Note

The Tank Fill switch should be On only when the water tank is being filled. This switch must be in Off position at all other times.

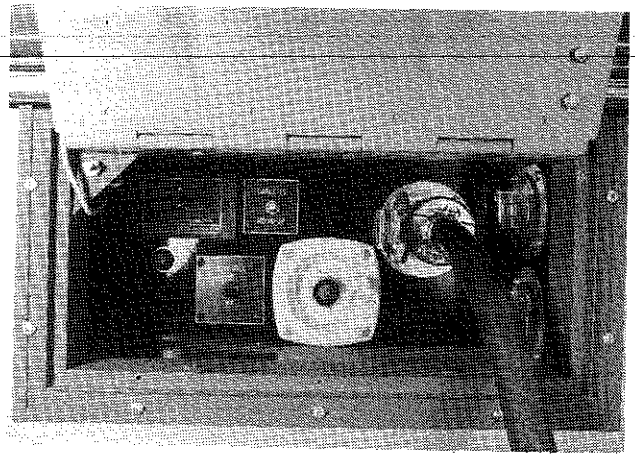


Figure 5-1. Location of Commercial Water Hookup

Filling and Sanitizing

Filling the Tanks — To fill the water supply tanks, connect the water hose to the commercial water inlet, set **Tank Fill** switch to **On**, then turn on the water supply. When the tank is full, as indicated by water overflow beneath the coach, set the **Tank Fill** switch to **Off** position, shut off the water supply and disconnect the hose. At this time, check that the Monitor panel readout indicates a full water tank. To check, press the **Pure** tank switch and observe that the **E** through **F** indicator segments are lit.

Sanitizing the Water System — Water sanitizing procedures should be followed before the system is used for the first time, after long idle periods, where water may become stagnant; or after any suspected contamination of the water supply. Whenever possible, use a commercially-approved tank sanitizer and follow the procedures on the product package. If it is not possible to use a commercial product, prepare your own mixture and sanitize the tank in accordance with the following procedures:

1. Empty the Water Tank(s) — To drain tank(s), set the **Water Tank Drain** control (on the control panel in the bed base cabinet) to **Open**, figure 5-2. After tank(s) is completely drained turn **Water Tank Drain** control to **Closed**.

Figure 5-2. Water Purge Air Pressure, Water Heater Drain and Water Tank Drain Controls

2. Prepare the sanitizing solution using ¼ cup of household bleach (sodium hypochlorite solution) for each gallon of water. Use one gallon of the solution for each 15 gallons of tank capacity. This procedure will result in a residual chlorine concentration of 50 ppm in the water system. If a 100 ppm concentration is required use ½ cup of household bleach with one gallon of water to prepare the chlorine solution. Seven gallons of solution will be most adequate for the largest tank(s) (100 gallons).

3. Add sanitizing solution to water tank(s) — Disconnect overflow hose from tank(s) and pour solution into vent fitting. A curved piece of 1 ¼ I.D. hose, clamped to the vent fitting, will facilitate this process. Reconnect overflow hose.

4. Fill tanks to Capacity — Connect the hose to the commercial water inlet, set the **Tank Fill** switch to **On** and fill water tank(s) completely. Shut off hose, and set **Tank Fill** switch to **Off**. Turn on water pump. Open each faucet (hot and cold) and run the water until a distinct odor of chlorine can be detected. Shut off water pump.

5. Allow the system to stand for at least 4 hours when disinfecting with 50 ppm residual chlorine. If a shorter time period is desired, then a 100 ppm chlorine concentration should be permitted to stand in the system for at least 1 hour.

6. Drain Tank(s) — Open the **Water Tank Drain** control and allow the tank(s) to drain completely.

7. Refill Tanks — Close the **Water Tank Drain** control, and turn on the water supply to the commercial water inlet, set **Tank Fill** switch to **On** and fill tank(s) completely. When the tanks are full, set **Tank Fill** switch to **Off**, shut off water supply and disconnect hose, replace fill cap and turn on water pump. When water flows from opened faucets, close them and open other faucets until water flows. This flushes the system, removing trapped air from the piping and ensures that the fresh water supply is ready for use.

Note

Residual tastes or odors can be removed by again draining and rinsing the system with a vinegar solution mixed to the ratio of one quart of vinegar to five gallons of water.

Potable Water Distribution System

The major components of the potable water distribution system are the water tanks, water pump, air accumulator, water heater, piping and fixtures. In addition, a bacteriostatic water purifier is connected in the water supply line to the coach. These components are located under the bed(s).

Water Pump

The water pump, figure 5-3, is equipped with a factory-calibrated pressure control switch which is preset to turn the pump on when the system pressure falls below 20 psi; and turn the pump off when the pressure reaches 35 psi. If the pump has been out of service for a period of time, it is advisable to open a faucet before turning the pump on. When water flows steadily from the opened faucet, close faucet and observe that pump shuts off when system becomes pressurized. (it may also be necessary to bleed the air from the other faucets as well.) When the potable water supply tank(s) level is low, or empty, shut the pump off to prevent possible damage to the pump motor. In addition to integral motor overload protection, the pump mechanism is also protected from jamming by the presence of an inline filter (pump guard) between the pump and the supply tank.

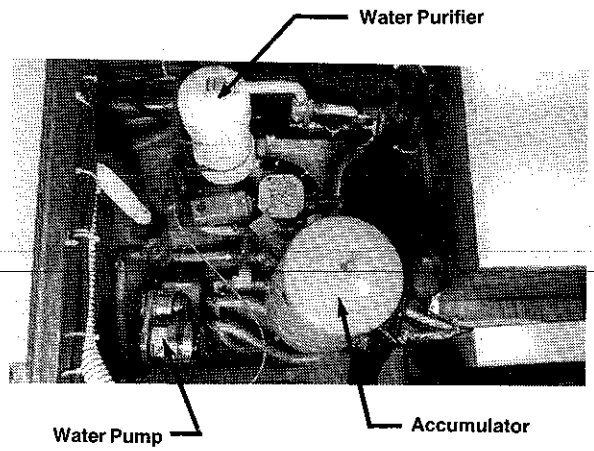


Figure 5-3. Water Pump Location

Water Purifier

The bacteriostatic water purifier filters and purifies potable water to eliminate tastes, odors and coloration produced by chlorine, rust, insecticides, detergents, sediment and other foreign objects. Satisfactory elimination of water-borne disease-carrying bacteria is accomplished by a hygienic filter bed which consists of silver ions absorbed on sponge silver metal which is deposited in a finely divided form on granular activated carbon of high surface area.

An added benefit is that even though the coach is not used for some time, bacteria will not grow in the water distribution system.

The water purifier is a self-contained unit requiring no routine or periodic maintenance.

Each time the filtered water supply is used for drinking or cooking purposes, run the tap for a few seconds to clean out the line prior to using the water. This is particularly important if the water tap is not used on a daily basis. If the water supply has not been in use for extended periods, allow the water to flow for a minute or two before use.

Purifier Replacement — Depending upon the condition of the municipal water used, the filter media will normally process 75,000 gallons of water before the purifier will need to be replaced. For the majority of "Wanderers" this means there will be at least five years of useful life.

The only practical way to determine when replacement is required is to go by the sense of taste. If a faint taste of chlorine is detected, it is time for a change. Even when there is a noticeable taste, the bacteria stopping properties have not been compromised.

Water System Air Accumulator With Diaphragm

An accumulator in the water system smooths out the water flow, eliminates water hammer, and pulsations from the water pump.

Having no diaphragm, the present accumulator can become water-logged, lose its effectiveness and require frequent re-pressurizing.

The WX101 incorporates a butyl diaphragm with the air side (top) being pre-charged to 20 psi. If this is accidentally lost, the accumulator may be re-charged to 20-25 psi through the Schrader valve on top.

Water Heater

The 10 gallon Marine Electric Water Heater has a "motor aid" heat exchanger to ensure a supply of hot water while in transit and upon arrival at your destination. Engine coolant circulates through this heat exchanger as shown in the chassis heater piping diagram in Section X. The electrical heater can be used whenever 120 volts ac is available. The heater switch, located in the bedfront, should be switched **Off** when heated water is not needed.

Dry Tank Switch – Water Heater

In order to preclude the possibility of water heater element burn-out, a dry tank sensor circuit is provided.

This circuit consists of a sensor in the outlet of the hot water tank which sends a signal through a printed circuit board to energize a relay whenever the tank is not full.

When the 12 volt coil of the relay is energized, it breaks the 120 volt ac circuit the the heater element.

Outside Faucet

An outside faucet is provided in the L.P.G. tank compartment so it is not necessary to enter coach to wash hands, etc.

The low point drain valve under the kitchen sink must be open to supply water to this faucet.

While traveling in freezing weather, this faucet should be left open and the low point drain valve closed.

Drainage System

A diagram of the drainage system is provided in Section X. Separate holding tanks for gray water and waste (60 gallons) are located beneath the coach mid-section. The gray water holding tank is the receiver for the gray water from the kitchen sink and the shower. The waste holding tank stores toilet wastes and waste water from the bathroom lavatory. Each holding tank has a separate drain valve, dumping gray water and wastes through a common single discharge connection on the road (left) side. Separate vents from each holding tank extend through the roof of the coach.

Note

On optional rear bath coaches, the waste holding tank stores toilet wastes and receives water from the kitchen sink while the gray water holding tank is the receiver for the bathroom tub/ shower and lavatory.

Draining the Holding Tanks

The waste holding tank is drained first, then the gray water tank. Drain the holding tanks as follows:

1. Check that both drain valves are in a closed position before removing drain cap. Note that the valve handles are turned clockwise to lock the valve.

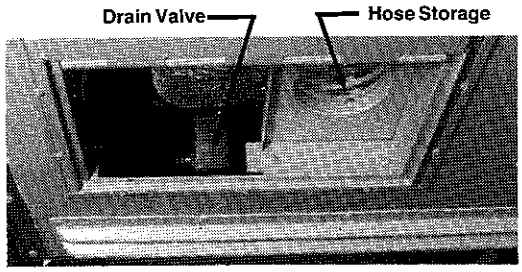


Figure 5-4. Location of Holding Tanks Drain Valve

2. Remove the safety cap from the single discharge connection by turning the locking ring in a counter-clockwise direction and connect the 3-inch sewer hose coupling to the end of the valve. Tighten locking ring securely, in a clockwise direction. The sewer hose is stored within a tube accessible through a compartment door located above the drain cap, figure 5-4. Place the discharge end of the hose into the sewer connection and check that all connections are secure to prevent accidental spillage.

3. Open the drain valves, by turning the handles to the left (counterclockwise) to unlock, then pull the handles straight outward.

4. After contents are emptied, flush out holding tank to dislodge remaining solids.

Note

To clean the holding tank, add a detergent solution into the tank after it is emptied. The agitating action from vehicle movement will clean the tank.

5. Close drain valves by pushing handle inward and turning to the right (clockwise) into the locked position.

6. Disconnect and wash out drain hose, replace hose and replace safety cap securely.

Tank Level Detectors

Each of the holding tanks and the potable water supply tank has a level detector which provides an electrical input to the Systems Monitor panel. Activate the display to read the level of liquid remaining in each tank by pressing the appropriate pushbutton switch.

Winterizing

To prevent freezing of water supply lines, they are wrapped with heat tapes that operate automatically when the temperature drops below 38 degrees F. The heat tapes are connected to ac outlets under the bathroom vanity and behind the kitchen sink base.

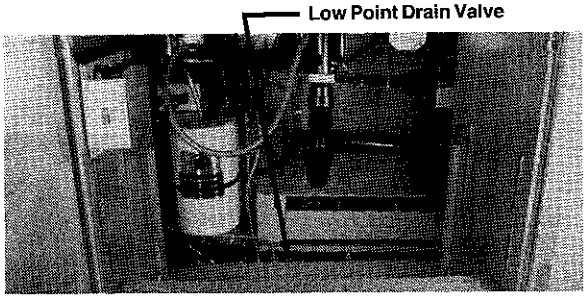


Figure 5-5. Kitchen Plumbing

If you are planning on storing your motorhome in an unheated area during cold weather, it will be necessary to winterize the water system to prevent damage from freezing conditions. Winterizing procedures are covered in the following paragraphs.

Draining and Winterizing the Fresh Water Supply System

The following procedures show the use of the various drain valves, controls and pressurized air system to remove the water from the plumbing and appliances in the fresh water supply system. Refer to figures 5-2 through 5-5 for the location of controls and valves.

1. Open the main circuit breaker box, figure 4-4, and set the **Water Heater** and **Instant Hot** circuit breakers to **Off**.

2. Turn **Water Pump** switch **On** and open all faucets (galley sink, lavatory, shower, outside hose connection and toilet water valve — after depressing pedal insert block to maintain position). Note that the outside water hose connection should always be left open when freezing temperatures are expected. Also, remove thumbscrew from bottom of toilet valve, and drain plug at bottom of **Instant Hot**. If equipped with Ice-Maker refer to **Draining the Ice-Maker** below.

3. Open the low-point drain valve located beneath the kitchen sink, figure 5-5.

4. Turn the **Water Tank Drain** control to **Open**, and the **Water Heater** switch to **Drain**. Both controls are located on a panel in the bed base cabinet, figure 5-2.

5. Allow water to drain completely before proceeding to the next step.

6. Move the **Water Heater** switch to **Fill**.

7. Set **Water Purge Air Pressure** switch, figure 5-2, to **On** to activate the solenoid which applies air pressure to the input water line to purge the water system. Note that it may be necessary to start the engine to build up air pressure.

8. When only air remains in the lines, close the low-point drain valve, replace drain screw/plug in toilet valve and **INSTANT HOT** and all fauctes. Operate the Instant Hot water heater valve to clear the heat exchanger of remaining water.

Note

On 31 and 33 foot coaches, close cold water galley sink faucet last to ensure that the water purifier is cleared of residual water.

When reactivating system, make sure INSTANT HOT is full of water before switching ON.

9. Turn **Water Purge Air Pressure** control to **Off**, set **Water Pump** switch off, and shut down engine.

10. Disconnect both hoses from the water pump to prevent residual water from backing up into the pump.

11. Open all faucets and lowpoint drain valve (toilet valve to remain open).

12. Drain the holding tanks and add RV anti-freeze (several quarts) to each tank through the toilet (into the sewage tank); and through the galley sink (gray water tank).

13. At this point, the only water remaining in the system is contained in the U-traps (P traps) beneath the lavatory and shower drain. To prevent this water from freezing and damaging the traps, pour one pint of RV system anti-freeze into each trap.

Draining the Ice-Maker — If your motorhome is equipped with an ice-maker it will also have to be drained so that no water remains in the line or ice-making mechanism.

1. Remove the cover from the bottom compartment and turn the switch **Off**.

2. Disconnect the water line from the solenoid valve fitting.

3. This line must be blown free of water, and can best be done during step 7. Do not reconnect the water line at this time.

4. Turn **On** the ice-maker and allow it to operate until all remaining water is drained (approximately one hour). Remove any water remaining in the ice-maker mold, drip tray, or cube compartment.

5. Turn ice-maker **Off**, reconnect water line, and leave door slightly ajar to prevent interior humidity build-up from corroding the ice-making mechanism micro-switches.

Section VI
LPG System

The coach is equipped with a permanently mounted 43.5 gallon (148 pounds of fuel-net) LP gas tank which is the energy source for the range, three gas furnaces and alternate source for the refrigerator. A piping diagram of the LPG system is shown in Section X.

LPG Tank and Controls

The LPG supply tank is located in a curbside compartment (roadside with rear bath option), as shown in figure 6-1. LPG system controls include a main gas service valve, two stage pressure regulator, filler connection with Auto Stop (80%) fill valve, 20% vapor (stop filling when liquid appears) valve, and the pressure relief valve. Down stream of the pressure regulator is a solenoid operated shut off valve.

Warning

When coach is to be stored in a confined area, turn off the LPG at the main tank shutoff valve (figure 6-1).

A flexible hose from the two stage pressure regulator connects to tubing which carries the LP gas to the electrical solenoid shutoff valve, and manifold to individual appliances.

The solenoid valve is actuated by either a high-pressure condition (caused by a defective regulator), or by the remote LP leak detector, located below the refrigerator door. Tank level can be monitored at the Systems Monitor panel. To read the digital display, press the **Propane Tank** button.

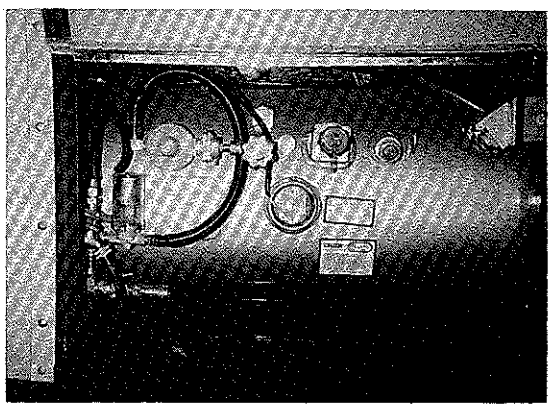


Figure 6-1. LPG Tank Compartment

Caution

Be sure to shut off all gas appliances before filling the LPG tank. Check gas lines and fittings periodically for tightness and leakage.

Fuel Requirements

Liquefied petroleum gas is a material composed of various hydrocarbons such as propane, butane, or a mixture thereof. In its gaseous form (vaporized) it is colorless and has a garlic-scented additive to ensure detection. In addition to being highly inflammable, it is also dangerous to inhale. For ease of transportation and storage, LPG is compressed into a liquid state and stored, in this form, within the LPG tank. As fuel is used, vapor passes from the top of the tank into the two stage pressure regulator and to the various gas appliances.

Appliances will not function if the LP gas does not vaporize. Butane will not vaporize below 32 degrees F. (the freezing point of water), but propane will continue to vaporize down to 44 degrees below zero. Propane has become the main type of LP gas used in RV's in recent years. Your LP supplier will have the correct type or blend for your locale. If your travels will take you into an area where climate differs, ask your LP dealer for his recommendations. The names of LP suppliers can be found in the yellow pages of your telephone directory under "Gas-Liquefied Petroleum – Bottled & Bulk". Many campgrounds now have LP gas fill facilities, as do some service stations.

Prevent condensation and possible regulator or line freeze-ups, when filling the tank, by requesting the dealer to add a small amount of Methyl Alcohol to the fill-up. A common mixture is one ounce of Methyl Alcohol to each 20 pounds of LPG.

Filling the LP Gas Tank

When the tank is being filled, the Service valve must be **Closed** and the 80% liquid level valve (20% vapor valve) must be **Open**. The 80% **Auto** stop fill valve may close before liquid appears at the 80% liquid level valve, but if liquid does appear, stop filling immediately; the tank is filled to its LP capacity. Close the liquid level valve. Do not use a wrench to tighten this or the **Service** valve; they are designed to be closed leak-tight by hand. If you cannot hand-tighten properly, the valve probably needs repair or replacement.

LP Gas and Vapor Detectors

The Gas/Smoke alarm, on the monitor panel, has sensors at various locations through the coach and sounds an alarm if the safe amount of LP gas or carbon monoxide in air is exceeded. The LP gas leakage detector below the refrigerator door monitors the area near the refrigerator and the range, sounding an alarm and actuating the LP gas solenoid shut-off valve if a leak is sensed.

Regulator Pressure

The two stage pressure regulator regulates the pressure of the LPG supplied to the appliances. The regulator functions automatically and is factory-preset to provide the correct line pressure. **Do Not** attempt to tamper with or reset the regulator! Even a small variation above the normal gas line pressure can be sufficient to create a dangerous situation and cause possible damage to individual appliance components. If there is any doubt about the regulator setting it can be checked by your Wanderlodge® dealer or LPG supplier. The correct setting is 11-14 inch water column.

Operation

To operate any LPG appliance, the main gas (Service) valve, figure 6-1, must be **Open**. At each furnace there is a shut-off valve that must be opened prior to use. When first used, or after a refill, there may be some air in the gas lines which will escape when you open a range burner or similar LP gas valve. The air may extinguish your match or igniter the first time or two, before you get ignition. Remember, too, that when you close the tank's Service Valve some of the gas will remain in the lines. To completely bleed the lines of gas, **Close** the tank's **Service** valve and light a range burner to use up the excess. When the flame burns out, turn the range burner **Off**.

Checking For Leaks

Periodically check the LPG system for possible leakage. Do not wait for an alarm condition to occur before correcting a leak! Although the entire system and associated appliances undergo extensive factory testing for leakage, road shocks and heavy vibrations may loosen or damage piping or fittings. Leaks will usually become noticeable by the characteristic odor of the garlic-scented gas additive. To check, turn off all burners and pilot lights. Open all doors and windows. Open LPG tank service valve and use an ammonia & chlorine free soap-bubble solution on all connections. Any bubbles are evidence of leakage.

Note

The gas leakage detectors may momentarily sound an alarm when the engine is initially started or when a heavy electrical load is placed on the system. Further, the ultrasensitive response of these units may also cause an alarm to be given in the presence of certain pressurized-can sprays or cleaning agents. Do Not Assume! Always Determine the Reason For This Vital Alarm Being Given!

LPG Consumption

Most gas appliances are intermittently operated. However, operation during cold weather conditions does cause a heavy use of the gas furnaces. Extensive oven usage also consumes a great deal of fuel. The amount of LPG consumption depends on the total use and manner of use of these appliances.

Note that each gallon (4¼) lbs of LPG fuel produces approximately 91,500 BTU's of heat energy. The LPG tank used in your coach will furnish over 3 million BTU's.

For your guidance in estimating your anticipated fuel consumption, the following is a listing of typical appliance consumption ratings when the appliance is operated for one hour:

Refrigerator	1,500 BTU's
Cooktop Burners	5,200 BTU's Each
Furnaces (3)	16,000 BTU's Each

LPG System Warnings

Warning

LP gas containers shall not be placed or stored inside the vehicle. LP gas containers are equipped with safety devices which relieve excessive pressure by discharging gas to the atmosphere.

Warning

It is not safe to use cooking appliances for comfort heating.

Cooking appliances need fresh air for safe operation. Before operation:

1. Open overhead vent or turn on exhaust fan.
2. Open Window.

This warning label has been located in the cooking area to remind you to provide an adequate supply of fresh air for combustion. Unlike homes, the amount of oxygen supply is limited due to the size of the recreational vehicle, and proper ventilation when using the cooking appliance(s) will avoid dangers of asphyxiation. It is especially important that cooking appliances not be used for comfort heating as the danger of asphyxiation is greater when the appliance is used for long periods of time.

A warning label has been located near the LP gas container. This label reads.

Do not fill container(s) to more than 80 percent of capacity.

Overfilling the LP gas container can result in uncontrolled gas flow which can cause fire or explosion. A properly filled container will contain approximately 80 percent of its volume as liquid LP gas.

Warning

Portable fuel-burning equipment, including wood and charcoal grills and stoves, shall not be used inside the recreational vehicle. The use of this equipment inside the recreational vehicle may cause fires or asphyxiation.

Warning

Do not bring or store LP gas containers, gasoline or other flammable liquids inside the vehicle because a fire or explosion may result.

The following label has been placed in the vehicle near the range area:

If You Smell Gas:

1. Extinguish any open flames, pilot lights and all smoking materials.
2. Do not touch electrical switches.
3. Shut off the gas supply at the tank valve(s) or gas supply connection.
4. Open doors and other ventilating openings.
5. Leave the area until odor clears
6. Have the gas system checked and leakage source corrected before using again.

LP gas regulators must always be installed with the diaphragm vent facing downward. This will minimize any chances of vent blockage which could result in excessive gas pressure causing fire or explosion.

Warning

Never check for leaks with an open flame. Do not check copper plumbing lines for leaks using ammoniated or chlorinated household-type detergents. These can cause cracks to form on the line and brass fittings. If the leak cannot be located, take the unit to your Wanderlodge® dealer or LPG supplier.

Section VII
Air Brake System

Your motorhome is equipped with dual service air brake systems for front and rear brakes, with integral fail/safe operation; and manual/automatic rear spring (parking) brakes. As shown in the air brakes system diagram in Section X, the service brakes are completely independent systems, each including a reservoir and separate distribution lines and valves. A separate reservoir is also supplied for the rear spring brakes, which function independently of the service brakes. All three reservoirs are pressurized from a single compressor. Both service brake systems are brought into operation each time the brake treadle is depressed to slow or stop the coach. Reservoir pressure for each service brake system is monitored by a respective pressure gauge on the front panel; system failure(s) are indicated by low pressure readings, illumination of the **Low Air** failure lamp and sounding of buzzer (item 10, figure 2-3).

Operation

When the coach is parked, and the engine off, the rear spring brakes will normally be set by operating the parking brake. The spring brakes cannot be fully released until the air pressure is above 65 psi. These brakes are in the released position when the control is pushed in. In the event that there is a loss of air pressure, the spring brakes will set automatically, at the brake-applied position, and will not release until the air reserve has again built up to required value. Consequently, there will be a normal delay, after the coach is first started, before the compressor builds up sufficient pressure in the three reservoir tanks, before the brakes can be released and the coach driven. When the brake treadle is depressed, to slow or stop the coach, reservoir air is applied simultaneously to both front and rear service brakes to effect the braking action. The spring brakes are held in a released position by the air pressure supplied from the associated reservoir tank.

Caution

Do not attempt to drive the coach until system pressure is above 90 psi.

Brake Failures

To compensate for normal lining wear, each brake system is individually self-adjusting.

A combination of fail/safe features provide protection against brake system failures. Each service braking system, front and rear, has a backup capability in the event of partial or total system failures. If the front brakes fail, operating the brake treadle activates the rear service brakes normally providing sufficient braking action to effectively stop the coach. If a failure occurs in the rear, the front service brakes and rear spring brakes provide braking action.Under these conditions, the spring brakes do not lock in, as in a normal set position, but instead their application is "modulated" in the same manner as the service brakes, thereby providing a normal braking "feel".

In the unlikely event of a failure where both service braking systems are disabled, the rear spring brakes will apply automatically and bring the vehicle to a stop. As a safety factor, the coach should not be moved until brake failures (any type) are corrected.

Note

With the front brake system service reservoir fully charged, enough air pressure is available to provide four full releases of the rear spring brakes. This will allow the coach to be brought to a safe position until repairs can be accomplished.

Additional Air-Operated Equipment

Besides providing the compressed air supply for the coach braking systems, the compressor also provides the air supply for the entry step, side-slide mechanism on pilot's and co-pilot's seats, front air vents and air suspension system (air bags) — all via separately-controlled solenoid switches operated from the dash, or at other locations throughout the coach. (This compressed air source is furnished from the front right side reservoir.) A compressed air outlet fitting, tire gauge, and spiral hose are contained in the center storage compartment on the left side of the coach, convenient for blowing out the water system, inflating tires, and so on. A Schrader valve (air connection) is available at the rear of the front right side air tank to to allow the air system to be pressurized from a "shop" source without the necessity of starting the engine.

Compressed Air System Air Dryer

The air dryer unit collects and removes moisture and contaminants from the compressor air output before the air reaches the reservoirs. This unit is different from a reservoir drain or an aftercooler in that it provides dry air for the brake system by eliminating the possible accumulation of condensate in the system reservoirs. Note that each reservoir also has a drain cock on the bottom for draining accumulated moisture. This assures a long maintenance-free life for air brake system components due to the removal of system contaminants.

The air dryer is located between the compressor discharge (output) line and the compressed air reservoirs. A safety valve mounted in the air dryer housing assembly protects against excessive pressure buildup. The desiccant cartridge and pleated paper oil filters are easily removable and replaceable as a complete serviceable unit. The desiccant "beads" which provide the drying action have a large capacity for absorption due to their combined surface area. In addition, an internal thermostatically-controlled heating element prevents freezeups on the purge drain valve when the unit is used during sub-freezing temperatures.

Purging of the dryer is automatic, exhausting combined oil and water residue to the atmosphere. At the same time that the contaminants are purged the reverse air flow across the desiccant material removes the accumulated moisture and reactivates the desiccant. Cartridge replacement should be accomplished at 12-month periods; sooner, if the cartridge has become contaminated.

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 ..... 34,000 lb.
Front Axle ..... 13,200 lb.
Rear Axle ..... 23,000 lb.
Wheelbase ..... 210 in. (35 ft.); 192 in. (33 ft.) 177 in. (31 ft.)
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 4,760 cu. in.

Retarder .. Transmission Hydrodynamic Brake
Wheels & Tires (6) .. Aluminum rim, 11R22.5, 16 PR tubeless steel-belted radial
Tire Inflation .... See information plate inside stepwell compartment door (figure 4-3)
Axle Ratio 5.29:1
Leveling Jacks (Hydraulic)
- Front (each) ..... 20790 lb. rating
- Rear (each) ..... 10990 lb. rating

A feature of the Wanderlodge® Forward Control is a swing-out radiator (with fold down bumper) 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

Water Pump Belt —
W/L P/N 1129626 –
Gates 9485 matched set

Power Steering Belt —
W/L P/N 1243146 –
Gates 9415 matched set

Air Conditioning Compressor Belt —
W/L P/N 1040005 – Gates 9700 (1)

Fan Belt — W/L P/N 1129626 –
Gates 9485 matched set

Table 8-2
Engine/Chassis Capacities

Diesel Fuel Tank Capacity
- 35 ft. side bath ..... 230 gallons
- 35 ft. rear bath ..... 225 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

Power Steering
Specification ..... Dextron II
Capacity ..... 4 quarts
Leveling Jacks
Specification ..... Dexron II
Capacity ..... 10 quarts
Transmission
Specification ..... Dexron, Dexron II
Capacity (including oil cooler) .... ~~47~~ 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
Battery ..... 12 volts, min. 500 CCA

Table 8-4
Motorhome Capacities and Specifications

Potable Water Tanks ..... 96 gallons (92 gallons 35 ft. side bath) (100 gallons w/rear bath)
Holding Tank, Gray Water ..... 62 gallons 35 ft. side bath (52 gallons w/rear bath)
Holding Tank, Waste ..... 62 gallons (56 gallons w/rear bath)
LPG Tank ..... 148 lbs.-net (43.5 gallons)
Water Pump ..... 3.5 GPM
Water Heater ..... 10 gallons
Batteries .. Six 6-volt batteries, series-parallel connected to supply 12v at 660 AH
Battery Chargers .... 75 amperes 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 500 miles to 1,000 miles
— Replenish cells with distilled water to 3/8-inch above plates.
— Coat 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 ito 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–Electroluminescent (inverters)	(6)/12.0
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
Windshield Wipers	(2)/8.0(max.)
Water Pump	(1)/6.2
Blower Motors	
Front Heater (Hi/Lo) Right	(1)9.0/4.5
Defroster (Hi/Lo)	(1)/9.0/4.5
Foot Warmer (Hi/Lo) Left	(1)/9.0/4.5
Chassis Heater (Hi/Lo)	(3)/9.0/4.5 ea.
LPG Furnace	(3)/9.0
Portable Fan	(1)/1.0
Duct Booster	(1)/1.0
Ceiling Vent (Round)	(2)/8.0
Vent Fan (Square)	(3)/6.6
Stereo System	(1)/15
Motor Generator(Option)	(1)14.6

Fuses

Electronic equipment fuses are located in left front and left rear 12 volt load centers. See diagrams in Section X.

Radio Privacy Switch — left front load center

AM/FM Stereo Tuner/Cassette Player — left front load center.

Radio Memory Circuit — left front load center.

Refrigerator — left front load center.

Spot Light Rotation — upper front load center (behind rubber flap).

Burglar Alarm — under dash right side below master switch.

Turn/Hazard Flasher — under dash left side of steering column behind retarder, black wire; fuse below master switch.

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.

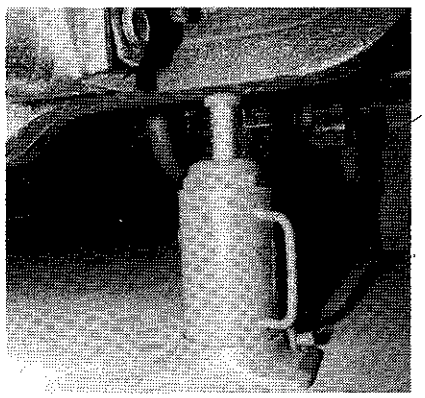


Figure 8-1. Locating Jack

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.

Warning

Hydraulic Leveling Jacks are not to be used as service jacks. Under no circumstances should anyone work under or around the coach unless the coach is securely supported at the frame rails.

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.

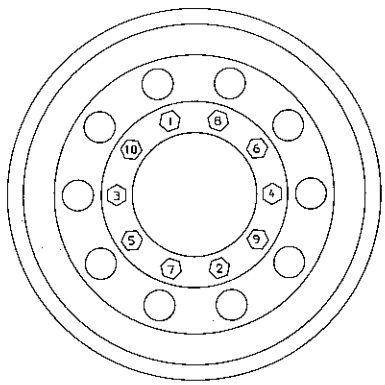


Figure 8-2. Lug Nut Tightening Pattern

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 six 6-volt batteries, connected in a series-parallel arrangement to provide 12 volts for engine and motorhome use. This arrangement makes available 660 AH (20 hour rate). Four batteries are located on a slide-out tray in the front compartment on the road side, as shown in figure 4-2 and two are on a similar tray in the curb side front compartment. A separate 12-volt battery is contained in the generator compartment and is used only for the generator. 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.

Periodic Battery Checks and Maintenance

Periodically check electrolyte level in the four six-volt batteries. Odorless drinking water may be used to raise the level of the electrolyte. Before charging, batteries must be filled only sufficiently to cover the plates. After batteries are fully charged, the maximum should be no higher than it takes for the electrolyte to form a "fisheye" at the bottom of the fill well. The generator battery is sealed so it is not necessary to check the level of the electrolyte. Battery condition depends on battery usage and proper utilization of the battery chargers.

Caution

Avoid sparking of any form in the vicinity of the batteries, especially while caps are off.

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. A safe level of charge is a specific gravity reading of 1.225 to 1.280. Always use a battery hydrometer which has a temperature correction scale. 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 and associated battery jumper 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 plastics 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 is readily available under the front logo panel, to the left of the radiator fill.

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. 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 just inside the engine cover opening (at the right rear).

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.

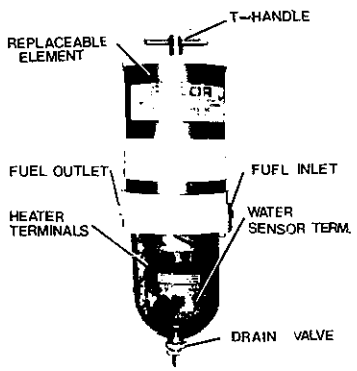


Figure 8-3. Racor Fuel Filter/Separator

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/separator 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

In side bath model coach with Queen Island bed, the sending unit is on the curb side of the bed at the edge of the bed base. In rear bath unit with single beds, the sending unit is located in the aisle approximately 84 inches from the rear of coach. Access to sender is accomplished by pulling up carpet and pad to expose cut out in plywood floor. In both coaches 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 it's 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 10.625 gallons of antifreeze 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 (see figure 10-1). 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 under the pilot's floor. The pressure valve for the front (cockpit) heater is electric solenoid operated and the return line has a gate valve at the engine (lower right side front). Close the front heater electric solenoid valve by placing the **FRONT HEAT** switch in the pilot's control area to **OFF**. 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 under the pilot's floor (at the return gate valve) for the coach system and over the radiator fill (in black tubing) for the front heater. Leave the return line gate valves closed and open the pressure line valves for front and coach heaters. Place the **FRONT HEAT** switch (item 13,figure 2-4) **ON** and the **HEAT SELECTOR** switch (item 1, figure 2-9) to **WINTER**. Press the **AUX. PUMP** switch (item 2, figure 2-9) **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 bleed valve and open front heater return gate 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 under the pilot's floor.

Note

The radiator must be filled often during bleeding procedures.

2. Close bleeder valve and open return gate valve (under pilot's floor). 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 commerical 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.

Battery Jumper Terminals and Jump-Starting

For your convenience and safety when jump-starting, terminal **posts** are provided at the top front and rear of the battery compartment, figure 4-2. 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 jumper 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 jumper 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 jumper 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 sliprings and inspect brushes
  - — Check governor operation and adjust as necessary.

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

Battery

Check the condition of the generator battery periodically. See that battery connections are clean and secure. A light coating of nonconductive grease will prevent corrosion at terminals. Refer to Battery Maintenance procedures provided earlier in this section.

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 antifreeze 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.

Generator Battery Charging

Generator battery charging current is supplied through the isolator from either the engine alternator or the battery chargers (when ac power is available).

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.

Toilet

No routine maintenance is required. If the bowl sealing blade fails to operate freely or does not close completely, clean foreign material out of sealing groove with stiff bristle brush.

To clean the toilet, use a high-grade, non-abrasive cleaner. Do not use highly concentrated or high-acid household cleaners. They may damage seals and finish.

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 pumpgard 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.

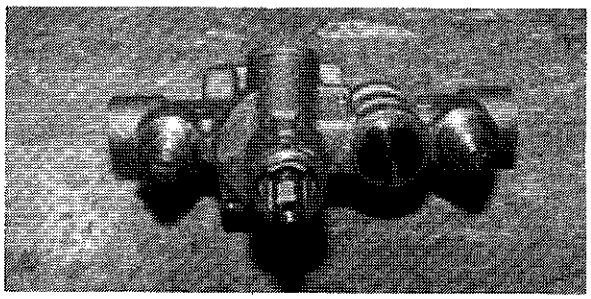


Figure 8-4. Tub/Shower Mixing Valve

Air Step Speed Adjustment

The adjustmens for the entrance step are located under the center portion of the step and are combined with sintered bronze exhaust filters. The extend adjustment is close to the center of step and the retract adjustment is to the rear.

To adjust the extend or retract function, loosen the lock nut (7/16" wrench) and turn adjustment with blade type screwdriver as follows. To increase speed turn counter-clockwise. To decrease speed turn clockwise. When adjustment is complete tighten lock nut.

Section IX
General Information

Equipment Manufacturers

Equipment
Manufacturer
Model or Type Number

Air Conditioner (Automotive)
Motive Manufacturing Division
3657 10th Avenue, North
Birmingham, AL 35234
Motivair

Awning
Zip-Dee Incorporated
96 Crossen Avenue
Elk Grove, IL 60007
Model BB (specify length)

Bath Vent
Hammond Manufacturing Corp.
P.O. Box 5393
2220 Raymond Drive
Lansing, MI 48905
Model CB-350-B Compact Blower

Burglar Alarm
Kolin Industries, Inc.
Box 357
Bronxville, NY 10708
Cat. No. 120

CB Radio
Audiovox Southeast
3770 Green Ind. Blvd.
Chamblee, GA 30341
AUDIOVOX
Model 6000A

Central Air Conditioner
Marine Development Corporation
P.O. Box 8570
Richmond, VA 23226
Cruisair Model ACA 14U

Chime
Ron Levy Company
P.O. Box 2456
Smyrna, GA 30081
Model GE-861

Closed Circuit TV Camera
Mashnick Associates
1977 Scenic Highway, Suite 1D
Snellville, GA 30278
SANYO Model VDC-3800

Closed Circuit TV Receiver
Dotronix
7947 Teak Way
Rancho Cucamonga, CA 91730
Model 7D-0959-CV-4-P-O-
E-15, 7, 12M-50/60

Duct Booster
Acar Industries
4563 Hamann Parkway
Willoughby, OH 44094
Model 951553

Electric Heaters
FASCO Industries, Inc.
810 Gillespie Street
Fayetteville, NC 28306
Model 2450
Living room, galley & bedroom

TPI Corporation
P.O. Box T–CRS
Johnson City, TN 37601
Model BCIA05
Freeze Protection

Electric Heat Tapes
Easy Heat, Inc.
31977 U.S. 20 East
New Carlisle, IN 46552
MT Cables

Fan, Exhaust
Fantastic Vent Co.
4349 South Dort Hwy
Burton, MI 48529
Model 1000R

Fan, Portable
Guest Corporation
17 Culbro Drive
West Hartford, CT 06110
12-volt Oscillating

Fan, Roof
Kool-O-Matic
1831 Terrace Road
Niles MI 49120
RU-12

Faucets
Bathroom
Grohe America Inc.
900 Lively Blvd
Wood Dale, IL 60191
Model 33.031

Kitchen
Stanadyne Moen Division
377 Woodland Avenue
Elyria, OH 44036
Model 7310A

Flourescent Lights
Thin-Light
530 Constitution Avenue
Camarilo, CA 93010
Model 2-411-723

Food Center
Scovill Industries
NuTone Division
Madison and Red Bank Roads
Cincinnati, OH 45277
Power Unit, Model 251
Food Processor Model 256

Fuel Filter – Water Separator
Racor Industries, Inc.
1137 Barium Road
Modesto, CA 95351
Model 1000FG
Detroit Diesel Engine
Model 500 FG
Kohler Power Generator

Furnace
Suburban Manufacturing Co.
P.O. Box 399
Dayton, OH 37321
Dyna-Trail Model NT-16SW

Gas/Smoke Alarm
P.M.M.I., Inc.
Drawer 10
Old Ocean, TX 77463

Ice Maker
U-Line Corporation
8900 North 55th Street
Milwaukee, WI 53223
Model BI-45A

Instant Hot Water
Kitchenaid Division
Whirlpool Corporation
World Street
Troy, OH 45374
Konstant Hot
KIH-160

LPG Alarm/Control
P.M.M.I., Inc.
Drawer 10
Old Ocean, TX 77463

LP Gas Grill
W.C. Bradley Enterprises, Inc.
P.O. Box 12040
Columbus, GA 31993
Charbroil
Model TG110

LPG Tank
Manchester Tank & Equipment Co.
2738 Lithonia Industrial Blvd.
Lithonia, GA 30058
No. 6042

Leveling Jacks
HWH Corporation
R.R. 1
Moscow, IA 52760
AP 3179

Microwave/Convection Oven
Sharp Electronics Corp.
725 Old Norcross Road
Lawrence, GA 30245
Model R8580

Power Generator
ONAN
1400 734-D Ave. NE
Minneapolis, MN 55432

Radio (AM/FM Stereo Cassette)
Robert Bosch Sales
2800 South 25th Ave.
Broadview, IL 60153
Equalizer-Model BEQ08E
Compact Disc Player-
Model CDP05
Radio Cassette
Model ASQR06

Range and Oven
Modern Maid
6075 Corners Parkway
Norcross, GA 30092
Model KGT-341

Reading Lights
Wemac/Puritan Bennett Div.
18475 Pacific St.
Fountain Valley, CA 92708
Model 2510

Refrigerator
Dometic
P.O. Box 490
Elkhart, IN 46515
RM 3801

Safeline Warning Device
Omnifac Corporation
1700 East Whipp Road
Dayton, OH 45440
Model 2

Shower Hose Kit
Alsons Corporation
42 Union Street
Hillsdale, MI 49242
500 PB59

Shower Valve
Stanadyne Moen Division
377 Woodland Avenue
Elyria, OH 44036

Tank, Water
Inca Plastics, Inc.
11555 Packard Drive
Middlebury, IN 46540

TV Antenna
Tandy Distributor Products
Swannanoa, NC 28788
Model 5MS550

Toilet
CL Barr & Assoc.
P.O. Box 284
Tucker, GA 30316
Model N/A

Washer/Dryer
Sears Roebuck and Co.
675 Ponce De Leon Ave., N.E.
Atlanta, GA 30308
Washer: 26K4090
Dryer: 26K8090

Water Heater
Atwood Vacuum Machine
P.O. Box 95780
Chicago, IL 60694
Model EH M-11

Water Pump
ITT JABSCO
1485 Daleway
Costa Mesa, CA 92626
Model 36950-1180

Water Purifier
Pure Water Enterprises, Inc.
343 Broad Street
Lake Charles, LA 70607
Model 7550

Section XI
Equipment Options

Awnings

The awnings are standard equipment on your coach and designed for simplicity of operation and long-term use. To open the awning, refer to the figures below and proceed as follows:

Open Awning

1. Pull down on **Z** lock lever, as shown in **figure 11-1**, to permit awning to be unrolled.

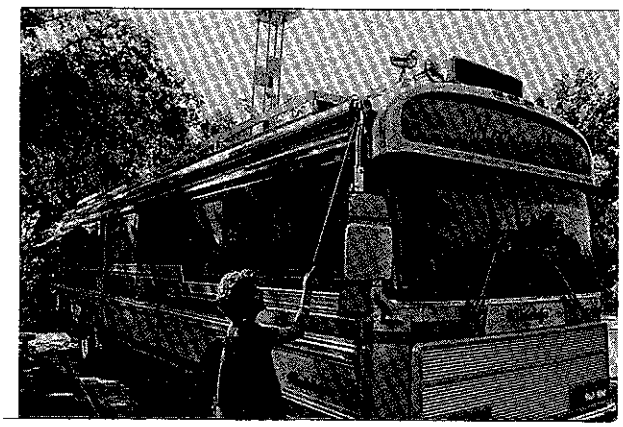


Figure 11-1.

2. Completely unroll awning by first pulling the tab toward you with the hook and then grasping strap with hands as shown in **figure 11-2** . Fold or roll the strap so the Velcro strips meet and hold tab in place next to the roller. Now move beneath the awning and proceed with step 3.
3. Release the ratchet stud on the rafter arm. Swing the arm toward the case and engage the hook section of the claw in the rafter lock, **figure 11-3.**. Lock the rafter arm by pressing down on main arm bar, making the fabric taut, until the ratchet stud engages.
4. Referring to **figure 11-4**, raise awning to desired height by releasing snap stud on main arm and pushing up and out on roller assembly. Lean, so that body weight — rather than arm strength — carries out this step.
5. Repeat steps 3 and 4 at other end of awning.

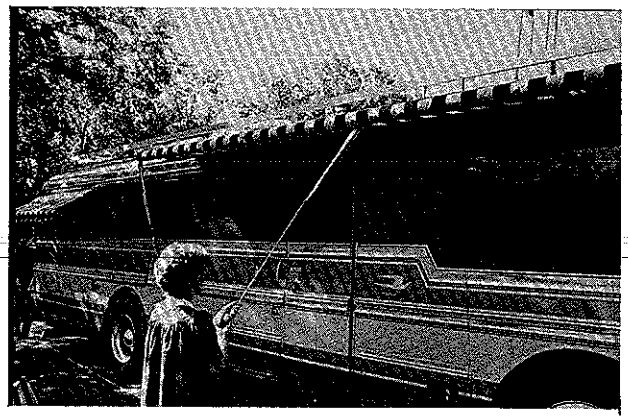


Figure 11-2.

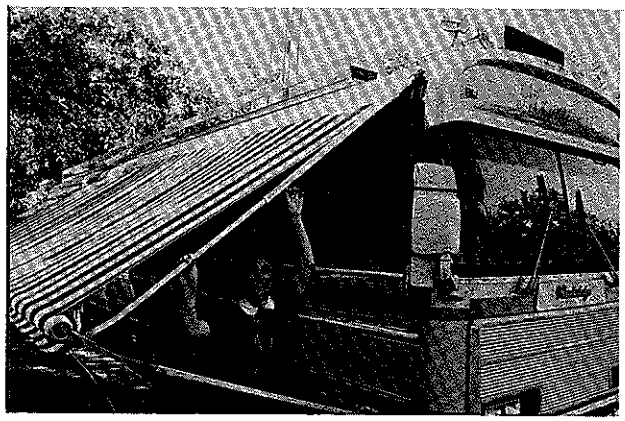


Figure 11-3.

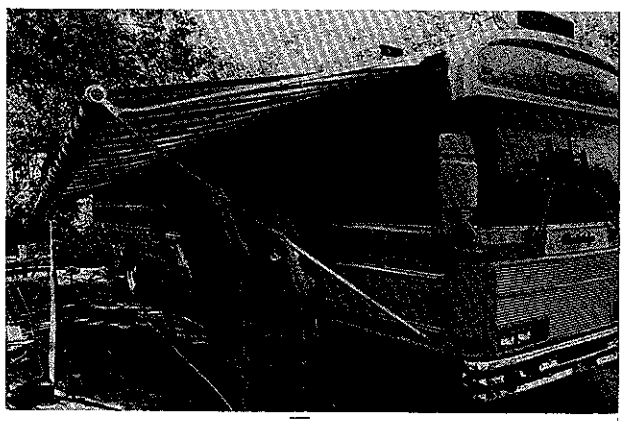


Figure 11-4.

Caution

Be sure to raise high enough to allow for clearance with the top of the door.

Close Awning

1. Lower awning to bottom position by releasing snap studs and dropping roller assembly.
2. Release ratchet stud on rafter arms and lift the claws out of the rafter locks.
3. Place arm claw casting end against protruding screw. To lock assembly, push rafter tube toward coach body until ratchet stud engages. Repeat at other end of awning.
4. Roll awning against coach using the pull tab to guide.
5. Lock the awning in place for travel by pushing up the **Z** lock lever.

Note

The tab must be spiraled around the roller to prevent a loose roll and the bunching-up of fabric.

6. Observe if the roll-up is even and in-line with clamps. If not, then unroll and give roller a slight push toward the direction required to line up the roller. If you wish to have the awning roll up more in either direction spiral the pull tab in that direction.

Fabric Care

The fabric of your awning is made of acrylic fibers which cannot rot or mildew. Your awning can be rolled up wet if necessary, but be sure to open it to dry as soon as possible.

The acrylic fabric of your awning is a synthetic and cannot support mildew or other plant growth. However, mildew can find a home on any pollen, grain dust, plant spores, or other airborne plant material that can accumulate on the awning. If mildew forms on any of these elements, it can leave a stain which can be unsightly and difficult to remove, even though it will not weaken the fabric itself. To minimize the chance of a stain, keep your awnings as clean and dry as possible by hosing it down frequently between seasonal washings.

Washing

On a monthly basis, loosen hardened dirt and dust with a dry, medium bristle brush, then thoroughly rinse both top and bottom with a hose. For more stubborn stains, use a mild solution of 1/2 cup bleach and 1/2 cup soap flakes diluted in one gallon of lukewarm water.

Wash both sides of the awning with the solution while scrubbing with a soft brush. Saturate the fabric and leave the solution on for 15-20 minutes. (Keep the fabric saturated by reapplying solution as needed.) Rinse **thoroughly**. Repeat if necessary until most of the stains disappear.

Caution

Never use a strong detergent (super spray) or stain remover on your awning. These can destroy the water repellency of the fabric.

Water Leaks

If leaking occurs after washing, it is usually the result of insufficient rinsing. If water drips through the needle holes in the stitching, you can use a commercial seam sealer available in canvas and trailer supply stores. You may also apply a paraffin wax to the top of the seams. However, as the awning **weathers**, these holes will normally seal themselves.

It is normal for slight leakage to occur through the fabric where water is allowed to accumulate or **pocket** on the fabric. See **Storm Precautions** for information on awning settings for proper water drainage. Sometimes soap or chemical residue, such as from active agents in insect fogs or sprays, can wet the fabric so that it appears unable to repel water. Rinse the fabric thoroughly and test for water repellancy after it dries. If leakage continues, wash the fabric or contact the manufacturer for information on treating the fabric.

Storm Precautions

Because there is no warranty for damage caused by acts of God, steps should be taken to prevent damage from occurring due to wind, rain or storm.

If you are leaving or retiring for the night, close the awning. This takes only a few seconds (less time than closing your windows) and gives you the best protection. If for some reason you can't close the awning, lower both ends of it as far as you can without removing the spring arms. This will create a sufficient slope for water run-off. If you are remaining with the awning, you may lower one end only sufficiently to divert water.

Hardware and Mechanism Maintenance

Although your awning requires less maintenance than any other awning, a little care (about the same amount that you give to your coach) will keep the metal parts in top shape. The rafter arm assemblies, main arm tubes, and the awning case are bright-anodized aluminum; the castings are polished, high-strength aluminum alloys. To keep these parts new looking they should be cleaned once a year with a good quality chrome or aluminum polish.

The main arm bar and all fasteners and stress bearing shafts are stainless steel. These need only be cleaned occasionally to remove accumulated grime that might hinder their operation.

At the end of each season:

- Tighten any loose bolts or screws. (Replace missing parts only with factory authorized replacements.)
- Polish accessible hardware.
- Use a silicone lubricant only on the 1/2" round shafts that protrude from each end of the roller.
- Extend all telescoping arms as far as possible to wipe off accummulated sand and dirt that can clog and scratch the protective aluminum finish.

Ice-Maker

The ice-maker, figure 11-5, is designed to provide a continuous automatic supply of ice cubes. It will operate unattended providing that the water supply line is open and the ac power is applied to the unit. This may be supplied from shorepower, the power generator, or from the optional motor generator (Redi-Line).

Ice-Maker Operation

The power on-off switch is located on the front grillework. When the ice cube supply is full, the ice-making mechanism shuts off automatically. However, the refrigeration system continues to operate to prevent the prepared ice cubes from melting. When removing cubes, do not use a sharp instrument to separate the cubes that are frozen together or the interior may be damaged.

Note that the ice-maker may supply small cubes the first time that it is used. This is due to accumulated air in the water line and subsequent batches will be normal-sized.

If the machine is used only intermittently, empty the ice periodically (every week to 10 days) to ensure a fresh supply of cubes.

Do not clean the cabinet interior with solvent-type cleaners, abrasives, or other cleaners that might cause ice cubes to acquire a bad taste. The exterior should be cleaned with a furniture-type cleaner/polish. Clean condenser (behind grille) with a blower/vacuum at least 3 to 4 times each year, depending on usage.

Caution

The ice-maker grille must be free from all obstructions. Any interference with free air flow to the grille will cause faulty operation.

To shut down the ice-maker, set power switch to off, and remove all cubes. Leave the door slightly ajar for ventilation to avoid mold or odors.

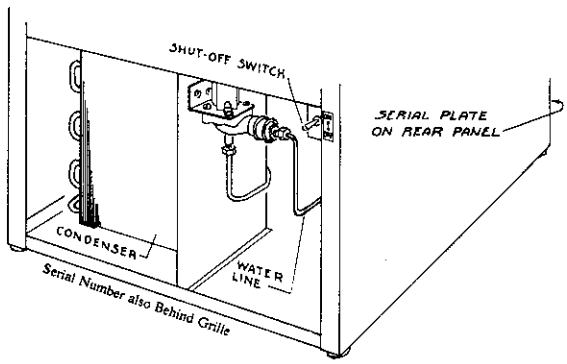


Figure 11-5 Ice-Maker Details.

Ice-Maker Maintenance

Other than periodic cleaning of grillework, condenser and interior, no other maintenance procedures are required. Remove the grille as follows: take out screw at top, put fingers in slots and lift up and out.

Winterizing

Follow procedure in Section V. To facilitate draining of water line, remove garden hose type fitting shown in figure 11-5

Konstant Hot Water Dispenser

Operated from 120V. ac (shoreline or power generator) to provide instant hot water.

Winterizing instructions are provided in Section V.

Kool-O-Matic Ventilation Fan

This 12 volt dc power ventilator has the capacity to move a large volume of air.

In many low humidity regions it will eliminate the need for operating air conditioning units.

Operation

Remove the magnetically attached fabric cover and open inlet dampers.

Be sure windows are open to provide proper air flow cooling and ventilation.

A heat-cool thermostat is located near the Kool-O-Matic fan. It also serves the area LPG furnace and chassis heater. In order to activate the fan, the selector switch (at the bottom) must be moved to **COOL** and the temperature lever set so the fan will operate. The fan will then start automatically whenever the temperature rises above the desired level.

Auxiliary Air Compressor

This unit provides a quick source of air so there is no need to wait for pressure to build up after starting engine; you just drive right off! It can be used to operate air tools and accessories without starting the coach engine. It also serves as a standby unit in the rare case of a malfunction in the engine driven air compressor system.

The compressor and starting relay are located in an outside compartment while the 12 volt switch to operate the relay is in an **ACCESSORY** position on the dash.

Operation

The compressor operates from 120 volt ac power so the coach must be plugged into shore power or the generator must be running. Press dash switch (in **ACCESSORY** position) ON.

For intermittent use, enough air will be supplied by the luggage compartment. If, however, it is to be used for an extended period, such as to power air tools, it is suggested that the luggage compartment door be opened.

Maintenance

No lubrication is required for the life of the unit.

The air inlet filters should be inspected once or twice a year. The black plastic air inlet covers can be removed by turning counter-clockwise. This will reveal the felt filters. If there is evidence of dirt on filters and covers they may be washed in a solvent and air dried.

CORIAN Counter Tops

Even stubborn stains — such as grape or beet juices — wipe off with a damp cloth and household cleanser. Because CORIAN is solid all the way through, it cannot be harmed by abrasive cleansers and normal household cleaners.

CORIAN is strong and tough, but slicing on it with knives can cause scratches. Use a cutting board.

While CORIAN does provide an extra measure of protection (better than ordinary countertops), it is **not** recommended as a hot pad. Do not place hot pots and pans directly on your CORIAN countertop.

Since it's a solid material with color and pattern all the way through, unusual damage such as cigarette burns, scratches, or other surface abuse can usually be removed using ordinary household cleansers or fine sandpaper. If the stain persists, or if the scratch is particularly deep, first use a medium sandpaper (120 or 240 grit) then fine sandpaper (320 or 400 grit) followed by circular motion buffing with a scotch Brite pad to match the gloss of adjacent surfaces. Household cleanser, steel wool or Du Pont No. 7 polishing compound can also be used if higher gloss levels are needed.

Caution

Certain chemicals found in the home — such as paint removers, paint brush cleaners, acid drain cleaners and certain brands of nail polish and polish removers — can harm CORIAN if left in contact even for short periods of time. These materials should be wiped away promptly and flushed with water. Depending on time of exposure, surface damage caused by these materials can sometimes extend too deeply for practical repairs.

Inverter

A 1500 watt inverter is offered to provide auxiliary power to operate ice maker, front overhead television, and electric drapes while in transit from

12 volt source. The inverter is located in the left hand outside luggage compartment with the battery chargers. See owner's manual for operating instructions.

Power Dump Valves

Air operated cylinders with a control panel located on left side of coach behind holding tank access door. Panel incudes toggle switch for each tank and an air pressure gauge for the system. Manual operating tool is attached to control panel in case of low air pressure. (Available on 35 foot side bath only.)

Quick Start Aid

An ether injection system is used to aid starting the engine in cold weather. The switch for the system is located in the accessory position on upper right hand dash panel (item 3, figure 2-6). To activate valve depress switch for 3 seconds to fill valve then release switch to inject charge into engine. Allow 3 seconds before starting engine.

Caution

Use only for starting engine and inject prior to cranking.

Intercom System

The optional intercom system used in your motorhome, figure 11-6, is a master-to-master system so that any station can originate calls to any other station. Just lift the handset, push in the button corresponding to the called station, and carry on your conversation. Intercom stations are located on the floor to the left of the driver, on the rear bedroom wall, and bedroom and dinette except on 35 foot coaches.

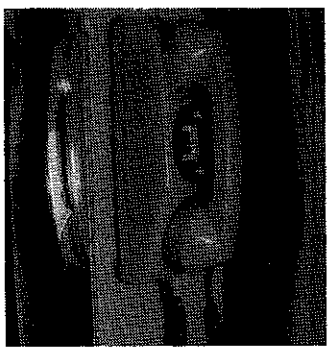


Figure 11-6. Intercom System

Skylight

A skylight, roof mounted, is offered in place of the roof vent. Occasional glass adjustment may be required to maintain weatherproof integrity. To adjust glass:

1. Place sheet of typing paper between glass and seal on both sides of latch.
2. Close skylight.
3. Pull on paper. If there is a slight drag no adjustment is needed. If there is no drag, fully open skylight.
4. While working from roof, partially remove the two glass clamp screw pins with a ⅛" diameter (max.) x 1 to 2" lock dowel. Tap on dowel from inside out.
5. Turn screw clockwise to tighten.
6. Retest with paper after reinstalling pins and closing skylight.

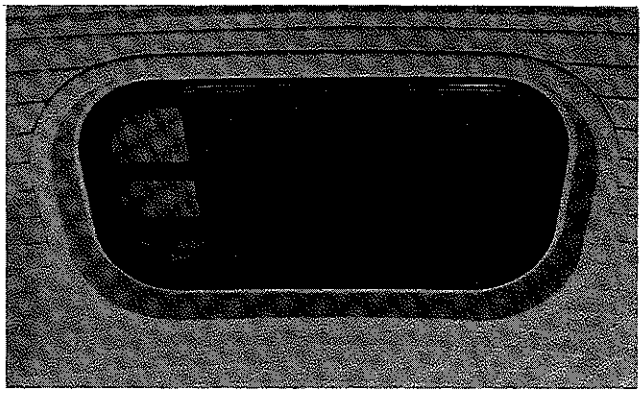
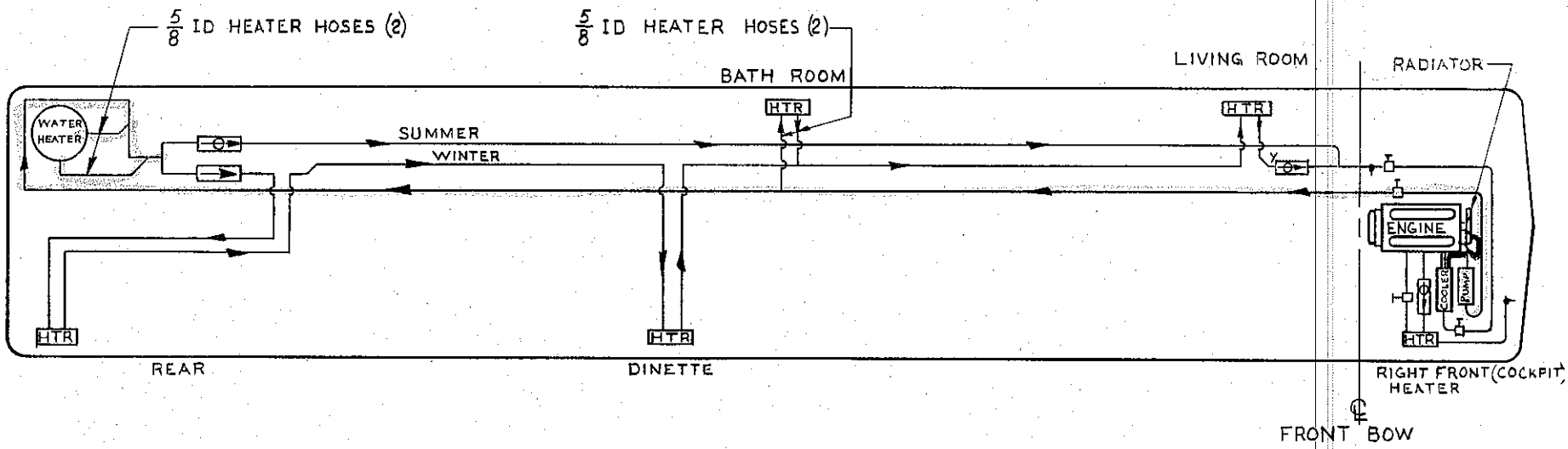


Figure 11-7. Skylight.



VALVE, SOLENOID, CUT OFF

VALVE, SWING CHECK, 3/4 FPT

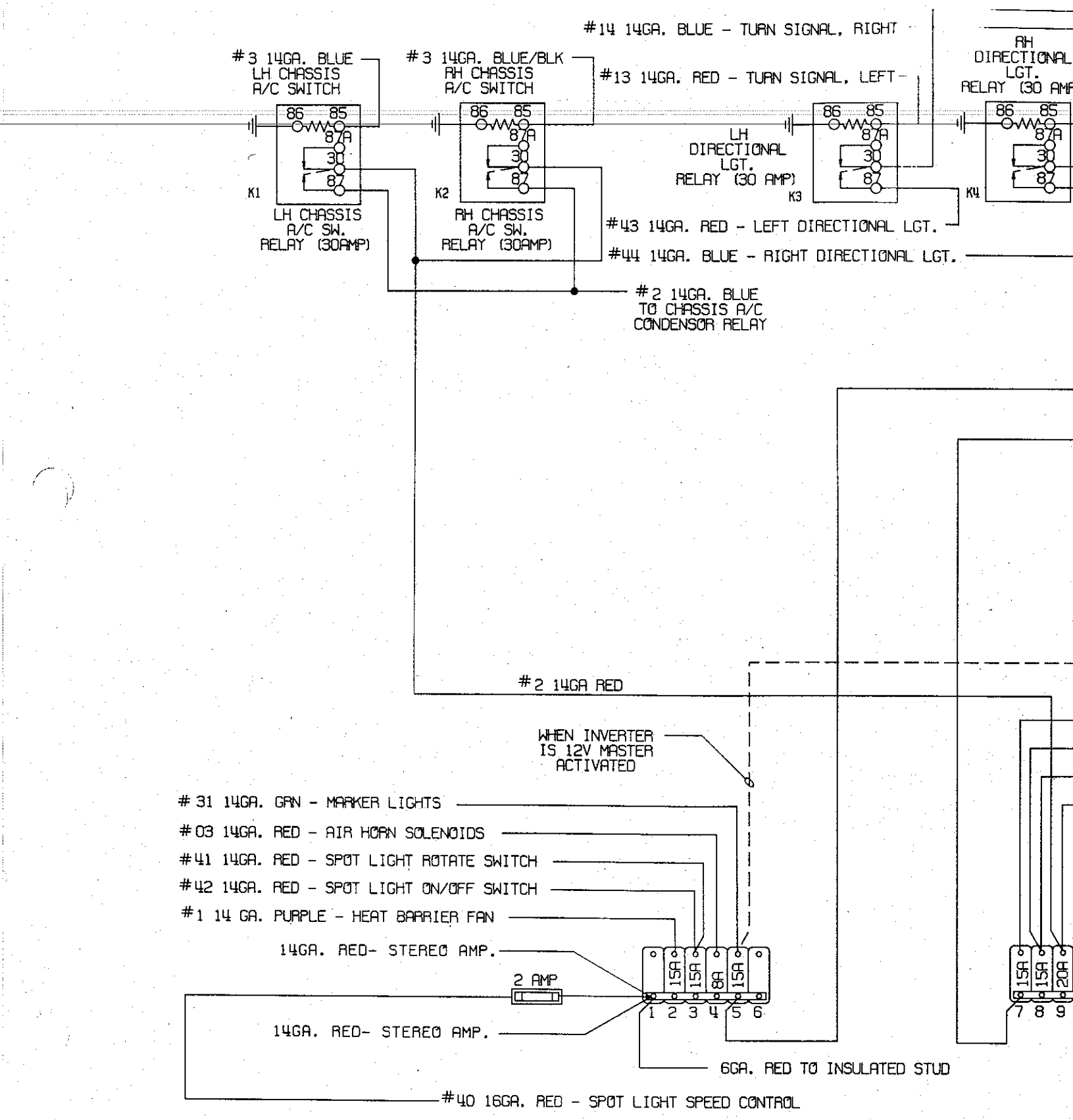
VALVE, GATE

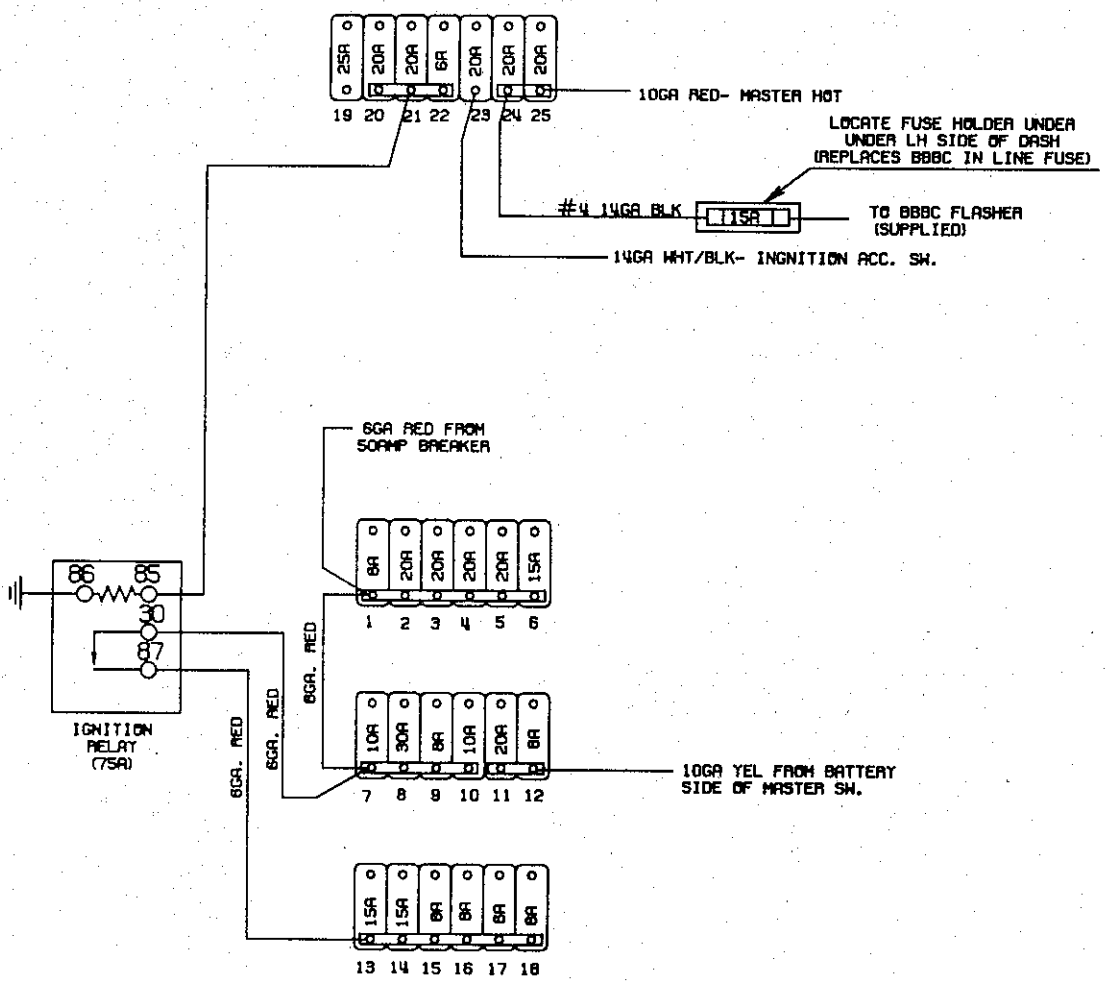
VALVE, BLEED

NOTES

1. ALL PIPING 1" I.D. UNLESS NOTED OTHERWISE.
2. PRESSURE LINES MARKED WITH RED TAPE.

Figure 10-1. Diagram, Chassis and Water Heater Circuits

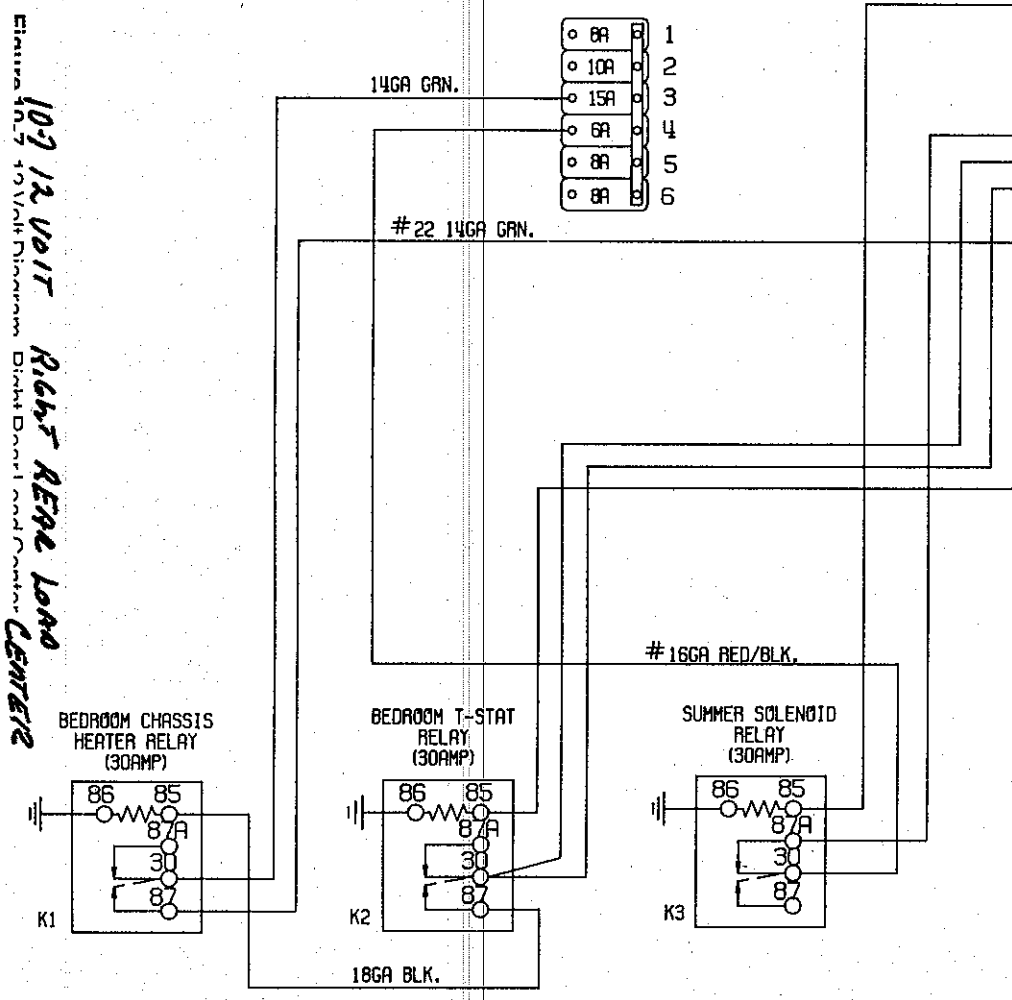

#14 14GA. BLUE - TURN SIGNAL, RIGHT
#3 14GA. BLUE
LH CHASSIS
A/C SWITCH
#3 14GA. BLUE/BLK
RH CHASSIS
A/C SWITCH
#13 14GA. RED - TURN SIGNAL, LEFT
RH
DIRECTIONAL
LGT.
RELAY (30 AMP
86
85
87A
30
87
K1
K2
K3
K4
LH CHASSIS
A/C SW.
RELAY (30AMP)
RH CHASSIS
A/C SW.
RELAY (30AMP)
LH
DIRECTIONAL
LGT.
RELAY (30 AMP)
#43 14GA. RED - LEFT DIRECTIONAL LGT.
#44 14GA. BLUE - RIGHT DIRECTIONAL LGT.
#2 14GA. BLUE
TO CHASSIS A/C
CONDENSOR RELAY
#2 14GA RED
WHEN INVERTER
IS 12V MASTER
ACTIVATED
#31 14GA. GRN - MARKER LIGHTS
#03 14GA. RED - AIR HORN SOLENOIDS
#41 14GA. RED - SPOT LIGHT ROTATE SWITCH
#42 14GA. RED - SPOT LIGHT ON/OFF SWITCH
#1 14 GA. PURPLE - HEAT BARRIER FAN
14GA. RED- STEREO AMP.
2 AMP
14GA. RED- STEREO AMP.
15A
15A
8A
15A
15A
15A
20A
1 2 3 4 5 6
7 8 9
6GA. RED TO INSULATED STUD
#40 16GA. RED - SPOT LIGHT SPEED CONTROL



CIRCUIT BREAKER NO.	WIRE NO.	DESCRIPTION
1	# 8	14GA. BLK.- LEVELING JACKS MASTER SW.
2	# 9	14GA. BLK.- 12V RECEPT., DASH
	# 9	14GA. GRN/BLK- ELECTRIC DOOR LOCK
3	#10	14GA. BLK.- WINDSHIELD WASHER
	#10	14GA. PURPLE- DEFROSTER BLOWER
4	#10	14GA. GRN/WHT.- LH HEATER BLOWER
	#11	14GA. RED- ELECTRIC SEAT, LH
5	#12	14GA. GRN/BLK.- RH HEATER BLOWER
	#12	14GA. GREEN- COMPARTMENT LGT. MASTER
	#12	14GA. BLK.- ENGINE COMPARTMENT LGT.
	#12	14GA. RED- ELECTRIC SEAT, RH
6	#13	14GA. BLK.- MIRROR HEATER SWITCH
7	#10	10GA, YEL.- DIRECTIONAL LGTS. RELAY
8	# 2	18GA. RED- LPG HEAT RELAY
	# 2	10GA. YEL.- DRIVING LGTS.
9	# 1	18GA. PINK- SUSPENSION DUMP VALVE
	# 2	18GA. BLK.- AIR SOLENOID VALVE, SEAT
	# 3	18GA. RED- POWER VENT & AIR SOLENOID VALVE
	# 3	14GA. GRN.- STOP LGT.
10	# 1	14GA. GRN.- PARKING & TAIL LGTS.
11	#40	10GA. YEL.- ELECTRONIC FILTER
12	#24	16GA. GRN.- AUXILARY AIR COMPRESSOR
13	#14	14GA. PINK- DOOR LOCK LGT.
14	#15	14GA. RED- LEVELING JACK BUZZER
	#15	14GA. PURPLE- FRONT HEAT SW.
15	#16	14GA. BLK.- SUSPENSION DUMP LGT.
	#14	16GA. GRN.- REFRIGERATOR IGNITION
16	#17	14GA. BLUE- WINDSHIELD WIPER
	#17	14GA. RED- INTERMITTENT WIPER
17	#18	14GA. RED- LOW WASHER FLUID INDICATOR
18	# 6	14GA. RED/BLK.- BACK-UP LGTS SW.
19		14GA, RED- RACOR RELAY
20		14GA. YEL.- AIR DRYER
		14GA. YEL.- RACOR RELAY
21		14GA. TAN- AIR WARNING
22		
23		14GA. WHT/BLK.- ACC. TERM. CONTAM.,& LOW FUEL
		14GA. RED- ENGINE WARNING
24		
25		

Figure 10-2. 12 Volt Diagram, Lower Front Load Center

Figure 10-7 12 Volt Diagram Right Rear Load Center



CIRCUIT BREAKER NO.	PIN NO.	WIRE NO.	DESCRIPTION
	18 PIN FEMALE RECEPT. WITH MALE PINS		
2	1	21	16GA RED/BLK.- 12VDC OUTLET, BEDROOM
5	2	26	14GA BLUE- READING LGTS., BEDROOM
	3	019	16GA TAN- TO SWITCHING RELAY
1	4	6	16GA GRN.- TV AMPLIFIER
1	5	1	16GA GRN/BLK.- CLOSET LGT. SW., RH SIDE
	6		
6	7	2	16GA GREY- CAMERA DEFOGGER
	8	24	18GA BLK.- SUMMER SOLENOID VALVE
	9	14	16GA BRN.- TO BEDROOM T-STAT
	10	014	16GA BRN.- TO BEDROOM LP HEAT RELAY
	11	17	16GA GRN/BLK.- TO SWITCHING RELAY
	12	22	14GA GRN.- BEDROOM CHASSIS HEATER SW.
4	13	14	16GA RED/BLK.- POWER TO BEDROOM T-STAT
	14		
	15		
	16		
	17		
	18		

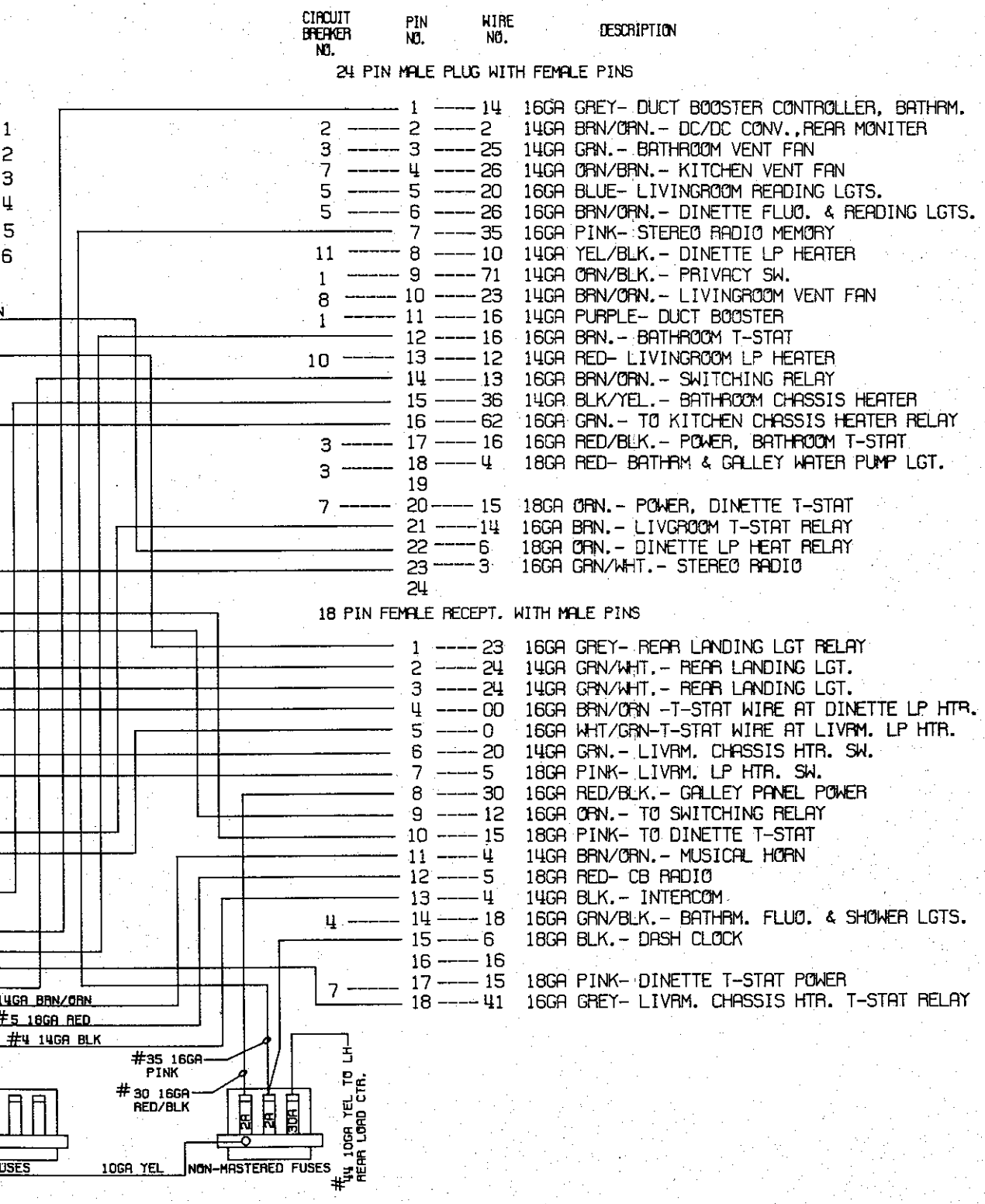
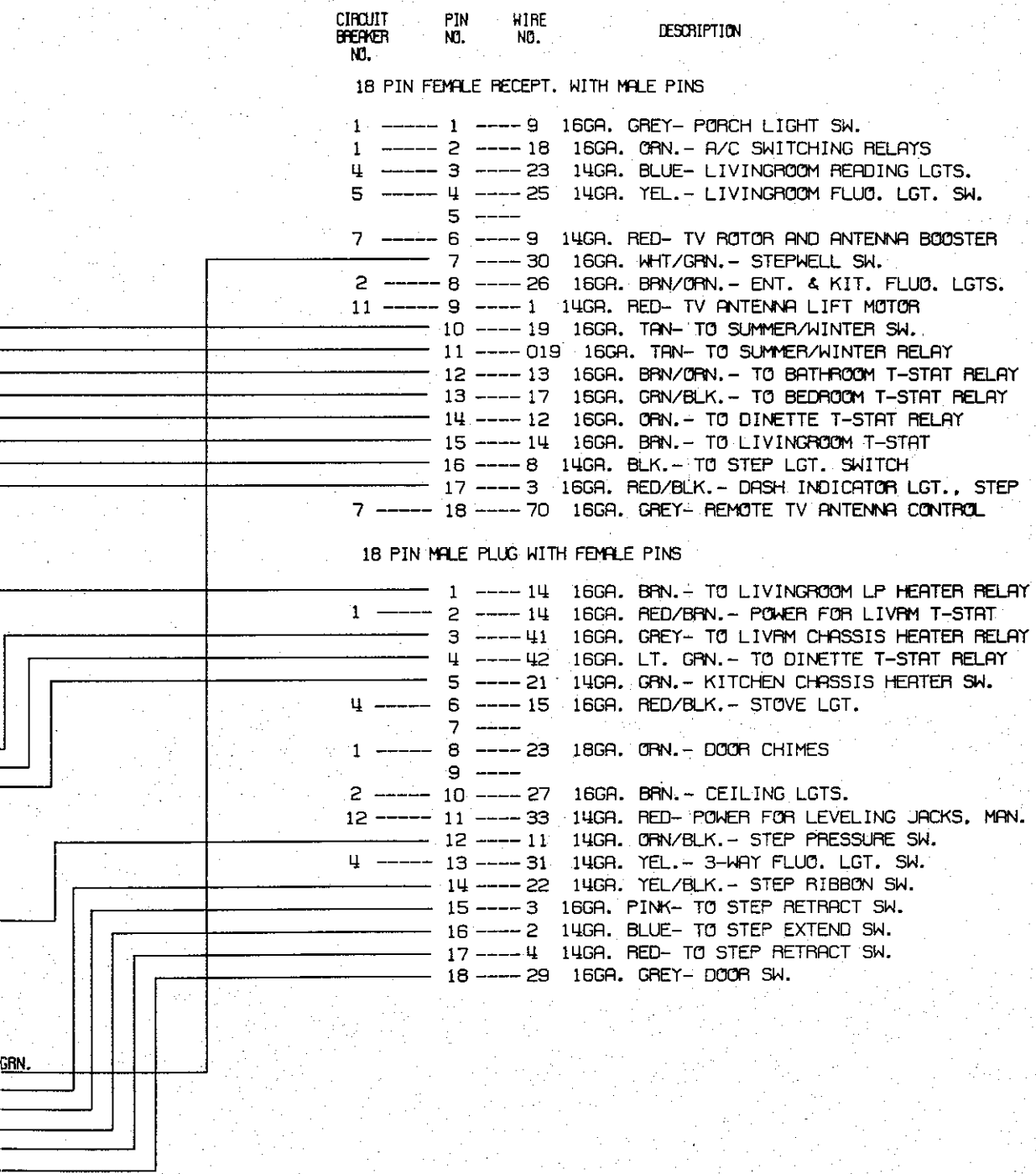


Figure 10-4. 12 Volt Diagram, Left Front Load Center



CIRCUIT BREAKER NO.	PIN NO.	WIRE NO.	DESCRIPTION
			18 PIN FEMALE RECEPT. WITH MALE PINS
1	1	9	16GA. GREY- PORCH LIGHT SW.
1	2	18	16GA. ORN.- A/C SWITCHING RELAYS
4	3	23	14GA. BLUE- LIVINGROOM READING LGTS.
5	4	25	14GA. YEL.- LIVINGROOM FLUO. LGT. SW.
	5		
7	6	9	14GA. RED- TV ROTOR AND ANTENNA BOOSTER
	7	30	16GA. WHT/GRN.- STEPWELL SW.
2	8	26	16GA. BRN/ORN.- ENT. & KIT. FLUO. LGTS.
11	9	1	14GA. RED- TV ANTENNA LIFT MOTOR
	10	19	16GA. TAN- TO SUMMER/WINTER SW.
	11	019	16GA. TAN- TO SUMMER/WINTER RELAY
	12	13	16GA. BRN/ORN.- TO BATHROOM T-STAT RELAY
	13	17	16GA. GRN/BLK.- TO BEDROOM T-STAT RELAY
	14	12	16GA. ORN.- TO DINETTE T-STAT RELAY
	15	14	16GA. BRN.- TO LIVINGROOM T-STAT
	16	8	14GA. BLK.- TO STEP LGT. SWITCH
	17	3	16GA. RED/BLK.- DASH INDICATOR LGT., STEP
7	18	70	16GA. GREY- REMOTE TV ANTENNA CONTROL
			18 PIN MALE PLUG WITH FEMALE PINS
	1	14	16GA. BRN.- TO LIVINGROOM LP HEATER RELAY
1	2	14	16GA. RED/BRN.- POWER FOR LIVRM T-STAT
	3	41	16GA. GREY- TO LIVRM CHASSIS HEATER RELAY
	4	42	16GA. LT. GRN.- TO DINETTE T-STAT RELAY
	5	21	14GA. GRN.- KITCHEN CHASSIS HEATER SW.
4	6	15	16GA. RED/BLK.- STOVE LGT.
	7		
1	8	23	18GA. ORN.- DOOR CHIMES
	9		
2	10	27	16GA. BRN.- CEILING LGTS.
12	11	33	14GA. RED- POWER FOR LEVELING JACKS, MAN.
	12	11	14GA. ORN/BLK.- STEP PRESSURE SW.
4	13	31	14GA. YEL.- 3-WAY FLUO. LGT. SW.
	14	22	14GA. YEL/BLK.- STEP RIBBON SW.
	15	3	16GA. PINK- TO STEP RETRACT SW.
	16	2	14GA. BLUE- TO STEP EXTEND SW.
	17	4	14GA. RED- TO STEP RETRACT SW.
	18	29	16GA. GREY- DOOR SW.

GRN.

Figure 10-5. 12 Volt Diagram, Right Front Load Center

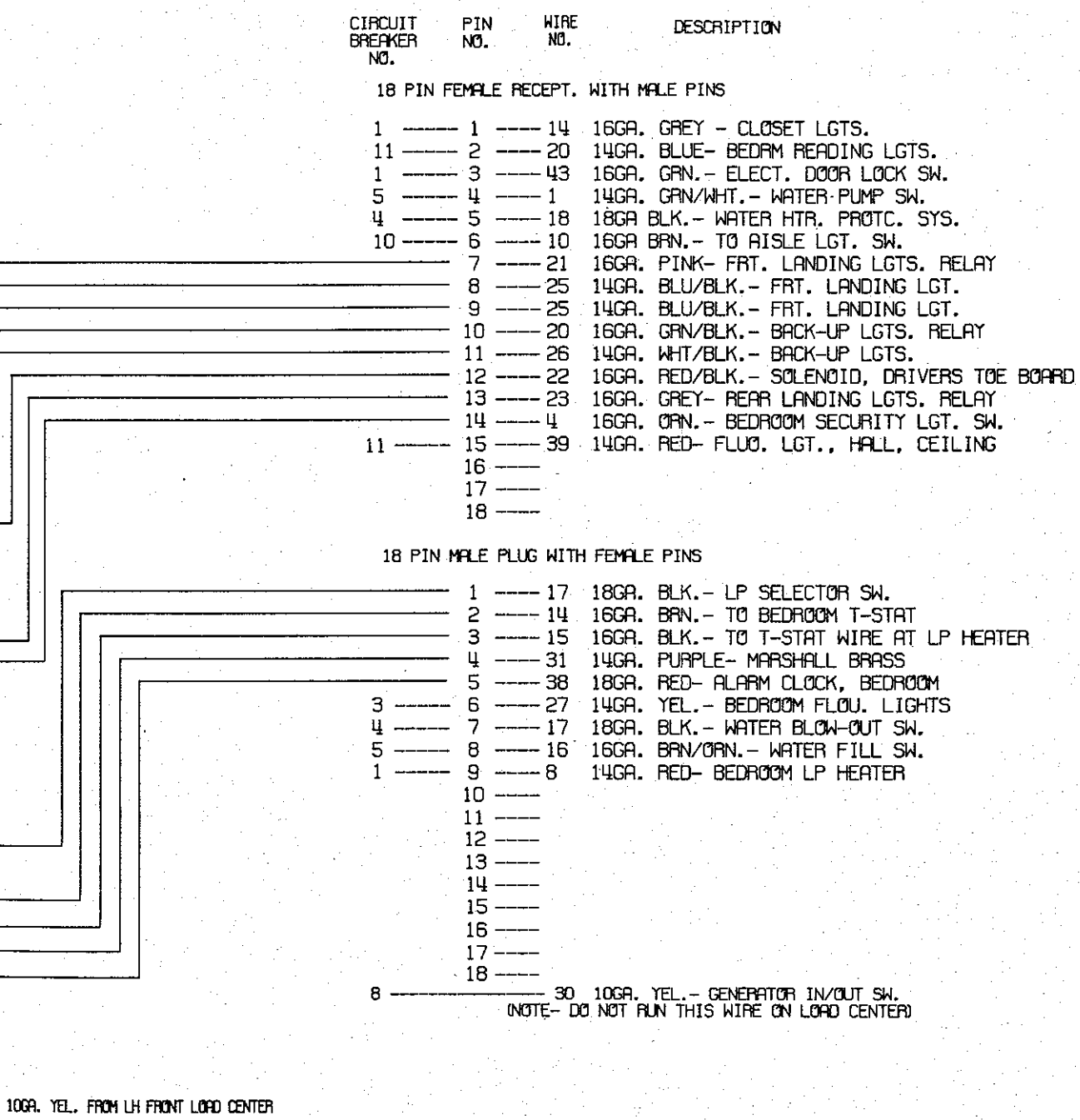


Figure 10-6. 12 Volt Diagram, Left Rear Load Center

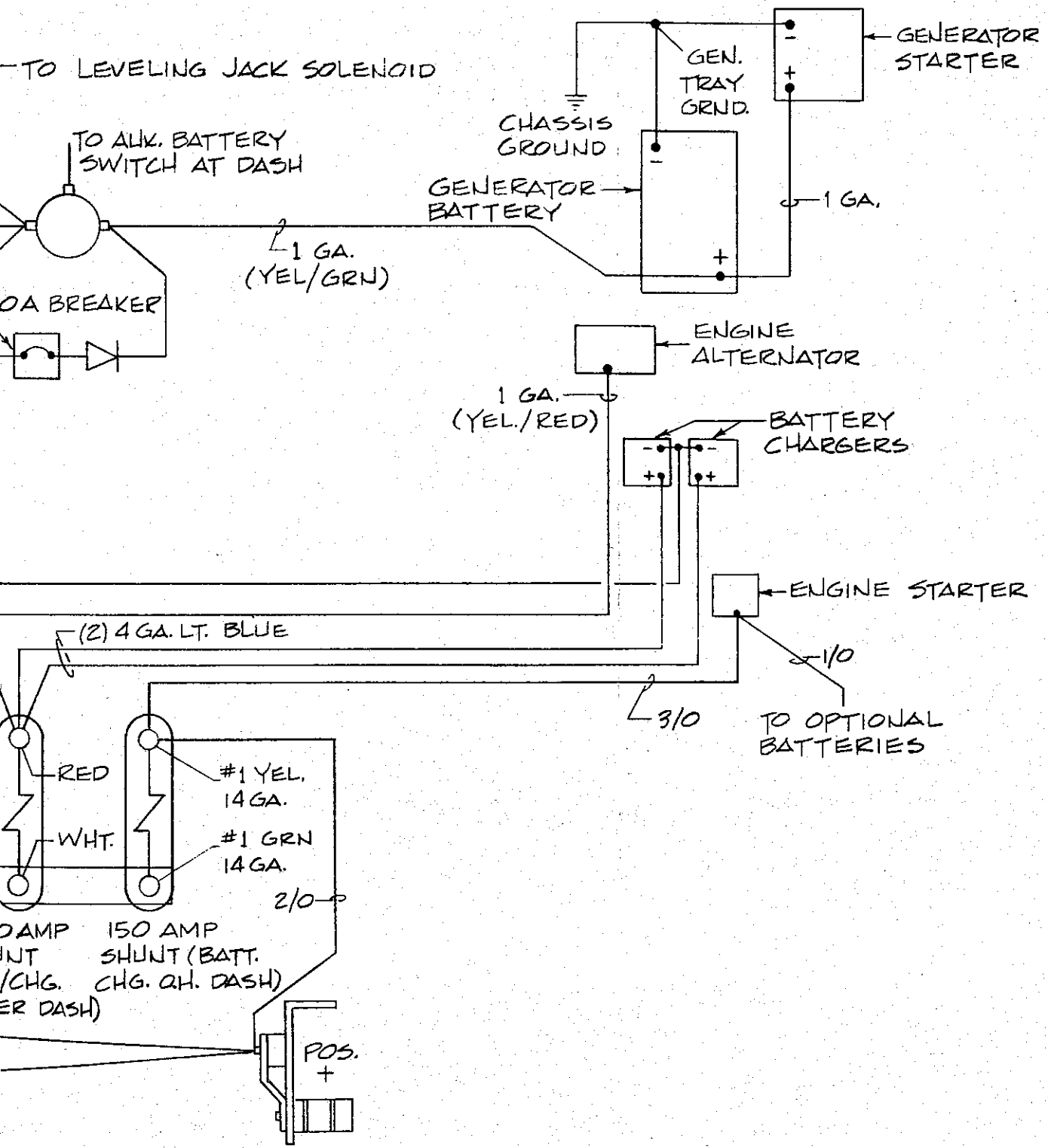


Figure 10-8. 12 Volt Diagram, Batteries and Charging Circuits

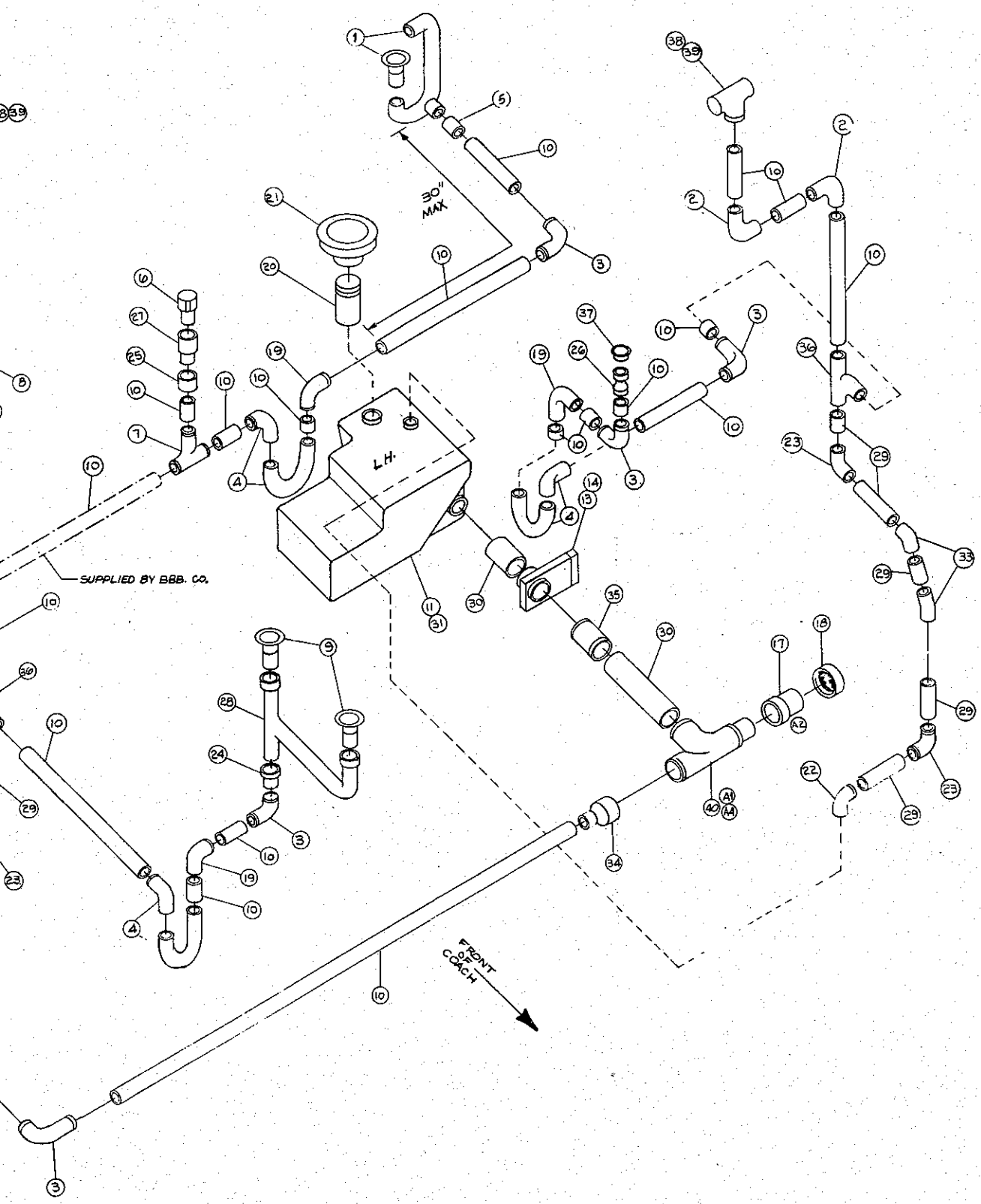
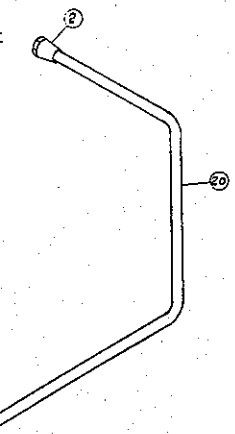


Figure 10-11. Drainage System



ITEM	PART NO.	DESCRIPTION
1	3744000 (B3)	NUT, LONG, FORGED FLARE, 1/2 14 FL-8 (4 REQD)
2	(B1) 3743994 (B4)	NUT, LONG, FORGED FLARE, 3/8 14 FL-6 (20 REQD)
3	(B2) 2254050	VALVE, SHUTOFF 3/8 x 3/8 FL (3 REQ'D)
(A1) 4		
5	2245454	VALVE SHUT-OFF, LPG (2 REQ'D)
6	2245494	REGULATOR LOW PRESSURE, MARSHALL BRASS (2 REQ'D)
7	2233930	ELBOW 1/2 NPT (1 REQ'D)
8	2222735	NIPPLE, HEX 1/2 MPT x 3/8 MPT (5 REQ'D)
9	2257897	CONNECTOR MALE, 3/8 FL x 1/2 MPT (5 REQ'D) (A)
10	2257905	CROSS FEMALE PIPE, 1/2 IN, NOA102 (1 REQ'D)
(A) 11		
12	2266591	VALVE, REG -1 PRESSURE SHUT-OFF MARSHALL BRA (1 REQ'D)
13	2266609	ADAPTER, SOLENOID, ARMATURE MARSHALL, BRASS (1 REQ'D)
14	2216745	ELBOW, 3/8 FLARE x 3/8 FPT 5654 EE (3 REQ'D)
15	2253979	CONNECTOR, 1/4 MPT x 3/8, FLARE (1 REQ'D)
16	2027191	NIPPLE, 3326 x 6 3/8 CLOSE PIPE (3 REQ'D)
17	2260222	CONNECTOR MALE, 1/2 MPT x 1/2 45 FLARE, 48x8x (3 REQ'D)
18	3804804	TEE, 1/2 FPT, CAST BRASS (2 REQ'D)
19	2027399	TUBING, 1/2 COPPER, 3/8 TYPE L WATER TUBE
20	2027381	TUBING, COPPER, 3/8 IN
21	0929554	TANK ASSY, LPG, 44 IN LONG, FRAME MTD (SUPPLIED BY BLUE BIRD)
22	1019231	REGULATOR, W/EXCESS FLOW (SUPPLIED BY BLUE BIRD)
23	0654277	TEE, STREET, 1/4 PIPE, 3750 x 4 (SUPPLIED BY BLUE BIRD)
24	2027183	NIPPLE, 3326 x 4 1/4 CLOSE (SUPPLIED BY BLUE BIRD)
25	2023190	ELBOW, 1/4 MPT x 3/8 TUBE, 205102 (2 REQ'D)
26	2246054	SOCKET, QWIK DISCONNECT, LP GAS (1 REQ'D)
27	0976068	HOSE ASSY, DUAL LABEL, DH430MP4FP4 (SUPPLIED BY BLUE BIRD)
28	2027233	ELBOW, 3400 x 4 1/4 STREET (SUPPLIED BY BLUE BIRD)
29	1153303	ELBOW, ANCHOR, 1/4 FPT, 90 DEG, BENDIX NO 201010 (SUPPLIED BY BLUE BIRD)
30	1154913	CONNECTOR, 1/4 MPT x 3/8 FLARE (SUPPLIED BY BLUE BIRD)
31	2265106	COUPLING, BULKHEAD, 1/4 FPT (SUPPLIED BY BLUE BIRD)
32	2260719	ELBOW, MALE, 3/8 FLARE x 1/4 MPT (SUPPLIED BY BLUE BIRD)
33	0758698	COUPLING, ANCHOR, B-W 217709 BENDIX WESTNGHS (SUPPLIED BY BLUE BIRD)
34	2026664	CONNECTOR, 48x8 3/8 MPT x 1/2 TUBE, FLARE (SUPPLIED BY BLUE BIRD)
35	2265155	ELBOW, MALE, 1/2 FL x 3/8 MPT, 49x8 (SUPPLIED BY BLUE BIRD)
36	2023554	ELBOW, STREET, 3/8 PIPE THDS x 3/8 PIPE TAP (1 REQD)

NOTE: 1) PART QUANTITIES SHOWN IN THE ABOVE PARTS LIST ARE THE QUANTITY SUPPLIED BY WANDERLODGE.

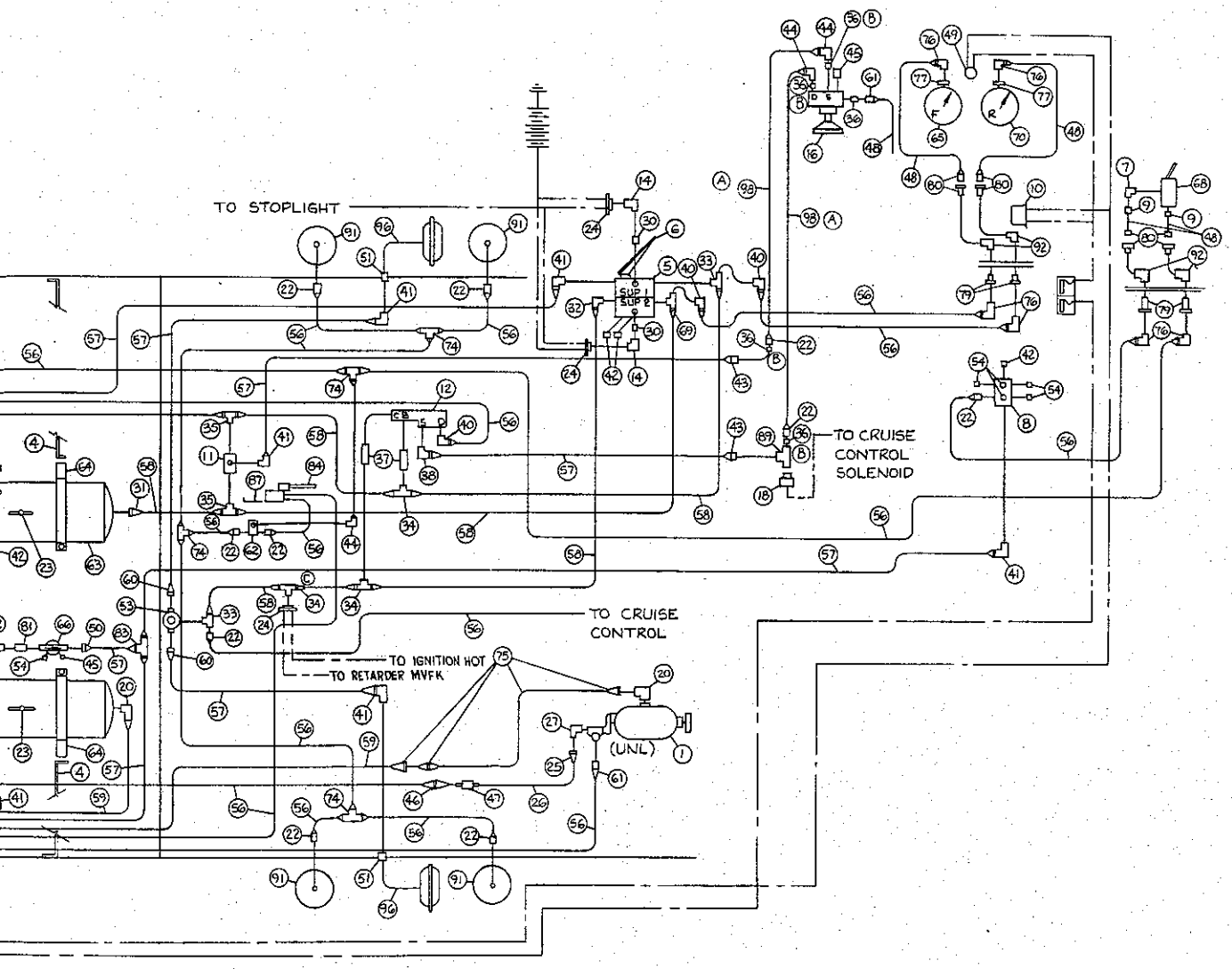
(R5) 2) PART NUMBER 2254050, VALVE, SHUTOFF, 3/8 X 3/8 FL MUST BE USED WITH OPTION 5761 (FOUR BURNER GAS COOK TOP)

*

*

S ARE SUPPLIED BY BLUE BIRD.

Figure 10-12. Liquid Petroleum Gas System



ARTS LIST, WLFC, SEE DRAWING 1247246

Figure 10-13. Air System (Sheet One)

ITEM NO.	QTY.	BB NO.	VENDOR & NO.	DESCRIPTION
1	1			Air Compressor
2	1	0754929	B-W 227629	Reservoir, Air, 1240 Cu. In.
3	4	0850578		Bracket, Mounting, 8 In., Air Reservoir
4	4	1095306		Spacer, Air Reservoir Bracket, AARE
5	1	0654533	B-W 286171	Valve, Treadle, Dual Brake
6	1	1133347	B-W 2299938	Treadle Assy, w/Rubber Cover, Bendix 229938
	1	0654517	B-W 238888	Pin, Dual Brake Valve, Fulcrum, Not Shown
	1	0654509	B-W 235212	Pin, Roll, Brake Valve, Not Shown
	1	0654491	B-W 236980	Button, Stop, Dual Brake Treadle Valve, Not Shown
	1	0654483	B-W 236981	Plunger, Dual Brake Valve, Not Shown
	1	0654475	B-W 236982	Boot, Dual Brake Valve, Not Shown
	3	0654459		Capscrew, Hex 5/16-18x7/8, Not Shown
	3	2001188		Washer, Lock, Split Hd, 5/16, Not Shown
	1	0654467	B-W 236979	Plate, Mounting, Dual Brake Valve, Not Shown
7	1	2227353	Cross 1500-2	Fitting, 90 Deg. Elbow, Tilt Steering Switch
8	2	2023083	B-W 212322	Fitting, Manifold, 212322
9	2	2227346	Cross 11752-1	Fitting, Barb, Tilt Steering Switch
10	1	2006187	Essex 44310-0	Buzzer, Rear Emergency Door/Rear Emergency Window/Pushout Window
11	1	0654434	B-W 278614	Valve, Double Check, 3/8 Pipe
12	1	0654426	B-W 286364	Valve, Spring Brake
13	2	0654418	B-W 227871	Valve, Single Check, 1/2 Pipe
14	2	2027233	W-H 3400x4	Elbow, 3400 x 4, 1/4 Street
15	1	0801373	B-w 286931	Air Dryer
16	1	0900266	B-W 289954	Valve, PP-1, 30 psi
17	1	1247253	BB Mfd	Valve Assy, Spring & Svc Brake Relay WLFC
18	2	1145853	B-W 104246	Indicator, Low Pressure, 66 PSI, BW 104246
19	1	0982272	B-W 205182	Tee, 1/8 MPT x 1/4 Tube x 1/4 Tube
20	4	2026706	W-H #49x10	Elbow, 49x10, 1/2 MPT x 5/8 Tube, Flare
21	1	0993295	B-W 224103	Tee, 1/4 FPT x 1/2 x 5/8 Tube, 224103
22	25	2023224	B-W 205183	Connector, 1/4 MPT x 1/4 Tube, 205183
23	3	1110188	B-W 103385	Cock, Drain, Reservoir, B-W 103385
24 (C)	3	0998740	W-M 777A 118150	Switch, Stop Light
25	1	2020899	Imp. East KA94-04MF	End, KA04-04MF, Hose
26	1	2008324	Imp. East B704	Hose, Air, 1/4 ID x 1/2 OD, B704
27	1	2026979	W-H 400x4	Elbow, Male, louvered Flare, 1/4 Tube x 1/8 Male Pipe
28	2	0654350	W-H 3750x8	Tee, 1/2 Pipe Street
29	4	2027241	W-H 3400x6	Elbow; 3400 x 6, 3/8 Pipe
30	6	2027134	W-H 3220x6x4	Bushing, Pipe, 3/8 x 1/4, 3220 x 6 x 4
31	2	2023380	B-W 217691	Connector, 1/2 MPT x 1/2 Tube
32	2	2023307	B-W 215709	Elbow, 3/8 MPT x 1/2 Tube, 215709
33	2	0948919	B-W 217640	Tee, 1/4 FPT x 3/8 MPT x 1/2 Tube
34 (C)	3	2023505	B-W 228751	Tee, 1/4 FPT x 1/2 Tube x 1/2 Tube, 228751
35	2	0556878	B-W 215700	Tee, 3/8 Male Pipe x 1/2 Tube x 1/2 Tube
36 (B)	5	0654970	I.E. 459-F	Insert, Plastic Tubing, 1/4
37	2	2009330		Nipple, 1/4 Pipe x 2" Long (Steel)
38	3	2023190	B-W 205102	Elbow, 1/4 Male Pipe x 3/8 Tube, 205102
39	2	0885426	B-W 288138	Hose Assy., 7/16 I.D. x 28 in. Long
40	3	2023935	B-W 224318	Elbow, 269AB-4-4, 1/4 MPT x 1/4 Tube
41	8	2023265	B-W 205829	Elbow, 3/8 MPT x 3/8 Tube, 205829
42	7	2009595		Plug, Pipe, 3/8
43	3	2023257	B-W 205826	Connector, 1/4 FPT x 3/8 Tube, 205826
44	4	2023786	B-W 205539	Elbow, 269AB-4-2, 1/8 MPT x 1/4 Tube
45	3	2027118	B-W 233410	Plug, 1/8 in., Pipe
46	1	2052736	B-W 205514	Union, Tube, 1/4 in. 205514
47	1	2020907	Imp. East KA04-04RL	End, KA04-04RL, Hose
48	9'8"	0654962	Gould C-604	Tubing, Plastic, 1/4 OD, Black, SAE J844, Type A
49	1	2006807	Cole Hersee PL-19	Light, Pilot, 17/32 Dia., Red Lens, PL-19AC-10
50	3	2023182	B-W 205053	Connector, 205053, 1/4 MPT x 3/8 Tube
51	3	0758698	B-W 217709	Coupling, Anchor, B-W 217709, Bendix-Westinghouse
52	1	2023422	B-W 221993	Elbow, 3/8 MPT x 5/8 Tube
53	1	1160464	B-W 104000	Valve, Quick Release, BW 104000
54	12	2023513	B-W 230576	Plug, Pipe, 1/4
55	1	0839019	B-W 284142	Valve, Safety, 1/4 In. Pipe, B-W 284142
56		2008431		Tubing, Copper, 1/4 In.
57		2027381		Tubing, Copper, 3/8 In.
58		2027399		Tubing, 1/2 Copper, 3/8 Type L, Water Tube
59		2027407		Tubing, 5/8 Copper, 1/2 Type L, Water
60	2	2023240	B-W 205824	Connector, 205824, 3/8 MPT x 3/8 Tube
61	2	2023570	I.E. 468-F	Connector, 468-F, 1/8 MPT x 1/4 Tube
62	3	0982280	WM #147-P	Valve, Relay, Pilot Control
63	2	0991513	Johnson #D1229	Reservoir, 9 1/2 x 27-1760 Cu. In., D1229

SUB-ASSEMBLIES

DUAL BRAKE VALVE ASSEMBLY

ITEM NO.	QTY.	BB NO.	VENDOR & NO.	DESCRIPTION
5	1	0654533	B-W 286171	Valve, Treadle, Dual Brake
30	2	2027134	W-H 3220x6x4	Bushing, Pipe, 3/8 x 1/4, 3220 x 6 x 4
33	1	0948919	B-W 217640	Tee, 1/4 x 3/8 MPT x 1/2 Tube
40	2	2023935	B-W 224318	Elbow, 269AB-4-4, 1/4 MPT x 1/4 Tube
41	1	2023265	B-W 205829	Elbow, 3/8 MPT x 3/8 Tube, 205829
42	2	2009595		Plug, Pipe, 3/8
14	2	2027233	W-H 3400x4	Elbow, 3400 x 4, 1/4 Street
24	2	0998740	W-M 777A118150	Switch, Stop Light
32	1	2023307	B-W 215709	Elbow, 3/8 MPT x 1/2 Tube, 215709
69	1	0654319	B-W 224799	Tee, 1/4 FPT x 3/8 MPT x 1/2 Tube

QUICK RELEASE VALVE ASSEMBLY

53	1	1160464	B-W 104000	Valve, Quick Release, BW 104000
33	1	0948919	B-W 217640	Tee, 1/4 FPT x 3/8 MPT x 1/2 Tube
60	2	2023240	B-W 205824	Connector, 205824, 3/8 MPT x 3/8 Tube

DOUBLE CHECK VALVE ASSEMBLY

11	1	0654434	B-W 278614	Valve, Double Check, 3/8 Pipe
35	2	0556878	B-W 215700	Tee, 3/8 Male Pipe x 1/2 Tube x 1/2 Tube
41	1	2023265	B-W 205829	Elbow, 3/8 MPT x 3/8 Tube, 205829

SPRING BRAKE VALVE ASSEMBLY

12	1	0654426	B-W 286364	Valve, Spring Brake
37	2	2009330		Nipple, 1/4 Pipe x 2" Long (Steel)
38	1	2023190	B-W 205102	Elbow, 1/4 Male Pipe x 3/8 Tube, 205102
40	1	2023935	B-W 224318	Elbow, 269AB-4-4, 1/4 MPT x 1/4 Tube
34	2	2023505	B-W 228751	Tee; 1/4 FPT x 1/2 Tube x 1/2 Tube, 228751

PP-1 CONTROL VALVE ASSEMBLY

61	1	2023570	I.E. 468-F	Connector, 468-F, 1/8 MPT x 1/4 Tube
16	1	0900266	B-W 289954	Valve, PP-1, 30 PSI
44	2	2023786	B-W 205539	Elbow, 269AB 4-2, 1/8 MPT x 1/4 Tube
45	1	2027118	B-W 233410	Plug, 1/8 In., Pipe
48	44 in.	0654962	Gould C-604	Tubing, Plastic, 1/4 O.D., Black, SAE J844, Type A
36	3 (B)	0654970	I.E. 459F	Insert, Plastic Tubing, 1/4
(A) 98	168 in.	1220011	SAE-J844-Type A	Tubing, Plastic, 1/4 O.D. Brown (2 parts 84 in. long each)

FRONT RESERVOIR TANK ASSEMBLY

63	1	0991513	Johnson D1229	Reervoir, 9 1/2 x 27 1760 Cu. In., D129
23	1	1110188	B-W 103385	Cock, Drain, Reservoir, B-W 103385
31	1	2023380	BpW 217691	Connector, 1/2 MPT x 1/2 Tube
13	1	0654418	B-W 227871	Valve, Single Check, 1/2 Pipe
42	2	2009595		Plug, Pipe, 3/8
72	1	2023901	B-W 222155	Tee, 1/2 MPT x 1/2 Tube x 5/8 Tube, DC Brake, 222135

REAR RESERVOIR TANK ASSEMBLY

13	1	0654418	B-W 227871	Valve, Single Check, 1/2 Pipe
2	1	0754929	B-W 227629	Reservoir, Air, 1240 Cu. In.
23	1	1110188	B-W 103385	Cock, Drain, Reservoir, B-W 103385
31	1	2023380	B-W 217691	Connector, 1/2 MPT x 1/2 Tube
52	1	2023422	B-W 221993	Elbow, 3/8 MPT x 5/8 Tube
71	1	0663427		Plug, 1/2 Square Head Pipe, 3151 x 8
28	1	0654350	W-H 3750x8	Tee, 1/2 Pipe, Street
73	1	2023349	B-W 216310	Elbow, 1/2 MPT x 1/2 Tube, 216310
42	1	2009595		Plug, Pipe, 3/8

WET RESERVOIR TANK ASSEMBLY

18	1	1145853	B-W 104246	Indicator, Low Pressure, 66 PSI, BW 104246
41	1	2023265	B-W 205829	Elbow, 3/8 MPT x 3/8 Tube, 205829
63	1	0991513	Johnson D1229	Reservoir, 9 1/2 x 27 1760 Cu. In., D1229
23	1	1110188	B-W 103385	Cock, Drain, Reservoir, B-W 103385
21	1	0993295	B-W 224103	Tee, 1/4 FPT x 1/2 MPT x 5/8 Tube 224103

Introduction

Thank you for the confidence you have shown in our company by purchasing a Blue Bird Wanderlodge. This catalog is designed to assist you in ordering service replacement parts for your Blue Bird. It contains illustrations with parts information for most parts and accessories.

If at any time you should need assistance. Please don't hesitate to contact your Blue Bird Distributor or the Service Parts Department in Fort Valley, Georgia, U.S.A.

Ordering Parts

You can order your service parts from your Blue Bird Distributor or directly from Blue Bird Body Company, Fort Valley, Georgia. When placing an order give the quantity, Blue Bird part number and a brief description. If for some reason you have been unable to find the part number, advise the quantity and a complete parts description, along with the body number for which the parts are required. The body number of your Blue Bird may be found on the Data Plate which is inside the electrical box compartment. The electrical box compartment is inside the coach immediately to the right of the entrance door. A picture of the Data Plate appears on the inside front cover of this catalog.

When ordering parts for a major wreck, it is a good idea to include photographs with your order. This will help to fill your order correctly.

Receiving Parts from Carrier

Certain steps should be taken when receiving an order to insure it's completeness and to evaluate the condition of the parts received.

1. Check the number of pieces actually received against the number of pieces shown on the bill of lading.
2. Visually check the external condition of the boxes, crates, etc. Any discrepancies should be noted on the bill of lading. Have the driver initial each notation on your copy and his copy of the bill of lading.
3. Any concealed damage not discovered until after the carrier has left should be reported immediately to the carrier.
4. Claims for shortages or damages should be filed with the carrier immediately.
5. If incorrect parts are received, notify the Service Parts Department from whom you purchased the parts. They will advise disposition of the parts. Do not return parts without prior authorization.

Shipment of Material

All parts will be shipped the most economical way, unless otherwise specified.

Company Policy

Although it is impractical to include all parts in this catalog for all options offered, we believe those included will meet the great majority of your needs. It is our earnest desire at Blue Bird to give you the fastest and most accurate service possible. Please help us by studying this catalog and ordering by the correct part number.

A Word of Caution

Blue Bird uses new parts and components in the manufacture of its' coaches. We strongly recommend that you use only new parts and components for replacement purposes. Blue Bird or its' vendor can not be responsible for failures due to the use of used or rebuilt parts.

Payment

All parts orders are shipped on a C.O.D. basis unless other arrangements have been made with your Blue Bird Distributor or Blue Bird Body Company. This is customary in the automotive field.

Important

The illustrations and drawings used in this parts catalog are to be used for parts identification purposes only, not as a guide for assembly, disassembly, maintenance or service.

Chassis Service Number

A chassis service number (CSN) is assigned to the **chassis** of each Blue Bird Wanderlodge. This number is used to identify the sequence in which a chassis is set up in production.

Example: CSN 0958560 is set up immediately before CSN 0958561.

This will assist you in identifying the first unit (beginning CSN) or last unit (ending CSN) on which a part was installed.

The CSN can be found attached to the axle record plate which is inside the electrical box compartment. The electrical box compartment is inside the coach immediately to the right of the entrance door. A picture of the axle record plate appears on the inside front cover of this catalog.

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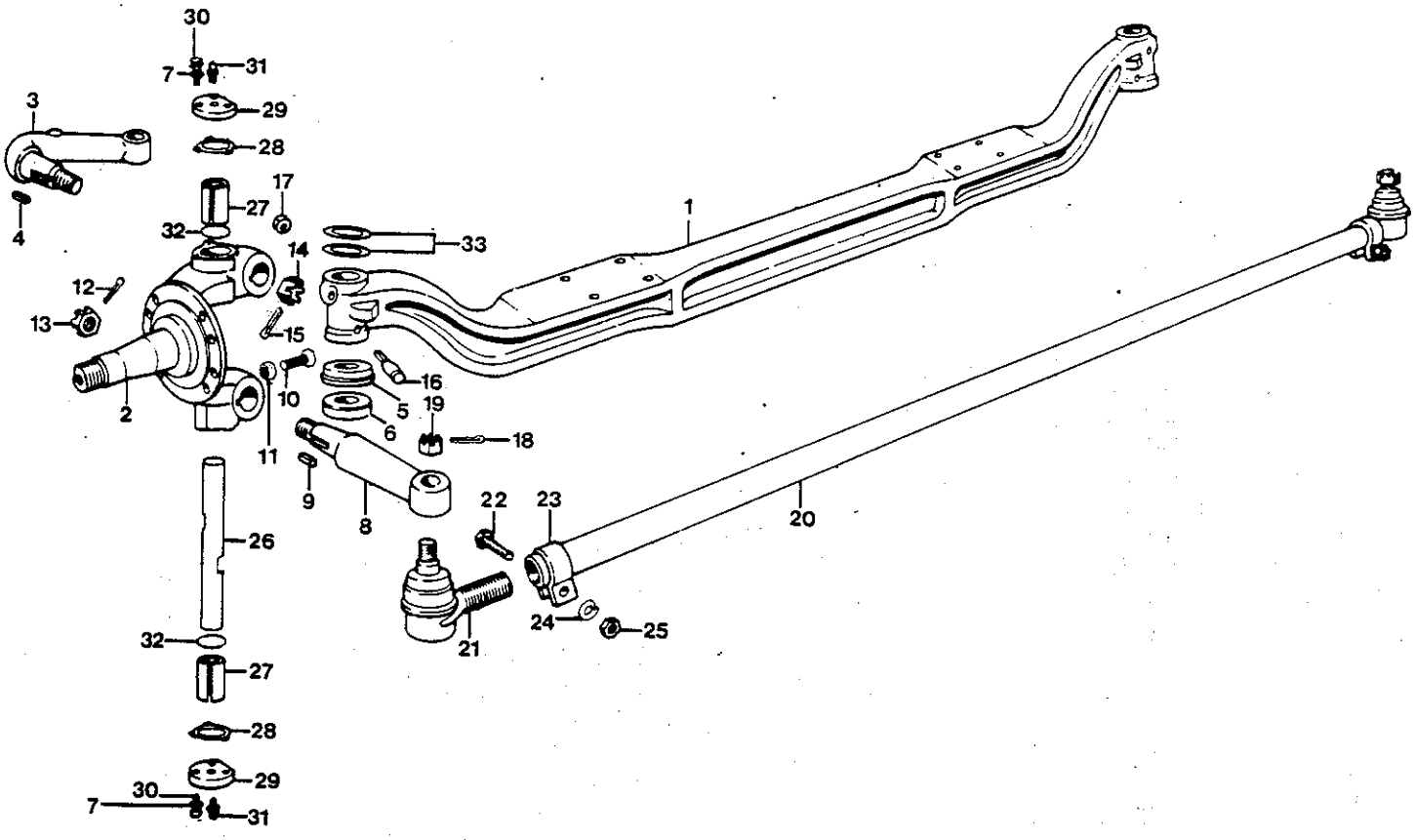
ABBREVIATIONS

AC	AIR CONDITIONING
ADJ.	ADJUSTING
AR	AS REQUIRED
ASSY.	ASSEMBLY
BB	BLUE BIRD
BLK	BLACK
BRKT.	BRACKET
COMP.	COMPRESSOR
CONT.	CONTINUED
CTR.	CENTER
CU.	CUBIC
CYL.	CYLINDER
DEG.	DEGREE
DIA.	DIAMETER
DIFF.	DIFFERENTIAL
DRI'S	DRIVER'S
ENG.	ENGINE
EXH.	EXHAUST
FPT	FEMALE PIPE THREAD
FRT.	FRONT
FWD	FORWARD
GD.	GRADE
GM	GENERAL MOTORS
GR.	GRADE
HDND	HARDENED
I.D.	INSIDE DIAMETER
INCL.	INCLUDED
LH	LEFT HAND
MAT'L	MATERIAL
MPT	MALE PIPE THREAD
MTG	MOUNTING
NI	NOT ILLUSTRATED
O.D.	OUTSIDE DIAMETER
OZ	OUNCE
PLTD.	PLATED
POS.	POSITION
PT	PIPE THREAD
RD.	ROUND
RH	RIGHT HAND
SM	SMALL
STD.	STANDARD
SUSP.	SUSPENSION
TRANS.	TRANSMISSION

FRONT AXLE
FF-942-NX-35

	DR. 10-11-87 BY LB	8007056
	APP. BY	

FRONT



FRONT AXLE
FF-942-NX-35

KEY NO.	PART NO.	DESCRIPTION	VENDOR PART NO.	QTY REQ'D
1	2599264	AXLE CENTER	3100-G-6091	
2	2137040	STEERING KNUCKLE ASSY, LH	A19-3111-Y-2599	
NI	2137057	STEERING KNUCKLE ASSY. RH	A16-3111-R-2358	
3	2136455	STEERING ARM	3133-K-5653	
4	2135218	KEY, STEERING ARM	16-X-202	
5	2703288	SEAL & GASKET ASSY., LOWER	A-1205-B-1432	2
6	2595502	THRUST BEARING & GASKET ASSY.	T-182	2
7	2600419	WASHER	1229-E-1669	12
8		ARM, CROSSTUBE		
	2600260	LH (SHOWN)	3133-K-999	
	2600161	RH	3133-J-998	
9	2135218	KEY, CROSSTUBE ARM	16-X-202	2
10	2646545	SCREW, STOP	26-X-219	2
11	2596195	LOCKNUT	N-48-1	2
12	2594596	PIN, COTTER	K-2616	2
13	2600724	NUT, CROSSTUBE ARM	14-X-27	2
14	2135200	NUT, STEERING ARM	13-X-159	
15	2135267	PIN, COTTER, STEERING ARM	K-2618	
16		KEY, DRAW		
	2622470	SHORT (UPPER)	7-X-112	2
	2622371	LONG (LOWER)	7-X-111	2
17	2646552	NUT, DRAW KEY	1227-Z-780	4
18	2594398	PIN, COTTER	K-2412	2
19	2643294	NUT, CROSSTUBE END	N-214-1	2
20	2596153	CROSSTUBE & CLAMP ASSY.	A-3102-N-3472	
21		END ASSY., CROSSTUBE		
	2597151	LH (SHOWN)	A-3144-N-456	
	2597250	RH	A-3144-P-458	
22	2597698	BOLT, CROSSTUBE CLAMP	S-11022-C	2
23	2600351	CLAMP, CROSSTUBE	2257-Q-17	2
24	2595601	LOCKWASHER, CROSSTUBE CLAMP	WA-110	2
25	2596393	NUT, CROSSTUBE CLAMP	N-710-C	2
26	2599769	PIN, KNUCKLE	3101-W-179	2
27	2137016	BUSHING, KNUCKLE PIN	1225-W-985	
28	2602142	GASKET	2208-Q-823	4
29	2600757	CAP, STEERING KNUCKLE	2297-C-2681	4
30	2703262	CAPSCREW	S-259-1	12
31	2703270	FITTING, GREASE	1199-N-1860	4
32	2594950	SEAL ASSY., OIL	A-1205-X-1428	4
33		SHIM, STEERING KNUCKLE SPACING		
	2603538	.005"	2203-L-3002	AR
	2603231	.010"	2203-K-3001	AR

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

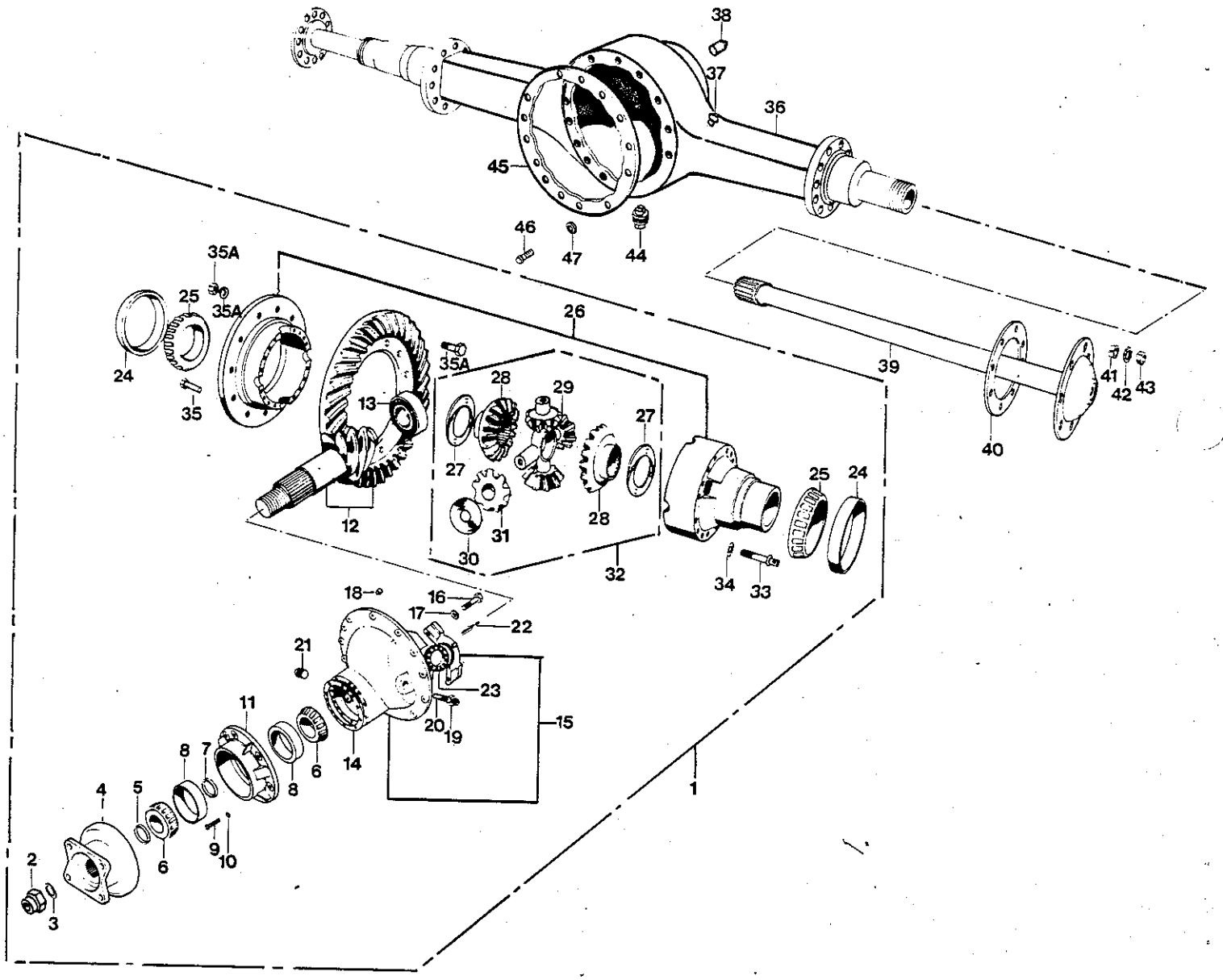
FRONT AXLE
FF-942-NX-35

KEY NO.	PART NO.	DESCRIPTION	VENDOR PART NO.	QTY REQ'D
NI	2137305	REPAIR KIT, KNUCKLE PIN (INCLUDES ITEMS 5,6,16,26,27 28,29,30,32,33)	KIT 1307	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

DR. 6/14/83 BY JET	8002362
APP. 11-1-83 BY DUB	

ROCKWELL STANDARD REAR AXLE
R-125-NX-10



ROCKWELL STANDARD REAR AXLE
R-125-NX-10

KEY NO.	PART NO.	DESCRIPTION	VENDOR PART NO.	QTY REQ'D
NI*	2137156	KIT, DIFF. CARRIER OVERHAUL	QR100-1314	
1	2149391	CARRIER ASSY, DIFFERENTIAL, COMPLETE, 5.29	A48-3200-N-1314	
2	2135903	NUT, YOKE INPUT	1227-R-902	
3	2117778	WASHER, YOKE INPUT	1229-T-1736	
4	2139848	YOKE, DRIVE	3260-Q-121	
5	2136851	SEAL ASSY., PINION OIL	A-1205-Y-1897	
6	2135051	BEARING, PINION, FWD. & REAR	72212-C	2
7	2135895	SPACER KIT, PINION BEARING	KIT 545	
8	2624427	CUP, PINION BEARING	72487	2
9	2594208	CAPSCREW, FWD. BEARING CAGE	S-2812-1	8
10	2600211	WASHER, FWD. BEARING CAGE	1229-C-1511	8
11	2135044	CAGE ASSY, PINION (INCLUDES ITEM #8)	A-3226-Z-806	
12	2135192	GEAR & PINION, MATCHED SET, 5.29:1	A-37376-1	
13	2599611	BEARING, PINION, REAR	1228-F-552	
14		SHIM, PINION CAGE		
	2135077	.003 THICK	2203-C-8115	
	2135085	.005 THICK	2203-D-8116	
	2135093	.010 THICK	2203-E-8117	
15	2135028	CARRIER & CAPS ASSY.	A2-3200-N-1314	
16	2135036	CAPSCREW, DIFF. BEARING CAP	S-21238-1	4
17	2603017	WASHER, DIFF. BEARING CAP	1229-V-1556	4
18	2599728	DOWEL, DIFF. BEARING CAP	1246-D-342	4
19	2121861	NUT, THRUST SCREW LOCK	13X-41	
20	2121853	SCREW, THRUST, DRIVE GEAR	15X-1025	
21	2596898	PLUG, OIL FILL & INSPECTION	P-212	
22	2596807	COTTER PIN, ADJUSTING RING	1199-R-2176	2
23	2135168	ADJUSTING RING, DIFF. BEARING	2214-Z-208	2
24	2135143	CUP, DIFFERENTIAL BEARING	JM-716610	2
25	2135150	CONE, DIFFERENTIAL BEARING	JM-716649	2
26	2135101	CASE ASSY., DIFFERENTIAL, 5.29	A28-3235-D-1174	
27	2602514	WASHER, THRUST DIFF. SIDE GEAR	1229-T-1034	2
28	2135127	GEAR, DIFF. SIDE	2234-C-783	2
29	2135135	SPIDER, DIFF.	3278-S-305	
30	2602019	WASHER, DIFFERENTIAL PINION	1229-R-1032	4
31	2599256	GEAR, DIFFERENTIAL PINION	2233-U-151	4
32	2137412	KIT, DIFFERENTIAL	KIT 326	

* NOTE: THIS KIT CONTAINS ALL PARTS NECESSARY TO PERFORM BASIC DIFFERENTIAL CARRIER OVERHAUL

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

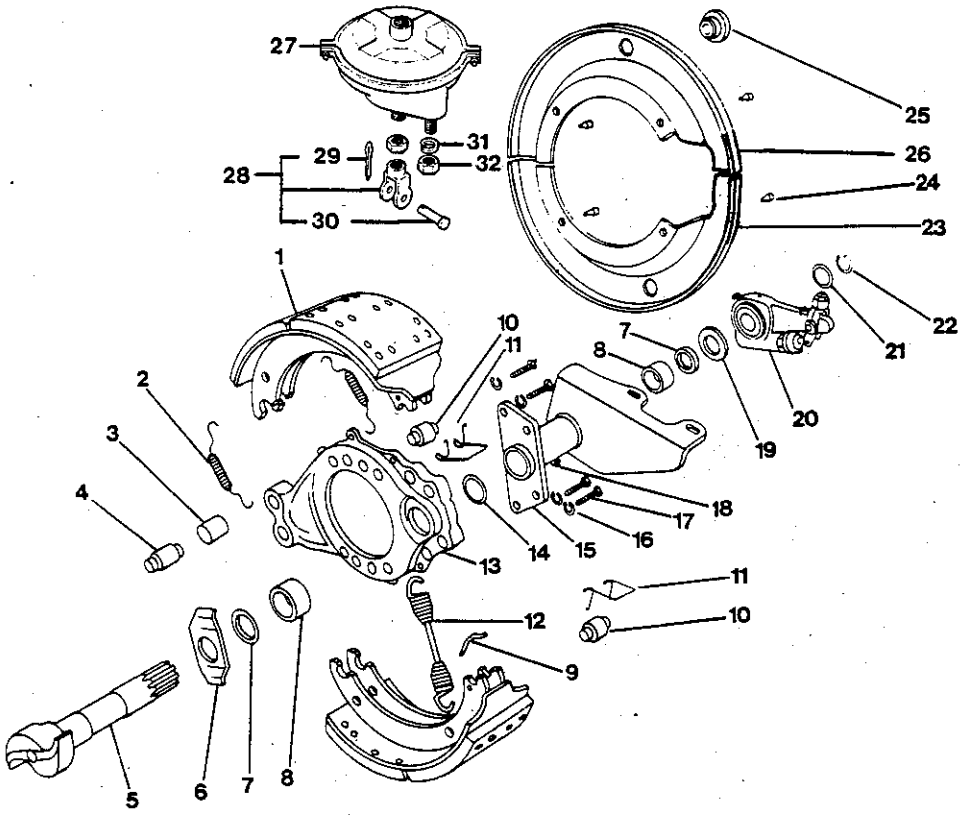
ROCKWELL STANDARD REAR AXLE
R-125-NX-10

KEY NO.	PART NO.	DESCRIPTION	VENDOR PART NO.	QTY REQ'D
33	2135119	CAPSCREW, DIFFERENTIAL CASE	S-2826A-1	16
34	2600211	WASHER, DIFFERENTIAL CASE	1229-C-1511	16
35	2597292	RIVET, DIFF. CASE TO GEAR (OPT)	RV-71013	12
35A	2120814	BOLT KIT, CASE TO GEAR	KIT 570	
36	2135804	HOUSING ASSY., AXLE	C-3121-Q-797	
37	2593150	BREATHER ASSY., AXLE HOUSING	A-1199-P-1394	
38	2134997	PLUG ASSY., HEAT INDICATOR	P-28	
39	2135002	SHAFT, AXLE, LH & RH	3202-P-8362	
40	0929083	GASKET, AXLE SHAFT	2208-X-440	
41	0929091	DOWEL, AXLE SHAFT STUD	13885	16
42	2603512	LOCKWASHER, AXLE SHAFT STUD	1229-X-518	16
43	2594893	NUT, AXLE SHAFT STUD	N-110-1	16
44	2121887	PLUG, AXLE HOUSING DRAIN (MAGNETIC)	1250-E-473	
45	2127017	GASKET, SILASTIC (3 OZ. TUBE)	EATON 107276	
46	2704666	BOLT, CARRIER TO HOUSING	S-21014-1	14
47	2602712	WASHER, CARRIER TO HOUSING	1229-U-1503	14

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

DR.	BY	2158541
APP.	BY	

FRONT BRAKES



FRONT BRAKES

KEY NO.	PART NO.	DESCRIPTION	VENDOR PART NO.	QTY REQ'D
1	2121598	BRAKE SHOE & LINING ASSY., 5"	A17-3222-E-1383	4
NI	2120897	BRAKE SHOE ONLY, 5"	A-3222-E-1383	4
NI	2117968	KIT, BRAKE LINING (1 PER AXLE)		
NI	2135978	RIVET, BRAKE LINING	10-9	64
2	2120863	SPRING, BRAKE SHOE RETAINING	2258-Q-615	4
3	2120889	BUSHING, ANCHOR PIN	1225-B-496	2
4	2120871	ANCHOR PIN, BRAKE SHOE	1259-N-274	2
5		CAMSHAFT, FRONT BRAKE		
	2121606	LH	2210-R-5374	
	2121614	RH	2210-Q-5373	
6	2121622	WASHER, CAMHEAD, (FLAT)	1229-N-2250	2
7	2121689	SEAL, CAMSHAFT	A-1205-V-1556	4
8	2597706	BUSHING, CAMSHAFT SPIDER & BRKT.	1225-N-378	4
9	2597300	PIN, BRAKE SHOE RETURN SPRING	1218-G-85	4
10	2598134	ROLLER, BRAKE SHOE	1779-R-18	4
11	2121655	RETAINER, SHOE ROLLER	3105-B-210	4
12	2638716	RETURN SPRING, BRAKE SHOE	2258-U-619	2
13		SPIDER, BRAKE		
	2136935	LH	A-3211-H-4428	
	2157923	RH	A-3211-J-4430	
14	2644235	GASKET, CHAMBER BRKT.	1779-J-1024	2
15		BRACKET, CAMSHAFT & CHAMBER		
	2136927	LH	B21-3299-K-2013	
	2157931	RH	B21-3299-L-2014	
16	2595809	WASHER, BRKT. CAPSCREW	WA-18	8
17	2594109	CAPSCREW, CHAMBER BRKT.	S-2812	8
18	2027431	FITTING, GREASE	1199-N-1860	2
19	2121663	WASHER, CAMSHAFT (THICK)	1229-S-2697	2
20		SLACK ADJUSTER ASSY.		
	1032499	RH	A2-3275-A-599	
	1032481	LH	A2-3275-U-593	
21	2121671	WASHER SPACING (STANDARD)	1229-G-2971	6
22	2121697	LOCKRING, CAMSHAFT	1229-D-2942	2
23		NOT APPLICABLE		
24		NOT APPLICABLE		
25		NOT APPLICABLE		
26		NOT APPLICABLE		
27	1099183	BRAKE CHAMBER, 24"	162895	
28	2137685	YOKE, BRAKE CHAMBER PUSH ROD	A-1245-E-395	
29		NOT APPLICABLE		

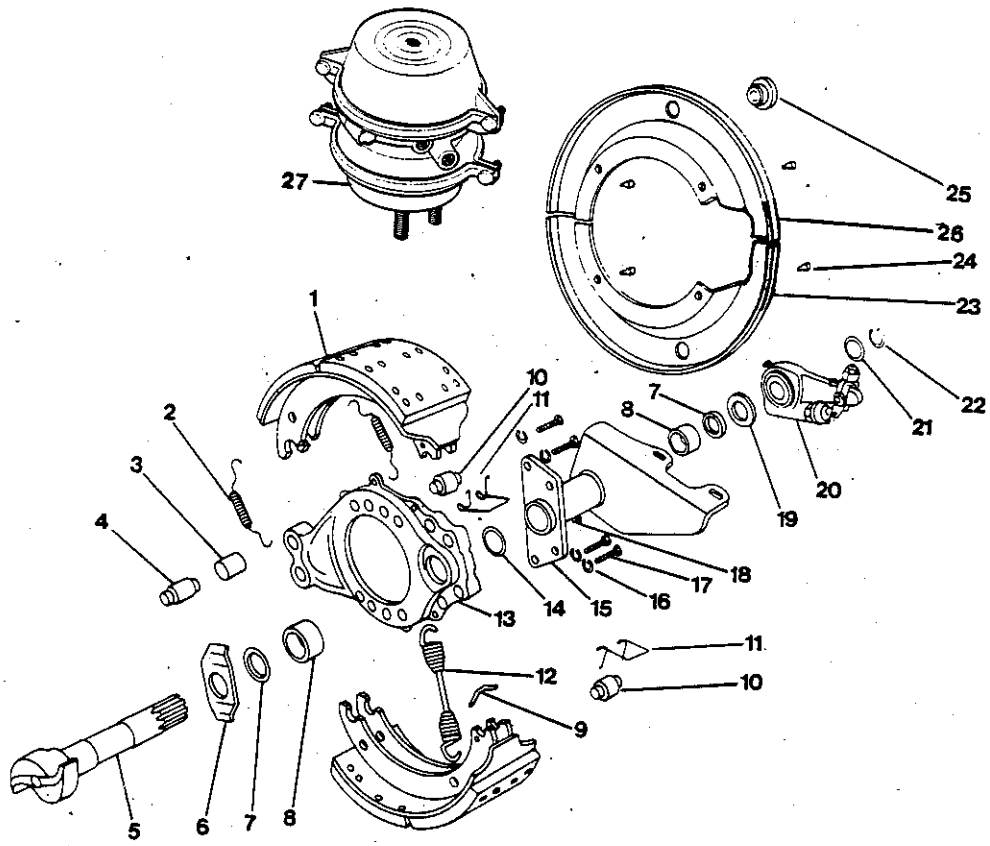
QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

KEY NO.	PART NO.	DESCRIPTION	VENDOR PART NO.	QTY REQ'D
30		N/A		
31	2595601	LOCKWASHER, BRAKE CHAMBER	WA-110	
32	2001501	NUT, BRAKE CHAMBER STUD		

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

REAR BRAKES

DR.	BY	2158558
APP.	BY	

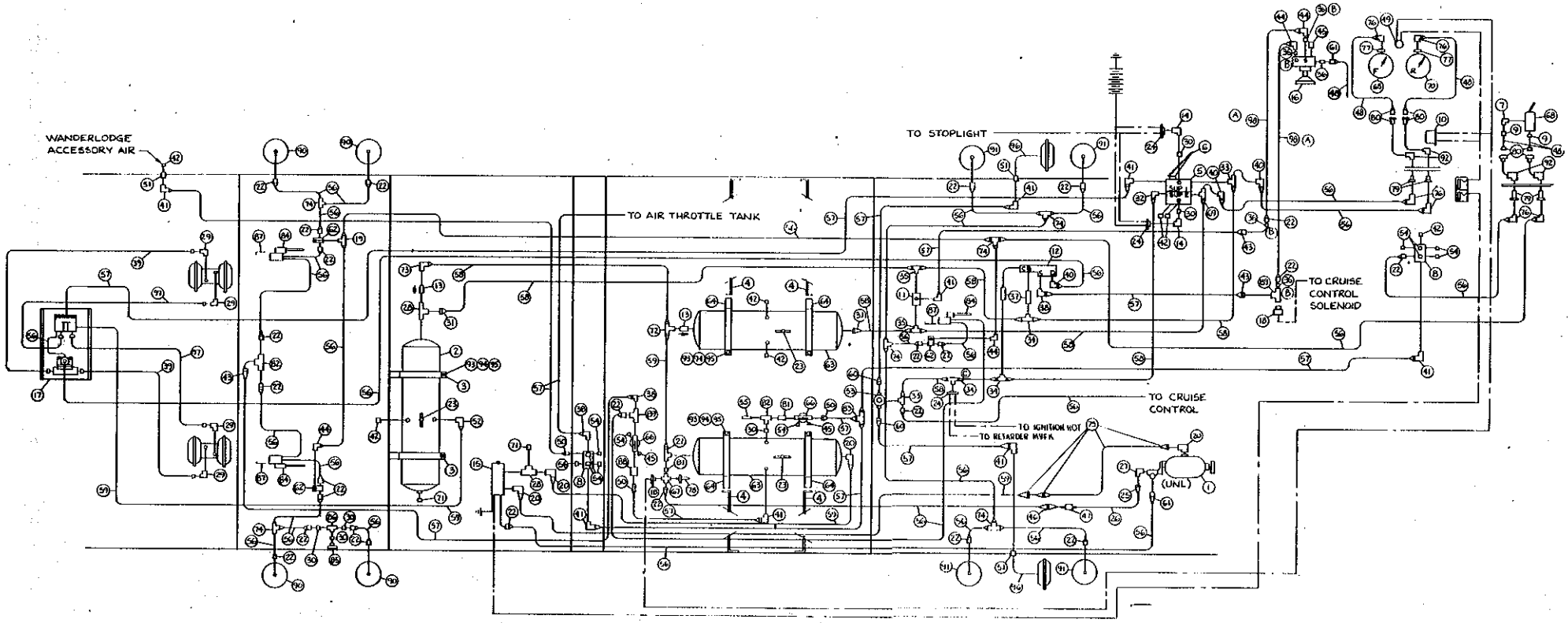


REAR BRAKES

KEY NO.	PART NO.	DESCRIPTION	VENDOR PART NO.	QTY REQ'D
1	2121705	BRAKE SHOE & LINING ASSY., 7"	A48-3222-S-1293	4
NI	2120905	BRAKE SHOE ONLY, 7"	A-3222-S-1293	4
NI	2151454	KIT, BRAKE LINING, 7"(1 PER AXLE)		
NI	2135978	RIVET, BRAKE LINING	10-9	64
2	2120863	SPRING BRAKE SHOE RETAINING	2258-Q-615	4
3	2120889	BUSHING, ANCHOR PIN	1225-B-496	2
4	2120871	ANCHOR PIN, BRAKE SHOE	1259-N-274	2
5		CAMSHAFT, BRAKE		
	2121739	LH	2210-A-5331	
	2121747	RH	2210-B-5332	
6	2121622	WASHER, CAMHEAD, (FLAT)	1229-N-2250	2
7	2121689	SEAL, CAMSHAFT	A-1205-V-1556	4
8	2597706	BUSHING, CAMSHAFT SPIDER & BRKT.	1225-N-378	
9	2597300	PIN, BRAKE SHOE RETURN SPRING	1218-G-85	
10	2598134	ROLLER, BRAKE SHOE	1779-R-18	4
11	2121655	RETAINER, SHOE ROLLER	3105-B-210	4
12	2638716	RETURN SPRING, BRAKE SHOE	2258-U-619	2
13	2137081	SPIDER, BRAKE	A-3211-P-3448	
14	2644235	GASKET, CHAMBER BRACKET	1779-J-1024	2
15	2135689	BRACKET, CAMSHAFT & CHAMBER LH & RH	A1-3299-M-1547	
16	2595809	WASHER, BRACKET CAPSCREW	WA-18	8
17	2594109	CAPSCREW, CHAMBER BRKT.	S-2812	8
18	2027431	FITTING, GREASE	1199-N-1860	2
19	2121663	WASHER, CAMSHAFT, (THICK)	1229-S-2697	2
20		SLACK ADJUSTER ASSY.		
	1144930	LH	A2-3275-C-601-S	
	1144948	RH	A2-3275-W-595-S	
21	2121671	WASHER, SPACING	1229-G-2971	6
22	2121697	LOCKRING, CAMSHAFT	1229-D-2942	2
23		N/A		
24		N/A		
25		N/A		
26		N/A		
27*		AIR CHAMBER ASSY., 30" ANCHORLOK		
	0754960	L. H.		
	0754952	R. H.		
		* SEE AIR BRAKE CHAMBER SECTION FOR COMPONENT PARTS.		

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

DUAL AIR BRAKE ASSY. W/AIR SUSPENSION PIPING



DUAL AIR BRAKE ASSY WITH AIR SUSPENSION PIPING

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1		AIR COMPRESSOR	
2	0754929	RESERVOIR, AIR, 1240 CU. IN.	
3	0850578	BRACKET, MOUNTING, 8", AIR RESERVOIR	4
4	1095306	SPACER, AIR RESERVOIR BRACKET	4
5	0654533	VALVE, TREADLE, DUAL BRAKE	
NI	2643237	REPAIR KIT, TREADLE VALVE	
6	1133347	TREADLE ASSY., W/RUBBER COVER	
NI	0654517	PIN, DUAL BRAKE VALVE	
NI	0654509	PIN, ROLL, BRAKE VALVE	
NI	0654491	BUTTON, STOP, DUAL BRAKE TREADLE VALVE	
NI	0654483	PLUNGER, DUAL BRAKE VALVE	
NI	0654475	BOOT, DUAL BRAKE VALVE	
NI	0654459	CAPSCREW, HEX 5/16-18X 7/8	3
NI	2001188	WASHER, LOCK, SPLIT HEAD, 5/16	3
NI	0654467	PLATE, MOUNTING, DUAL BRAKE VALVE	
8	2023083	FITTING, MANIFOLD	2
10	2006187	BUZZER	
11	0654434	VALVE, DOUBLE CHECK, 3/8 PIPE	
12	0654426	VALVE, SPRING BRAKE	
13	0654418	VALVE, SINGLE CHECK, 1/2 PIPE	3
14	2027233	ELBOW, 1/4 STREET	2
15	1310721	AIR DRYER, AD-4, BENDIX	
NI	2156842	REPLACEMENT CARTRIDGE A-D4	
16	0900266	VALVE, PP-1, 30 PSI	
17	1247253	VALVE ASSY. SPRING & SERVICE BRAKE RELAY	
NI	1066315	VALVE ONLY, SERVICE BRAKE	
NI	2135721	REPAIR KIT, SERVICE BRAKE	
NI	1220128	VALVE ONLY, SPRING BRAKE QR-1C	
NI	2160778	REPAIR KIT, SPRING BRAKE VALVE QR-1C	
18	1145853	INDICATOR, LOW PRESSURE, 66 PSI	2
19	0982272	TEE, 1/8 MPT X 1/4 TUBE X 1/4 TUBE	
20	2026706	ELBOW, 1/2 MPT X 5/8 TUBE, FLARE	4
21	0993295	TEE, 1/4 FPT X 1/2 X 5/8 TUBE	
22	2023224	CONNECTOR, 1/4 MPT X 1/4 TUBE	26
23	1110188	COCK, DRAIN, RESERVOIR	3
24	0998740	SWITCH, STOP LIGHT	3
25	1313816	INSERT, BARBED, SWIVEL, .25 HOSE X .25 MPT	
26	1313741	HOSE, .25 ID X .50 OD	
27	2026979	ELBOW, MALE, INVERTED FLARE, 1/4 TUBE X 1/8 MALE PIPE	
28	0654350	TEE, 1/2 PIPE STREET	3
29	2027241	ELBOW, 3/8 PIPE	4
30	2027134	BUSHING, PIPE, 3/8 X 1/4	6
31	2023380	CONNECTOR, 1/2 MPT X 1/2 TUBE	2
32	2023307	ELBOW, 3/8 MPT X 1/2 TUBE	2
33	0948919	TEE, 1/4 FPT X 3/8 MPT X 1/2 TUBE	2
34	2023505	TEE, 1/4 FPT X 1/2 TUBE X 1/2 TUBE	3
35	0556878	TEE, 3/8 MALE PIPE X 1/2 TUBE X 1/2 TUBE	2
36	0654970	INSERT, PLASTIC TUBING, 1/4	5
37	2009330	NIPPLE, 1/4 PIPE X 2" LONG (STEEL)	2

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

DUAL AIR BRAKE ASSY WITH AIR SUSPENSION PIPING

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
38	2023190	ELBOW, 1/4 MALE PIPE X 3/8 TUBE	4
39	0885426	HOSE ASSY., 7/16 ID X 28" LONG	2
40	2023935	ELBOW, 1/4 MPT X 1/4 TUBE	4
41	2023265	ELBOW, 3/8 MPT X 3/8 TUBE	7
42	2009595	PLUG, PIPE, 3/8	6
43	2023257	CONNECTOR, 1/4 FPT X 3/8 TUBE	3
44	2023786	ELBOW, 1/8 MPT X 1/4 TUBE	4
45	2027118	PLUG, 1/8", PIPE	3
46	2052736	UNION, TUBE, 1/4"	
47	1313790	INSERT, BARBED, STRAIGHT, .25 HOSE X .25 TUBE	
48	0654962	TUBING, PLASTIC, 1/4 OD, BLACK, TYPE A	3'7"
49	2006807	LIGHT, PILOT, 17/32 DIA., RED LENS	
50	2023182	CONNECTOR, 1/4 ,PT X 3/8 TUBE	3
51	0758698	COUPLING, ANCHOR	2
52	2023422	ELBOW, 3/8 MPT X 5/8 TUBE	
53	1160464	VALVE, QUICK RELEASE	
54	2023513	PLUG, PIPE, 1/4	14
55	0839019	VALVE, SAFETY, 1/4" PIPE	
56	2008431	TUBING, COPPER, 1/4"	
57	2027381	TUBING, COPPER, 3/8"	
58	2027399	TUBING, 1/2 COPPER, 3/8 TYPE L	
59	2027407	TUBING, 5/8 COPPER, 1/2 TYPE L	
60	2023240	CONNECTOR, 3/8 MPT X 3/8 TUBE	2
61	2023570	CONNECTOR, 1/8 MPT X 1/4 TUBE	2
62	0982280	VALVE, RELAY, PILOT CONTROL	3
63	0991513	RESERVOIR, 9 1/2 X 27-1760 CU. IN.	2
64	0850586	BRACKET, MOUNTING, 9 1/2", AIR RESERVOIR	8
65		GAUGE, AIR PRESSURE, FRONT BRAKE, DUAL SCALE (SUPPLIED W/INST. PANEL)	
66	0522508	VALVE, PRESSURE PROTECTION, 65 PSI	2
67	0559054	CROSS, 1/4", FEMALE PIPE	
68	2227338	VALVE, AIR	
69	0654319	TEE, 1/4 PPT X 3/8 MPT X 1/2 TUBE	
70		GAUGE, AIR PRESSURE, REAR BRAKE, DUAL SCALE (SUPPLIED W/INST. PANEL)	
71	0663427	PLUG, 1/2 SQ. GD., PIPE	2
72	2023901	TEE, 1/2 MPT X 1/2 TUBE X 5/8 TUBE	
73	2023349	ELBOW, 1/2 MPT X 1/2 TUBE	
74	2008381	TEE, 1/4"	6
75	1024975	HOSE ASSY., AIR COMP. DISCH.	
76	2008241	ELBOW, MALE, 1/4 TUBE X 1/8 PIPE	6
78	0818609	VALVE, SCHRADER, 1/4 MPT	
79	0949370	ADAPTER, BULKHEAD, 1/8 PIPE X 1 1/2" LONG	4
81	2027183	NIPPLE, 1/4 CLOSE	2
82	0559047	TEE, MALE BRANCH, 1/4 PIPE	2
83	0654541	TEE, 3/8 X 3/8 X 3/8 TUBE	
84	0871376	VALVE, HEIGHT CONTROL	3
85	0982918	INDICATOR, LOW PRESSURE LP-3, 30 PSI	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

DUAL-AIR BRAKE ASSY WITH AIR SUSPENSION PIPING

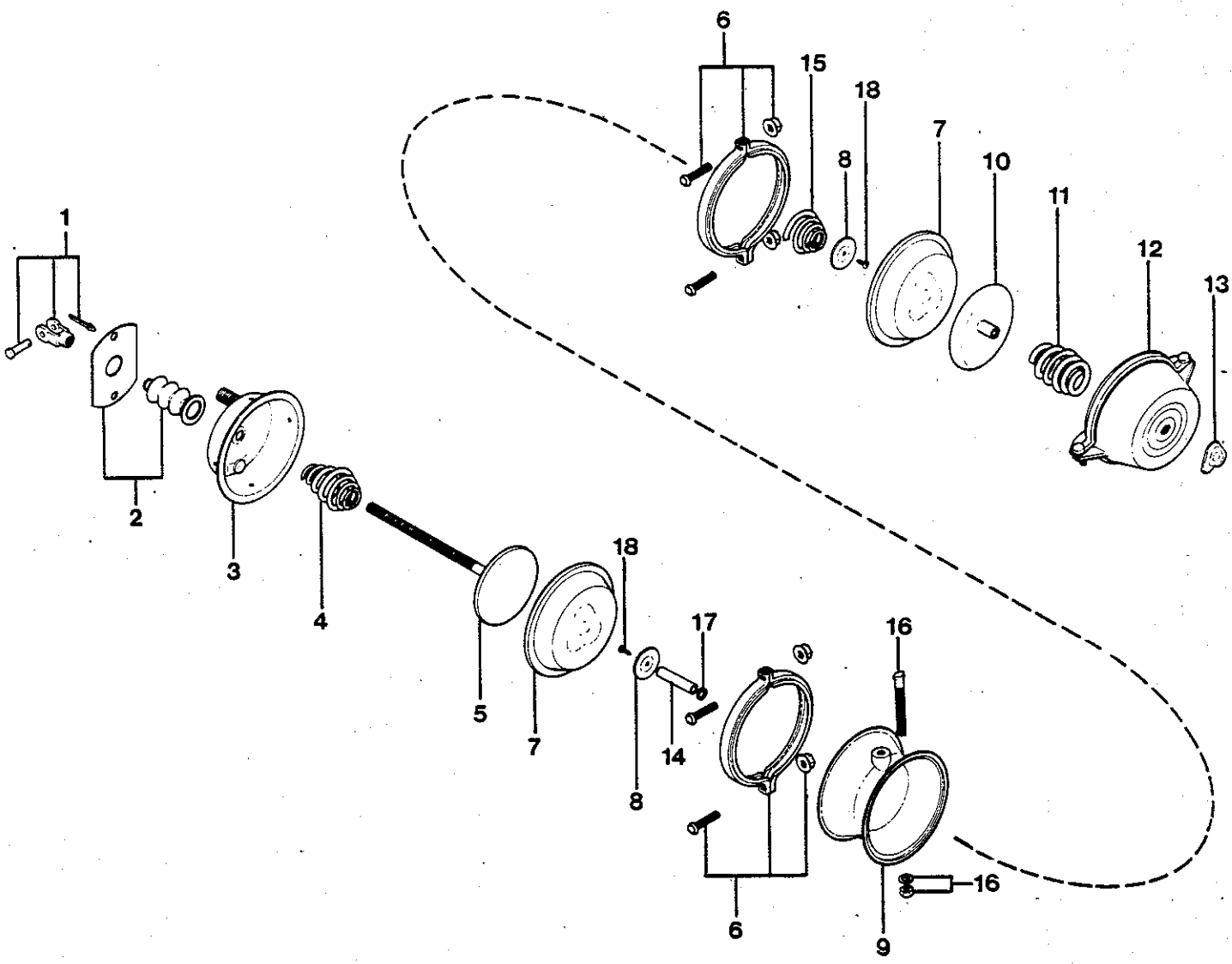
KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
86	2027258	TEE, 3/8 BRASS PIPE	
87	0961649	BRACKET, MOUNTING, HEIGHT CONTROL VALVES, WL	3
88	0962183	FILTER, AIR, RIDEWELL SUSPENSION	
89	0654277	TEE, STREET, 1/4 PIPE	2
90		AIR SPRING, RIDEWELL REAR SUSPENSION	4
91		AIR SPRING, RIDEWELL FRONT SUSPENSION	4
92	2027225	ELBOW, 1/8 STREET	4
93	0851337	CAPSCREW, HEX 3/8-16 X 6 1/2	6
94	0882795	LOCKWASHER, 3/8", CAD PLATED	6
95	2001451	NUT, HEX, 3/8-16, CAD.	6
96	0770909	HOSE ASSY., 7/16 ID X 23" LONG	2
97	0991653	HOSE ASSY., 7/16 ID X 36" LONG	2
98	1220011	TUBING, PLASTIC, 1/4 OD, TYPE A	
99	3827201	CONNECTOR, MALE; 1/8 MPT X 1/8 TUBE	4
100	1004621	TUBING, NYLON, 1/8 OD	8'0"
101	3827268	CONNECTOR, FEMALE, 1/8 NPTF X 1/8	2
102	3827318	ELBOW, MALE, SWIVEL, 90, 10-32 UNF X 1/8 TUBE	
103	3827243	CONNECTOR, MALE, 10-32 UNF X 1/8 TUBE	
104	2027159	BUSHING, PIPE, 1/2 X 1/4	
105	2023232	COUPLING, ANCHOR	2

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

REAR BRAKE CHAMBER, ANCHORLOK
STANDARD BRAKES

	DR. 4-8-86 BY LAD	
	APP. 4-8-86 BY DHC	8005852

FRONT



REAR BRAKE CHAMBER, ANCHORLOK
STANDARD BRAKES

KEY NO.	PART NO.	DESCRIPTION	VENDOR PART NO.	QTY REQ'D
1		CLEVIS ASSEMBLY		
	0530568	STD.	11M018	
	2137685	OPT. 4321-01, 4321-02	A-1245-E-395	
2	2703411	DUST BOOT ASSEMBLY	11M034	
3	2703718	HOUSING ASSEMBLY	1127M015	
4	2703395	RETURN SPRING	11M016	
5	2703452	PUSH ROD ASSEMBLY	1126M017	
6	2703437	CLAMP ASSEMBLY	1126M005	
7	2643534	DIAPHRAGM	1126M009	
8*	2707941	PLATE	11M037	
9*	2118529	ADAPTER	1134M001	
10	2121911	PRESSURE PLATE	1126M003	
11@	2703445	COMPRESSION SPRING	1126M006	
12@	2707933	CHAMBER	1126M002	
13@	2118545	PLUG	11M012	
14*	2118537	ADAPTER PUSH ROD	1126M038	
15*	2703387	RETURN SPRING	11M014	
16	2707198	RELEASE STUD ASSEMBLY (ALSO INCLUDED IN KIT 2140002)	11M011	
17*	2703429	"O" RING	11M114	
18*	2117745	NYLOK SCREW	11428R8	
NI	2139731	KIT, PUSH ROD REPLACEMENT (INCLUDES ITEMS 8,9,14,15,17,18)		
NI	2140002	CHAMBER ASSY. (INCLUDES ITEMS 10,11, 12)		

* NOT SERVICED SEPARATELY-SERVICED IN KIT 2139731 ONLY

@ NOT SERVICED SEPARATELY-SERVICED IN KIT 2140002 ONLY

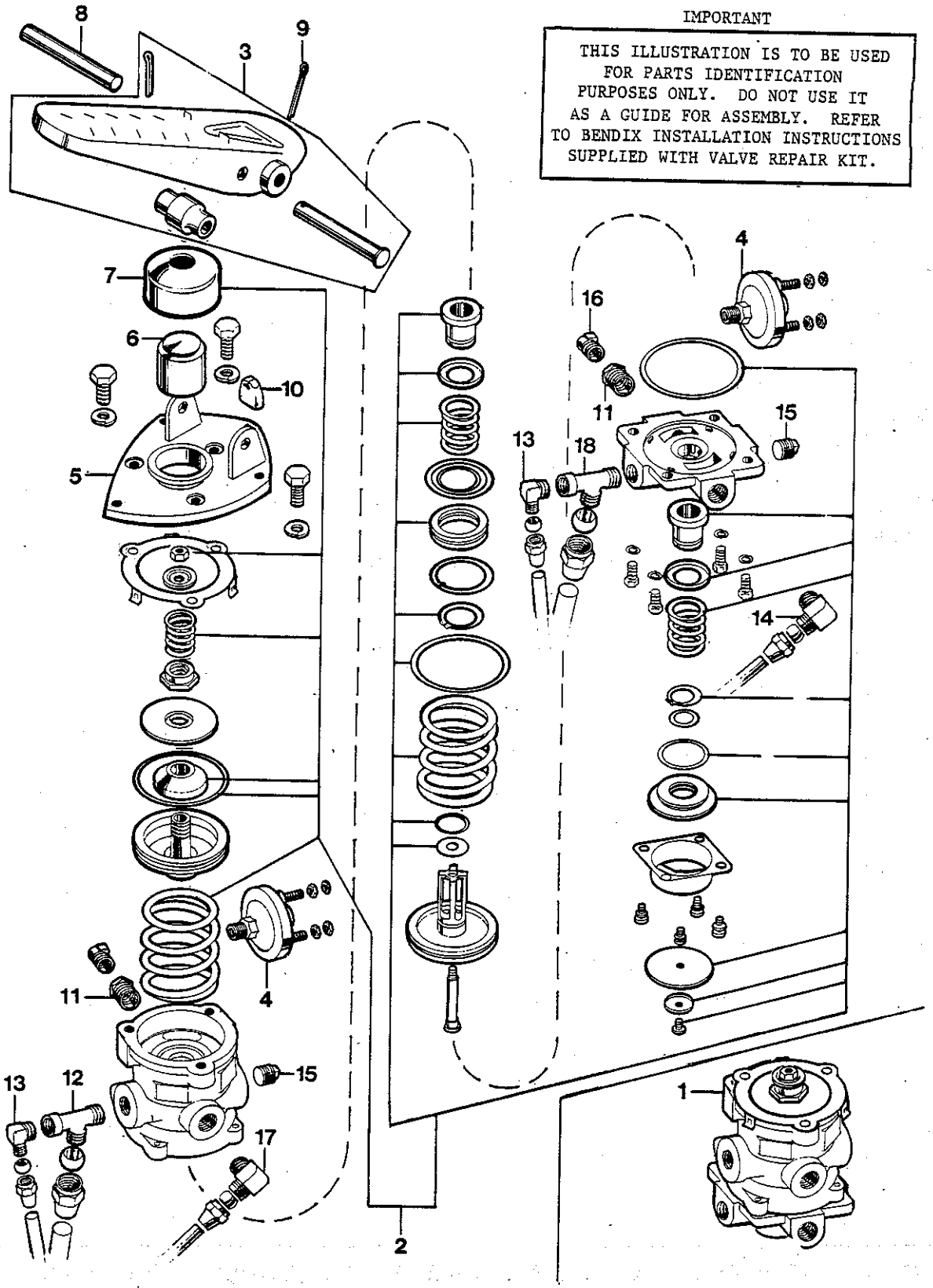
QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

DR. 5/20/81 BY JET
APP. 10/25/82 BY DVB
8001679

BRAKE TREADLE VALVE

IMPORTANT

THIS ILLUSTRATION IS TO BE USED FOR PARTS IDENTIFICATION PURPOSES ONLY. DO NOT USE IT AS A GUIDE FOR ASSEMBLY. REFER TO BENDIX INSTALLATION INSTRUCTIONS SUPPLIED WITH VALVE REPAIR KIT.



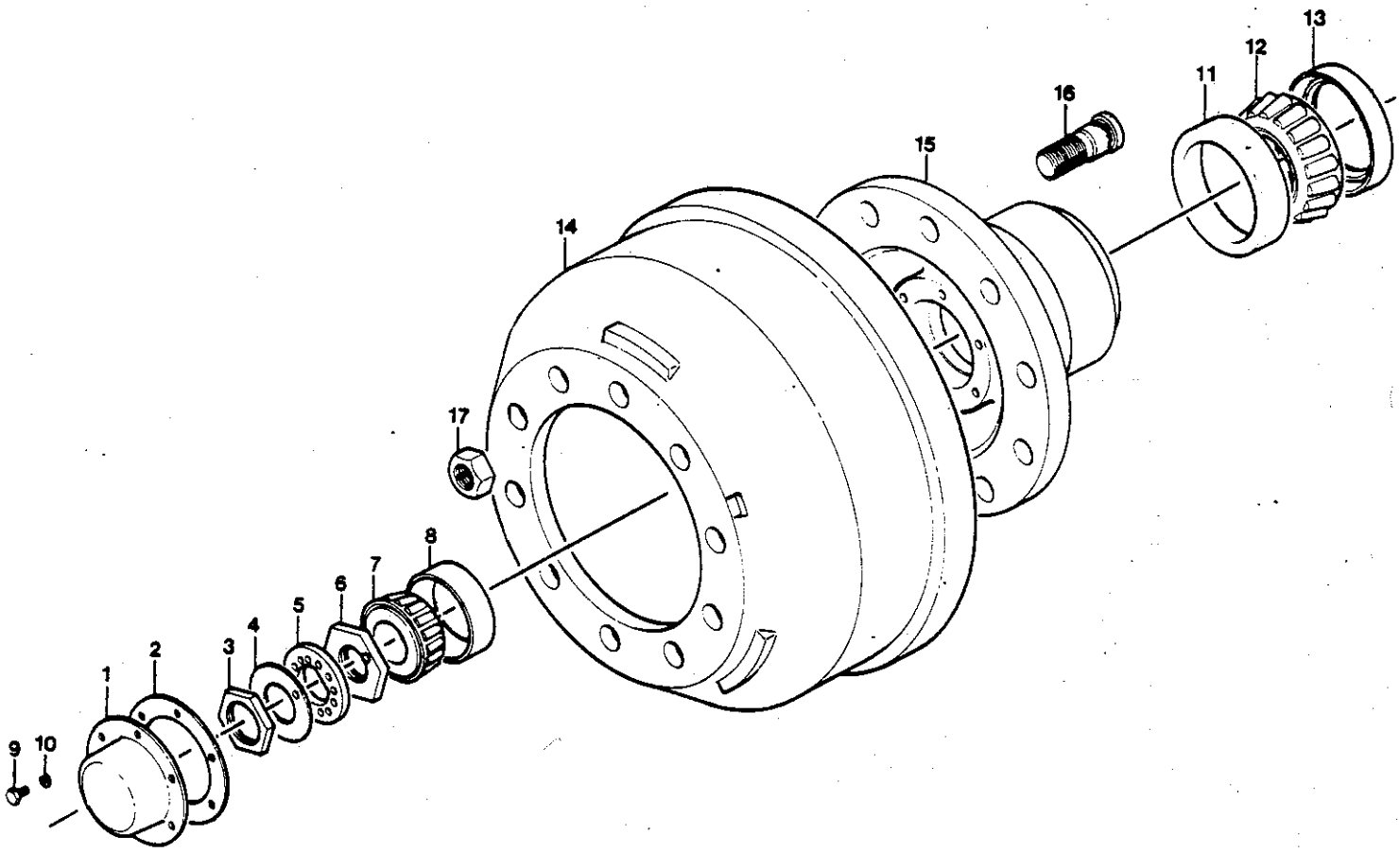
BRAKE TREADLE VALVE

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	0654533	VALVE ASSY., BRAKE TREADLE	
2	2643237	REPAIR KIT, TREADLE VALVE	
3	1133347	TREADLE, DUAL BRAKE VALVE, RUBBER COVERED	
NI	2137545	COVER, RUBBER, DUAL BRAKE VALVE TREADLE	
4	0998740	SWITCH, STOP LIGHT	2
5	0654467	PLATE, MOUNTING	
6	0654483	PLUNGER, BRAKE VALVE	
7	0654475	BOOT, BRAKE VALVE	
8	0654517	PIN, BRAKE VALVE FULCRUM	
9	0654509	PIN, ROLL, BRAKE VALVE FULCRUM	
10	0654491	BOTTOM, STOP	
11	2027134	BUSHING, 1/4 X 3/8 PIPE	
12	0948919	TEE, 1/4 FEMALE PIPE X 3/8 MALE PIPE X 1/2 TUBE	
13	2023935	ELBOW, 1/4 MALE PIPE X 1/4 TUBE	
14	2023265	ELBOW, 3/8 MALE PIPE X 3/8 TUBE	
15	2009595	PLUG, 3/8 PIPE	
16	2027233	ELBOW, 90 DEGREE STREET, 1/4 PIPE	
17	2023307	ELBOW, 3/8 MALE PIPE X 1/2 TUBE	
18	0654319	TEE, 1/4 FPT X 3/8 MPT X 1/2 TUBE	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

WHEEL END COMPONENTS, FRONT

	DR. 10 29 BY Andrew	8004954
FRONT	APP. BY	



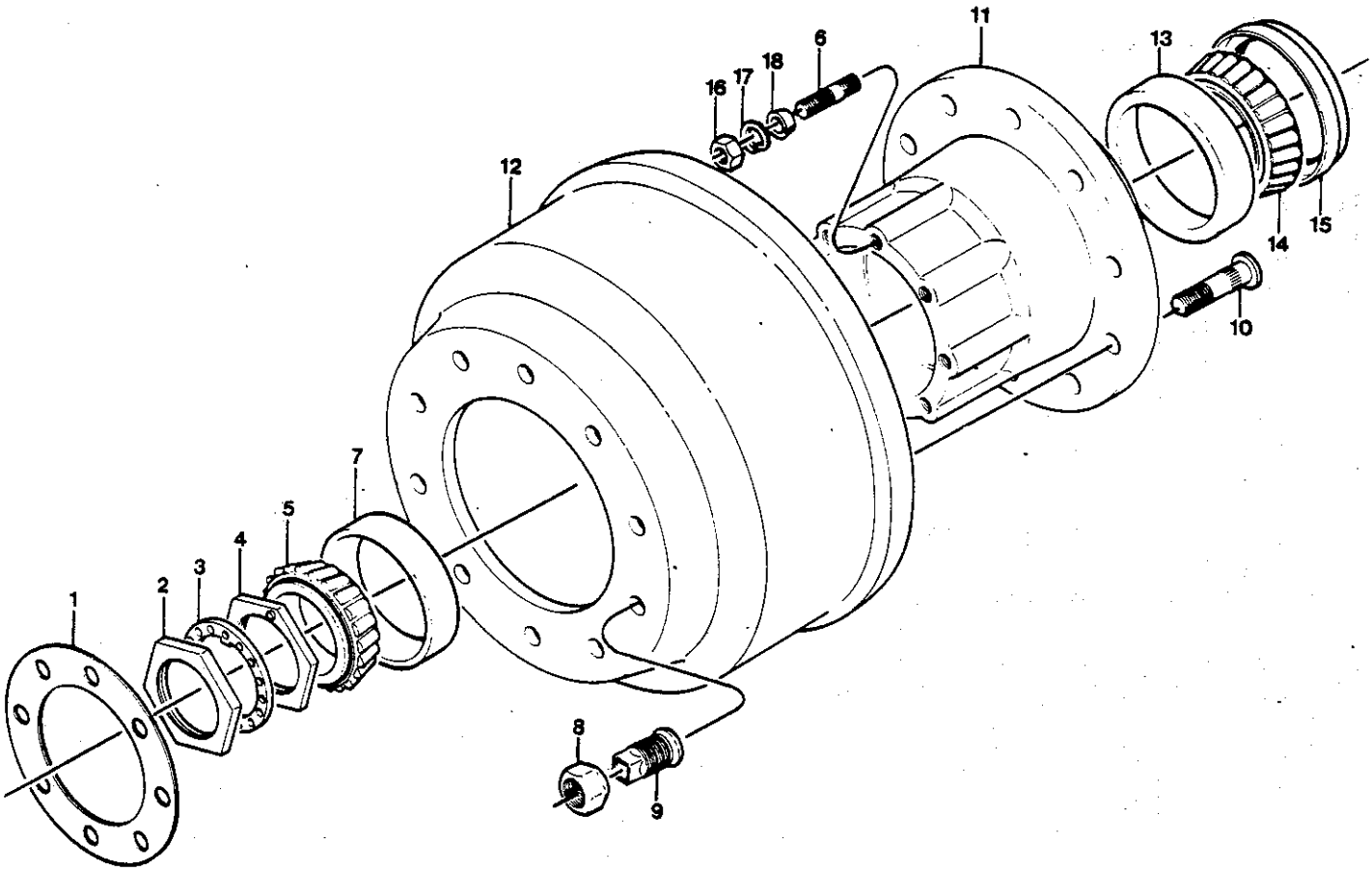
WHEEL END COMPONENTS, FRONT

KEY NO.	PART NO.	DESCRIPTION	VENDOR PART NO.	QTY REQ'D
1	0998534	HUB CAP, FRONT	340-4095	
NI	2139582	SIGHT GLASS		
NI	2137008	PLUG, SIGHT GLASS		
2	0998484	GASKET, FRONT HUB CAP	330-3009	
3	2598217	JAM NUT, OUTER WHEEL BEARING	1227-B-106	
4	2600617	LOCK, OUTER WHEEL BEARING	1229-F-474	
5	2600815	LOCKING, OUTER WHEEL BEARING NUT	1229-G-475	
6	2599017	ADJUSTING NUT, WHEEL BEARING	1227-U-541	
7	0929414	BEARING ASSY., OUTER	3782	
8	2600179	CUP, OUTER BEARING	3720	
9	0654459	CAPSCREW, HUB CAP		
10	2001188	LOCKWASHER, HUB CAP CAPSCREW		
11	2593093	CUP, INNER BEARING	HM-212011	
12	0929406	BEARING ASSY., INNER	HM-212049	
13	0997908	SEAL, WHEEL BEARING, INNER		
14	1117365	DRUM, BRAKE		
15	1147016	HUB & CUP ASSY., STD.	1521F-N	
16		STUDS, LUG		
	1346758	LH		
	1346741	RH		
17		NUT, LUG, OUTER		
	1311729	LH		
	1311711	RH		
NI	0992941	HUB COVER, CHROME		
NI	0992925	NUT COVER, CHROME		

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

WHEEL END COMPONENTS, REAR

	DR. 11/15/85 BY Andrew	8004962
FRONT	APP. BY	



WHEEL END COMPONENTS, REAR

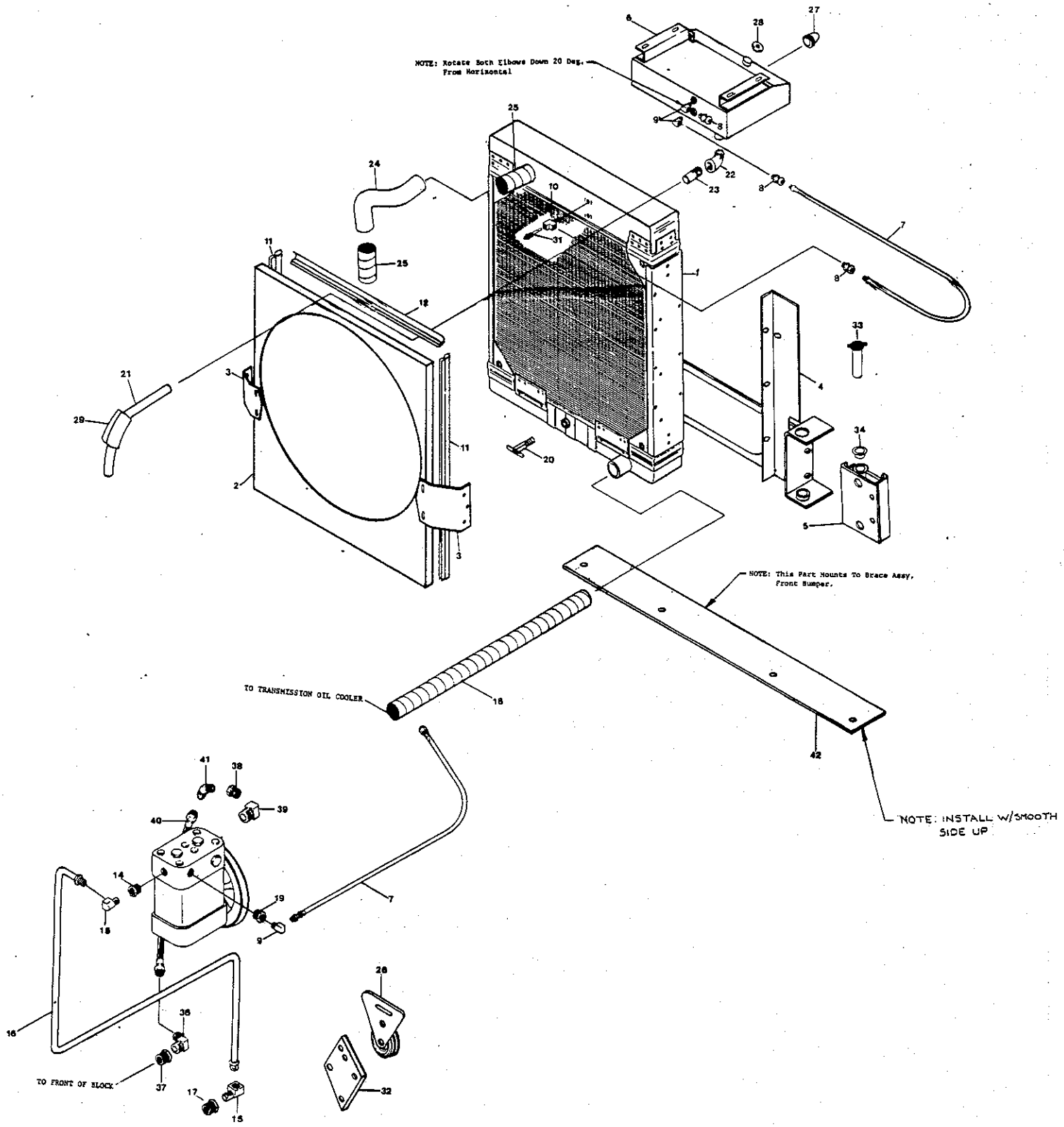
KEY NO.	PART NO.	DESCRIPTION	VENDOR PART NO.	QTY REQ'D
1	0929083	GASKET, AXLE FLANGE	2208-X-440	2
2	2598613	NUT, WHEEL BEARING, OUTER	1227-R-330	2
3	2647238	WASHER, LOCK, WHEEL BEARING NUT	1229-U-1009	2
4	2599215	NUT, WHEEL BEARING, INNER	1227-W-517	2
5	0929059	WHEEL BEARING (OUTER)	580	2
6	2138584	STUD, AXLE SHAFT DRIVE	161832	16
7	2621571	CUP, OUTER WHEEL BEARING	572	2
8		NUT, WHEEL STUD, OUTER		10
	1311729	LH		
	1311711	RH		
9		NUT, WHEEL STUD, INNER		10
	1311745	LH		
	1311737	RH		
10		STUD, WHEEL		10
	1296227	LH		
	1296219	RH		
11	1147024	HUB & CUP ASSY.	16227-N	
12	1117340	BRAKE DRUM	B69883B	
13	2621779	CUP, WHEEL BEARING (INNER)	592-A	2
14	0929042	WHEEL BEARING (INNER)	594-A	2
15	0929067	OIL SEAL, WHEEL BEARING (INNER)	47697-S	2
16	0929000	NUT, AXLE SHAFT DRIVE STUD		16
17	2001220	LOCKWASHER, AXLE SHAFT DRIVE STUD		16
18	0929091	DOWEL, AXLE SHAFT DRIVE STUD	13885	16
NI	0992933	HUB COVER, CHROME		2
NI	2127108	LOCKING RING, HUB COVER		5
NI	0992925	NUT, COVER, CHROME		10

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

COOLING SYSTEM
CAT. 3208TA

DR. 1-16-86 BY J. COPE
APP. 1-16-86 BY CCN
1247717

FRONT

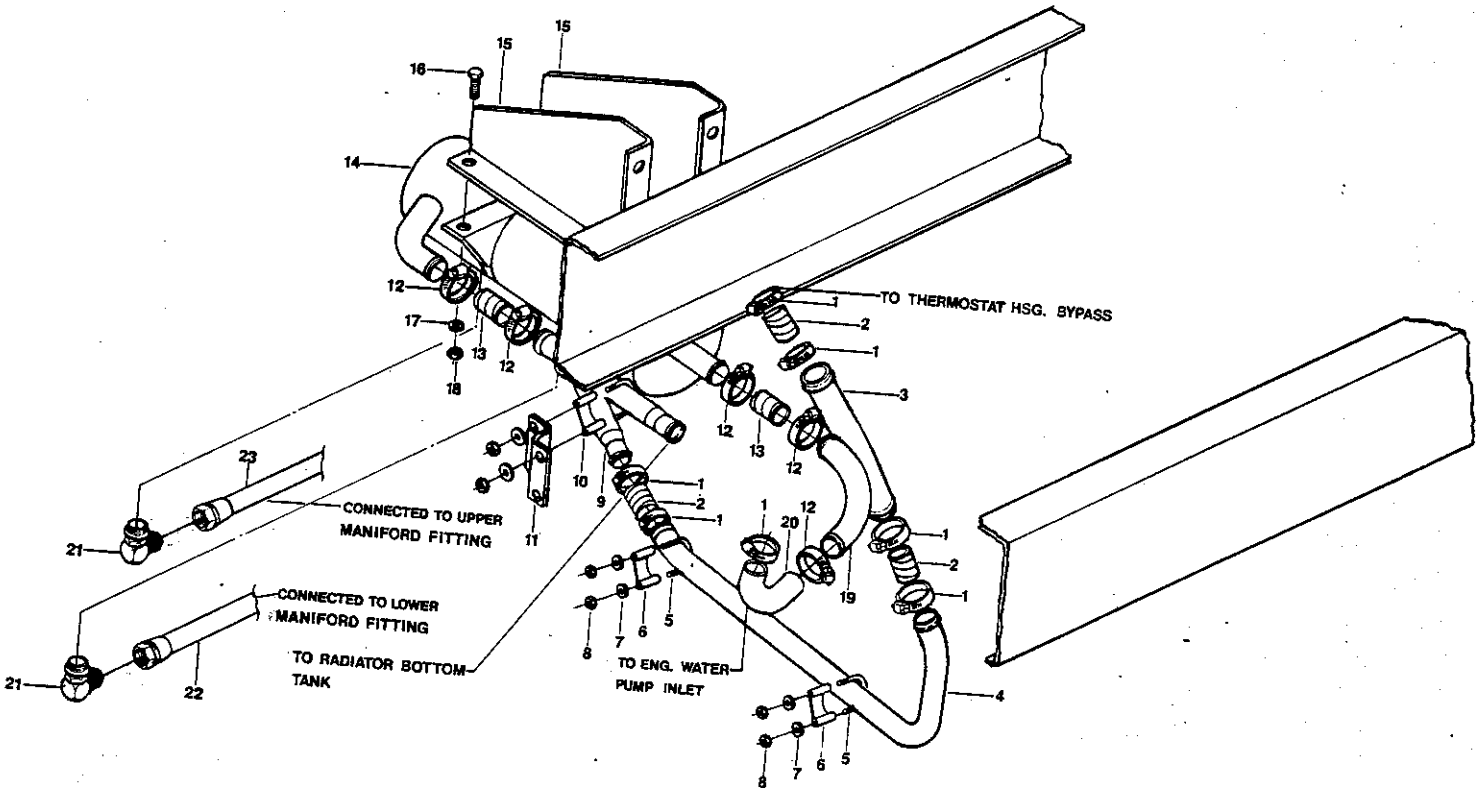


COOLING SYSTEM
CAT. 300 HP

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1247105	RADIATOR ASSY.	
2	1238237	SHROUD, RADIATOR	
3	1238245	BRACKET, MOUNTING, SHROUD	2
4	1238948	CROSSMEMBER ASSY., FRONT HINGED	
5	1238591	HINGED ASSY.	
6	1238252	TANK ASSY., 20"	
7	0870303	HOSE ASSY., 20"	2
8	1119700	ADAPTER, SWIVEL MALE PIPE	3
9	2027233	ELBOW, 1/6-B, 1/4 STREET, PT	2
10	0559054	CROSS, 1/4 PIPE	
11	1149376	SEAL, RUBBER ENGINE COVER FRT	63"
12	1068501	SEAL, RUBBER, A/C HOOD TRIM	56"
13	2027241	ELBOW, 3/8 STREET	
14	2023539	BUSHING, PIPE, 1/2 MPT X 3/8 FPT	
15	2026995	ELBOW, 3/8 MPT X 1/2 IF	2
16	0854620	TUBE ASSY.	
17	2009066	BUSHING PIPE, 3/8 X 3/4	
18	1151703	HOSE, RADIATOR, 2" X 33	
19	2009041	BUSHING, PIPE 1/4 X 1/2	
20	2020667	COCK, RAD. DRAIN	
21	1143866	HOSE, HEATER 1" ID SILICONE	18"
22	0760249	ELBOW, STREET GALV. 3/4"	
23	0315200	ADAPTER, HEATER 3/4 PIPE X 1" HOSE	
24	1247519	TUBE, RADIATOR UPPER CAT	
25	1163435	HOSE, RADIATOR 2" ID SILICON	8"
26	1247527	PULLEY IDLER	
27	1146877	BULB, WITH O-RING	
28	0522052	CAP, RADIATOR PRESSURE 7 PSI	
29	1059278	SPLINT 1" HOSE BEND, 90 DEGREE	
30	0964940	CLAMP HOSE LINED	6
31	0965509	SENDER LOW COOLANT LEVEL	
32	1247535	PLATE IDLER PULLEY CAT. 3208TA	
33	1247543	PIN ASSY, HINGE SWING-OUT RADIATOR	
34	1150846	BUSHING, NYLON 1 I.D., THOMSON	4
35	1257138	POST, RADIATOR, LH CAT	
36	1002864	ELBOW, 90 MALE 1/2 TUBE FLARE X 1/2 PIPE	
37	2023950	BUSHING, 1/2 X 3/4 PIPE	
38	2009058	BUSHING, PIPE 3/8 X 1/2	
39	2008274	ELBOW, 90 DEG, STREET	
40	0854596	HOSE ASSY, AIR COMPRESSOR	
NI	0853226	AIR COMPRESSOR	
41	0963736	ELBOW 45 DEGREE 3/8 MPT X 1/2 TUBE	
42	1287911	DEFLECTOR, AIR	
43	0938548	HOSE, RUBBER, 9/32 X 17/32	4'
44	0557710	CLAMP, CLOSED TYPE, INSL., 13/16	
45	2009322	NIPPLE, 1/4 X CLOSE	
46	2023513	PLUG, 1/4 PIPE	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

COOLING, RETARDER, Z-F TRANSMISSION

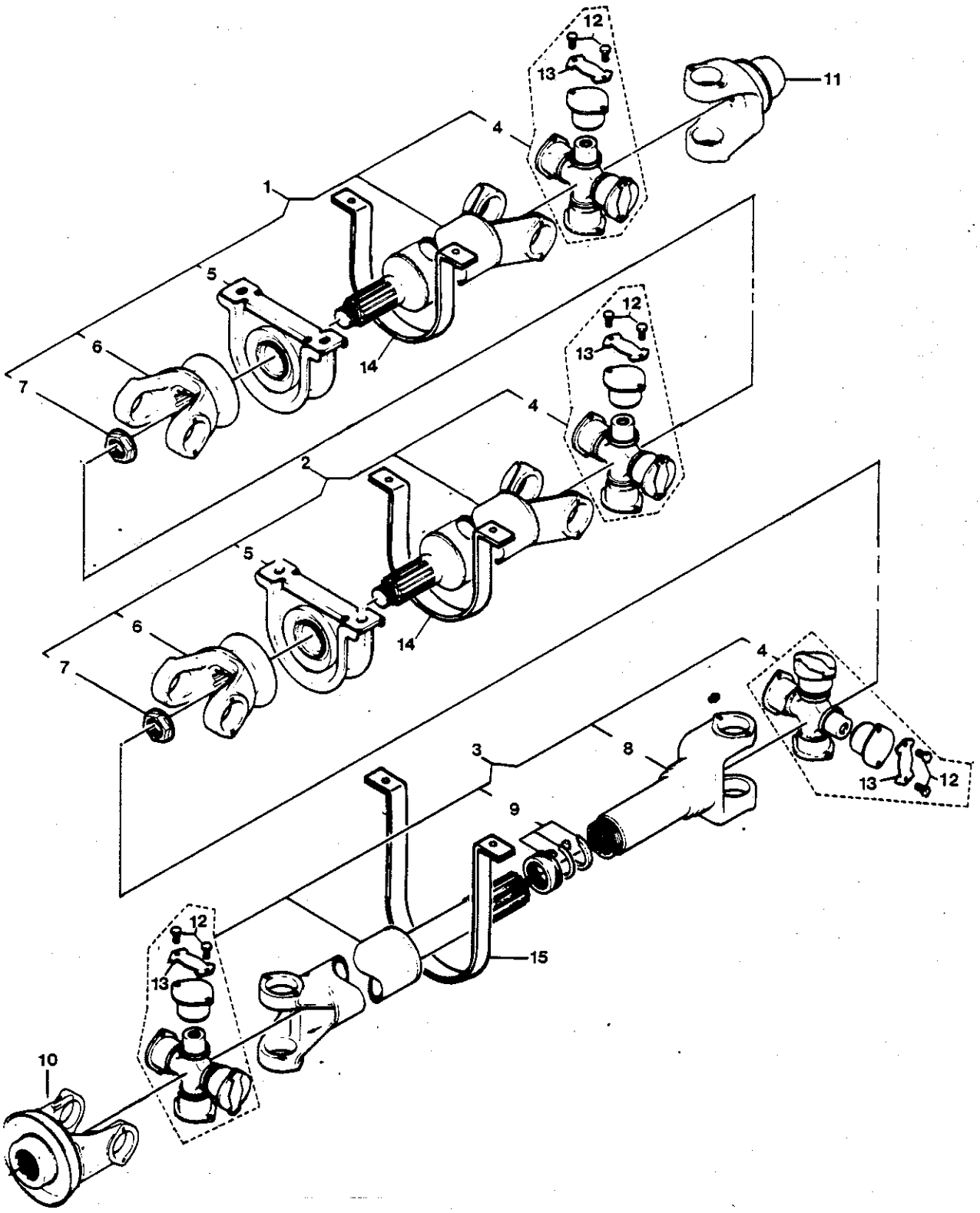


COOLING RETARDER, Z-F TRANSMISSION

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1167709	CLAMP HOSE, LINED, 2"	7
2	1163435	HOSE RADIATOR, 2 ID X 14 1/2 LONG (4" LONG)	3
3	1237437	ELBOW, BYPASS, OIL COOLER	
4	1237445	CONNECTOR, BYPASS LOWER, OIL COOLER	
5	0805218	U-BOLT, TILT STEERING	2
6	0805226	SADDLE, 2", TILT STEERING	2
7	1166750	WASHER, FLAT, 3/8 DD	4
8	2001451	NUT, HEX, 3/8-16 CAD	4
9	1237429	TEE, CONNECTOR, OIL COOLER, INLET	
10	2019347	CLAMP, MUFFLER, 2 1/4"	
11	1237411	BRACKET SUPPORT, OIL COOLER, TEE CONNECTOR	
12	0964940	CLAMP, HOSE LINED, 2 1/2"	5
13	0964932	HOSE, RADIATOR, 2 1/4" (4" LONG)	2
14	1280627	COOLER, TRANS. OIL	
15	1237403	BRACKET, SUPPORT, OIL COOLER	2
16	0803221	BOLT, HEX 1/2-20 X 1 1/4 GD. 8	4
17	1003045	WASHER, FLAT 17/32 X 1 3/32	4
18	0966051	NUT, HEX, LOCKING, 1/2-20	4
19	1237395	ELBOW, OIL COOLER TO ENG. INLET	
20	1232826	ELBOW, 2 X 2 1/4 ID, 90 DEG. 3 1/2 X 5 1/2	
21	1151232	ADAPTER, 37 DEG. STL. FLARE	2
22	1248145	HOSE ASSY., OIL COOLER	
23	1259704	HOSE ASSY., OIL COOLER	
NI	1039486	CLIP, 1.562 VINYL	6
NI	2005734	LOOM, ASPHALTUM WIRE	2'

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

DRIVELINE



KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1247915	FRONT SHAFT	
2	1247915	#2 SHAFT, 210 WB	
3	1248038	REAR SHAFT	
4	1121565	KIT, 5-280X, JOURNAL & BEARING	
5	1247998	BEARING ASSY.	
6	1248004	YOKE END	
7	1248012	NUT, FLANGE	
8	1121573	YOKE ASSY., SLIP 1710	
9	1121581	SEAL, SLIP JOINT	
10	2139848	YOKE ASSY., DRIVE AXLE	
11	1250331	YOKE END, TRANS.	
12	1084128	BOLT, 3/8-24 X 19/32, GD. 8	
13	1084136	LOCK STRAP	
14	1282003	SHAFT GUARD STRAP	
15	0119784	REAR SHAFT GUARD STRAP	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

ENGINE TRIM

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
		AIR COMPRESSOR & ASSOCIATES PARTS	
	0853226	AIR COMPRESSOR	
	0908160	AIR COMPRESSOR GOVERNOR	
	0603324	GASKET, AIR COMPRESSOR GOVERNOR	
	0616755	AIR STAINER	
	1017797	PULLEY, AIR COMPRESSOR	
	1017805	ADAPTER, AIR COMPRESSOR	
	0854513	HOSE ASSY., AIR COMPRESSOR LUBE	
	0854638	GASKET, AIR COMPRESSOR BASE	
	0814038	BELT, A/COMP (MATCHED SET)	
		ENGINE MOUNTING PARTS	
	1071281	SUPPORT BRACKET ASSY., FRONT ENGINE MOUNT RH	
	1233725	BRACKET ASSY., ENGINE MOUNTING TO FRAME	2
	1233758	BRACKET ASSY., ENGINE MOUNTING, REAR	
	1235647	CROSSMEMBER ASSY.	
	1255371	BRACKET ASSY., MOUNTING, FRONT ENGINE	
	1255827	ISOLATOR, MOTOR MOUNT, FRONT	2
	1255835	ISOLATOR, MOTOR MOUNT, REAR	2
		ALTERNATOR & ASSOCIATED PARTS	
	1263359	ALTERNATOR, 160 AMP, SELF-EXITED	
	0771873	SPACER, ALT. ADJUSTING CENTER	
	0854109	BASE, ALT. ADJUSTING	
	0854679	PULLEY, ALT.	
	0966432	BRACKET ASSY., ALT. & FREON COMP.	
	1007673	PULLEY, ALT.	
		FREON COMPRESSOR	
	0966432	BRACKET ASSY., ALT & FREON COMPRESSOR	
	0860098	CLUTCH, FREON COMPRESSOR	
	0893453	COMPRESSOR, FREON	
	0860072	PULLEY, IDLER	
	0908160	VALVE, SERVICE 5/8 ROTOLOCK	
	0908517	VALVE, SERVICE 1/2 ROTOLOCK	
	0967125	BOLT SHOULDER	
	0967133	IDLER, ECCENTRIC	
	1031400	HOSE, A/C 5/8 X 240	
	1152354	HOSE	
		STARTER MOTOR	
	1204494	STARTER MOTOR, 12V	
	0809103	SWITCH, MAGNETIC STARTER	
	0823963	GASKET, STARTER MOTOR	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

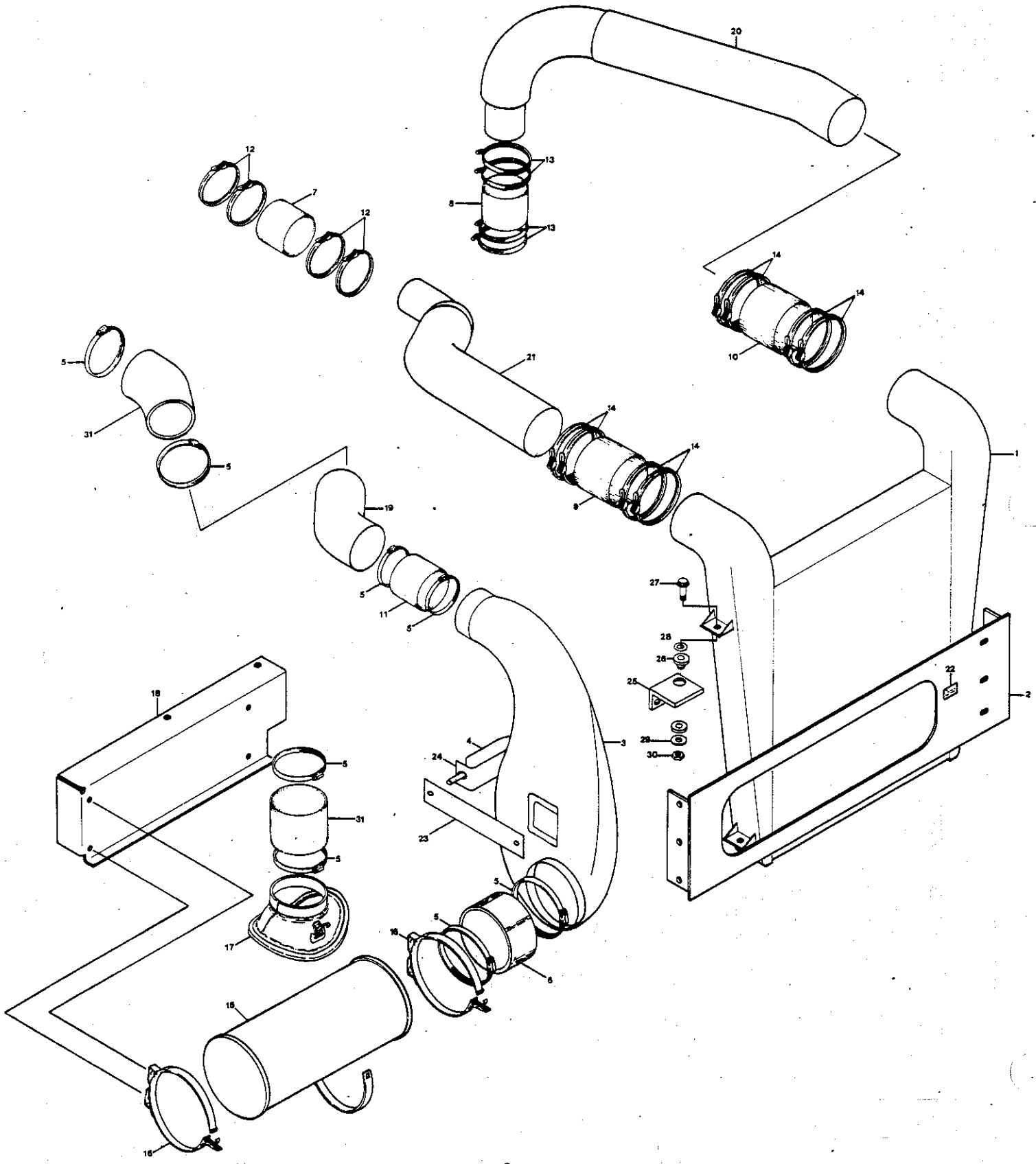
KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
		TRANSMISSION ACCESSORIES	
	1250364	MODULE, TRANS. CONTROL	
	1250448	CONTROL SHIFTER, PUSH BUTTON	
	1250455	SENDER, OIL TEMP, TRANS.	
	1250810	CLAMP, OIL FILLER TUBE	
	1250836	TUBE ASSY., OIL FILL	
		ENGINE OIL DIPSTICK	
	1238039	TUBE, DIPSTICK, ENGINE OIL	
	1238047	DIPSTICK, ENGINE OIL	
	1238617	TUBE ASSY., OIL FILL	
		MISC.	
	1250455	SENDER OIL TEMP	
	1255819	FAN ASSY., 8 BLADES	
	1257732	FAN CLUTCH	
	1148998	SWITCH, TEMP CONTROL	
	0965491	MODULE, ENGINE WARNING	
	1054378	ALARMSTAT, HIGH TEMP, KYSOR	
	1078781	SENDER, WATER TEMP.	
	1112564	PRESSURE SWITCH, FASCO, LOW OIL	
	1148998	SWITCH, TEMP CONTROL, FAN CLUTCH	
	1258748	HEATER, DIRECT IMMERSION	
	1282714	ALARMSTAT, 215 DEGREE	
		BELTS	
	1129626	BELT SET (WATER PUMP & FAN)	2
	1040005	BELT, FREON COMPRESSOR	
	0814038	BELT AIR COMP., ALT, MATCHED SET	
	1243146	BELT, POWER STEERING	
		FILTERS	
	2236677	FUEL FILTER	
	3743481	FILTER, ENGINE OIL	
	1258615	AIR CLEANER, ELEMENT	
	2136752	FILTER KIT, REAR FUEL FILTER/WATER SEPARATOR	
	2107753	CARTRIDGE KIT, AIR DRYER	
	2108199	ELEMENT, POWER STEERING RESERVOIR	
	2107670	ELEMENT, AIR COMPRESSOR	
	0871657	INDICATOR, SERVICE AIR CLEANER	
	2153153	KIT, INTERNAL FILTER CHANGE ZF TRANS.	

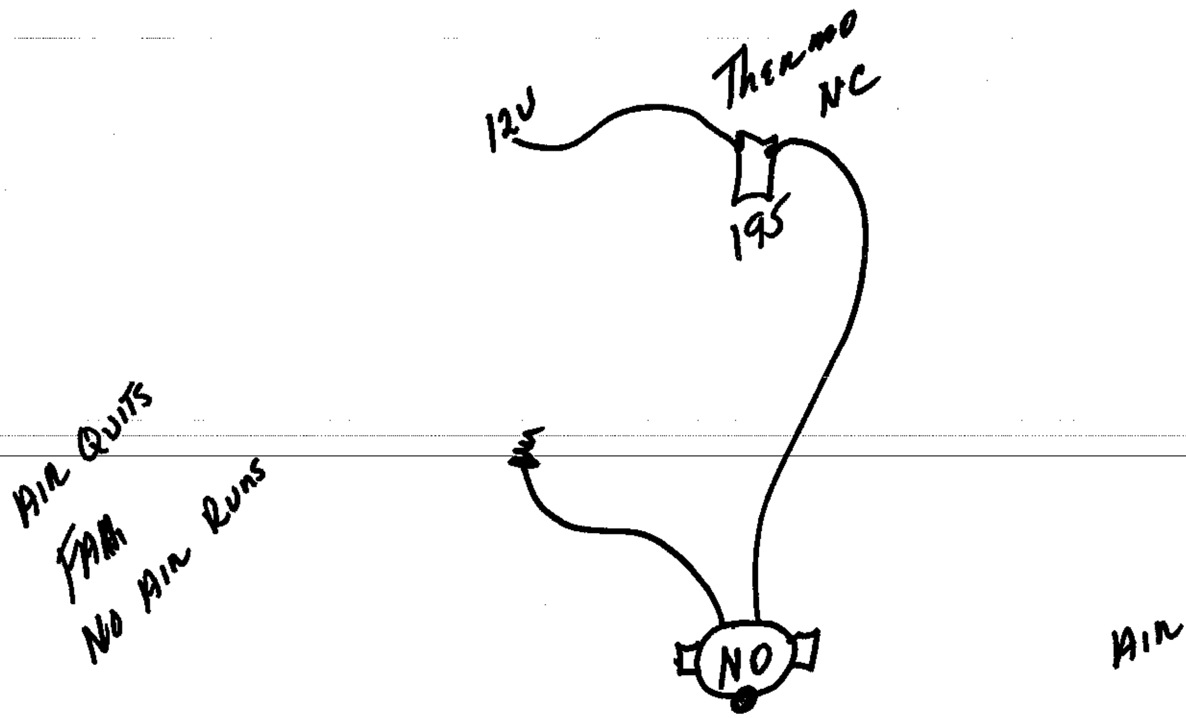
QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

AIR INTAKE, CAT 300 HP

DR. 1-14-86 BY J. COPE
APP. 1-14-86 BY CCW
1247725

FRONT

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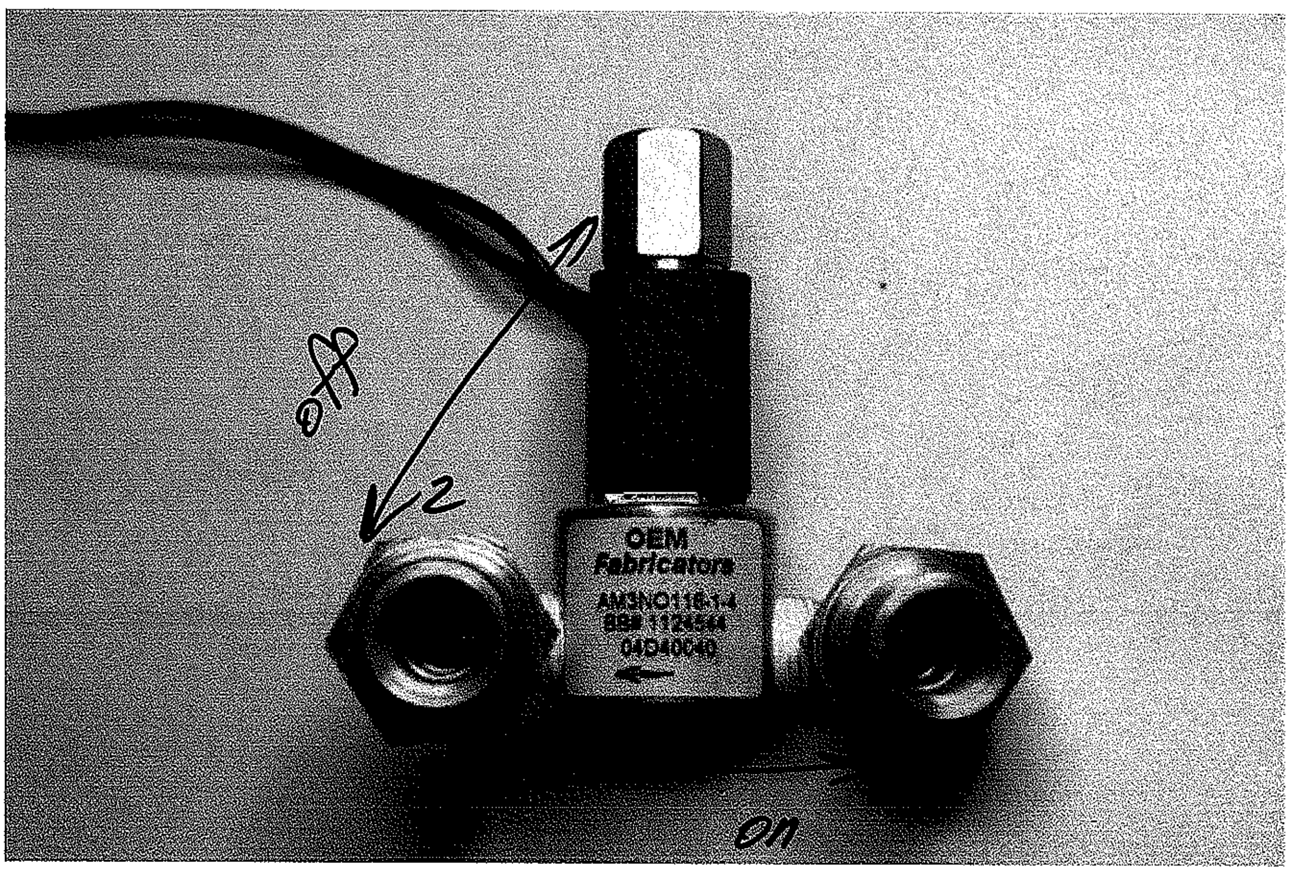
off
1
2
OEM
Fabricators
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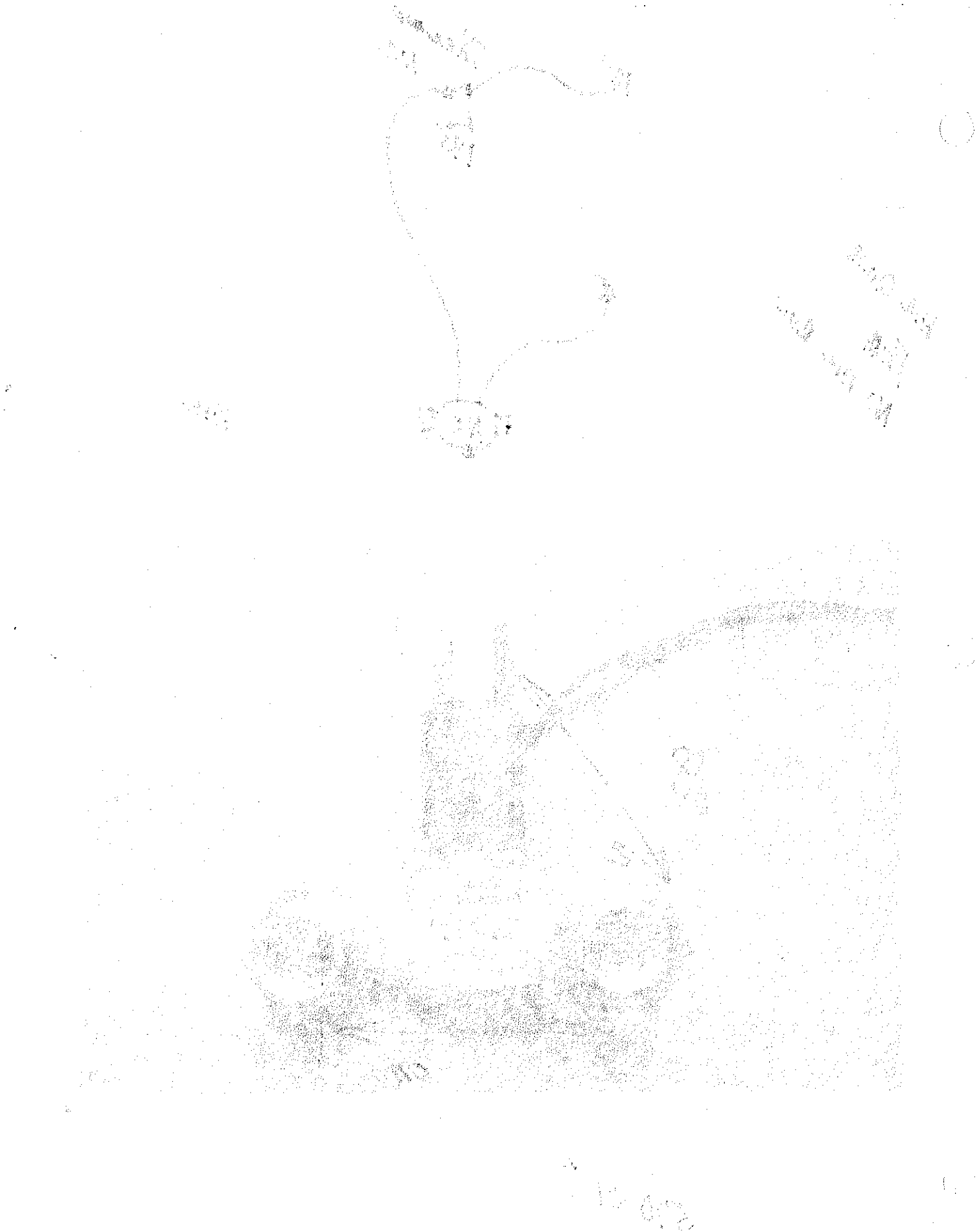
on

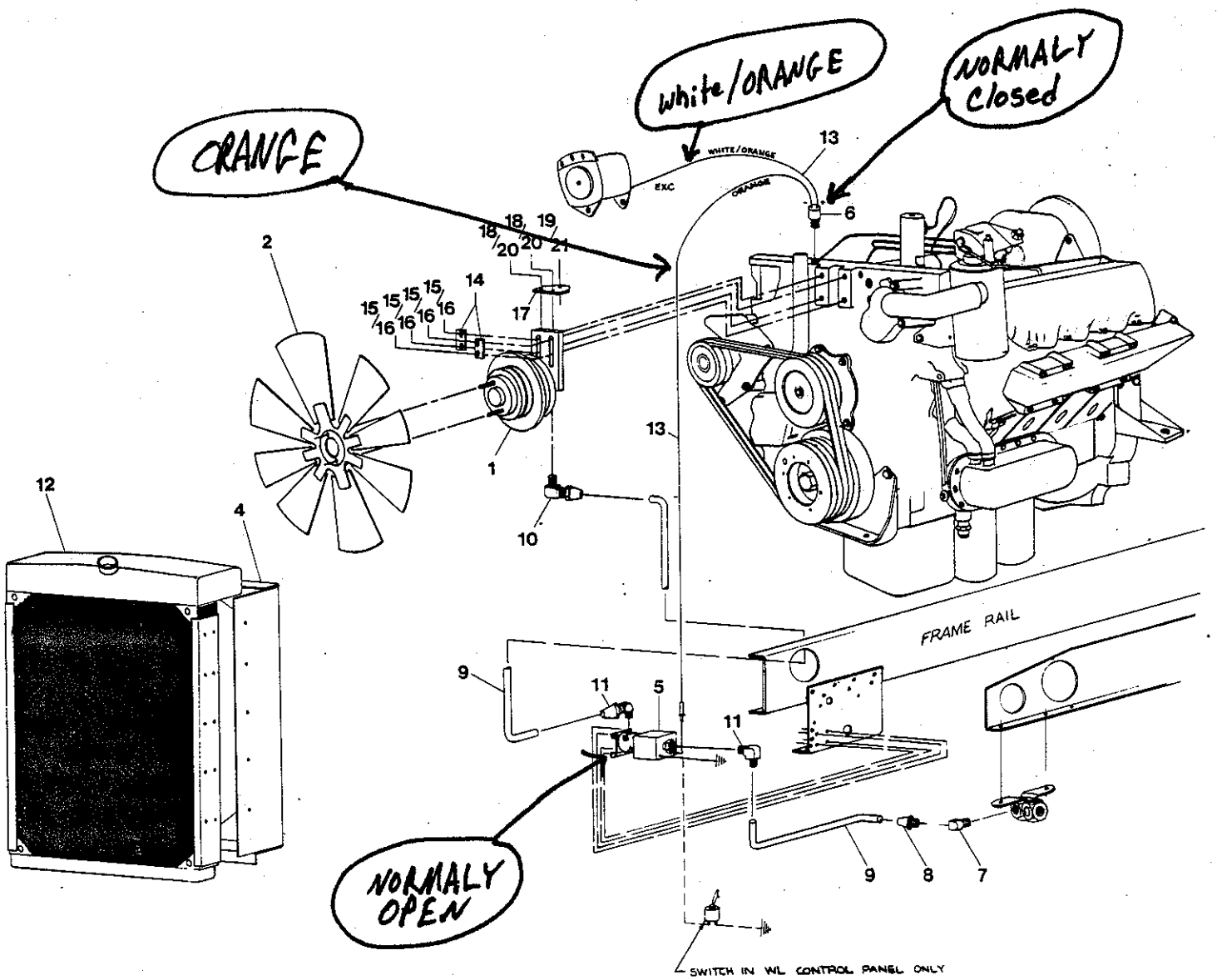
590-01



OPT. 4393
ENGINE FAN CLUTCH, AIR

DR. 10/14/85 BY J.E.T.
APP. 10-17-85 BY CCN
8004731

FRONT



AIR INTAKE, CAT. 300 HP

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1236645	COOLER, CHARGE AIR	
2	1244748	CROSSMEMBER ASSY., FRONT, SWINGOUT RAD 300 HP	
3	1249325	DUCT, AIR INTAKE, 300 HP WLFC	
4	1249309	STRAP ASSY., AIR INTAKE 300 H	
5	0969701	CLAMP HOSE, 2-7 INCH	8
6	1258607	HOSE, RUBBER, 6 ID X 4 1/2	5"
7	1258540	HOSE TURBO CHARGER 2 3/4 ID	5"
8	1258557	HOSE TURBO CHARGER 3 ID	
9	1258565	HOSE TURBO CHARGER 4 ID	8"
10	1258565	HOSE TURBO CHARGER 4 ID	8"
11	1258565	HOSE TURBO CHARGER 4 ID	7"
12	1258573	CLAMP, SPRING LOADED, 3 ID	4
13	1258581	CLAMP, SPRING LOADED, 3 1/4 ID	4
14	1258599	CLAMP, SPRING LOADED, 4 1/4 ID	8
15	1258615	AIR CLEANER, ECO II 9 3/4 X 24, 6" OUTLET	
16	1258623	CLAMPS, MOUNTING 9 3/4	2
17	1258631	ADAPTER, INLET 9 3/4 W/6 IN INLET	
18	1243484	BRACKET, MOUNTING, AIR CLEANER	
19	1235654	TUBE, AIR INTAKE TO TURBO 300 HP	
20	1235662	TUBE, AFTER COOLER TO MANIFOLD 300 HP	
21	1235670	TUBE, TURBO TO AFTER COOLER 300 HP	
22	1198159	DECAL, WARNING, SWING-OUT RADIATOR	
23	1249333	RUBBER, 1/4 X 1 3/4 X 12 1/2	
24	1249341	RUBBER, 1/4 X 1 3/4 X 19 1/2	
25	1238187	ANGLE 3/8 X 2 X 3 X 3 1/4 LONG	
26	1106822	INSOLATOR, 3/8, NEOPRENE	3
27	0801910	CAPSCREW, HEX, 3/8-16 X 2 GD. 8	3
28	0560748	WASHER, FLSY, 15/32 X 1 1/2 X 3/32 HDND P & O	3
29	0870915	WASHER, 3/4, PLAIN	3
30	0543934	NUT HEX, LG FLNG, CENTER LOCK	3
31	1139872	HOSE, FLEXIBLE, DUCT, 6"	12"
32	1258656	ELBOW, REWORKED, 3 1/2 ID X 45 DEG.	
33	1337476	TAB ASSY., AIR COOLER, MOUNTING	

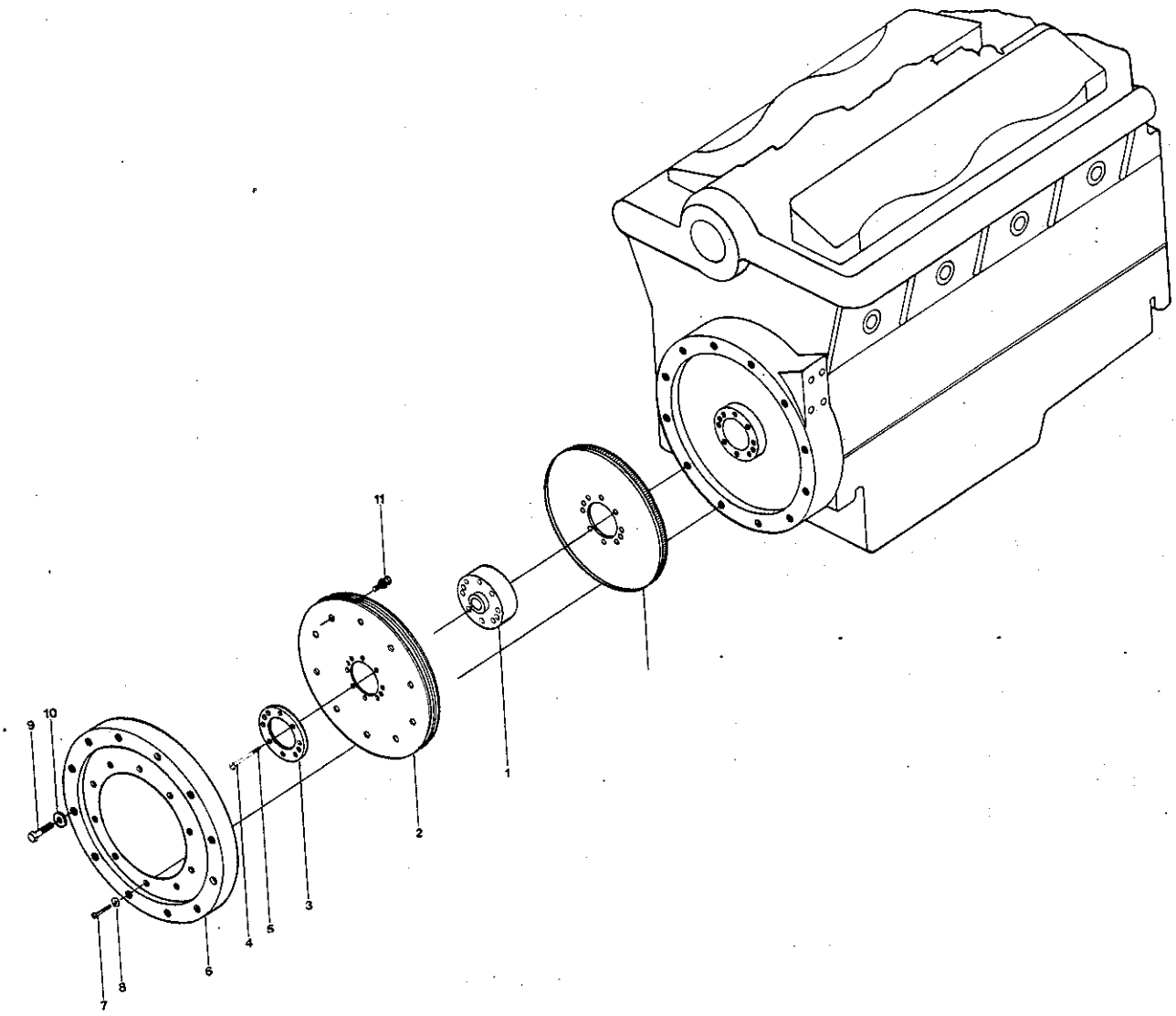
QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

OPT. 4393
ENGINE FAN CLUTCH, AIR

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1257732	FAN, CLUTCH, AIR, HORTON	
2	1255819	FAN ASSY., 25 1/4, 8 BLADE	
3	1167220	BELT SET, FAN DRIVE, (MATCHED)	
4	1164565	SHROUD, RADIATOR, 3208TA W/AIR FAN CLUTCH	
5	1164854	VALVE ASSY., SOLENOID, N.O., ALLENAIR	
6	1148998	SWITCH, TEMP, CONTROL, 195 DEGREE —	
7	2027233	ELBOW, 1/4 STREET PT	
8	2023224	CONNECTOR, 2/4 MPT X 1/4 TUBE	
9	0654962	TUBING, STRATOFLEX, BLACK, 1/4 O.D.	48"
10	2023786	ELBOW, 1/8 MPT X 1/4 TUBE	
12		SEE ENGINE COOLING	
13		NOT APPLICABLE	
14	1163484	PLATE, PULLEY ASSY.	2
15	0803213	BOLT, HEX 3/8-26 X 1 1/4, GD. 8	4
16	1107085	WASHER, FLAT, 13/31 X 13/16 X 3/32	
17	1297670	PLATE, ADJUSTING, PULLEY ASSY, FAN CLUTCH	
18	0854414	BOLT, 5/16-18 X 7/8	2
19	1248764	BOLT, 3/8-16 X 3 HEX, G5, FULL THREAD, CAD PLTD	
20	1167485	WASHER, FLAT, 11/32 X 5/8 X 1/16 HARD, P&O	2

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

MOUNTING ZF TRANSMISSION



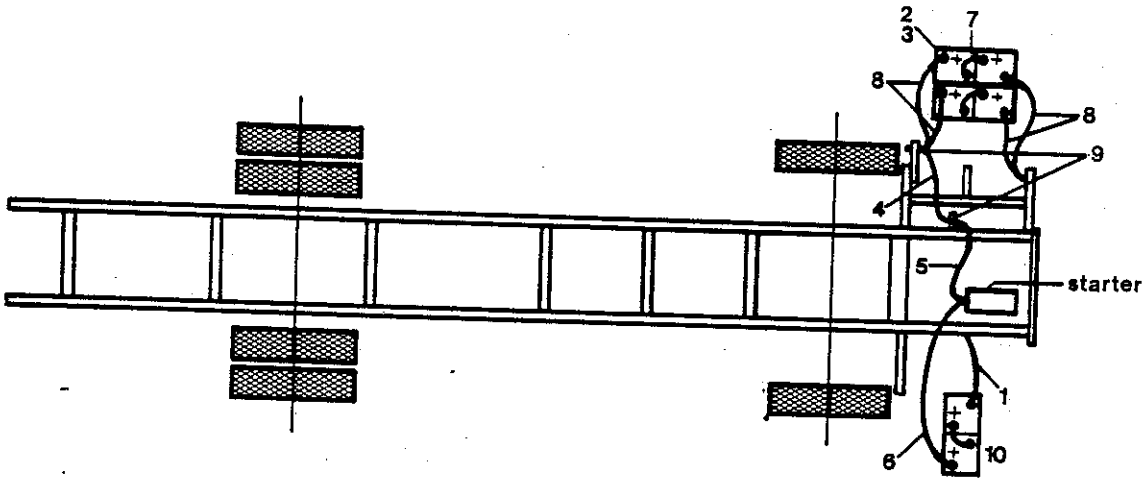
MOUNTING ZF TRANSMISSION

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1250422	FLANGE, FLEX DISC, TRANS, ZF	
2	1250414	DISC, FLEX TRANS, ZF	4
3	1250430	PLATE, SCUFF, FLEX DISC, ZF	
4	1252790	BOLT, HEX 7/16-20 X 3.25 GD. 8	10
5	0969816	SEALANT, LOCTITE, THREADLOCKER 27L ADHESIVE	AR
6	1250372	RING, ADAPTER SAE 1/2	
7	0870451	BOLT, HEX, 3/8-16 X 2 1/2 GD. 8 P&O	12
8	2028579	LOCKWASHER, 3/8 MED. SPRING P&O	12
9	1250380	BOLT, M10-1.5 X 40 ZF	12
10	1107085	WASHER, FLAT 13/32 X 13/16 X 3/32	12
11	1250398	BOLT, M12-1.5 X 22 W/WASHER ZF	10
NI	2153153	KIT, INTERNAL FILTER CHANGE 2F TRANS.	
NI	1314780	MODULE, TRANS. RELAY, ZF TRANS.	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

BATTERIES AND CABLES

FRONT	DR. 7-22-85 BY JLR APP. 7-22-85 BY DN	8004129



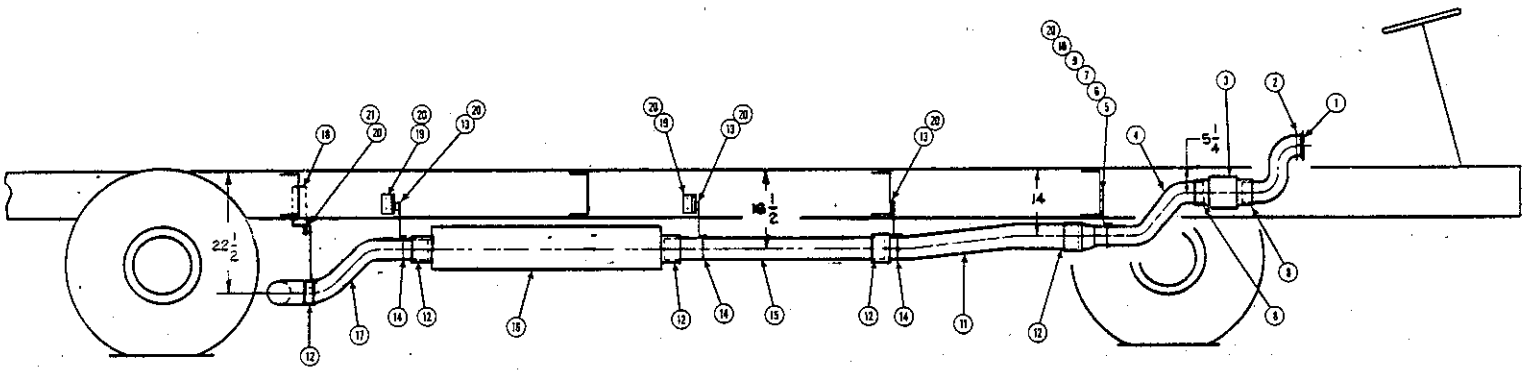
WLFC

BATTERIES AND CABLES

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1105436	CABLE, BATTERY (OPT. 5633 ONLY)	
2	1142173	ANGLE, BATTERY CLAMPING	
3	0621342	BATTERY	
4	1073139	CABLE, STARTER FRAME	
5	0815761	CABLE, STARTER	
6	1130665	CABLE, BATTERY (OPT. 5633 ONLY)	
7	0359109	CABLE, BATTERY	
8	1171727	CABLE, BATTERY POS/NEG	
9	0553131	TERMINAL, BATTERY	
10	1144161	ANGLE, BATTERY CLAMPING, 10 1/4" (OPT. 5633 ONLY)	2
		(ELECTRICAL COMPONENTS)	
	0521781	RELAY, HORN	
	0553131	JUNCTION, BATTERY CABLE	
	1049139	CABLE ASSY., ALTERNATOR HOT TO INSL STUD	
	1069202	CABLE ASSY., BATTERY CHARGER POSITIVE	
	1081652	CABLE ASSY., SHUNT TO BATTERY SWITCH	
	1210970	TERMINAL BLOCK, ELECTRICAL, 13 STUD	
	1231265	CABLE ASSY., AMMETER SHUNT TO U/BLOCK	
	1314335	HARNESS, WIRING, ENGINE	
	1314780	MODULE, TRANS RELAY, ZF	
	1259480	MODULE, DIRECTIONAL CONTROL	
	1324532	HARNESS, MASTER WIRING, CHASSIS	
	1302827	HARNESS, WIRING, CHASSIS, 300 HP	
	1289909	HORN ASSY., HIGH NOTE	
	1289917	HORN ASSY., LOW NOTE	
	2006112	BREAKER, CIRCUIT, 20 AMP	6
	2025146	HORN, LOW NOTE	
	2025153	HORN, HIGH NOTE	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

EXHAUST SYSTEM
CAT. 3208TA
35' REAR BATH



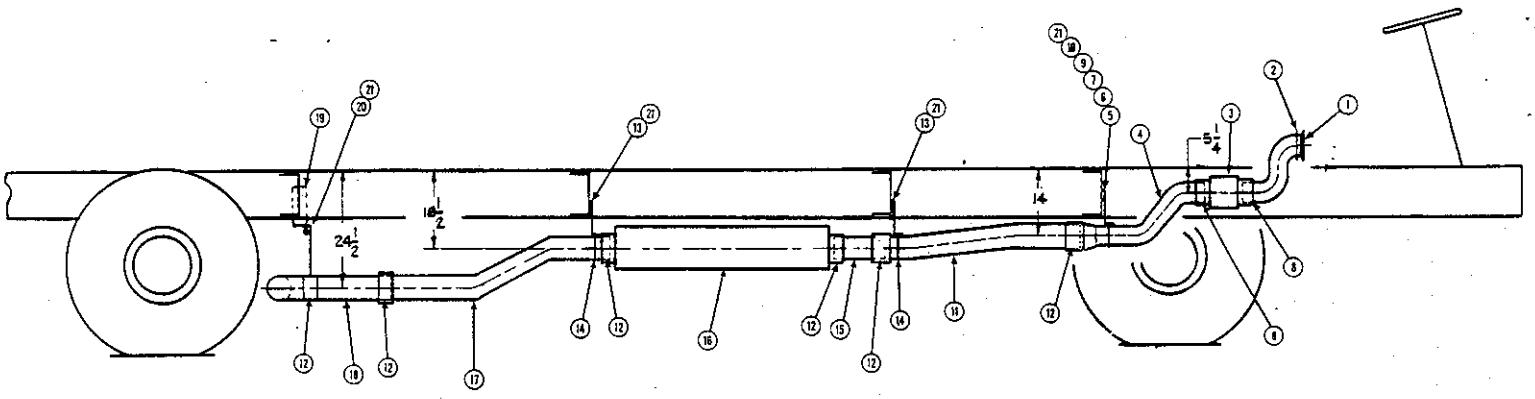
EXHAUST SYSTEM
CAT. 3208TA
35' REAR BATH

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1239508	PIPE, EXHAUST, ENGINE	
2	1250646	CLAMP, TURBO EXHAUST, 4"	
3	1124767	CONNECTOR, FLEXIBLE, EXHAUST, 4"	
4	1239516	PIPE, EXHAUST, FRONT	
5	0867549	BRACKET, FRONT EXHAUST	
6	0815621	U-BOLT, 4" EXHAUST PIPE	
7	0819359	CLAMP, SADDLE, 4" EXHAUST PIPE	
8	1005552	CLAMP, EXHAUST, WIDE BAND, 4"	2
9	2001451	NUT, HEX, 3/8-16	2
10	2028579	LOCKWASHER, 3/8"	2
11	1239524	PIPE, CROSSOVER	
12	1250851	CLAMP, EXHAUST, WIDE BAND	
13	1250687	BRACKET FINAL ASSY., REAR EXHAUST SUPPORT	2
14	0993915	CLAMP, EXHAUST PIPE, 5"	2
15	2148963	STRAIGHT PIPE 10" LENGTH, 210 W/REAR BATH	
16	1250844	MUFFLER, 5"	
17	1239557	TAILPIPE, 177, 192 X 210 W/REAR BATH	
18	1252154	BRACKET, TAILPIPE HANGER	
19	1252162	ANGLE, MUFFLER HANGER	
20	2001428	NUT, HEX, 5/16-24	
21	1250661	BRACKET FINAL ASSY., TAILPIPE EXH. SUPPORT	
NI	1242403	BLANKET, EXHAUST PIPE ENGINE	
NI	1242403	BLANKET, EXHAUST PIPE ENGINE	
NI	1242411	BLANKET, EXHAUST PIPE, FRONT	
NI	1255777	BLANKET, FLEX EXHAUST PIPE	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

EXHAUST SYSTEM
35' SIDE BATH

DR.	BY	1251487
APP.	BY	



EXHAUST SYSTEM
35' SIDE BATH

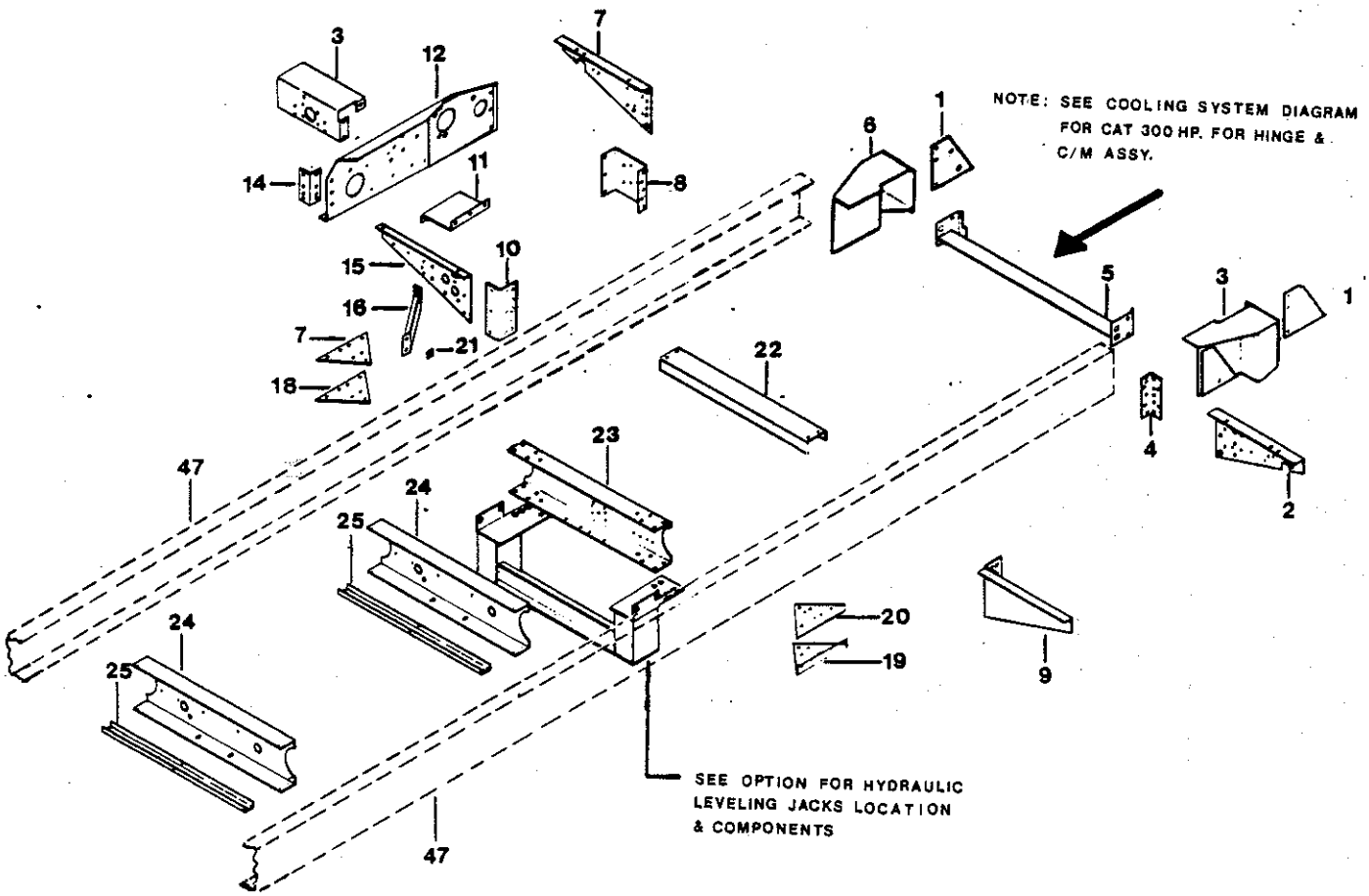
KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1239508	PIPE, EXHAUST, ENGINE	
2	1250646	CLAMP, TURBO EXHAUST, 4"	
3	1124767	CONNECTOR, FLEXIBLE, EXHAUST, 4"	
4	1239516	PIPE, EXHAUST, FRONT	
5	0867549	BRACKET, FRONT EXHAUST	
6	0815621	U-BOLT, 4" EXHAUST PIPE	
7	0819359	CLAMP, SADDLE, 4" EXHAUST PIPE	
8	1005552	CLAMP, EXHAUST, WIDE BAND, 4"	2
9	2001451	NUT, HEX, 3/8-16	2
10	2028579	LOCKWASHER, 3/8"	2
11	1239524	PIPE, CROSSOVER	
12	1250851	CLAMP, EXHAUST WIDE BAND	
13	1250687	BRACKET FINAL ASSY, REAR EXHAUST SUPPORT	2
14	0993915	CLAMP, EXHAUST PIPE, 5"	2
15	2148971	PIPE, EXHAUST, 5" X 49"	
16	1250844	MUFFLER, 5"	
17	1239532	EXHAUST PIPE, REAR	
18	1239540	TAILPIPE	
19	1250653	BRACKET, TAILPIPE HANGER	
20	1250661	BRACKET, FINAL ASSY., TAILPIPE EXHAUST SUPPORT	
21	2001428	NUT, HEX, 5/16-24	8
NI	1242403	BLANKET, EXHAUST PIPE ENGINE	
NI	1242411	BLANKET, EXHAUST PIPE FRONT	
NI	1255777	BRACKET, FLEX EXHAUST PIPE	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

FRAME
FRONT SECTION

DR. 12-12-85 BY GJJ
APP. 12-12-85 BY
1252808

FRONT



FRAME
FRONT SECTION

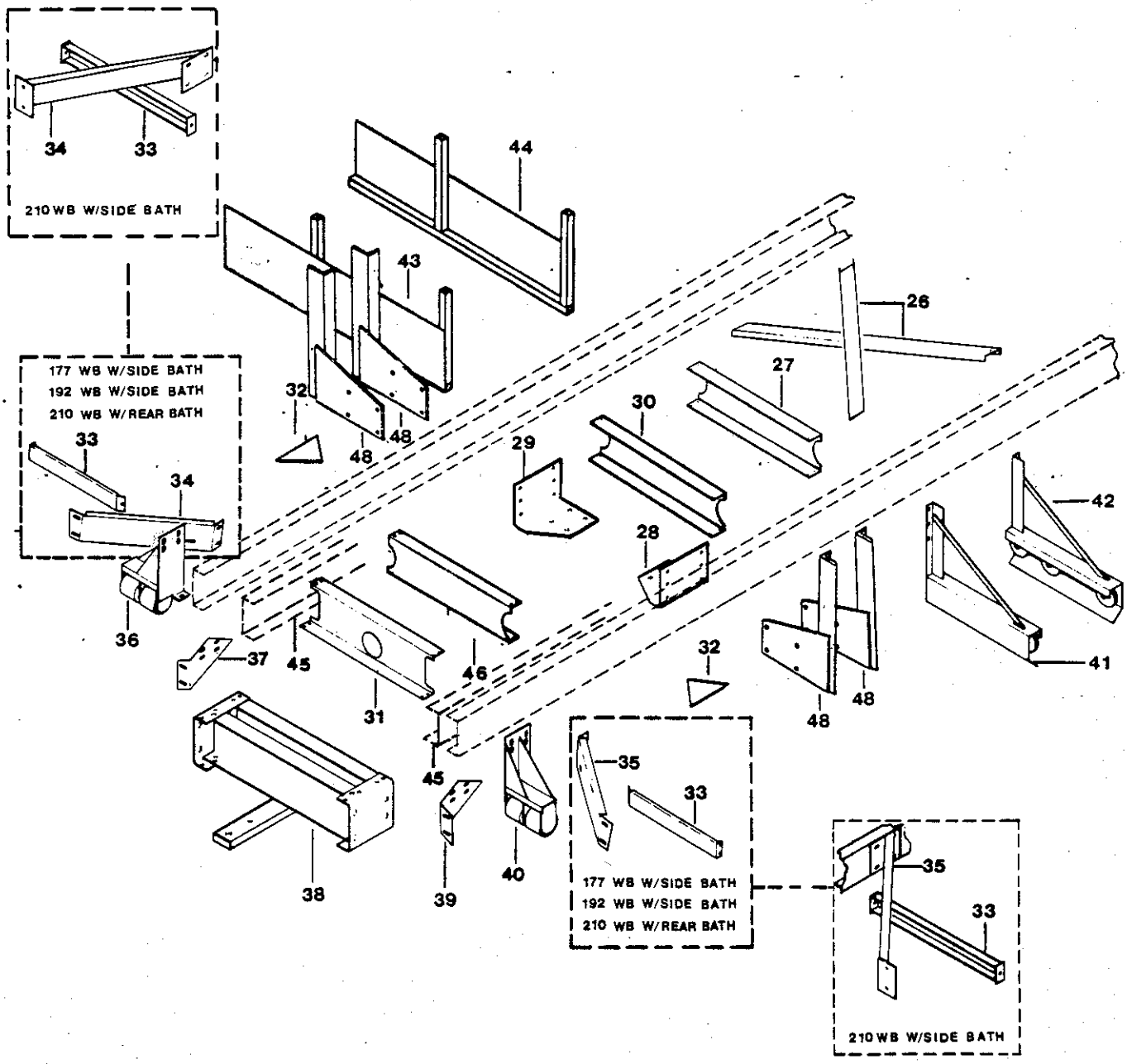
KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1244623	BRACE, TOW HOOK, RH, FRONT BUMPER	2
2	0984674	OUTRIGGER, FRONT, RH	
3	1244664	BRACKET ASSY, FRONT BUMPER RH	
4	1021773	ANGLE, FRONT OUTRIGGER	
5	1255108	BRACE ASSY, FRONT BUMPER BRACKET	
6	1254853	BRACKET ASSY, FRONT BUMPER LH	
7	0996520	OUTRIGGER, FRONT LH	
8	0995225	BRACKET, FRONT OUTRIGGER & STEERING GEAR BRKT.	
9	1255603	OUTRIGGER ASSY,REAR RH	
10	1249101	ANGLE, OUTRIGGER	
11	0995357	BRACKET, SUPPORT STEERING GEAR BRACKET ROSS	
12	0995654	BRACKET ASSY,MOUNTING S/GR ROSS	
13	0996272	BRACKET, BRAKE & CLUTCH S/GR ROSS	
14	0995316	ANGLE, STEERING GEAR BRKT. MOUNT BAR ROSS	
15	0996546	OUTRIGGER, REAR LH	
16	0998492	BRACE ASSY, OUTRIGGER TO FRAME	
17	0961664	GUSSET, FRONT SUSPENSION, RR C/M LH	
18	1039866	GUSSET, FRT SUSP, RR, LOWER LH	
19	0961722	GUSSET, FRT. SUSPENSION RR/C/M, RH UPPER	
20	1105717	GUSSET, FRT. SUSPENSION RR/C/M RH LOWER	
21	0998526	SPACER, OUTRIGGER TO FRAME BRACE ASSY	
22	1276674	CROSSMEMBER, HORIZONTAL	
23	1109545	CROSSMEMBER, FRONT SUSP, RR	
24	1308873	CROSSMEMBER, MIDSHIP, BEARING	2
NI	3841681	BUMPER, FRONT	
25	0418756	SUPPORT, PROPELLER SHAFT	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

FRAME
REAR SECTION

DR. 12-12-85 BY G.J.J.
APP. 12-12-85 BY
1252808

FRONT



KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
25	0418756	SUPPORT, PROPELLER SHIFT GUARD	2
26	0102467	BRACE, CROSS, CHASSIS FRAME	2
27	0977157	CROSSMEMBER, REAR SUSP, FRONT	
28	0977165	GUSSET, REAR SUSPENSION FRT C/M RH	
29	0977173	GUSSET, REAR SUSPENSION FRT C/M LH	
30	1095397	CROSSMEMBER REAR SUSPENSION, RR	
31	1088277	CROSSMEMBER REAR, 275 GAL., FUEL TANK	
32	1095413	GUSSET, RR SUSPENSION RR	2
33	1246271	BRACE ASSY, HORIZONTAL, REAR BUMPER MODEL 3411, SIDE BATH (210 WB)	2
NI	3763307	BUMPER, REAR	
33	1078203	BRACE, BUMPER END REAR MODEL 3411, REAR BATH (210 WB)	2
34	1248756	BRACE ASSY, REAR BUMPER, LH MODEL 3411, SIDE BATH (210 WB)	
34	1078195	BRACE, REAR BUMPER, CORNER, LH MODEL 3411, REAR BATH (210 WB)	
35	1248749	BRACE ASSY, REAR BUMPER RH MODEL 3411, REAR BATH (210 WB)	
35	1078187	BRACE, REAR BUMPER, CORNER, RH MODEL 3411, REAR BATH (210 WB)	
36	3770948	BRACKET ASSY, SKID ROLLER LH, SIDE BATH 210 WB, MODEL 3411	
36	3770930	BRACKET ASSY, SKID ROLLER, REAR BATH, LH 210 WB, MODEL 3411, REAR BATH	
37	1076009	BRACKET, BUMPER, REAR, LH	
38	1085323	TRAILER HITCH ASSY, LH	
39	1075993	BRACKET, BUMPER, REAR, RH	
40	3770880	BRACKET ASSY, SKID ROLLER, RH 210 WB, MODEL 3411, SIDE BATH	
40	3770872	BRACKET ASSY, SKID ROLLER, REAR BATH, RH 210 WB, MODEL 3411, SIDE BATH	
41		NOT APPLICABLE	
41	3774379	BRACKET ASSY, REAR MTG, 12.5 KOHLER GENERATOR	
42	2252658	BRACKET ASSY, FRT, 7.5 GEN 33 FT	
42		NOT APPLICABLE	
43	3835584	BRACKET ASSY, GEN. SUPPORT, REAR, 300 HP	
44	3835576	BRACKET ASSY, GEN. SUPPORT, FRONT, 300 HP	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

FRAME
REAR SECTION

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
45		INSERT, FRAME RAIL	
	1147636	MODEL, 3411, REAR BATH (210 WB) W/OPT. 5783	
	1250273	MODEL, 3411, REAR BATH (210 WB) STD	2
46	1245018	CROSSMEMBER, SUPPORT 90 GALLON FUEL TANK W/INSERT MODEL, 3411, REAR BATH (210 WB)	
47		FRAME RAIL 210 WB, MODEL 3411	2
NI	3839560	SUPPORT ASSY, LEVELING JACK, NON-KICKDOWN, MODEL 3411, SIDE BATH	4

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

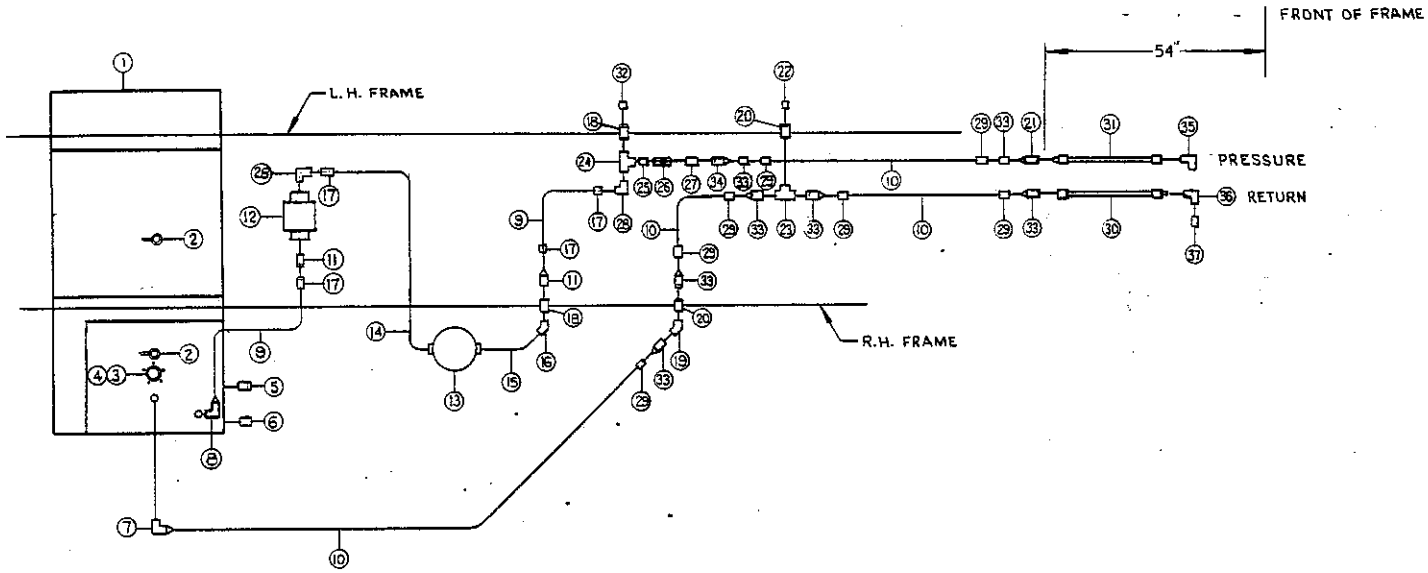
FUEL SYSTEM
35' W/REAR BATH

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
	0890145	INDICATOR, FUEL TANK	
	1025899	RELAY, RACOR FUEL FILTER	
	1029594	PUMP, FUEL, ELECTRIC, 3208	
	1078617	INDICATOR, FUEL TANK, LEVEL	
	1218551	SENDER, FUEL TANK, 235/275/300 GAL. AC.	
	1237072	VENT, FUEL TANK	2
	1248954	HOSE ASSY.	
	2027381	TUBING, COPPER, 3/8	31'
	2027399	TUBING, COPPER, 1/2	13'
	2270726	CAP, FUEL TANK, NON-VENTED, 2 1/2 THD.	
	3830486	TANK ASSY., FUEL, 225 GAL	
	2225431	COCK, RESERVOIR, DRAIN	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

FUEL LINES, 35', SIDE BATH

DR.	BY	1290188
APP.	BY	



FUEL LINES, 35', SIDE BATH

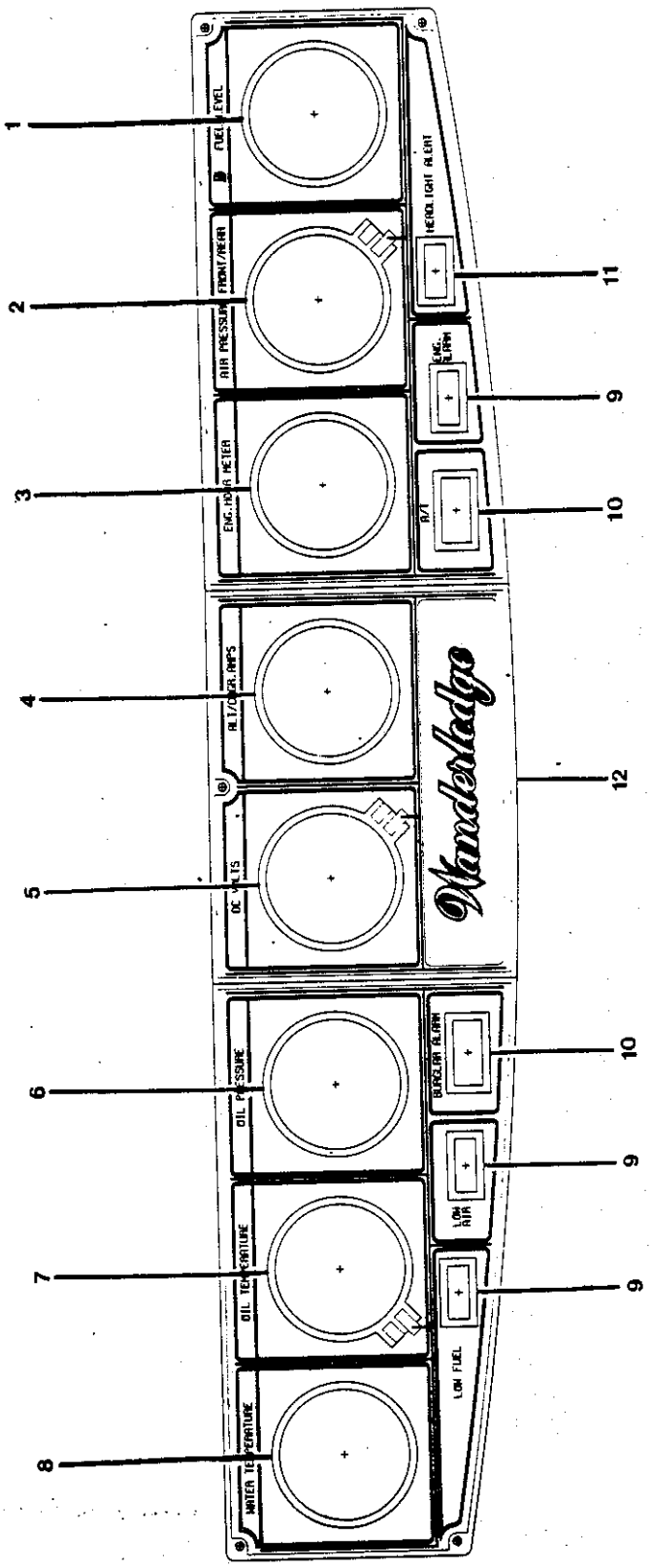
KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	3828571	TANK ASSY, FUEL, 230 GALLON	
2	1237072	VENT, FUEL TANK	2
3	1218551	SENDER, FUEL TANK	
4	2025815	GASKET, FUEL TANK SENDER	
5	1078617	INDICATOR, FUEL TANK LEVEL	
6	0890145	INDICATOR, FUEL TANK	
7	2023190	ELBOW, 1/4 MPT X 3/8 TUBE	
8	2023349	ELBOW, 1/2 MPT X 1/2 TUBE	
9	2027399	TUBING, 1/2 COPPER	
10	2027381	TUBING, COPPER, 3/8 IN (SPECIFY LENGTH)	
11	2023307	CONNECTOR 1/2 FLARE X 3/8 MPT, 48 X 8	2
12	1029594	PUMP, FUEL, ELECTRIC	
13	2249472	FUEL FILTER	
NI	3844438	BRACKET, FUEL FILTER	
NI	3750403	ELBOW, FUEL FILTER	
*14	3738952	HOSE ASSY	
*15	1359025	HOSE ASSY	
NI	3738960	COUPLING, HOSE END FEMALE	
NI	3738978	COUPLING, HOSE END MALE	
16	2027241	ELBOW, BRASS, 45 DEGREE STREET	
17	2027084	NUT, 1/2 FLARE, 1110 X 8	3
18	0758698	COUPLING, ANCHOR	2
19	2027209	ELBOW, 1/4, STREET, 45 DEG .	
20	2023232	COUPLING, ANCHOR	2
21	2023364	CONNECTOR 3/8 FLARE X 1/4 MPT	
22	2027100	PLUG, PIPE 1/4	
23	0559047	TEE, MALE BRANCH, 1/4 PIPE	
24	1010065	TEE, STREET, 3/8 PIPE	
25	2027191	NIPPLE, 3/8 CLOSE PIPE	
26	0877597	VALVE, CHECK	
27	1002898	COUPLING, 3/8 X 3/8 PIPE	
28	2023240	ELBOW 1/2 FLARE X 3/8 MPT, 49 X 8	
29	2023257	NUT 3/8 FLARE	
30	1024876	HOSE ASSY, FUEL, 1/4 - 26	
31	1248954	HOSE ASSY	
32	2009595	PLUG, PIPE, 3/8	
NI	2225431	COCK, RESERVOIR, DRAIN	
33	0928853	CONNECTOR 1/4 PIPE X 3/8	7
34	2027134	BUSHING 3/8 X 1/4	
35	1290717	ELBOW, 90 DEG.	
36	2008241	ELBOW MALE 1/4 TUBE X 1/8 TUBE	
37	2008050	BUSHING 1/8 FPT	
		* SPECIFY LENGTH IN FEET	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

PANEL ASSY., DASH, UPPER

	DR. 8-28-86 BY JB	8006330
	APP. BY	

FRONT



PANEL ASSY., DASH, UPPER

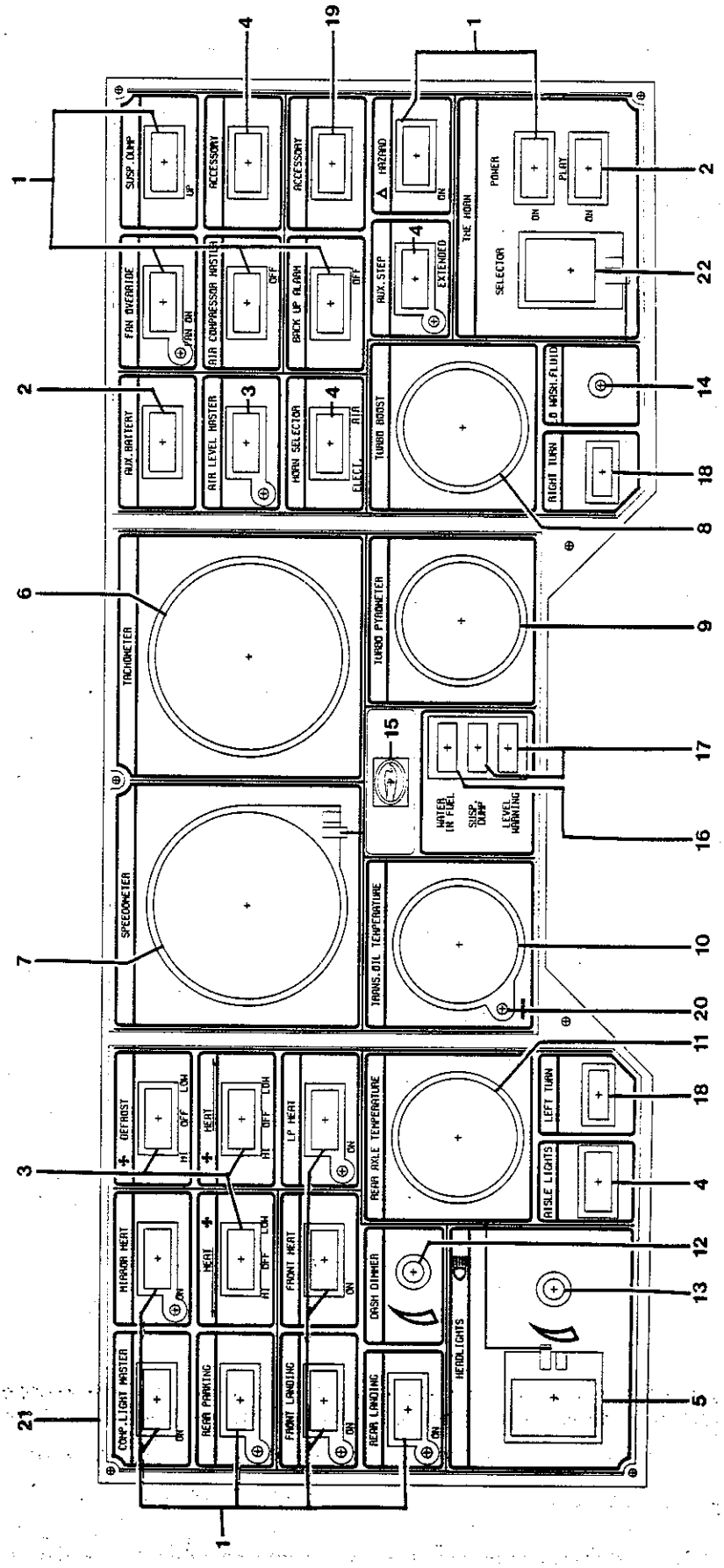
KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1077676	GAUGE, FUEL LEVEL	
NI	1218551	SENDER, FUEL LEVEL	
2	3810389	GAUGE, AIR PRESSURE, DUAL FRONT/REAR	
3	3746112	GAUGE, HOURMETER	
4	3847381	GAUGE, AMPERE, 0-300 ADC	
NI	0804294	SHUNT, AMP GAUGE	
5	3746120	GAUGE, VOLTMETER	
6	3795481	GAUGE, OIL PRESSURE, ELECTRIC	
NI	1078799	SENDER, ENGINE OIL PRESSURE	
7	3768496	GAUGE, ENGINE OIL TEMP.	
NI	1078799	SENDER, OIL TEMP.	
8	1078823	GAUGE, WATER TEMP, D/SCALE, GAS ENGINE	
NI	1078781	SENDER, WATER TEMP.	
9	2271807	LIGHT, PILOT RED, LEVELING JACK	3
10	2268522	SWITCH, CHICAGO, DASH	2
11	2271823	LIGHT, INDICATOR, BLUE	
12	3867314	PANEL ONLY, DASH, UPPER	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

PANEL ASSY., DASH LOWER

DR. 8-25-86 BY JB	8006363
APP. BY	

FRONT



PANEL ASSY., DASH LOWER

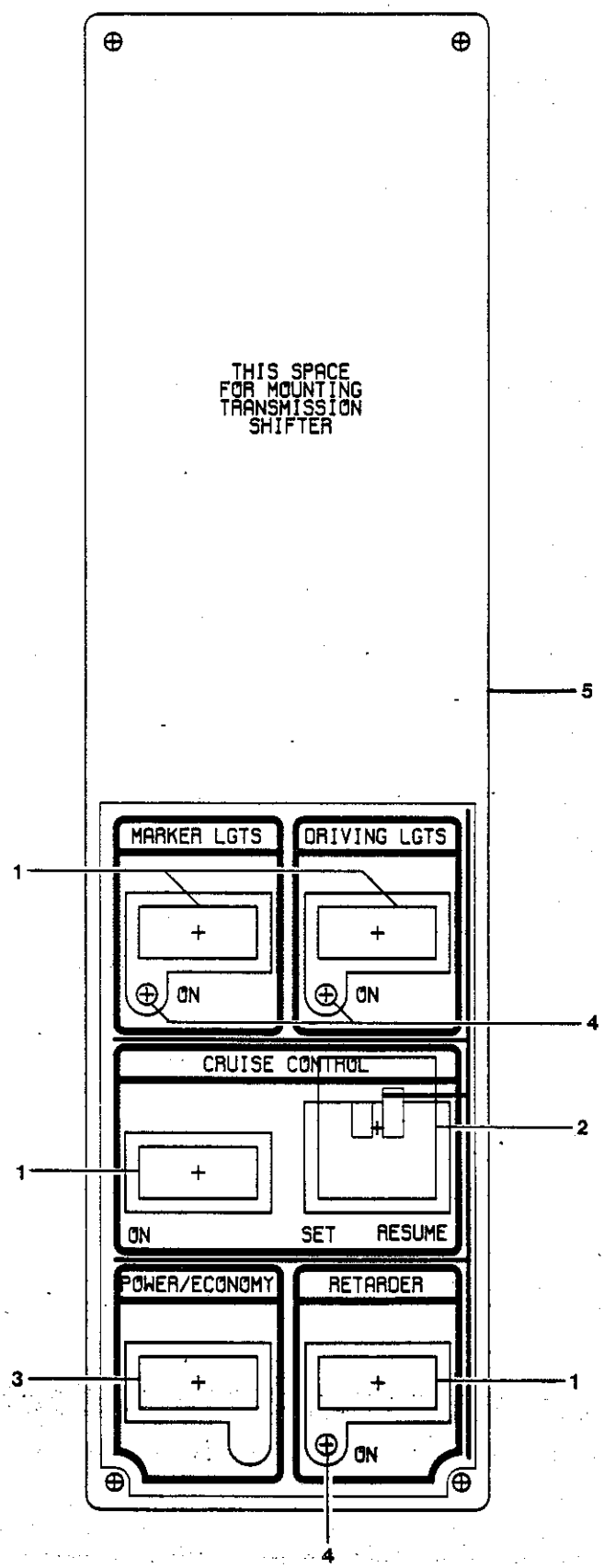
KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	2268522	SWITCH, CHICAGO DASH, ON-OFF	13
2	2268555	SWITCH, CHICAGO DASH, MOM ON	2
3	2268548	SWITCH, CHICAGO DASH, ON-OFF-ON	4
4	2268530	SWITCH, CHICAGO DASH, ON-ON	4
5	3839040	SWITCH, HEADLIGHT	
6	3765062	TACHOMETER	
NI	0910216	SENDER, TACH	
7	3765096	SPEEDOMETER, TELEFLEX, ELECTRIC	
NI	0932475	SENSOR, ELECTRIC SPEED	
8	3765039	GAUGE, TURBO BOOST DASH	
9	3760923	GAUGE, PYROMETER	
10	1250471	GAUGE, OIL TEMP, ZF TRANS	
NI	1250455	SENDER, OIL TEMP., TRANS.	
11	3768496	GAUGE, ENGINE OIL TEMP	
12	3761632	RHEOSTAT	
13	3851920	RHEOSTAT	
14	3851904	LIGHT ASSY., P, BLUE	9
15	3843877	LIGHT, INDICATOR, HIGH BEAM, DASH	
16	2271815	LIGHT, INDICATOR, AMBER	
17	2271807	LIGHT, PILOT, RED, LEVELING JACK	2
18	2271955	LIGHT, GREEN, RECTANGLE, DIRECTIONAL	2
19	3876695	WIPER DELAY	
20	3851912	LIGHT ASSY., P, RED	
21	3867264	PANEL ONLY, SASH, LOWER	
22	3737160	SWITCH SELECTOR	
NI	2271484	LIGHT, INDICATOR, BLUE	
NI	3826914	LIGHT, INDICATOR, RED	
NI	0770339	SWITCH, IGNITION	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

PANEL, DASH, SHIFTER

DR. 8-28-86 BY LB
APP. BY
8C0632Z

FRONT



PANEL, DASH, SHIFTER

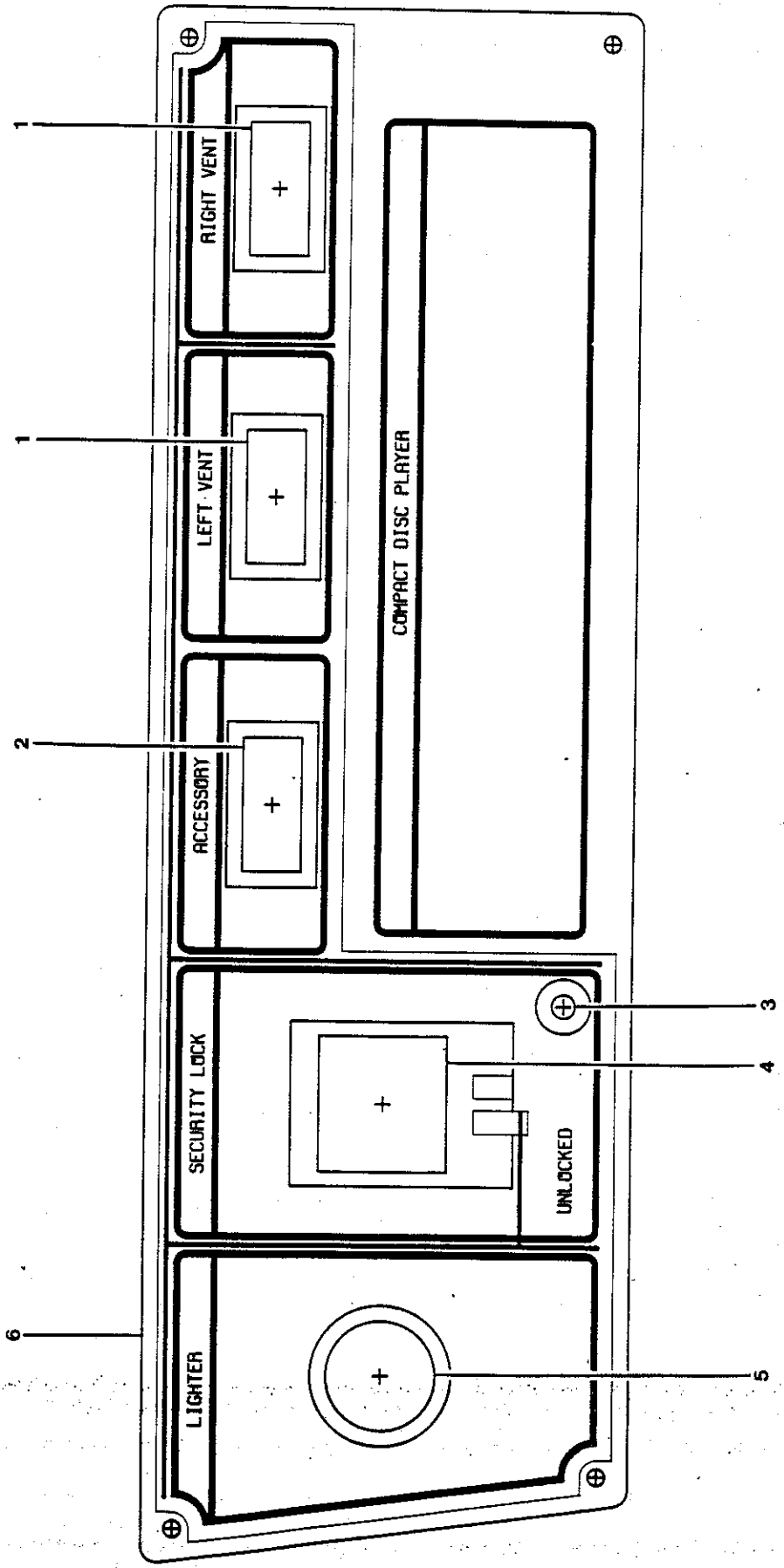
KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	2268522	SWITCH, CHICAGO DASH	4
2	2268563	SWITCH, CHICAGO DASH	
3	2268530	SWITCH, CHICAGO DASH, ON-ON	
4	3851904	LIGHT ASSY., P, BLUE	3
5	3867306	PANEL ONLY, DASH, SHIFTER	
NI	1250448	CONTROL, SHIFTER, PUSH-BUTTON	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

PANEL, DASH, RH, UPPER

	DR. 9-2-86 BY JB	8006405
	APP. BY	

FRONT



PANEL, DASH, RH, UPPER

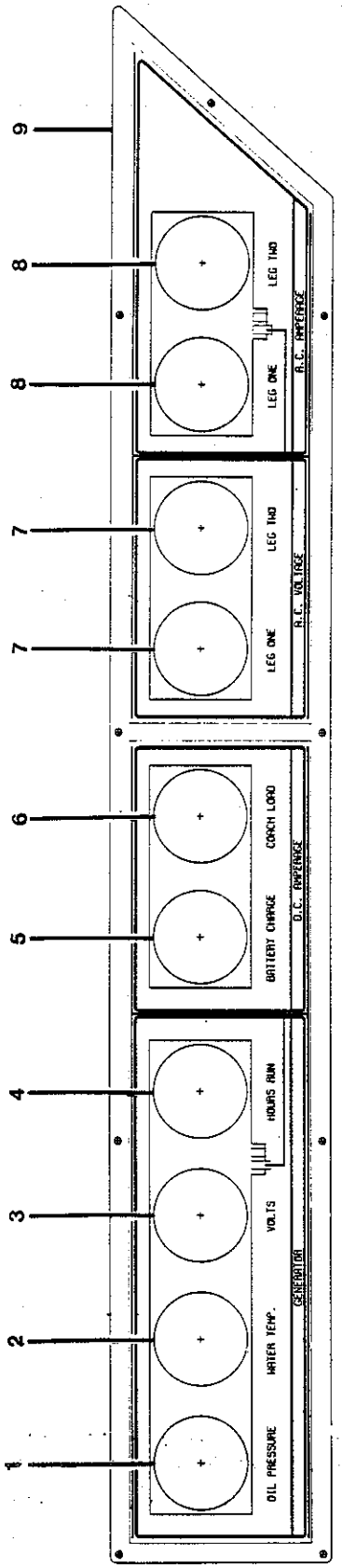
KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	2268522	SWITCH, CHICAGO DASH	2
2	2274165	SWITCH, BLANK, CHICAGO	
3	3851904	LIGHT ASSY., P. BLUE	
4	2268530	SWITCH, CHICAGO, DASH, ON-ON	
5	2018406	LIGHTER, CIGARETTE	
6	3867298	PANEL, ASSY., DASH, RH UPPER	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

PANEL, DASH, OVERHEAD AUXILIARY, RH

DR. 8-27-86 BY LB	8006348
APP. BY	

FRONT



PANEL, DASH, OVERHEAD AUXILIARY, RH

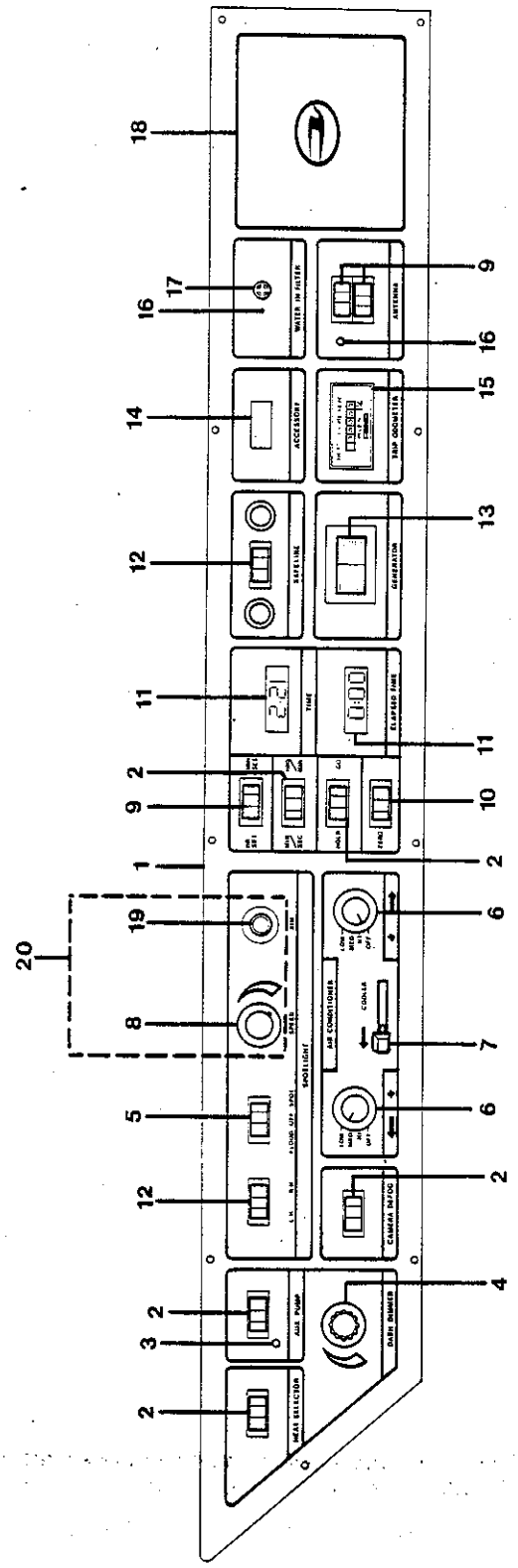
KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	3795481	GAUGE, OIL PRESSURE, ELECTRIC	
NI	3811254	SENDER, OIL PRESSURE	
2	1078823	GAUGE, WATER TEMP, D/SCALE, GAS ENGINE A-C	
NI	3811221	SENDER, WATER TEMP	
3	3746120	GAUGE, VOLTMETER	
4	3746112	GAUGE, HOURMETER	
5	3847357	GAUGE, AMPERE, 150-0-150 ADC	
6	3847381	GAUGE, AMPERE, 3-300 ADC	
7	3847373	GAUGE, VOLT, 60-140 VAC	2
8	3847365	GAUGE, AMPERE, 0-50 AAC	2
9	3863685	PANEL ONLY, DASH, OVERHEAD AUXILIARY, RH	
NI	3811254	SENDER, OIL PRESSURE	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

	DR. 7-30-85 BY DBW	8004327
	APP. BY	

FRONT

INSTRUMENTS
LEFT HAND, OVERHEAD



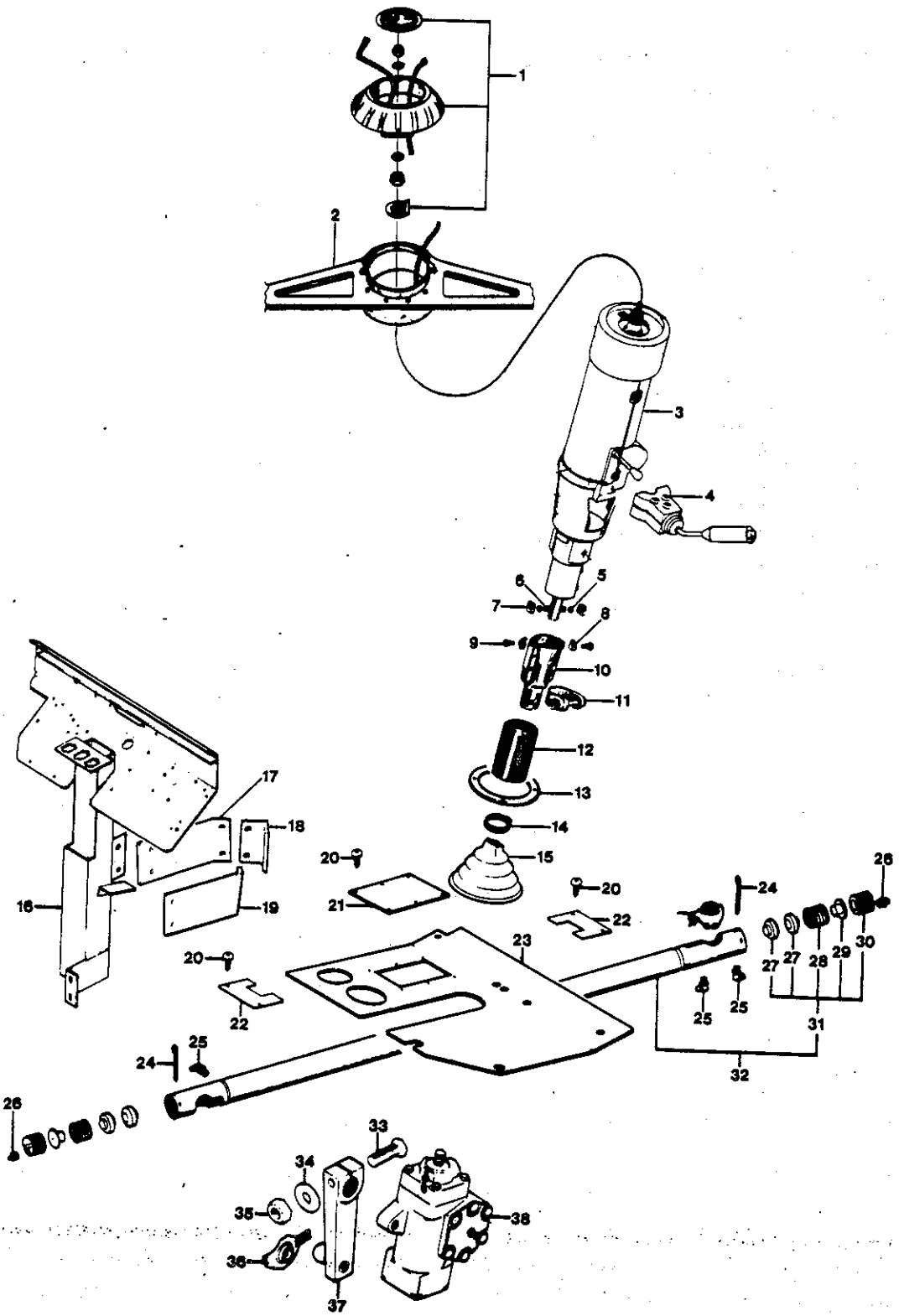
INSTRUMENTS
LEFT HAND, OVERHEAD

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	3760964	DECAL ONLY	
2	2268522	SWITCH, ON/OFF	
3	2271484	LIGHT	
4	3761632	SWITCH, RHEOSTAT	
5	2268548	SWITCH, ON/OFF/ON	
6	3856721	SWITCH, AC	
NI	3758521	KNOB, AC	
7	3767613	THERMOSTAT	
NI	3767621	KNOB, THERMOSTAT	
8	2105476	SWITCH, SPEED CONTROL, SPOTLIGHT	
9	2268563	SWITCH, MOMENTARY ON/ON	
10	2268555	SWITCH, MOMENTARY ON	
11	2272383	CLOCK	
12	2268530	SWITCH, ON/ON	
13	3805306	SWITCH, GEN.	
NI	3804846	BEZEL	
14	2274165	BLANK	
15	3765021	GAUGE, TRIP ODOMETER	
16	2271484	LIGHT	
17	3743929	ALARM, WATER FILTER	
18	2249209	ALTIMETER, DASH MOUNTED	
19	2105351	SWITCH, ROTATING SPOTLIGHT	
20	3756012	SWITCH ASSY., SPOTLIGHT	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

STEERING INSTALLATION

FRONT	DR. 4-2-86 BY SHC APP. 8/27/86 BY DF	8006108



STEERING INSTALLATION

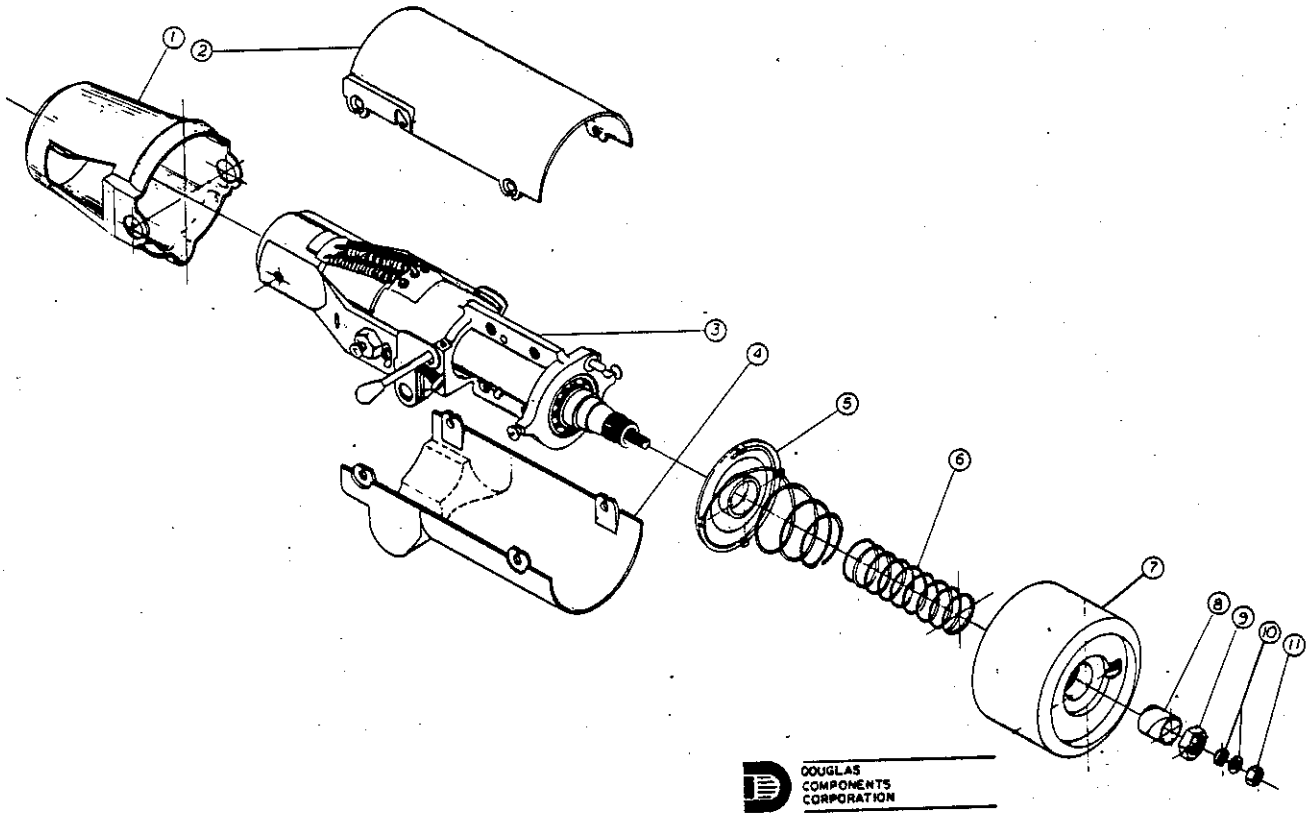
KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	3841335	KNOB, LOCKING, TILT & TELESCOPING STEERING COLUMN	
NI	3841350	STOP, LOCK, TILT & TELESCOPING STEERING COLUMN	
2	3882453	RFD STEERING WHEEL ASSY.	
3	1330836	COLUMN ASSY., TILT & TELESCOPING, DOUGLAS A933A	
4	1287606	SWITCH ASSY., TURN SIGNAL, SELF CANCELING	
5	1254986	WASHER, WHEELSHAFT, WAVE	2
6	1255140	PIN, STEERING SHAFT, LOWER	
7	1254994	BUTTON, WHEEL SHAFT SLIDE	2
8	1255009	WASHER, TONGUED COUPLING SHELL	2
9	1255017	CAPSCREW, COUPLING SHELL	2
10	1255025	COUPLING SHELL, STEERING SHELL	
11	1255041	CLAMP ASSY., STEERING CLAMP SHELL	
12	1255033	RUBBER SHIELD, STEERING SHAFT, LOWER	
13	2003473	RETAINER, GEAR SHIFT LEVER BOOT	
14	1290972	CLAMP, STEERING COLUMN BOOT, 2.37, OETIKER NO. 605	
15	1300581	BOOT, RUBBER GEAR SHIFT & STEERING COLUMN	
16	1333343	POST, FINAL ASSY., INSTRUMENT PANEL	
17	1256015	BRACKET, MTG., TILT & TELESCOPE STEERING COLUMN, RH	
18	1256049	ANGLE, MTG., TILT & TELESCOPE STEERING COLUMN	
19	1256023	BRACKET, MTG., TILT & TELESCOPE STEERING COLUMN, LH	
20	2000511	SCREW, SM PH OVAL HD 10 X 1/2	10
21	1037688	PLATE, SERVICE ACCESS. TOEBOARD POWER STEERING	
22	0996496	PLATE, SERVICE ACCESS. TOEBOARD	2
23	1252212	TOEBOARD, W/ACCESS HOLE	
24		NOT APPLICABLE	
25		NOT APPLICABLE	
26		NOT APPLICABLE	
27		NOT APPLICABLE	
28		NOT APPLICABLE	
29		NOT APPLICABLE	
30		NOT APPLICABLE	
31		NOT APPLICABLE	
32	1300300	DRAG ROD ASSY., POWER STEERING	
NI	1300383	TIE ROD END 1.25-12 RH THREAD	
NI	1300391	TIE ROD END 1.25-12 LH THREAD	
NI	1300334	DRAG ROD TUBE, VERTICAL JOINT 53.5"	
NI	0990184	COVER, DUST, DRAG ROD	
NI	2028165	PIN, COTTER 1/8 X 3"	
NI	0609495	PIN, COTTER 7/32 X 3"	
33	0870873	BOLT, HEX 3/4-10 X 4, GD. 8	
34	0870915	WASHER, 3/4 PLAIN	
35	0933879	NUT, HEX, 3/4-10 GD. 8, PREV. TORQUE	
36	0990184	DUST COVER, DRAG ROD STEERING	2
37	1300078	ARM, PITTMAN, 8 1/2, ISP-564, PAINTED	
38	1161330	STEERING, GEAR	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

COLUMN ASSY., TILT & TELESCOPING

	DR. 12-17-85 BY SHC	8006124
	APP. 8/27/86 BY SDF	

FRONT



DOUGLAS COMPONENTS CORPORATION

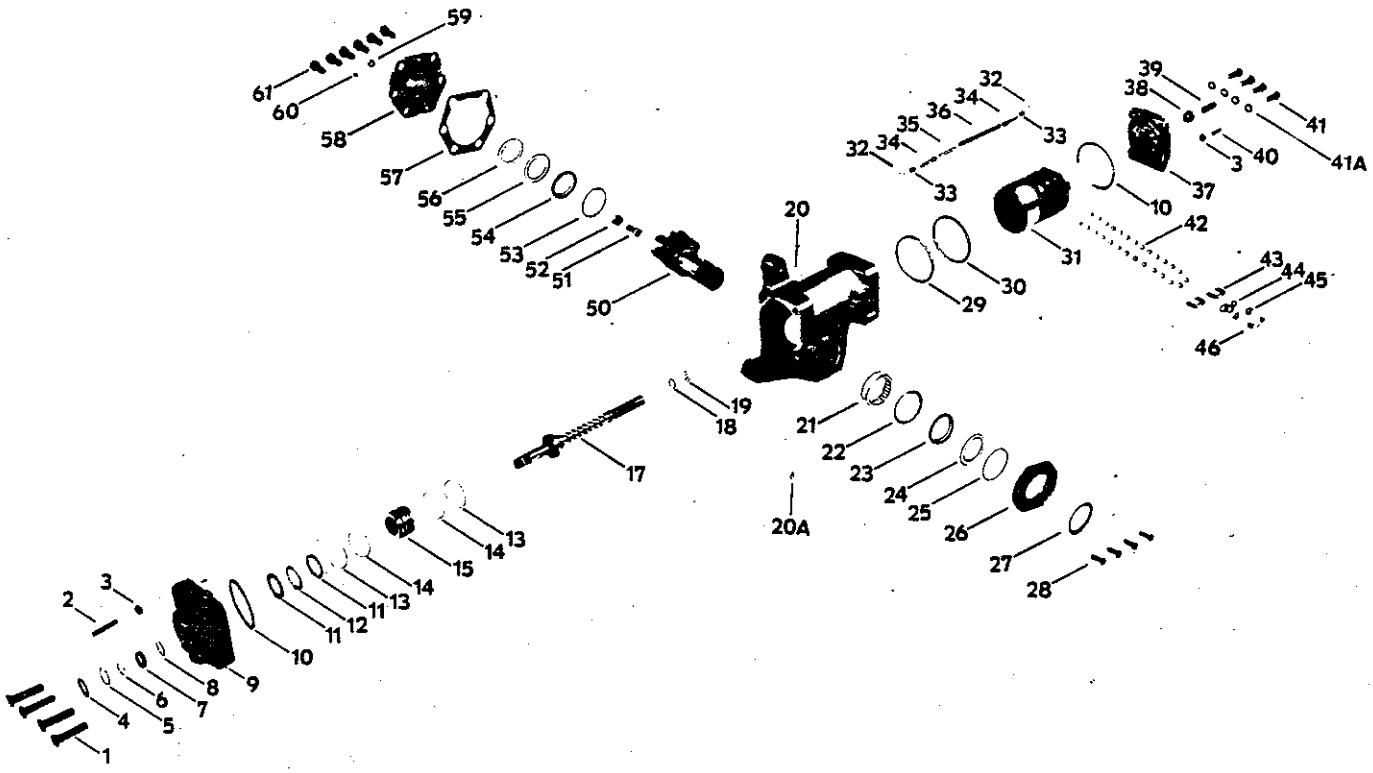
COLUMN ASSY., TILT & TELESCOPING

KEY NO.	PART NO.	DESCRIPTION	VENDOR PART NO.	QTY REQ'D
1		COVER	47369A	
2	1320332	COVER-UPPER	47371D	
3*		MODEL 909 STEERING COLUMN	4733A	
4		COVER-LOWER	4737D	
5		HOUSING & PLATE ASSY.	47372	
6		SPRING	47376	
7		COVER ASSY.	47377A	
8		PROTECTOR (DISCARD)	47383	
9		NUT	46361	
10		LOCKWASHER	47386	
11		NUT	43472B	
NI		KNOB-LOCKING ROD	47384	
		*NOT SERVICED SEPARATE		

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

DR.	BY	2158509
APP.	BY	

HFB 64, STEERING GEAR ASSY.



HFB 64, STEERING GEAR ASSY.

KEY NO.	PART NO.	DESCRIPTION	VENDOR PART NO.	QTY REQ'D
NI	2120848	SEAL KIT, HFB 64 STEERING GEAR	HFB 640001	
NI	1161330	GEAR ASSY., POWER STEERING		
1	2120996	BOLT, 1/2-13 TORX HEAD	020251	4
2	2121044	ADJUSTING SCREW	021336	
3	2121051	NUT	025121	
3A	2121077	NUT, 5/16-24	025124	
4	2121184	SEAL	032579	
5	2593648	RETAINING RING	401314	
6	2121127	BACKUP WASHER	028445	
7	2121176	SEAL ASSY.	032577-A1	
9	2121416	VALVE HOUSING ASSY.	HFB-646013-A1	
10	2121226	O-RING	032616	2
11	2121085	THRUST WASHER	028430	2
12	2597235	THRUST BEARING	067026	
13	2121150	SEAL RING	032570	2
14	2121168	O-RING	032571	2
15		NOT SERVICED SEPARATELY, SEE ITEM 17		
17	2121374	WORM AND VALVE ASSY.	HFB-523001-J1	
18	2121135	O-RING	032552	2
19	2121143	SEAL RING	032536	2
20	2138329	HOUSING ASSY.		
21	2121267	ROLLER BEARING	071018	
22	2593440	RETAINING RING	401309	
23	2121770	SEAL RING ASSY.	032634-A1	
24	2121093	WASHER	028433	
25	2121192	O-RING	032586	
26	2121325	TRUNNION COVER ASSY.	402368-A1	
27	2121200	SEAL	032591	
28	2121366	SCREW	G-9429710	4
29	2705184	SEAL RING	032590	
30	2121218	O-RING	032615	
31	2121424	RACK AND BALL ASSY.	HFB-647002-J1	
32	2121309	RETAINING RING	401379	2
33	2121341	POPPET SEAT	415442	2
34	2121234	POPPET	040124	2
35	2121242	ROD	040125	
36	2121291	SPRING	401375	
37	2121333	COVER, END	402376	
38	2121069	NUT	025122	
39	2121036	ADJUSTING SCREW	021333	
40	2121010	ADJUSTING SCREW	021322	
41	2121002	BOLT	020252	4
41A	2596922	WASHER	028335	4
42	2121275	BALL ASSY. (KIT OF 27)	216191-X1	
43		NOT SERVICED SEPARATELY, SEE ITEM 46A		

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

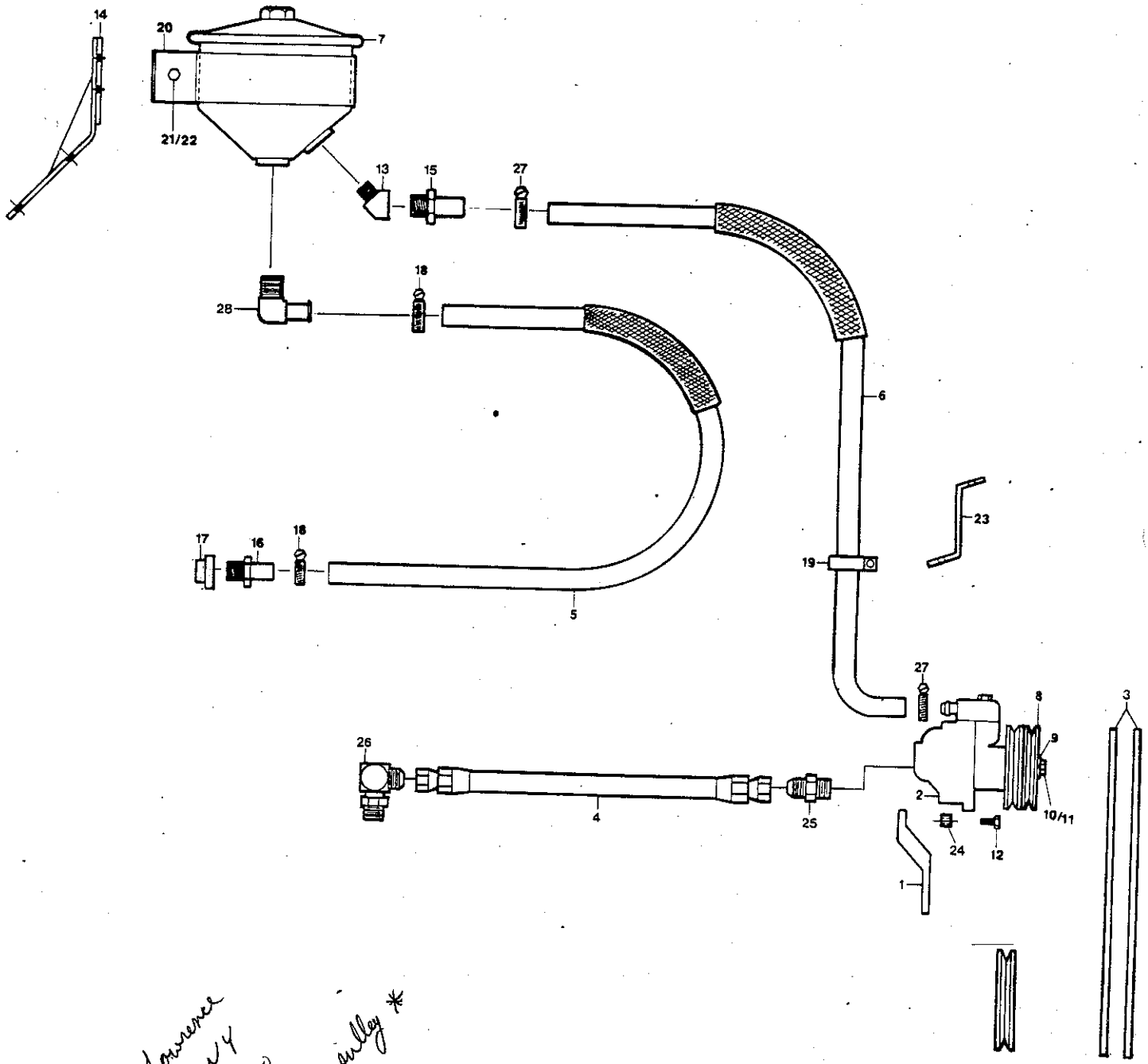
HFB 64, STEERING GEAR ASSY.

KEY NO.	PART NO.	DESCRIPTION	VENDOR PART NO.	QTY REQ'D
44		NOT SERVICED SEPARATELY, SEE ITEM 46A		
45		NOT SERVICED SEPARATELY, SEE ITEM 46A		
46		NOT SERVICED SEPARATELY, SEE ITEM 46A		
46A	2121283	CAP, GUIDE AND STRAP KIT INCLUDES ITEMS 43, 44, 45, 46	400122-X1	
50	2121788	SHAFT ASSY.	HFB-644100-A1 -472	
51	2595023	ADJUSTING SCREW	021200	
52	2596633	RETAINER	062005	
53	2121317	RETAINING RING	401445	
54	2138303	SEAL RING ASSY.		
55	2594638	WASHER	028435	
56	2121101	WASHER	028434	
57	2121432	GASKET, SIDE COVER	HFB-649000	
58	2121408	SIDE COVER ASSY.	HFB-645002-J1	
59	2121358	JAM NUT, HEX 1/2-20	G-9419666	
60	2596138	VENT PLUG	036141	
61	2121028	SCREW, 5/8-18	G-223734	6

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

POWER STEERING ASSY., 300 H.P.

DR.	BY	1244086
APP.	BY	



James Lawrence
Lancaster NY
716-665-4200
* Smaller PS pump pulley *

POWER STEERING ASSY., 300 H.P.

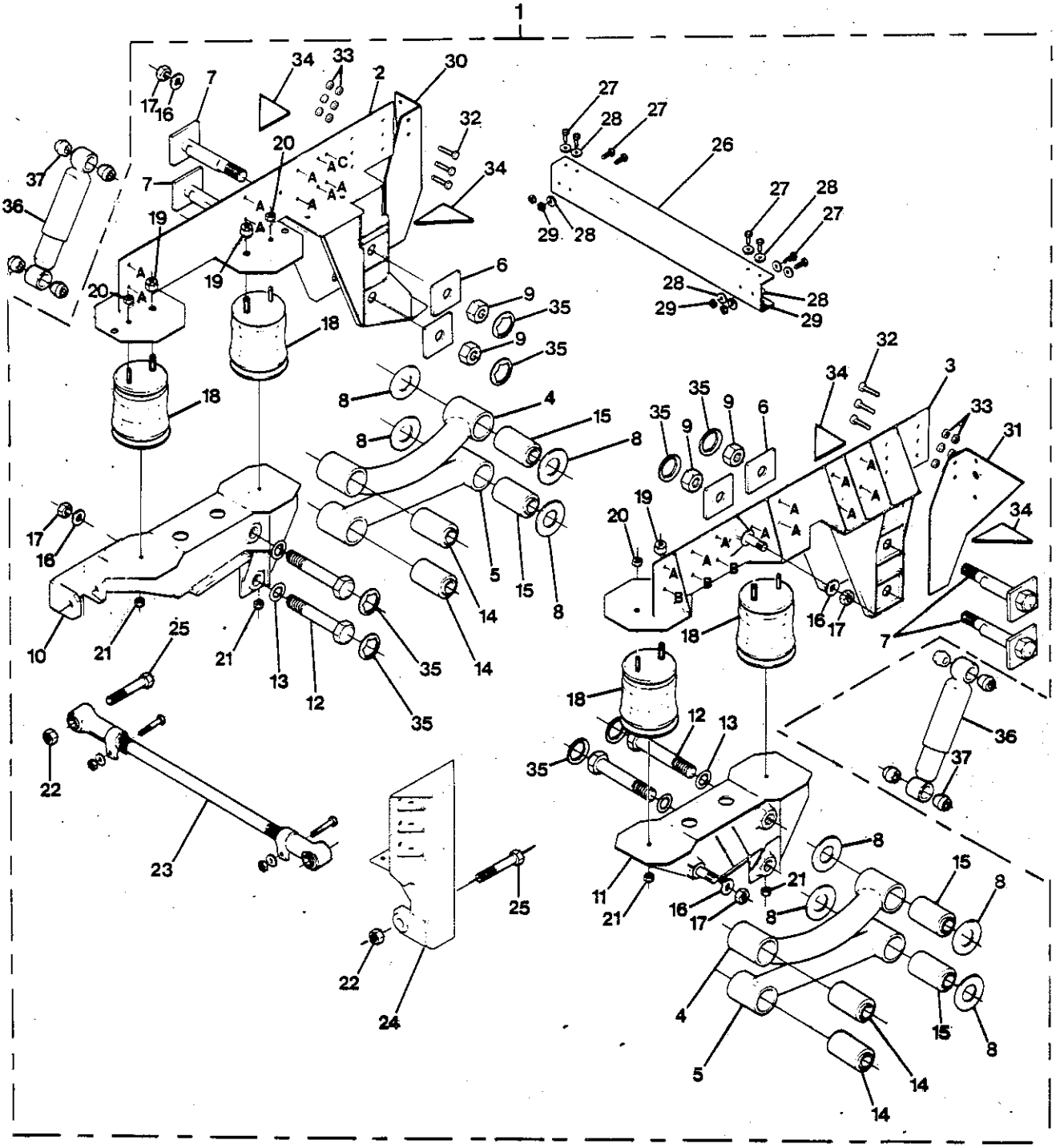
KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1019520	BRACKET POWER STEERING PUMP	
2	1234194	PUMP ASSY., POWER STEERING	
3	1243146	BELT SET, MATCHED, 41 3/4 X 1/2	
4	1164961	HOSE ASSY., 3/8 I.D., 40 IN. LONG	
5	1313774	HOSE ASSY., POWER STEERING RETURN	
6	2003366	HOSE, 3/4 I.D. BLACK	
7	1098615	RESERVOIR ASSY	
NI	2149987	ELEMENT, P/S RESERVOIR	
8	*	PULLEY, POWER STEERING PUMP	
9	*	WASHER, FLAT	
10	*	CAPSCREW, HEX HEAD	
11	*	LOCK WASHER	
12	*	BOLT, P/S PUMP TO BRACKET MOUNTING	
13	2027217	ELBOW, STREET, 45 DEG .	
14	1237726	BRACKET ASSY., MOUNTING, POWER STEERING RESERVOIR	
15	2051134	INSERT, BARBED, 3/4 HOSE X 1/2 PIPE	
16	1313840	INSERT, BARBED, 5/8 I.D. HOSE X 3/8 PIPE	
17	0876649	ADAPTOR, SWIVEL, UNION	
18	1025857	CLAMP, HOSE, SIZE 8, LINED	2
19	0557710	CLAMP, CLOSED TYPE, INSULATED, 13/16	
20	0846832	STRAP, POWER STEERING RESERVOIR MTG.	
21	2000107	CAPSCREW, HEX HD. 1/4 - 20 X 3 1/2	
22	2001337	NUT, HEX NC, 1/4-20	
23	0612861	BRACKET, REAR ACC CONTROL	
24	1237734	SPACER, POWER STEERING PUMP	3
25	1166115	CONNECTOR, SAE 37 DEG . FLARE	
26	1166107	ELBOW, 90 DEG ., SAE 37 DEG . FLARE	
27	2008522	CLAMP, 1 IN. HOSE	2
28	1243153	ELBOW, 90 DEG . 5/8 HOSE BARBED X 1/2 MALE PIPE	

* SUPPLIED WITH PUMP

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

DR. 7-24-84 BY JLR	8003121
APP. BY	

SUSPENSION, FRONT
(ENDING W/CSN 0964115)



SUSPENSION, FRONT
(ENDING W/CSN 0964115)

KEY NO.	PART NO.	DESCRIPTION	VENDOR PART NO.	QTY REQ'D
1	1253004	SUSPENSION SYSTEM, FRONT		
2	1253046	HANGER RAIL ASSY., LH	309-4360C-100	
3	1253038	HANGER RAIL ASSY., RH	309-4360C-200	
4	1026368	TORQUE BEAM ASSY., UPPER	506-4035B-000	2
5	0961821	TORQUE BEAM ASSY., LOWER	505-4033B-000	2
6	0961839	CLAMPING PLATE ASSY.	740-1494B-000	4
7	0961847	ECCENTRIC BOLT ASSY.	500-1458B-000	4
8	0961359	WASHER, BEARING SLEEVE	116-0519B-302	8
9	1077221	NUT, HEX LOCKING, 1 1/4-7NC	115-5648B-105	4
10	1130657	LOWER BEAM ASSY., LH	425-4361D-100	
11	0961383	LOWER BEAM ASSY., RH	425-4362D-200	
12	0961409	CAPSCREW, 1 1/2-6 X 7" LONG	113-0670B-105	4
13	0961417	WASHER, LOCK 1 1/2 INT. TOOTH	116-0673B-000	4
14	0961573	BUSHING, TORQUE BEAM, SOFT RUBBER	111-3328B-000	4
15	0961581	BUSHING, TORQUE BEAM, HARD RUBBER	111-0512B-000	4
16	1087329	WASHER, 2" O.D. SHOCK STUD	116-1677B-100	4
17	1105782	NUT, LOCK, 1"-8 NYLON INSERT	115-5939B-102	4
18	1263581	AIR SPRING, FRT. SUSP.	100-358-8997C	4
19	0985549	NUT, 3/4-16 THIN LOCK	115-4700B-102	4
20	0961458	NUT, 1/2-13	115-0555B-102	4
21	0961458	NUT, LOCK, 1/2-13	115-0555B-102	4
22	1085489	NUT, LOCK, 1"-8, NYLON INSERT	115-1678B-105	2
23	1245927	SWAY BAR	503-4326B-303	
NI	2159879	BUSHING, SWAY BAR	111-7195B-000	
24	1280270	BRKT. SWAY BAR	353-6019C-000	
25	1085380	CAPSCREW, 1"-8 X 6"	113-5711B-108	2
26	1280288	CHANNEL, CROSSBRACE	817-4754B-301	
27	0803239	BOLT, HEX 1/2-13 X 1 1/2 GD. 8		8
28	0850776	WASHER, FLAT 17/32 X 1 1/16		62
29	0850800	NUT, HEX LOCKING 1/2-13 GD.8		31
30		NOT APPLICABLE		
31		NOT APPLICABLE		
32	2028470	CAPSCREW, HEX HD. 1/2-20 X 2 GD. 5		4
33	2001485	NUT HEX 1/2-20		4
34		NOT APPLICABLE		
35	0961375	WASHER, ANTI-TURN	900-3092B-000	4
36	1235233	SHOCK ABSORBER, KONI (BUSHINGS INCLUDED)		2
37		BUSHING, SHOCK ABSORBER	15.23.33.008.0	
38	0803205	BOLT, HEX 1/2-13 X 2 , GD. 8		19
39	0803148	BOLT, HEX 1/2-13 X 1 3/4, GD. 8		3

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

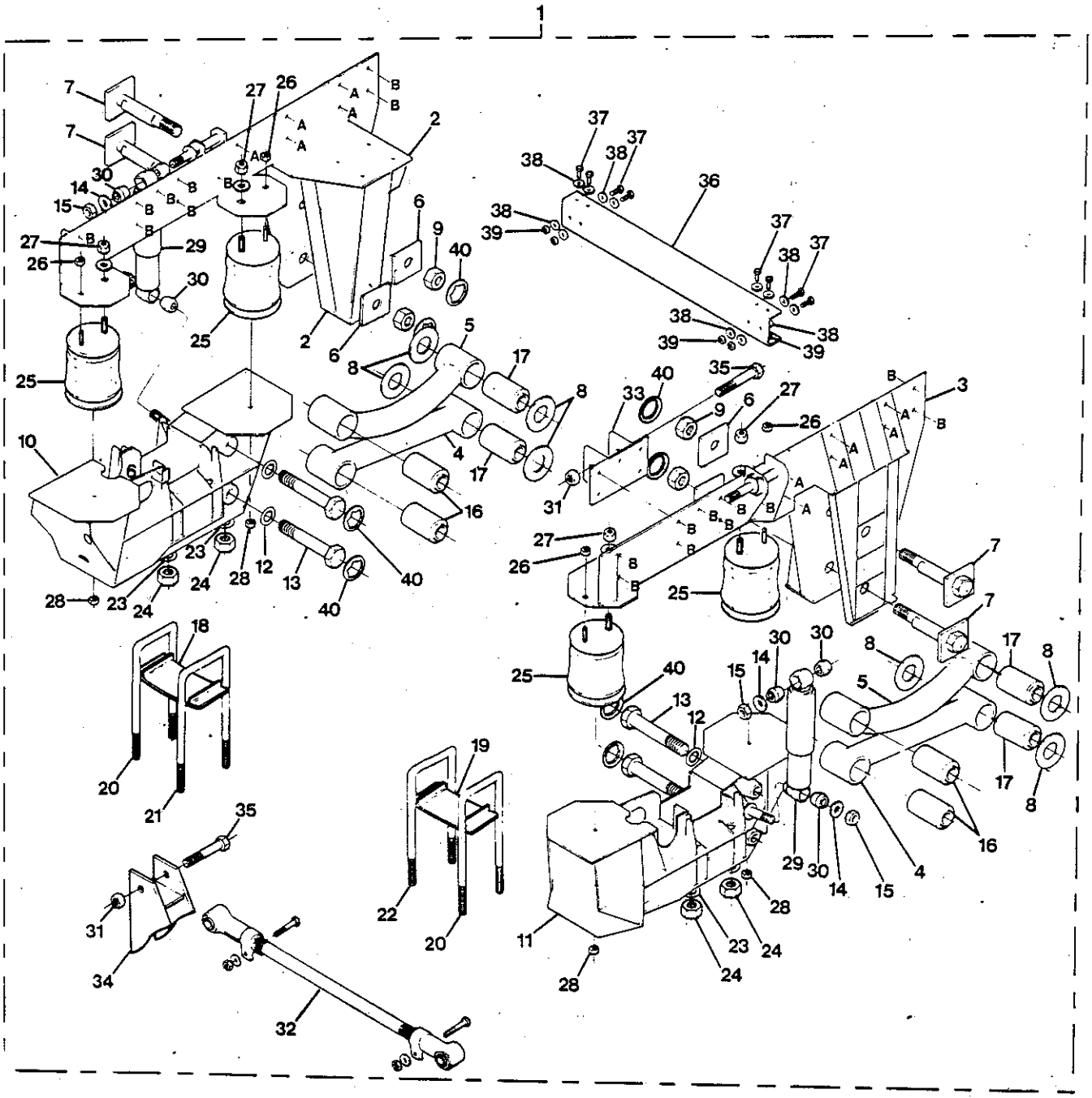
SUSPENSION, FRONT
(BEGINNING W/CSN 0964116)

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
NI		HANGER RAIL ASSY.	
	1321264	RH	
	1321272	LH	
NI		TORQUE ROD ASSY.	
	1321280	RH	2
	1321280	LH	2
NI		BRACKET, TORQUE ROD	
	1321298	RH	2
	1321298	LH	2
NI	1321306	KIT, SHIM PLATE	4
NI		BEAM ASSY., LOWER	
	1321595	RH	
	1321603	LH	
NI	1263581	AIR SPRING	4
NI	1280262	SWAY BAR ASSY.	
NI	2159879	BUSHING, SWAY BAR	
NI	1280270	BRACKET, SWAY BAR	
NI	1321611	CHANNEL, CROSS	
NI	1235233	SHOCK, ABSORBER	2

NOTE: ILLUSTRATION NOT AVAILABLE AT TIME OF PUBLICATION.

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

SUSPENSION, REAR

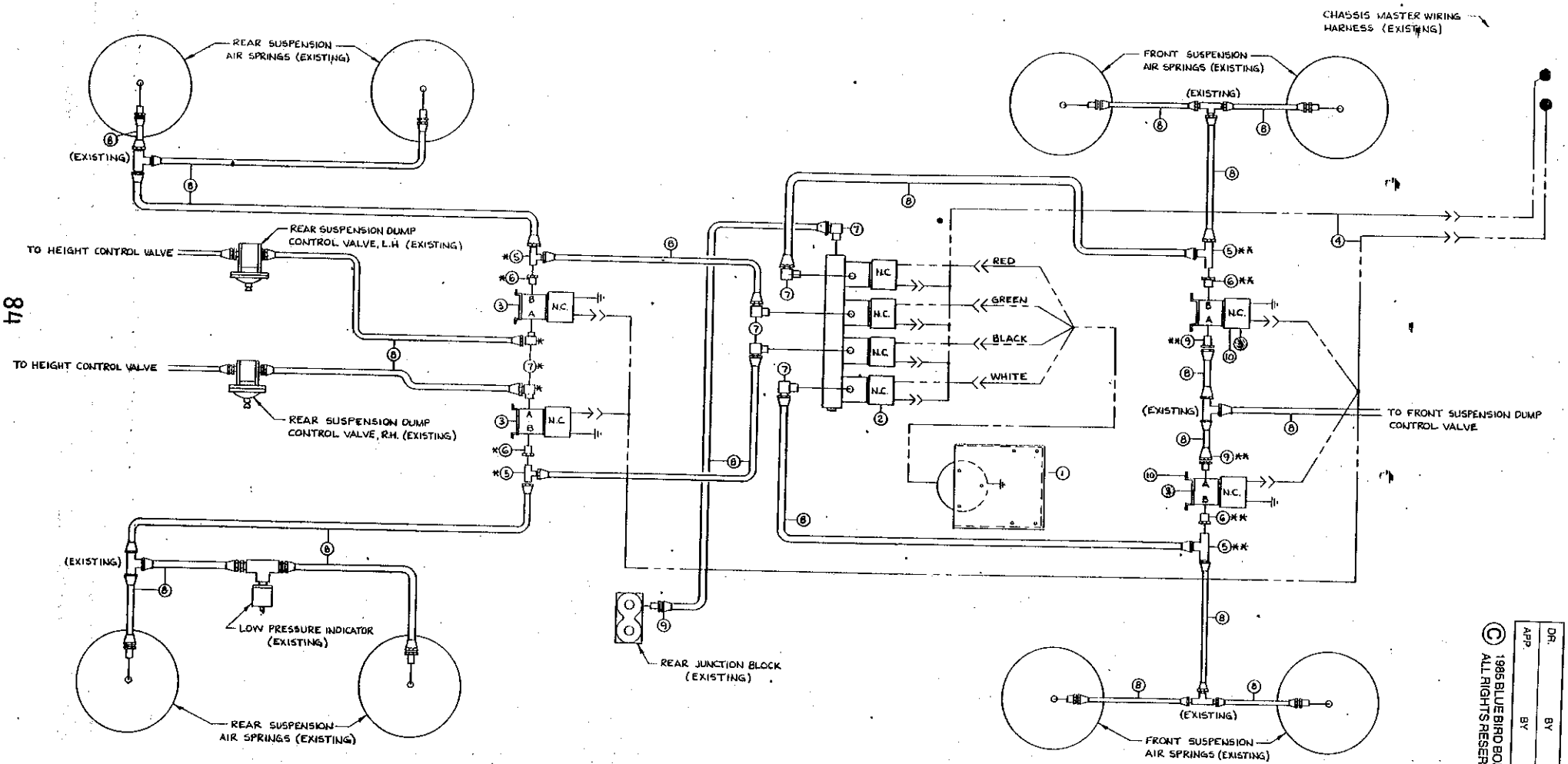


SUSPENSION, REAR

KEY NO.	PART NO.	DESCRIPTION	VENDOR PART NO.	QTY REQ'D
1	1087279	SUSPENSION SYSTEM, REAR		
2	0990093	HANGER RAIL ASSY., LH	310-4416C-100	
3	0990085	HANGER RAIL ASSY., RH	310-4416C-200	
4	0961821	TORQUE BEAM ASSY., LOWER	505-4033B-000	2
5	1026368	TORQUE BEAM ASSY., UPPER	506-4035B-000	
6	0961839	CLAMPING PLATE ASSY.	740-1494-000	4
7	0961847	ECCENTRIC BOLT ASSY.	500-1458B-000	4
8	0962118	WASHER, BEARING SLEEVE	116-0519B-301	8
9	1077221	NUT, HEX LOCKING 1 1/4-7NC	115-5648B-105	4
10	1087311	LOWER BEAM ASSY., LH	426-5744-D-100	
11	1087303	LOWER BEAM ASSY., RH	426-5745D-200	
12	0961417	WASHER, LOCK, 1 1/2 INT. TOOTH	116-0673B-000	4
13	0961409	CAPSCREW, 1 1/2 X 6 X 7"	113-0670B-105	4
14	1087329	WASHER, 2" O.D., SHOCK STUD	116-1677B-100	4
15	1105782	NUT, LOCK 1"-8 NYLON, INSERT	115-5939B-102	4
16	0961573	BUSHING, TORQUE BEAM, SOFT RUBBER BEAM END	111-3328B-000	4
17	0961581	BUSHING, TORQUE BEAM, HARD RUBBER HANGER END	111-0512B-000	4
18	1087345	SPACER PLATE ASSY., LH	465-5702B-100	
19	1087337	SPACER PLATE ASSY., RH	465-5703B-200	
20	0961201	U-BOLT 7/8-14-14" LONG	117-3532B-308	2
21	1087352	U-BOLT 7/8-14-14 1/2" LONG	117-3532B-327	
22	1087352	U-BOLT 7/8-14-14" LONG	117-3532B-327	
23	0961235	WASHER, FLAT 7/8	116-0868B-100	8
24	1095892	NUT, LOCK 7/8-14	115-5876B-108	8
25	0961250	AIR SPRING	100-358-9039C	4
26	0961458	NUT, LOCK 1/2-13	115-0555B-102	4
27	0985549	NUT, 3/4-16 THIN LOCK	115-4700B-102	4
28	0961276	NUT, LOCK, 3/4-10	115-1384B-102	4
29	0961284	SHOCK ABSORBER	125-4025B-000	2
30	0961474	BUSHING, SHOCK ABSORBER	110-2608B-000	8
31	1085489	NUT, LOCK, 1"-8	115-1678B-105	2
32	1245935	SWAY BAR ASSY.	503-4326B-304	
NI	2159879	BUSHING, SWAY BAR	111-7195B-000	
33	1087360	BRACKET, SWAY BAR MT., FRAME	353-5704B-000	
34	1087378	BRACKET, SWAY BAR MT., AXLE	462-5746B-000	
35	1085380	CAPSCREW, 1" X 8 X 6"	113-5711B-108	2
36	1118124	CHANNEL, CROSSBRACE	548-6099B-000	
37	0803239	BOLT, HEX 1/2-13X1 1/2, GD. 8		8
38	0850776	WASHER, FLAT 17/32 X 1 1/16		76
39	0850800	NUT, HEX LOCKING 1/2-13, GD. 8		38
40	1101062	PLATE, ANTI-TURN	900-4565B-000	4
41	0803148	BOLT, HEX 1/2-13 X 1 3/4, GD.8		11
42	0803205	BOLT, HEX 1/2-13 X 2, GD.8		19

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

AIR LEVELING SYSTEM
OPT. 5640-00



DR. BY
APP. BY

125139

AIR LEVELING SYSTEM
OPT. 5640-00

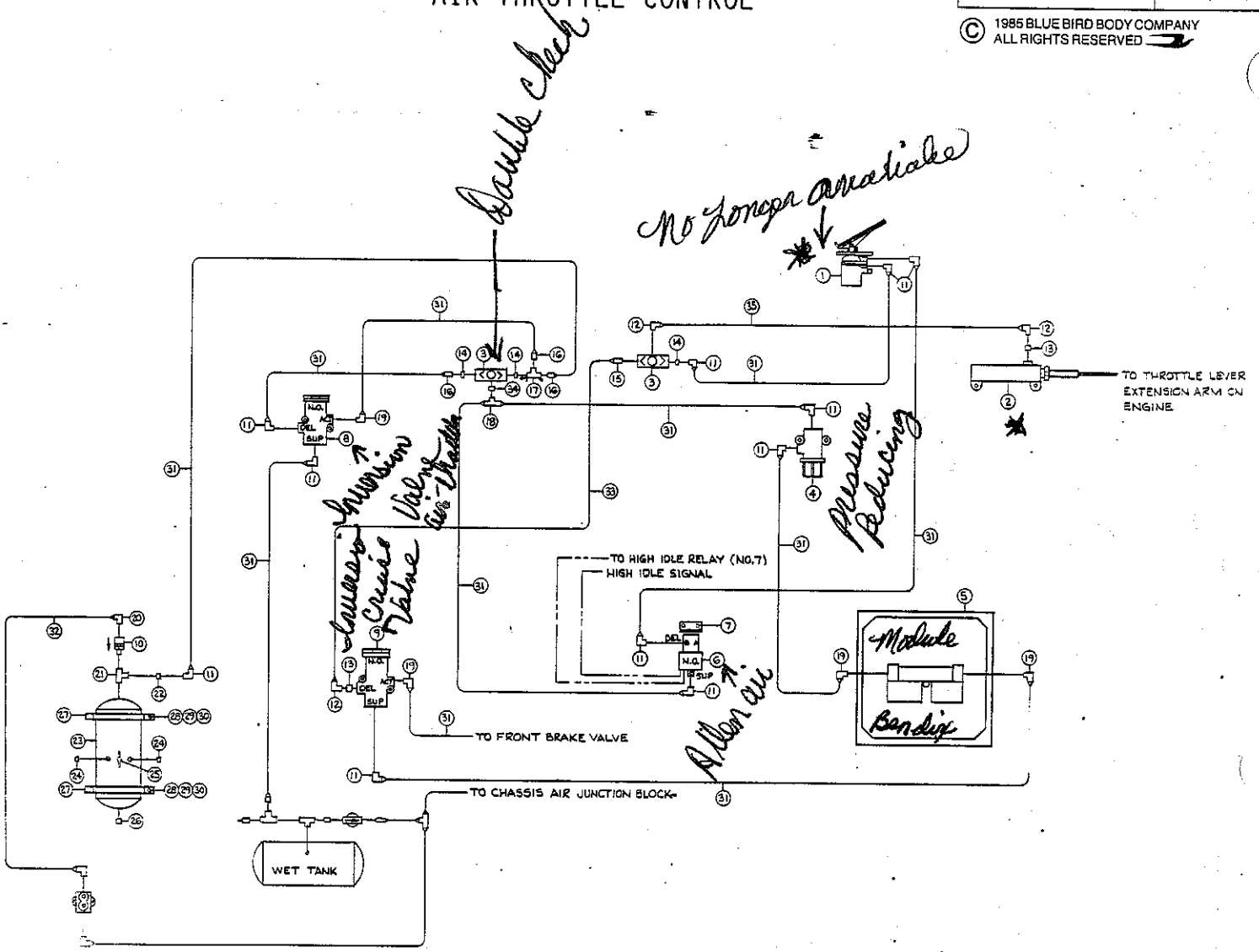
KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1255900	BRACKET ASSY., MERCURY SWITCH	
NI	1255405	SWITCH ASSY., MERCURY	
2	1255397	VALVE ASSY., SOLENOID, NORMALLY CLOSED	
3	1255389	VALVE ASSY., SOLENOID, NORMALLY CLOSED, 2 WAY	4
4	1256189	HARNESS, WIRING	
5	0982272	TEE, 1/8 MPT X 1/4 TUBE X 1/4 TUBE	4
6	2008050	BUSHING, BRASS, 1/8 X 1/4	4
7	2023935	ELBOW, 1/4 MPT X 1/4 TUBE	7
8	2008431	TUBING, COPPER, 1/4"	50'
9	2023224	CONNECTOR, 1/4 MPT X 1/4 TUBE	3
NI	0871376	LEVELING VALVES	
10	1282011	VALVE ASSY., SOLENOID, NORMALLY CLOSED	

*INCLUDED ON ASSY. # 1255389
**INCLUDED ON ASSY. # 1282011

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

AIR THROTTLE CONTROL

DR.	BY	1248210
APP.	BY	



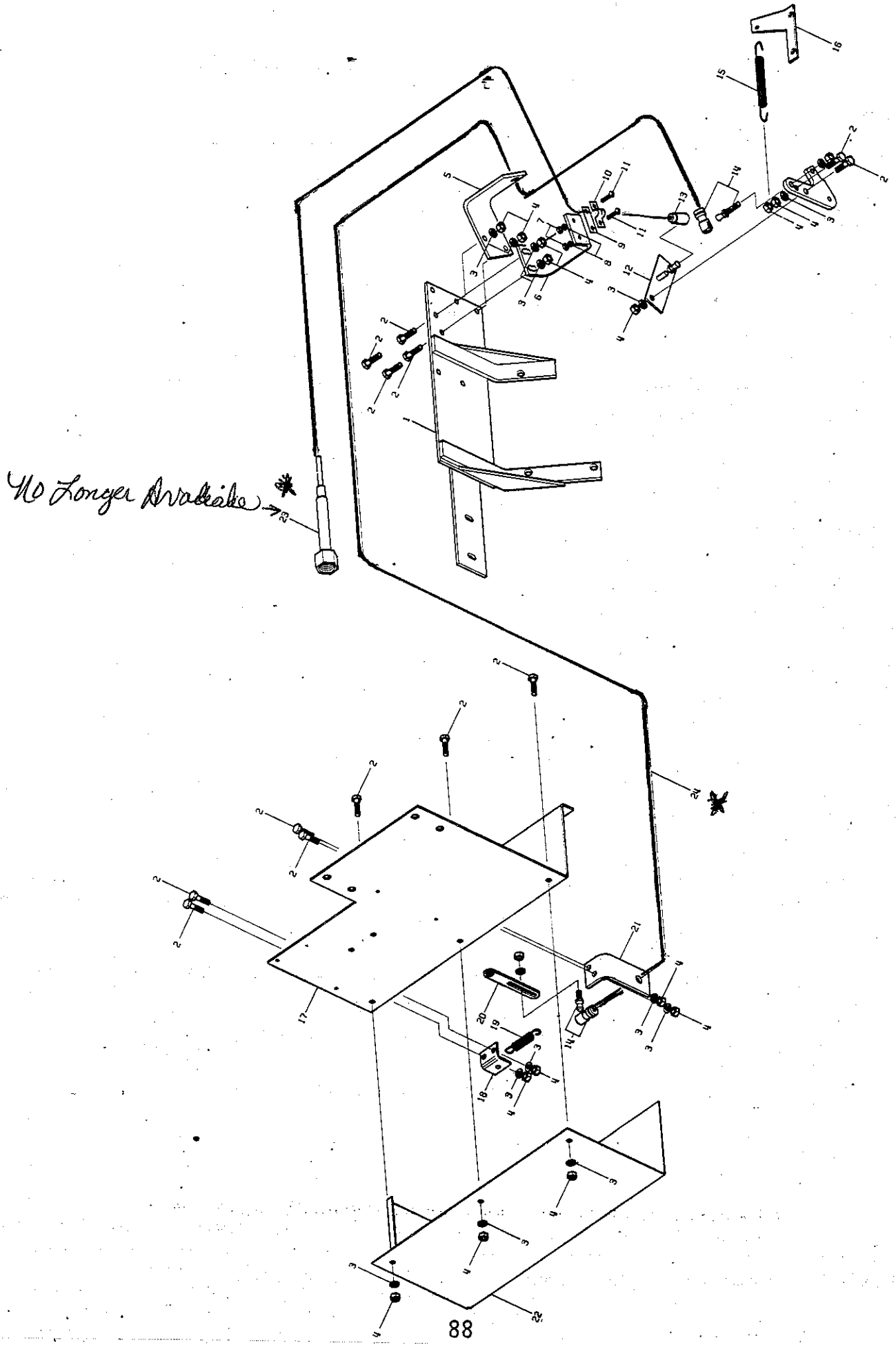
AIR THROTTLE CONTROL

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1252204	VALVE, TREADLE, AIR THROTTLE CONTROL-	
NI	0986356	VALVE,ONLY	
2	1087428	CYLINDER, AIR CRUISE CONTROL	
3	0654434	VALVE, DOUBLE CHECK, 3/8 PIPE	2
4	1087436	VALVE, PRESSURE REDUCING, CRUISE CONTROL	
5	1087410	MODULE, BENDIX, CRUISE CONTROL	
6	1124544	VALVE, SOLENOID, NORMALLY OPEN, ALLENAIR	
7	1248319	BRACKET, MOUNTING, ALLENAIR VALVE, CRUISE CONTROL	
8	1102920	VALVE, INVERSION, AIR THROTTLE $114.99	
9	1087444	VALVE, INVERSION, CRUISE CONTROL $90.07	
10	0654418	VALVE, SINGLE CHECK, 1/2 PIPE	
11	2023935	ELBOW, 1/4 MPT X 1/4 TUBE	11
12	2023307	ELBOW, 3/8 MPT X 1/2 TUBE	3
13	0766188	ADAPTER, 3/8 FPT X 1/4 MPT	2
14	2027134	BUSHING, PIPE, 3/8 X 1/4	3
15	2023364	CONNECTOR, 3/8 MPT X 1/2 TUBE	
16	2023224	CONNECTOR, 1/4 MPT X 1/4 TUBE	3
17	0654277	TEE, STREET, 1/4 PIPE	
18	0982272	TEE, 1/8 MPT X 1/4 TUBE X 1/4 TUBE	
19	2023786	ELBOW, 1/8 MPT X 1/4 TUBE	4
20	2023414	ELBOW, 1/2 MPT X 3/8 TUBE	
21	0654350	TEE, 1/2 PIPE, STREET	
22	2027159	BUSHING, PIPE, 1/2 X 1/4	
23	0754929	RESERVOIR, AIR	
24	2009595	PLUG, PIPE, 3/8	2
25	1110188	COCK, RESERVOIR DRAIN	
26	0663427	PLUG, 1/2 SQ. HD., PIPE	
27	0850578	BRACKET, MOUNTING, 8 IN., AIR RESERVOIR	4
28	0851337	CAPSCREW, HEX, 3/8-16 X 6 1/2	2
29	0882795	LOCKWASHER, 3/8 IN., CAD. PLATED	2
30	2001451	NUT, HEX, 3/8-16, CAD PLATED	2
31	2008431	TUBING, COPPER, 1/4 INCH	
32	2027381	TUBING, COPPER, 3/8 INCH (SPECIFY LENGTH)	
33	2027399	TUBING, 1/2 COPPER, 3/8 TYPE L, WATER TUBE	
34	2027142	BUSHING, PIPE, 3/8 X 1/8, BRASS	
35	1197177	TUBING, PLASTIC, 1/2 OD GRAY	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

DR.	BY	
APP.	BY	125165

ACCELERATOR CABLE INSTALLATION, 300 HP



ACCELERATOR CABLE INSTALLATION, 300 HP

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1237726	BRACKET ASSY, MOUNTING, POWER STEERING RESERVOIR	
2	0870477	BOLT, HEX, 1/4-20 X 1, G8	
3	2001170	WASHER, LOCK, 1/4, MEDIUM	
4	2001329	NUT, HEX, 1/4, NC, CAD	
5	1248251	BRACKET, MOUNTING, MODULATOR CABLE, UPPER	
6	1287937	BRACKET, MOUNTING, ACCELERATOR CABLE	
7	2001253	NUT, HEX CAD	
8	2001162	WASHER, LOCK, 3/16 MEDIUM	
9	0620120	SHIM, CABLE CLAMP	
10	1091446	CLAMP ACCELERATOR CABLE, CRUISE CONTROL	
11	2000743	SCREW, PHILLIP HEAD, ROUND	
12	1291004	EXTENSION ASSY, THROTTLE LEVER, CAT 3208TA	
13	1276815	SOCKET, CABLE END	
14	0939348	BALLJOINT, CABLE END	
15	0939231	SPRING, ACCELERATOR RETURN	
16	1248244	BRACKET, SPRING, ACCELERATOR CABLE	
17	1248186	BRACKET, MOUNTING, ISOLATOR, BATTERY TRAY	
18	1248442	BRACKET ASSY, MOUNTING, MODULATOR RETURN SPRING	
19	1218056	SPRING, ACCELERATOR RETURN	
20	1250513	SENSOR, THROTTLE POSITION	
21	1248269	BRACKET, MOUNTING, MODULATOR CABLE, LOWER	
22	1249192	SHIELD, MODULATOR CABLE	
23	1091461	CABLE, THROTTLE, CRUISE CONTROL	
24	1052109	CABLE, ACCELERATOR	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

HOLDING TANK
35' REAR BATH

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
	1122688	TANK ASSY., WASTE HOLDING, SOLID	
	1061449	PROBE, ODER CONTROL	4
	1249069	BRACKET ASSY., HOLDING TANK, LEFT FRONT	
	1249085	BRACKET ASSY., HOLDING TANK, LEFT REAR	
	1140607	STRAP ASSY., HOLDING TANK, GRAY	
	0817197	STRAP ASSY., RETAINER HOLDING TANK, SINK	
	1122712	TANK ASSY., WASTE HOLDING, GRAY, REAR BATH	
	1249093	BRACKET ASSY., HOLDING TANK, RIGHT REAR	
	1249077	BRACKET ASSY., HOLDING TANK, RIGHT FRONT	
	1122621	STRAP ASSY., HOLDING TANK, RIGHT	
	2001451	NUT, HEX, 3/8-16, CAD	8
	2000339	CAPSCREW, HEX, 5/8-11 X 1 1/2	12
	2001220	WASHER, LOCK, 5/8	12
	2001493	NUT, 5/8-11, NC	12
	2001485	NUT, HEX, 1/2-20 NC, P & O	8
	1016583	SPACER, HOLDING TANK BRACKET, REAR BATH	4

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

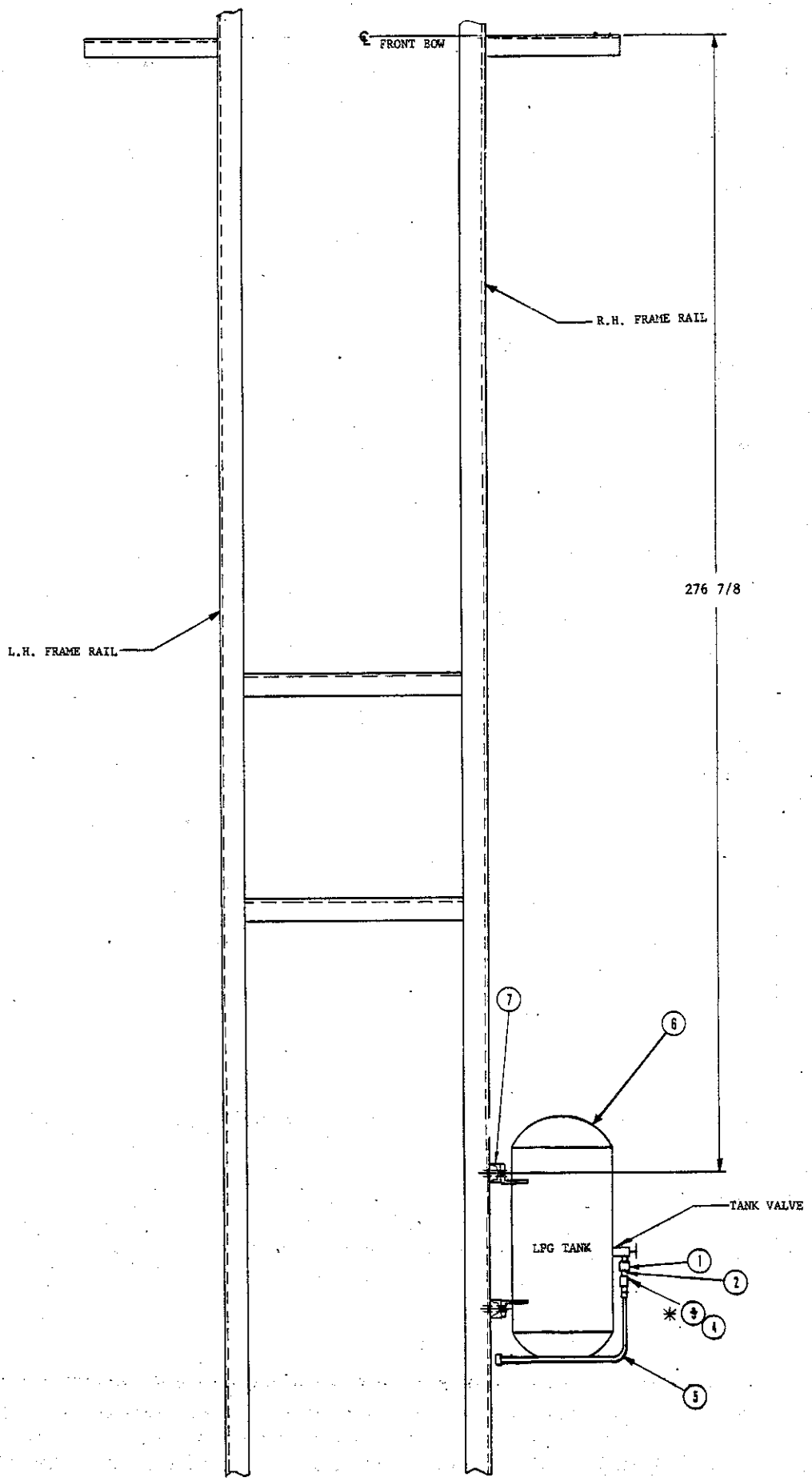
HOLDING TANKS
35' SIDE BATH

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
	1249002	TANK ASSY., WASTE HOLDING, SOLID	
	1061449	PROBE, ODOR CONTROL	4
	1234350	BRACKET ASSY., HOLDING TANK, LEFT FRONT	
	1234368	BRACKET ASSY., HOLDING TANK, LEFT REAR	
	1140623	STRAP ASSY., HOLDING TANK, SOLID	
	1249150	STRAP ASSY., RETAINER, HOLDING TANK, SOLID, OUTSIDE	
	1248996	TANK ASSY., WASTE HOLDING, GRAY	
	1234376	BRACKET ASSY., HOLDING TANK, RIGHT FRONT	
	1234384	BRACKET ASSY., RIGHT REAR	
	1249168	STRAP ASSY., GRAY	
	1249176	STRAP ASSY., RETAINER, GRAY	2
	2001451	NUT, HEX, 3/8-16, CAD	8
	2000339	CAPSCREW, HEX, 5/8-11 X 1 1/2	12
	2001220	WASHER, LOCK, 5/8	12
	2001493	NUT, 5/8-11, NC	12
	2001485	NUT, HEX, 1/2-20 NC, P & O	16
	1249440	STRAP ASSY., RETAINER, INSIDE	
	2265916	ELBOW, STREET, PVC 1 1/2 X 90 DEG.	
	2017333	PIPE, PLASTIC, 1 1/2 X 20 FEET	18"
	2250793	ELBOW, PVC 1 1/2 X 90 DEGREE	2
	2017333	PIPE, PLASTIC 1 1/2 X 20 FEET	40"
	1018407	MOLDING, PROTECTIVE 1/2" MATERIAL	2
	2017333	PIPE, PLASTIC 1 1/2 X 20 FEET	1"

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

DR.	BY	1259761
APP.	BY	

LPG TANKS
35' W/ REAR BATH



210 WHEELBASE WITH SIDE BATH

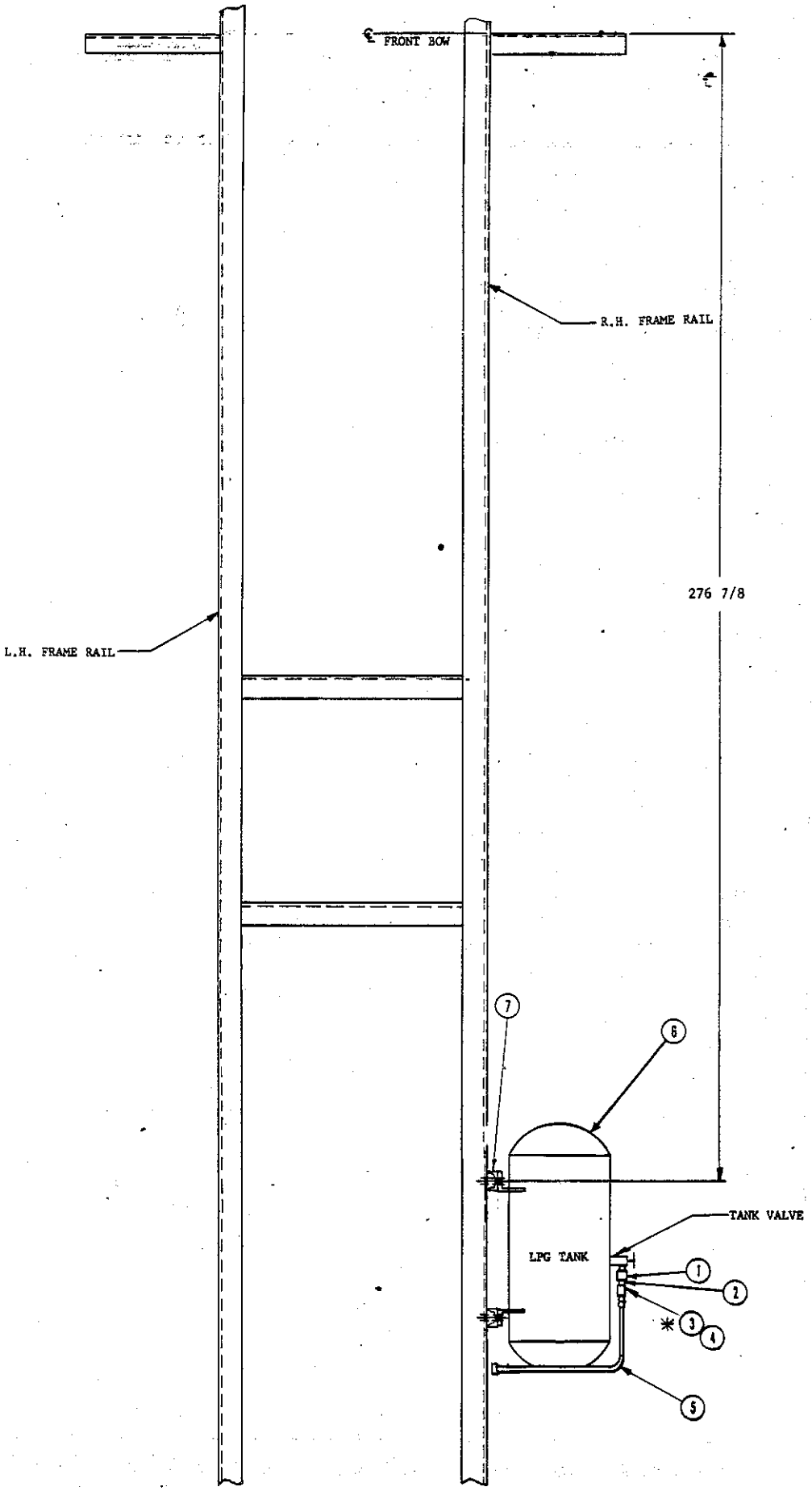
LPG TANKS
35' W/ REAR BATH

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1297373	REGULATOR WITH EXCESS FLOW P.O.L	
2	2027183	NIPPLE, 1/4 CLOSE	
3	0654277	TEE STREET, 1/4 PIPE	
4	2023513	PLUG, PIPE 1/4"	
5	0976068	HOSE ASSY., DUAL LABEL	
6	2023232	COUPLING, ANCHOR	
7	1154897	ELBOW, 90 DEGREE, 1/4 MPT X 3/8 FLARE	
8	1154905	NUT, 3/8 FLARE	
9	2027381	TUBING, 3/8 COPPER, 1/4 TYPE L, WATER TUBE	
10	1154905	NUT, 3/8 FLARE	
11	1154897	ELBOW, 90 DEGREE, 1/4 MPT X 3/8 FLARE	
12	2023232	COUPLING, ANCHOR	
13	2023513	PLUG, PIPE, 1/4"	
14	2023513	PLUG, PIPE, 1/4"	
15	2023232	COUPLING, ANCHOR	
16	1154897	ELBOW, 90 DEGREE, 1/4 MPT X 3/8 FLARE	
17	1154905	NUT, 3/8 FLARE	
18	2027381	TUBING, 3/8 COPPER, 1/4 TYPE L, WATER TUBE	
19	0929554	TANK ASSY., LPG, 44" LONG, FRAME MOUNTED	
20	1154905	NUT, 3/8 FLARE	2
21	1162445	TEE, 1/4 MPT X 3/8 FLARE BRANCH	
22	2023232	COUPLING, ANCHOR	
23	2023513	PLUG, PIPE, 1/4"	
24	2027381	TUBING, 3/8 COPPER, 1/4 TYPE L, WATER TUBE	
25	1154905	NUT, 3/8 FLARE	
26	1154897	ELBOW, 90 DEGREE, 1/4 MPT X 3/8 FLARE	
27	2023232	COUPLING, ANCHOR	
28	2023513	PLUG, PIPE, 1/4"	
29	2023513	PLUG, PIPE, 1/4"	
30	2023232	COUPLING, ANCHOR	
31	1154897	ELBOW, 90 DEGREE, 1/4 MPT X 3/8 FLARE	
32	1154905	NUT, 3/8 FLARE	
33	2027381	TUBING, 3/8 COPPER, 1/4 TYPE L, WATER TUBE	
34	1154905	NUT, 3/8 FLARE	
35	1154897	ELBOW, 90 DEGREE, 1/4 MPT X 3/8 FLARE	
36	2023232	COUPLING, ANCHOR	
37	2023513	PLUG, PIPE, 1/4"	

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.

DR.	BY	125764
APP.	BY	

LPG TANKS
35' W/SIDE BATH



210 WHEELBASE WITH SIDE BATH

LPG TANKS
35' W/SIDE BATH

KEY NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	1297373	REGULATOR WITH EXCESS FLOW P.O.L.	
2	2027183	NIPPLE, 1/4 CLOSE	
3	0654277	TEE STREET, 1/4 PIPE	
4	2023513	PLUG, PIPE 1/4"	
5	0976068	HOSE ASSY., DUAL LABEL	
6	0929554	TANK ASSY., LPG, 44" LONG, FRAME MOUNTED	
NI	1248285	CHANNEL, MOUNTING, LPG TANK	

Vendor 00063 Manchester Tank

QUANTITY REQUIRED IS ONE UNLESS OTHERWISE SPECIFIED.