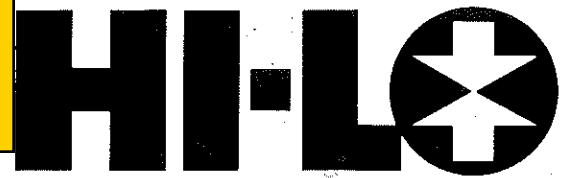
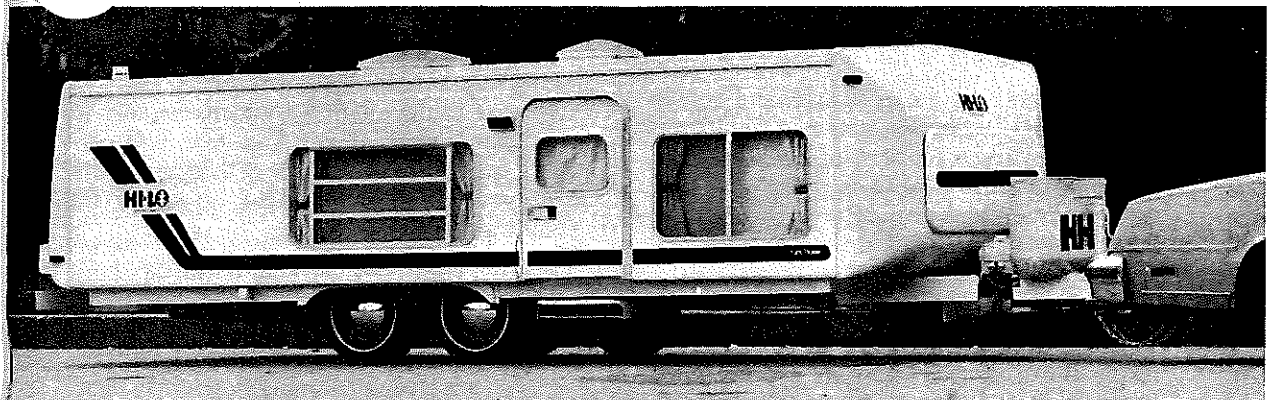


1983 Funlite 16-6



The telescoping
travel trailer

CARE AND USE MANUAL



LO FOR TRAVEL

Lowers instantly with the flip of a switch for safety, easy towing and up to 64% savings on gas.

IMPORTANT

Read This Manual Thoroughly Before Operating This Vehicle

1. Tighten wheel nuts after first 100 miles (torque to 85 lbs.)
2. Check tire pressure periodically.
3. Do not over load trailer with excess cargo (see label at front left corner of trailer).
4. All heat producing appliances should be turned off before trailer is lowered. Also turn off valve at LP Gas cylinder.
5. Be sure to read appliance manufacturer's instructions before attempting to light or operate appliance.
6. Store trailer in the lowered position. If stored in the raised position, (for an extended period of time) **grease the exposed thrust rod of the hydraulic cylinder.**

GENERAL INFORMATION

Congratulations

You've joined a growing group of travelers who own a trailer carrying the HI-LO mark of distinction. Your new HI-LO sets you apart as individuals who maximize their trailering comfort, excitement and ease to enjoy outdoor life at its best.

With the many unique features found only in your new HI-LO trailer, you gain significant advantages over owners of conventional units. Your new HI-LO is safer and easy to tow—over highway or wilderness trail. It's easier on your car, simple to park and more economical to tow.

Before You Hitch Up . . .

. . . read this manual carefully. It's designed to provide the maintenance information, service instructions, and use tips that make your travel and camping carefree and trouble-free. We also recommend you keep this manual at hand during your trips for easy reference.

Your HI-LO Is Registered

HI-LO TRAILER CO. prides itself in each trailer's quality construction and excellent workmanship. When you buy your HI-LO trailer, your Dealer will fill out a **CERTIFIED CUSTOMER CARE REGISTRATION CARD** and mail it to HI-LO TRAILER CO. where it is kept on file.

Appliance Operation and Service

Included in your Owner's Kit provided by your HI-LO Dealer is literature on component manufacturers such as, but not limited to, appliances, water heaters and furnaces purchased with your trailer. These products are all built by nationally known manufacturers. These manufacturers also have a **LIMITED WARRANTY** on their equipment. **FOR SERVICE ON COMPONENT PARTS, FIRST CONTACT YOUR COMPONENT MANUFACTURER'S SERVICE CENTER AS LISTED IN THE PRODUCT LITERATURE.**

PREPARING FOR TRAVEL

Packing and Inspecting Your HI-LO Trailer

Part of the fun of trailer travel and camping is the ability to take along recreational equipment such as a boat, motor, fishing gear, and sports equipment. Comfort items such as awnings, folding tables and chairs add to your camping pleasure. And, you will certainly want to include some of the food stuffs from your own kitchen. Also, be sure to fill your water tank.

Although your HI-LO trailer is sturdily built with margins of safety, too much extra weight can damage the undercarriage and cause excessive tire wear. Check label GW on left front corner for maximum gross vehicle weight. (See "Loading the Vehicle", pg. 16.)

Your HI-LO trailer is designed and balanced for easier and safer towing so that just the right tongue weight rests on the car hitch. In

lacking extra equipment, it is important to maintain that balance as near as possible fore and aft. It is also recommended that the heaviest item be positioned as near as possible to directly over the wheels.

In stowing loose equipment, pack it in such a way as to avoid shifting during acceleration or braking. Pad heavy and sharp items to avoid damaging interiors and equipment. A little extra care and few minutes spent in getting your trailer ready for travel assures a pleasant trip.

How to Hitch Up Your HI-LO Trailer

1. Move tow vehicle into place so ball on hitch is directly below the ball lock coupler on trailer.
2. Hook up the breakaway switch cable. Be sure it is properly attached to tow vehicle.
3. Lower ball lock coupler over hitch ball and secure.
4. Install the stabilizer bars, completely retract jack and remove dolly wheel.
5. Plug in the electrical connections and check to see that the turn signals, brake and trailer marker lights are working properly.
6. Hook up safety chains.
7. Put step in travel position.

Before You Go . . .

. . . check inside to make sure all materials are stored securely. Then, check to make sure the trailer is in the fully lowered position. We recommend you **NOT TOW THE TRAILER IN THE UPRIGHT POSITION FOR ANY DISTANCE**. When all is ready, close the doors firmly and lock the outer door. You're ready to get underway.

PARKING AND SET UP

For maximum living comfort in your HI-LO it's always advisable to position your trailer perfectly level. Upon arrival at your campsite, take a few minutes to locate an

area where your trailer will be level from side to side. When you're unhitched, use the leveling jack on your trailer hitch to level the trailer from front to rear.

Placing the Leveling Jacks

To provide a good solid base for indoor activity, it is recommended that you use four leveling jacks with your HI-LO trailer. Position these jacks according to the diagram in Figure 1 as follows:

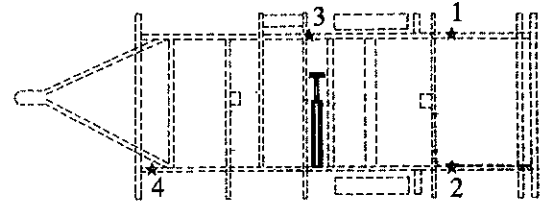


Figure 1

1. Under the shackle hanger just to the rear of the right wheel.
2. Under the shackle hanger just to the rear of the left wheel.
3. Under the cross frame member at the rear of the side door.
4. Under the cross frame member at the left front of the trailer.

Adjust these jacks up to a point where they make a tight fit between the frame and the ground. While you may use them to make minor adjustments, do not raise them to the point where they take the trailer weight off the wheels.

NOTE: It is especially important that your trailer be level for most efficient operation of your refrigerator.

Raising Your HI-LO

With your HI-LO positioned on your campsite and leveled, you are ready to raise the upper section.

1. Fasten top section of door to the door holder.

2. Hold bottom door section open at an angle of 90 degrees.
3. Flip the control switch and hold in this position until the top section has reached its full height (at which time you should hear a "squeal" and the safety lock engage automatically).

Before You Lower Your HI-LO

When you're ready to leave your campsite, follow these simple steps to assure proper lowering of your HI-LO trailer:

1. Close valve on L.P. gas container.
2. Check that all counters are cleared, wardrobe tops are in place, bunk bed is in stored position and cabinet door closed.
3. Turn oven pilot to "pilot off" position, and shut off gas at the valve on the bottle.
4. Close and latch all windows. Disconnect drainage, water and electric connections from outside of trailer and replace covers.
5. Lower and secure front window sun shade.
6. Set doors in same position as for raising.
7. Release safety by pulling release cable located near control switch. If necessary, raise top section enough to accomplish this.
8. Make one last check for obstructions on counter tops, and make sure no one is close to or in contact with the trailer before lowering.
9. Depress self-centering control switch lever and allow the top section to come all the way down. It takes about 12 seconds, that's all.
10. Remove and store leveling jacks.
11. Put slide-out door step in "stow-away" position.

Toilet

Your HI-LO is equipped with a marine type toilet. The instruction booklet accompanying these units should be reviewed carefully before use.

If your campsite is equipped with drain facilities, pull the flexible hose from its storage place in the rear bumper. After loosening the termination cap, install the drain hose on the termination fitting and place the other end in the drain facility. This will allow drainage of wastes from your sink and shower, bypassing the holding tank.

The body waste holding tank on your HI-LO trailer holds waste from the toilet only. This holding tank should be emptied when full or at the end of your trip, in an appropriate dumping station as follows: With the hose fastened securely to the termination fitting and the other end well into the the dumping station fitting, pull out on the Slide-EZ valve lever. When the holding tank is drained, push the Slide-EZ valve lever in, and remove the flexible hose. Wash water through the flexible hose and then store it in the rear bumper.

The sink and shower drainage on the HI-LO are independent from the holding tank.

If your HI-LO is equipped with two holding tanks, one tank is for body waste and one tank is for gray water. Each tank has a separate valve and is connected to a common outlet.

CAUTION: All drain caps must be in place while in transit.

Electrical System

The electrical circuits within your HI-LO trailer consist of a combination 110/125-volt a-c and 12-volt d-c system. This is provided so that you may use campsite electrical service where available or operate independently off your car and trailer batteries. When using outside power, it is recom-

mended that you first check to make certain the source provides service within the compatible voltage rating. A power supply cord is provided with your trailer to make these connections. As a reminder of this circuit capacity, the instruction plate in Figure 2 is attached to your HI-LO trailer near the 110/125-volt inlet.

**THIS CONNECTION IS
FOR 3-WIRE
110/125 VOLT A.C.
60 Hz [CYCLES]
AMPERE SERVICE.**

Figure 2

Tail lights, brake lights, turn signals, warning lights, hydraulic power lift, interior lamps, exhaust fan and air compressor are all independent of the 110/125-volt a-c circuit and operate only on the 12-volt d-c current. Interior lighting is also wired on the 12-volt d-c circuit. The duplex receptacles located inside the trailer are wired for 110/125-volt a-c power. Optional appliances may operate the 110/125-volt circuit—check the accompanying manual for instructions.

operating power for the 12-volt d-c system is provided by a 12-volt battery mounted adjacent to the pump and motor assembly. This is a heavy duty automotive battery that may be replaced by any service station or battery dealer. It is connected in parallel to the electrical system of your towing vehicle so that your generator automatically recharges your trailer battery as you drive. It is recommended that you consult your dealer for this hook-up.

NOTE: The auto charging system will not give your trailer battery a full charge. To insure the longest possible battery life, it is recommended that this battery be recharged to full capacity at least twice a season on a slow-rated charging unit.

Hydraulic Lifting System

The Electric/Hydraulic Power Lifting Unit is located at the "A" Frame of the chassis and consists of the following elements as shown in Figure 3. (1) electric motor; (2) solenoid start switch; (3) filler breather port; (4) reservoir; (5) relief valve; (6) manual release lever; (7) 3/8 NPTF pressure port; (8) electric release valve. This complete unit is factory adjusted and preset for smooth and efficient operation. It should require no further adjustment. However, for your information, here are some facts about the unit which may prove useful in the future.

Electric Motor—A standard d-c Prestolite Starter Motor operates the hydraulic pump. While it should seldom need servicing or replacement, an automotive supply house can supply a replacement in an emergency.

Raising Solenoid—Engaged by raising control switch, the solenoid completes the circuit to supply power to the pump.

Hydraulic Pump—The hydraulic pump is close-coupled to the electric motor as shown in Figure 3. It is capable of producing pressure up 3,000 psi; however, the raising mechanism of your HI-LO trailer requires much less for efficient operation. This unit includes a by-pass valve that operates when the hydraulic lifting cylinder has reached its maximum thrust. This by-pass is a built-in safety device to prevent damage. A harmless "squeal" will be detected when it is activated to indicate the top section is fully raised into position.

Lowering solenoid is engaged by depressing control switch level to activate bleed-off valve and lower top section.

Hydraulic Cylinder—The cylinder that raises your HI-LO is located in a transverse position and mounted in the center of the frame assembly. This unit is readily accessible from the trailer underside. As the pump and other elements of the lifting system, it is rated well beyond maximum requirements to insure dependable performance.

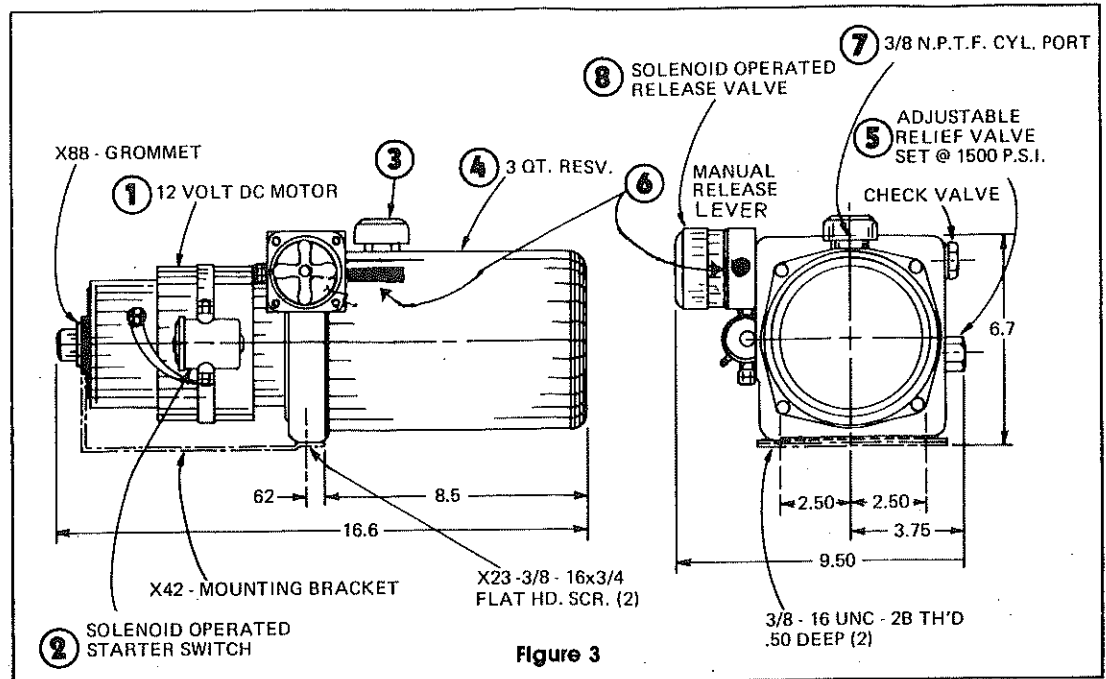


Figure 3

Cable Lifting Assembly – Aircraft-type cables operate from the hydraulic cylinder and perform the actual raising of the upper section.

The upper section of your HI-LO is also equipped with nylon glide assemblies and the bottom section with matching trunnion guides to keep the upper and lower section in perfect alignment at all times.

Your HI-LO Trailer Coupler

Your HI-LO trailer comes equipped with a coupler. This coupler has positive lock latch that automatically snaps in place over the hitch ball.

THE ELECTRIC BRAKE SYSTEM

The electric trailer brake system is basically an electric circuit. This means that it must be a complete, clean, tight conductor from beginning to end, and it begins and ends at the battery. Any break or poor connection will prevent or interfere with the flow of elec-

trical energy which means loss of braking.

APPLIANCE OPERATION & CARE

3 Way/Electric Refrigerator

Your HI-LO is equipped with a 3-way refrigerator and there is an instruction booklet inside trailer. We recommend you read and follow the instructions for the most efficient operation of this unit.

Before starting on a trip, plug in your coach utility cord at your home about six hours before leaving. Switch the refrigerator to 110v. This will insure that the refrigerator is cold before you start your journey. **Do not operate refrigerator over one hour while trailer is in lowered position unless the vehicle is in motion.** On the highway switch to Low Volts until you get to your destination. When you arrive, switch to LP Gas or 110v.

NOTE: IF THE REFRIGERATOR VOLT-AGE SELECTOR IS ACCIDENTALLY

LEFT ON 12v. IT WILL RESULT IN A DISCHARGED BATTERY.

Oven/Range Combination

If your HI-LO includes an oven/range unit, you will find an operating guide book in your Owner's Kit. Be sure to read it carefully and follow directions step by step, and be sure the pilot is off during transit.

Automatic Gas Hot Water Heater

Units equipped with a hot water heater will include an instruction manual in the Owner's Kit. This unit should also be turned off while in transit or whenever the trailer is in the lowered position.

NOTE: An additional plate concerning the HI-LO unit's gas piping is located on the front of the trailer adjacent to the mounting for the gas bottles. For your reference, it is reproduced here.

THIS GAS PIPING SYSTEM IS DESIGNED FOR USE OF LIQUEFIED PETROLEUM GAS ONLY. DO NOT CONNECT NATURAL GAS TO THIS SYSTEM.

Securely cap inlet(s) when not connected for use. After turning on gas, except after normal container replacement, test gas piping and connections to appliances for leakage with soapy water or bubble solution. Do not use products that contain ammonia or chlorine.

Fresh Water Tank

A tank for your water supply is standard equipment. This tank is located at the front end and is filled through a fitting on the outside wall of the trailer.

Fill the water tank by inserting a standard hose into the exterior water fill.

After each trip, it is recommended that the remaining water in the tank be run off at the faucet. For prolonged storage and during the winter months, this tank should be drained completely by opening valves at tank.

NOTE: The water system should be

sanitized, flushed and drained before using.

Sanitizing Potable Water Systems

To assure complete sanitation of your potable water system, it is recommended that the following procedures be followed on a new system, one that has not been used for a period of time, or one that may have become contaminated:

1. Prepare a chlorine solution using one gallon of water and $\frac{1}{4}$ cup of Clorox or Purex household bleach (5% sodium hypochlorite solution). Pour one gallon of solution into tank for each 15 gallons of tank capacity.
2. Complete filling of tank with fresh water. Open each faucet and drain cock until all air has been released from the pipes and entire system is filled.
3. Allow to stand for three hours.
4. Drain and flush with potable fresh water.
5. To remove any excessive chlorine taste or odor which might remain, prepare a solution of one quart vinegar to five gallons water and allow this solution to agitate in tank for several days by vehicle motion.
6. Drain tank and again flush with potable water.

SERVICE AND TROUBLESHOOTING

Servicing the Hydraulic Lifting System

The hydraulic lifting system has been fully tested by HI-LO and proven in over 12 years of actual use. Here are a few helpful hints in the unlikely event you encounter a problem with your HI-LO trailer:

1. If top section will not raise, first check the steps in the raising procedure.
2. If the pump motor will not run, check the battery connection for tightness. (Be sure there is a good ground to motor mechanism.) Turn on trailer lights to see if you have power. If lights go out when you operate the toggle switch for the motor,

the battery is low and in need of a charge. Also check to be sure the raising solenoid is operating properly.

3. If motor runs, but pump does not raise trailer, check the fluid level in the pump reservoir. Fluid level should be one inch from the top when trailer is in the "Down" position. If low, add necessary amount. Use only Type A automatic transmission fluid. Be sure it is clean and avoid over filling. If fluid level is extremely low, check for leaks around the pump, at the lifting cylinder, and the connecting hoses.
4. If top section appears to be out of level when raised, check by measuring from the bottom edge of the trailer body. Distance should be the same on all four corners. If it is uneven, it is probably due to normal stretch of the cables and should be corrected as follows:

Check the leveling adjustment points. For simple front and back realignment, adjust the proper adjusting nut located on the underside of the trailer. All front-to-back adjustment should be made with the trailer upper section supported so that tension is removed from the cables — accomplished by lowering the upper section onto four 2" x 4" boards of the same length to brace between top section and frame member. (Figure 4).

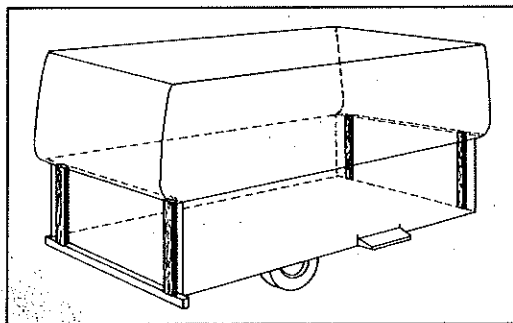


Figure 4

For example, if the front section is lower than the rear, you will correct this condition as follows: (See Drawing C.)

1. Lower the top section onto 2" x 4" boards as shown in Figure 4.
2. Loosen the locking nut.
3. Turn the front adjusting nut until all slack in the cable is taken up.
4. Tighten the locking nut.
5. Raise trailer; remove 2" x 4" boards, and check for proper alignment.

If one corner of the trailer is low, it may be corrected as follows:

1. Lower the top section onto 2" x 4" boards.
2. Loosen the locking nut on appropriate cable.
3. Adjust nut to take up slack in cable.
4. Tighten locking nut on cable.
5. Raise trailer; remove 2" x 4" boards, and check for proper alignment.

1. If upper section will not lower, release safety catch. (follow lowering procedure). If safety catch does not release and lift motor runs and makes a squeal, the unit may be low on hydraulic fluid.
2. If the safety catch does not release and lift motor runs and does not make a squeal, the lowering valve is blocked in open position.
 - A. Dirt in valve: Run lift motor for 10 sec. (at 1 min. intervals) 4 times to dislodge any dirt that may be in the lowering valve.
 - B. Manual release valve open: Be sure manual release lever is in neutral and not in partially opened position. (See Figure 3.)
 - C. Check toggle switch: With switch in center (off) position or in raising (up) position there should be no 12 volt supplied to the terminal to which the yellow wire is attached. Twelve volt

should be supplied to this terminal only when switch is in lowering (down) position. (Drawing "A"). If toggle switch does not follow this pattern—replace switch. For temporary operation: to raise trailer off of safety release, use a screwdriver to short between black and *white* wire. To lower, short between black and *yellow* wire.

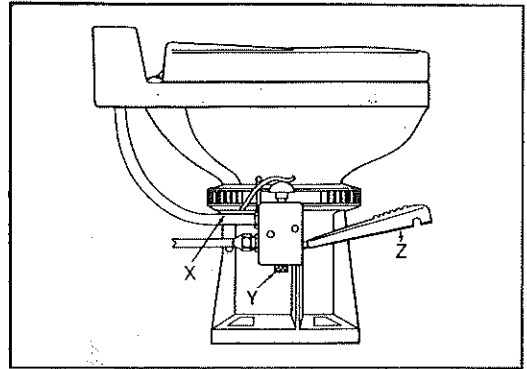
3. If safety catch releases and trailer will not lower:
 - A. Check all cables to be sure that the cable is in the pulley grooves.
 - B. Lower trailer with manual valve. Pull manual release valve lever until trailer lowers. Then release lever to original position. Then raise trailer ½ way and try toggle switch. This releases high pressure that may have generated in lowering valve.
 - C. Check ground wire from lowering valve to motor bracket. Be sure terminals are tight.
 - D. With 12 volt test light, check center terminal (black wire) of toggle switch to ground. If no light, check fuse 3 or check for broken wire between toggle switch and fuse block.
 - E. Using screwdriver, short between black and yellow wire of toggle switch. If valve operates—replace toggle switch.
 - F. Check connection at black lead wire of lowering valve to yellow wire of toggle switch for broken wire or loose terminal.
 - G. Replace lowering valve.

HOW TO WINTERIZE YOUR HI-LO WATER SYSTEM

1. Open all interior valves, sink, shower, etc.
2. Drain supply tank by opening valve at front of tank.
3. Lower front of trailer by cranking down

with jack.

4. If equipped with hot water tank, open drain valve and pressure relief valve at front of tank. This is located back of cover at front of trailer under pilot light. Open valve in hot and cold water supply line.



5. Drain demand pump. Remove the output hose at the pump. Turn the pump on to pump out any remaining water. Use towel or rag to catch this water. (Note: Check manual supplied with pump.)
6. To drain marine type toilet:
 - a. Remove drain plug at rear of toilet. (X)
 - b. Remove drain cap on bottom of valve. (Y)
 - c. Depress flush lever (Z) until all water drains from system. For the Thetford and other models, check manual provided with unit.
7. Blow out all lines with air, including sink trap.

Servicing the Braking System

To keep your trailer's braking system in top notch condition, a few simple procedures should be followed:

Electric Brakes

Electric brakes need no special care or service other than keeping connections and wiring free of dirt and other foreign matter. Brake adjustment, relining and repair are

similar to those on your car. Any qualified service station can do the job.

CAUTION: Do not pull breakaway pin for parking brake, as this will result in a constant drain on the battery and run it down.

Wheel Bearing Lubrication

Repack the wheel bearings with a good grade of grease every 6,000 miles or before any major trip. Check tightness of wheel lugs every 1,000 miles.

GOOD HOUSEKEEPING HINTS

1. Counter tops and tables—The hard finish surfaces of your counter tops and tables are the same as those in your kitchen at home. While being highly resistant to heat, staining, and abrasion, the same good care will keep them like new for years to come. Simply wipe clean with a damp cloth or wash with warm soap and water.
2. Drapes and cushions—See cushion manufacturers label.
3. Floors—Same as your kitchen floor at home. Waxing before extended trip will make floor care easier enroute. A rubber or fiber mat placed outside the door will do wonders in keeping sand and dirt outside. For units equipped with carpet, use mild soap and water to clean spots and a regular vacuum cleaner to pick up sand and dirt.
4. Appliances—Same as your appliances at home.
5. Trailer exterior—Almost the entire outside surface of your HI-LO consists of prefinished aluminum that will keep its finish indefinitely if given the proper care. Mild soap and water will help retain the natural gloss. Do top section first in lowered position, then raise and do the bottom section.
6. Abrasive cleansers should *not* be used on the front and rear fiberglass.

These helpful housekeeping hints will help

you preserve the beauty, comfort, and value of your HI-LO trailer for years to come. They're well worth the small effort involved.

THE LP-GAS SYSTEM

General

As with other systems in your RV, all components have been tested and approved for use in recreational vehicles by a nationally recognized testing laboratory. When properly handled, LP-gas will provide you with trouble-free operation of your heat producing appliances.

LP-gas (liquid petroleum) is a material composed of various hydrocarbons such as propane, propylene, butanes, butylenes, or a mixture of them. In its gaseous form (vaporized), it is colorless and carries an added garlic-like odor for detection. Besides being inflammable, it is potentially lethal to inhale. LP-gas is compressed into liquid form for storage and transportation. It is also known as bottle gas. Propane gas will vaporize during extreme cold (above 44°F. below Zero), while butane will not vaporize below 30°F. Most LP-gas fueling stations sell only propane for recreational vehicle use.

The LP-gas tank mounted on your vehicle contains LP-fuel in liquid form under high pressure. As fuel is used, vapor (LP-gas) passes from the top of the tank through a regulator which reduces the pressure to about 6½ ounces per square inch. Vapor at the low pressure is then transferred through the gas distribution lines for appliance use.

Checking for Leaks

Upon delivery and periodically thereafter, check your gas system for possible leaks. Although the entire distribution system and its attached appliances have undergone extensive factory testing for leaks, with normal use being subject to road vibrations, connections and fittings can develop leaks. Usually you can detect these leaks by the strong odor of garlic or onions. If you do encounter this

odor, turn off all open flames immediately and commence a systematic search for leaks throughout the gas system. Use a bubble solution or soapy water—**NEVER A MATCH**—on connections and fittings. Bubbles will appear at the leaky points. When tightening connections, use two wrenches with opposing torque to prevent twisting of copper tubing. If the leak doesn't show up in the manifold or copper tubing distribution system, then check the appliances.

LP-Gas Regulator Setting

Never attempt to reset the gas regulator yourself. Have an authorized service agency make any regulator adjustments. Even a little amount of pressure over the recommended 6½ ounces per square inch can cause damage to appliance regulators.

Using the Automatic Changeover Regulator

Your model RV may incorporate an automatic changeover regulator. This apparatus allows both gas bottles to be turned on simultaneously. The arrow on the regulator handle indicates which bottle is in service. When the indicated bottle in service becomes empty, changeover is automatically accomplished to commence drawing fuel from the other bottle. At this point, the plastic window will display a red signal or flag to indicate the condition, whereupon first notice you should then flip the lever over to indicate service on the other bottle. The first bottle which was depleted can then be turned off, uncoupled and taken to be refilled without disturbing the RV gas supply. After refilling, it can be remounted and again turned to the "On" position. When the other bottle is depleted, the LP-gas supply will again be automatically changed over.

Gas Containers—Using Alcohol

When gas containers are not in use for some time, or are empty, it is advisable to keep the service outlet valve closed to minimize entry of moisture inside containers

or the regulator. Moisture can cause freeze-up damage to regulators. To minimize chance of freeze-up, have your dealer add a half cup of dry methyl alcohol into each container.

Filling LP-Containers

WARNING

YOUR VEHICLE HAS EXTERIOR COMBUSTION AIR INLETS. APPLIANCE PILOT LIGHTS SHOULD BE TURNED OFF DURING GASOLINE OR LP-GAS REFUELING ON THE UNIT. (Required by law in some States.)

LP-gas is available throughout the country. When one bottle is depleted, it is best to have it refilled without delay. Woodall's, Rand McNally, and other publications have listings of LP-gas stations. Many travel parks have LP-gas available.

Local regulations sometime require that I.C.C. removable cylinders be removed from the RV for filling. Caution the supplier not to overfill your tank. A 20% or 10% relief valve is incorporated on some tanks for safety. This valve is normally opened during filling and will indicate when the tank is filled to the proper limit by appearance of liquid replacing vapor. At all other times, the overfill valve should be tightly closed by hand only.

The main valve on the LP-gas container should be tightened by hand only using caution not to over-tighten. The valve is designed to satisfactorily close with only a reasonable amount of tightening. Continual over-tightening will eventually damage the valve and will require its replacement. If a valve is replaced, always replace it with the RV type that incorporates a check valve as some local regulations prohibit filling tanks that don't have one.

When LP-gas containers are filled to the proper level there is available space for safe expansion of the vaporized liquid. If your tank becomes overfilled and is not allowed to "bleed off" before installation with the

RV system, it may gain pressure due to exposure to hot sun rays and will begin "blowing off" pressure from the relief valve. This can be detected by the strong odor around tanks and can be heard close up. Keep all open flames away from this area. It is best to remove the bottle, take it to a safe area, and bleed off the excess pressure by opening the valve and closing it when discharge has been sufficient.

Handle your LP-tanks with care. Note that when disconnecting, you must turn the wrench in a clockwise direction because the connection utilizes left hand threads. Similarly, when reconnecting, turn wrench counter clockwise. When tightening, only "snug up" — avoid over-tightening.

LP-Gas Consumption

Most gas appliances are only intermittently operated. Unless there is heavy use of hot water, water heater consumption is not too great. Operating under wintery conditions, requiring heavy use of the furnace, or doing a lot of oven baking for hours at a time is what really consumes the gas rapidly. During freezing weather and high wind conditions, furnace consumption can be extremely heavy. Those who have need to use an RV during much freezing weather many times install storm windows to reduce the amount of heat required.

LP-gas consumption depends upon individual use of appliances and the length of time operated. Each gallon of LP-gas produces about 91,500 BTU's of heat energy. A typical seven gallon container will provide about 640,500 BTU's of heat energy. Following is a list of typical appliance consumption when turned full on for one hour of operation:

APPLIANCE HEAVY BTU Consumption	
Water Heater	8,500
Refrigerator	1,350
Furnace	12,000, 16,000 or 24,000
Range Oven	10,000
Each Range Burner	5,000

SAFETY CONSIDERATIONS

Safety in Using LP-Gas

You should check for leaks at the connections on the LP-gas system soon after purchase and initial filling of LP-tanks, and 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 vibration encountered during travel. Your vehicle was manufactured to provide you with full access to all gas line connections. Leaks can be found easily with a soapy water solution applied to the outside of the gas piping connections. Usually tightening of connections will close leaks. If not, ask your authorized dealer service to make the necessary repairs.

LP-gas is heavier than air. Leaking gas tends to flow to low places, much as will water. It will sometimes pocket in a low area. LP-gas can usually be detected by an identifiable odor similar to onions or garlic. Never light a match or allow any open flame in the presence of leaking gas.

Be sure to shut off the main LP-gas supply valve when the vehicle is not in use. This rule should also apply while the vehicle is moving to prevent any accidental ignition of gasoline fumes while refueling by the pilot lights in the water heater, furnace or refrigerator.

Never allow gas containers to be filled above the liquid capacity indicated on the container. If a container is overfilled, liquid gas may flow through the regulator causing it to freeze and/or introduce a dangerous excessive gas pressure into the lines. In addition, an overfilled container placed in hot sunlight may expel excess gas through the relief valve and be susceptible to ignition by any nearby open flame.

Electrical System Safety

As delivered, your HI-LO trailer has been

engineered and checked for your complete safety. Circuit breakers and fuses are installed to protect electrical circuits from overloading. Do not make unauthorized changes to circuitry or add on fixed appliances yourself. If you wish changes, consult your dealer and he will assist you in obtaining a safe installation.

An approved power supply cord has been supplied with the vehicle. Always use this cord for hook-up to the 120 volt source. Note that the cord has a three pin plug, which provides proper grounding through the third (round) pin. Grounding is your personal protection from electrical shock. Do not use any adapter, cheater, or extension cord that will break the continuity of the grounding circuit connected to that third pin. NEVER remove the grounding pin for convenience of being able to connect to a non-grounded (only 2 prong) receptacle. Use a grounding adapter with two prongs plus a "pig-tail" conductor which should be externally grounded.

NEVER operate your RV with a "hot skin". If you can feel a shock—even a small one—from the RV while standing on the ground, you should immediately disconnect the RV and locate the trouble. The fault is usually from a break in the grounding circuit which should be continuous from the skin or frame to the distribution panel board to the third pin on the power supply cord and thence to the park receptacle and earth ground. (See Drawings A and B.)

Safety When Emergency Stopping

Always carry road flares and/or reflective triangular highway warning devices to be displayed when necessary. Pull off the roadway as far as possible when changing flats or for other emergency situations. Turn on your vehicular hazard warning flashers when parked alongside a roadway, if only for a minute or two. Get members of your family out of the RV and have them stand clear of the vehicle area when parked on the edge of a highway.

Additional Safety Considerations

1. Sanitize the fresh water supply system periodically (see sanitizing instructions).
2. Try to keep water connection fittings from coming in contact with the ground or drain hose to reduce chance of contamination.
3. Never attempt to fix gas or electrical appliances yourself. Enlist services of a qualified technician.
4. Always have a serviceable fire extinguisher placed in an easily accessible location. This extinguisher should have a rating of at least 2 BC units.
5. Don't overload your vehicle.
6. Be careful not to cause an improper load distribution which can adversely affect roadability and towing safety.
7. Insure that tires are in good condition and properly inflated. Watch inflation especially close for tandem wheel models—under-inflated tires get hot. Hot tires are more apt to blow out.
8. Check and tighten wheel lugs regularly.
9. Check brakes in a safe area—not while traveling a busy highway.
10. Disconnect television power cord and antenna lead-in during local thunderstorm and lightning activity.
11. Always solidly chock trailer wheels before unhitching.
12. Before leaving a camp area with a trailer in tow, insure that the safety pin or locking lever is seated, breakaway wire is attached to tow vehicle, and the electrical cord and safety chains are connected.
13. Have wheel bearings cleaned and packed at regular intervals.
14. Check condition of trailer brake magnets and linings periodically.
15. Observe the warning labels attached to your vehicle concerning LP-gas, water, electricity, and loading.

DRAWING A 12 VOLT SCHEMATIC LOWER SECTION

NOTE:
Connect Battery
Charger to Terminal
X (-) and (+)

FUSE CODE

- 1 - Air Compressor
- 2 - Refrigerator
- 3 - Interior Lamps
- 4 - Motor Control Optional
Furnace Blower
- 5 - Aux.

DRAWING B 12 V. SCHEMATIC CAR - TRAILER CONNECTION

Back-Up Lamp (Yellow) #16
Tail Lamps (Green)
Left Turn & Stop (Red)
Right Turn & Stop (Brown)
Interior Lamps (Yellow) #14
Ceiling Fan Motors (Black) #14
Stereo (White)

Wire Splice (TYP)

Mounting Plate

Coiled Cord

Brake Away Switch

BLACK #2
RED
BLUE
GREEN
BROWN
WHITE #3

Trailer Brakes (Blue) - ①
Charge Line (#10 Black)
Interior Lamps (Yellow)
Ceiling Fan Motor (Black)
Stereo (White)
Back-Up (Yellow)
To Lower Section

To Upper Section

Left Tail Lamp
Left Turn and Stop

Ground To Frame #10 White

Charge Line #10 Black

30 Amp Breaker

To (+) Terminal of Battery of Tow Vehicle

To Brake Controller

Tow Vehicle Connector

Right Turn and Stop
Right Tail Lamp
Back-Up Lamp

Tow Vehicle Lamps

Trailer Connector

NOTES -

- #1 - refer to #14 & #12
- #2 - White Painted Black
- #3 - Black Painted White
- #14 Blue - Single Axle
- #12 Blue - Tandem Axle

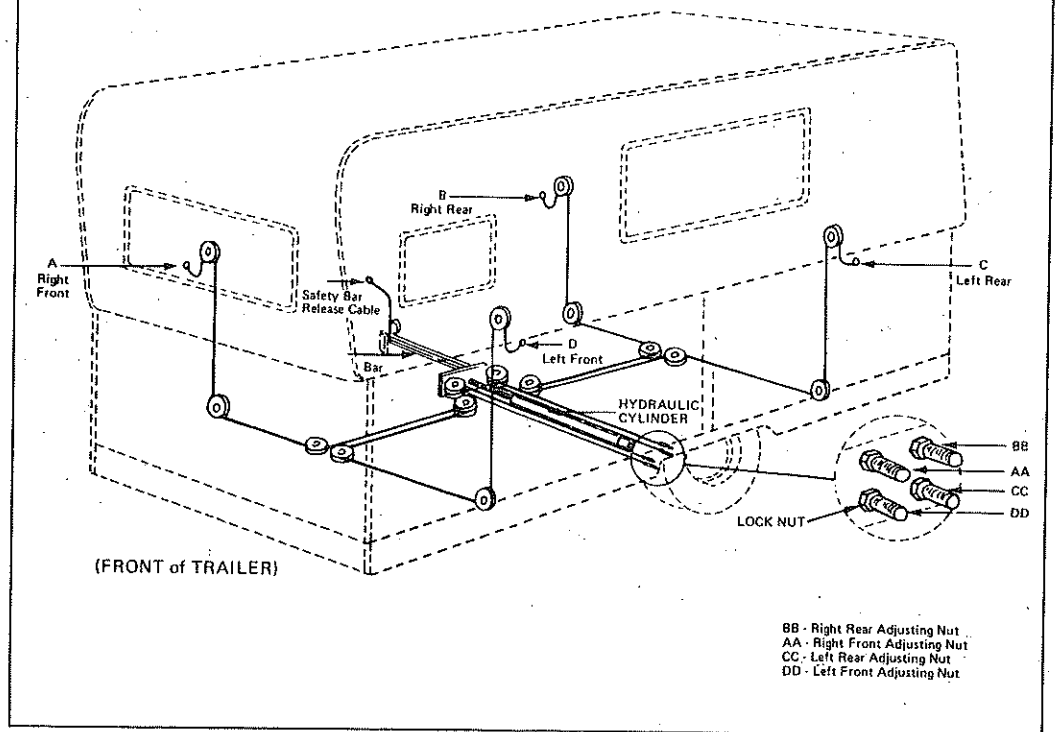
	7 - Way Bargman	6 - Way Pollak or Berg
BACK-UP LAMP	7	A
BATT. CHARGE	4	L.T.
LEFT TURN & STOP	5	S
ELECTRIC BRAKES	2 ^{only}	T.M.
TAILS LAMPS	3	R.T.
RIGHT TURN & STOP	6	G
GROUND	1	

TROUBLE SHOOTING HI-LO LIFT MECHANISM

CAUSE	SOLUTION
I. Top will not raise	Lift Motor will not run
A. Low or Dead Battery	Attach jumper cables from the charger battery to the trailer battery. If the motor now runs check to be sure you are getting ample charge from the convertor system and to the tow vehicle charge line.
B. Blown Fuse	Replace blown fuse located in the circuit panel of the convertor system. Check for short in wire between fuse and motor solenoid.
C. Loose Wire Connection	Tighten all connections at the battery and motor terminals. Check to be sure that the wire and the terminal connection is crimped properly.
D. Defective toggle switch	Remove the panel housing the toggle switch, lift the toggle switch to the raising position and with a 12 Volt test lamp test for 12 Volt current supply between the red wire and ground. If the light does not light and you have voltage at the black wire, replace the toggle switch.
E. Defective motor solenoid	Using a jumper wire, jump between the battery terminal of the solenoid and the switch control terminal. The solenoid should click indicating a response from the magnet. If it does not click be sure that the solenoid is properly grounded to the motor chassis. Next with a heavier jumper wire jump between the two larger terminals of the solenoid. If the motor runs the solenoid is defective, replace it.
F. Worn motor brushes	Remove end cap from motor and inspect the brush assemblies. Clean and lubricate and replace brushes if necessary.
II. Top Will Not Raise	Lift Motor Runs
A. Low on ATF fluid	Check to be sure oil level is within one inch of the top of the reservoir with the trailer in the lowered position.
B. Lowering valve stuck in open position.	Check to be sure that the manual lowering valve lever is in neutral position and not in partially open position. Lift the toggle switch to run the motor and simultaneously pull on the lowering valve lever in an attempt to raise and lower the trailer at the same time. This will force the oil through the lowering valve at high pressure and clean out any debris that may have lodged in the valve.

II. Top Will Not Raise		Lift Motor Runs	cont.
C. Air in pump chamber		Air in the pump chamber will result when running the pump when the oil level is not at its filled position when the trailer is lowered. This will result in a gravelly sound when the pump is running. Lower the trailer and keep the switch in the lowering position for 60 seconds so that the air can bubble out of the pump into the reservoir, then add fluid to the proper level.	
D. Too low of pressure relief settings.		To adjust pressure, a pressure gauge with a reading of 0 to 3000 lb. should be used. Remove $\frac{1}{4}$ " pipe plug from tee on top of pump and install gauge. Proper setting should be approximately 1500 lbs. maximum. To adjust pressure remove 1" cap on lower rear of pump (Ref 33). To increase pressure turn screw $\frac{1}{4}$ turn clockwise for each 200 lbs.	
III. Safety Bar Will Not Release			
A. Locked in safety position		To remove pressure off of safety bar, lift toggle switch to raise the top section. Pull on safety release cable and depress lift switch. If trailer top does not raise to release safety bar, then follow steps under trouble shooting trailer will not raise.	
B. Dirt on top of safety bar		From the underside of the trailer, inspect the safety release bar which lies on top of the cylinder rod assembly. Remove any dirt which may have been lodged on top of the safety bar.	
C. Broken release cable		A replacement cable will have to be strung through the safety release housing and attached to the safety release bar.	
IV. Lowering Valve Inoperative			
A. Low or dead battery		Follow instructions for Item I.A	
B. Blown fuse		Follow instructions for Item I.B	
C. Loose wire connection		Follow instructions for Item I.C	
D. Defective toggle switch		Follow instructions for Item I.D except test the yellow wire to ground.	
E. Dirt in lowering valve		Follow instructions for Item II.B	
F. Lowering valve adjustment		To adjust lowering valve remove two screws on the plate on top of the valve. Remove the plate. (Ref. 8) Using 2 $\frac{5}{16}$ open end wrenches, hold the valve stem with one wrench and turn the cap screw in the end of the valve stem counter clockwise to increase the lowering speed of top section. Turn the cap screw clockwise to reduce the speed.	

DRAWING C



LOADING THE VEHICLE

Weight Distribution and Load Capacity:

Located on the left exterior wall of your trailer, near the front, is the Federal Certification Label which gives the maximum weight-carrying capacities of your trailer and each axle, designated by the letters "GVWR" and "GAWR", respectively.

The Gross Vehicle Weight Rating (GVWR) is the maximum your trailer should weigh with water and LP-gas tanks full, and with food, clothing and all other supplies aboard.

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

Your HI-LO is rated as follows:

MODEL*	FACTORY WEIGHT	HITCH WT.	G.A.W.R.	G.V.W.R.	MAX. CARGO WT.	RECOM-MENDED HITCH WT.**
16 S	2000	200	¹ 2600	2800	800	12-15%
21 S, D&L	3000	325	² 2100-2100	4200	1200	12-15%
25 T, D&L	3775	425	³ 2700-2700	5000	1225	12-15%
29 S&R	4590	625	⁴ 2900-2900	6000	1410	12-15%

¹ 16 S - B78-13 LRC

² 21 S, D&L - B78-13 LRB

³ 25 T, D&L - F78-14 LRB

⁴ 29 S&R - G78-14 LRB

* Standard Equipment

** % of loaded weight (Factory Wt. + Cargo Wt.) 750 lbs. max. w/2" coupler

When loading your trailer, store heavy gear first, keeping it on or as close to the floor as possible. Heavy items should be stored directly over or slightly ahead of the axles. Store only light objects on high shelves. Distribute weight to obtain even side-to-side balance of the loaded vehicle. Secure loose items to prevent weight shifts that could affect the balance of the trailer.

With the trailer fully loaded, drive to a scale, unhitch the trailer from the tow vehicle, and weigh separately the load on the hitch coupler and the load on the axles. The load on each axle should not exceed its GAWR. The total of the axle loads and hitch load should not exceed the GVWR. For best

towing stability the load at the hitch coupler should be between 12% and 15% of the fully loaded trailer weight. If a weight-distributing hitch is employed, the load on the axles should also be weighed with the trailer hitched to the tow vehicle to make certain the load on each axle does not exceed its GAWR. If weight ratings are exceeded, move or remove items to bring all weights below the ratings.

Weight of Optional Equipment

Swing Away Bed 80 lbs.
Roof Air Conditioner 130 lbs.
Spare Tire and Mount 55 lbs.



HI-LO TRAILER CO.

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