Congratulations,
and thank you for purchasing a Krystal Enterprises Vehicle

You have taken ownership of a true luxury vehicle which is in a class all its own. We are providing this manual to familiarize you with your new Krystal Enterprises Professional Bus. This manual shall serve as a reference document for the operations and maintenance procedures that shall be required throughout the life of your vehicle. This edition covers all our International Chassis models, and is designed to be used in conjunction with the original chassis manufacturer’s owner’s literature, as well as all other component manufacturers literature.

IMPORTANT: PLEASE READ CAREFULLY

For your safety and the safety of others, we ask that you completely familiarize yourself with this manual, and all other operators manuals before you operate this vehicle for the first time.

KRYSTAL ENTERPRISES  2701 East Imperial Highway  Brea, California 92821
(800) KRYSTAL(579-7825)  (714) 986-1200
# TABLE OF CONTENTS

**SAFETY**
- Pre-Trip Inspection (suggested minimum)........................................................................ 8
- General Vehicle Safety Warnings ..................................................................................... 10
- Vapor Door Operational Safety Check List ....................................................................... 11
- Air Door Emergency Release Valve .................................................................................... 12
- Electric Door Emergency Release Lever ............................................................................. 13
- Wheelchair Securement and Occupant Restraint Systems ............................................... 14
- Air Door Lock Pin Assembly ............................................................................................... 16
- Dual Overhead Parcel Racks ................................................................................................ 17
- Emergency Egress Window Operation ................................................................................ 18
- Emergency Roof Hatch Exit ................................................................................................ 19

**OPERATION**
- In-Dash Control Panels ..................................................................................................... 20
- Controls and Accessory Functions ...................................................................................... 21
- Audio/Video PA Control ....................................................................................................... 22
- Blank Page ............................................................................................................................ 23
- Video Entertainment Center ................................................................................................. 24
- Load Shed & High Idle Charge Protection Operating Procedures .................................... 26
# Table of Contents

- High Idle Charge Protection Operating Controls ........................................... 27
- Battery Location - Primary and Secondary .................................................... 28
- Window, Door, Mirror and Light Control Switches ........................................... 29
- Back-Up Camera Controls and Operation ....................................................... 30
- Rear Step Operation ....................................................................................... 31
- Rear Cargo Door Micro Switch ....................................................................... 32
- Foldaway Seating ........................................................................................... 33
- Bus Passenger Seating .................................................................................. 34
- Stainless Steel Wheel Liners .......................................................................... 35
- Air Conditioning Assembly .............................................................................. 36
- Floor Heaters .................................................................................................. 38
- Movable Wall - Standard ............................................................................... 39
- Movable Wall - EZ Move ................................................................................ 41
- Air Operated - Single Plug Door .................................................................... 44
- Air Operated - Single Plug Door .................................................................... 46
- Air Operated - Double Plug Door with Lower Air Step .................................. 48
- Electric Swing Doors ...................................................................................... 50
- Braun Rear Door Wheelchair Lift .................................................................... 52
- Ricon Rear Door Wheelchair Lift .................................................................... 54
# TABLE OF CONTENTS

## SPECIFICATION
- Standard Chassis Specification for 31’ & 35’ .................................................. 56
- Standard Equipment for 31’ & 35’ ........................................................................ 58
- Standard Chassis Specification for 38’ ................................................................. 59
- Standard Equipment on 38’ .................................................................................. 61
- General Vehicle Dimensional Specifications-Body & Chassis by Model ............. 62
- General Body Material and Construction Measurements .................................... 64
- Vehicle Manufacturers Identification Label ......................................................... 65

## PREVENTATIVE CARE & MAINTENANCE
- Preventative Maintenance Schedule ..................................................................... 66

## TROUBLE SHOOTING
- Basic Troubleshooting Guide ............................................................................... 85

## ASSEMBLIES & SCHEMATICS - AIR & ELECTRIC
- INTERNATIONAL Diamond Logic Electrical System ......................................... 90
- Legend for Standard Fuse & Circuit Breaker Panel ............................................ 92

**CLICK ON THE DESCRIPTION TO GO TO THAT PAGE**

---

Krystal Enterprises
## TABLE OF CONTENTS

Legend for Optional Fuse & Circuit Breaker Panel................................................................. 93  
Carrier Rooftop Air Conditioning System Diagrams......................................................... 94  
Model 35 & 38 Accessory Harness-Front Portion................................................................. 100  
Model 35 & 38 Accessory Harness-Rear Portion................................................................. 101  
Model 35 & 38 Accessory Harness-Legend............................................................................. 102  
Model 35 & 38 Accessory Harness-Body Wiring Diagram Part 1 & 2...................................... 103  
Front/Rear A/C Module Wiring Diagram.............................................................................. 105  
Circuit Board Assembly Phase 1......................................................................................... 106  
Circuit Board Assembly Phase 2......................................................................................... 108  

**PARTS - SERVICE - WARRANTY**  
110

**VENDOR REFERENCE LIST**  
114

**INDEX**  
116

**KRYSТАL ENTERPRISES VEHICLE WARRANTY**  
120

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**CLICK ON THE DESCRIPTION TO GO TO THAT PAGE**

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Krystal Enterprises
Pre-Trip Inspection (suggested minimum)

<table>
<thead>
<tr>
<th>Item</th>
<th>Inspection Procedure</th>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Check preventative maintenance schedule: for services due at present mileage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Check operation of: drivers seat and seat belt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Check operation of: steering wheel and shift levers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Check operation of: turn indicators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Check operation of: foot pedals and parking brake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Check operation of: all gauges, for normal readings with engine running</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Check operation of: dash indicator lights with key on, engine not started, then again with engine started</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Check operation of ventilation system: heating, defrosters, fans and air conditioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Check: horn, wipers, washers, and mirrors for cleanliness, adjustment, operation and damage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Check condition of: fire extinguisher, warning reflectors and first aid kit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Check: all doors, glass and windows: for operation, cleanliness, and damage.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Check: all emergency exits for operation, warning devices, markings, to be free and clear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Check interior lighting: for operation and damage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Check Side Passenger Entry Door - Emergency Exit Operation (see page 11,12,13)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Any item not passing inspection, must be reported immediately, before operating vehicle

FAILURE OF HIGHLIGHTED ITEM(S) TO PASS INSPECTION WILL CAUSE VEHICLE TO BE GROUNDED
## Pre-Trip Inspection (suggested minimum)

Failure of highlighted item(s) to pass inspection will cause vehicle to be grounded.

<table>
<thead>
<tr>
<th>Item</th>
<th>Inspection Procedure</th>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Check Side Passenger Entry Door: for damage and proper closing operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Check exterior lighting: for operation and damage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Check exterior: for cleanliness, markings and damage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Check fuel cap: in place and secure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Check all tires and wheels: for tread depth, cracks &amp; bulges, missing lug nuts, and air pressure 100 psi Frt/Rr for KK35, and 120 psi Frt &amp; 100 psi Rr for KK38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Check: oil level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Check: transmission fluid level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Check: engine coolant level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Check: power steering fluid level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Check: brake fluid level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Check: belts for tension and wear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Check operation of: cameras, if applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Check operation of: PA system, if applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Check operation of: audio and video system, if applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Check wheelchair lift: for proper function or damage and securement station equipment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Any item not passing inspection, must be reported immediately, before operating vehicle.
NO STANDEES ARE ALLOWED, AT ANY TIME WHILE THE VEHICLE IS IN MOTION.

DISCONTINUE OPERATION OF THE VEHICLE, WHEN THE LOW AIR WARNING LIGHT OR BUZZER ON INSTRUMENT CLUSTER ACTIVATE, OR UNTIL THE PROBLEM WITH THE SYSTEM CAN BE RESOLVED.

DISCONTINUE OPERATION OF THE VEHICLE, IF ANY CRITICAL ITEM ON THE PRE-TRIP INSPECTION LIST FAILS TO PASS, OR UNTIL ALL PROBLEMS ARE RESOLVED.

AIR DOOR EMERGENCY RELEASE VALVE, MUST BE OPERATED DAILY, PRIOR TO VEHICLE OPERATION Caution! UNDER EMERGENCY SITUATIONS. (IF EQUIPPED) THE BOTTOM AIR STEP WILL NOT DEPLOY.

Krystal Enterprises

RETURN TO MENU
ATTENTION

WHEN OPERATING A VEHICLE WITH A VAPOR DOUBLE PANEL AIR OR ELECTRIC ACTUATED PASSENGER ENTRANCE DOORS, THE FOLLOWING PRECAUTIONS SHOULD BE TAKEN.

AIR DOORS - SINGLE or DOUBLE

The Emergency Release Valve System - *(must be checked on a daily basis)*
Once the emergency release valve has been actuated (by turning the red handle counter clockwise), it should be possible to open the doors by pushing outward with your hand after about 5 seconds.

**Caution!** UNDER EMERGENCY SITUATIONS, (IF EQUIPPED) THE BOTTOM AIR STEP WILL NOT DEPLOY.

The Obstruction Sensing System (Sensitive Edge) - *(must be checked on a daily basis)*
Only when the door is closing, can reversing be actuated. The reversing motion should be shut off at about 10 to 30 mm before the final closing position. If the reversing process actuates too late, the sensi-

ELECTRIC DOORS

The Emergency Release Lever System - *(must be checked on a daily basis)*
Once the emergency release lever has been actuated (by pushing the red handle from right to left as indicated on the sticker), it should then be possible to open the doors by pushing the panels outward with your hand.
Air Door Emergency Release Valve

**ACTION:**
Valve must be operated daily, prior to vehicle operation.

**EMERGENCY OPERATION**
For Emergency Door Opening, turn the red valve counter clockwise, this will release the door after about 5 seconds, then the door can be pushed open.

**CAUTION!**
Under emergency situations, (if equipped) the bottom air step will not deploy.
Electric Door Emergency Release Lever

**Electric Door Motor Cover**

**Emergency Exit Lever Decal**

**Emergency Exit Lever**

**ACTION:**
LEVER MUST BE CHECKED DAILY, PRIOR TO VEHICLE OPERATION

**EMERGENCY USE ONLY**
Wheelchair Securement and Occupant Restraint Systems

Pre-Trip Inspection

- Is each securement station properly equipped with four securement straps, a lap belt, and a shoulder belt?
- Are all straps and belts in good working condition? Any defects such as cut, frayed, contaminated or damaged webbing, improperly functioning buckles or hardware, or broken or worn parts, require replacement of the entire strap or belt assembly.
- Are all floor anchorages, (i.e., tracks or plates), clear of dirt or debris to allow for proper system fitting attachment?
- Is there a clean, dry container in the vehicle to allow for storage of the system when not in use?
- Is the vehicle equipped with a web belt cutter for use in the event of an emergency evacuation?
- Are complete system operational instructions, in either printed or decal form, located within the vehicle compartment to serve as a reference?

**CAUTION!** Never utilize the Occupant Restraint System unless you are fully trained, if you’re not sure what to do, always call your Kinedyne Representative for Assistance!
Typical Wheelchair Securement Methods

With the wheelchair and occupant facing toward the front of the vehicle, center the wheelchair between the floor tracks or plates. As you position the wheelchair, remember that the securement straps need to have approximately a 45° angle from the floor tracks or plates to where they attach to the frame. Also, keep in mind the proper extension and placement of the occupant restraint shoulder belt. Apply the wheel locks or turn off the power if motorized.

Typical 4-Point Restraint with Lap & Shoulder Belt

For Specific Operating Instructions and System Care and Maintenance, refer to your Kinedyne Literature
Air Door Lock Pin Assembly

CAUTION!
Security Pin must be removed during bus operation.
Pin is only to be used for security, if bus is not in operation.

CAUTION!
UNDER EMERGENCY SITUATIONS, (IF EQUIPPED) THE BOTTOM AIR STEP WILL NOT DEPLOY.
Dual Overhead Parcel Racks

CAUTION! Do not overload Parcel Racks. Do not fasten parcels to retainer bars.
Emergency Egress Window Operation

Windows with Emergency Exit stickers are designated emergency exits. Follow the directions on the sticker.

*Disengage latches and push windows out*
Emergency Roof Hatch Exit

This is a Dual Purpose hatch used for Emergency Egress and Ventilation purposes.

SUGGESTED MAINTENANCE
Periodically inspect attaching fasteners for evidence of loosening due to tampering, and regularly clean surface with a mild soap and water.

CAUTION: When removing graffiti, it is the customers responsibility to ensure cleaning solutions are compatible with the materials used on Safety Vents. Solutions containing, acetone, ether, lacquer thinner, or other solvents can destroy the high strength properties of many engineering plastics - AVOID these cleaners

For Emergency Exit
Turn Red Handle Clockwise, Then Push Knob to Open

SEE MANUFACTURERS LITERATURE FOR ADDITIONAL INFORMATION

Krystal Enterprises
In Dash Control Panel

Switches 1 - 6

Switches 7 - 12

Switches 13 - 18

Component Legend

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Air Park Brake **</td>
</tr>
<tr>
<td>B</td>
<td>Front Fan Switch Hi-Low-Off</td>
</tr>
<tr>
<td>C</td>
<td>Rear Fan Switch Hi-Low-Off</td>
</tr>
<tr>
<td>D</td>
<td>Climate Control Cool-Heat-Off</td>
</tr>
<tr>
<td>E</td>
<td>Auxiliary</td>
</tr>
<tr>
<td>F</td>
<td>AM/FM - CD</td>
</tr>
<tr>
<td>G</td>
<td>Audio/Video PA</td>
</tr>
<tr>
<td>H</td>
<td>Fan Control Speed</td>
</tr>
<tr>
<td>J</td>
<td>Temp Control</td>
</tr>
<tr>
<td>K</td>
<td>Front A/C Control</td>
</tr>
</tbody>
</table>

** Air Brake is Standard with LCT Transmission and Optional with WTEC Transmission
In Dash Control Panel Switches and Components

Carrier Sutrak Controls for Roof Mounted A/C

Component Legend (cont)

| L | Fan Switch - Carrier Sutrak |
| M | Temp Control - Carrier Sutrak |
| N | 12 Volt Access |
| O | |
| P | |
| Q | |
| R | |

Dash Panel Switch Legend

| 1 | Air Suspension Dump - DUMP/SUSP |
| 2 | Heated Mirror - ON/OFF |
| 3 | BLANK |
| 4 | BLANK |
| 5 | Luggage Door Ajar Warning Light |
| 6 | Passenger Door Ajar Warning Light |
| 7 | Cabin Light - ON/OFF |
| 8 | Map Light - ON/OFF |
| 9 | Bath Pump - ON/OFF |
| 10 | Floor Heater - ON/OFF |
| 11 | Floor Heater - HI/LO |
| 12 | Load Shed - ON/OFF |
| 13 | BLANK |
| 14 | BLANK |
| 15 | BLANK |
| 16 | BLANK |
| 17 | BLANK |
| 18 | BLANK |
Audio/Video PA Control

1. **On/Off Volume Control** - controls power and volume
2. **Bass Control** - increases or decreases bass
3. **Treble Control** - increases or decreases treble
4. **Radio Mode** - enables radio, indicator light will be on
5. **PA Mode** - enables PA, indicator light will be on
6. **VCP Mode** - enables VCP, indicator light will be on
7. **VCP Power**
8. **VCP Play** - starts the tape playing
9. **VCP Fast Forward** - fast forwards tape
10. **VCP Stop** - stops tape
11. **VCP Replay** - rewinds and replays from start of tape
12. **VCP Rewind** - rewinds tape
13. **Paging Mode** - (Internal or External) press button once to engage system, press again to toggle between internal/external

SEE MANUFACTURERS LITERATURE FOR ADDITIONAL INFORMATION

Krystal Enterprises
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Basic Operating Instruction

LCD Monitor

[The TV cannot be viewed without first tuning on the DVD]

For specific Operating Instructions, Check Your Component information Manual

1. After tuning on the DVD, turn on the TV using the power on the TV or the button on the TV remote.
   (Note: TV must be set to Video #1 for DVD to work)
2. To view TV, push the TV/Video button to switch between TV and DVD(Video).
3. To view movies select DVD, from the on screen menu.
4. The DVD buttons on the remote will now operate all the functions of the DVD.
To view the TV, the DVD Player must be turned on. Next set the DVD to TV by using the remote control.
Load Shed & High Idle Charge Protection Operating Procedures

Load Shed System Reference Guide
The Load Shed portion of your vehicle’s Charge Protection System, is engaged by pressing the switch marked “Load Shed” on the dash. Once engaged, this system monitors system voltage and automatically shuts down vehicle functions as necessary, to maintain the proper specified voltage levels. This system is automatic and not adjustable. It is recommended that the Load Shed system be enabled at all times. **NOTE:** The light on this switch **will only be illuminated** if the system is actively monitoring and turning off systems to conserve voltage. See your INTERNATIONAL manual for specific details.

Manual High Idle System Reference Guide

**SPSC** (Stationary Pre-Set Speed Controls)

**This System Offers Pre-Programmed Settings for Manual High Idle Charge Protection**

**Note:** This means, if all vehicle enabling conditions are met, Manual High Idle Charge Protection mode can be engaged.

**ENABLING CONDITIONS:**
- Parking brake set
- Gear shift lever in PARK
- Foot off service brake
- Foot off accelerator
- Brake lights connected and functional

**TO ACTIVATE HIGH IDLE CHARGE PROTECTION**
Do the following:
- Press the “ON” position on the left side CRUISE/THROTTLE - ON/OFF switch.

- This feature provides two different predetermined speeds which are selected with the SET/CRUISE or RESUME/ACCEL positions. You need to know which position to use for your specific need. Press the right side SET/CRUISE or RESUME/ACCEL switch for the desired pre-set speed.
- Press the switch that selects the desired speed.
- To select the other speed, press the other switch. The engine will immediately return to idle.
- You must press the switch a second time to go to the second speed. This is done to protect equipment from being inadvertently operated at the wrong speed.

**TO DEACTIVATE HIGH IDLE CHARGE PROTECTION,**
Do the following:
- Press the “OFF” position on the left side CRUISE/THROTTLE - ON/OFF switch.
High Idle Charge Protection Operating Controls

See Section D of your INTERNATIONAL Operators Manual for specific information on the basic functions of your engine speed control system.

All speed control functions are activated by using the switches on the steering wheel as shown below.

The switches on the steering wheel control five (5) possible options:
4. Stationary Pre-Set Speed. 5 Mobile Variable Speed.

The Stationary Pre-Set Speed function is used to provide High Idle Charge Protection

Refer to your INTERNATIONAL Operators Manual - Chassis, for complete Speed Control System instructions
Battery Compartment and Under Vehicle Storage

Battery Compartment Access
This tray contains three (3) in-line INTERNATIONAL batteries
See your INTERNATIONAL manual for specific details and specifications.

Under Vehicle Storage Bin
Standard on model 38
Optional on model 31 & 35
Window, Door, Mirror and Light Control Switches

Door Lock and Window Control Switch
If equipped, these switches allow the driver to lock/unlock doors and windows, and raise and lower windows. The passenger side may also be comparably equipped.

Mirror Control Switch
This rocker switch allows the operator to switch from right to left mirror. When either the right or left mirror is engaged, pressing the 4 arrow control, allows the mirror to move in 4 different directions for precise adjustment.

**CAUTION!**
Leaving the heated mirror switch on in hot weather may cause the mirror to crack.

Door Switch
This switch opens and closes the passenger door.

Panel Dimmer Switch
This momentary rocker switch controls and adjusts the dash cluster lights up and down eight levels of brightness.

Park Light Switch
This three position switch activates dash lights and exterior running lights and headlights.
Back-Up Camera Controls and Operation

Monitor Controls

1. **Power Button**, glows dimly when system is connected fully manual, becoming bright upon activation.
2. **A/B input Select Button**, toggles active display between AV1 and AV2 inputs.
3. **Day/Night Mode Button**, toggles intensity of LCD screen for day or night operation, (day=maximum intensity, night=less intensity).
4. **Picture Adjustment Menu Button**, accesses on-screen-display, to adjust (brightness, contrast, color, tint). Use the Volume control to adjust each up or down, as indicated by a bar graph at bottom on screen.
5. **Volume Button**, controls +/− output volume of built-in speaker, when feature is connected. Also used in Picture Adjustment Mode.

System Operation

This system consists of two major components:

1. **The Back-Up Camera**
2. **LCD Monitor**

The system may be connected two ways:

1. **Fully manual**, requiring the power button on the LCD Monitor to be pushed to energize the system and activate the monitor.
2. **Automatic**, which activates the monitor whenever the ignition is turned to accessory or the engine is started.

SEE MANUFACTURERS LITERATURE FOR ADDITIONAL INFORMATION.
For the double rear step (shown above) and the single rear step, operation is the same. The schematic (this page) explains the electrical operation of both steps. The **power switch** allows you to enable or disable step operation. When the step is enabled, opening the rear door automatically extends the step.

**Note:** See Manufacturers literature regarding periodic lubrication requirements.
The switch is located at the rear cargo door upper hinge, shown at left and above. It operates the rear interior lights and also activates the door-ajar light on the front overhead control panel.

This switch works in conjunction with the rear step, allowing the power switch (shown on previous page) to enable or disable step operation.
Foldaway Seating

To Raise
1. Push lever “A” forward, and fold the back cushion down against the seat cushion until lever has snapped back into locked position.
2. Push lever “B” upward, and lift the seat into the fold away position, and rotate the Truss Lock “C” to lock the assembly in place.

To Lower
1. Rotate the Truss Lock “C” to unlock the assembly, then push Lever “D” and pull the top of the seat toward the aisle until it is locked in the down position.
2. Push lever “A” forward, and lift the back cushion until the lever “A” has snapped back into the locked position.
Bus seating is mounted into the floor of the vehicle as shown in the photos to the left and right.

To move seating:
1. Remove the black plastic track cover, so the track is exposed.
2. Next remove the nut from the base.

NOTE: Nut must be horizontal with the track when the seat is re-attached to the seat track.

CAUTION: Bolts must be torqued to 35 ft... Lbs.

Caution: When Adding Seating, Do Not Exceed Weight Distribution/Payload Limitations
Optional Stainless Steel Wheel Liners

**CAUTION!**
Wheel liners should only be removed using the Wheel Liner Tool provided with your vehicle. Damage could occur if the supplied tool is not used.

**INSTALLATION - REMOVAL INSTRUCTIONS**

**NOTE:** When removing or installing, never remove the original equipment lug nuts.

1. TO REMOVE, simply place the Wheel Liner Tool over the Jam Nut Covers.
2. Remove Jam Nut Covers from each wheel and remove Liners

1. TO INSTALL, determine the correct placement of liners for proper hand hole alignment.
2. Install Liner over studs, then install Jam Nut Covers w/built-in jam nuts onto the studs. Using the Wheel Liner Tool, tighten all Jam Nuts

SEE MANUFACTURERS LITERATURE FOR ADDITIONAL INFORMATION
Air Conditioning Assemblies for Models 31 & 35 ONLY

Both units are operated by the driver, using the controls on the Dash Panel, see page 20 & 21.

Optional ACC Rear Air Conditioning
A/C only - No Heat

<table>
<thead>
<tr>
<th>MODEL BY BTU’S</th>
<th>FREON CHARGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>68,000 BTU Front with 40,000 BTU Rear using (Single Aux Compressor)</td>
<td>11.75 lbs.</td>
</tr>
<tr>
<td>Model 38 Roof Top Carrier A/C (Single Aux Compressor)</td>
<td>11.75 lbs</td>
</tr>
<tr>
<td>68,000 BTU (Dual Aux Compressors)</td>
<td>5.50 lbs</td>
</tr>
<tr>
<td>40,000 BTU (Dual Aux Compressors)</td>
<td>6.0 lbs</td>
</tr>
<tr>
<td>Model 38 Roof Top Carrier A/C (Dual Aux Compressors)</td>
<td>7.0 lbs. per compressor</td>
</tr>
</tbody>
</table>
Air Conditioning System - Roof Mounted for Model 35 & 38 Only

Intake grille for roof mounted A/C

Removing intake grille for access to filter and electrical panel.

**Intake grille fasteners** are twist out to disengage and push in to engage.

**Intake Filter** should be cleaned often to ensure proper filtration. Fuses and relays for the A/C system are located for easy access as shown on the right.

For schematics of wiring diagrams and fuse locations see pages 96-101

Roof mounted A/C electrical panel located behind forward intake grille

Krystal Enterprises
Floor Heater Assembly - Optional Rear

Both units are turned on when the heat mode is selected on the In Dash Control Panel (see page 20)
Caution: When Adding Seating, Do Not Exceed Weight Distribution/Payload Limitations

Movable Wall, Standard - Front View (models 31 & 35 only)

Movable Wall shown above in the forward position
The standard movable wall can be moved by doing the following:
1. Remove the seats from in front of the wall
2. From the baggage compartment side, remove the plastic track cover on both the side wall and floor to expose the track.
3. Disengage the top latches at the outside corners of the wall.
4. From the front side of the wall, loosen the bolts.
5. With assistance on both sides of the wall, push evenly on both sides and slowly move the wall to the desired position.
6. When securing wall, make sure to re torque all bolts to 35 ft.. lbs.
Note: if seats are installed, seat bolts must also be torqued to 35 ft.. lbs.
7. Replace all plastic track covers and engage top latches.
E-Z Move Wall Operating Instructions

**Movable Wall to the open position (with luggage compartment)**
1) Release the top two clamps located on the ceiling.
2) Enter bus through the rear door and release bottom clamp.
3) Push the movable wall at the upper most centrally located handle to the stop.
4) Release the divider clamp and slide out each divider half. Rotate the clamp assembly into the seat track and engage clamps.
5) Engage the top two clamps into the locked position.

**SAFETY ALERT**
Clamps must be locked down before operating vehicle.

**Movable Wall to the closed position (no luggage compartment)**
1) Release the top two clamps located on the ceiling.
2) Enter bus through the rear door.
3) Release and rotate the clamp assembly (divider) out of the seat track. Slide the divider to the stop and engage the divider clamp to lock down the dividers.
4) Pull the movable wall at the upper most centrally located handle to the stop.
5) Engage the bottom clamp into the receiver located in the floor.
6) Close the rear door. Enter the bus, walk to the rear and engage the top two clamps into the locked position.

**SAFETY ALERT**
Clamps must be locked down before operating vehicle.

---

**Caution:** When adding seating, do not exceed weight distribution/payload limitations.
To Open and Close E-Z Move Wall

Instructions for Opening and Closing the E-Z Move Wall shown on the previous page, may also be found mounted on the back of the Movable Wall. Follow the instructions for Open Position - (with luggage compartment) or Close Position - (no luggage compartment)

**SAFETY ALERT:** ALL CLAMPS MUST BE LOCKED DOWN BEFORE OPERATING VEHICLE
Movable Wall (E-Z Move) - Clamp Assemblies

SAFETY ALERT: ALL CLAMPS MUST BE LOCKED DOWN BEFORE OPERATING VEHICLE
Air Door Speed Adjustment Procedure

1. Remove the air motor cover located in the stepwell.
2. Using the photo on this page, identify the speed control valves. Using a 3/8” wrench, loosen the locknuts on both valves.
3. Operate the door and adjust both valves until the opening and closing speeds are equal and acceptable. Then tighten both locknuts.
4. Using a flat blade screwdriver, adjust the opening and closing cushioning valves on the air motor, then replace cover.

CAUTION! Never attempt adjustment of the Boomerang Arm, call KRYSTAL SERVICE.
Single Plug Door with Air Operated Lower Step

**CAUTION!** Never attempt adjustment of the Boomerang Arm, call KRYSRAL SERVICE

**STEP**
- 4-Way Valve

**DOOR**
- Closing Speed Valve
- Closing Cushioning Valve
- Opening Speed Valve
- Opening Cushioning Valve

**CAUTION!** Never attempt adjustment of the Boomerang Arm, call KRYSRAL SERVICE

**DOOR**
- Closing Speed Valve

**DOOR**
- Opening Speed Valve

**DOOR**
- Opening Cushioning Valve

Air Door Speed Adjustment Procedure
1. Remove the air motor cover located in the stepwell.
2. Using the photo on this page, identify the speed control valves. Using a 3/8” wrench, loosen the locknuts on both valves.
3. Operate the door and adjust both valves until the opening and closing speeds are equal and acceptable. Then tighten both locknuts.
4. Using a flat blade screwdriver, adjust the opening and closing cushioning valves on the air motor, then replace cover.

**Note!** Emergency override prevents door from opening if Lower Step Fails To Deploy

**Single Plug Door System With Extended Lower Step**

**Secondary Entry Door Switch** - used on air operated door systems, located on passenger door post
Lower Step Adjustment Procedure and Door/Step Air Schematic

Air Operated Step Adjustment Procedure
1. Remove the air motor cover located in the stepwell, and remove air step cover from the underside of air step.
2. Locate the speed control valves on the cylinder located on the underside of the air step. Using a 3/8” wrench, loosen the locknuts on both valves.
3. Check air pressure on gauge to verify operating pressure is between 60 psi minimum and 80 psi maximum.
4. Operate the door and adjust both speed control valves until the extension and retraction speeds are equal and acceptable. Then tighten both locknuts, and replace both covers.
ATTN: Double Plug Air Door Speed Is Factory Set

If adjustments become necessary, do not attempt adjustments. Contact the Krystal Service Dept., at 1-800-Krystal (579-7825)

**CAUTION!**
The Emergency Release Valve System - *(must be checked on a daily basis)*
Once the emergency release valve has been actuated (by turning counter clockwise), it should be possible to open the doors by pushing outward with your hand after about 5 seconds.

**Caution!** UNDER EMERGENCY SITUATIONS, (IF EQUIPPED) THE BOTTOM AIR STEP WILL NOT DEPLOY.

The Obstruction Sensing System (Sensitive Edge) - *(must be checked on a daily basis)*
Only when the door is closing, can reversing be actuated. The reversing motion should be shut off about 10 to 30 mm before the final closing position. If the reversing process actuates too late, the sensitivity of the differential pressure switch would require re-adjustment. Do not attempt adjustment, call the KRISTAL SERVICE DEPT.
Double Plug Door - Air Operated

Double Plug Door System
(doors shown partially open)

Secondary Entry Door Switch, used on air operated double plug door systems, is located on the in-dash control panel as shown on page 20-21.
Electric Swing Door System

Electric door motor Cover

For removal of door motor cover
1. Remove black rubber strip from molding channel
2. Remove exposed screws in aluminum channel
3. Remove screws from 3 corners of cover

Emergency Exit Lever Decal

NOTE:
LEVER MUST BE CHECKED DAILY, PRIOR TO VEHICLE OPERATION

Electric door motor with control arm

Electric Door Adjustment Procedure
Door Speed Is Factory Set

If adjustments become necessary, do not attempt adjustments. Contact the Krystal Service Dept., at 1-800-Krystal (579-7825)
Any concerns regarding door operation, such as opening or closing speed, or non-operation, should be directed to the Krystal Service Department. Never attempt any adjustments on any portion of this door assembly.
Wheelchair Lift - Rear Door, BRAUN

User Instructions

Passenger Loading and Unloading

Do not exceed the 800 pound load capacity of the lift. Prior to lift operation, the lift should be inspected for proper function. If any problems exist, DO NOT USE LIFT. Contact Braun Corp. at 1-800-THE LIFT for repair.

Passengers loading from the ground level, should back onto the platform. All passengers loading onto the platform, should be positioned fully within the yellow boundaries, facing outward from the vehicle, with the wheelchair locks locked, gripping handrails if able. Electric wheelchairs should be turned off.

UNFOLD  The UNFOLD function deploys the lift from the upright position, with the platform extended flat at floor level, with the roll stop vertical.

FOLD  The FOLD function raises the lift from the horizontal floor level position, bringing the platform back to a full upright position.

DOWN  The DOWN function lowers the platform to the ground level, and extends the roll stop to a flat position, for wheelchair egress.

UP  The UP function raises the roll stop to full vertical position, before raising the platform from ground level to the floor level position for unloading.

CAUTION! Never raise or lower lift if roll stop is malfunctioning

CAUTION!

YOU MUST READ AND UNDERSTAND THE MANUFACTURERS OPERATORS MANUAL BEFORE EVER OPERATING THIS LIFT
In the event of an electrical system failure, this lift system provides for full manual operation. Locate the back-up pump release valve, and the hand pump handle on the motor housing.

**To Unfold the Platform**
1. Place the slotted end of the pump handle onto the back-up pump release valve, and turn counterclockwise until the platform reaches floor level.
2. Turn the release valve clockwise to stop the platform (make sure valve is tight but not over tight)

**To Lower Platform and Roll Stop**
1. Repeat step 1 in the previous procedure to lower the lift to the ground level.

**To Fold Roll Stop and Raise Platform**
1. Place the slotted end of the pump handle onto the back-up pump release valve, and turn clockwise to close valve.
2. Insert handle into back-up pump, and pump until platform reaches floor level.

**To Fold Platform Up**
1. Repeat step 2 above until fully upright.

**Emergency Back-Up Operation**

*Note: Refer to Operator’s Manual for Detailed Operating & Maintenance Procedures*
Wheelchair Lift - Rear Door, RICON

Basic User Instructions
Passenger Loading and Unloading

Do not exceed the 800 pound load capacity of the lift. Prior to lift operation, the lift should be inspected for proper function. *If any problems exist, DO NOT USE LIFT.* Contact Ricon Corp. at 1-818-322-2884 for repair.

Passengers loading from the ground level, should back onto the platform. All passengers loading onto the platform, should be positioned centrally on the platform, facing outward from the vehicle, with the wheelchair locks locked, and restraint belt fastened. Electric wheelchairs should be turned off.

**UNFOLD** The UNFOLD function deploys the lift from the upright position, with the platform extended flat at floor level, with the roll stop vertical.

**FOLD** The FOLD function raises the lift from the horizontal floor level position, bringing the platform back to a full upright position

**DOWN** The DOWN function lowers the platform to the ground level, and extends the roll stop to a flat position, for wheelchair egress.

**UP** The UP function raises the roll stop to full vertical position, before raising the platform from ground level to the floor level position for unloading.

*CAUTION!* *Never raise or lower if roll stop is malfunctioning*

---

**ATTENTION!**
Lift needs service, when green light is continuously lit,

---

**CAUTION!**
YOU MUST READ AND UNDERSTAND THE MANUFACTURERS OPERATORS MANUAL BEFORE EVER OPERATING THIS LIFT

---

Krystal Enterprises

RETURN TO MENU
Wheelchair Lift - Rear Door, RICON

In the event of an electrical system failure, this lift system provides for full manual operation. Locate the back-up pump release valve, and the hand pump handle on the motor housing.

**To Deploy the Platform**
1. Place the slotted end of the pump handle onto the back-up pump release valve, and turn counterclockwise ¼ turn until the platform reaches floor level.

**To Lower Platform and Roll Stop**
1. Repeat step 1 in the previous procedure to lower the lift to ground level.

**Emergency Back-Up Operation**

To Fold Roll Stop and Raise Platform
1. Place the slotted end of the pump handle onto the back-up pump release valve, and turn clockwise to stop the platform (make sure valve is tight but not over tight).

To Stow Platform Up
1. Repeat step 2 above until fully upright.

**Note:** Refer to Operator’s Manual for Detailed Operating & Maintenance Procedures

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**Krystal Enterprises**

RETURN TO MENU
### Chassis Specification - Standard 3200 for Model 31 & 35

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chassis</strong></td>
<td>International 3200</td>
</tr>
<tr>
<td><strong>GVWR - Total</strong></td>
<td>23,880 lbs</td>
</tr>
<tr>
<td><strong>Front Axle Capacity</strong></td>
<td>8,000 lbs</td>
</tr>
<tr>
<td><strong>Front Springs Capacity</strong></td>
<td>8,000 lbs</td>
</tr>
<tr>
<td><strong>Rear Suspension</strong></td>
<td>INTERNATIONAL AIR RIDE - 20,000 lbs</td>
</tr>
<tr>
<td><strong>Rear Axle Capacity</strong></td>
<td>17,500 lbs</td>
</tr>
<tr>
<td><strong>Rear Axle Ratio</strong></td>
<td>4.63</td>
</tr>
<tr>
<td><strong>Shock Absorbers</strong></td>
<td>Gas Filled</td>
</tr>
<tr>
<td><strong>Engines</strong></td>
<td>DT466 Turbo Diesel - 210HP</td>
</tr>
<tr>
<td><strong>Fast Idle Controller</strong></td>
<td>Standard INTERNATIONAL</td>
</tr>
<tr>
<td><strong>Transmission</strong></td>
<td>Allison 2200 PTS Series Electronic 5-Speed Automatic</td>
</tr>
<tr>
<td><strong>Alternator</strong></td>
<td>270 Amp Leece-Neville</td>
</tr>
<tr>
<td><strong>Batteries - Chassis</strong></td>
<td>3 - 12 Volt, 1950 CCA</td>
</tr>
<tr>
<td><strong>Steering</strong></td>
<td>Power Assisted</td>
</tr>
<tr>
<td><strong>Steering Column</strong></td>
<td>Locking, Energy Absorbing, Tilt w/ Cruise Control</td>
</tr>
<tr>
<td><strong>Brakes</strong></td>
<td>4 Wheel ABS Power Disc Brakes w/Air Actuated Parking Brake</td>
</tr>
<tr>
<td><strong>Fuel Tank</strong></td>
<td>65 Gallon</td>
</tr>
</tbody>
</table>
## Chassis Specification - Standard 3200 for Model 31 & 35

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cab Paint</td>
<td>9219 White</td>
</tr>
<tr>
<td>Glass</td>
<td>Tinted All Windows</td>
</tr>
<tr>
<td>Doors</td>
<td>Power Door Locks - Power Windows</td>
</tr>
<tr>
<td>Lights</td>
<td>Halogen Sealed Beam Headlights</td>
</tr>
<tr>
<td>Air Conditioner</td>
<td>Cab 23,000 BTU INTERNATIONAL with R-134a</td>
</tr>
<tr>
<td>Heater/Defroster</td>
<td>4-Speed Fan</td>
</tr>
<tr>
<td>Safety</td>
<td>3-Point Shoulder/ Lap Belts</td>
</tr>
<tr>
<td>Air Bags</td>
<td>Driver Safety Restraint System</td>
</tr>
<tr>
<td>Windshield Wipers</td>
<td>Intermittent</td>
</tr>
<tr>
<td>Gauges/Instrumentation</td>
<td>Voltmeter, Oil Pressure, Temperature, Fuel Gauge,</td>
</tr>
<tr>
<td></td>
<td>Speedometer, Tachometer, Air Pressure Gauges</td>
</tr>
<tr>
<td>Mirrors</td>
<td>Power Remote with Heated Element</td>
</tr>
<tr>
<td>Tires</td>
<td>245/70R19.5F 12Ply All-Season Radial</td>
</tr>
<tr>
<td>Wheels</td>
<td>19.5” x 7.5”, 8 - Hole, Stamped Steel</td>
</tr>
<tr>
<td>Wheelbase</td>
<td>31= 218” 35= 254”</td>
</tr>
</tbody>
</table>

---

Krystal Enterprises

RETURN TO MENU
Standard Equipment on 3200 Model 31 & 35

- DT466 Turbo Diesel Engine 210HP
- Power Steering
- 4-Wheel ABS Power Disc Brakes
- Heavy Duty Dual Batteries
- Allison 5-Speed Auto Transmission
- International Air Ride Rear Suspension
- 245/70R19.5F All Season Radial Tires
- 50 States Emissions
- 65 Gallon Fuel Tank
- Adjustable Tilt Steering Wheel
- Cruise Control
- Engine Oil Cooler
- Transmission Oil Cooler
- Automatic High Idle Controller
- Drive Shaft Guards
- .063 Aluminum Exterior Side Walls
- Welded Steel Cage Frame
- Cab Running Boards
- Air Ride Drivers Seat
- Captains Chairs - Co-Pilot

- 3/4” Resin Laminated Floor
- 2” Fiberglass Insulation
- Commercial Grade Carpet
- Ribbed Rubber Center Aisle
- Mid-High Seats with Level 3 Fabric
- 68,000 BTU A/C System w/Dual Compressors
- AM/FM Stereo Cassette - In Dash
- Power Cab Door Locks
- Power Cab Windows
- Back-up Alarm
- Valance Lighting
- Single Plug Air Actuated Sedan Entry Door
- Full Body Undercoating
- Base White Body Color
- Power Remote/Heated Mirrors
- GL20 80% Tinted Windows w/UV Protection
- 270 Amp Leece-Neville Alternator
- Movable Luggage Partition
- Rear Luggage Door w/Electric Step

Krystal Enterprises
Chassis Specification - Standard 3200 for Model 38

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>GVWR - Total</td>
<td>27,500 lbs</td>
</tr>
<tr>
<td>Front Axle Capacity</td>
<td>10,000 lbs</td>
</tr>
<tr>
<td>Front Springs Capacity</td>
<td>10,000 lbs</td>
</tr>
<tr>
<td>Rear Suspension</td>
<td>INTERNATIONAL AIR RIDE - 20,000 lbs</td>
</tr>
<tr>
<td>Rear Axle Capacity</td>
<td>17,500 lbs</td>
</tr>
<tr>
<td>Rear Axle Ratio</td>
<td>4.11 with DT466 Engine</td>
</tr>
<tr>
<td>Shock Absorbers</td>
<td>Gas Filled</td>
</tr>
<tr>
<td>Engines</td>
<td>DT466 In-Line 6 cylinder Turbo Diesel - 245HP</td>
</tr>
<tr>
<td>Fast Idle Controller</td>
<td>Standard INTERNATIONAL</td>
</tr>
<tr>
<td>Transmission</td>
<td>Allison 3000 PTS Series Electronic 5-Speed Automatic</td>
</tr>
<tr>
<td>Alternator</td>
<td>270 Amp Leece-Neville</td>
</tr>
<tr>
<td>Batteries - Chassis</td>
<td>3 - 12 Volt, 1950 CCA</td>
</tr>
<tr>
<td>Steering</td>
<td>Power Assisted</td>
</tr>
<tr>
<td>Steering Column</td>
<td>Locking, Energy Absorbing, Tilt w/ Cruise Control</td>
</tr>
<tr>
<td>Brakes</td>
<td>S-Cam Air Brake System with ABS</td>
</tr>
<tr>
<td>Fuel Tank</td>
<td>65 Gallon</td>
</tr>
</tbody>
</table>

MODEL 38 SPECIFICATIONS CONTINUED ON PAGE 58
<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cab Paint</td>
<td>9219 White</td>
</tr>
<tr>
<td>Glass</td>
<td>Tinted All Windows, Power Assisted Door</td>
</tr>
<tr>
<td>Lights</td>
<td>Halogen Sealed Beam Headlights</td>
</tr>
<tr>
<td>Doors</td>
<td>Power Door Locks - Power Windows</td>
</tr>
<tr>
<td>Air Conditioner</td>
<td>Cab - 23,000 BTU INTERNATIONAL</td>
</tr>
<tr>
<td>Heater/Defroster</td>
<td>4-Speed Fan</td>
</tr>
<tr>
<td>Safety</td>
<td>3-Point Shoulder/ Lap Belts</td>
</tr>
<tr>
<td>Air Bags</td>
<td>Driver Safety Restraint System</td>
</tr>
<tr>
<td>Windshield Wipers</td>
<td>Intermittent</td>
</tr>
<tr>
<td>Gauges/Instrumentation</td>
<td>Voltmeter, Oil Pressure, Temperature, Fuel Gauge,</td>
</tr>
<tr>
<td></td>
<td>Speedometer, Tachometer, Air Pressure Gauges</td>
</tr>
<tr>
<td>Mirrors</td>
<td>Power Remote with Heated Element</td>
</tr>
<tr>
<td>Tires</td>
<td>245/70R19.5F 16 PLY All Season Radial</td>
</tr>
<tr>
<td>Wheels</td>
<td>19.5” 8 - Hole, 8-Lug Steel</td>
</tr>
<tr>
<td>Wheelbase</td>
<td>K38 - 291”</td>
</tr>
</tbody>
</table>
Standard Equipment on 3200 Model 38

- DT466 6cyl. Turbo Diesel Engine 245HP
- Power Steering
- Full Air Brake System w/ABS
- 3 Heavy Duty INTERNATIONAL Batteries
- Allison 5-Speed Auto Transmission
- International Air Ride Rear Suspension
- 245/70R19.5F All Season Radial Tires
- 50 States Emissions
- 65 Gallon Fuel Tank
- Adjustable Tilt Steering Wheel
- Cruise Control
- Engine Oil Cooler
- Transmission Oil Cooler
- Automatic High Idle Controller
- Drive Shaft Guards
- .063 Aluminum Exterior Side Walls
- Welded Steel Cage Frame
- Cab Running Boards
- Air Ride Drivers Seat
- Captains Chairs - Co-Pilot
- 3/4” Resin Laminated Floor

- 2” Fiberglass Insulation
- Dual Overhead Racks w/Reading Lamps
- Smooth Rubber Flooring w/Ribbed Center Aisle
- Amaya Coach Seating
- 165,000 BTU Ducted Roof A/C System
- AM/FM Stereo w/CD Player - In Dash
- TV VCP Package
- Power Cab Door Locks
- Power Cab Windows
- Back-up Alarm
- Paging System
- Single Plug Air Actuated Sedan Entry Door
- Full Body Undercoating
- Base White Body Color
- Power Remote/Heated Mirrors
- Frameless Panoramic View Windows
- 270 Amp Leece-Neville Alternator
- S/S Wheel Inserts
- Rear Luggage Partition-Permanent
- Rear Luggage Door w/Electric Step
- Under Vehicle Storage Bins
### General Vehicle Dimensional Specifications - Body & Chassis by Model

<table>
<thead>
<tr>
<th>Features</th>
<th>Models 31</th>
<th>Models 31W</th>
<th>Models 35</th>
<th>Models 35W</th>
<th>Models 38</th>
</tr>
</thead>
<tbody>
<tr>
<td>GVWR</td>
<td>25,500 lbs</td>
<td>25,500 lbs</td>
<td>25,500 lbs</td>
<td>25,500 lbs</td>
<td>27,500 lbs</td>
</tr>
<tr>
<td>Wheelbase</td>
<td>218&quot;</td>
<td>218&quot;</td>
<td>254&quot;</td>
<td>254&quot;</td>
<td>291&quot;</td>
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<tr>
<td>Overall Length</td>
<td>30' 10&quot;</td>
<td>30' 10&quot;</td>
<td>34' 4&quot;</td>
<td>34' 4&quot;</td>
<td>38'</td>
</tr>
<tr>
<td>Turning Radius</td>
<td>29' 1&quot;</td>
<td>29' 1&quot;</td>
<td>33' 2&quot;</td>
<td>33' 2&quot;</td>
<td>37' 6&quot;</td>
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<tr>
<td>Interior Height</td>
<td>76.5&quot;</td>
<td>76.5&quot;</td>
<td>76.5&quot;</td>
<td>76.5&quot;</td>
<td>75&quot;</td>
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<tr>
<td>Interior Body Length (without Luggage)</td>
<td>262&quot;</td>
<td>262&quot;</td>
<td>302&quot;</td>
<td>302&quot;</td>
<td>330&quot;</td>
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<tr>
<td>Interior Body Length (with Luggage)</td>
<td>224&quot;</td>
<td>224&quot;</td>
<td>258&quot;</td>
<td>258&quot;</td>
<td>286&quot;</td>
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<tr>
<td>Depth of Luggage Compartment</td>
<td>38&quot;</td>
<td>38&quot;</td>
<td>44&quot;</td>
<td>44&quot;</td>
<td>44&quot;</td>
</tr>
</tbody>
</table>
| Clear Door Opening - Luggage Door              | 30½" x 64½"| 30½" x 64½"| 30½" x 64½"| 30½" x 64½"| 30½" x 64½"
<p>| Clear Door Opening - Single Plug               | 32½&quot; x 81&quot;| 32½&quot; x 81&quot;| 32½&quot; x 81&quot;| 32½&quot; x 81&quot;| 32½&quot; x 81&quot;|
| Clear Door Opening - Double Plug               | 40½&quot;      | 40½&quot;      | 40½&quot;      | 40½&quot;      | 40½&quot;      |
| Clear Door Opening - Swing Doors               | 42&quot;       | 42&quot;       | 42&quot;       | 42&quot;       | 42&quot;       |
| Clear Door Opening - Wheelchair Lift Door      | N/A       | 42&quot; x 73¾&quot;| N/A       | 42&quot; x 73¾&quot;| N/A       |
| Exterior Height                                | 124&quot;      | 124&quot;      | 124&quot;      | 124&quot;      | 124&quot;      |
| Exterior Width (excluding Mirrors)             | 102&quot;      | 102&quot;      | 102&quot;      | 102&quot;      | 102&quot;      |
| Exterior Width (including Mirrors)             | 120&quot;      | 120&quot;      | 120&quot;      | 120&quot;      | 120&quot;      |</p>
<table>
<thead>
<tr>
<th>Features</th>
<th>Models</th>
<th>31</th>
<th>31W</th>
<th>35</th>
<th>35W</th>
<th>38</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior Width - at Floor</td>
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<td>89½”</td>
<td>89½”</td>
<td>89½”</td>
<td>89½”</td>
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<tr>
<td>Interior Width - at Shoulder</td>
<td>94½”</td>
<td>94½”</td>
<td>94½”</td>
<td>94½”</td>
<td>96”</td>
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<tr>
<td>Aisle Width</td>
<td>18”</td>
<td>18”</td>
<td>18”</td>
<td>18”</td>
<td>18”</td>
<td></td>
</tr>
<tr>
<td>Hip to Knee</td>
<td>26½”</td>
<td>36½”</td>
<td>26½”</td>
<td>26½”</td>
<td>27½”</td>
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<tr>
<td>Seat Cushion Length</td>
<td>18”</td>
<td>18”</td>
<td>18”</td>
<td>18”</td>
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<tr>
<td>Front of Seat Cushion to Seat Back</td>
<td>27½”</td>
<td>27½”</td>
<td>27½”</td>
<td>27½”</td>
<td>27½”</td>
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<tr>
<td>Floor Height from Ground at Rear</td>
<td>37½”</td>
<td>37½”</td>
<td>37½”</td>
<td>37½”</td>
<td>37½”</td>
<td></td>
</tr>
<tr>
<td>1st Step from Ground</td>
<td>14”</td>
<td>14”</td>
<td>14”</td>
<td>14”</td>
<td>14”</td>
<td></td>
</tr>
<tr>
<td>Riser Height</td>
<td>11”</td>
<td>11”</td>
<td>11”</td>
<td>11”</td>
<td>11”</td>
<td></td>
</tr>
<tr>
<td>Step Height</td>
<td>11½”</td>
<td>11½”</td>
<td>11½”</td>
<td>11½”</td>
<td>11½”</td>
<td></td>
</tr>
</tbody>
</table>
## General Body Materials and Construction Measurements

<table>
<thead>
<tr>
<th>Description</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of Steel Tubing used in Body Sidewall &amp; Roof Structure</td>
<td>1” x 1½”</td>
</tr>
<tr>
<td>Center line Spacing of Tubing used in Body Sidewall &amp; Roof Structure</td>
<td>30”</td>
</tr>
<tr>
<td>Wall Thickness of Steel Tubing used in Body Sidewall &amp; Roof Structure</td>
<td>.095</td>
</tr>
<tr>
<td>Thickness of Aluminum Sidewall &amp; One Piece Aluminum Roof</td>
<td>.063</td>
</tr>
<tr>
<td>Size of Steel Tubing used in Main Floor Structure</td>
<td>2” x 4”</td>
</tr>
<tr>
<td>Center line Spacing of Tubing used in Floor Structure</td>
<td>24”</td>
</tr>
<tr>
<td>Wall Thickness of Steel Tubing used in Floor Structure</td>
<td>.120</td>
</tr>
<tr>
<td>Thickness of Double Backed Insulated Fiberglass Batting Insulation</td>
<td>2”</td>
</tr>
<tr>
<td>Window Size - KK31 &amp; KK35</td>
<td>32” x 40”</td>
</tr>
<tr>
<td>Window Size - KK38</td>
<td>45” x 41”</td>
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</tbody>
</table>
Vehicle Manufacturers Identification Label

**Model 31 & 35**

<table>
<thead>
<tr>
<th>Manufactured By:</th>
<th>Krystal Enterprises, Inc.</th>
<th>K</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Manufacture</td>
<td></td>
<td>MO.</td>
<td>YR.</td>
</tr>
<tr>
<td>VIN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GVWR</td>
<td>25500</td>
<td>LB</td>
<td>11567</td>
</tr>
<tr>
<td>GAWR Front</td>
<td>8000</td>
<td>LB</td>
<td>3629</td>
</tr>
<tr>
<td>Tires</td>
<td>245/70R19.5F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rims</td>
<td>19.5x7.5</td>
<td>PSi</td>
<td>690</td>
</tr>
<tr>
<td>GAWR Rear</td>
<td>17500</td>
<td>LB</td>
<td>7938</td>
</tr>
<tr>
<td>Tires</td>
<td>245/70R19.5F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rims</td>
<td>19.5x7.5</td>
<td>PSi</td>
<td>690</td>
</tr>
</tbody>
</table>

**Model 38**

<table>
<thead>
<tr>
<th>Manufactured By:</th>
<th>Krystal Enterprises, Inc.</th>
<th>K</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Manufacture</td>
<td></td>
<td>MO.</td>
<td>YR.</td>
</tr>
<tr>
<td>VIN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GVWR</td>
<td>27500</td>
<td>LB</td>
<td>12474</td>
</tr>
<tr>
<td>GAWR Front</td>
<td>10000</td>
<td>LB</td>
<td>4536</td>
</tr>
<tr>
<td>Tires</td>
<td>245/70R19.5F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rims</td>
<td>19.5x7.5</td>
<td>PSi</td>
<td>830</td>
</tr>
<tr>
<td>GAWR Rear</td>
<td>175000</td>
<td>LB</td>
<td>7938</td>
</tr>
<tr>
<td>Tires</td>
<td>245/70R19.5F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rims</td>
<td>19.5x7.5</td>
<td>PSi</td>
<td>690</td>
</tr>
</tbody>
</table>

**LABEL EXPLANATION**

K # - This is your permanent Krystal Vehicle Identification number.
VIN # - This is your DMV Vehicle Identification Number.
GVWR - This is the gross rated capacity of your vehicle.
GAWR Front - This is the rated capacity of the front axle.
GAWR Rear - This is the rated capacity of the rear axle.
Date Incomplete Vehicle Manufactured - This is the date the chassis was produced by INTERNATIONAL.
Date Of Manufacture by Krystal - This is the date the vehicle was completed by KRYSAL.
Paint Code - This is the master number for the paint specification and color used on your vehicle.
Tires, Rims - This indicates the required tire and rim sizes, and air capacities for your specific vehicle.
GENERAL PREVENTATIVE MAINTENANCE INFORMATION

Please familiarize yourself with all INTERNATIONAL Manuals that have been provided with your new vehicle. They detail specific components, and specify how they are to be properly maintained. Both INTERNATIONAL and Krystal recommend that you study your manuals carefully before ever attempting to operate this vehicle for the first time.

**IMPORTANT**

The information contained in this section of your Krystal Owners Manual does not supersede any information that relates to a specific component of the INTERNATIONAL portion of your vehicle.

**REGARDING THE INTERNATIONAL PORTION OF YOUR VEHICLE:**
ANY PROCEDURE REFERENCED IN THE FOLLOWING PREVENTATIVE MAINTENANCE SECTION OF THIS MANUAL, SHOULD ALWAYS BE REFERENCED TO THAT SPECIFIC PORTION OF YOUR INTERNATIONAL CHASSIS OPERATORS MANUALS, SEE MAINTENANCE & SPECIFICATIONS - SECTION “E” OF YOUR INTERNATIONAL CHASSIS MANUAL.

**LUBRICATION AND MAINTENANCE INTERVALS**
After a vehicle is placed in operation, *Regular Lubrication and Maintenance Intervals* should be established, based upon the type of service and road conditions that the vehicle will be subjected to, such as; ON HIGHWAY, CITY, OR SEVERE SERVICE.
PREVENTATIVE MAINTENANCE SCHEDULE

The following Maintenance Schedules are provided as a convenient reference for the specified systems and components which require periodic service.

These schedules are not intended to be a complete list of all possible services to be performed on a regular basis, nor is it suggested that more frequent services not be considered.

Because of the different types of operations coaches are subjected to, the severity of service must be considered when establishing maintenance intervals. Therefore, any such intervals given in the following schedule must be adjusted according to the specific type of operation in which your particular vehicle will be used.

The intervals given include those recommended by Krystal Enterprises, Inc., and those recommended by INTERNATIONAL Truck and Engine Corporation. The recommendations should be considered as maximum intervals. It should be noted that maintenance inspection and service operations of shorter intervals are always preferable to longer intervals. Check your INTERNATIONAL Engine and Chassis Operation and Maintenance Manual for additional specific information not covered in this section of your Krystal Operators Manual.
## MAINTENANCE OPERATIONS FOR THE DT466 ENGINES

### Inspection Intervals (whichever Miles, Kilometers, Hours, Months occurs First)

<table>
<thead>
<tr>
<th>OP NO.</th>
<th>Maintenance Operation</th>
<th>Daily</th>
<th>Every 21,100 km (15,000 miles), 550 hours, 6 months</th>
<th>Every 43,000 km (30,000 miles, 1100 hours, 12 months)</th>
<th>Every 24 months</th>
<th>Every 193,100 km, 120,000 miles, or 5000 hours</th>
<th>Every 290,000 km, 180-200,000 miles, or 6700 - 7500 hours</th>
<th>Annually</th>
<th>Every 322,000 km, 200,000 miles, or 3800 hours or 2 years</th>
<th>Every 241,000 km, 150,000 miles, or 6000 hours, or 2 ½ years</th>
<th>Every 500,000 km, 300,000 miles, or 12,000 hours, or 5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>check oil level ¹</td>
<td>■</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>check coolant level ¹</td>
<td>■</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>drain water separator(fuel system) ¹,²</td>
<td>■</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>inspect air to air cooler ¹</td>
<td>■</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>inspect for external leakage ¹</td>
<td>■</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>inspect air restriction indicator ³</td>
<td>■</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>inspect belt ¹</td>
<td>■</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>change engine oil &amp; filter ⁴</td>
<td>Refer to Op 8 page 81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>check coolant SCA concentration (conventional coolant only) ¹</td>
<td>■</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>inspect air intake piping and clamps ¹</td>
<td>■</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See page 68 for specific explanation of Notes
# MAINTENANCE OPERATIONS FOR THE DT466 ENGINES

<table>
<thead>
<tr>
<th>OP NO.</th>
<th>Maintenance Operation</th>
<th>Daily</th>
<th>Every 21,100 km (15,000 miles), 550 hours, 6 months</th>
<th>Every 43,000 km, 30,000 miles, 1100 hours, 12 months</th>
<th>Every 24 months</th>
<th>Every 193,100 km, 120,000 miles, or 5000 hours</th>
<th>Every 290,000 km, 180-200,000 miles, or 6700 - 7500 hours</th>
<th>Annually</th>
<th>Every 322,000 km, 200,000 miles, or 3800 hours or 2 years</th>
<th>Every 241,000 km, 150,000 miles, or 6000 hours, or 2 ½ years</th>
<th>Every 500,000 km, 300,000 miles, or 12,000 hours, or 5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>measure air intake restriction 1,3,5</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>12</td>
<td>change fuel filters 6</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>13</td>
<td>change coolant filter (if equipped) 7,9</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>14</td>
<td>pressurize induction system 1,5</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>15</td>
<td>inspect vibration damper 1,8</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>16</td>
<td>adjust valve lash 5,8</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>17</td>
<td>measure crankcase pressure 5</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>18</td>
<td>inspect turbo 1</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>19</td>
<td>inspect electrical system 1</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
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<td>service cooling system 4</td>
<td></td>
<td>■ (green)</td>
<td>■ (red)</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td></td>
<td>■</td>
<td>■</td>
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<tr>
<td>21</td>
<td>extended life coolant 9</td>
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<td>■</td>
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<td>■</td>
<td>■</td>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
</tbody>
</table>

See page 68 for specific explanation of Notes
DETAILED MAINTENANCE NOTES FOR THE DT466 ENGINES

1. Correct if necessary
2. If equipped
3. Service Air Cleaner elements as required
4. If fuel contains more than 0.05% sulfur, reduce oil change intervals, see page 81 of your INTERNATIONAL Engine Operation and Maintenance Manual
5. Refer to current Engine Diagnostic Manual sections in your INTERNATIONAL Engine Operation and Maintenance Manual
6. Change according to transfer pump minimum specifications
7. Refer to appropriate manual charts in Section 6 of your INTERNATIONAL Engine Operation and Maintenance Manual for cooling system maintenance schedules
8. Refer to EGES-210, DT466 and DT530 Diesel Engine Service Manual - Latest Revision
9. Extended life coolant does not require a filter. If a filter is installed, only a blank filter containing no supplemental coolant should be used.
PREVENTIVE MAINTENANCE SCHEDULE

SPECIAL INSTRUCTIONS/SUGGESTIONS
It is strongly suggested that the following items always be observed or acted upon at every established maintenance interval or as otherwise specified by INTERNATIONAL and/or Krystal Enterprises.

Air Conditioning - serviced each spring
Front Axle - complete inspection, lubrication and adjustments
Rear Axle - complete inspection, re-torquing, replace worn parts
Air Brakes System - inspect, clean, lubricate and adjust all components
Desiccant Air Dryer - replace every 12 months
Hydraulic Brakes - inspect, clean, lubricate, replace fluid, shoes, linings
Catalytic Converter - check for proper function
Air Induction System - inspect complete system every 12 months
Chassis Mounted Charge Air Cooler - inspect daily
Cooling System - inspect coolant level daily, Note special instructions for Extended Life Coolant
Fan Clutch - inspect every spring
Fuel System - inspect accelerator and system components frequently
Propeller Shaft - at regular lubrication intervals, all components should be inspected
THE FOLLOWING PAGES SPECIFY THE MINIMUM REQUIREMENTS NECESSARY TO PROPERLY MAINTAIN YOUR VEHICLES SYSTEMS AND COMPONENTS

CHECK EVERY DAY:
► all items on Pre-Trip inspection (see page 8 & 9)
► side passenger door emergency release valve operation
► side passenger entry door, operation, locking, damage, and adjustment
► emergency roof hatch
► emergency egress window latches
► function of all interior and exterior lights
► check all seat belts for proper operation
► tire pressure, Model 31 & 35 - 100 psi Frt/Rr, Model 38 - 120 psi Frt & 100 psi Rr
► fluid leaks from, transmission, engine, power steering, engine coolant, gear oil, fuel
► drain fuel filter/water separator

CHECK EVERY MONTH:
► windshield washer fluid level
► door linkage and pivot arm lubrication
► lube rear Kwikee step, (if equipped)
► clean air intake filter for A/C system
► tires for wear, and tread depth
KRYSRAL RECOMMENDED PREVENTIVE MAINTENANCE SCHEDULE

AT 5,000 MILES/600 HOURS DO THE FOLLOWING:
► inspect tires for wear and inspect tread depth
► rotate tires
► re-inspect torque settings on International Air Ride Suspension System
► lube door seals with silicon spray, check for proper sealing
► lube Vapor door rotary drive mechanism
► check the torque of all door hardware on Vapor door systems

AT 10,000 MILES/1200 HOURS DO THE FOLLOWING:
► inspect tires for wear and inspect tread depth
► rotate tires
► clean battery terminals
► check the torque of all door hardware on Vapor door systems

AT 15,000 MILES/1800 HOURS DO THE FOLLOWING:
► inspect tires for wear and inspect tread depth
► rotate tires
► inspect steering linkage, suspension, ball joints, drive shafts, and drive shaft guards
► inspect engine cooling system and hoses
► inspect brake system
► inspect exhaust system and heat shields
► inspect automatic transmission fluid and external filter element
► check wheels for end play and noise
KRYSTAL RECOMMENDED PREVENTIVE MAINTENANCE SCHEDULE

- inspect and lubricate steering idler arms
- replace cabin air filter, if equipped
- inspect half shaft boots, if equipped
- re-inspect torque settings on International Air Ride Suspension System
- clean air compressor intake filter
- lube door seals with silicon spray, check for proper sealing
- check air system for leaks, and electrical connections
- lube Vapor door rotary drive mechanism
- check the torque of all door hardware on Vapor door systems

AT 20,000 MILES/2400 HOURS DO THE FOLLOWING:
- inspect tires for wear and inspect tread depth
- rotate tires
- clean battery terminals
- check the torque of all door hardware on Vapor door systems

AT 25,000 MILES/3000 HOURS DO THE FOLLOWING:
- inspect tires for wear and inspect tread depth
- rotate tires
- check the torque of all door hardware on Vapor door systems
- clean condenser coils
AT 30,000 MILES/3600 HOURS DO THE FOLLOWING:
▶ inspect tires for wear and inspect tread depth
▶ rotate tires
▶ inspect steering linkage, suspension, ball joints, drive shafts, and drive shaft guards
▶ inspect engine cooling system and hoses
▶ inspect brake system
▶ inspect exhaust system and heat shields
▶ change automatic transmission fluid and external filter element
▶ check wheels for end play and noise
▶ inspect and lubricate 4 x 2 ball joints
▶ inspect and lubricate steering idler arms
▶ replace cabin air filter, if equipped
▶ inspect half shaft boots, if equipped
▶ clean air compressor intake filter
▶ clean battery terminals
▶ lube door seals with silicon spray, check for proper sealing
▶ re-inspect torque specifications on INTERNATIONAL Suspension System
▶ check air system for leaks, and electrical connections
▶ lube Vapor door rotary drive mechanism
▶ check the torque of all door hardware on Vapor door systems
▶ inspect drive belts and replace if necessary
KRYSRAL RECOMMENDED PREVENTIVE MAINTENANCE SCHEDULE

AT 35,000 MILES/4200 HOURS DO THE FOLLOWING:
► inspect tires for wear and inspect tread depth
► rotate tires
► check the torque of all door hardware on Vapor door systems

AT 40,000 MILES/4800 HOURS DO THE FOLLOWING:
► inspect tires for wear and inspect tread depth
► rotate tires
► clean battery terminals
► check the torque of all door hardware on Vapor door systems

AT 45,000 MILES/5400 HOURS DO THE FOLLOWING:
► inspect tires for wear and inspect tread depth
► rotate tires
► inspect steering linkage, suspension, ball joints, drive shafts, and drive shaft guards
► inspect engine cooling system and hoses
► inspect brake system
► inspect exhaust system and heat shields
► check wheels for end play and noise
► inspect and lubricate steering idler arms
► replace cabin air filter, if equipped
► inspect half shaft boots, if equipped
KRYSTAL RECOMMENDED PREVENTIVE MAINTENANCE SCHEDULE

- clean air compressor intake filter
- lube door seals with silicon spray, check for proper sealing
- re-inspect torque specifications on INTERNATIONAL Suspension System
- check air system for leaks, and electrical connections
- lube Vapor door rotary drive mechanism
- check the torque of all door hardware on Vapor door systems

AT 50,000 MILES/6000 HOURS DO THE FOLLOWING:
- inspect tires for wear and inspect tread depth
- rotate tires
- clean battery terminals
- check the torque of all door hardware on Vapor door systems
- clean condenser coils

AT 55,000 MILES/6600 HOURS DO THE FOLLOWING:
- inspect tires for wear and inspect tread depth
- rotate tires
- check the torque of all door hardware on Vapor door systems

AT 60,000 MILES/7200 HOURS DO THE FOLLOWING:
- inspect tires for wear and inspect tread depth
- rotate tires
- inspect steering linkage, suspension, ball joints, drive shafts, and drive shaft guards
KRYS†AL RECOMMENDED PREVENTIVE MAINTENANCE SCHEDULE

▶ inspect engine cooling system and hoses
▶ inspect brake system
▶ inspect exhaust system and heat shields
▶ change automatic transmission fluid and external filter element
▶ check wheels for end play and noise
▶ replace wheel bearing grease seal
▶ inspect and lubricate steering idler arms
▶ replace cabin air filter, if equipped
▶ inspect half shaft boots, if equipped
▶ clean air compressor intake filter
▶ clean battery terminals
▶ lube door seals with silicon spray, check for proper sealing
▶ re-inspect torque specifications on INTERNATIONAL Suspension System
▶ check air system for leaks, and electrical connections
▶ lube Vapor door rotary drive mechanism
▶ check the torque of all door hardware on Vapor door systems
▶ inspect drive belts and replace if necessary

AT 65,000 MILES/7800 HOURS DO THE FOLLOWING:
▶ inspect tires for wear and inspect tread depth
▶ rotate tires
▶ check the torque of all door hardware on Vapor door systems
AT 70,000 MILES/8400 HOURS DO THE FOLLOWING:
► inspect tires for wear and inspect tread depth
► rotate tires
► clean battery terminals
► check the torque of all door hardware on Vapor door systems

AT 75,000 MILES/9000 HOURS DO THE FOLLOWING:
► inspect tires for wear and inspect tread depth
► rotate tires
► inspect steering linkage, suspension, ball joints, drive shafts, and drive shaft guards
► inspect engine cooling system and hoses
► inspect brake system
► inspect exhaust system and heat shields
► check wheels for end play and noise
► inspect and lubricate steering idler arms
► replace cabin air filter, if equipped
► inspect half shaft boots, if equipped clean air compressor intake filter
► lube door seals with silicon spray, check for proper sealing
► re-inspect torque specifications on INTERNATIONAL Suspension System
► lube Vapor door rotary drive mechanism
► check the torque of all door hardware on Vapor door systems
► clean condenser coils
KRYSTAL RECOMMENDED PREVENTIVE MAINTENANCE SCHEDULE

AT 80,000 MILES/9600 HOURS DO THE FOLLOWING:
► inspect tires for wear and inspect tread depth
► rotate tires
► clean battery terminals
► check air system for leaks, and electrical connections
► check the torque of all door hardware on Vapor door systems

AT 85,000 MILES/10200 HOURS DO THE FOLLOWING:
► inspect tires for wear and inspect tread depth
► rotate tires
► check the torque of all door hardware on Vapor door systems

AT 90,000 MILES/10800 HOURS DO THE FOLLOWING:
► inspect tires for wear and inspect tread depth
► rotate tires
► replace engine and frame mounted fuel filters
► inspect steering linkage, suspension, ball joints, drive shafts, and drive shaft guards
► inspect engine cooling system and hoses
► inspect brake system
► inspect exhaust system and heat shields
► check wheels for end play and noise
► inspect and lubricate 4 x 2 ball joints
KRISTAL RECOMMENDED PREVENTIVE MAINTENANCE SCHEDULE

► inspect and lubricate steering idler arms
► replace cabin air filter, if equipped
► inspect half shaft boots, if equipped clean air compressor intake filter
► clean battery terminals
► lube door seals with silicon spray, check for proper sealing
► re-inspect torque specifications on INTERNATIONAL Suspension System
► check air system for leaks, and electrical connections
► lube Vapor door rotary drive mechanism
► check the torque of all door hardware on Vapor door systems
► inspect drive belts and replace if necessary

AT 95,000 MILES/11400 HOURS DO THE FOLLOWING:
► inspect tires for wear and inspect tread depth
► rotate tires
► check the torque of all door hardware on Vapor door systems

AT 100,000 MILES/12000 HOURS DO THE FOLLOWING:
► inspect tires for wear and inspect tread depth
► rotate tires
► clean condenser coils
► clean battery terminals
► check the torque of all door hardware on Vapor door systems
SUPPLEMENTARY PREVENTIVE MAINTENANCE INFORMATION

In addition to the required Preventative Maintenance information included in the previous schedule, the following specific exceptions should be noted.

**Extended Life Coolant**
Extended Life Coolant must have ELC extender added at 150,000 miles in order to extend the life of the coolant to 300,000 miles, 5 years, or 12,000 hours of operation.

**Rear Axle Lubricant:**
Must be changed every 18 months or 90,000 miles.

**Change Rear Axle Lubricant:**
On Dana axles using synthetic fluid, fluid must be changed every 3 years or 250,000 miles.

*Check your INTERNATIONAL Engine Operation and Maintenance Manual*, for special operating condition maintenance requirements, that may be applicable due to your specific vehicle operating profile.
User Notes - Preventive Maintenance

<table>
<thead>
<tr>
<th>Additional User Notes</th>
<th>Additional User Notes</th>
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</thead>
<tbody>
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</tbody>
</table>
The following section details basic troubleshooting techniques that will help you to understand and determine the best course of action regarding some commonly encountered problems.

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE SOLUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIBRATION: Noises or Vibration at high speeds only, or in a certain range of speeds:</td>
<td>A certain range of speeds indicates a damaged or otherwise out-of-balance drive line, Contact your nearest INTERNATIONAL DEALER. The Krystal Service Dept. can recommend one near you.</td>
</tr>
<tr>
<td>REAR A/C BLOWER INOPERATIVE</td>
<td>Check to make sure the INTERNATIONAL front A/C unit is on. Check fuses on the A/C control relay board in ceiling. If the rear A/C is still not working, call the Krystal Service Dept.</td>
</tr>
<tr>
<td>MOVING CARGO PARTITION TO ADD ADDITIONAL SEATING</td>
<td>Remove seats in front of the Partition Wall and loosen all four bolts securing the wall. Then go behind the wall and remove the channel nut on the floor, this will allow the wall to be move back and then additional seating can be installed. Note: torque Seat Bolts to 35 ft. lbs.</td>
</tr>
<tr>
<td>EXTERIOR LIGHTING</td>
<td>One or all exterior clearance lights inoperative, please refer to the INTERNATIONAL wiring schematic in the Krystal Electrical Schematic Manual. Exterior running lights work off of the Krystal relay board.</td>
</tr>
<tr>
<td>SLIDER WINDOWS HARD TO OPEN AND CLOSED</td>
<td>If any of the windows start to stick during opening or closing, simply spray both side tracks with silicone spray and work the windows a few times to lubricate the tracks. This should be done approximately every three months.</td>
</tr>
</tbody>
</table>
## Basic Troubleshooting Guide

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE SOLUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAGING SYSTEM INOPERATIVE</td>
<td>Check the 15 amp fuse, on the fuse panel behind the dash cover, on the passenger side. See page 92-93 for fuse legend &amp; location. See instructions for the paging system located on page 22.</td>
</tr>
<tr>
<td>NO TELEVISION RECEPTION</td>
<td>If the TV has power, but you cannot pickup any stations, make sure VCP mode button on the P.A. System is engaged and the VCP power button is engaged.</td>
</tr>
<tr>
<td>REAR VCP &amp; TV INOPERATIVE</td>
<td>Check to make sure all connections on the back of both units are tight. Check the fuse located at the front face of the TV, and on the backside of the VCP.</td>
</tr>
<tr>
<td>EXTERIOR SEALANTS CRACKING OR LIFTING</td>
<td>If the exterior seams of the bus ever crack or start lifting, simply clean the area with rubbing alcohol or mineral spirits completely. After this has been done you can remove the old silicone by using a sharp knife or razor cutter. Clean the area again with the above cleaners and apply a thin bead of white exterior silicone and smooth the bead with your finger for a smooth appearance.</td>
</tr>
<tr>
<td>REAR ELECTRIC STEP INOPERATIVE</td>
<td>Check to make sure the step switch is turned on. This switch is located inside the cargo area on the right hand sidewall. If this will not power up the step, call the Krystal Service Dept. The rear step should be lubricated every 30 days to ensure proper operation of the step.</td>
</tr>
<tr>
<td>REAR STEREO/CD INOPERATIVE</td>
<td>Check to make sure all connections are tight. Also remove the stereo and check the fuse located on the backside of the stereo.</td>
</tr>
</tbody>
</table>

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**Krystal Enterprises**

86

RETURN TO MENU
## Basic Troubleshooting Guide

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE SOLUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CANNOT REMOVE WATER FROM LAVATORY</td>
<td>Make sure fresh water tank has water in it and the water pump switch is in the on position. NOTE: Always be sure to turn the water pump switch off when not in use. Failure to do so could cause a steady drain on the auxiliary battery or could cause damage to the water pump. The fresh water fill is located under the bus at the rear of the vehicle.</td>
</tr>
<tr>
<td>PASSENGER LIGHTS INOPERATIVE</td>
<td>Check to make sure the switch on the overhead control panel is turned on. Check the fuse located on the INTERNATIONAL fuse panels behind the dash cover. (Ref. diagram on pages 92-93)</td>
</tr>
<tr>
<td>BACK-UP ALARM INOPERATIVE</td>
<td>Check to make sure reverse lights are coming on, if not, check the fuse located on the INTERNATIONAL fuse panels behind the dash cover. (Ref. diagram on pages 92-93)</td>
</tr>
</tbody>
</table>
## Troubleshooting Notes

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE SOLUTIONS</th>
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## Troubleshooting Notes

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</tbody>
</table>
INTERNATIONAL’S Diamond Logic Electrical System

This vehicle is equipped with the Diamond Logic Electrical System. This system is self diagnosing, and self monitoring, making troubleshooting and repairs quicker and faster than conventional systems.

This system should only be diagnosed and repaired by authorized service centers. Any attempt by unauthorized personnel may damage your system and/or jeopardize your warranty.

Your new Diamond Logic Electrical System and all component interfaces are covered by INTERNATIONAL and Krystal to provide you with seamless coverage for your electrical system.

When problems arise, simply follow the procedures as outlined in the Parts-Service-Warranty section in this manual.

The following pages will provide you with schematics and diagrams that can help you understand the general concept of your buses electrical components and how they are connected. These schematics and diagrams will prove helpful when trying to determine which connection is faulty and where it is located. The following pages will also provide some basic general information about your buses possible configuration, including some information which is provided in greater detail in your INTERNATIONAL product manuals.
INTERNATIONAL’S Diamond Logic Electrical System

Fuses and Circuit Breakers are located behind the dash cover on the passenger side. See page 92-93 for diagrams & legends.
Legend for Standard Fuse & Circuit Breaker Panel

<table>
<thead>
<tr>
<th>Fuse</th>
<th>Label</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>ACC</td>
<td>CB/RADIO</td>
</tr>
<tr>
<td>F2</td>
<td>BAT</td>
<td>INST CLUSTER</td>
</tr>
<tr>
<td>F3</td>
<td>BAT</td>
<td>OWNER/OPERATOR</td>
</tr>
<tr>
<td>F4</td>
<td>BAT</td>
<td>HEATER - A/C BLOWER</td>
</tr>
<tr>
<td>F5</td>
<td>ACC</td>
<td>SYS CONTROLLER / 6 SWITCH PACK</td>
</tr>
<tr>
<td>F6</td>
<td>BAT</td>
<td>KEY SWITCH / DIAG CONN</td>
</tr>
<tr>
<td>F7</td>
<td>BAT</td>
<td>CIGAR LIGHTER</td>
</tr>
<tr>
<td>F8</td>
<td>OPT</td>
<td>NOT AVAIL</td>
</tr>
<tr>
<td>F9</td>
<td>OPT</td>
<td>OPT PANEL LIGHT</td>
</tr>
<tr>
<td>F10</td>
<td>BAT</td>
<td>HEATER - A/C CONTROL</td>
</tr>
<tr>
<td>F11</td>
<td></td>
<td>NOT AVAIL</td>
</tr>
<tr>
<td>F12</td>
<td>BAT</td>
<td>DOME LIGHTS / MAP LIGHT / RADIO</td>
</tr>
<tr>
<td>F13</td>
<td></td>
<td>RIGHT MIRROR HEAT</td>
</tr>
<tr>
<td>F14</td>
<td>BAT</td>
<td>AUX POWER SOURCE</td>
</tr>
<tr>
<td>F15</td>
<td>BAT</td>
<td>PWR WINDOW / LOCKS DRIVER DOOR</td>
</tr>
<tr>
<td>F16</td>
<td>BAT</td>
<td>PWR WINDOW / LOCKS PASS DOOR</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Fuse</th>
<th>Label</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F17</td>
<td>IGN</td>
<td>ALLISON - LCT/EATON AUTOSHIFT - AUTOCLUTCH</td>
</tr>
<tr>
<td>F18</td>
<td>IGN</td>
<td>LEFT MIRROR HEAT</td>
</tr>
<tr>
<td>F19</td>
<td>IGN</td>
<td>INST CLUSTER / HTR - A/C CONTROLS</td>
</tr>
<tr>
<td>F20</td>
<td>IGN</td>
<td>SYSTEM CONTROLLER / NTR - A/C BLOWER</td>
</tr>
<tr>
<td>F21</td>
<td>IGN</td>
<td>OWNER / OPERATOR</td>
</tr>
<tr>
<td>F22</td>
<td>IGN</td>
<td>DRIVERS INFO CENTER</td>
</tr>
<tr>
<td>F23</td>
<td>IGN</td>
<td>COMPASS / TEMP</td>
</tr>
<tr>
<td>F24</td>
<td>IGN</td>
<td>ACCELERATOR CLUTCH SW</td>
</tr>
</tbody>
</table>

**PLEASE NOTE:**
The legend shown on this page reflects all available standard configurations and may include items not ordered with your vehicle.
Legend for Optional Fuse & Circuit Breaker Panel

<table>
<thead>
<tr>
<th>Fuse</th>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F27</td>
<td>IGN</td>
<td>STD</td>
</tr>
<tr>
<td>F28</td>
<td>IGN</td>
<td>STD</td>
</tr>
<tr>
<td>F29</td>
<td>IGN</td>
<td>STD</td>
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<tr>
<td>F30</td>
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<td>STD</td>
</tr>
<tr>
<td>F31</td>
<td>IGN</td>
<td>STD</td>
</tr>
<tr>
<td>F32</td>
<td>IGN</td>
<td>STD</td>
</tr>
<tr>
<td>F33</td>
<td>IGN</td>
<td>OPT</td>
</tr>
<tr>
<td>F34</td>
<td>IGN</td>
<td>OPT</td>
</tr>
<tr>
<td>F35</td>
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</tr>
<tr>
<td>F36</td>
<td>ACC</td>
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<tr>
<td>F37</td>
<td>BAT</td>
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<tr>
<td>F38</td>
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<td>F39</td>
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<td>F40</td>
<td>BAT</td>
<td>OPT</td>
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<tr>
<td>F41</td>
<td>BAT</td>
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<td>F42</td>
<td>BAT</td>
<td>OPT</td>
</tr>
<tr>
<td>F43</td>
<td>BAT</td>
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<td>F44</td>
<td>BAT</td>
<td>OPT</td>
</tr>
<tr>
<td>F45</td>
<td>OPT</td>
<td></td>
</tr>
<tr>
<td>F46</td>
<td>ACC</td>
<td>OPT</td>
</tr>
</tbody>
</table>

**PLEASE NOTE:**
The legend shown above reflects all available options and may include options not ordered with your vehicle.
Carrier Rooftop Air Conditioning System Diagram

- Evaporator
- Condenser
- Control Panel
- Shielded Cable
- Fan
- Temp
- In Dash Control Panel
- 12V Battery
- Alternator
- Waterpump Heating
- Heating Valve
- High Pressure Switch
- Low Pressure Switch
- Compressor Clutch
- High Pressure Switch
- Low Pressure Switch
- Compressor Clutch

**Krystal Enterprises**
Condenser Blowers Schematic

Krystal Enterprises

RETURN TO MENU
Evaporator Blowers Schematic

Krystal Enterprises
Evaporator Blowers Schematic
Model 35 & 38 Accessory Harness-Front Portion

SEE ACCESSORY HARNESS
LEGEND ON PAGE 102

(A) RF SPEAKER
150"-LEG
16AWG RED/YELLOW
16AWG BLACK/WHITE

INTERIOR LIGHT
14AWG ORANGE (MAP)
16AWG YELLOW (CABIN)
16AWG WHITE #2

(B) ENTRY DOOR LIGHT
127"-LEG
16AWG BLUE/WHITE
16AWG WHITE #3

(E) RELAY BOARD
34"-LEG
14AWG PINK
16AWG RED
16AWG BLUE/WHITE
16AWG PURPLE
16AWG YELLOW (LOOP)
14AWG ORANGE (LOOP)

(F) GROUND
32"-LEG
16AWG WHITE #5
16AWG WHITE #2
16AWG WHITE #3
16AWG WHITE #4
16AWG WHITE #1 (LOOP)

(G) LF SPEAKER
44"-LEG
16AWG PINK (LOOP)
16AWG WHITE/BLACK (LOOP)

(H) EXTERIOR LIGHTS
166"-LEG
16AWG BROWN
16AWG WHITE #1

(I) EXTERIOR LIGHTS
16"-LEG
16AWG BROWN (LOOP)
16AWG WHITE #1 (LOOP)

(J) EXTERIOR LIGHTS
10"-LEG
16AWG BROWN (LOOP)
16AWG WHITE #1 (LOOP)

(K) INTERIOR LIGHTS
12"-LEG
16AWG YELLOW (CABIN)
14AWG ORANGE (MAP)
16AWG WHITE #4

(L) EXTERIOR LIGHTS
14"-LEG
16AWG BROWN (LOOP)
16AWG WHITE #1 (LOOP)

(M) EXTERIOR LIGHTS
11"-LEG
16AWG BROWN (LOOP)
16AWG WHITE #1 (LOOP)

(N) LR SPEAKER
48"-LEG
16AWG PINK
16AWG WHITE/BLACK

(P) EXTERIOR LIGHTS
45"-LEG
16AWG BROWN (LOOP)
16AWG WHITE #1 (LOOP)

(Q) EXTERIOR LIGHTS
68"-LEG
14AWG PINK
16AWG PURPLE
16AWG BROWN/WHITE
Model 35 & 38 Accessory Harness-Rear Portion

SEE ACCESSORY HARNESS

LEGEND ON PAGE 102

REAR OF VEHICLE

101
## Model 35 & 38 Accessory Harness Legend

<table>
<thead>
<tr>
<th>AWG</th>
<th>COLOR</th>
<th>FROM LOCATION</th>
<th>TO DESTINATION</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>BROWN/WHITE</td>
<td>Q</td>
<td>X</td>
<td>REAR STEP SWITCH</td>
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<tr>
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<td>WHITE #1</td>
<td>H</td>
<td>LOOP @ I, J, L, M, O, P, R, U, V, W, Z, BB, CC, DD, ending @ EE</td>
<td>EXTERIOR LIGHTS GROUND</td>
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<tr>
<td>16</td>
<td>BROWN</td>
<td>H</td>
<td>LOOP @ I, J, L, M, O, P, R, U, V, W, Z, BB, CC, DD, ending @ EE</td>
<td>EXTERIOR LIGHTS POWER</td>
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<tr>
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<td>F</td>
<td>K</td>
<td>INTERIOR LIGHT GROUND</td>
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<tr>
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<td>F</td>
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<td>MICRO SWITCH GROUND</td>
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<tr>
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<td>E</td>
<td>Q</td>
<td>RELAY BOARD TO REAR STEP</td>
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<tr>
<td>16</td>
<td>RED</td>
<td>E</td>
<td>LOOP @ S, ending @ Y</td>
<td>RELAY BOARD TO LUG. LIGHTS</td>
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</tr>
<tr>
<td>14</td>
<td>PINK</td>
<td>E</td>
<td>Q</td>
<td>RELAY BOARD TO REAR STEP</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>BLACK/YELLOW</td>
<td>D</td>
<td>LOOP @ S, T, X, ending @ Y</td>
<td>DOOR AJAR LED</td>
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</tr>
<tr>
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<td>PINK</td>
<td>C</td>
<td>LOOP @ G, ending @ N</td>
<td>SPEAKERS</td>
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<tr>
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<td>WHITE/BLACK</td>
<td>C</td>
<td>LOOP @ G, ending @ N</td>
<td>SPEAKERS</td>
<td></td>
</tr>
<tr>
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<td>WHITE #3</td>
<td>B</td>
<td>F</td>
<td>ENTRY DOOR LIGHT GROUND</td>
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</tr>
<tr>
<td>16</td>
<td>BLUE/WHITE</td>
<td>B</td>
<td>E</td>
<td>ENTRY DOOR LIGHT</td>
<td></td>
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<tr>
<td>14</td>
<td>ORANGE</td>
<td>A</td>
<td>LOOP @ E, ending @ K</td>
<td>INTERIOR (MAP) LIGHTS</td>
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<td>A</td>
<td>F</td>
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<td>A</td>
<td>LOOP @ E ending @ K</td>
<td>INTERIOR (CABIN) LIGHTS</td>
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<tr>
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<td>BLACK/WHITE</td>
<td>A</td>
<td>LOOP @ C ending @ AA</td>
<td>SPEAKER</td>
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<tr>
<td>16</td>
<td>RED/YELLOW</td>
<td>A</td>
<td>LOOP @ C ending @ AA</td>
<td>SPEAKER</td>
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<td>COLOR</td>
<td>FROM LOCATION</td>
<td>TO DESTINATION</td>
<td>DESCRIPTION</td>
</tr>
</tbody>
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**WIRE LIST**
Model 35 & 38 Accessory Harness Wiring Diagram - Part 2

TURN SIGNAL HARNESS
(ROUTED ALONG FLOOR)

LEFT MID TURN SIGNAL
GREEN/YELLOW

RIGHT MID TURN SIGNAL
GREEN

TURN SIGNALS
GREEN/YELLOW
GREEN
A/C Module Wiring Diagram - Front/Rear

Details of A/C Modules as shown in Diagrams on pg. 107 & 109
Circuit Board Assembly Phase 1

Circuit board located in compartment above driver
Circuit Board Phase 1 - Electrical Diagram

This board configuration was last used through Feb. '04
Circuit Board Assembly Phase 2

Circuit Board Assembly located on divider panel behind driver’s seat.
Circuit Board Phase 2 - Electrical Diagram

1. Remote Power Module #1
2. Remote Power Module #2
3. Heat Pump Relay Fuse
4. Power Solenoid - Rear A/C Unit
5. Heat Pump Relay
6. Front A/C Low Speed Relay \ 20 Amp Fuse
7. Front A/C High Speed Relay \ 35 Amp Fuse
8. Front A/C Condenser Relay \ 35 Amp Fuse
9. Front A/C Compressor Relay \ 7.5 Amp Fuse
10. Rear A/C Low Speed Relay \ 20 Amp Fuse
11. Rear A/C High Speed Relay \ 35 Amp Fuse
12. Rear A/C Condenser Relay \ 35 Amp Fuse
13. Rear A/C Compressor Relay \ 7.5 Amp Fuse

Krystal Enterprises
PARTS - SERVICE - WARRANTY

OBTAINING PARTS

When parts are required for a warranty repair, all parts will be handled by the KRYS\TAL Service Department.

All other Non-Warranty parts needs can be handled by contacting the KRYS\TAL PARTS DEPARTMENT, directly at 1-800-845-4883. You may purchase parts directly over the counter, or have them shipped to you, usually within 24 hours. In order to expedite your parts order, please have your KRYS\TAL ENTERPRISES serial number, which starts with K-#####, and is located on the drivers door jamb of all our vehicles.

UNDERSTANDING WARRANTY POLICY  *(read the following sections carefully)*

Should your bus require service related to the converted areas of the vehicle, read this section first, before taking any action. By doing so, you will clearly understand the KRYS\TAL SERVICE PROCESS, and avoid possible delays. NEVER initiate a warranty repair without prior approval of the KRYS\TAL SERVICE DEPARTMENT. Not following this procedure could void your warranty reimbursement for that particular repair.
WHO SHOULD PERFORM WARRANTY SERVICE ON YOUR VEHICLE

If there is any doubt as to whether or not a repair is related to the KRYSTAL WARRANTY, call the KRYSTAL SERVICE DEPARTMENT at 1-800-845-4883, this may save you time wasted at a chassis dealer or another shop, for a problem appropriately solved by contacting KRYSTAL SERVICE DEPARTMENT.

If the problem is conversion related, then it can either be repaired at our Brea, California facility, or by a shop that we recommend in your area, or by a shop of your choice. This procedure is true of both warranty and non-warranty repairs. Depending on the nature of the problem, it may be necessary to have the warranty repair done at our Brea, California facility.

CAUTION ABOUT TOWING!

If it becomes necessary to tow your bus, a flat bed rig is preferred. UNDER NO CIRCUMSTANCES, should the bus be towed by lifting the rear end, serious frame damage can occur.
WARRANTY VERSUS NON-WARRANTY

Whether a particular problem is covered under the KRYSSTAL WARRANTY depends, in some cases, on several factors. The KRYSSTAL SERVICE DEPARTMENT determines coverages ahead of time on a case-by-case basis, either over the phone or at our Brea, California facility.

HAVING NON-WARRANTY REPAIRS PERFORMED

If the service manager has determined that the repair is not covered, or you are sure that it is not covered, we would be happy to recommend a shop in your area, or schedule an appointment with the KRYSSTAL SERVICE DEPARTMENT, whichever is more convenient.

HAVING WARRANTY REPAIRS PERFORMED

There are three (3) methods:

1. Repair is done at the KRYSSTAL SERVICE DEPARTMENT, in Brea, California
2. Repair is done at a KRYSSTAL authorized service facility near you.
3. Repair is done at a shop of your choice, with prior approval of the KRYSSTAL SERVICE DEPARTMENT
HAVING WARRANTY REPAIRS PERFORMED (con’t)

If either method 2 or 3 as described on the previous page are to be used, you must obtain pre-authorization and a KRYSRATL ENTERPRISES SERVICE DEPARTMENT repair authorization number (R.A.N), in advance of performing any repairs. Both requirements my be accomplished from a single phone call to the KRYSRATL SERVICE DEPARTMENT, at 1-800-845-4883.

If method 3 is used, simply pay for the work and mail a copy of the invoice with the repair authorization number, and your KRYSRATL vehicle ID number, which is found on the vehicle ID tag on the drivers door jamb) on the invoice, so your claim(s) can be processed without any problems. You will be reimbursed within 30 days.

Send all invoices to the service manager at:

KRYSRATL ENTERPRISES
Attn: Service Department Manager
2701 East Imperial Highway
Brea, California 92821
## Vendor Reference Listing

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Warranty Period</th>
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<tbody>
<tr>
<td>ALLISON TRANSMISSION 1-800-252-5283</td>
<td>3 Years, Unlimited Miles</td>
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<tr>
<td>AUTOMOTIVE CLIMATE CONTROL A/C 1-800-462-6322</td>
<td>2 Years, Unlimited Miles</td>
</tr>
<tr>
<td>AUDIOVOX TV &amp; VCP 1-800-274-1886</td>
<td>1 Year, Unlimited Miles</td>
</tr>
<tr>
<td>CARRIER A/C 1-800-673-2431</td>
<td>2 Years, Unlimited Miles</td>
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<tr>
<td>FREEDMAN SEATING 1-713-929-6100</td>
<td>2 Years or 20,000 Miles, Whichever Comes First</td>
</tr>
<tr>
<td>GOODYEAR TIRES 1-800-466-3982</td>
<td>Free Replacement 1st year or up to 3/32&quot; tread wear, then pro-rated thereafter</td>
</tr>
<tr>
<td>PHOENIX USA 1-931-561-6128</td>
<td>3 Years</td>
</tr>
<tr>
<td>INTERNATIONAL ROAD SERVICE 1-800-448-7825</td>
<td>1 Year Towing</td>
</tr>
<tr>
<td>KRYSRAL SERVICE DEPT 1-800-845-4883</td>
<td>See Copy of Krystal Warranty</td>
</tr>
<tr>
<td>KWIKEE ELECTRIC STEPS 1-800-736-7366</td>
<td>1 Year or 12,000 Miles, Whichever Comes First</td>
</tr>
<tr>
<td>ROSEN 1-866-467-6736</td>
<td>1 Year, Unlimited Miles</td>
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<tr>
<td>PANASONIC 1-949-251-1851</td>
<td>1 Year, Unlimited Miles</td>
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<tr>
<td>SHURFLOW WATER PUMPS 1-800-854-3218</td>
<td>2 Years, Unlimited Miles</td>
</tr>
<tr>
<td>SONY STEREO 1-800-282-2848</td>
<td>1 Year, Unlimited Miles</td>
</tr>
<tr>
<td>TRANSPEC WORLDWIDE 1-810-274-9400</td>
<td>1 Year, Unlimited Miles</td>
</tr>
<tr>
<td>VOYAGER PA SYSTEM 1-800-274-1886</td>
<td>1 Year, Unlimited Miles</td>
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</table>

**Krystal Enterprises**
INDEX

A
Air and Electrical Diagrams & Schematics 105
Air Conditioning 36, 37
Air Door Lock Pin 16
Air Schematic, Single & Double Plug Doors 45
Audio/Video. PA Control 22

B
Back-Up Camera 30
Battery Location 28
Body Materials & Construction Measurements 64
Braun Rear Door Wheelchair Lift 50, 51, 52, 53

C
Cargo Door Micro Switch 32
Caution!, Safety Alerts 14, 16, 17, 44
Charge Protection 26
Circuit Board Assembly, F-550 Ver 1 & 2 106, 108
Compressed Air Supply & Schematic, single 45
Construction Materials & Measurements 64

D
Dimensional Specifications, Boby & Chassis 62
INDEX

Double Plug Door System  47

E
Electrical Diagrams & Schematics, misc, enlargements  105
Emergency Egress Window  18
Emergency Release Lever  11, 13
Emergency Release Valve  8, 11, 12, 48
Emergency Roof Hatch  19

F
Foldaway Seating  33

H
Heated Mirror Switch  29

I
Identification Label, Vehicle Manufacturers  65
Idle Controller, Ford & Penntex  26, 27

L
LCD Monitor, ref back-up camera  30

M
Micro Switch  32
Mirror Control Switch  29
Movable Wall  39, 40, 41

O
Obstruction Sensing System, Sensative Edge  11
Occupant Restraint Systems, ADA  14
Overhead Parcel Rack  17

P
PARTS  110, 111, 112, 113
Passenger Seating  34
PA Control, Audio/Video  22
Pre-Trip Inspection  8
PREVENTATIVE MAINTENANCE SCHEDULE  66
Processing Warranty Claims  112, 113

R
Rear Step  31
Ricon Rear Door Wheelchair Lift  54

S
Safety Check List, Vapor Air & Elect Door  11
Seating, Std. Passenger & Foldaway  33, 34
SERVICE, Warranty  110, 111, 112, 113, 114
Single Plug Door System  44, 46
INDEX

Swing Door System  50
Switches, mirror, micro, pressure, door, step  32, 46, 49

T
TOWING  111
Troubleshooting Guide  85

V
Vapor Air & Electric Door Safety Alerts  11
VEHICLE SAFETY WARNINGS  10
Vendor Reference Listing  114
Video Entertainment Center  24

W
WARRANTY  110, 111, 112, 113
WARRANTY POLICY  110
WARRANTY REPAIRS  112, 113
WARRANTY SERVICE  111
Wheelchair Lift, Braun & Ricon  52, 54
Wheelchair Securement, ADA  14, 15
Wheel Liners, Stainless Steel  35
Wiring Diagrams,  100 - 105
Krystal Enterprises (hereinafter referred to as Krystal Enterprises and Krystal) is the final stage manufacturer of an incomplete vehicle, which is manufactured and separately warranted by the incomplete vehicle manufacturer. This limited Warranty thus does not extend to any part or portion of the incomplete vehicle except as specifically required by any applicable Federal law or regulation.

Krystal Enterprises warrants to the original purchaser of each new Krystal Enterprises bus, that all parts (except electronic parts which are warranted by their original manufacturer) installed by Krystal will be free from defects in material and workmanship under normal use and service for one (1) year, with unlimited mileage, from the date of purchase by the original retail customer.

Krystal Enterprises further warrants to the original purchaser of each new Krystal Enterprises bus, the body structure which is defined as the cage, skin, front and rear caps, and floor structure to be free from defects, in material and workmanship under normal use and service for five (5) years or 100,000 miles, whichever comes first, from the date of purchase by the original retail customer.

In the event of a Warranty claim, Krystal reserves the right to replace or repair the defective part. The original retail customer must return the bus to the original selling Authorized Dealer for the necessary authorization and parts. THE DEALER MUST OBTAIN, PRIOR TO PERFORMING ANY WORK, A REPAIR AUTHORIZATION NUMBER (R.A.N) ON ANY KRYSTAL ENTERPRISES BUS. If the selling Dealer is unable to remedy the situation, the original retail customer should contact the Warranty Department of Krystal Enterprises. If the selling
dealer does not perform repair work on premise, the Dealer must call the Krystal Warranty Department for
instructions on proceeding with the repair via an authorized repair facility.

If the bus was not purchased from a Krystal Authorized Dealer, the original retail customer must contact the
Krystal Warranty Department to receive information and prior authorization for any needed repair work.

Provided that prior authorization was obtained from the Warranty Department of Krystal Enterprises, all labor
costs associated with the repair or replacement of defective parts will be paid by Krystal. Krystal reserves the
right to make a physical inspection of the bus by authorized factory personnel following any complaint prior to
any repair.
Krystal shall have no liability for any defect or damage caused by the original owner’s use of parts or services
which are not authorized by Krystal or for any parts or paint which have been subject to misuse, neglect or
accident, or have been subject to external mechanical or chemical influences, especially stone chips, airborne
rust or industrial fall-out. This Limited Warranty **DOES NOT** cover loss to time. Inconvenience, loss of use of
any vehicle, cost of rented replacement vehicle, or lodging or mileage expense in connection with any warranty
repairs.

NO PERSON IS AUTHORIZED TO ALTER OR CHANGE IN ANY WAY
THE TERMS AND CONDITIONS OF THE ABOVE STATED LIMITED WARRANTY
It is the policy of KRYS TAL ENTERPRISES, Inc., to incorporate product improvements to our products whenever possible or practical to do so. We reserve the right to make changes and or improvements at any time without incurring any obligation to make such changes on previously sold products. Additionally, the information and specifications contained within this manual are current at time of printing. Subsequently all information contained in this manual is subject to change at any time, without notice.

Please note that this manual applies to all INTERNATIONAL models and explains standard equipment as well as many options, and may include equipment not presently installed on your vehicle.