BENCHMARK

OWNER'S GUIDE

OBSESSED WITH PROVIDING THE BEST RV OWNERSHIP EXPERIENCE!

ALLIANCE RV

OFFICE: (574) 218-7165 / SALES: (574) 281-9869 / SERVICE: (574) 226-0140
EMAIL: service@alliancerv.com / WEBSITE: alliancerv.com

WELCOME TO THE ALLIANCE RV FAMILY!

Congratulations on the purchase of your new Alliance RV. We are honored that you have placed your trust in the Alliance RV Team, and it is our privilege to help you enjoy a great RV ownership experience!

One of the best ways to begin enjoying your Alliance RV experience is by taking time to read and familiarize yourself with the contents of this owner's manual along with the individual component manuals included with your new Alliance RV. Knowing how to properly operate the various systems, appliances, and components will make your first trips even more enjoyable. We would also encourage you to review the general maintenance recommendations, as these will help keep your RV in great working condition for years to come.

Your new Alliance is backed by a Limited Base Warranty and Limited Structural Warranty as outlined on the following pages. While we work to build Alliance RVs to a higher quality standard, if a warranty or service concern arises, our priority is to get you back to camping as promptly as possible. Your Alliance RV Dealer is authorized and trained in servicing the many systems unique to your Alliance RV and is a great "Ally" to assist you in finding a resolution. If for any reason it is not feasible to work with your local Alliance RV dealer, please don't hesitate to reach out to the Alliance Customer Service Team directly. Our ability and willingness to keep open lines of communication and find creative service solutions will help us navigate thru finding the best way to assist your specific circumstance. The Alliance RV Customer Service Team can be reached at:

- Phone: (574) 226-0140
- Email: service@alliancerv.com
- Address: Attn: Customer Service - 301 Benchmark Drive, Elkhart, IN 46516

Thank you again for being a valued member of the Alliance family. The entire Alliance team wishes you safe travels and looks forward to enhancing your RV ownership experience!

Happy camping,

Bill Martin
Vice President of Customer Experience

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EMAIL: service@alliancerv.com / WEBSITE: alliancerv.com

MY INFO:

Alliance RV Model (ie. Paradigm): _____

Floorplan or Model # (ie. 370FB): _____

VIN (17 Digits):

Dealership Name: _____

Dealership Address: _____

_____

_____

Dealer Phone: _____

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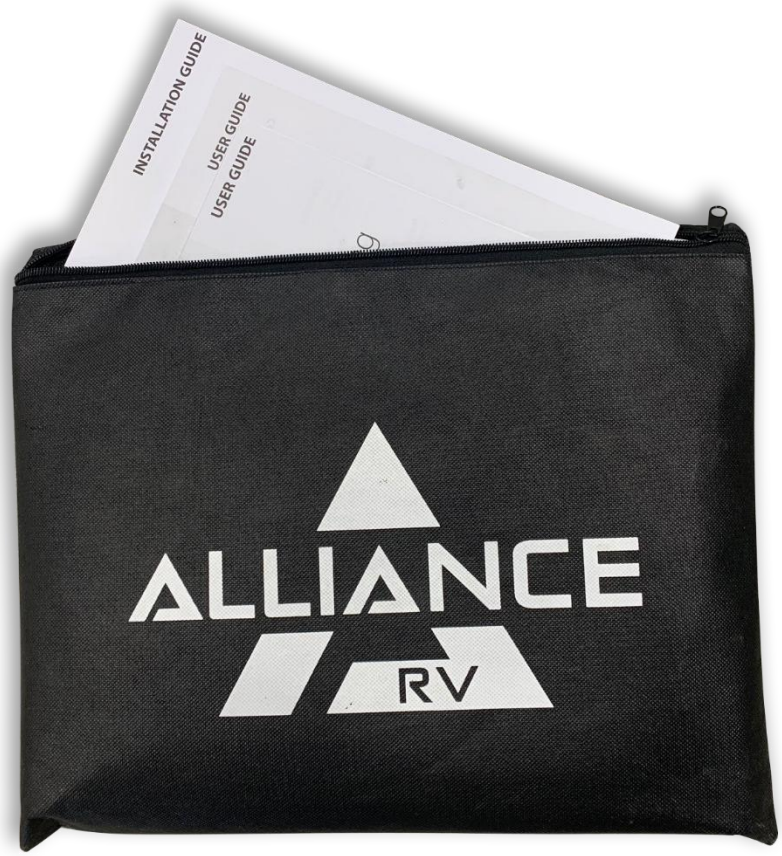
OWNER'S INFORMATION BAG

You will find the manuals and registration cards for individual components in your Alliance RV Fifth Wheel Owner's Information Bag.

It is important that you take time to register and activate each component warranty according to the information and timelines provided. Doing so will help any potential delays in the event your RV requires warranty service. Failure to register these warranties will not dismiss warranty coverage, although it could cause delays. Please contact Alliance Customer Service with any questions.



Alliance RV Customer Service Contact Information:

Phone: (574) 226-0140

Email: service@alliancerv.com

OWNER SUPPORT RESOURCES

Alliance RV has provided many resources for owners to obtain information about their RV, ranging from simple tips to in-depth videos, manufacturer links for installed appliances and equipment, how-to summaries of systems called Tech Tips, and owner-supported forums for discussion.

Contacting Alliance Customer Service

The three primary methods to contact customer service directory are:

- Phone: (574) 226-0140
  Especially useful for urgent situations during business hours. After hours, a message can be left. This should be followed up by an email with specific information as noted below. *You may also use this number to contact our Parts team, following the voice prompts accordingly.*
- Email: service@alliancerv.com
  - This is the preferred method of contact. When writing, please be sure to include the last six (6) digits of your VIN, a clear description of the issue(s) to be addressed, and if possible pictures of the issue(s).
  - Response time is typically 1-2 business days.
- In writing:
  Alliance RV
  Attn: Customer Service
  301 Benchmark Drive
  Elkhart, IN 46516

Social Media

Alliance RV can be found on the following social media channels: Facebook, Instagram, X and Tik Tok. You can find all current links at https://jointhealliance.com/.

It is worth noting that the Facebook page “Alliance RV Group” is a particularly focused point of contact that is monitored by not only many Alliance employees, but also several Owner Empowerment Ambassadors – non-employee owners who have extensive experience with the Alliance RV products and are available to assist other owners.

AllianceRVOwners.com

Outside of the social media outlets mentioned above, this website provides the most comprehensive starting point for finding information about:

- The National Rally
- Other Owner-hosted events around the country
- Alliance RV Apparel
- Alliance Academy: Training videos, short video tips on a range of topics, Owner’s Manuals for equipment and appliances installed in Alliance RVs, and Tech Tips. See the next section.
- And Alliance Owners Forums: focused areas of discussion on a very wide range of topics, all related to the Alliance RV ownership experience (maintenance, specific systems, upgrades, etc.)

Alliance Academy

The Alliance Academy is a collection of resources dedicated to helping the interested owner find all documentation and videos related to learning about RV care and use, and the specific components in Alliance RVs.

Some of the available resources are:

- Alliance RV Training: Over 4 hours of videos produced in partnership with the NRVTA covering RV Electricity, Propane Systems, Water Systems, Air Conditioning, Leveling Systems, and Slideouts. This also includes new owner walkthroughs of interior and exterior components!
- Owner Empowerment Video links: Alliance-produced videos on in depth topics such as the Super Solar System components and use, the TV system, plumbing, and more.
- What'cha Know Wednesday Video links: Snippets of information addressing the most common questions fielded by Alliance Customer Service
- Tech Tips: Documents focused on how to perform certain tasks or work with certain sets of equipment. Examples include Winterization, the All TV System wiring, a master Torque Guide for running gear, and how to use an Automatic Changeover Regulator.
- Product Support/Vendor Information: Owner's Manuals and links for advanced information on specific products and vendors of equipment installed in Alliance trailers.

	While every effort has been made to include useful and relevant video and document links throughout this manual, there are videos and documents beyond what is shown here, and new resources are being produced. As such, the well-informed reader will visit the Alliance Academy, and monitor other online resources, to keep aware of all new information between User Manual updates.

VEHICLE IDENTIFICATION NUMBER (VIN)

Alliance RV vehicles all have a unique 17-digit VIN. You will find your VIN listed on the Federal Certification label located toward the front of the RV on the off-door side. The following VIN decoder identifies each digit location and its function.

DIGIT LOCATION	FUNCTION	KEY
1st, 2nd and 3rd	WMI (SAE Assigned)	**7M5**
4th	Trailer Type	F = Fifth Weel / Gooseneck T = Travel Trailer / Bumper Pull
5th	Model Designator	P = Paradigm (Active 2021 Model Year) V = Valor (Active 2021 Model Year) A = Avenue (Active 2022 Model Year) D = Delta (Active 2024 Model Year)
6th and 7th	Length of RV	Length of RV (2 digits regardless of length)
8th	Number of Axles	1 = 1 Axle 2 = 2 Axles 3 = 3 Axles
9th	Check Digit	Calculated
10th	Model Year	M = 2021 T = 2026 1 = 2031 6 = 2036 N = 2022 V = 2027 2 = 2032 7 = 2037 P = 2023 W = 2028 3 = 2033 8 = 2038 R = 2024 X = 2029 4 = 2034 9 = 2039 S = 2025 Y = 2030 5 = 2035
11th	Plant Location	A = Plant 1 - Location Elkhart, IN B = Plant 2 - Location Elkhart, IN C = Plant 3 - Location Elkhart, IN D = Plant 4 - Location Elkhart, IN
12th thru 17th	Serial Number	Sequential Six Digit Number (001000)

REPORTING SAFETY DEFECTS

In the United States:

If you believe that your recreational vehicle has a defect which could cause a crash or cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA), and Alliance RV.

If the National Highway Traffic Safety Administration (NHTSA) receives similar complaints, they may open an investigation. If they determine that a safety defect exists in other vehicles, a recall and remedy campaign may be ordered. NHTSA does not become involved in individual cases between you, your dealer or Alliance RV.

To Contact NHTSA:

Website: www.safecar.gov

Address: NHTSA Headquarters

Attn: Administrator
1200 New Jersey Avenue, SE
Washington DC 20590
Toll Free Vehicle Safety Hotline: 888.327.4236
TTY: 800.424.9153

For additional information, please refer to the NHTSA website at www.safecar.gov.

In Canada:

If you believe that your recreational vehicle has a defect which could cause a crash or cause injury or death, you should immediately inform Transportation Canada's Defect Investigations and Recalls Division, and Alliance RV.

To Contact Transportation Canada:

Website: www.tc.gc.ca

Address: Transport Canada

Defect Investigations & Recalls Division
330 Sparks Street
Ottawa ON K1A 0N5
Canada
Toll Free in Canada: 800.333.0510

If calling internationally or from the Gatineau-Ottawa area: 819.994.3328

SERVICE & WARRANTY

Alliance RV Limited Warranties

Alliance RV, LLC (Alliance RV) provides the following Limited Base and Limited Structural Warranties with this recreational vehicle which sets forth what Alliance RV will cover and what Alliance RV will do if a defect is found to exist. Please read the following warranty details closely before your purchase of the recreational vehicle.

ACCEPTANCE OF WARRANTY: When you request or accept the performance of warranty repairs under the terms of either limited warranty, you are accepting all terms of both limited warranties.

ONE (1) YEAR LIMITED BASE WARRANTY

Alliance RV provides this Limited Base Warranty for the period of One (1) Year. Warranty period starts from the earlier of (a) the date of purchase by the original retail purchaser, or, (b) if the dealer places the vehicle in service prior to retail sale, on the date the recreational vehicle is first placed in such service.

For the warranty period set forth above, this one (1) year Limited Base Warranty covers certain defects in materials and/or workmanship for the recreational vehicle manufactured by Alliance RV, and workmanship provided directly by Alliance RV, arising under normal use and service for the Limited Base Warranty period of the recreational vehicle. Alliance RV reserves the right to use new or remanufactured parts of similar quality to complete any work, and to make parts and design changes without notice to anyone. Alliance RV reserves the right to make changes in the design or material of its products without obligation to incorporate such changes in any product previously manufactured.

This Limited Base Warranty only covers a recreational vehicle sold by an authorized Alliance RV dealer and to the original retail purchaser. Note that recreational vehicles purchased in the US with the specific intent to import to Canada will NOT be covered under this Limited Base Warranty.

Alliance RV makes no warranty whatsoever with respect to the recreational vehicle beyond that contained in this Limited Base Warranty. No other person(s) are authorized by Alliance RV to establish any other obligation or liability for it regarding this recreational vehicle. Alliance RV is not responsible for any promise, representation or warranty made by any dealer or person beyond what is expressly stated in this Limited Base Warranty. No one has authority to amend or modify this Limited Base Warranty.

NOTE: This Limited One (1) Year Base Warranty is separate from the Limited Three (3) Year Structural Warranty on the following page and will expire exactly one year from the warranty period start date as identified above.

LIMITATIONS, EXCLUSIONS AND DISCLAIMER OF IMPLIED WARRANTIES:

THE LIMITED BASE WARRANTY IS PROVIDED EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WHETHER EXPRESS OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE, AND IN LIEU OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF ALLIANCE RV. IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, IN ANY, GIVEN BY LAW, WILL BE LIMITED TO AND NOT EXTEND BEYOND THE SCOPE OF COVERAGE AND BEYOND THE DURATION OF THE ABOVE ONE-YEAR LIMITED BASE WARRANTY.

IN NO EVENT SHALL ALLIANCE RV BE RESPONSIBLE OR LIABLE FOR ANY LOSS OF USE, REVENUE, PROFIT, OR FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, EXEMPLARY, OR PUNITIVE DAMAGES OF ANY KIND OR NATURE THAT RESULT FROM ANY DEFECT IN THE RECREATIONAL VEHICLE REGARDLESS OF WHETHER SUCH DAMAGES WERE FORESEEABLE. THE DISCLAIMER OF CONSEQUENTIAL DAMAGES IS NOT DEPENDENT UPON THE LIMITED BASE WARRANTY FULFILLING ITS ESSENTIAL PURPOSE.

NOTE: SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

THREE (3) YEAR LIMITED STRUCTURAL WARRANTY

Alliance RV provides this Limited Structural Warranty for the period of Three (3) Years. Warranty period starts from the earlier of (a) the date of purchase by the original retail purchaser, or, (b) if the dealer places the vehicle in service prior to retail sale, on the date the recreational vehicle is first placed in such service.

For the warranty period set forth above, this three (3) year Limited Structural Warranty covers certain defects in materials and/or workmanship of the **"structural components"** (as defined below) portions of the recreational vehicle manufactured by Alliance RV, and workmanship provided directly by Alliance RV, arising under normal use and service for the Limited Structural Warranty period of the recreational vehicle. Alliance RV reserves the right to use new or remanufactured parts of similar quality to complete any work, and to make parts and design changes without notice to anyone. Alliance RV reserves the right to make changes in the design or material of its products without obligation to incorporate such changes in any product previously manufactured.

"Structural components" is defined as (i) main steel frame including outriggers and cross members; (ii) laminated side walls and rear wall assembly; (iii) slideroom box assembly including sidewall, end walls, roof and floor; (iv) roof assembly; (v) floor assembly; and (vi) fiberglass cap including paint application (this structural warranty item does not cover damages to the cap such as rock chips, dents, scratches or failure to meet the maintenance requirements as outlined in the Owner's manual).

This Limited Structural Warranty only covers a recreational vehicle sold by an authorized Alliance RV dealer and to the original retail purchaser. Note that recreational vehicles purchased in the US with the specific intent to import to Canada will NOT be covered under this Limited Structural Warranty.

Alliance RV makes no warranty whatsoever with respect to the recreational vehicle beyond that contained in this Limited Structural Warranty. No other person(s) are authorized by Alliance RV to establish any other obligation or liability for it regarding this recreational vehicle. Alliance RV is not responsible for any promise, representation or warranty made by any dealer or person beyond what is expressly stated in this Limited Structural Warranty. No one has authority to amend or modify this Limited Structural Warranty.

NOTE: This Limited Three (3) Year Structural Warranty is separate from the Limited One (1) Year Base Warranty on the previous page and will expire exactly three years from the warranty period start date as identified above.

LIMITATIONS, EXCLUSIONS AND DISCLAIMER OF IMPLIED WARRANTIES:

THE LIMITED STRUCTURAL WARRANTY IS PROVIDED EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WHETHER EXPRESS OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE, AND IN LIEU OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF ALLIANCE RV. IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, IN ANY, GIVEN BY LAW, WILL BE LIMITED TO AND NOT EXTEND BEYOND THE SCOPE OF COVERAGE AND BEYOND THE DURATION OF THE ABOVE ONE-YEAR LIMITED BASE WARRANTY.

IN NO EVENT SHALL ALLIANCE RV BE RESPONSIBLE OR LIABLE FOR ANY LOSS OF USE, REVENUE, PROFIT, OR FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, EXEMPLARY, OR PUNITIVE DAMAGES OF ANY KIND OR NATURE THAT RESULT FROM ANY DEFECT IN THE RECREATIONAL VEHICLE REGARDLESS OF WHETHER SUCH DAMAGES WERE FORESEEABLE. THE DISCLAIMER OF CONSEQUENTIAL DAMAGES IS NOT DEPENDENT UPON THE LIMITED BASE WARRANTY FULFILLING ITS ESSENTIAL PURPOSE.

NOTE: SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

Extended or Third-Party Warranties

Alliance RV does not offer any warranties outside of those outlined on pages 6-7 on the new purchase of an Alliance RV. Any extended or third party warranties obtained in connection with the purchase of an Alliance RV is the product of another organization. All questions related to such warranties must be directed toward the seller or provider of those warranties.

Obtaining Service

For a defect to be covered under either limited warranty, the repair or replacement must occur at an independent authorized Alliance RV dealer, or Alliance RV approved repair shop/service provider, or Alliance RV facilities. Alliance RV will remedy defects in materials and workmanship covered under the Limited Base Warranty or Limited Structural Warranty, under normal use and service, caused by Alliance RV in the recreational vehicle itself only.

To obtain warranty service the original retail purchaser must do the following:

1. Within twenty (20) days of discovery of any defect to be covered by this warranty, notify an independent, authorized Alliance RV dealer or Alliance RV. Warranty services can only be obtained through Alliance RV authorized dealers and service representatives.
2. Following notification, the recreational vehicle must be taken to an independent, authorized Alliance RV dealer, or if authorized by Alliance RV, a designated repair shop/service provider. Either that dealer or repair shop, or Alliance RV will undertake appropriate corrective repair actions in instances where the defect is covered by this warranty.

	Ancillary expenses incurred for transportation of the RV or while the RV is undergoing repairs, shall be borne by purchaser. Ancillary expenses include, but are not limited to: transportation, fuel, accommodations, food, loan payments.

If assistance is needed, you may contact Alliance RV directly at:

- Email: service@alliancerv.com (Preferred method of contact)
- Phone: (574) 226-0140
- Mail: 301 Benchmark Drive, Elkhart, IN 46516 (Attn: Customer Service)

	When sending an Email to Alliance RV Customer Service, please include the following information: • Last six digits of your VIN • Relevant photos to help illustrate your question or concern • Questions or concerns regarding components (ie. refrigerator, toilet, awning, etc), a photo of the data tag/label located on that specific component will often be needed.

	Alliance RV Customer Service response time for all inquiries is typically within 1-2 business days. For emails, if you do not see a response within the expected timeframe, please check your SPAM or JUNK folders, and also ensure that the email address was keyed in correctly at (service@alliancerv.com)

Parts Information for Non-Warranty Purposes

For parts information on non-warranty items, please contact your local Alliance RV Dealer or email the Alliance RV Parts Team directly at parts@alliancerv.com.

Unable to Complete Warranty Claim Within the Warranty Period

If there are concerns with completing warranty requests within the warranty period, it is recommended that you document these concerns via email prior to the warranty expiration with Alliance RV Customer Service or your Alliance RV Dealer. Sending an email does not guarantee coverage, but will provide a record and allow us to review.

Repair Remedy: Exclusive Remedy

Alliance RV's obligation is to address, within industry standards, any covered substantial defect discovered and reported within the warranty period provided: (a) you notify an authorized dealer within 20 days of your discovery of the substantial defect: AND (b) you deliver the recreational vehicle to an authorized dealership or Alliance RV at your cost and expense. If this primary remedy fails to successfully cure any substantial defect after a reasonable number of repair attempts, your sole and exclusive remedy shall be to have Alliance RV pay an independent service shop to perform repairs to the defect. If the defect is still incapable of being repaired, Alliance RV may, at its option, provide you the diminished value damages (the difference in purchase price and actual value of your recreational vehicle on the date of purchase). You must exhaust the primary repair remedy and this back-up remedy, and both these remedies must fail of their essential purpose before initiating any action against Alliance RV.

Warranty Exclusions

The Limited Base and Limited Structural Warranties noted above will not cover and will not apply to:

- Routine maintenance and adjustments;
- Any deterioration due to normal wear and tear;
- Defects in labor, materials, components or parts not manufactured or performed by Alliance RV;
- Modifications or alterations to the original design after the recreational vehicle leaves possession of Alliance RV;
- Damage caused by unauthorized attachments, modifications or alterations;
- Equipment or accessories installed by any party other than Alliance RV;
- Materials, components, appliances, electronics or parts which are warranted separately by the respective component manufacturer;
- Recreational vehicles used for purposes other than recreational travel and camping (By way of example only business, rental commercial or disaster relief purposes);
- Any recreational vehicle purchased in the United States with specific intent to import vehicle to Canada;
- Any recreational vehicle registered or primarily used outside the United States or Canada;

- Any water leaks or related significant damages that are a result of your failure to properly maintain the exterior seals as required in the Owner's Manual;
- Repairs or replacements made necessary as a result of your failure to follow ordinary maintenance procedures as recommended by Alliance or the manufacturer or dealer of the recreational vehicle;
- Rust or corrosion due to the environment;
- Damage caused by misuse, abuse, neglect, theft, or vandalism;
- Damage caused by improper stowing of equipment, overloading or improper load balancing;
- Damage caused by unprotected electrical hookups or power surges;
- Damage caused by extreme weather conditions such as extreme cold or heat, winds, rain, lightning, hail, ice and flooding;
- Damage caused by unauthorized repair or failure to follow instructions supplied with the recreational vehicle;
- Damage caused by the tow vehicle by the owner, owner's operation or use of the tow vehicle, improper selection or installation of towing hitch on tow vehicle, or damage to the owner's tow vehicle;
- Damage caused by road conditions, applications of salt or de-icing chemicals, gravel, sand, potholes, etc.;
- Fading, yellowing or aging of exterior materials and components due to exposure of UV or sunlight, or weather;
- Damage caused in-transit to or from a dealer, or to or from the consumer, or by the consumer or another;
- Recreational vehicles not originally purchased through an authorized Alliance RV dealer

	Relating to aftermarket items & modifications: • As stated above, warranties will not cover and will not apply to damage caused by unauthorized attachments, modifications or alterations. It is important to note that such addition or modification does not automatically void a coach warranty. If that aftermarket item is deemed to be the cause of an issue, then it could impact warranty coverage of that or a related issue. • In providing a warranty covered repair or replacement of any kind, should that repair negatively affect an aftermarket item, Alliance RV is not liable to return the aftermarket addition to like-new condition. For example, replacement of graphics due to warranty coverage will not result in Alliance RV paying for a new ceramic coating application.

Events Discharging Alliance RV from Obligation Under Warranty

Certain things completely discharge Alliance RV from any obligation under these warranties. By way of example, the following shall discharge Alliance RV from any express or implied warranty obligation to repair or replace any defect that results from: misuse or negligent use, abuse, or accident, neglect, unauthorized alteration, failure to provide reasonable and necessary maintenance including reasonable periodic inspections of the recreational vehicle, use of the recreational vehicle for rental, business or commercial use or any other use other than to use the recreational vehicle only for recreational and personal use.

Warranty Registrations

The selling dealer will assist you in completing and submitting the Alliance RV product warranty registration form. That form must be returned to Alliance RV within ten (10) days of your taking delivery of the recreational vehicle. Failure to file this warranty registration with Alliance RV will not affect your rights under the Limited Base or Limited Structural warranties as long as you can present proof of purchase, but it can cause delays in obtaining the benefits of these Limited Warranties and may inhibit any servicing facility's ability to provide proper repairs and/or part replacement.

As stated above, some components, accessories or equipment are not covered by these Limited Warranties. By way of example, the following have coverage that may be provided by the component manufacturer: tires, batteries, generators, and some appliances & electronics and entertainment equipment. These component manufacturer warranties are separate from this Limited Base Warranty, and in some cases may be longer and/or have specific coverage provisions and requirements. In order to activate these warranties, you may have to complete registration forms, post cards or some other form of notification to the component manufacturer within a specific time period. These forms and documents will be located with the Owner's Materials packet provided with your new vehicle. You must complete and submit them to the respective manufacturer as quickly as possible, and within the time periods required by those warranties.

Care and Maintenance

The owner of the recreational vehicle is responsible to perform proper care and maintenance of the recreational vehicle as outlined in the Alliance RV Owner's Manual and the owner's manuals of the chassis and other component part manufacturers. Failure to maintain the RV as noted in those manuals voids these warranties, and any damage to the RV as a result of your failure to perform such care, is not covered by the warranties set forth above.

LEGAL REMEDIES

ANY ACTION TO ENFORCE ANY PORTION OF THIS LIMITED BASE OR STRUCTURAL WARRANTIES, OR ANY IMPLIED WARRANTY, MUST BE COMMENCED WITHIN NINETY (90) DAYS AFTER THE EXPIRATION OF THE APPLICABLE WARRANTY COVERAGE PERIOD. ANY PERFORMANCE OF REPAIRS WILL NOT SUSPEND THIS LIMITATION PERIOD FROM EXPIRING, UNLESS STATE LAW PROVIDES OTHERWISE. ANY PERFORMANCE OF REPAIRS AFTER THE APPLICABLE WARRANTY COVERAGE PERIOD HAS EXPIRED, OR PERFORMANCE OF REPAIRS REGARDING ANYTHING EXCLUDED FROM COVERAGE UNDER THIS LIMITED WARRANTY SHALL BE CONSIDERED "GOOD WILL" REPAIRS, AND THEY WILL NOT CHANGE THE EXPRESS TERMS OF THIS LIMITED WARRANTY OR EXTEND THE WARRANTY COVERAGE PERIOD.

EXCLUSIVE JURISDICTION FOR DECIDING LEGAL DISPUTES RELATING TO ALLEGED BREACH OF WARRANTY OR REPRESENTATIONS OF ANY NATURE MUST BE FILED IN THE COURTS WITHIN THE STATE OF MANUFACTURE. THE ABOVE LIMITED WARRANTIES WILL BE INTERPRETED AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF INDIANA, WITHOUT GIVING EFFECT TO ANY CHOICE OR CONFLICT OF LAW PROVISION OR RULE (WHETHER OF THE STATE OF INDIANA OR ANY OTHER JURISDICTION) THAT WOULD CAUSE THE APPLICATION OF THE LAWS OF ANY JURISDICTION OTHER THAN THOSE OF THE STATE OF INDIANA. ANY AND ALL CLAIMS,

CONTROVERSIES, AND CAUSES OF ACTION ARISING OUT OF OR RELATING TO THE ABOVE LIMITED WARRANTIES, WHETHER SOUNDING IN CONTRACT, TORT OR STATUTE, WILL BE GOVERNED BY THE LAWS OF THE STATE OF INDIANA, INCLUDING ITS STATUTE OF LIMITATIONS, WITHOUT GIVING EFFECT TO ANY CHOICE OR CONFLICT OF LAW PROVISION OR RULE (WHETHER OF THE STATE OF INDIANA OR ANY OTHER JURISDICTION) THAT WOULD CAUSE THE APPLICATION OF THE LAWS OF ANY JURISDICTION OTHER THAN THOSE OF THE STATE OF INDIANA.

THE LIMITED BASE WARRANTY AND LIMITED STRUCTURAL WARRANTY GIVE YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

California Consumers

Alliance RV has elected to follow the procedures described in California Code of Civil Procedure, Section 871.20, et seq. regarding pre-litigation notice requirements for consumer claims brought pursuant to the Song-Beverly Consumer Warranty Act. Beginning on July 1, 2025, to comply with the Song-Beverly Consumer Warranty Act's pre-litigation notice requirements, as described at California Code of Civil Procedure Section 871.24, a consumer must include Full Name of Registered Owner, VIN number of the recreational vehicle, repair history and problems with the recreational vehicle, consumer demand, current physical address of where the RV is located, and confirmation that customer has possession of the recreational vehicle. This information must be sent to service.ca@alliancerv.com. Alternatively, the pre-litigation notice requirements can be sent via certified or registered mail, return receipt requested, to the following address: Alliance RV, LLC - Attn: Consumer Affairs 301 Benchmark Dr. Elkhart, IN 46516." Please include a physical address or email address where a confirmation receipt can be sent to you.

Alliance RV ha optado por seguir los procedimientos descritos en el Código de Procedimiento Civil de California, Sección 871.20 y siguientes, con respecto a los requisitos de notificación previa al litigio para las reclamaciones de consumidores presentadas de conformidad con la Ley de Garantía del Consumidor Song-Beverly. A partir del 1 de julio de 2025, para cumplir con los requisitos de notificación previa al litigio de la Ley de Garantía del Consumidor Song-Beverly, descritos en la Sección 871.24 del Código de Procedimiento Civil de California, el consumidor debe incluir el nombre completo del propietario registrado, el número de identificación del vehículo (VIN) del vehículo recreativo, el historial de reparaciones y problemas con el vehículo recreativo, la solicitud del consumidor, la dirección física actual donde se encuentra el vehículo recreativo y la confirmación de que el cliente está en posesión del mismo. Esta información debe enviarse a service.ca@alliancerv.com. Alternativamente, los requisitos de notificación previa al litigio pueden enviarse por correo certificado o registrado, con acuse de recibo, a la siguiente dirección: Alliance RV, LLC - Attn: Consumer Affairs, 301 Benchmark Dr. Elkhart, IN 46516. Incluya una dirección física o una dirección de correo electrónico donde podamos enviarle un recibo de confirmación.

SAFETY PRECAUTIONS

Throughout this manual, you will find the symbols shown below. This information is provided to help you avoid personal injury or death as well as damage to your RV and other property. Take the time to review all these warnings.

⚠CAUTION

INDICATES POTENTIAL MINOR TO MODERATE INJURY AND/OR PROPERTY DAMAGE

⚠WARNING

INDICATES POTENTIAL DEATH OR SERIOUS INJURY

⚠ DANGER

INDICATES POTENTIAL DEATH OR SERIOUS INJURY

SYMBOLS USED

	Information box: Used to highlight particularly helpful information about the topic.
	Technical Hint or Troubleshooting box: Used to present a short technical hint or troubleshooting method related to the topic.
	This symbol denotes an available vendor manual or Tech Tip at Alliance Academy.
	This symbol denotes an available video at Alliance Academy. When the abbreviation WYKW is used at the beginning, these are What You Know Wednesday videos: especially short and focused videos about the noted topic.
	This symbol denotes available vendor website information.

WEIGHT RATINGS, ASSOCIATED LABELS, LOADING AND WEIGHING

Weight Terms

⚠WARNING

PLEASE READ AND UNDERSTAND THE MANY SAFETY LABELS THROUGHOUT YOUR RV, FAILURE TO DO SO COULD RESULT PROPERTY DAMAGE, DEATH OR SERIOUS INJURY

Knowing and understanding the following weight terms are a crucial step to overall safety of your RV. By becoming familiar with this information, you will be better equipped in making decisions when using your Alliance RV product.

GAWR = Gross Axle Weight Rating and is the maximum weight the recreational vehicles axle(s) are rated for.

GVWR = Gross Vehicle Weight Rating and is the maximum operating weight the vehicle is rated for when fully loaded.

UVW = Unloaded Vehicle Weight and is the weight of the manufactured completed RV.

CCC = Cargo Carrying Capacity and is the difference between what the RV weighs when there is nothing in it and what it weights when you have loaded it with your personal belongings, also including but not limited to food, water, propane and any upgrades added (ie. *solar power, washer/dryer, additional batteries etc.)*

HITCH WEIGHT = The weight of the trailer that is on the hitch of the tow vehicle when attached.

⚠WARNING

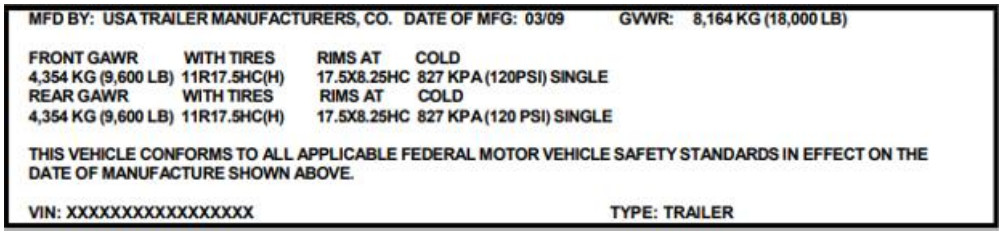
NEVER EXCEED ANY OF THE DESIGNATED WEIGHT RATINGS, DOING SO COULD RESULT IN DEATH OR SERIOUS INJURY

⚠WARNING

FACTORY INSTALLED WEIGHT LABELS ARE SPECIFIC TO YOUR RV, NEVER REMOVE OR MODIFY THESE LABELS. IF YOU HAVE A MISSING LABEL, CONTACT YOUR DEALER OR ALLIANCE RV FOR ASSISTANCE

Federal Certification

This label verifies that your RV is compliant with all Vehicle Safety Standards. You'll find this label near the front of your RV on the off-door side near the cabover.


MFD BY: USA TRAILER MANUFACTURERS, CO. DATE OF MFG: 03/09 GVWR: 8,164 KG (18,000 LB)

FRONT GAWR WITH TIRES RIMS AT COLD
4,354 KG (9,600 LB) 11R17.5HC(H) 17.5X8.25HC 827 KPA (120PSI) SINGLE
REAR GAWR WITH TIRES RIMS AT COLD
4,354 KG (9,600 LB) 11R17.5HC(H) 17.5X8.25HC 827 KPA (120 PSI) SINGLE

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

VIN: XXXXXXXXXXXXXXXXX TYPE: TRAILER

Figure 1. Vehicle Manufacturing Information label.

Tire and Loading Information

This label houses information regarding the correct tire pressure for the vehicle and will also tell you the size of the tires and the CCC of the RV. This label is also located near the front of the RV on the off-door side near the cabover.

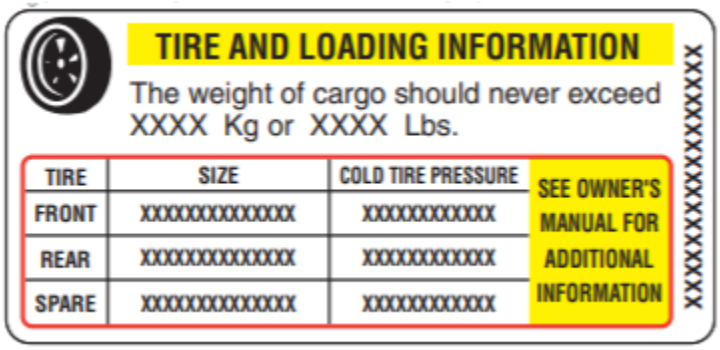


Figure 2. Tire and Loading Information label.

	WYKW: Alliance RV Tire Pressure

Cargo Capacities & Weighing Your RV

Weight and balance of your RV is crucial to your safety. To ensure that you are within all the established weight limits and ratings, you should have your RV weighed.

Always make sure that your RV is loaded evenly from side to side, never exceeding the specified weight ratings established for your RV. Always secure loose items and ensure that all factory-provided securements are in place before you travel.

	LP Gas and fresh water are considered cargo weight.

⚠WARNING

A LOAD THAT IS NOT PROPERLY DISTRIBUTED, REGARDLESS OF WEIGHT RATINGS, CAN HAVE AN ADVERSE EFFECT ON THE WAY THE RV PULLS.

⚠WARNING

THE TOTAL WEIGHT OF THE RV AND THE TOW VEHICLE TOGETHER SHOULD NEVER EXCEED THE GCWR OF THE TOW VEHICLE.

⚠WARNING

YOU MAY NOT ALWAYS BE ABLE TO USE ALL AVAILABLE STORAGE SPACE WHEN LOADING YOUR RV. JUST BECAUSE IT CAN FIT DOESN'T MEAN THAT YOUR RV IS WITHIN THE ESTABLISHED WEIGHT RATINGS.

	Can My Truck Tow This?

TIRE AND WHEEL INFORMATION & SAFETY

Your tires are the only part of the RV that has direct contact with the road. Tires directly affect the handling, braking and safety of your RV. Tires must have correct air pressure, tread depth and balance.

Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies characteristics of the tire and provides a tire ID number for safety standard certification and in case of a recall.

DOT Tire Identification Number

This begins with the letters "DOT" and indicates the tire meets all federal standards. The following two digits are the plant code where the tire was manufactured. There may be several letters and numbers depending upon the manufacturer. The last four numbers represent the week and year the tire was built. In Figure 3, the tire was made in the seventh week of 2024. The DOT number is also important in the event of a tire recall and used for that purpose.

Figure 3. DOT tire information.

Tire Size

Alliance RV uses a very robust Load Range E ST235/80R16 tire for the Benchmark trailer line. Only purchase new tires that are the same size as the vehicle's original tires. Look at the tire information label or on the sidewall of the tire you are replacing to find the information. If you have any questions, please contact Alliance RV.

Spare Tire Carrier

A cable hoist is used for storing your spare tire under the RV. You'll find the spare tire up against the underbelly of the coach. An access hole in the skirt metal is provided for the spare tire crank handle to be inserted in order to lower or raise the spare tire hoist.

Tire and Wheel Maintenance

Inspect Tires and Check Pressure

As per the Maintenance Schedule, as well as after encountering any significant road hazards, each tire should be inspected for abnormal wear, and the tire pressure should be checked.

	WYKW: Alliance RV Tire Pressure

⚠WARNING

TIRE PRESSURE SHOULD BE CHECKED AT THE BEGINNING OF A TRIP. ALWAYS FOLLOW ALL INSTRUCTIONS ON THE FEDERAL CERTIFICATION LABEL FOR ESTABLISHED REQUIREMENTS.

1. Inspection of the tires
   - Check your tires regularly, this is crucial to your safety. Ideally, tires should be inspected monthly. If you drive over potholes, debris or live in a cold climate or even regularly pull your RV, a more frequent inspection is suggested. The more often you inspect, the easier it is to catch small problems and get them fixed before it becomes a more expensive and potentially time-consuming problem.
   - Look for this during inspection:
     - **Over Inflation** – Too much air causing the tires middle section to contact the road. This will create wear in the center of the tire.
     - **Under Inflation** – Too little air pressure causes the outer edges to contact the road. This will create wear on the outside edges of the tire tread.
     - **Tread Wear on one Edge of the Tire** – This typically indicates that something is out of alignment.
     - **Erratic Tread Wear** – Often called cupping and can mean the wheel is out of balance or an issue with suspension component
2. Pressure should be checked when the tires are cold. Tires are considered cold when the vehicle has not been moved for a period of 3 hours or more. Do NOT adjust tires when they are hot.
3. Using a quality tire gauge rated for the required pressure, check all the tires to make sure they have the same air pressure. Follow the tire manufacturer's inflation guidelines for maximum load capacity on the federal Tire Information Label. If the pressure is too high or too low, adjust as needed to match the required tire pressure.

⚠WARNING

ALWAYS KEEP TIRES PROPERLY INFLATED. NOT DOING SO CAN RESULT IN TIRE FAILURE THAT COULD RESULT IN AN ACCIDENT.

- If you have been driving your vehicle and think a tire is underinflated, fill it to the recommended cold inflation pressure indicated on your vehicle's tire information placard or certification label. While your tire may still be slightly underinflated due to the extra pounds of pressure in the warm tire, it is safer to drive with air pressure that's slightly lower than the vehicle manufacturers recommended cold inflation pressure than to drive with a significantly underinflated tire. **Since this is a temporary fix, don't forget to recheck and adjust the tire's pressure when you can obtain a cold reading.**

⚠WARNING

NEVER ADJUST TIRE PRESSURE TO A "HOT" OR "WARM" TIRE. ADJUSTMENTS ARE ONLY TO BE MADE AFTER THE TIRE HAS BEEN AT REST FOR 3 OR MORE HOURS.

Changing a Tire

	WYKW: Where to Place Your Tire jack

1. Keep the recreational vehicle attached to the tow vehicle. Block the tire on the opposite side of the recreational vehicle from the tire you are changing.
2. Remove the spare tire from the Spare Tire Carrier.
3. Loosen the wheel lug on the tire you are changing before jacking up the vehicle. **DO NOT remove the lug nuts.**
4. Locate the mainframe rail of the trailer (it spans from front-to-back just inside the tires).
5. To raise the recreational vehicle, place the jack (hydraulic or screw) under the main frame rail. It must be just ahead of the front tire or just behind the rear tire. Raise the recreational vehicle enough to lift the damaged wheel off the ground for removal. NOTE: The trailer may need to be raised slightly more to enable the new wheel to be placed.

⚠WARNING

NEVER USE THE LEVELING SYSTEM TO CHANGE A TIRE. NEVER RAISE THE RV BY PLACING A JACK UNDER THE AXLE, AXLE SPRINGS OR ANY ATTACHED PARTS.

⚠WARNING

BE SURE TO REPLACE TIRES WITH A TIRE OF THE SAME SIZE AND SPECIFICATION.

6. Finish removing the lug nuts.
7. Replace the damaged wheel with the spare wheel, and secure the lug nuts hand tight.
8. Lower the recreational vehicle only enough to provide ground contact to prevent the wheel from turning as you complete the lug nut torques.
9. Apply full rated torque to the lug nuts in the sequence shown in **Wheel Nut Torque** for your wheel. You may need to repeat the torque sequence multiple times to fully seat all lug nuts.
10. Fully lower the recreational vehicle.

⚠WARNING

AFTER REPLACING A WHEEL, TORQUE SHOULD BE CHECKED AGAIN AFTER 100 MILES AND 200 MILES OF DRIVING.

Wheel Nut Torque

Always use a calibrated torque wrench to confirm proper torque. Check the lug nut torque on each wheel before departure and according to the Maintenance Schedule. Do NOT under torque or over torque under any circumstance. Tighten all lug nuts in the correct order according to your RVs lug pattern, illustrated in Figure 4.

⚠WARNING

ALWAYS TORQUE THE WHEEL LUG NUTS TO THE REQUIRED SPECIFICATIONS.

Table 1. Wheel lug nut torque specifications.

LUG NUT	STUD DIAMETER	RIM SIZE	RIM TYPE	ACCEPTABLE TORQUE RANGE
6	1/2"	16"	Steel	90-120 ft./lbs.

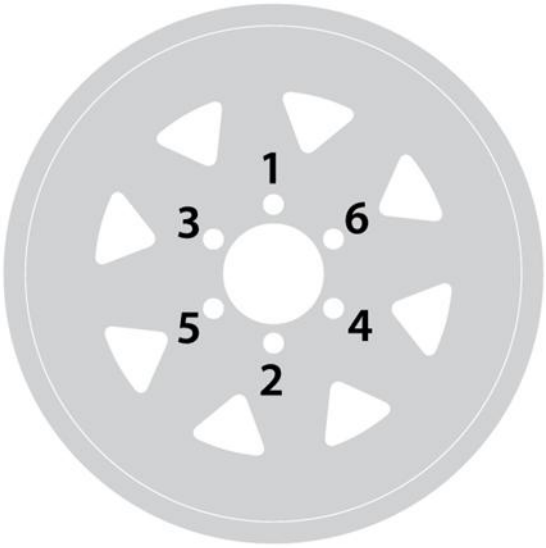


Figure 4. Proper lug nut torque sequence for a six-lug wheel.

BRAKE SYSTEMS

Alliance trailers come standard with drum brakes. The brakes are actuated via a brake controller to provide an electric signal to the trailer via the Tow Plug to apply the brakes. That signal travels to each wheel where an electromagnet applies the brakes. It is important to regularly inspect and maintain the brake systems according to the maintenance schedule.

Brake Controller

The brake controller should be installed in the tow vehicle to work in conjunction with the RV brakes. Consult with your dealer or brake controller manufacturer to decide what is the right towing combination. This controller will be present regardless of the type of brakes installed on the trailer.

Breakaway Switch

The breakaway switch is a critical safety component of the RV brake system. You'll find this located on the trailer's A-frame. If the trailer and the tow vehicle become separated during towing, the line will pull the plunger out and immediately activate the trailer's brakes. Always make sure your breakaway switch is in working order.

⚠ CAUTION

NEITHER THE BREAKAWAY SWITCH NOR THE TRAILER BRAKES SHOULD EVER BE USED AS A PARKING BRAKE

⚠ CAUTION

ENSURE THAT THERE IS ENOUGH SLACK IN THE BREAKAWAY SWITCH CABLE TO ALLOW FOR TIGHT TURNING RADII.

Brake Troubleshooting

Full troubleshooting of brake systems is beyond the scope of this manual. However, the following issues have been reported by Alliance owners:

Symptom: The drum brakes on the trailer appear to work less than in the past. The brakes have low miles and should not be worn.

Possible Causes:

- The brakes are self-adjusting, but the mechanisms that allow for self-adjustment can fail or become disconnected.
- Wires between the pin box connection and each brake could be damaged or disconnected. Check as much wiring as possible, using continuity checks where the full wire run cannot be seen.

- Inner grease seals have blown out, causing contamination of the shoes. This can usually be seen by inspection of the inner brake assembly with the wheel on.

Symptom: There is a known issue on Chevy/GMC trucks where a "Check Trailer Wiring" or "Service Trailer Brake" issue will post on the Driver Information Center, yet all tail lights and brakes function

- Damage to tow vehicle socket or trailer plug causing poor blade or socket connection. Refer to GM service bulletin 21-NA-155 to check for this issue.

Brake Maintenance

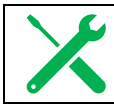
⚠WARNING

FAILURE TO KEEP YOUR BRAKES IN PROPER WORKING CONDITION AS OUTLINED CAN CAUSE PROPERTY DAMAGE, SERIOUS INJURY OR DEATH.

Breakaway Switch Operation

As per the Maintenance Schedule, test your breakaway switch with the following procedure. You may need to have a helper with you to hear the brakes actuate against the brake drums.

1. If the RV is still hitched to the tow vehicle, disconnect the tow plug from the vehicle.
2. With a helper standing near a trailer wheel, pull the breakaway pin out, only to the first stage.
3. The brake actuator should be heard to contact the brake drum.



It may be necessary to raise a wheel (or pair of wheels) using proper jacking techniques to test that it does not (they do not) rotate.

4. Reinsert the breakaway pin to disengage the brakes.

Brake Inspection

⚠WARNING

BRAKE MAINTENANCE SHOULD ONLY BE PERFORMED BY QUALIFIED PERSONS USING STANDARD INSPECTION AND MAINTENANCE PROCEDURES.

LEAF SPRING SUSPENSION SYSTEM

The trailer is equipped with triple axles using Dexter equalizers, shackles, and leaf springs on an over-slung (the leaf springs are over the axles) suspension. This system provides for low maintenance and a well balanced ride for the trailer.

The Benchmark trailer is configured with non-lubricated bolts on bushings within the leaf spring eyes. The leaf spring at the front and rear end of the assembly is connected directly to reinforced spring hangers welded to the frame. Between the axles are equalizers, with three of the four ends utilizing a shackle. The middle axle leaf spring is directly connected to the forward equalizer. This is a normal triple axle configuration.

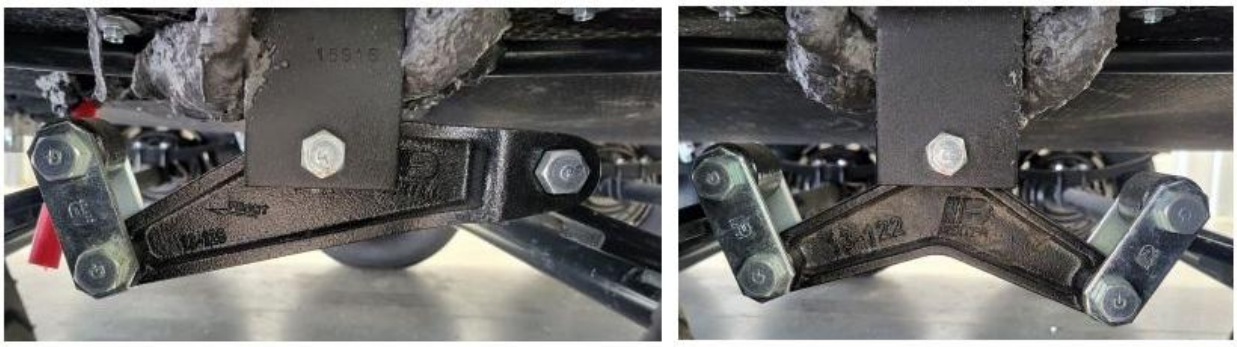


Figure 5. Dual equalizer arrangement. The forward end of the trailer is to the left. The middle axle does not have a shackle to connect the leaf spring to the forward equalizer.

	Running Gear - Dexter: Operation, Maintenance, Service Manual -Axles -Brakes (electric drum) -Double eye leaf springs

	WYKW: Why is there a slight bend in your Alliance RV Axles?

Leaf Spring Suspension Maintenance

Spring Hanger and Leaf Spring Inspection

Inspect each spring hanger location to assure no cracks exist and the hanger is straight. Ensure leaf springs are solid and not cracked or broken.

Equalizer Inspection

Equalizers are very strong, but perform a quick inspection to assure no cracks or damage are evident.

Leaf Spring Bolt Torque

As per the Maintenance Schedule, all bolts on the leaf spring assembly, whether in the leaf spring end, in a shackle, or on an equalizer, should only be snug tight (40 ft-lbs.) Rotation/play must exist for the assembly to work correctly. There are 11 bolts per side.

Axle U-Bolt Torque

Always use a calibrated torque wrench to confirm proper torque according to the Maintenance Schedule. Do NOT under torque or over torque under any circumstance. Torque the nuts of all axle U-bolts to 100 ft-lbs.

Axle Bearing Inspection and Grease Repacking

⚠WARNING

AXLE MAINTENANCE SHOULD ONLY BE PERFORMED BY QUALIFIED PERSONS USING STANDARD INSPECTION AND MAINTENANCE PROCEDURES.

TOW PLUG

The tow plug (7-way wire harness) is wired to your RV to connect electrical power from the tow vehicle for the RV brakes, taillights, clearance lights, turn signals and brake lights. The plug is keyed to fit into a receptacle on your tow vehicle and can only be inserted one way. The gauge of wiring to operate your brakes must be the same size in both the tow vehicle and RV.

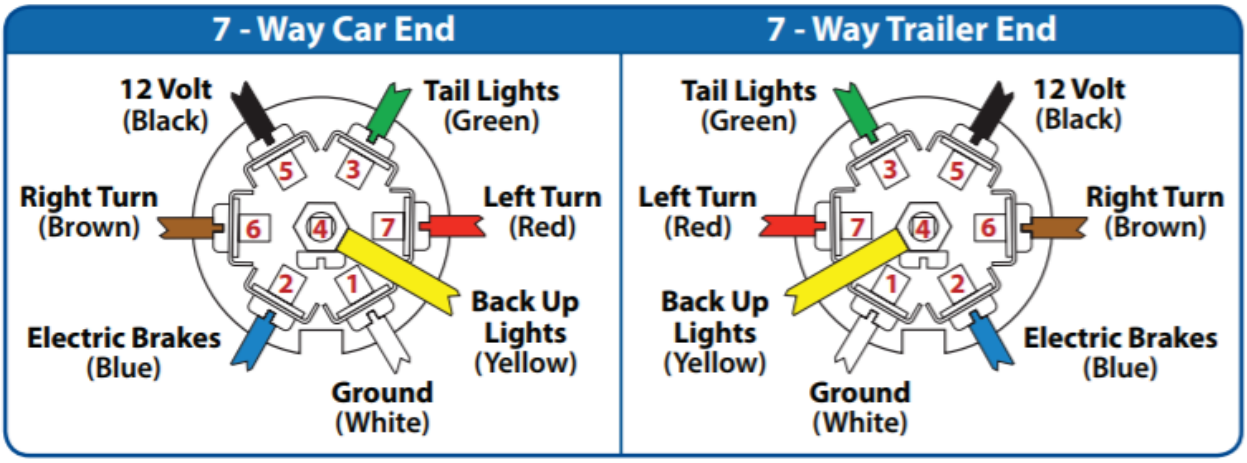


Figure 6. Standard 7 pin trailer wiring.

	WYKW: 7-Way Trailer Connection

Tow Plug Troubleshooting

Modern tow vehicles have many advanced monitoring systems for trailer wiring and braking. Often times, when these vehicles post errors and warnings for trailer braking issues, the issue will be related to fusing, programming, grounding, or other concern on the tow vehicle itself. Some things to verify on the trailer are as follows:

- Are the spades and sockets of the tow vehicle plug and trailer tow plug in good condition?
- Is there continuity between the trailer connection points and the connection box points?
- Is there continuity between the trailer tow plug pin 1 and the trailer frame ground?
- When testing the trailer's breakaway switch, does it operate normally?

If all of these items check out as functional, it is suggested to check the tow vehicle setup by contacting the manufacturer or online resources for your vehicle.

Tow Plug Maintenance

Inspection

As per the Maintenance Schedule, inspect your tow plug for corrosion and build up, clean as needed. Ensure the insulation is not pulled out from the plug. If damage is noticed, have the tow plug repaired by an authorized RV technician.

Wire Lug Torque

The Tow Plug cord is connected to the trailer wiring through a junction box mounted on the A-frame at the front of the trailer. According to the Maintenance Schedule, one should follow this procedure to assure a solid wiring connection.

1. Using the battery disconnect switch on the trailer, turn off the battery power.

⚠ CAUTION

ALWAYS EXPECT THAT 12 V POWER IS ACTIVE IN THE JUNCTION BOX AND DO NOT TOUCH MORE THAN ANY ONE METAL OBJECT WITH THE TOOL.

2. Remove the junction box cover by removing the 2 screws.
3. Using a socket or nut driver, attempt to tighten each of the wire lugs connecting the Tow Plug cord to the trailer wiring.
4. Replace the cover, ensuring no wires are pinched.

SAFETY CHAINS

Requirements for safety chains vary by state. Your travel trailer RV comes equipped with chains to meet Society of Automobile Engineers (SAE) standards for the maximum gross trailer weight.

Using safety chains when towing is always recommended. The recommended method is to cross them under the trailer tongue and attach them to the safety chain loops on the tow vehicle's hitch.

When hitching always inspect the length of the chains once they are attached to the tow vehicle frame as they should be of sufficient length to allow sharp turns, but short enough as to not contact the ground. Each chain should have an equal amount of slack but only enough length to allow the tow vehicle to turn at its minimum radius.

⚠WARNING

ALWAYS USE SAFETY CHAINS WHEN TOWING YOUR TRAVEL TRAILER. SAFETY CHAINS MAINTAIN THE CONNECTION BETWEEN THE TRAVEL TRAILER AND THE TOW VEHICLE IN THE EVENT THE TRAVEL TRAILER WERE TO BECOME DETACHED DURING TRAVEL.

TOWING YOUR RV

When pulling an RV, the most obvious thing is shear mass. You'll be taller, wider and much heavier. Allow yourself plenty of room and time to maneuver out of potentially difficult situations.

Being taller, RVs are more susceptible to sway caused by cross winds and turbulence created by other large passing vehicles. Having the correct hitch equipment that is adjusted properly can significantly reduce these effects.

Know the height of your RV. This can only be properly measured when hitched to your tow vehicle. This will help in avoiding overhead obstructions such as tree branches, low building overhangs and low clearance bridges or overpasses.

Know the width of your RV. This is important when negotiating, turns and other obstructions. Extendable side mirrors and/or add on tow mirrors can help.

Know how much your RV weighs and be aware of the weight ratings of the RV. This information is available for your safety. It is critical to never overload your RV. Overloading adversely affect the towing and handling of your RV. Stay within the weight ratings and limits of your RV.

	Can My Truck Tow This?

A tow vehicle and RV weigh a lot and can take longer to stop. Increase your following distance and give yourself plenty of room and time to stop. Ensure your braking controller is set to correctly stop your vehicle, referring to your brake controller or tow vehicle owner's manual. Each truck & towable recreational vehicle setup is unique and no one value of brake gain or setup can be advised.

Practice makes perfect. Get a feel for how the RV tows and handles. Offtracking is the term used to describe the behavior of the rear wheels of a vehicle, or the wheels of a trailer, to turn inside the radius of a turn made by the front (steering) wheels of a vehicle. Many incidents of recreational vehicle damage are caused by this behavior. As such, it is imperative that a driver understands this tendency and is comfortable with how to safely navigate turns in tight spaces and at highway speeds. This is especially important if you are new to RVs. It is also important to obey highway signs with speed advisement for turns and downgrades.

⚠WARNING

THE RV BRAKE SYSTEM IS DESIGNED AND RATED FOR THE GVWR OF THE RV, NOT THE GCWR OF THE TOW VEHICLE.

⚠WARNING

WHEN POSSIBLE, ENSURE THAT YOUR HOLDING TANKS ARE EMPTY DURING TRAVEL. FULL HOLDING TANKS CAN ADVERSELY AFFECT THE TOWING OF THE RV.

⚠WARNING

ALWAYS MAKE SURE THE PROPANE IS OFF WHEN TOWING THE RV.

Before and After Travel: Checklists

Your Alliance RV has a multitude of features that enable comfortable living while camping and traveling. Many of those features and capabilities require moving parts and specific setups for use. This not only includes sliding doors, but also small appliances, assorted decorations, and equipment setup inside and out (electronics, camp chairs, utility connections.) In order to move place to place, it's important to prepare for the trip carefully, review items during travel (depending upon distance being traveled,) and set up at the new location. Finally, it's good to assure that your Alliance RV continues to be "road ready" between trips.

Experienced RVer's know the importance of carefully preparing to leave a campsite, converting their RV from a living space to a traveling vehicle. As such, they often use checklists to assure all items are taken care of. Sometimes, those lists contain items added due to unfortunate experiences in the past. Every owner is encouraged to develop a series of checklists to assure each stage of the RV experience is protected from oversight of small but important steps.

⚠WARNING

THIS SECTION MENTIONS SEVERAL TYPES OF CHECKS NEEDED FOR SAFE TRAVEL, BUT CANNOT SUGGEST ALL CHECKS AND MAINTENANCE THAT ONE MAY NEED TO PERFORM. EACH SITUATION IS DIFFERENT AND THE READER IS ADVISED TO BUILD THEIR CHECKLISTS AND TRAVEL ROUTINES BASED UPON THEIR UNIQUE SITUATION(S), RV, AND TOW VEHICLE SETUPS.

An example of a couple of items to think about before travel is shown in the following short videos

	WYKW: Microwave Plate Quick Tip

	WYKW: Shower Door Latch

Some of the suggested checklists are:

- Pre-travel or departure checklist: This list contains all steps that might be needed to transition from a stationary campsite to a traveling RV, departing the campground. Sometimes, this list may need to start being addressed the day before travel (tow vehicle checks, electronic device charging are two points that might need to be reviewed the day before.) The list commonly contains things like packing up decorations, making sure to empty any water out of the fresh water tank, pack up satellite dishes, ensuring all doors and windows are latched in position, vent lids down, etc.
- Mid-travel quick check: This list might be used at every location where you stop during a travel day. Often called a "walk around," it can be used to assure the condition of the tires, wheels, running gear, and hitch are all in the expected condition. For example, your Tire Pressure Monitor System may not be indicating any problems, but there may be damaged tire tread or a bubble in the side of the tire that needs attention.
- Arrival checklist: What should be done when you arrive at a new camp location, and in what order? For example, it's important to level the trailer before extending slides. It's also important to carefully check around slides on the inside before extending to ensure things have not fallen or jostled into position to damage the slide as it moves out.
- Post-trip checklist: This is often done between travel days, and its purpose is to assure that no major repair is needed before the next travel day. It should be done close to arrival at a destination, which would help provide time to complete any repair so that travel plan changes are mitigated. This list would include the same type of items as the Mid-travel quick check, but is intended to be more in depth and include tow vehicle fluid checks, bolt torques as needed, etc.

There are numerous sources for checklists in the RV community. For novice RV owners, it is suggested to consult with other trusted RV owners as to what they use for checklists, as well as numerous RV owner communities that provide information on the internet.

	Building a checklist is not a one-and-done activity. Even experienced RVers find they revise their checklists to account for things like new equipment or decorations, age of the tow vehicle, or unusual conditions.

CONNECTING TO THE TOW VEHICLE

Initial Setup

- Before operating the jack, ensure that the foot is attached with the safety lock pin provided.
- Ensure all slides are IN, and stabilizers have been raised.

FOR NIGHTTIME HOOKUPS, FLIP THE LIGHT SWITCH (MOUNTED ON THE JACK) ON TO ILLUMINATE YOUR WORK. YOU MAY ALSO FIND THE FRONT DOCKING LIGHT AND PORCH LIGHTS USEFUL (SEE THE SECTION TV & STEREO

ALL TV

ALL TV is an effort to simplify the overall configuration and wiring for the AV system in your RV. We've taken steps to eliminate connection points, wall plates and the overall burden of work when trying to switch from one AV source to another.

	How To Setup My Alliance RV TV

TV Antenna

Your RV is equipped with a Winegard Air 360+. This unit provides signal amplification of television and radio signals and also is cellular internet ready and can be upgraded easily with the Winegard Gateway for 4G LTE & WiFi capabilities. It is a low-profile dome that requires no aiming or pointing to pick signals up. Be sure to read the full manual for your antenna for all features and functionality.

At each new location, an initial channel scan must be run on each TV. Ensure that the antenna power supply is in the on position and the green light is illuminated. A scan will find any new channels that have been added in your area. Follow the channel scan instructions for your TV when running a new scan.

	Winegard Air 360 Installation and Owner's Manual

Winegard Booster Switch

The booster switch is located in the small cabinet below the RV, on the right side.

This panel provides power to the tv/radio antenna (Left button,) and the wifi router (right button,) if equipped. When the tv/radio button is depressed and the light is ON, then your TV and radio are receiving the TV antenna signal for Over-The-Air viewing. If this is OFF, then the system is routing the incoming Cable TV signal (from the cable connected to the CABLE port on the exterior Centralized Docking Panel at the rear left corner of the trailer.

	For information on connecting a satellite dish or campground-provided Cable to the to the AV system, see the plumbing section regarding the Centralized Docking Station.

The COAX wiring system is configured as shown in Figure 55. One component not shown in the diagram is the living room radio. It is connected to the antenna line between the Booster Switch and living room

TV outlet. It is also important to note that while the Utility Panel shown is a different model, the satellite and Cable TV connections work the same.

In order to connect a satellite antenna, one will need to connect to the marked port on the Titus T1 panel and then use a Male/Male connector between that feed and the desired TV feed behind the booster switch panel with the group of white COAX wires. These wires are bundled together at the factory. On the 44 Benchmark trailer models, that bundle of wires is next to the flip top cabinet behind the sofa, while on the 42 Benchmark trailer models, they are in the overhead hutch.

Winegard Gateway (Wi-Fi)

The Winegard Gateway is an optional module with a pre-installed port location on the ceiling of the RV just below where your antenna is installed. Please refer to the following video on how to access the wiring and install the gateway should you wish to add it.

	WYKW: Winegard Gateway Installation and Booster Power

Televator

The Benchmark comes standard with a flat screen TV mounted on a Televator, a motorized drive to enable one to raise the TV for viewing, or lower it to hide it and be able to enjoy more views out of the living room windows. The switch for the televator is a momentary pushbutton rocker mounted on the right side of the cabinet, below the motorized blinds rocker switch. Use the switch UP or DOWN to move the TV accordingly.

Television & Stereo Setup and Operation

Due to the large variety of models of televisions and stereos installed in Alliance RV units, please review the owner's manual for your tv or stereo for operation. Links to the manuals can be found in the Alliance Academy Product Support section.

TV Signal Troubleshooting

If one or more of your TVs is not displaying the intended programming, please follow this troubleshooting list, in order, to help diagnose and fix common issues. If after following this list you're unable to achieve the desired viewing, please contact your Alliance Dealer or other service provider.

Symptom: One or more TVs are able to see many TV channels after performing a Channel Scan, while one or more are not able to see the same channels.

Possible Issues:

Loose COAX connection: Check all COAX connections.

1. Starting at the back of the problematic TV, check to ensure COAX cable is tight at the TV, and the Wall Plug.
2. Next, remove the wall plate (cable(s) still connected) and check to ensure the COAX connections on the back of the wall plate are tight.

3. If this TV outlet is near the living area radio, locate the COAX splitter providing a signal to the radio, and ensure all connections on that splitter are tight.
4. Finally, check all fittings on the back of the plate for the booster switch.

Damaged COAX cable: If all connections are tight, exchange the COAX cable from the problematic TV with the one from a working TV. If all channels are now found, discard the removed cable and replace.

Symptom: No TVs are finding the number of channels expected with Over-The-Air (OTA) reception. They have been able to receive OTA programming in the past.

Possible Issues:

Ensure the Booster is turned OFF.

Loose COAX connection: Check all COAX connections.

1. Starting at the back of the problematic TV, check to ensure COAX cable is tight at the TV, and the Wall Plug.
2. Next, remove the wall plate (cable(s) still connected) and check to ensure the COAX connections on the back of the wall plate are tight.
3. If this TV outlet is near the living area radio, locate the COAX splitter providing a signal to the radio, and ensure all connections on that splitter are tight.
4. Finally, check all fittings on the back of the plate for the booster switch.

Damaged COAX cable: If all connections are tight, exchange the COAX cable from the problematic TV with the one from a working TV. If all channels are now found, discard the removed cable and replace.

Symptom: No TVs are finding the number of channels expected with CABLE reception. They have been able to receive CABLE programming in the past.

Possible Issues:

Campground CABLE source: Ensure the campground cable feed is in working order at the power pole. Ensure tight connections from the campground CABLE source to the trailer at the nautilus panel.

Ensure the Booster is turned ON.

Loose COAX connection: Check all COAX connections.

1. Starting at the back of the problematic TV, check to ensure COAX cable is tight at the TV, and the Wall Plug.
2. Next, remove the wall plate (cable(s) still connected) and check to ensure the COAX connections on the back of the wall plate are tight.
3. If this TV outlet is near the living area radio, locate the COAX splitter providing a signal to the radio, and ensure all connections on that splitter are tight.

4. Finally, check all fittings on the back of the plate for the booster switch.

Symptom: A TV cannot connect with the satellite source. If the satellite receiver is connected directly to the dish/source, it works well.

Possible Issues:

Satellite input at Nautilus not connected to TV/Room feed.

1. Each satellite COAX connection has a white COAX cable connected to the back (in-wall side) of the plate. Remove the plate and ensure the lower COAX cable is white. Ensure the satellite receiver box is connected to that COAX port on the wall plate.
2. Near the booster switch, behind the wall, is a bundle of white COAX cables. Each cable connects to a different COAX plate. One will be for the service entrance at the Nautilus, one will be for the room of interest (for example, the living room.) Using a Male/Male COAX connector, ensure the two desired cables are connected.
3. If the problem TV is the living room TV, remove the radio from its mounted position and gentle pull it out. Follow the antenna cable to the splitter. Verify the COAX cable connection color. If the wire leading from the splitter to the TV is white, then go back to the TV wall plate and connect the satellite receiver to the non-white (other) COAX cable. Most satellite signals will not travel through a splitter well.

Loose COAX connection: Check all COAX connections.

1. Starting at the back of the problematic TV, check to ensure COAX cable is tight at the TV, and the Wall Plug.
2. Next, remove the wall plate (cable(s) still connected) and check to ensure the COAX connections on the back of the wall plate are tight.
3. If this TV outlet is near the living area radio, locate the COAX splitter providing a signal to the radio, and ensure all connections on that splitter are tight.
4. Finally, check all fittings on the back of the plate for the booster switch.

Damaged COAX cable: If all connections are tight, exchange the COAX cable from the problematic TV with the one from a working TV. If all channels are now found, discard the removed cable and replace.

- INTERIOR – Front Lights.)

Hooking Up

1. If not already present, place wheel blocks at the RV wheels to prevent forward and aft movement.

⚠WARNING

DO NOT STACK BLOCKS UNDER THE JACK'S FOOT TO INCREASE THE HEIGHT. STACKED BLOCKS MAY BECOME UNSTABLE AND FALL.

2. Extend the jack by pushing the operating switch UP to raise the travel trailer tongue above the hitch ball height.

	Under heavy use, or exceeding the STOP limiting mark when retracting the jack, the fuse may fail (blow) causing the motor to stop. In this situation, release the operation switch and replace the fuse before continuing.

3. Ensure the receiver latch mechanism is open/up to receive the hitch ball correctly.
4. Move the tow vehicle into position, with the hitch ball directly below the receiver.
5. Press and hold the motor switch to lower the coupler down onto the 2-5/16" hitch ball.

⚠WARNING

ENSURE THAT THE LATCH OF THE HITCH BALL RECEIVER IS ACTUALLY UNDER THE HITCH BALL AND THAT THE BALL HAS NOT ACTUALLY PUSHED IT UP INTO THE RECEIVER.

6. Complete connecting the trailer to the tow vehicle:
    a. Latch and the hitch ball receiver
    b. Insert the safety pin in the latch
    c. Connect the safety chains securely
    d. Connect the trailer's electrical plug to the tow vehicle.
7. If using a weight distributing hitch, setup the system as per the manufacturer's directions.
8. Retract the foot of the jack to the fully up position, and then remove wheel blocks.

	The jack will slow down and stop as it approaches the fully retracted position. Release the switch at the first sign of slowing.

⚠WARNING

ALWAYS CHECK TO ENSURE THAT THE UNIT IS PROPERLY CONNECTED TO THE TOW VEHICLE BEFORE RETRACTING THE TONGUE JACK.

9. Remove wheel blocks from all locations.
10. Make a final check around the trailer to ensure the only items touching the ground are the tires.

DISCONNECTING AND LEVELING YOUR RV

When disconnecting and leveling your RV, it is important that your RV is reasonably level before starting. This may include using leveling devices under wheels to assure side-to-side level.

1. After locating the trailer in a suitable, reasonable level location and orientation, place blocks in front of and behind wheels on both sides of the trailer.
2. If removed, reattach the jack foot with the provided safety pin.
3. Extend the jack foot to the ground using the DOWN switch. Continue to push the switch until some of the weight has been removed from the vehicle.
4. Disconnect the electrical Tow Plug and Breakaway safety cable.
5. If used, remove the weight distribution components as per manufacturer's directions.
6. Now continue to move the jack DOWN (Extend) until the coupler can be unlatched. Unlatch the coupler and use the jack to lift the trailer tongue off the hitch ball.
7. Move the vehicle a safe distance away from the trailer.
8. Raise or lower the tongue jack to provide front-to-back level of the trailer.

⚠CAUTION

THE LEVELING OF THE RECREATIONAL VEHICLE SHOULD BE DONE WITH THE SLIDES IN. ALSO BE SURE TO LEAVE THE STEPS FOLDED IN WHILE LEVELING TO ASSURE MAXIMUM GROUND CLEARANCE.

WYKW: Do you level your Alliance RV with your slides in or out?

9. After the trailer is stable and level, the stairs may be lowered, and the slides may be extended. Please refer to the **Slide-outs** section.

Stabilizer Jack Use

The manual stabilizer jacks are located under the RV at each corner. Stabilizer jacks are designed to stabilize the RV and minimize movement as you move around inside the RV. After the trailer is level, lower them to the ground using the provided crank handle and ensure they’re snug against the ground. Do not over-torque. Placing blocks under the foot pads of the jacks can prevent them from sinking into the ground. They should be wider and longer than the pads of the jacks.

⚠WARNING

STABILIZER JACKS ARE NOT INTENDED TO SUPPORT THE WEIGHT OF THE RV. DO NOT USE STABILIZER JACKS TO LEVEL THE RV OR ATTEMPT TO LIFT THE RV IN ANY WAY.

OCCUPANT SAFETY

Alliance RV trailers are equipped with safety systems that work together to help protect the occupants in the event of an emergency. Please read and fully understand all safety functions before using your new RV.

Emergency Exit Windows

While all RV brands are different, the operation of the emergency windows are generally consistent across brands. The design, application, and location of these windows are governed by the RV Industries governing bodies. You will find some helpful safety information below regarding these exit windows. Please take time to familiarize yourself and anyone that will be in the RV with the location and operation of all exit windows in the RV.

Figure 7. Label placed on or near all emergency exits in the RV.

⚠CAUTION

ENSURE THAT ALL EXIT WINDOWS ARE CLOSED AND LOCKED DURING TRAVEL.

Identify and locate all emergency exit windows in the RV, they are easily identifiable by both the “EXIT” sticker and the red hardware used to open them.

Know what to expect in the event of an emergency. Activate the release mechanisms on the exit windows and apply pressure to push or slide them open.

Once you’re familiar with the location and operation, make yourself familiar with the drop between the window and the ground. Depending on the RV, it could be a significant distance.

⚠WARNING

ALWAYS PUT YOUR LEGS OUT FIRST AND ATTEMPT TO LAND ON YOUR FEET IF YOU MUST USE AN EMERGENCY EXIT WINDOW.

Table 2. Styles of emergency exit windows that may be present on your RV. Each opens differently.

1. **Pull or Tab Style Latch:** This style is generally used on larger slider style exit windows. Pull the handle out, or rotate the tab out (similar to other sliding windows) to slide the window open for escape.	 *Figure 8. Pull style latch on an emergency exit.*  *Figure 9. Tab style latch on an emergency exit.*
2. **Flip Style Latch:** This style flips up and disengages which allows the window to be pushed out for escape.	 *Figure 10. Flip style latch on an emergency exit.*

3. **Lever Style Latch:** This style has a handle that will either rotate or pull out and up to disengage to window retention. Once opened, push out the window, which will hinge at the top.

Figure 11. Rotation-Lever style latch on an emergency exit. Rotate the handle up into the window area to disengage the latch. Push window out.

Figure 12. Pull-Lever style latch on an emergency exit. Pull the leverl out, away from base, to disengage latch. Push window out.

4. **Bar Style Latch:** This style has a long bar with red handle that unlatches from the frame, and then rotating in. Push the bar out through the opening, which opens the window and allows escape.

Figure 13. Bar style latch on an emergency exit.

Fire Safety

Safety is always important, whether you're at home or on the road. As far as your RV, make sure to keep fire safety a top priority.

⚠WARNING

IN A FIRE, EVACUATING ALL OCCUPANTS FROM THE RV SAFELY MUST BE YOUR TOP PRIORITY.

Fire Extinguishers

Your recreational vehicle comes equipped with a fire extinguisher mounted by the door. Become familiar with its location and use to be prepared for emergency situations. A common acronym for proper fire extinguisher operation is P.A.S.S.

P – Pull the pin

A – Aim the nozzle (always aim at the base of the fire, not the flames)

S – Squeeze the trigger

S – Sweep from side to side

For additional information on fire extinguisher chemistry and operation, please refer to the fire extinguisher's user manual.

Alarms

Smoke Alarm (Ceiling)

Your RV is equipped with a smoke alarm. Understanding the information in this section will prepare you to reach in the event of an emergency.

⚠WARNING

NEVER TEST OR PRACTICE USING A FIRE EXTINGUISHER BY SQUEEZING THE TRIGGER. THESE ARE NON-RECHARGEABLE AND ONCE USED, PRESSURE WILL DECREASE OVER TIME AND WILL NOT BE FULLY FUNCTIONAL IN AN EMERGENCY.

⚠WARNING

WHILE USING A FIRE EXTINGUISHER, ALWAYS KEEP YOUR BACK TOWARD A CLEAR PATH FOR EXIT.

⚠WARNING

DO NOT TURN ELECTRICAL POWER BACK ON AFTER THE USE OF AN EXTINGUISHER.

⚠WARNING

INSPECT EXTINGUISHERS WEEKLY. IF YOUR RV HAS BEEN IN STORAGE, INSPECT BEFORE THE RV IS USED. ALWAYS INSPECT BEFORE A VACATION OR TRIP WITH YOUR RV.

Follow safety rules and prevent hazardous situations:

1) NEVER smoke in bed.
2) Keep matches or lighters away from children.
3) Store flammable materials in proper containers.
4) Keep electrical appliances in good condition and NEVER overload electrical circuits.
5) Keep stove debris free.
6) Never leave anything cooking on the stove unattended.
7) Keep portable heaters and open flames, such as candles, away from flammable materials.
8) Don't let rubbish accumulate.

Refer to the alarm owner's manuals for a more in-depth understanding of the features, functions and precautions of this safety device.

Keep alarms clean and test them weekly. Immediately replace any alarm that is not functioning properly.

Figure 14. Ceiling mounted smoke alarm.

⚠WARNING

- **THIS ALARM WILL NOT OPERATE WITHOUT BATTERIES.**
- **NEVER IGNORE ANY ALARM, FAILURE TO RESPOND COULD RESULT IN SERIOUS INJURY OR DEATH.**
- **TEST ALARMS WEEKLY. IF THE ALARM FAILS TO TEST CORRECTLY, REPLACE THE ALARM IMMEDIATELY.**

If this alarm sounds, get out of the RV as quickly as possible and call your emergency services. Do not go into the RV until the problem is identified and corrected.

Propane and Carbon Monoxide (LP & CO) Alarm (Base of Wall near Stairs)

For your safety, your RV is equipped with a combination LP and CO Alarm. This alarm will detect both propane gas and carbon monoxide. Please read and become familiar with the individual users manual for this alarm. This will help prepare you if there is an emergency.

Figure 15. Wall mounted Carbon Monoxide (CO) and Propane alarm. These will be mounted near floor level, usually near stairs.

⚠WARNING

- **THIS UNIT MUST BE REPLACED WITHIN 5 YEARS OF ITS PRODUCTION DATE.**
- **THIS ALARM WILL NOT WORK WITHOUT POWER.**
- **THIS ALARM WILL ONLY INDICATE THE PRESENSE OF GAS AT THE SENSOR. THERE COULD BE GAS ELSEWHERE THAT HAS NOT REACHED THE SENSOR.**
- **THIS ALARM IS DESIGNED TO DETECT CARBON MONOXIDE AND PROPANE GAS. THE ALARM IS NOT DESIGNED TO DETECT SMOKE OR FIRE.**

<u>If an alarm sounds, identify which alarm is sounding.</u>

CO Alarm - If CO is detected, the red CO LED will flash and the alarm will sound with 4 beeps and then a 5 second silence. This indicates that the CO level is over 35pp. If this alarm is activated, immediate action is required.

If the CO alarm sounds:

1. Press the TEST/MUTE button to temporarily silence the alarm.
2. Evactuate the RV. Make sure to account for everyone.
3. Call 911 or the local emergency services available in your area.
4. Do not re-enter the RV until the problem has been corrected

Propane Alarm - If propane is detected, the RED led will will flash and the alarm will sound with a steady tone and remain on until the area is clear from propane gas. If you hear this alarm, immediate action is requried. Exit the RV immediately and do not return into the RV until the problem has been corrected.

If the Propane alarm sounds:

1. Extinguish all flames and smoking material and turn off all gas appliances.
2. Press the TEST/MUTE button to temporarily silence the alarm (DO NOT DISCONNECT POWER).
3. Evactuate the RV. Make sure to account for everyone.
4. Turn off the propane tank valve.
5. Open doors and windows of the RV.
6. Determine & Repair the source of the leak.
7. Do not re-enter the RV until the issue has been corrected.

Alarm Troubleshooting

	WYKW: LP and CO Detectors - Beeping

If you hear “chirping” in your trailer:

- Get very close to both the Smoke & CO alarm and the LP & CO Alarms to determine which one is making the noise. Also watch the front of the alarm for any LED indications
- If the chirping is coming from the Smoke & CO alarm: Open the cover and change the battery with a new battery. If the chirping persists, replace the alarm unit.

⚠WARNING

- **THE SMOKE & CO ALARM WILL NOT OPERATE WITHOUT BATTERIES.**
- **NEVER ATTEMPT TO REPAIR AN ALARM, IMMEDIATELY HAVE THE ALARM REPLACED.**
- **ALWAYS USE THE EXACT BATTERIES SPECIFIED BY THE ALARM MANUFACTURER.**

- If the LP & CO alarm is chirping and has an alternating Red & Green LED: You will need to replace the unit. This requires removal from the wall and disconnecting the power to replace.

Alarm Maintenance

Smoke & CO/Carbon Monoxide Alarm

- Test at least once a month by pushing the TEST button.
- Test after the RV has been in storage and before a vacation or long trip.

- Clean the alarm at least once a month by blowing air across it from a vacuum output or dusting the cover with an appropriate cloth or dusting tool.

⚠WARNING

- **ALWAYS USE THE EXACT BATTERIES SPECIFIED BY THE ALARM MANUFACTURER.**
- **NEVER USE AN OPEN FLAME OF ANY KIND TO TEST AN ALARM.**
- **DO NOT STAND CLOSE TO THE ALARM WHEN THE HORN IS SOUNDING. EXPOSURE AT CLOSE RANGE CAN BE HARMFUL TO YOUR HEARING. WHEN TESTING, STEP AWAY WHEN THE HORN STARTS TO SOUND.**

LP & CO Alarm

- Test at least once a month by pushing the TEST button.
- Test after the RV has been in storage and before a vacation or long trip.
- Vaccum the dust off of the alarm cover. If cleaning is needed, clean with a damp cloth. Do NOT spray cleaning agents or waxes directly onto the front panel. This can cause damage to the alarm.

PROPANE

The propane system provides heat, hot water, fuel for cooking, refrigeration and can be used for other small appliances.

The propane supply for an RV is stored in a DOT cylinder that is positioned vertically upright and mounted outside the living space of an RV. Repair and/or replacement should always be done by certified service technicians.

Make sure your propane system is inspected at least annually by a certified service technician. They are trained to detect incorrect tank pressure, leaks, or other potential hazards and address them properly. Do not connect your propane system to another gas source or attempt to repair any propane related component yourself.

⚠WARNING

IF YOU SMELL PROPANE:

- **EXTINGUISH ANY OPEN FLAMES INCLUDING PILOT LIGHTS AND ALL SMOKING MATERIALS.**
- **SHUT OFF THE PROPANE SUPPLY AT THE LP CONTAINERS.**
- **DO NOT TOUCH ELECTRICAL SWITCHES.**
- **OPEN DOORS AND OTHER VENTS.**
- **LEAVE THE AREA UNTIL THE ODOR CLEARS.**
- **THE PROPANE SYSTEM SHOULD BE CHECKED FOR LEAKS AND THE SOURCE DETECTED AND REPAIRED BEFORE USING THE RV AGAIN.**
- **FAILURE TO COMPLY COULD RESULT IN EXPLOSION RESULTING IN DEATH OR SERIOUS INJURY.**

⚠WARNING

NEVER USE AN OPEN FLAME TO TEST FOR A PROPANE LEAK. DO NOT CHECK FOR LEAKS USING PRODUCTS THAT CONTAIN AMMONIA OR CHLORINE, THESE PRODUCTS CAN CAUSE CRACKS TO FORM ON METAL COMPONENTS IN THE PROPANE SYSTEM. A SOLUTION OF WATER AN MILD SOAP SHOULD BE USED BY SPRAYING THE FITTINGS AND CONNECTION POINTS DOWN AND WATCHING FOR BUBBLES.

⚠WARNING

IF YOU SMELL PROPANE:

- **DOT PROPANE TANKS MUST BE TRANSPORTED AND STORED IN AN UPRIGHT POSITION SO THE PRESSURE RELIEF VALVE CAN FUNCTION PROPERLY. LAYING A TANK ON ITS SIDE MAY CREATE A VERY DANGEROUS SITUATION.**
- **THE LP PIGTAIL HOSE MUST BE INSTALLED IN A MANNER TO AVOID TENSION OR STRESS AT EITHER END OF THE HOSE. KEEP THE PIGTAIL AWAY FROM SHARP EDGES, RIGID CORNERS, WALLS, AND DOORS.**
- **BEFORE ENTERING A PROPANE FUEL SERVICE STATION MAKE SURE ALL PILOT LIGHTS ARE EXTINGUISHED. SHUT THE GAS TO ALL APPLIANCES OFF BY TURNING OFF THE PROPANE AT THE GAS SHUT OFF VALVE(S). ALWAYS SHUT OFF ANY ENGINE BEFORE REFUELING. DO NOT SMOKE AND NEVER OPERATE IGNITION SOURCES WHILE REFUELING.**

Traveling with Propane

Turning the propane off when traveling is always safer, it reduces the risk of a gas leak from a line or connection working loose. Some states have laws against traveling with propane on. Even in states where traveling with propane on is legal, there may be locations, such at bridges and tunnels, that restrict or prohibit propane altogether. Make sure you are familiar with those laws and regulations in the area you are traveling.

⚠WARNING

MAKE SURE ALL PROPANE CYLINDER FASTENERS ARE SECURED BEFORE TRAVELING.

Two Stage Regulator

To regulate the propane pressure throughout the RV, it is equipped with a two-stage regulator with automatic changeover. With the first stage of the regulator, the fuel coming from the tank is reduced by venting from the tank or extended feed line high pressure down to 10 to 15 psi. In the second stage, the pressure is reduced again by further venting down to 11” water column which is the pressure safe for the appliances that the propane system powers. Always make sure that the vents are clean and unobstructed.

This regulator is mounted between your two propane cylinders and allows for removal of empty cylinders for refill without interrupting propane supply and will automatically switch from the supplying cylinder to the reserve cylinder when empty.

Figure 16. Two stage regulator with 11" water column pressure output for the trailer's appliances.

	WYKW: Your Auto-Changeover LP Regulator

⚠WARNING

PROPANE CONNECTIONS SHOULD BE CHECKED PERIODICALLY AS VIBRATIONS FROM TRAVEL MAY CAUSE THEM TO LOOSEN. FAILURE TO CHECK THESE CONNECTIONS COULD LEAD TO A PROPANE LEAK. A LEAK CAN CAUSE A FIRE OR EXPLOSION.

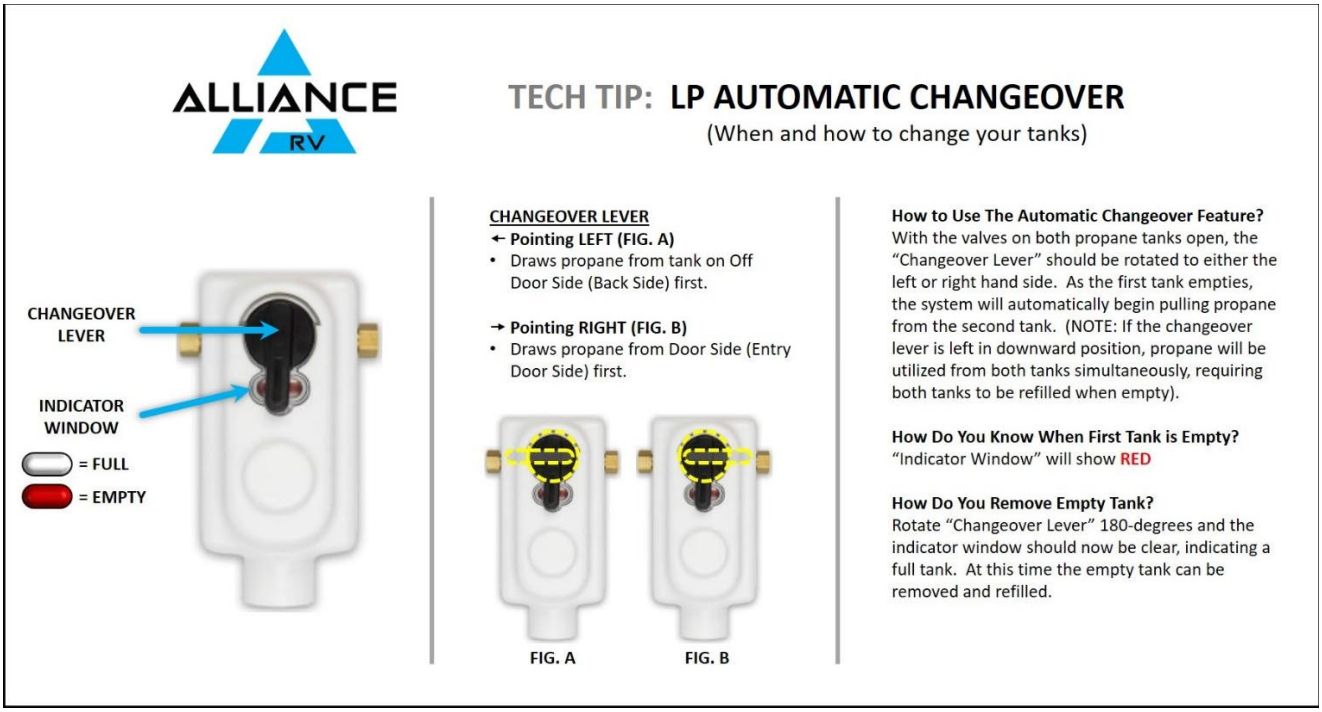


Figure 17. Using the Automatic Changeover regulator.

External Appliance Quick Connect

The quick connection port allows you to use the onboard propane supply for external appliances outside of your RV. The pressure at the port is already at 11" of Water Column (wc), meaning your appliance (BBQ Grill, firepit, etc.) needs to be able to connect to this port without having the propane supply travel through another regulator. Please refer to the appliance documentation for proper setup in this application.

Figure 18. External propane quick connect, with flow lever in the "off" position.

Using the External Quick Connect

Connecting an Appliance

1. Remove the Dust Cover.
2. Push the retaining ring back (toward on/off lever.) **Ensure that the shutoff lever is as shown in the picture, turned perpendicular (across) the flow of propane**. The ring will not move when the lever is inline with the direction of flow (propane flow ON.)
3. Push the connection line fitting into the port, the retaining ring will pop back out. Make sure the ring is fully seated toward the new connection.
4. Rotate the lever to the ON position, allowing propane to flow.

Figure 19. Pushing the retaining ring to accept an appliance connector.

Figure 20. Connected appliance, with flow lever rotated forward to the "on" position.

	The quick connect port connection can be difficult if debris has fouled the unit. If this is the case, electrical contact cleaner, carburetor cleaner, or brake cleaner can be sprayed into/on the port while moving the ring to clean out dirt and debris. Always allow the fluid to completely evaporate before re-attempting a connection.

	The pressure at the quick connect port is 11" of water column, which is the desired operational pressure of most propane appliances. If the appliance connected to the quick connect port has an additional regulator, the pressure will be too low to function. Verify proper set up with accessory manufacturer.

Disconnecting an Appliance

1. Rotate the black ON/OFF lever to the OFF position, stopping the flow of propane and enabling the retaining ring to be moved.
2. Firmly grasp the connection hose at the quick-connect fitting. Push the retaining ring on the fitting back (toward on/off lever.)
3. The connection hose should be able to be pulled out without too much force.
4. Ensure the ring closes/returns to the closed position. This may need to be manually pulled to the front position.
5. **Make sure to replace the Dust Cover, keeping the fitting clean.**

Propane Cylinders

Alliance RVs have a pair of DOT approved propane cylinders mounted at each front corner of the trailer. These cylinders can be removed and taken to a propane dealer for refilling. During transport, do not tilt the cylinders onto their side. Doing so will cause a safety valve to shut at the outlet of the cylinder and flow will be prevented.

Propane cylinders, like many other items, have an expiration date to ensure they are safe and reliable for use. Each cylinder is stamped with a date code that indicates when it was manufactured or last certified for use. Understanding this date is important because propane cylinders must be re-certified or replaced after a certain period to maintain safety standards.

The date code is typically stamped on the collar or handle of the cylinder and is shown in a **month-year** format, such as "03-20," which means March 2020. Most propane cylinders have a shelf life of **12 years** from the date of manufacture, after which they must either be inspected and re-certified for continued use or replaced.

Always check the date code before using a propane cylinder to ensure it is still within its certified period, ensuring safety and peace of mind during use.

Figure 21. Propane cylinder with a date code of "03-20".

Filling Your Propane Cylinders

	WYKW: Quick Tip After Changing LP Tanks (Cylinders)

A propane cylinder can only be filled to 80% of their total capacity. The remaining 20% is for expansion that takes place when subjected to heat. If a cylinder is filled to 80% when it is cold outside, that same cylinder may be at 90% on a much warmer day. Always ensure that the cylinder is filled to the required limit only.

⚠WARNING

NEVER FILL A PROPANE TANK OVER 80% OF ITS CAPACITY. AN OVERFILLED TANK COULD ALLOW LIQUID PROPANE TO ENTER THE SYSTEM WHICH IS DESIGNED FOR VAPOR AND CREATE A VERY HAZARDOUS CONDITION.

Cooking with Propane Gas

In an RV most stovetops and ovens run on propane. A properly ventilated RV is very important when cooking. Open a window or roof vent and turn your range hood fan on. Never use your stove or oven for space heat and never use outdoor fuel-burning equipment inside the RV.

⚠WARNING

IN AN RV, THE AMOUNT OF OXYGEN SUPPLY IS LIMITED DUE TO ITS SIZE. PROPER VENTILATION DURING COOKING WILL HELP AVOID DANGEROUS SITUATIONS.

Propane System Maintenance

⚠WARNING

- **NEVER ATTEMPT TO REPAIR ANY PROPANE RELATED COMPONENT.**
- **ENSURE THAT ALL ALARMS, DETECTORS AND EXTINGUISHERS ARE IN GOOD WORKING ORDER.**

Installing Propane Cylinders

Anytime a propane cylinder is removed for servicing or filling and re-installed on the RV, ensure that the fittings are all tight and the main shutoffs on the LP cylinders are in the off position and that the strap that secures the tank is in place. A quick visual inspection of the LP system should be performed any time cylinders are removed.

Inspection (Owner)

As per the Maintenance Schedule:

1. Visually inspect your propane cylinders, mounting hardware, and connection points for wear, rust, kinks or damage. Using a good flashlight can help illuminate small defects that would otherwise go unseen.
2. Inspect supply lines (between cylinders and regulator(s), along the underside of the trailer) using your eyes and fingers to assure there is no wear/rub point, no cracks, and no separation at joints. Using a good flashlight can help illuminate small defects that would otherwise go unseen.

3. **If issues are found:** Turn off the propane cylinders immediately. The propane system should be serviced by a qualified technician immediately upon an issue being identified. Never paint propane cylinders, valves or mounting hardware.

Inspection (Professional)

As per the Maintenance Schedule, your RV's propane system should be inspected by a certified professional. This will usually consist of a full visual inspection of visible lines as well as a Pressure Drop Test to assure no leaks in the system.

SLIDE-OUTS OVERVIEW

Slide-out Safety Information

⚠WARNING

FAILURE TO ADHERE WITH THE FOLLOWING INFORMATION MAY RESULT IN DEATH, SERIOUS INJURY, RV OR OTHER PROPERTY DAMAGE.

All slide-out systems are intended solely for opening and closing the slide-out room and should never be used for any other purpose. Before operating your slide-out, please keep these things in mind:

- Exterior: Your location should be clear of obstructions that may cause damage when the slide-out room is operated. Each slide-out may open a different distance. Know your slide-out opening distances.
- Interior: Ensure that items have not fallen while traveling and are now blocking the slide-out path or trim pieces. Also check that cabinet doors have not jostled open and are now blocking the slide from opening.
- Be sure that everyone is clear of the RV prior to the slide-out room actuation.
- Keep parts away from slide-out mechanisms during use. Severe injury or death may result.
- Park your RV on solid and level ground.

	WYKW: Properly Opening and Closing Slides – What to Check

	WYKW: Slide Seal Setup

⚠ CAUTION

ALWAYS ENSURE THE SLIDE-OUT PATH IS CLEAR DURING OPERATION. KEEP CLEAR OF SLIDE RAILS WHEN THE ROOM IS IN MOTION. THE GEAR ASSEMBLY MAY PINCH OR CATCH ON LOOSE CLOTHING AND CAUSE PERSONAL INJURY.

Slide-out Control

All slide-outs are operated at the central monitor panel shown below, regardless of type. This panel will be found in the forward bedroom, relatively close to the door. The number of slide switches will vary depending on floor plan of your RV. Slides are numbered as such: Starting at the front end of the trailer on the street side (Off Door Side) and continuing around the trailer in a counterclockwise direction.

Figure 22. Monitor panel with slide-out controls (and potential slide-out controls) highlighted.

ELECTRIC SLIDE-OUTS

Alliance RV utilizes an electric through frame slide-out system on Benchmark trailers. This system has a single electric actuator with manual override capability. The system is robust, low maintenance, and enables easy adjustment of the slide if needed.

	Lippert Electric Through Frame Slide-Out Owner's Manual

Electric Slide-out System Overview

The system is a Lippert 2 x 2 electric through frame slide system. This system uses a pair of telescoping bars (arms) with rack gears and connected by a cross shaft with pinion gears to keep each arm

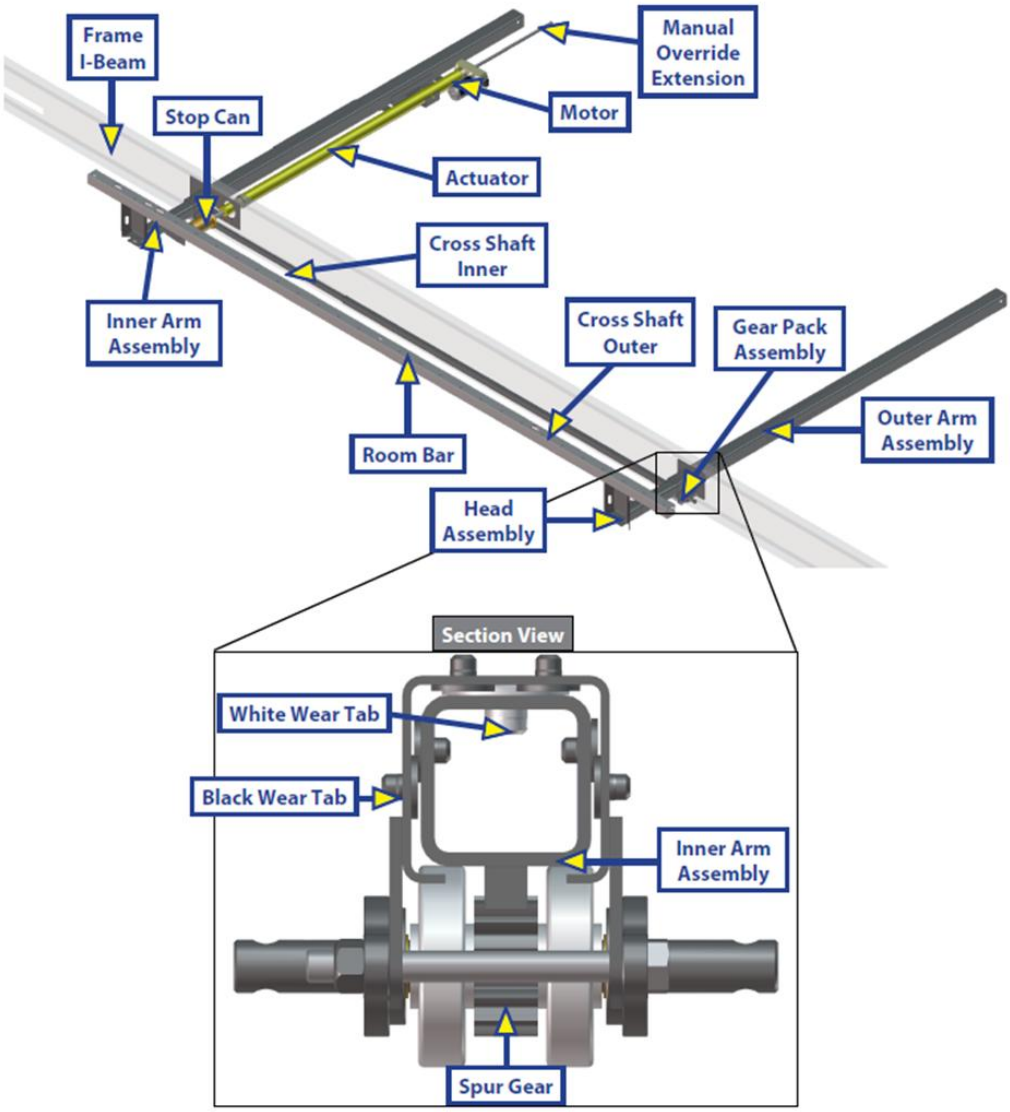


Figure 23. Lippert electric 2x2 through-frame slide-out system overview.

synchronized. A single actuator drives the system from one side, and has a gold-colored Stop Can and nuts secured to the brackets in order to control the precise in and out travel distances.

Slide-out Gear Pack

The Gear Pack converts the linear motion from the drive bar into rotational motion, which is transmitted to the idler side of the system via the crossbar, and a second gear pack converts the rotational motion back to linear motion. These are located on the frame where the drive bars exit.

Figure 24. Through-fram gear pack.

Operating Your Electric Through Frame Slide-out

Extending Your Electric Slide-out

1. Level the RV.
2. Press and hold the room's switch in the "OUT" position until room is fully extended and stops moving.
3. Release the switch, this will lock the room into the "OUT" position *(**NOTE:** Only hold switch until the room stops extending).*

	If your slide room does not move, or moves initially and then stops, the first item to check is the state of charge of your battery.

Retracting Your Electric Slide-out

1. Ensure the floor is swept clean and no debris is present that will get caught under the slide and damage the floor. Lifting the covering flap and sweeping below it often helps to remove pebbles, etc.
2. Press and hold the room's switch in the "IN" position until the room is fully retracted and stops moving.
3. Release the switch, this will lock the room in the "IN" position. *(**Note:** Only hold the switch until the room stops retracting).*

	If your slide room does not move, or moves initially and then stops, the first item to check is the state of charge of your battery.

Electric Slide-out Troubleshooting

Lippert Electric Through-Frame Slide-Out Service Manual

The troubleshooting chart below outlines some common problems, their causes, and possible corrective actions. If any part or serial number information is available, provide it to the service technician when asking for assistance.

The Through Frame Electric Slide-out System is only one of four interrelated slide-out room system components. These four components are: chassis, room, coach, and Through Frame Electric Slide-out System. Each one needs to function correctly with the others or misalignment problems will occur.

Every travel trailer has its own personality and what may work to fix one trailer may not work on another even if the symptoms appear to be the same.

When something restricts room travel, system performance will be unpredictable. It is very important that slide tubes be free of contamination and allowed to travel full distance (Stroke). Ice or mud buildup during travel is an example of a type of contamination that can occur.

When you begin to troubleshoot the system, make sure the battery is fully charged, there are no visible signs of external damage to the system and that all connections are secure.

During troubleshooting, remember that if you change something, that change may affect something else. Be sure any changes you make will not create a new problem.

Table 3. Electric Through-frame slide troubleshooting.

WHAT IS HAPPENING?	WHY?	WHAT SHOULD BE DONE?
Room doesn't move when switch is pressed.	Restriction or obstruction inside or outside of unit.	Check for and clear obstruction.
	Low battery voltage, blown fuse, or defective wiring.	*Check battery voltage and charge if needed. This must be above 10.5V, under load. *Find and check fuse in the main 12V fuse panel, replace if blown. *Check battery terminals and wiring. Look for loose, disconnected or corroded connectors.
Actuator motor runs but room does not move.	Actuator not attached to front mounting drive bracket.	Check jam nuts/nylock nuts. Be sure that they are properly tightened and adjusted.
	Bad motor or gear housing.	Replace motor.
Motor runs but room moves slowly (compared to normal.)	Low battery voltage, poor ground, extremely low outdoor temperature.	Charge battery and check ground wire.
	Room is in a bind.	Check to see that the room is properly adjusted.

WHAT IS HAPPENING?	WHY?	WHAT SHOULD BE DONE?
Room stalls in mid travel.	Actuator is in a bind.	Crank the manual override and move room short distance then retry electric switch to move room.
	Bad actuator.	Replace actuator if above instructions do not work.

Electric Slide-out Maintenance

System Inspection

The following general inspections should be performed as per the Maintenance Schedule to assure the system is in peak operating condition.

1. Before any slide movement, ensure the interior floor is clean and free of debris. Ensure the exterior wall and areas around the seals is also clean.
2. Retract and extend the slide as needed to check the following points:
    a. Outside seals compress when slide-out is retracted.
    b. Inside seals compress when slide-out is extended.
    c. Slide-out extends and retracts smoothly.
    d. Both sides of slide-out are synchronized. Each end of the slide should have the same (or nearly the same) seal compression when extended and retracted.

System Maintenance

It is recommended that when operating in harsh environments (road salt, ice buildup, etc.) the moving parts be kept clean. They can be washed with mild soap and water. No grease or lubrication is necessary and, in some situations, may be detrimental to the environment and long-term dependability of the system.

⚠CAUTION

THE GEAR PACKS SHOULD BE LUBRICATED PERIODICALLY OR WHEN EXCESSIVE SOUND IS HEARD, PLEASE REFER TO THE APPROPRIATE MAINTENANCE SECTION.

Mechanical Maintenance

Although the system is designed to be almost maintenance free, actuate the room once or twice a month to keep the seals and internal moving parts lubricated. Check for any visible signs of external damage after and before movement of the unit.

	When the RV is in storage or not being used for extended periods of time, it is recommended the room be closed (retracted.)

Electrical Maintenance

The slide-outs need a full battery for operation. The battery should be maintained in accordance with the battery manufacturers' recommendations. Always check the terminals and other connections at the

battery, the control switch, and the system for corrosion, and loose or damaged terminals. Check motor leads under the trailer chassis, these connections are subject to damage from road debris.

Gear Pack Lubrication

Perform the following steps to the gear packs on each slide on the trailer.

1. Loosen both gear packs bolts (**Error! Reference source not found.**A and B) until tension is off of the gear pack.

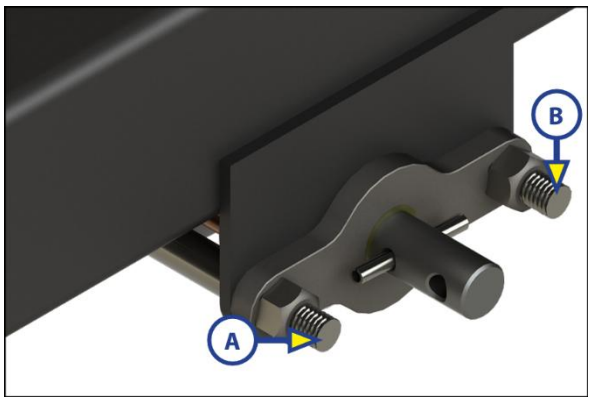


Figure 25. Gear pack mounting bolts.

2. Apply dry silicone onto gear pack drive shaft at lubrication points A through D in **Error! Reference source not found.** and **Error! Reference source not found.**.

Figure 26. Gear Pack lubrication points - exterior.

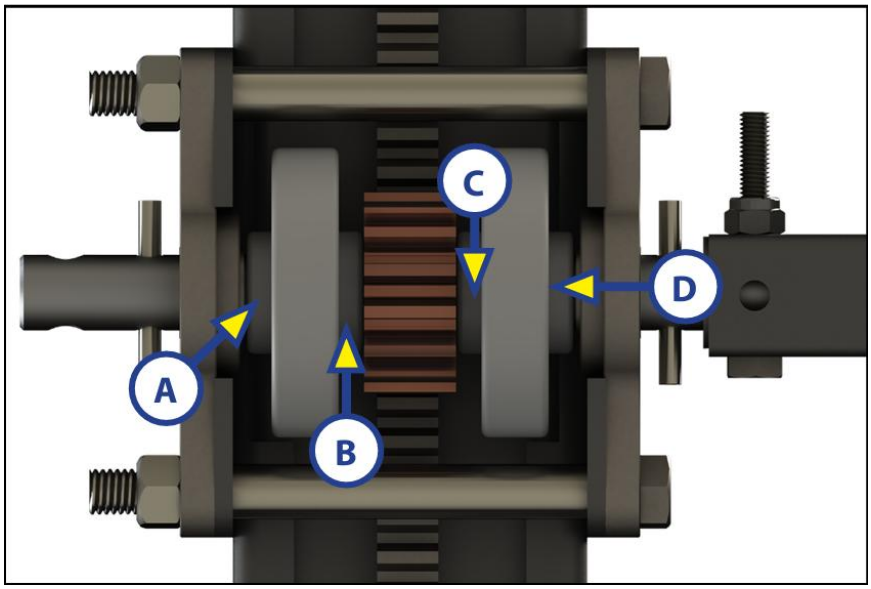


Figure 27. Gear Pack lubrication points - interior.

	Do not lubricate rack or pinion gear teeth, lubricate drive shaft only. If lubricant gets on pinion/bar, dirt and debris can stick and cause premature wear.

3. Extend and retract slide-out arms several times to work lubricant through gear pack.

Manual Electric Slide-out Operation (Manual Override)

⚠ CAUTION

ALWAYS DISCONNECT BATTERY FROM SYSTEM PRIOR TO MANUALLY OPERATING SYSTEM. FAILURE TO DISCONNECT BATTERY CAN CAUSE ELECTRICITY TO BACKFEED THROUGH THE MOTOR AND CAUSE SERIOUS DAMAGE TO THE SYSTEM AS WELL AS VOID THE WARRANTY.

The Lippert Electric Through Frame Slide-out comes with a Manual Override system. The manual override is accessed through specially placed access holes which penetrate the lower skirting and frame of the trailer. These holes are placed on the opposite side of the trailer from the slide-room, near the location of the actuator. For example, if one wants to move the Door Side (Curb Side) slide, the manual override hole will be on the Off Door Side (Street Side) of the trailer, nearer to the front of the slide (where the actuator is.) A gold-colored crank handle is provided for this purpose with a hex socket on the end. That hex socket is placed through the hole and will connect to a hex drive on the actuator gear box.

Rotate the extension clockwise to retract the slide-out and counterclockwise to extend the slide-out. It is important to note that you DO NOT need to attempt to disengage the motor (physically) as the actuator is "manual ready." Please do note the previous warning about disconnecting the electrical path to the battery.

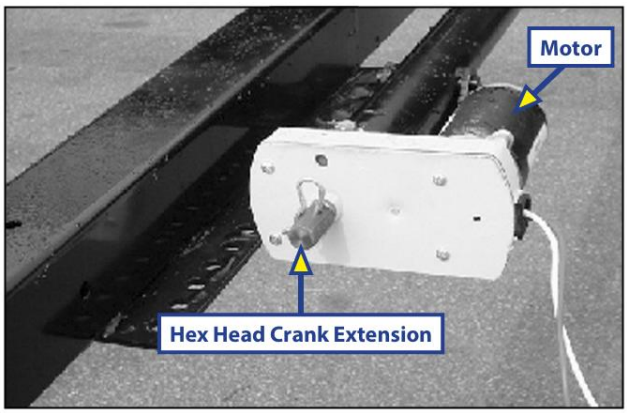


Figure 28. Actuator manual override hex configuration. This assembly is inside the frame of the trailer. The access hole lines up with the Hex Head Crank Extension.

⚠WARNING

USE EXTREME CAUTION WHEN EXTENDING AND/OR RETRACTING ROOM USING THE MANUAL OVERRIDE FEATURE. IT IS POSSIBLE TO OPERATE THE SLIDE-OUT BEYOND THE MAXIMUM EXTENSION AND/OR RETRACTION AND DAMAGE THE SLIDE COMPONENTS, SLIDE ROOM STRUCTURE OR TRIM COMPONENTS.

⚠WARNING

THE GEARS CAN BE STRIPPED OUT IF THE ROOM IS MANUALLY RETRACTED/EXTENDED TO ITS FULLEST EXTENT AND THE OPERATOR CONTINUES TO ROTATE MANUAL OVERRIDE. ANY DAMAGE DUE TO MISUSE OF THE MANUAL OVERRIDE FEATURE WILL DISQUALIFY ANY AND ALL CLAIMS TO THE LIMITED WARRANTY.

Advanced Maintenance: Adjusting Your Electric Slide-outs

While slide-outs are adjusted at the factory to achieve smooth and consistent operation, normal wear and tear may require slides are adjusted over the lifetime of the trailer.

⚠CAUTION

WE RECOMMEND THAT SLIDE-OUTS ARE ADJUSTED BY A CERTIFIED RV TECHNICIAN.

⚠WARNING

- **IT IS THE RESPONSIBILITY OF THE TECHNICIAN PERFORMING THESE PROCEDURES TO FOLLOW ALL STANDARD SAFETY PROTOCOLS IN SUPPORTING THE SLIDEROOM.**
- **REMOVE ALL EQUIPMENT FROM THE WORKING AREA BEFORE MOVING THE SLIDE OUT AFTER ADJUSTMENTS.**

Adjusting Electric Slide-out “IN” Position

1. Locate the cylinder coming through the frame.
2. Run the slide-out room partially out. Pressure must be off of the Stop Can.
3. Referring to Figure 29, loosen the 3/4” jam nut at the end of the stop can using a 1-1/8” wrench (A).
4. Adjust the Stop Can away from the frame if the room does not seal.
5. Adjust the Stop Can towards the frame if the room is too tight.
6. Tighten the jam nut (A) back against the Stop Can and test the room “IN” position.

⚠CAUTION

MAKE SMALL ADJUSTMENTS, RUNNING THE ROOM IN AFTER EACH ADJUSTMENT UNTIL PROPER SEAL IS ACHIEVED.

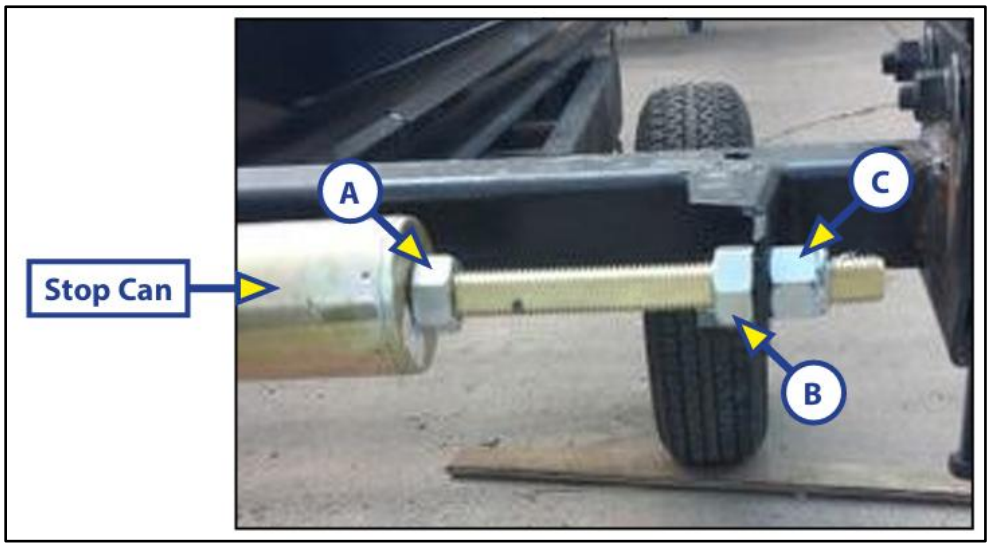


Figure 29. Electric slide-out IN and OUT adjustment components on the actuator.

Adjusting Electric Slide-out "OUT" Position

1. Locate the cylinder coming through the frame.
2. If the slide is fully extended, bring it partially in.
3. Referring to **Error! Reference source not found.**, use a 1-1/8" wrench for nut (B) and a 1-1/16" w rench for the Nylock nut (C) to move the bracket in our out as needed. You may need to loosen the first nut in the direction of desired change, then tap the actuator in the desired direction to bring the bracket in, and then tighten the other nut against the bracket.
   a. Adjust the pair **closer** to the Stop Can if the room is too tight at full extension.
   b. Adjust the pair **farther** from the Stop Can if there is too much gap between the trim and wall (too loose) when the room is at full extension.
4. Ensure both nuts (B) and (C) are tight on the bracket before testing.

⚠CAUTION

MAKE SMALL ADJUSTMENTS, RUNNING THE ROOM IN AFTER EACH ADJUSTMENT UNTIL PROPER SEAL IS ACHIEVED.

Adjusting the Electric Slide-out Room Horizontally

⚠WARNING

BEFORE BEGINNING THIS PROCEDURE, MAKE SURE THE VERTICAL ADJUSTMENT BOLT ON BOTH BRACKETS IS DRIVEN FULLY UP AGAINST IT'S BRACKET. IF NOT, THE ROOM WILL DROP WHEN YOU LOOSEN THE BOLTS IN STEP 4. REFER TO THE VERTICAL ADJUSTMENT PROCEDURE FOR AN IMAGE OF THE BOLTS OF CONCERN.

1. Begin by determining how much sideways movement is needed. Noting this value, divide it in half for the following adjustments. For example, if the slide must move ½" forward on the trailer, you will adjust the brackets by only 1/4". This will be called the **Bracket Offset Distance**, below.
2. Extend the room fully.
3. Using a scribe, mark the horizontal location of the bracket on the room bar (both sides.)
4. Loosen carriage bolts (**Error! Reference source not found.**A) on each bracket located at the end of each guide rail. The image shown is from the top of the bracket, where the slide-out room is sitting.

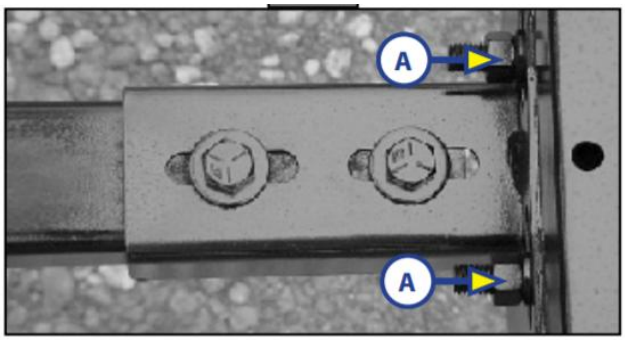


Figure 30. Room Bar mounting bracket - idler side. The drive side will not have adjustments on the guide rail.

5. Using a Dead-blow hammer or other hefty mallet, move the bracket by the **Bracket Offset Distance**, in the direction *opposite* of what direction you want the room to move. Continuing the example from above, if you want the room to move forward on the trailer, the bracket must be moved backwards. This will result in pulling the room forward.
6. Tighten the bolts on this bracket.
7. Repeat for the second bracket.
8. Make sure the area is clear of any tools, run the room in and out fully a few times to verify the new position of the room.

Adjusting the Electric Slide-out Room Vertically

1. Extend the room fully.
2. Place a jack underneath the slide room, near the bracket you will adjust first. Use a vertical board to extend the jack's height and a horizontal board of some length directly on the slide underside. Raise the room only enough to remove weight from the bracket. This can be observed by seeing the inner bar come up with respect to the outer bar near the trailer frame rail.
3. Using a scribe, mark the vertical location of the bracket on the room bar.

4. Loosen carriage bolts (**Error! Reference source not found.**A) on each bracket located at the end of each guide rail. The image shown is from the top of the bracket, where the slide-out room is sitting.

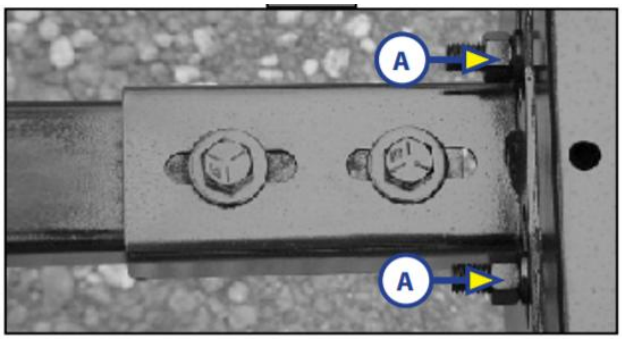


Figure 31. Room Bar mounting bracket - idler side. The drive side will not have adjustments on the guide rail.

5. Referring to **Error! Reference source not found.** for the following adjustments, raise the room using the jack to ensure it lifts off of the vertical adjustment bolt (B).
6. Loosen jam nut (A).

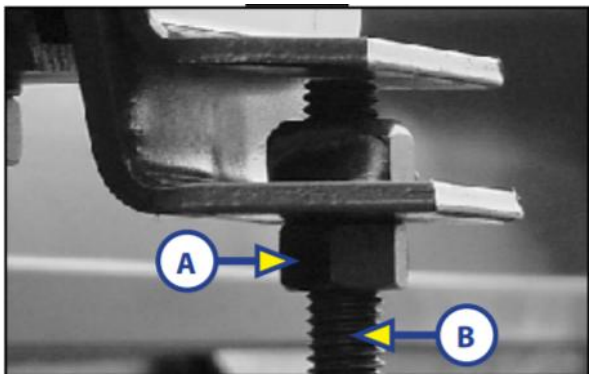


Figure 32. Vertical adjustment lock nut (A) and bolt (B).

7. For vertical adjustment turn vertical adjustment bolt (B) up or down to set room height.
8. Once room height is located, tighten the jam nut (A).
9. Tighten carriage bolts (**Error! Reference source not found.**A) on this bracket. Once you are sure they're tight, gently lower the jack.
10. Repeat for the second bracket, moving the jack near that bracket.
11. Make sure the area is clear of any tools and the jack, run the room in and out fully a few times to verify the new position of the room.

Synchronizing Electric Slide-out Room Travel

This can be adjusted with the specially designed synchronizing bracket mounted on the passive slide tube. The passive slide tube is the one that is not powered. The active slide tube has the actuator attached to it. If one side of the room fails to seal adjust as follows:

1. Run the slide-out approximately halfway out.
2. Measure the active side from the "T"-molding on the slide-out main wall to the outside wall of the RV.

	If the synchronization requires more distance than that provided by the adjustment bracket, a more advanced procedure is required to adjust the gear pack position on the telescoping bar. That procedure is beyond the scope of this section. Refer to Lippert documentation for further assistance.

3. Measure the passive side in the same way.
4. Loosen bolts (**Error! Reference source not found.**B) on top of the passive slide tube (A).

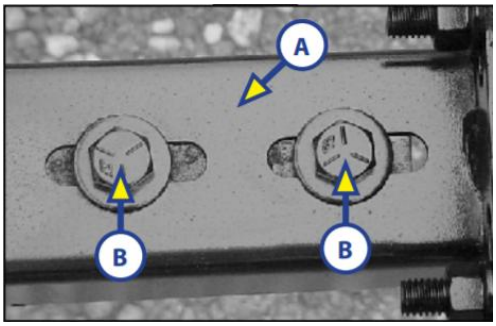


Figure 33. Synchronization adjustment bolts on guide rail. These are only present on the idler side.

5. Push or pull room (on passive side) to align the passive side with the active side.

	It can be helpful to remove weight from this side of the slide room using jacking techniques similar to the Vertical Slide-out Adjustment procedure.

6. Tighten bolts (**Error! Reference source not found.**B) to secure the passive side position.
7. Move the room in and out to verify the new position.

ELECTRICAL: GENERAL

This section of the manual focuses on all items related to the power connection, distribution, and conversion devices on your Alliance RV.

All trailers will have: A Power Cord, a Battery Disconnect Switch, a 12-volt Battery Bank, and a Power Distribution Center that includes a converter. These items are discussed in this section. Many other optional systems and devices have been installed as optional equipment as Alliance RV has grown. The following sections on Inverters, Solar (equipment), and Generators discuss those items in detail.

Electrical System Overview

Your RV has a 120-volt (120V) electrical system and a 12-volt (12V) system.

The 120-volt system is powered by an electrical source such as: Shore Power via the Power Cord, an Inverter converting 12V battery power to 120V power (if equipped), or a Generator (if equipped.) This system usually powers the Air Conditioners, kitchen appliances, TVs, and other items that utilize conventional wall outlets. All 120V circuits are protected by breakers in a Power Distribution Center, and most outlets in the RV will be protected by a GFCI outlet. More details on the Power Distribution Center and the GFCI circuits can be found below.

The 12-volt system is powered by a bank of one or more batteries and powers numerous items such the water heater, water pump, furnace, lights, radio, alarms such as Carbon Monoxide and LP detectors, and depending upon the refrigerator some, or all, of its power. You'll also find that Alliance RV uses Smart Wire Technology, where 12-volt wiring is color coded and numbered. Further details on Smart Wire Technology are covered below. All 12V circuits are protected by fuses in the Power Distribution Center, special fuses mounted on a high-power 12V bus bar near the battery bank, and possibly by additional fuses contained within the 12V device itself (such as a 12V refrigerator.)

The 12-volt system is supported by a converter, which will charge the battery or batteries when on shore power or a generator is running. The converter will also help power the 12V loads in the RV up to a certain extent. High power items such as a hydraulic pump or electric slide motor depend upon the high-current capabilities of the battery bank. The battery bank may also be charged from a solar system (if equipped) or a DC-DC charger (if equipped.)

	High-current systems such as Leveling and Slides will draw primarily from your battery bank. This is why problems with your slides or leveling may be related to the health of your battery, and not the converter. However, it's important to be sure both are operating at peak condition if you experience problems.

	The converter generates a fair amount of heat when many 12 V loads are running. This is why you'll often hear a fan running near your power panel, especially is several 12 V loads are running.

Alliance RV is compliant with industry standards applicable at the time the RV is manufactured. Do not make unauthorized changes.

Modifications to the RVs electrical system should only be performed by qualified technicians and should never be made without approval from Alliance RV. Should modifications be made, those changes MUST comply with current safety and code requirements.

⚠WARNING

CHANGES OR ADDITIONS MADE AFTER DELIVERY MAY RESULT IN HAZARDOUS CONDITIONS. ALWAYS HAVE A PROFESSIONAL WORK ON YOUR RV.

	Owner Empowerment Series Video – Electrical System Overview.

Electrical Troubleshooting

There are a number of individual electrical systems in your Alliance RV. Some of them interact with each other, and all of them are connected through the Power Distribution Center, either on the 120 V side, or the 12 V side. This section will help identify common problems found at the highest level of electrical power in your RV. It is not intended to solve specific problems, but rather to help identify where to go for further investigation.

	My Power Is Out… What Can I Check?

Below is a second video with the same topic, but some different information:

	No Power To My Alliance RV! Why?

Table 4. General RV electrical troubleshooting.

Symptom	When plugged into 50 Amp shore power, several 120V items in the RV work, but several 120V items in the RV do not work.
Possible Cause	One leg of 50 Amp power supply is faulty
Suggested Action(s)	1. Contact a campground employee to check that shore power is correct at the power pole. 2. Ensure Power Cord is securely plugged into the power pole, and the connection at the RV is secure. 3. Check the Automatic Transfer Switch (if equipped.)

Symptom	One or more of the 120V outlets in the RV do not work.
Possible Causes	Breaker tripped, faulty GFCI, loose connection.
Suggested Action(s)	1. Locate any breaker labeled GFI in the Power Distribution Center. Turn each breaker off, then on. Do this even if they don't seem to have been tripped. 2. Reset each GFI in the trailer. Each one should have a solid green light when operating correctly. If the green light is not on, use a multimeter or small appliance to determine if the outlet is working. 3. If the above steps do not solve the problem, contact a qualified repair service to further troubleshoot the outlets.
Symptom	The 120V items work fine either on shore power or generator, but not with the other source.
Possible Cause	Faulty Automatic Transfer Switch, or a fault at the generator.
Suggested Action(s)	Refer to the troubleshooting section for Automatic Transfer Switch.

Removing All Power from the RV

To disable all power systems in the RV, follow these steps, in order. If your RV does not have a particular power source, for example a generator, simply skip that step.

⚠WARNING

USE CAUTION WHEN USING METAL TOOLS. IF A TOOL CONTACTS A BATTERY OR ELECTRICAL TERMINAL OR METAL CONNECTED TO IT, A SHORT CIRCUIT COULD OCCUR AND CAUSE INJURY.

1. Turn off all appliances (Refrigerator, AC, Water Heater) and loads (lights, radios.)
2. Turn off the generator (if equipped and running) and disable the auto start function (if equipped.)
3. Make sure the inverter is turned off (if equipped.)
4. Turn off the solar disconnect switch, or otherwise disable solar power input to the solar charge controller (if equipped.)
5. Turn off the battery disconnect switch.
6. In the Power Distribution Center, turn off the Main input AC circuit breakers.
7. If connected to shore power turn off the breaker at the power pole, then disconnect the Power Cord.
8. Disconnect the negative 12-volt DC battery terminal from the battery.

Power Cord

A heavy-duty power cord with a 4-prong grounding plug is used to plug the RV into an external 120V source.

Figure 34. Power plug port and connected cord.

Never connect the power cord to a power source:

- That is not wired to the National Electric Code standard for 50 amp 120V/240V.
- With non-functioning ground circuits.
- That has reverse polarity.
- That shows outward signs of heat damage.

Do not:

- Use a cheater plug/adapter/extension cord. (A device to lift AC ground.)
- Adapt the power cord to plug into a connector which it was not designed.

⚠WARNING

VIOLATING THE ABOVE DIRECTIONS MAY RESULT IN PROPERTY DAMAGE OR SERIOUS INJURY. YOU CAN POTENTIALLY DAMAGE YOUR RVs ELECTRICAL SYSTEM WHICH COULD RESULT IN SEVERE OR EVEN FATAL INJURY.

To connect your power cord:

1. At the power pole, ensure the breaker is off.
2. At the Power Distribution Center, turn off the MAIN breakers.
3. Attach the power cord to the trailer. Tighten the outer plastic ring. Do not over-tighten.
4. Extend the power cord to the length needed.
5. Plug the power cord into the power pole. Be sure that all the power cord prongs are properly plugged in at the same time.

6. Turn on the breaker at the power pole.
7. Turn on the MAIN breakers in the Power Distribution Center.

- **DO NOT** plug your RV 50-amp shore cord into any receptacle that is not wired to National Electric Code for 50 amp 120/240V configuration. Doing so will supply the RV with the incorrect electrical power causing extensive damage to the electrical system and 120-volt components which would not be warrantable.
- **DO NOT** disconnect the 50-amp male plug connection by pulling up on the cord. This will cause a loss of neutral and 240 volts AC will be supplied to the electrical system and 120-volt components causing extensive damage which would not be warrantable. Always pull straight out on the head of the cord so all 4 prongs disengage the receptacle simultaneously.
- **DO NOT** plug in or unplug the shore cord while under load. Make sure all 120-volt components are turned off prior to connecting or disconnecting the shore cord or damage to the 120-volt systems may result. Turn off the breakers at the power center first before connecting or disconnecting the shore cord to prevent damage.

⚠WARNING

FAILURE TO PLUG YOUR 50 AMP POWER CORD INTO A RECEPTACLE THAT IS NOT WIRED TO THE NATIONAL ELECTRIC CODE FOR 50 AMP 120/140V CONFIGURATION COULD LEAD TO AN INCREASED RISK OF PROPERY DAMAGE, SERIOUS INJURY OR DEATH.
IT IS IMPORTANT TO INSPECT POWER CORD FREQUENTLY FOR DAMAGE. IF DAMAGE IS FOUND, HAVE THE CORD REPLACED IMMEDIATELY.

⚠WARNING

EXPOSURE TO VOLTAGES HIGHER OR LOWER THAN A NOMINAL 120-VOLTS, WILL DAMAGE OR SHORTEN THE SERVICE LIFE OF THE ELECTRICAL SYSTEM AND APPLIANCES. THE 50 AMP 120-VOLT 60HZ AC ELECTRICAL SYSTEM CAN BE POWERED BY AN OUTSIDE 120/240-VOLT 60HZ UTILITY SERVICE LIKE THOSE COMMONLY FOUND IN CAMPGROUNDS OR BY 120/240-VOLT 60HZ GENERATOR POWER.

⚠WARNING

MAKE CERTAIN THE EXTERNAL POWER SOURCE YOU CONNECT THE POWER CORD TO IS A PROPERLY WIRED 50 AMP NEMA 14-50 RV RECEPTACLE AND NOT 240 VOLT AC. PLUG INTO 50-AMP SERVICE ONLY.
CIRCUIT BREAKERS AND FUSES WILL NOT OFFER COMPLETE PROTECTION OF THE ELECTRICAL SYSTEM IN THE EVENT OF POWER SURGE OR VOLTAGE SPIKE.

GFCI (Ground Fault Circuit Interrupter)

A ground fault circuit interrupter is a type of circuit breaker usually incorporated into a standard-looking 120V wall socket that shuts off electric power when it senses an imbalance between the outgoing and incoming current. A GFCI is specifically designed to protect a person from electrical shock by reacting to an imbalance that can be as small as 4 or 5 milliamps, when detected, in less than one tenth of a second the circuit is tripped and shuts off.

GFCI Troubleshooting

If the GFCI circuit breaker trips, and cannot be reset by pushing the RESET button, please check the following things:

- Power to the GFCI: Sometimes, an event that causes the GFCI to trip can also cause the circuit's breaker to trip.
  - Manually turn off the breaker and turn it back on, even if it looks like it has not tripped.
  - Try again to RESET the GFCI.
- Check the circuit for overloads:
  - Unplug all loads on the GFCI and try to RESET.
  - If the RESET is successful, plug in devices one at a time until the circuit trips again.
  - If the circuit does not trip again, it could be due to a connected device pulling more than average power.
- Check for ground faults: this could be water near an outlet or damaged wiring. Inspect for either of these conditions and rectify before attempting to RESET the GFCI again.
- Nuisance tripping: GFCI outlets can be sensitive to high levels of moisture and electromagnetic interference. Check for either of these conditions and rectify before resetting.
- Faulty GFCI. GFCI outlets do have a lifespan and can wear out over time. If no other cause can be determined, contact a qualified professional to replace the GFCI outlet.

GFCI Maintenance

GFCI Outlet Testing

As per the Maintenance Schedule:

1. Push the TEST button. This action should force the RESET button out on the receptacle (engaging the interruption of power).
2. To reset the GFCI to working order, push the RESET button.

3. If the RESET button cannot be depressed, your 120-volt electrical will require service – contact your servicing dealer immediately.

Battery Disconnect Switch

Used to shut off all nonessential 12 Volt (12V) power that supplies RV. When the switch is activated, in the "OFF" position, the batteries are disconnected/isolated and no longer supply 12V power to the RV. **Some items will remain powered.** Exactly which items stay on depend upon your specific trailer options but may include the Refrigerator (if a 12V model,) and the charge line from your Tow Plug. When the switch is in the "ON" position, all 12V items in the RV will have power.

	If you are plugged into shore power, your converter (in the Power Distribution Center) will still supply 12V power to the trailer, but has a limited level of current it will produce. That power limit is well below what the batteries can produce.

You will find the battery disconnect switch mounted either on the trailer's A-frame, or inbetween the A-frame and the front of the chassis face near the batteries.

To turn the 12V system ON and OFF, simply rotate the key or knob to the desired position.

Figure 35. Battery disconnect switch as mounted on a different trailer model.

Battery

Alliance RV does not supply batteries in trailers. Batteries are selected and installed by the dealership from which you purchased your trailer.

When you are not plugged into electricity (dry camping), the battery supplies power to the 12-volt system in the RV. The battery in this scenario will eventually die unless other steps are taken to charge them. Such a method might be to use an external generator with the shore power cord connected to it, or connecting a Tow Vehicle supplying 12V power. Normal Tow Vehicle power generally does not supply sufficient amperage (energy flow) to enable charging at a reasonable rate. One option to correct this is to setup the Tow Vehicle with a high-output DC-DC charger. Such a setup is beyond the scope of this manual. Please contact a local RV service center for available options.

When plugged in, the Converter in your RV reduces some of the 120-volt incoming power down to 12 volts in order to supply power to the 12-volt system in the RV. It will also automatically sense voltage on the battery and will select an appropriate charging profile based on the battery type and state of charge

(how full it is.) The battery type setting on the converter is set manually. Please refer to the Power Distribution Center section for more information.

The converter will also charge the battery when the trailer is connected to a running generator (as mentioned above) as the generator simulates shore power.

	WYKW: What to Expect of Your Batteries in Storage

Battery Troubleshooting

When encountering problems with any 12V device, the following items should be verified. Note that this is not a full troubleshooting process for 12V systems, but can help identify where issues may exist.

- Ensure all connections between the battery terminals and device of concern are tight.
- Verify any fuse(s) are not damaged. Fuses can pass electrical checks for voltage and resistance when not under load but fail once put under load (usually through heated expansion of a crack.) If in doubt, replace the fuse with a known-good fuse.
- If no other sources of error are found for a dropping voltage when the battery is the only power source, disconnect all batteries and perform load testing on each battery individually before re-connecting.

Battery Maintenance

Perform the following maintenance on each battery as per the Maintenance Schedule, or whenever problems are being investigated with any 12V powered item on the trailer:

1. Remove any corrosion from the terminals using standard safety protocols and techniques.
2. Look for cracks, leaks, or bulging in the case. Any physical damage requires replacement.
3. Check water levels in non-sealed batteries.
    - Ensure the top of the battery is very clean before removing caps.
    - Add distilled water as needed to keep each cell full.
    - Do not allow **any** contaminants to enter the battery.
    - Replace the caps.

⚠WARNING

IT IS IMPORTANT THAT THE FLUID LEVELS OF ANY NON-SEALED CONNECTED BATTERY(S) BE CHECKED ON A REGULAR BASIS. ALL BATTERIES WILL "GAS" AND LOSE SOME FLUID WHEN CONTINUOUSLY CONNECTED TO ANY CHARGING SOURCE.

4. Ensure all battery connections are tight.
5. Using a voltmeter set to a proper range, ensure battery voltage is appropriate at the battery.
    - It is best to check this while the trailer is unplugged from shore power.) **If this is not done, you may be reading input charging voltage and not actual battery resting voltage.**
    - The value measured across the terminals should be **equal to or more than** the nominal value of 12.0 Volts.

POWER DISTRIBUTION

All electrical circuits in an RV need protection devices. These devices most commonly are 120 V **breakers**, similar to what is in a house, or they could be 12V **fuses**, similar to what is seen in a car. There are also some 12V fuses that may be in another location (close to the batteries) that are commonly termed **self-resetting fuses** or **self-resetting breakers**. These are often placed on a single device called a **12V Bus Bar**.

	WYKW: How Many A/Cs Can I Run?

	WYKW: Power and Amp Draw in Your Alliance RV

The most common power distribution setup in an RV is the single **Power Control Center**. This device looks like a panel mount breaker box, but also has 12V fuses visible and accessible. This device also usually has an integrated Converter, discussed at the start of the electrical section.

Note that while this single three-function unit is most commonly used, some Alliance trailers will have their 12V fuse panel separated from the 120V breakers, and also may have the converter mounted outside of the actual Power Control Center, but still behind a wall and inaccessible to the RV inhabitants (called a “deck mount” converter.)

In the below sections, you’ll find separate discussions of most items due to the variety of installations in Alliance RV models. If you need help verifying what is installed in your RV, take a look at the images in the sections to identify which equipment you have, or feel free to contact Alliance RV to learn what your specific trailer has.

Smart Wire Technology (12 V systems)

Smart Wire is an attempt to help individuals trace and troubleshoot 12V circuits when needed. Throughout the trailer, 12V wiring is highly standardized with specific colors and numbers printed on the wires which can be identified via a label on the inside of the Power Control Center door. This chart lists the following information:

- Circuit Number
- Equipment on the circuit / its use
- Required fuse amperage
- The gauge of wire and number of conductors
- The color and number printed on the wires used for that circuit

In addition to these pairs of wires, the wires used for specific slides and tank heaters have markings and colors, as listed at the bottom of the Power Control Center door panel. The fuses for these systems are located in the front compartment on the 12 V bus bar (see 12 V Bus Bar, below.)

	WYKW: Smart Wire Quick Tip

12 Volt Bus Bar

While not in the Power Control Center, it is important to note the location of where several 12 Volt circuits receive their power. These circuits may require high current or a certain type of fused connection, such as a self-resetting circuit breaker. This bus bar is mounted in the front bay of the trailer and is split into an upper and lower section. One section is connected directly to the battery bank and is connected to the converter through the battery disconnect switch, and the other section is connected directly to the converter.

All maintenance or modifications to these bus bars must be performed by trained and certified persons.

⚠WARNING

- **ITEMS CONNECTED THROUGH THE 12 V BUS BAR ARE HIGH POWER ITEMS.**
- **ALL MAINTENANCE AND MODIFICATION TO THESE CONNECTIONS MUST BE DONE BY TRAINED PERSONS.**
- **REPLACEMENT BREAKERS AND FUSES MUST BE OF THE SAME VOLTAGE, AMPERAGE RATING AND TYPE. NEVER USE A HIGHER RATED REPLACEMENT FUSE, DOING SO MAY CAUSE A FIRE BY OVERHEATING THE RV WIRING.**

Progressive Dynamics Power Control Center

The Progressive Dynamics Inteli-Power 4500 series distribution panel is the most commonly installed Power Control Center used in Alliance trailers. It has 120V breakers on the bottom of the panel, and 12V fuses at the upper left of the panel. Each 12V fuse has a faulty-fuse indicator (below the fuse) which will light up if a blown fuse is detected.

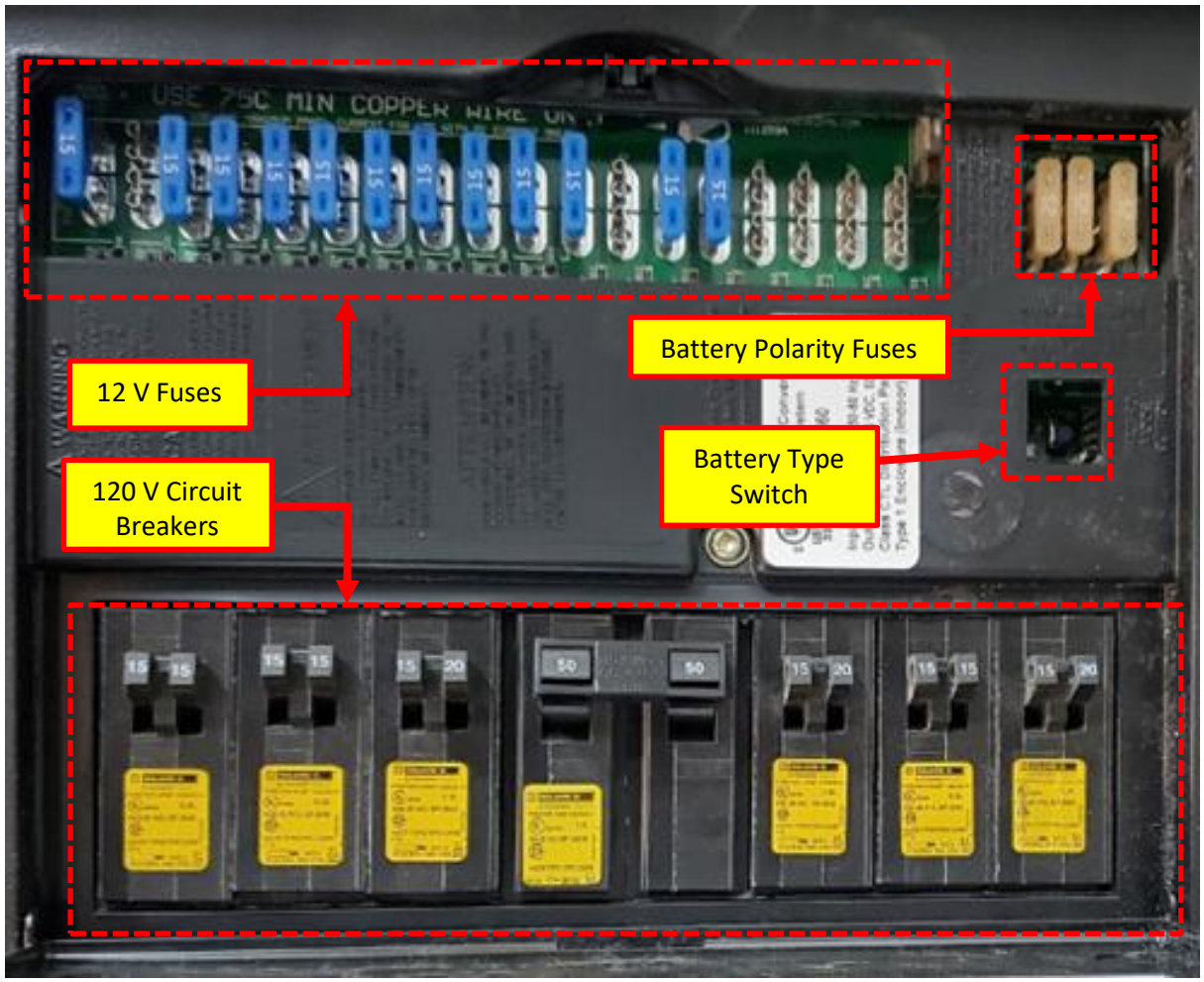


Figure 36. Progressive Dynamics Power Control Center.

120 Volt Circuit Breakers

Your 120V circuit breakers are in the main power control center. These circuit breakers act just like those in a household in that they protect 120V wiring and components. You'll find the individual circuits labeled on the power center door to identify which each breaker is for.

To reset a breaker, simply flip the switch to the off position then immediately back to the on position. If the breaker immediately trips again, contact your dealer or Alliance RV for assistance.

	If you believe a circuit breaker has tripped, but the switch is not visibly moved from its ON position, it is suggested to turn it off and then back on anyway. Sometimes when a circuit breaker trips the movement of the switch is not easily visible.

⚠WARNING

- **CIRCUIT BREAKERS AND FUSES WILL NOT OFFER COMPLETE PROTECTION OF THE ELECTRICAL SYSTEM IN THE EVENT OF POWER SURGE OR VOLTAGE SPIKE**
- **REPLACEMENT CIRCUIT BREAKERS MUST BE OF THE SAME VOLTAGE, AMPERAGE RATING AND TYPE. NEVER USE A HIGHER RATED REPLACEMENT CIRCUIT BREAKER, DOING SO MAY CAUSE A FIRE BY OVERHEATING THE RV WIRING.**

At the beginning of camping season, inspect the circuit breakers and replace as needed. Test by turning each circuit breaker off and back on, circuit breakers are wearable parts and must be replaced as needed as part of your RV maintenance.

12 Volt Fuse Panel

You'll find the 12-volt fuse panel at the top of the power control center, toward the left. As with the 120 V circuits, individual 12 V circuits are labeled as to their use. As part of the Smart Wire system, the 12 V circuit label also has notation as to what colors the wires are, what gauge/size they are, and what number is stamped on the wiring. This can be quite helpful in matching wires behind panels.

The fuse panel has helpful indicator LEDs that illuminate when a fuse has failed. When a fuse fails, the LED next to the corresponding failed fuse will light. These can be useful to quickly identify if there is a fault in a fuse.

	Failed fuse LEDs are not a fool-proof method to check fuses. Sometimes they will not light for certain types of fuse failures. In particular a fuse can have a type of failure that it only fails when the load is applied, but not when it's out-of-circuit. **If there is any reason to suspect the fuse could be bad, it is best to replace the fuse.**

⚠WARNING

DISCONNECT ALL POWER TO THE CONVERTER PRIOR TO CHECKING OR CHANGING FUSES.

⚠WARNING

FOR CONTINUED PROTECTION AGAINST RISK OF FIRE OR ELECTRICAL SHOCK, REPLACE ONLY WITH SAME TYPE AND RATING OF FUSE. CONSULT A LICENSED ELECTRICAL OR RV TECHNICIAN FOR ANY NEEDED ASSISTANCE.

When replacing fuses, please follow these safety precautions:

- Disconnect the main power cord.
- Turn the inverter off, if equipped.
- Disconnect solar, if equipped.
- Disconnect batteries.

Reverse Battery Protection Fuses

In order to protect the RV from an improperly installed battery, the Power Control Center features a set of ATC type fuses and associated circuit. Located at the upper-right corner of the panel and separated from all other fuses, these easily accessible fuses will blow when a battery is connected in reverse. If these fuses blow, correct battery wiring and then replace fuses with the same type and rating.

12 Volt Converter

The 12 V converter is mounted inside the power control center and is responsible to power the 12 V fused circuits and charge the battery bank when 120 Volt power is received. It is powered by a single 120V breaker as labeled on the power control center door. It can monitor and power both conventional (flooded) batteries as well as Lithium-Ion (Li-Ion) batteries.

Selecting Battery Type

The Progressive Dynamics converter can interface with both Lead-Acid (flooded) and Lithium-Ion batteries. The converter is properly set at the factory for Lead-Acid batteries, unless shipped with Lithium-Ion batteries. The only time you would need to change this is when upgrading from Lead-Acid batteries to Lithium-Ion batteries.

	WYKW: Switching Between Lithium & Lead Acid Batteries

To change the battery type:

1. Disconnect existing batteries.
2. Set the Battery Type Switch (referred to as the Wizard Switch) as needed:
    a. The switch should be UP when Lithium-Ion batteries are connected.
    b. The switch should be DOWN if Lead-Acid batteries are connected.
3. Connect new batteries.

⚠ CAUTION

IF YOU HAVE A SOLAR CHARGE CONTROLLER INSTALLED, REFER TO THE OWNER'S MANUAL OF THAT EQUIPMENT TO REVIEW WHAT STEPS NEED TO BE TAKEN, IF ANY, TO ENSURE IT WORKS WITH THE NEW BATTERIES.

Progressive Dynamics Power Control Center Troubleshooting

	At normal input voltages (105 – 130VAC) the full load rated capacity is available. At input voltages less than 105 VAC the converter may not supply full rated output capacity.

Table 5. Progressive Dynamics Power Distribution Center troubleshooting guide.

WHAT IS HAPPENING?	WHY?	WHAT SHOULD BE DONE?
No Output	Proper AC power not connected	Connect power supply Check AC distribution panel for proper operation
	Reverse battery fuses blown	Check for reverse battery connection Replace fuses with same type and rating
	Short circuit	Trace circuits for possible fault
	Unit has shutdown due to overheating	Check air flow Allow unit to cool
	Unit has shutdown due to over voltage	Check input voltage Correct input voltage
Low Output	Compartment gets too hot	Check air flow to the converter Improve ventilation to the compartment
	Excessive load for converter	Reduce load requirements Install larger converter
	Input voltage not between 105-130 Volts AC	Correct input supply voltage
	Bad battery cells	Replace battery
Intermittent or no output on generator, works on shore power	Unit has shutdown due to over voltage	Add another load to the generator, this may reduce the spikes to an acceptable level.
	Some generators exhibit excessive voltage spikes on the AC power output, this may cause the over voltage protection to shut the unit down.	Contact generator manufacturer for possible defect in the generator

WHAT IS HAPPENING?	WHY?	WHAT SHOULD BE DONE?
	Reverse battery fuses blown	Check battery polarity Replace fuses
	No battery connection	Check wiring to battery Check inline fuse

Progressive Dynamics Power Control Center Maintenance

⚠WARNING

120 V ELECTRICAL POWER IS DANGEROUS. ALL POWER CONTROL CENTER MAINTENANCE MUST BE PERFORMED BY A TRAINED AND QUALIFIED PERSON.

Inspection & Torque Check

As per the Maintenance Schedule, perform the following inspection and bolt torquing procedure to the Power Control Center.

1. Completely remove all power from the RV as per the associated procedure discussed above.
2. Using a Voltmeter set to AC Voltage, ensure no power is present on either AC Mains breakers.
3. Set Voltmeter to DC Voltage, and ensure no voltage exists on any of the DC connections.
4. Remove the power distribution center cover panel, exposing all ground and neutral bars for both AC and DC sides of the panel. See Figure 37.
5. Check the torque of all electrical connections in the power control center as per the following table.

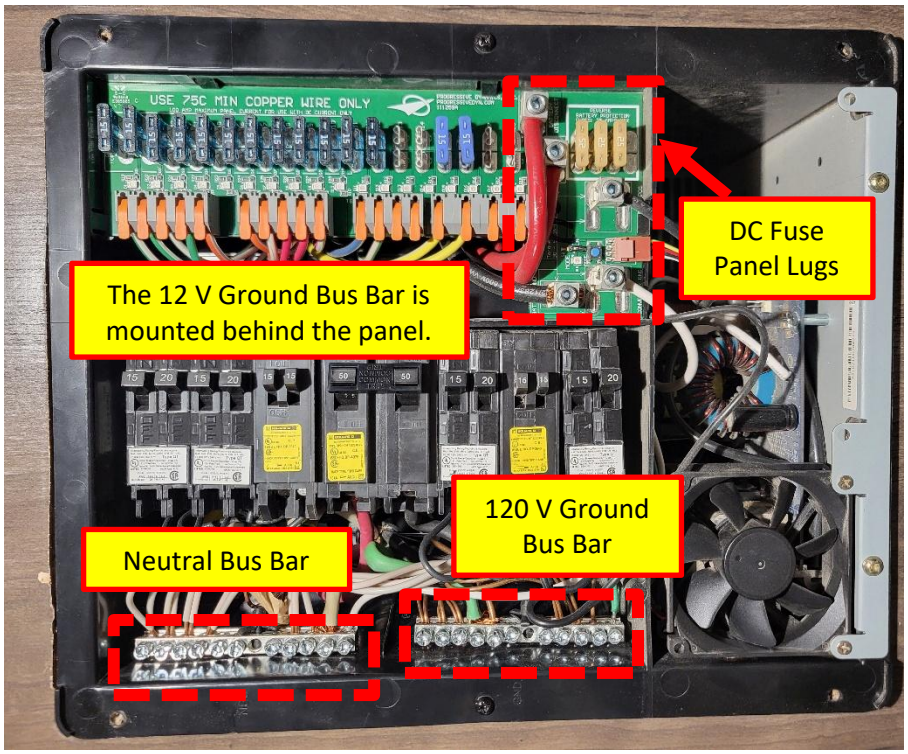


Figure 37. Progressive Dynamics Power Control Center with the safety cover removed. The converter is shown at the right, where the fan is.

Table 6. Required torque values for lugs in the Progressive Dynamics power distribution center.

LOCATION/BOLT	WIRE GAUGE (AWG)	TORQUE REQ. (in. lbs.)
AC Breakers		See breaker mfg. data
AC Neutral & Ground Bars	8	30
	10-14	25
DC Fuse Panel Lugs (+VCC, NEG-, POS+)		30-50
DC Terminal Block: Single Ckt Terminals DO NOT REMOVE TERMINAL BLOCK SCREWS		7-9

	IMPORTANT: Pay close attention as to what wires are on the Neutral bar. Most of them will be 120 V neutral wires (solid core, paired in romex cable with black and bare copper ground.) If you do not see a 12 V set of white wires – between the Circuit Breakers and the 12 V fuses, then the 12 V bus bar for negative is mounted behind the Power Distribution box. You will need to carefully remove the power distribution box from the wall, the ground bar will then be visible, and you can tighten all lugs. **This must be done to properly complete this procedure.**

WFCO Energy Management Switch EM-20 (if equipped)

In order to provide optimum power usage in the Benchmark, Alliance has installed the WFCO EM-20 Energy Management Switch. This system allows for the use of a single 20 Amp circuit breaker to power two large appliances which usually do not run at the same time, but if they are run at the same time, requiring too much power, the system will prioritize one output and "shed" or disable the other.

Figure 38. WFCO EM-20 Power Management Switch, usually mounted above the power distribution panel.

On equipped units, In the main distribution panel, you'll note that the left-most breaker is labeled "Fireplace 2 / AC 2" – this circuit is the input to the EM-20. The system will prioritize the rear AC (AC 2) and "shed" (or turn off) the output to the fireplace if the load from the AC **and** the fireplace are greater than 20 Amps (the limit of the circuit.) If both systems are on, and drawing low current, the switch will allow both to run. The system is programmed at the factory, and the Owner's Manual is available at Alliance Academy and at the link below.

	WFCO EM-20 Energy Management Switch

MONITOR PANEL

This system allows monitoring of fresh water, gray water, black water and battery levels. Power control of the water heater, water pump, some of the RVs lights, awnings and slide-outs are also done from the central monitor panel. Controls are explained in the sections of interest.

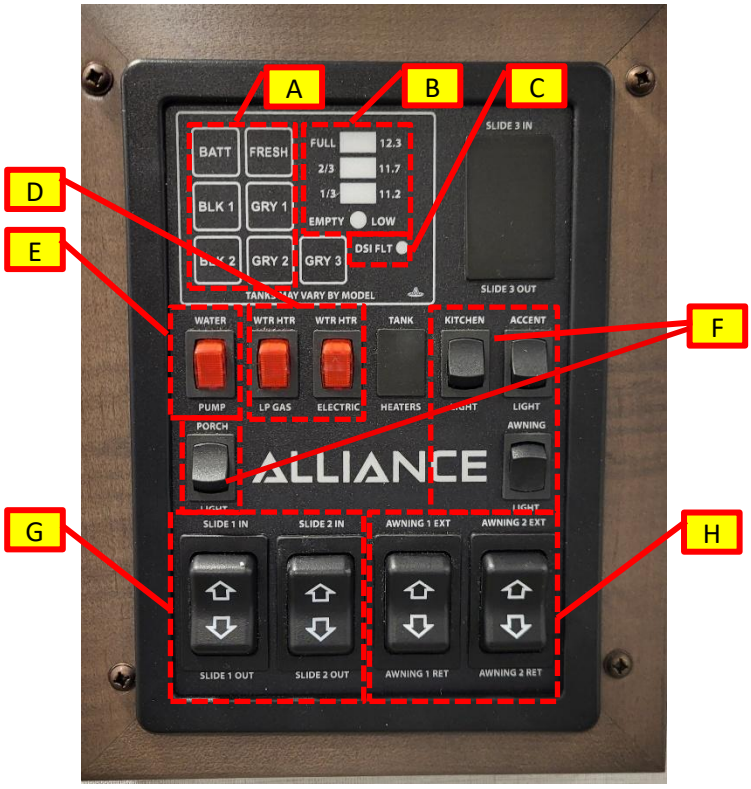


Figure 39. Monitor panel with sections highlighted.

Table 7. Monitor panel control group identification.

ID	DESCRIPTION
A	Tank Levels & Battery Selector Buttons
B	Tank & Battery Charge Level Indicators
C	Water Heater Gas Fault Light
D	Water Heater Power Switches
E	Water Pump Power
F	Light Switches
G	Slide out Room Controls
H	Awning Controls

AWNINGS

Your Alliance RV comes standard with a power awning and in some cases, depending on the floor plan, may have two power awnings installed from the factory.

	WYKW: Best Practices for Patio Awnings Use

	Solera 3000 Series 12V Power Awning Owner's Manual

Awning Operation

The awning controls are located at the lower-right corner of the Monitor Panel, in section H of Figure 39. Either switch location may be used at any time. Awning 1 is the awning closer to the front of the trailer.

Extending the Awning

1. First verify that the battery is fully charged and connected to the electrical system.

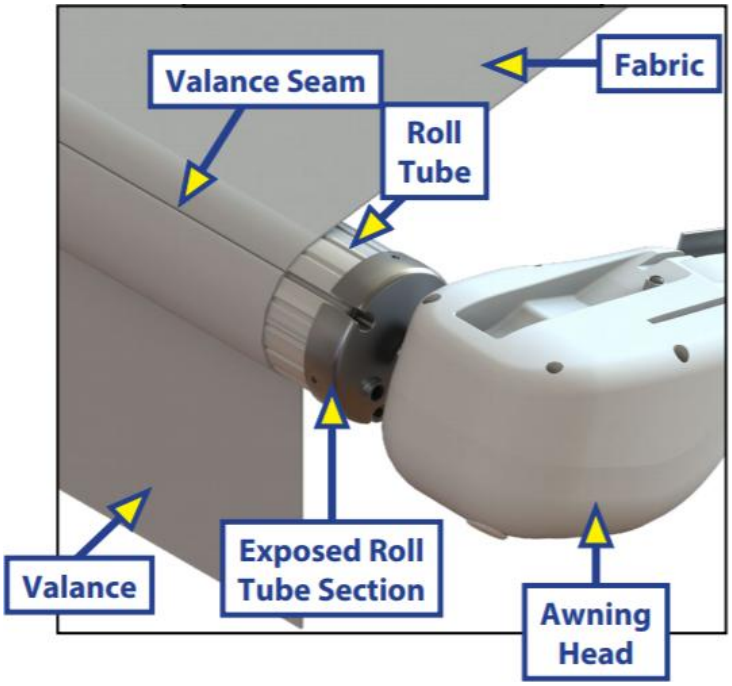


Figure 40. Awning part identification at full extension.

2. Press and hold the awning extend button in the monitor panel.

	Extension is considered complete when the fabric is completely unrolled, the valance sean is visible and a section of the awning tube is exposed.

	The fabric should always be above the tube. However, if the extend switch is engaged too long or it is accidentally hit, the awning will roll up backwards. To correct the orientation of the fabric, press the retract button to extend it to its correct position and normal operation can resume.

	WYKW: Awning Operating in Reverse

⚠WARNING

TYING DOWN THE ROLLER TUBE ONCE THE AWING IS EXTENDED WILL NOT ALLOW THE FREE-FLOATING SUPPORT ARMS TO WORK AS DESIGNED AND CAN CAUSE DAMAGE TO THE AWNING AND/OR RV.

Retracting the Awning

1. Always check the battery first to ensure it's charged and tied into the electrical system.

	The awning can be retracted wihtout resetting the pitch.

2. Press and hold the retract button until the awning is retracted completely.

Adjusting the Awning Pitch

Pitch can be set by adjusting the articulating arm to tip one side of the awning in order to allow water runoff.

1. Extend the awning.
2. Choose the side of the awning for optimum shade or conenient water runoff. Pull down on the joint of the atriculating arm until desired pitch is set to allow for water runoff. Never push the jointes of the atriculating arms up. This will put tension on the gas strut, which can cause the strut to break.

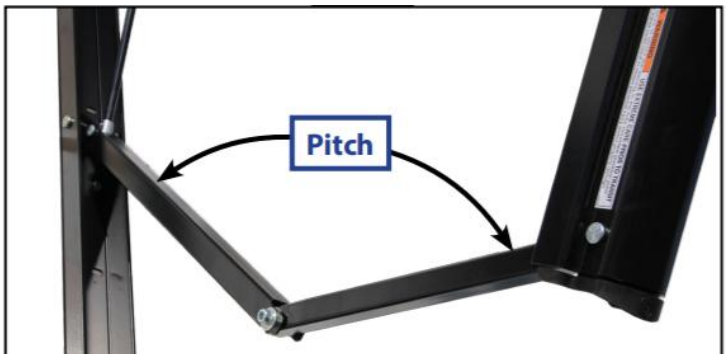


Figure 41. Awning pitch adjustment location. Pull down on the center of the arm to lower pitch.

	If the articulating arm does not hold position, it can be tightened by adjusting the bolt in the center of the articualating arm.

⚠ CAUTION

DURING INCIDENTS OF HIGH WIND, HEAVY RAIN OR EXTENDED TIME AWY FROM THE RV, BE SURE TO RETRACT THE AWNING COMPLETELDY TO PREVENT DAMAGE TO THE WAWNING AND THE RV.

Awning Component Breakdown

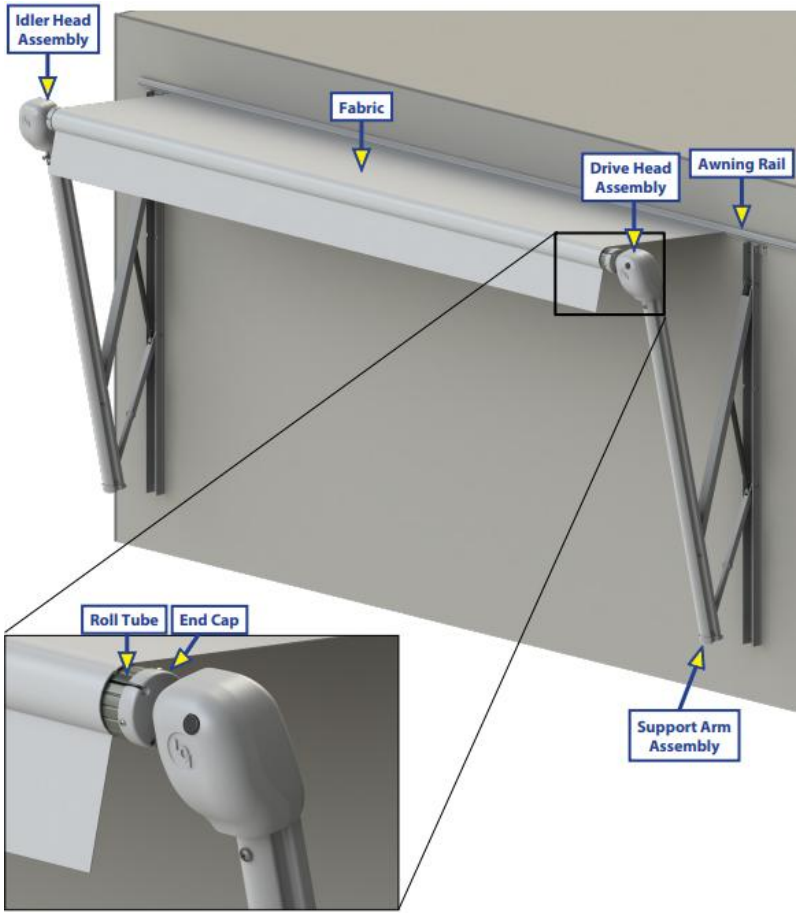


Figure 42. Awning components of interest.

Awning Troubleshooting

	Solera Power Awning Troubleshooting and Service Manual

Awning Maintenance

Cleaning & Inspection

As per the Maintenance Schedule, perform the following tasks:

1. Extend the awning and clean it with mild soap and water, or approved awning cleaner. Allow awning to dry before closing.
2. While running the awning out and in, monitor the gas struts. If bouncing or rough operation is witnessed, open the awning fully, and wipe the exposed strut shafts with a small cloth dampened with silicone lubricant.
3. With the awning out, carefully inspect upward (from underneath the awning) to verify the awning rail has not started to separate from the trailer side. If evidence of this is seen, contact an appropriate service provider to remedy.

Awning Manual Override

If you lose power or experience motor falilure, the awning can be extended and rertracted manually. This override can also be used if you're dry camping or camping without a battery.

1. Remove the rubber grommet form the drive head assembly (on the right or forward arm,) this will expose the override nut on the motor.

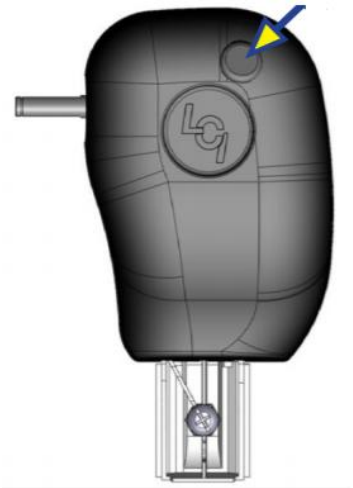


Figure 43. Location of rubber grommet covering the awning manual override. Location may vary slightly due to manufacturer differences.

2. Using a 7/16" socket and a drill, turn the override nut counterclockwise to retract the awning.

Figure 44. Using a drill to manually retract or extend awning.

3. When the awning is completely retracted, remove the drill and replace the rubber grommet.

Slide-out Topper Prep

Alliance RV has prepped their fifth wheels with a slide topper prep kit to allow for easy installation of a Solera Slide-out Topper at a later date. The top left and right hand corners, just beneath the slide-out fascia, you'll find the bracket (shown below) installed.

For assistance with parts and or questions regarding the slide-out topper prep kits, please contact your Alliance Dealer or Alliance RV.

Figure 45. Slide topper prep with cover. Note the cover may be black.

	Solera 1000 Series Slide Topper (Aftermarket Installation and Owner's Manual)

Slide-out Toppers (If Equipped)

Late model Alliance RVs can be purchased with Solera Series 1000 Slide Toppers installed. Slide toppers are affixed to the top of the side and the side of the trailer and require no user intervention.

	Solera 1000 Series Slide Topper Owner's Manual

Slide Topper Component Breakdown

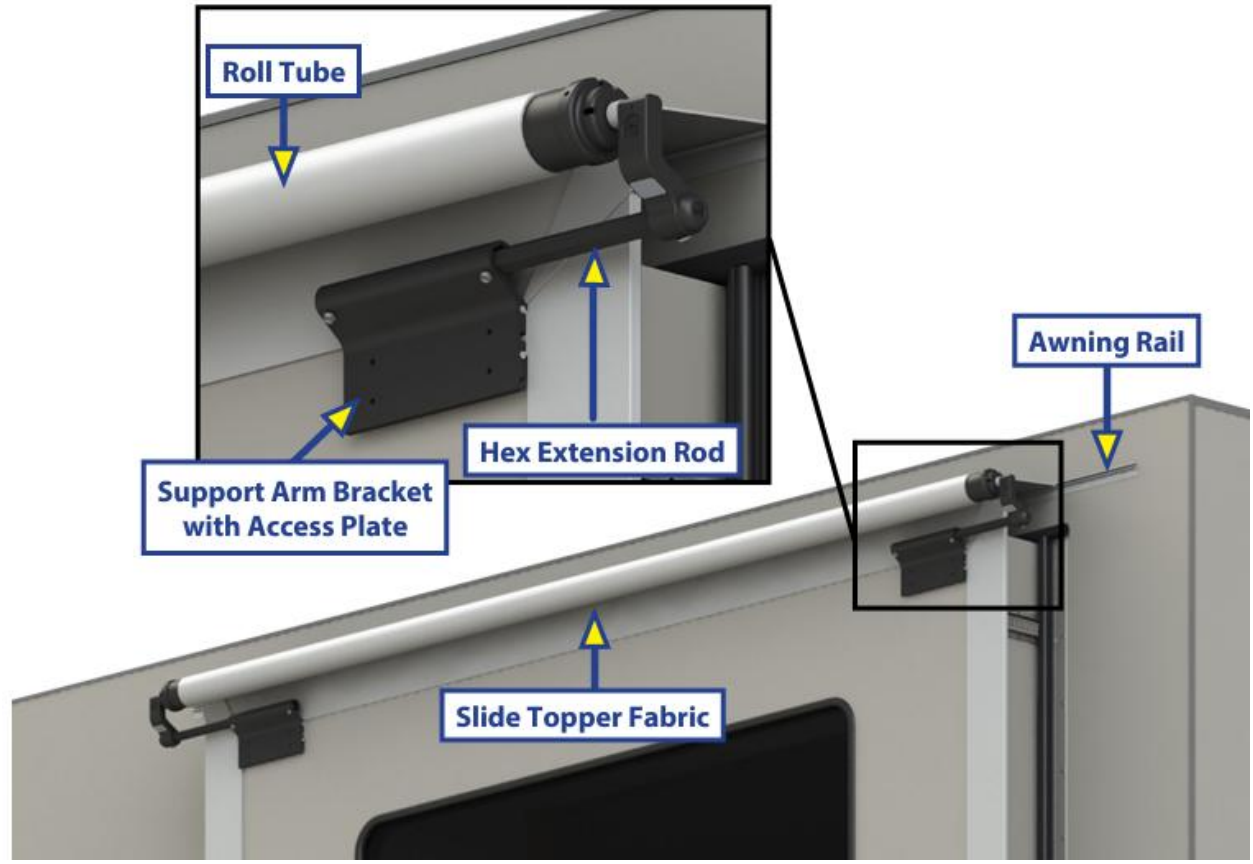


Figure 46. Slide topper component identification.

HEATING, COOLING & VENTILATION

Digital Thermostat

There are three Coleman digital thermostats installed, one for each rooftop unit installed. The middle zone thermostat controls cooling only, while the thermostats on each end also control the associated furnace on that end of the trailer. The following are features of the display.

Figure 47. Coleman digital thermostat.

Room Temperature: The current room temperature is displayed in large digits in the middle of the display.

Setpoint Temperature: The setpoint temperature is displayed on the right side of the display in smaller digits.

System Mode: Information about the system mode settings is displayed at the lower-left corner of the display, circled in blue in Figure 47. The state of the cooling/heating will be shown above the box, and the selected mode will be shown in the box.

Fan: Information about the Fan settings is in the lower right corner of the display, circled in blue in Figure 47. The state of the fan will be shown above the box (on/off) and the setting (Low, High, and Auto if selected) will be shown in the box.

Selection Knob: Use the Selection Knob to change the mode, set the fan, and setpoint temperature. You can push on the knob to accept a setting. If it's not pushed, it will automatically "accept" the set value after 7 seconds. See below for operation details.

	Hold the Selection Knob down for 4 seconds to change from Fahrenheit to Celsius.

Operating the Thermostat

	Coleman Digital Wall Thermostat Manual

The Selection Knob is the only input method for the thermostat. Depending upon the current state of the thermostat/system, the knob enables certain functions.

1. System off: The knob has no effect when turned. Press the knob to enable Mode Selection.
2. Mode Selection: If the knob is pushed at any time before being turned, you will enter Mode Selection.
    - Turning the dial changes the selected mode, flashing in the lower left corner (Cool, Dry Cool, Heat (if equipped,) and Cool+Heat (if equipped.) Push the knob to accept the state.

- The Fan mode is now flashing. Rotate the dial to select the desired setting (Lo, Hi, Lo Auto, Hi Auto.) If Dry Cool is selected, you will not be able to set the Fan mode. Push the dial to accept.
- The system now runs in the selected HVAC state (cool/heat) and fan speed, related to the Setpoint Temperature.

3. Running in any mode: Turning the knob will change the Setpoint Temperature. Push to accept or let the system automatically "accept" the setting after 7 seconds.
4. Turn the system off: With the system running, push the Selection Knob. Rotate until the HVAC State is "off" and push the knob again.

	In Alliance trailers, only the middle thermostat has a furnace connected.

Coleman Mach Air Conditioners

The Benchmark main living area (Living Room and Kitchen) will utilize a "direct cool" Coleman air conditioner. This unit are mounted on the exterior roof of the RV with a combination shroud mounted on the inside ceiling of the RV. This method of direct cooling (compared to using ducts) as it is significantly more efficient than your typical ducted system.

The bedroom areas at each end of the RV will utilize a ducted Coleman air conditioner system. Due to the nature of the design in these spaces, containing multiple rooms and areas that can be isolated with doors, a ducted system is utilized.

Each air conditioner will be operated by its own individual thermostat.

The ability of the air conditioner to maintain the desired inside temperature depends on the heat gain of the recreational vehicle. The size of the vehicle, amount of window area, amount of insulation, direct exposure to the sun, outside temperature, and the number of people in the recreational vehicle may increase the heat gain to such an extent that the capacity of the air conditioner is exceeded.

As a general rule, air entering the air conditioner will be cooled about 15 to 20 degrees, depending on the outside temperature and humidity conditions. For example, if the air entering the return air grilles in the air conditioner is 80 degrees F., the air leaving the discharge grilles in the air conditioner will be 60 to 65 degrees F. As long as this temperature difference is being maintained between the return air and discharge air, the air conditioner is operating at its capacity. If the desired inside temperature (normally 80 degrees F) cannot be maintained, then the heat gain of the RV is too great for the capacity of the air conditioner.

Parking the vehicle in a shaded area, keeping windows and doors shut and avoiding the use of heat producing appliances in the vehicle will help to reduce the heat gain. When possible, the addition of insulation and tinted glass (especially in uninsulated vans) should be considered.

	How Do I Fix/Troubleshoot My Alliance RV Air Conditioner (AC)?

Coleman Mach AC Maintenance

⚠WARNING

DO NOT OPERATE YOUR AIR CONDITIONER WITHOUT THE FILTER INSTALLED.

Cleaning the AC Filter

As per the Maintenance Schedule, clean or replace the AC Filters:

1. Turn the AC unit off.
2. Each side of the AC ceiling assembly has a removable plastic grille and foam filter behind it. On each side, push the pair of tabs on the outer edge toward the center. The grilles can be stiff and difficult to bend.
3. Once loose on the outside edge, rotate and lower. The grille will come loose along with the filter.
4. Either clean the filter with a vacuum, or soap and water, and shake or gently wring out the water. If replacing, make sure to use identical replacement filters. Do not use more restrictive (i.e. HEPA) filters as the AC fan is not designed to use these and premature system failure can be expected.
5. Replace the filters in the reverse order of removal.

AC Coil Cleaning

As per the maintenance Schedule, one needs to remove the top shroud and clean the Evaporator Coils, Condenser coils, and Fan (as needed.) The process to do this standard service is beyond the scope of this manual. There are many sources of information on how to do this online, and RV service centers can also provide this service.

Suburban Furnace

Your trailer will be heated with two Suburban furnaces that provides 42,000 BTUs each. An exterior access door allows for ease of service. Each furnace is operated with the thermostat that is nearest to the end of the trailer where the furnace is mounted.

	Owner Empowerment Furnace Tips

⚠WARNING

DO NOT OPERATE THE FURNACE WHILE VEHICLE IS IN MOTION OR BEING TOWED.

	During initial firing of this furnace, a burn-off of excess paint and oils remaining from manufacturing process may cause foul odors and mild smoking for 5 – 10 minutes. This can also happen after several months with no operation due to dust build up.

To Turn the Furnace On

For the furnace to properly turn on, the propane gas valve must be fully open. Never attempt to operate the furnace with any of the gas valves partially open

1. Set the thermostat to Heat mode, and program the Setpoint Temperature as desired.
2. When the thermostat senses the room temperature at least 2 degrees below the Setpoint Temperature, the furnace fan motor will start. It will run approximately 30 seconds before the next step.
3. After the burn chamber has been purged for 30 seconds, the furnace will automatically attempt to ignite. At the outside cover of the furnace, you will hear a click and then the ticking of the ignitor.

⚠WARNING

DO NOT ATTEMPT TO LIGHT THE BURNER BY HAND.

   a. If the burner fails to light after several seconds of ignition attempt, the system will stop the ignitor (ticking stops) and the propane valve will close. The fan will run for another 2 minutes before another attempt is made to ignite (steps 2-3.)
   b. If the system fails to ignite after 3 cycles, the furnace will go into “Lockout Mode.” The fan will continue to run for several minutes to evacuate the burn chamber of any propane fumes.
   c. The system can be reset by turning the system off, then back on. See Troubleshooting for further assistance.
4. After a normal ignition, the system will continue to run the fan and blower until the thermostat senses the room is 1 degree warmer than the Setpoint Temperature. It will then shut off the burner, while the fan continues to run for several minutes to cool the burn chamber and ensure all exhaust gasses have been purged before stopping.

To Turn the Furnace Off

1. Set the thermostat Setpoint Temperature to a value at least 2 degrees warmer than the current room temperature, or set the mode to OFF.
2. The burner will shut off, but the fan continues to run for several minutes to cool the burn chamber and ensure all exhaust gasses have been purged before stopping.

Suburban Furnace Maintenance

Inspection

As per the Maintenance Schedule, and prior to operation after an extended period of not running the furnace:

1. Inspect the exterior furnace vent for debris, spider webs, animal presence, or soot.
2. If soot is found, shut down the furnace immediately and contact a qualified service provider to address incomplete burning of the fuel.

3. Inspect the return air location to assure no blockages exist. The return air vent is located below stair steps on either end of the trailer. Open the access panel at the stairs and use a flashlight to inspect behind the furnace. Ensure no debris or excessive fiber buildup (from rugs, pet fur, etc.) has occurred. If found, ensure area is clean before furnace is used.

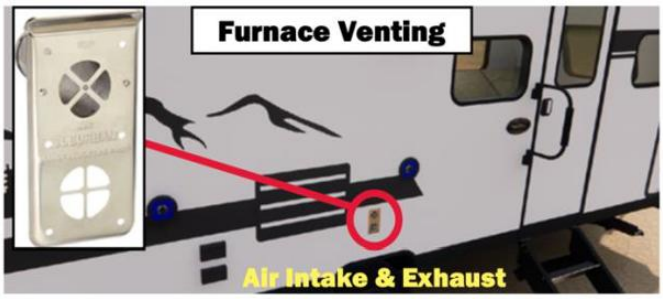


Figure 48. Exterior furnace vent.

Fireplace

Your RV is equipped with an electric fireplace with a rating of 5100 Btu. You'll be able to use this to help knock the chill off on cold days, this fireplace is not intended to heat your entire RV nor will it do so.

You can operate the fireplace at the control panel on the fireplace itself or with the remote.

Control Panel

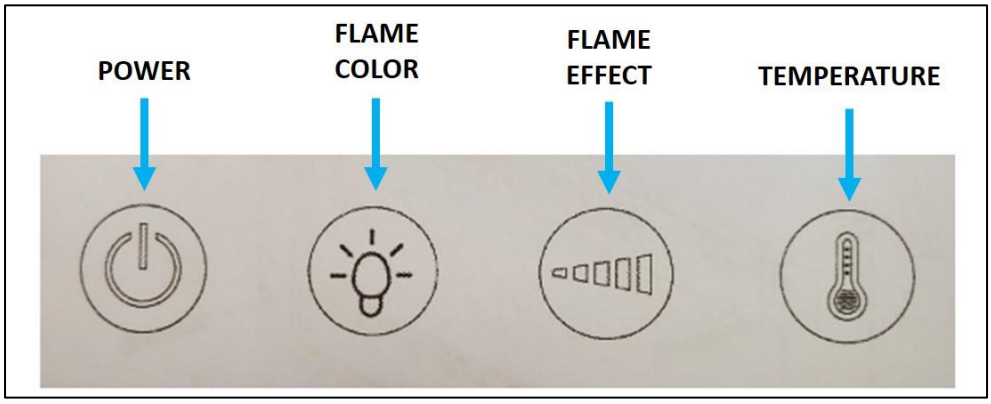


Figure 49. Fireplace control panel at the bottom center.

- **Power button** – Press this button to turn the fireplace on. The unit will beep. Press again to turn the fireplace off.

ℹ	The fan will continue to run for 60 seconds without heat.

- **Flame Color** – Press this button to change the flame color. The unit will beep – press once for orange, press twice for an orange'ish blue, press three times for blue

- **Flame Effect** – Press this button to change the flame effect. The unit will beep. Press again to decrease the flame intensity. There are 6 light settings for your selection. The flame optics will go lower under the sequence of 6,5,4,3,2,1. Pressing the button again will stop the flame effect.
- **Temperature** – Press this button to set the temperature. The unit will beep. Press to set the desired temperature. When desired ambient temp is reached, the heater will automatically stop heating. When the ambient temperature drops below the set point, the heater will resume heating.

Remote Control

- **Fahrenheit Vs. Celsius** – Press this button to toggle between the two temperature scales.
- **Flame Effect** - Press this button to change the flame effect. The unit will beep. Press again to decrease the flame intensity. There are 6 light settings for your selection. The flame optics will go lower under the sequence of 6,5,4,3,2,1. Pressing the button again will stop the flame effect.
- **Up and Down** – Press these buttons to set the desired temperature.
- **Power Button** – Turn the unit on and off with this button.
- **Time Function** – Press this button for timer function. The letters “0H” to “8H” will appear on the LED screen. “OH” means there is no set running time and the heater will run continuously. The letters “1H” thru “8H” mean the number of hours that the heater will operate before shutting off.

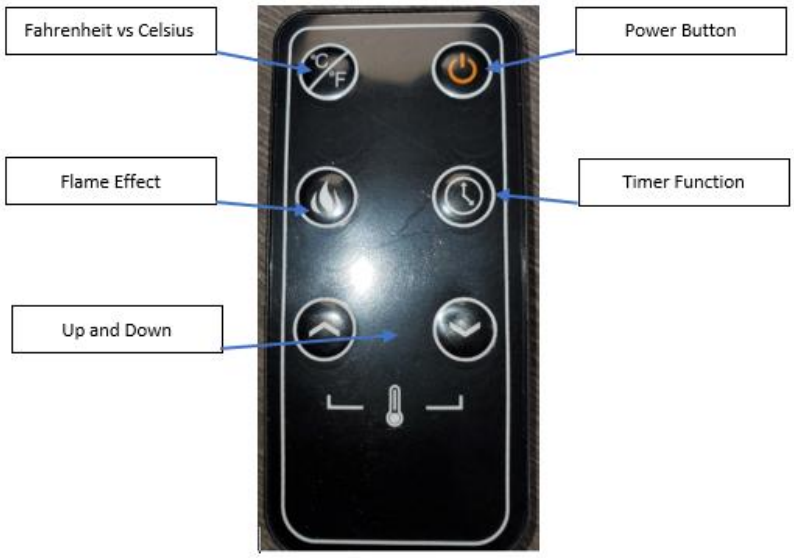


Figure 50. Fireplace remote interface.

	The battery in the remote is a CR2025 battery.

	If the fireplace will not run, verify the AC outlet in the space behind the unit is providing adequate power. If not, have a qualified RV Technician verify the plug function as well as checking the relay mounted in the bottom of the kitchen island. This relay diverts power to the dishwasher (if installed) or device(s) running on the provided dishwasher outlet.

	How to Fix/Troubleshoot Your Alliance RV Fireplace

Ventilation

Ceiling Fan (if equipped)

The ceiling fan mounted in the living area of the trailer is controlled by a switch usually mounted near the rear wall of room. It has a toggle switch for the light, and a multi-position slider to control the fan operation, from OFF to HIGH.

Figure 51. Ceiling fan control.

Maxxfan Dome

The ventilation fan installed on the wall in the bathroom is a round Maxxfan Dome unit. The unit has a black button on the handle (in the center) which opens and closes the vent to the outside. At the top of the inner circle (above the screen) is a pushbutton to turn on the fan.

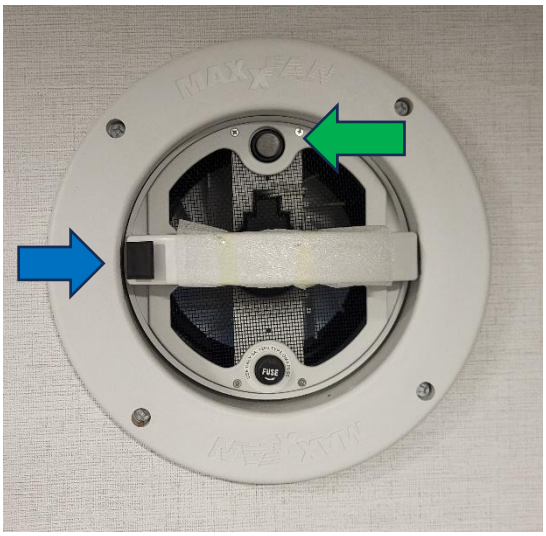


Figure 52. Maxxfan Dome. The fan power is controlled by the upper button (green arrow.) The vent is opened and closed with the left side button (blue arrow.)

Range Vent

The microwave or microwave/convection oven (if equipped) situated above your stove has a built-in fan. This will be covered in the Appliances section to follow.

APPLIANCES

120 V Residential Refrigerator

If the trailer was equipped from the factory with a 120 V residential refrigerator, this RV will have an inverter installed that will be converting 12-volt battery power to 120-volt power for assistance with powering the refrigerator and allowing it to be operated when not on shore power.

Please refer to your residential refrigerators user's manual for full details on this appliance.

120 V Refrigerator Maintenance

Properly caring for your refrigerator will give you years of trouble-free service, checking these few things periodically should be priority.

- Keep the food compartment and freezer clean
- Make sure the doors seal correctly
- Be aware of any performance changes that are not caused by overloading or weather

Microwave or Microwave/Convection Combination Oven

Your Alliance RV comes equipped with either an Over the Range (OTR) Microwave, or combination Microwave/Convection Oven. Please refer to the owner's manual of your appliance for a review of all features and operations of your appliance.

Range Vent (Vent Hood)

Your OTR (Over-the-Range) microwave is equipped with a vent fan and a light underneath the microwave. The fan works as a range hood to filter out smoke and other odors from cooking. Use your range hood anytime you cook, this will help maintain the air quality in your RV.

The exterior hood has closure tabs and a flap to keep cold air out when not in use. It is recommended to keep these tabs in the open position when cooking on the stovetop or using a convection cooking option (if equipped) in the microwave.

Be sure to read your microwave oven user's manual or convection oven user's manual (if equipped) for additional information.

Range/Cooktop

Your freestanding residential style gas range represents the newest in RV range design and is designed for reliable and trouble-free performance.

Before Using Your Range

Remove all the packaging materials and wipe the surfaces of your range with a damp cloth or sponge. When you turn on a burner or the oven for the first time, smoke and odors may be present. This is normal, make sure the room is well ventilated.

TV & STEREO

ALL TV

ALL TV is an effort to simplify the overall configuration and wiring for the AV system in your RV. We've taken steps to eliminate connection points, wall plates and the overall burden of work when trying to switch from one AV source to another.

	How To Setup My Alliance RV TV

TV Antenna

Your RV is equipped with a Winegard Air 360+. This unit provides signal amplification of television and radio signals and also is cellular internet ready and can be upgraded easily with the Winegard Gateway for 4G LTE & WiFi capabilities. It is a low-profile dome that requires no aiming or pointing to pick signals up. Be sure to read the full manual for your antenna for all features and functionality.

Figure 53. Winegard Air 360+ antenna. This combines TV, radio, and cellular (for Wifi) reception. Note that a Wifi router is not included, but purchased as an additional component.

At each new location, an initial channel scan must be run on each TV. Ensure that the antenna power supply is in the on position and the green light is illuminated. A scan will find any new channels that have been added in your area. Follow the channel scan instructions for your TV when running a new scan.

	Winegard Air 360 Installation and Owner's Manual

Winegard Booster Switch

The booster switch is located in the small cabinet below the RV, on the right side.

This panel provides power to the tv/radio antenna (Left button,) and the wifi router (right button,) if equipped. When the tv/radio button is depressed and the light is ON, then your TV and radio are receiving the TV antenna signal for Over-The-Air viewing. If this is OFF, then the system is routing the incoming Cable TV signal (from the cable connected to the CABLE port on the exterior Centralized Docking Panel at the rear left corner of the trailer.

Figure 54. Winegard booster switch, with booster and Wifi enabled.

	For information on connecting a satellite dish or campground-provided Cable to the to the AV system, see the plumbing section regarding the Centralized Docking Station.

The COAX wiring system is configured as shown in Figure 55. One component not shown in the diagram is the living room radio. It is connected to the antenna line between the Booster Switch and living room TV outlet. It is also important to note that while the Utility Panel shown is a different model, the satellite and Cable TV connections work the same.

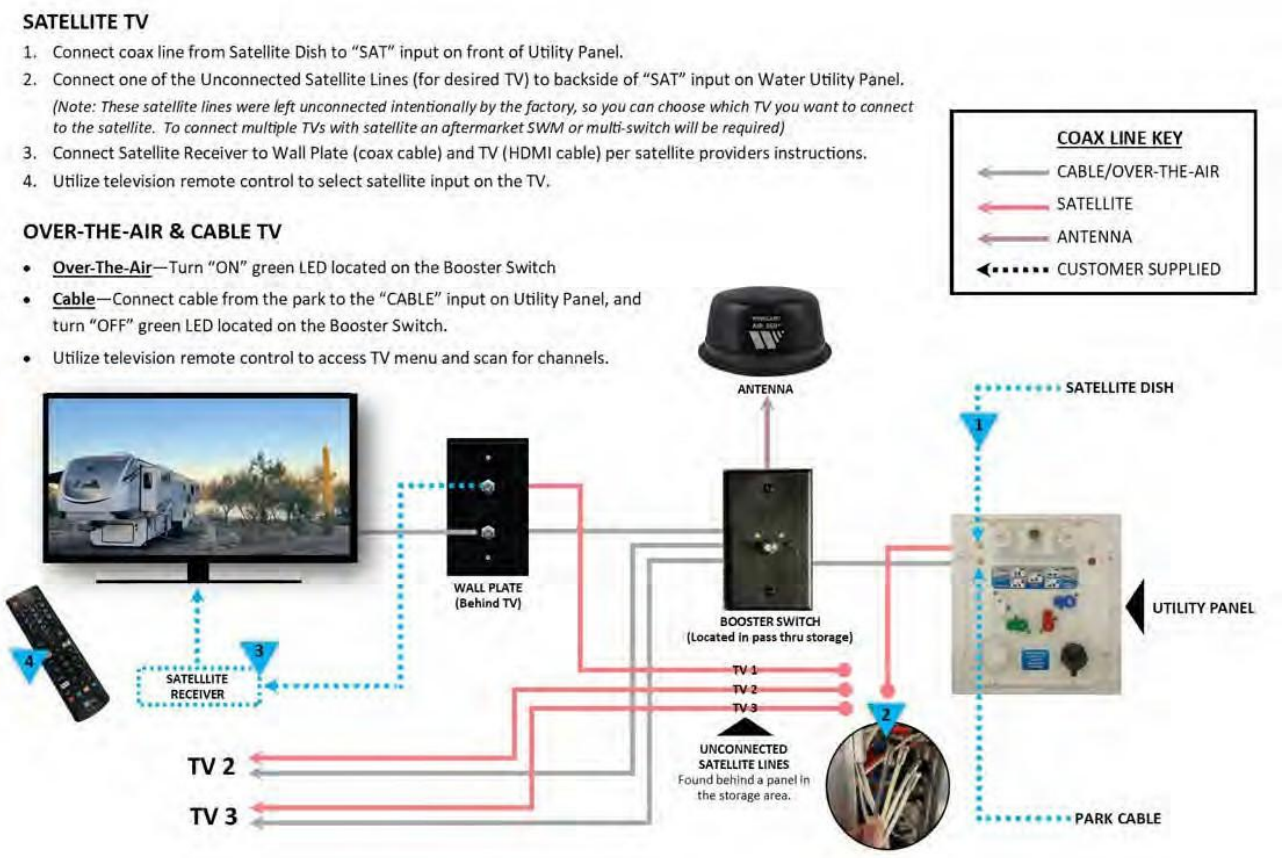


Figure 55. Alliance COAX wiring system.

In order to connect a satellite antenna, one will need to connect to the marked port on the Titus T1 panel and then use a Male/Male connector between that feed and the desired TV feed behind the booster switch panel with the group of white COAX wires. These wires are bundled together at the factory. On the 44 Benchmark trailer models, that bundle of wires is next to the flip top cabinet behind the sofa, while on the 42 Benchmark trailer models, they are in the overhead hutch.

Winegard Gateway (Wi-Fi)

The Winegard Gateway is an optional module with a pre-installed port location on the ceiling of the RV just below where your antenna is installed. Please refer to the following video on how to access the wiring and install the gateway should you wish to add it.

	WYKW: Winegard Gateway Installation and Booster Power

Televator

The Benchmark comes standard with a flat screen TV mounted on a Televator, a motorized drive to enable one to raise the TV for viewing, or lower it to hide it and be able to enjoy more views out of the living room windows. The switch for the televator is a momentary pushbutton rocker mounted on the right side of the cabinet, below the motorized blinds rocker switch. Use the switch UP or DOWN to move the TV accordingly.

Television & Stereo Setup and Operation

Due to the large variety of models of televisions and stereos installed in Alliance RV units, please review the owner's manual for your tv or stereo for operation. Links to the manuals can be found in the Alliance Academy Product Support section.

TV Signal Troubleshooting

If one or more of your TVs is not displaying the intended programming, please follow this troubleshooting list, in order, to help diagnose and fix common issues. If after following this list you're unable to achieve the desired viewing, please contact your Alliance Dealer or other service provider.

Symptom: One or more TVs are able to see many TV channels after performing a Channel Scan, while one or more are not able to see the same channels.

Possible Issues:

Loose COAX connection: Check all COAX connections.

5. Starting at the back of the problematic TV, check to ensure COAX cable is tight at the TV, and the Wall Plug.
6. Next, remove the wall plate (cable(s) still connected) and check to ensure the COAX connections on the back of the wall plate are tight.
7. If this TV outlet is near the living area radio, locate the COAX splitter providing a signal to the radio, and ensure all connections on that splitter are tight.
8. Finally, check all fittings on the back of the plate for the booster switch.

Damaged COAX cable: If all connections are tight, exchange the COAX cable from the problematic TV with the one from a working TV. If all channels are now found, discard the removed cable and replace.

Symptom: No TVs are finding the number of channels expected with Over-The-Air (OTA) reception. They have been able to receive OTA programming in the past.

Possible Issues:

Ensure the Booster is turned OFF.

Loose COAX connection: Check all COAX connections.

5. Starting at the back of the problematic TV, check to ensure COAX cable is tight at the TV, and the Wall Plug.
6. Next, remove the wall plate (cable(s) still connected) and check to ensure the COAX connections on the back of the wall plate are tight.
7. If this TV outlet is near the living area radio, locate the COAX splitter providing a signal to the radio, and ensure all connections on that splitter are tight.
8. Finally, check all fittings on the back of the plate for the booster switch.

Damaged COAX cable: If all connections are tight, exchange the COAX cable from the problematic TV with the one from a working TV. If all channels are now found, discard the removed cable and replace.

Symptom: No TVs are finding the number of channels expected with CABLE reception. They have been able to receive CABLE programming in the past.

Possible Issues:

Campground CABLE source: Ensure the campground cable feed is in working order at the power pole. Ensure tight connections from the campground CABLE source to the trailer at the nautilus panel.

Ensure the Booster is turned ON.

Loose COAX connection: Check all COAX connections.

5. Starting at the back of the problematic TV, check to ensure COAX cable is tight at the TV, and the Wall Plug.
6. Next, remove the wall plate (cable(s) still connected) and check to ensure the COAX connections on the back of the wall plate are tight.
7. If this TV outlet is near the living area radio, locate the COAX splitter providing a signal to the radio, and ensure all connections on that splitter are tight.
8. Finally, check all fittings on the back of the plate for the booster switch.

Symptom: A TV cannot connect with the satellite source. If the satellite receiver is connected directly to the dish/source, it works well.

Possible Issues:

Satellite input at Nautilus not connected to TV/Room feed.

4. Each satellite COAX connection has a white COAX cable connected to the back (in-wall side) of the plate. Remove the plate and ensure the lower COAX cable is white. Ensure the satellite receiver box is connected to that COAX port on the wall plate.
5. Near the booster switch, behind the wall, is a bundle of white COAX cables. Each cable connects to a different COAX plate. One will be for the service entrance at the Nautilus, one will be for the room of interest (for example, the living room.) Using a Male/Male COAX connector, ensure the two desired cables are connected.

6. If the problem TV is the living room TV, remove the radio from its mounted position and gentle pull it out. Follow the antenna cable to the splitter. Verify the COAX cable connection color. If the wire leading from the splitter to the TV is white, then go back to the TV wall plate and connect the satellite receiver to the non-white (other) COAX cable. Most satellite signals will not travel through a splitter well.

Loose COAX connection: Check all COAX connections.

5. Starting at the back of the problematic TV, check to ensure COAX cable is tight at the TV, and the Wall Plug.
6. Next, remove the wall plate (cable(s) still connected) and check to ensure the COAX connections on the back of the wall plate are tight.
7. If this TV outlet is near the living area radio, locate the COAX splitter providing a signal to the radio, and ensure all connections on that splitter are tight.
8. Finally, check all fittings on the back of the plate for the booster switch.

Damaged COAX cable: If all connections are tight, exchange the COAX cable from the problematic TV with the one from a working TV. If all channels are now found, discard the removed cable and replace.

INTERIOR

Front Lights

While the front lights may be on the outside, the switches for them are mounted in the front bathroom inside. The switches are mounted below the storage doors closer to the off door side (street side) of the bathroom.

Figure 56. The exterior front porch and docking lights (left) as well as the switch location inside the front bathroom (right, below doors.)

Window Blinds

Alliance RVs come with MCD Innovations' dual Day/Night roller shades on all windows in the main living area and have the night shades in the bedrooms. Periodically, some blinds may need adjustment of their upper stop setting, or their tension. Please see the maintenance section for instructions on these operations. Also see the maintenance section for cleaning instructions.

Motorized blinds

In the upper windows of the main living area, on the door side, we have provided three (3) motorized blinds controlled by a momentary pushbutton rocker switch installed on the right side of the TV cabinet. The switch is the upper one, above the Televator switch.

Window Blind Troubleshooting

Please refer to the following Tech Tip for a guide on troubleshooting and adjusting the MCD shades. Note that for single Night shade installations, the Tension/Speed Adjustment is always on the LEFT end of the shade (the fabric hangs down over the BACK of the roller tube) and the Set Point (AutoStop™) Adjustment is on the RIGHT end.

	How to fix/troubleshoot your roller shades in your Alliance RV

	MCD video library – extensive selection of how-to videos

Window Blind Maintenance

Adjustments of the shade can be found in the Tech Tip referenced in the Troubleshooting section. For cleaning and removing/replacing a shade, see below.

Cleaning

Day Shade

Clearview™ Solar Screens should be vacuumed periodically to remove accumulated dust, particularly when traveling in dry, dusty climates. We recommend using your vacuum cleaner's soft upholstery brush to gently vacuum each shade.

To clean your Clearview™ solar screens, use a sponge or a soft brush and water to remove stuck-on dust and most stains. A mild cleaning solution can be used to remove tougher blemishes. Rinse after cleaning by soaking a clean cloth in fresh water, wringing out any excess and wiping the areas where any cleaner was used – repeat as necessary. Use a towel behind the screen as you clean with a sponge or brush to keep splatter down.

Night Shade

Vinyl blackout shades material will typically clean up nicely with water using a micro-fiber cloth or non-colored paper towel. Wipe down with water after cleaning and dry thoroughly before raising the shade.

Fabrics have been Teflon treated and should be cleaned with a damp sponge. For stubborn stains, Woolite brand pet stain remover with oxygen may be used carefully and as directed. After using upholstery cleaner, you should consider reapplying the Teflon treatment by using a ScotchGuard™ brand upholstery protecting spray and following the directions for application on a "lightweight" fabric.

	Be sure the shades are completely dry before rolling them up. They may stick together if you do not let them dry. It is also recommended to spray ScotchGuard™ (on the cloth fabric shades only) over the area you cleaned if you use a chemical cleaner.

	How to use Mounting Clips | MCD Innovations

Removing and Replacing a Roller Shade Assembly: Metal Clips

Alliance trailers use shades with a metal clip which grabs the external ridges of the shade base. If one inspects the area between the shade assembly and the wall, you may see two or three (on longer shade assemblies) metal tabs visible between the shade and the wall.

	The procedure below is done without removing the valence from the wall. In the Alliance-produced video linked above, the valence is removed for easier access to the clips. Either method is acceptable.

To remove the shade assembly:

1. Insert a flat bladed screwdriver between the metal tab and the shade
2. Twist to release the back side of the shade base from the clip. The front will still be contained in the clip until the other clip(s) is/are removed as well.

To replace the assembly shade:

1. Hold the shade assembly with the shade rolling off the back of the roller tube away from you.
2. Roll the shade assembly back at the top, where the front edge will contact the top of the valence/metal clips first.
3. While pushing up and pulling forward (engaging the front of the clip,) rotate the shade assembly up in back. This will engage the tab- and after pushing against it as you continue to roll the shade back you'll hear the clip and feel the shade captured.

PLUMBING AND UTILITIES

Centralized Docking Station

Alliance RV uses the Titus T1 Water Management System for Benchmark trailers. With this system you'll have the ability to perform the following functions from a centralized and easy to access location:

1. Connect up to two (2) coax lines with satellite and cable
2. Fill your fresh water tank for dry camping.
3. Connect to city water at the camping site to supply water to fixtures
4. Rinse black tank to help control odors and prevent sewage buildup

Winterizing the trailer is accomplished by using the siphon hose connected to the water pump inlet and plumbing valves available via an access panel at the rear stairs. All of these operations are covered in this section.

Figure 57. Titus T1 Water Management System panel. It is located on the Off Door Side (ODS) of the trailer near the rear.

Cable and Satellite Connection

At the top of the panel are two COAX connections. The left port is connected to the Winegard TV antenna booster for incoming RV park cable. The right port is provided to enable Satellite connection. More details on these connections can be found in the TV & STEREO section.

Filling the Fresh Water Tank

The lower left hose connection port allows one to connect a standard water hose and fill the fresh water tank. As discussed below in the section Fresh Water System, there is an overflow tube below the trailer that will allow the safe overflow if the tank is overfilled. As with connecting to City Water, it is recommended to have a pressure regulator on the input hose to assure a location with abnormally high pressure does not damage the system.

To use the water from the fresh water tank, one only needs to turn on the Water Pump via the Monitor Panel switch. It is suggested to only do this when City Water is not connected.

⚠ CAUTION

DO NOT TURN ON THE WATER HEATER UNTIL YOU ARE SURE THERE IS WATER IN THE TANK.

If the trailer has not had water in the system, or it has been a long time (i.e. after storage,) it is suggested to turn on the hot water faucet in one bathroom while the water heater tank fills. During this time, you may hear air escaping from the valve but not see water. This is expected. Once the tank is filled, you will have water and air coming out from the faucet. Once the air has been purged, turn off the faucet. It is now safe to turn on the water heater.

	WYKW: Proper Water Pressure (PSI)

	WYKW: Properly Connecting Your Water Fill

Sanitizing the Water System

As per the Maintenance Schedule, at a minimum, it is recommended to sanitize the water system. You may also want to sanitize after having had water sit in the fresh water tank for too long, or if you've been using water systems with a natural well.

There are several commercially available sanitizing solutions and dual-solution systems, each having specific instructions that should be followed if used. It is also acceptable to use unscented bleach added to the water tank (using the following procedure) to obtain a clean system.

	For sanitizing, a solution of 1 gallon of water and one quarter cup of unscented household bleach should be prepared for every fifteen gallons of fresh water tank capacity.

1. Prepare the water tank
    a. Ensure you have access to clean water, a bucket, measuring cup, a funnel to pour the solution into the fresh water tank, and a standard garden hose.
    b. Drain any remaining water from the fresh water tank through the drain valve. Close the drain valve once the tank is empty.
2. Mix and add sanitizing solution
    a. In the bucket, add the appropriate amount of bleach to at least twice as much water. You may need to make more than one bucket of solution. It is best not to add straight bleach to the fresh water tank.
    b. Using a funnel, pour the solution into the fresh water tank through the hose connection port.
    3. Fill the fresh water tank
        a. Connect a standard hose to the lower left hose connection port to fill the fresh water tank.

   b. Slowly fill the tank with clean water, allowing the bleach solution to mix thoroughly.
4. Distribute the solution throughout the trailer's plumbing
   a. Turn on the RV's water pump using the Monitor Panel switch.
   b. Open all faucets (hot and cold water) one at a time, including the kitchen, bathroom, and outdoor taps.
   c. Let the water run until you smell the bleach solution at each faucet. Once detected, turn off the faucet.
5. Let the solution sit
   a. Allow the sanitizing solution to sit in the water system for at least 4 to 12 hours. This will ensure all bacteria and impurities are killed.
6. Flush the system
   a. Drain the fresh water tank completely using the drain valve.
   b. Refill the tank with clean water and run the water through all faucets to flush out the bleach solution.
   c. Repeat this process of draining, refilling, and flushing until the bleach smell is completely gone.
   d. Alternatively, you can drain, refill, and dump the fresh water tank, and connect the trailer to a city water supply to run fresh water through all faucets for a few minutes each.
7. Final Check
   a. Inspect the water system for any lingering odors or discoloration. If necessary, flush the system one more time with clean water.
   b. Once the system is clean and odor-free, it is ready for use.

Connecting to City Water

In order to connect a pressurized water source, use the lower right hose connection. Be sure to also connect a regulator between the city water source and the trailer to regulate the pressure to 45-55 psi. Once connected, turn on the water supply.

⚠CAUTION

DO NOT TURN ON THE WATER HEATER UNTIL YOU ARE SURE THERE IS WATER IN THE TANK.

If the trailer has not had water in the system, or it has been a long time (i.e. after storage,) it is suggested to turn on the hot water faucet in one bathroom while the water heater tank fills. During this time, you may hear air escaping from the valve but not see water. This is expected. Once the tank is filled, you will have water and air coming out from the faucet. Once the air has been purged, turn off the faucet. It is now safe to turn on the water heater.

	WYKW: Proper Water Pressure (PSI)

Dumping/Flushing the Black Tank

When dumping the contents of the Black holding tank, it is recommended to also flush the tank with water to remove as much of the contents as possible. The top-center hose connection is plumbed to the black tank rinse sprayer, mounted in the tank.

⚠CAUTION

THE BLACK TANK RINSE CONNECTION IS PLUMBED TO BOTH BALCK TANKS. BOTH TANK DUMP VALVES SHOULD BE OPEN WHEN USING THE FLUSH PORT.

Here is the recommended procedure to dump and rinse your black tank:

1. Connect a flexible sewer hose to the 4” outlet of the unit. As the Benchmark has two outlet positions, it is suggested to connect both to a single point with a single output drain hose.
2. Open both black tank dump valves to begin letting them drain.
3. Connect a hose to the upper-middle black hose connector on the centralized docking station. See Figure 57. Turn on the water to enable tank flushing.
4. Continue to let the tanks flush until the water runs clear out of both connections.
5. Turn off the water and disconnect the flushing hose from the centralized docking station.

⚠CAUTION

IT IS ADVISED TO ENSURE THE BLACK TANK FLUSH HOSE IS NOT LEFT CONNECTED TO THE TRAILER AT THE CENTRALIZED DOCKING STATION. WHILE NOT COMMON, THERE IS A RISK OF OTHER PEOPLE AT A CAMPGROUND ACCIDENTALLY TURNING ON THE WRONG HOSE AND FLOODING AN RV WITH SUCH A SETUP.

Winterizing: Using the Water Pump

In order to perform winterizing operations in the Benchmark trailer, Alliance has provided the necessary plumbing valves and inlet hose accessible via a panel on the rear stairs of the trailer as shown in Figure 58.

Behind this panel is the water heater bypass as well as an inlet syphon hose connected to the water pump through a diverter valve. Refer to the figures for more details.

Figure 58. Louvered panel on rear stairs. Remove this panel using the 6 screws to access the sanitizing and winterizing valves and plumbing.

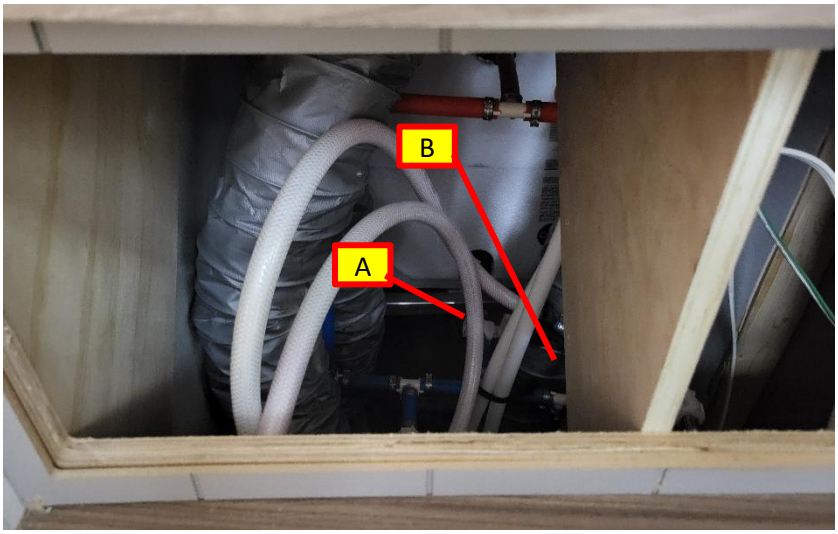


Figure 59. View of the sanitizing/winterizing plumbing with access cover removed. The white syphon tube is coiled at the front and the locations of the Water Heater Bypass Valve (A) and the Diverter Valve (B) are indicated.

The image below provides a better unobstructed view of both the Water Heater Bypass Valve and the Diverter Valve.

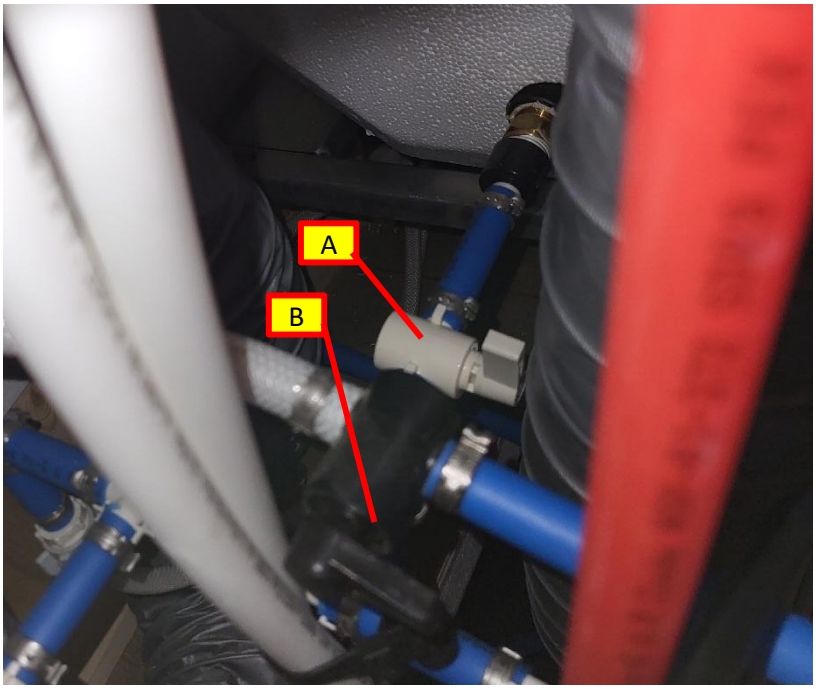


Figure 60. An unobstructed view of the Water Heater Bypass Valve (A) and Diverter Valve (B) underneath the stairs. In this configuration, the Water Heater is bypassed, and the diverter Valve is enabling the Water Pump to pull from the syphon hose.

The Water Heater Bypass valve, mounted on the inlet side of the water heater, is used to shut off supply to the water heater. The output of the water heater has a one-way check valve to prevent water in the hot water lines from flowing back into the water heater tank.

The Diverter Valve is used to select what source the Water Pump pulls from. In the horizontal position shown, it will pull fluid from the connected siphon hose. This is used to pull antifreeze fluid into the plumbing system. In the other position (the “run” position) it will pull water from the fresh water tank and send it through the trailer’s plumbing, including the water heater.

What follows is the full procedure to winterize the Benchmark trailer. It is helpful to have access to a dump station to drain the waste tanks (although with practice, you can do this procedure without having to empty the holding tanks.)

Tools and supplies needed:

- Air compressor with a tire chuck.
- A blow-out plug, with male garden hose connection and a tire valve inlet.
- 3-5 gallons of RV Antifreeze
- Towels to place on stairs while working with antifreeze
- A screwdriver with a #2 square drive tip (to remove the rear stair access panel.)
- Socket wrench with 1-1/16” socket and 4” extension for the water heater.

Winterizing process:

1. Make sure the water heater is off, and the water inside is cold. If it is not, turn on a hot water faucet to run out the hot water. Continue to let the system run until the water coming out is not hot.
2. Disconnect the city water.
3. Open the low point drains on the trailer. See the next section for a reference.
4. Open the fresh water drain to ensure that tank is empty. When all water has drained out, close the valve.
5. Drain the water heater.
    a. Open the water heater cover.
    b. At the top of the water heater, pull the tab out on the Pressure and Temperature relief valve (T&P Valve). See Figure 65.
    c. Use a 1-1/16" socket to remove the Anode Rod at the bottom. Set this aside for re-insertion when you go to de-winterize the trailer.
    d. Replace the water heater cover.
6. Now open all faucets in the trailer to let water drain as much as possible.
    a. Kitchen (sink, and refrigerator ice maker if you have connected it and can open it with a manual valve.)
    b. Bathroom (sink, shower, and hold the toilet pedal open to allow water to drain from the lines.
    c. Outside faucets (usually at the rear of the trailer but may be in other places depending upon the trailer model.)
7. Now remove the access panel show in Figure 58 and pull out the siphon hose. Reach into the area behind the water heater and rotate the **Water Heater Bypass Valve** so it is closed, perpendicular to the pipe direction as shown in Figure 60. Also ensure the **Diverter Valve** is rotated as shown in the same figure, so that the Water Pump will pull from the siphon hose.
8. On the air compressor, **be sure to set the maximum pressure to no more than 40 psi.** This is critical to ensure no damage to your RVs plumbing fittings. Install the blowout plug into the City Water fitting (lower right) on the Centralized Docking Station. Connect the air compressor using the tire chuck and blow out all the lines until there is no more water coming out. Disconnect the air compressor and remove the blowout plug. Replace the cover on the city water inlet.

	**Using antifreeze fluid after blowing out with air**: It's often asked if this is needed. The answer is YES. Using an air blow technique alone can result in low points in the system retaining some pockets of water, and if the system has a tankless water heater it is very important to assure all water is out of the system.

9. Now close all open valves on the trailer.
10. Returning to the rear stair access, open a bottle of RV antifreeze and place onto the stair below the access hole. Insert the siphon hose to allow the fluid to be drawn into the system.
11. Turn on the water pump. The antifreeze will be drawn into the system until the set pressure is reached. **Be sure to be mindful of how much antifreeze is left in the current bottle as the next steps are taken. Try not to let the bottle run dry.**

12. Now, with the water pump still on, turn on each faucet until you see pink fluid run out of the faucet, proving that line is full of antifreeze.
    a. It is best to start at the rear bathroom, then move to each faucet farther and farther away from the rear stairs.
    b. As the bottle gets low, change out the bottle for a fresh bottle. Pour remaining fluid from one bottle into the next as needed.
    c. Make sure to run both the Hot and Cold at each location until pink fluid comes out.
    d. Don't forget the toilets and outside water faucet.
    e. Save the Washer and Ice Maker (if connected) until last.
13. In order to complete the Washer winterizing, make sure enough fluid is in the bottle (usually at least ½ gallon) and follow the directions in the Owner's Manual for your washer.
14. Follow the instructions provided in your refrigerator Owner's Manual to winterize the ice maker (if equipped and connected.)
15. Once all inside and outside locations have been completed, be sure to return to the Low Point Drains, and open each one until antifreeze comes out, shutting them when complete.
16. Once all locations have been done, remove the siphon hose from the last bottle and wipe off. Return the hose to the under-stair space and re-attach the panel.
17. As a last step, be sure to pour a few ounces of antifreeze down each drain.
18. Depending upon how much water flowed through the system into the drains before there was antifreeze, you may wish to empty the holding tanks.

Fresh Water System

The fresh water system is made up of two inputs, a portable fresh water holding tank with a pressure demand 12 volt water pump and a city water connection that provides water to the system and bypasses the fresh water holding tank and the water pump to supply your fresh water from an already pressurized source.

The fresh water system consists of:

- **A fresh water holding tank** which is filled at the docking station (covered above). The tank is emptied/drained at a low point drain on the exterior beneath the fresh water holding tank, see Figure 61. There is a large, white, manual pull dump valve to allow for rapid draining if putting the rv into storage, or if draining water to enable travel. Always be sure to drain your freshwater tank between uses, and during storage in the winter, this will prevent any stagnation that can cause water to smell and/or taste bad. This tank is also equipped with a safety overflow drain. This drain is connected to the top of the tank, and will come straight out of the underbelly of the RV beneath the fresh water tank. It is blue, ½" in diameter, and

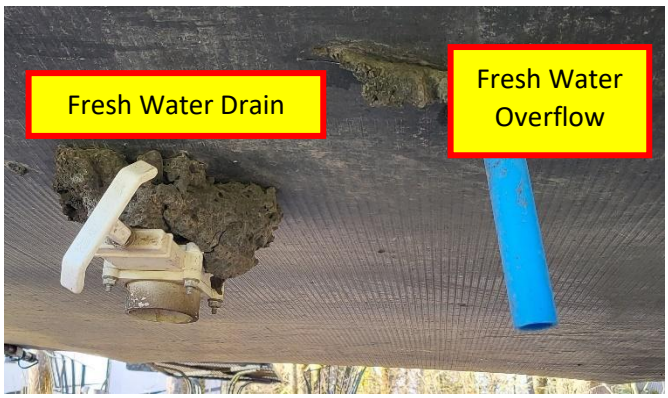


Figure 61. Fresh water drain and overflow.

has an open end. This drain should never be plugged or obstructed. Keeping this line open for safety overflow will prevent damage that can occur from overfilling your fresh water tank.

	WYKW: Can I Travel With Full Tanks?

	The fresh water tank does not have a gravity fill capability. The water pump siphon method must be used. See above section "Fill and/or Sanitize the Fresh Water Tank with the Pump."

- **A water pump connected to the fresh water tank**. When not hooked up to an external water supply, the RVs fresh water tank is utilized. The water is pumped from the fresh water tank by the water pump. When the power is switched on, the pump works automatically whenever a faucet is on. The water pump is self-priming and when the system pressure drops below 55psi, the water pump will energize and re-pressurize the system to that 55psi.

	If the water pump is on, and no faucets are running, the pump should not run after it pressurizes the plumbing lines. If your pump runs for short periods of time (anywhere from several seconds between runs up to a couple of hours between runs) then you either have a leak or there is a problem with the inner workings of the pump.

- **A city water system connection**, which is a water hose connected to the docking station (covered above). When connected and turned on, the system will automatically pressurize. It is always a good idea to bleed the system by turning on a hot water faucet until the water runs smoothly and there is no air present.

⚠CAUTION

HIGH WATER PRESSURE CAN DAMAGE YOUR WATER SYSTEM. DUE TO PRESSURE INCONSISTENCIES IN POTENTIAL WATER SOURCES, AN RV WATER PRESSURE REGULATOR MUST BE USED BETWEEN THE HOSE AND THE CONNECTION POINT TO ENSURE AN ALWAYS CONSISTENT WATER PRESSURE COMING INTO THE RV. A SAFE SETTING IS 45PSI.

When draining your fresh water system (required for winterization, covered in the centralized docking station portion of this manual, when the RV is not being used and/or is being stored in the cold or winter months), all tanks should be emptied. This will prevent damage from freezing. Every Alliance RV has **low point drains** as well as a **fresh water drain (and overflow)** in which the fresh water system can be evacuated. These low point drains will be located on the off-door side of the RV near the water heater directly beneath the RV and coming out of the underbelly. These are shut off valves that can be opened and closed with a thumb turn, see Figure 62.

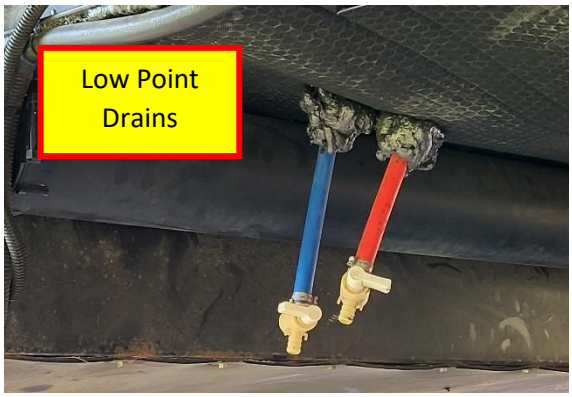


Figure 62. Water system low point drains.

	The Fresh Water Drain & Overflow, as well as the Low Point Drains may be located in slightly different locations depending upon the model of trailer but will always look similar.

Waste Water System

	WYKW: Best Practices for Holding Tanks

The waste system contains holding tanks. The quantity of tanks along with location is dictated by the floor plan of the RV.

- **Black tanks** hold toilet waste. There are some things to note with black tanks. Black tanks typically will need a digester/deodorant (talk with your RV dealer for recommendations). Black tanks require RV toilet paper. RV toilet paper breaks down quicker and is specifically designed for this type of waste water system. You'll find that this toilet paper breaks down more quickly and allows the waste water to flow more easily during the dumping process. A black tank's monitoring electronics can be adversely affected by debris handing up on the reading probes. For this case, we have installed a tank flush for your black tank(s) to assist in keeping the probe indicators clean so that you have accurate readings on the tank's levels. It is advised to always keep the black tank(s) closed until full. This allows for solid waste to flow out of the tank along with liquid. When left open, the liquid will run out, leaving the solid to build into a very difficult to remove pile.

⚠CAUTION

DO NOT USE THE BLACK TANK FLUSH SYSTEM WITHOUT HAVING THE BLACK TANK VALVES OPEN. IF CLOSED, THE TANK COULD OVERFILL.

- **Gray tanks** hold your sink, shower, and laundry waste water. Gray tanks require less maintenance due to the difference in waste produce making its way into the tank. It may be ideal to dump black tanks first and then your gray tanks, the gray tank running thru the main dump will help in keep the pipeline cleaner.

Plumbing System Throughout the Trailer

Your trailer is plumbed with ½" PEX B piping. Clamp-style fittings are used at all locations, and all fixtures have a shutoff valve to ensure if there are problems, you can turn off the water to that fixture without disabling your entire water system. These valves are usually located very close to the fixture, for example under a sink below the faucet. However, for some fixtures they may be in the storage space below the trailer floor (in the case of a shower or washer supply.)

	WYKW: Plumbing Shutoff Valves

The drains for sinks and showers may use conventional p-traps, or they may use **waterless p-traps** due to space or other constraints.

Figure 63. Waterless p-trap under a shower location.

	WYKW: Waterless P-Traps

	If you should notice foul smells coming from drains with a waterless p-trap, it may need replacement. Sometimes the "duck bill" can be left open to permit odors to backflow into the RV space. These are typically only available at RV parts supply locations and online.

Figure 64. Air admittance valve.

Another item that may be used in the plumbing system is an **air admittance valve**. The air admittance valve is a device designed to allow air to enter the drainage system to balance the pressure. These can sometimes fail and need replacement. They can be found at local big-box hardware stores.

Water Heater

A Suburban SW12DEL with a 12-gallon capacity supplies your RV with hot water. This water heater has a porcelain lined steel tank to fight against corrosion and foam insulation around the tank for added insulation and protection.

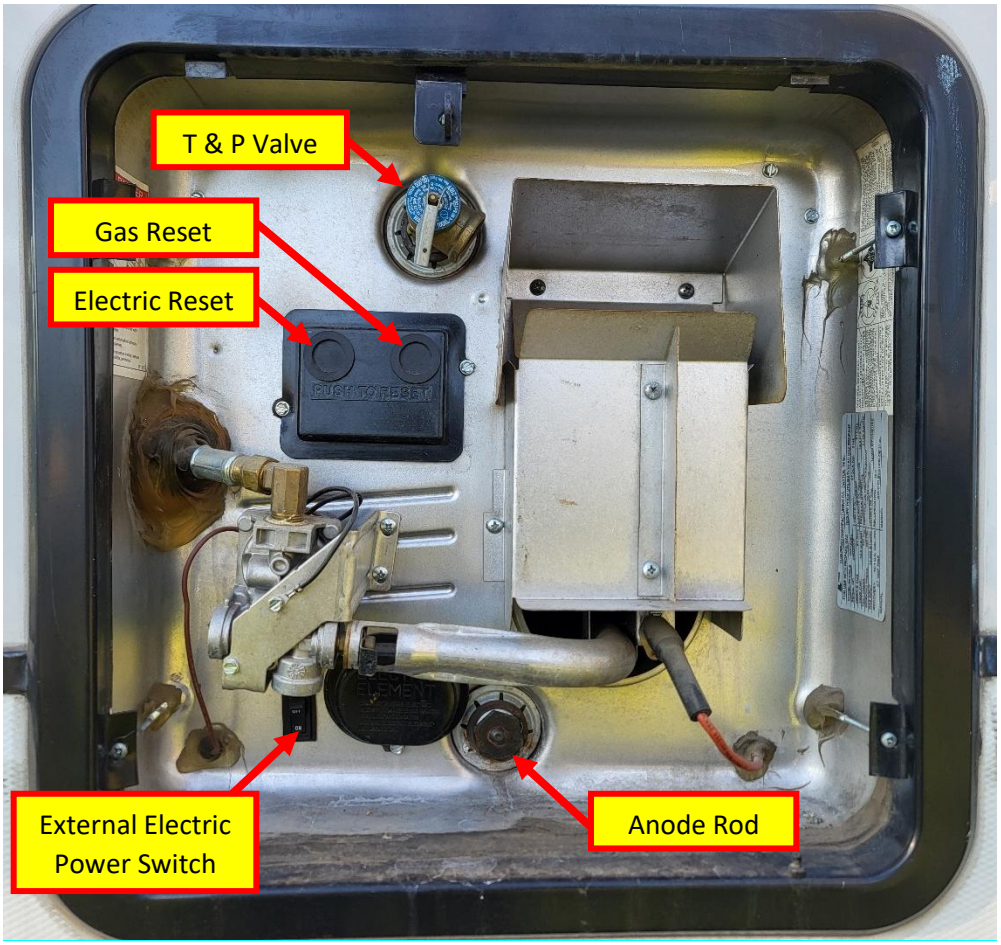


Figure 65. Suburban water heater.

When initially filling the water system, it's recommended to open the top Temperature & Pressure (T & P) safety valve once you have connected to city water or turned on the water pump. Let the air escape until you see water starting to come out of the top valve. Then close the valve, it is now safe to turn on the water heater in gas and/or electric mode.

	WYKW: Maintaining Your Anode Rod

⚠WARNING

DO NOT TURN ON THE WATER HEATER WITHOUT HAVING WATER IN THE TANK.

The water heater may use either LP Gas or 120 V electricity, or both at the same time. Simply turn on either the “Gas” or “Electric” switch on the Monitor Panel to enable water heating.

Figure 66. The water heater power switches on the main Monitor Panel. The DSI FLT light is highlighted on the upper right. These are also shown in Figure 39C and D.

	When using the Gas option, you may see the DSI FLT light illuminate on the Monitor Panel, refer to Figure 66 and Figure 39C and D. This is normal and simply means that the system is expecting a gas flame to be burning, but it has not yet started. Once the gas ignition system safely starts the water heater burner, the light will go out. If the light stays illuminated, you should turn off the Gas switch and contact someone for service.

It should be noted that heating water from cold/ambient temperature, with the water heater being cold itself, is a lengthy process with only electricity. This is because not only the water must heat up, but also the tank and inside surfaces of the insulation. Once the system is hot, electric heating (only) tends to heat water sufficiently quickly for most users. The gas may be used as needed to hasten the water heating where there are large demands on the hot water (i.e. multiple showers, or running laundry or a dishwasher.)

⚠WARNING

YOU MUST READ THE USERS MANUAL FOR THIS WATER HEATER.

Water Heater Troubleshooting

	There are times when the over-temp limit switch is activated (when water temp rises above 180°F) and the system will not heat water. If this happens, wait until the water is below 110°F and push the reset buttons indicated in the image above. If the problem repeats, do not use that side of the water heater (electric or gas, as appropriate) and contact an RV service center for repair.

	WYKW: No Hot Water Quick Fix (On Demand or Tank Water Heater)

Symptom: The hot water is suddenly smelling like rotten eggs. We have recently moved to a new site/campground.

Possible Causes/Suggested Actions: The water heater normally uses a Magnesium Anode Rod. However, this can sometimes react with water supply minerals to produce this effect. Switch the Anode Rod to an Aluminum Anode Rod to alleviate this problem. Be sure to change back to a Magnesium rod when you travel to another location.

Symptom: I have turned on the electric water heating element and waited a very long time (at least 60 minutes,) but the water isn't even warm.

Possible Causes/Suggested Actions: There are a couple of common things that happen in this scenario:

- The outside electric power switch is still off. Refer to Figure 65 in the lower left corner. This switch is mounted behind the face cover of the water heater and is sometimes hidden behind components on the face of the water heater. This needs to be turned on, as well as the inside switch. It is okay to leave this switch on permanently.
- The electric element can be quickly damaged if it is turned on when there is no water in the tank. If the gas side of the water heater heats water without a problem, contact an RV service provider to diagnose the electrical side non-operational status. It may be helpful to denote this potential issue.

Symptom: I have turned on the gas-powered water heater and the system won't light the flame. The FLT light stays illuminated.

Possible Causes/Suggested Actions: There are a couple of common things that happen in this scenario:

- Check to make sure at least one propane cylinder has fuel and is turned on. One of the common ways to assure this is to run the gas cooktop or furnace to assure propane is burning in either one of those appliances.
- You are at high altitude. At altitudes above 4,500 feet, the burner needs to be adjusted (derated) to run with the thinner air.
- If neither of these cases apply, contact an RV service provider to determine the cause.

Symptom: Water is weeping from the Pressure & Temperature (P & T) valve.

Possible Causes/Suggested Actions: This can happen if the air pocket at the top of the water heater has been reduced (this can happen through normal usage) or if the valve is developing calcification or other deterioration. Follow this process to correct:

1. Turn off the water heater (both gas and electric.)
2. Turn off cold water supply.

3. Open a faucet in the RV.
4. Pull out the handle of the Pressure & Temperature (P & T) relief valve and allow water to flow from the valve until it stops.
5. Release the handle of the P&T valve, it should snap closed.
6. Close the faucet and turn on the cold water supply. As the tank fills, the air pocket will develop.

You may need to repeat this procedure to get the weeping to stop. If it does not, contact an RV service provider to replace the T & P Valve.

Water Heater Maintenance

Safely Drain the Water Heater

1. Turn the water heater off, both gas and electric.
2. In the RV, or at the outside shower, turn on a hot water faucet. Let the water run until it's evident the hot water has been depleted. This assures no pressure in the tank and no scalding water. Close this faucet.
3. Turn off the water pump and ensure any City Water is turned off.
4. Open a hot water faucet in the RV, preferably both the Hot and Cold side of the main shower.
5. Remove the drain plug/anode rod from the water heater. It will be easiest using a 1-1/16" socket with a minimum 4" extension.
6. Open the Temperature & Pressure (T&P) relief valve to allow water to drain.

Anode Rod Inspection

As listed in the Maintenance Schedule, perform the following inspection procedure on the water heater:

1) Safely drain the water heater. See the procedure Safely Drain the Water Heater.
2) Inspect the anode rod. It is normally ¾" in diameter and approximately 9" long inside the drain plug. At the center of the anode is a steel rod.
3) If less than 50% of the material has been removed, you may continue to use the rod. If in doubt, replace the anode rod.
4) Apply Teflon tape to the anode rod threads.
5) Insert the Anode Rod and secure on the water heater. Do not overtighten.
6) Ensure all faucets are off in the trailer and turn the City Water supply back on or turn on the water pump.
7) Allow the water heater tank to fill until water is excaping from the T & P valve. Close the valve.

Storage

When the RV is not in use or is being stored, the water heater must be drained. This will prevent damage to the water heaters lining and protect the water heater in the cold. Follow the procedure to **Safely Drain the Water Heater**, after you have disabled power to the water heater.

Winterization

Refer to the Centralized Docking Station section of this manual.

Toilet

Alliance RV uses the best in class 310 series Dometic RV toilet. Each toilet is 100% factory tested to assure watertight seal in the toilet bowl before it even leaves Dometic. After installation by Alliance RV, the entire waste system is flood tested for leaks by filling the system with water to the rim of the bowl.

Operation

To use the toilet, first add water to the toilet by pressing the flush pedal only partially down. Water will flow into the bowl while the flush ball remains closed. If the flush ball moves, let up slightly on the pedal until the ball closes. Adding water to the empty bowl acts as a trap and helps prevent holding tank odors from entering the RV. Adding water is always recommended prior to flushing solids and/or toilet paper.

To flush the toilet, press the pedal down until it contacts the floor. Release the pedal after the flush is complete. When flushing liquids, quick press of the pedal for 1 to 2 seconds will do. When flushing solids, the pedal should be pressed until the contents are rinsed from the bowl. Never flush longer than needed as this will cause holding tank capacity to be used up and require more frequent black tank dumps. A small amount of water should collect in the bowl after a flush, this will create an airtight seal. Further instructions and information can be found in the toilet owners/users manuals.

	If water will not stay in the bowl, you may have to add plumber's grease to the Flush Seal (the black rubber piece separating the bowl from the flat bottom valve.) You can shut off water behind the bowl, have a helper hold down the flush pedal, and apply the grease in a thin film around the bottom and inside of the seal. If this doesn't solve the problem, replacing the Flush Seal is an easy repair. Be mindful of not dropping the seal into the tank, and make sure to orient it correctly as well.

	WYKW: Toilet Ball Valve Quick Tip

	How Do I Fix My Alliance RV Toilet?

Dumping Your Waste Tanks – Manual Cable Pull Valves

Benchmark trailers are equipped with manual cable termination valves. These valves are located on the lower edge of the trailer skirting on the off-door-side (street side) of the unit. Depending on floorplan, there may be two groups of valves, one near the front and one near the rear.

Waste Tank Pull Valve Maintenance

The handles can become difficult to pull over time. Here are a couple of points to keep in mind:

- If possible, use waste tank chemicals that provide lubrication to the seals of the waste tank valves.

- When open, you might find it useful to add silicone lubricant to the valve push rod. This will allow it to work into the cable sleeve over several cycles.
- Always be sure to push the valve closed in such a way as to direct the closing force straight into the pushrod. Pushing sideways will often cause a bent pushrod. As they are Aluminum, these can be carefully straightened.

Should you need to access your dump valves, late model year trailers will have a Cloroplast patch material attached under the trailer in the location needed to access the valves. One may remove the patch material, cut a U-shaped hole in the belly material (make sure the top of the "U" faces forward, and the opening toward the rear of the trailer,) and then use this patch to close up the opening.

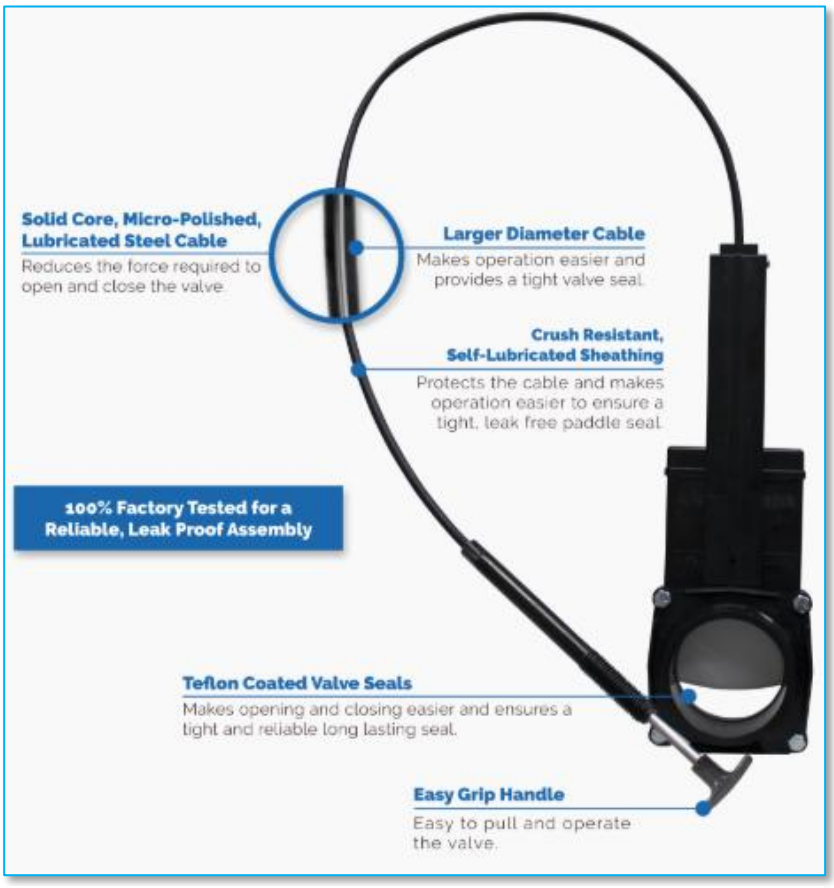


Figure 67. Valterra manual waste tank valve assembly.

Monitoring Your Water Systems

The Monitor Panel shows the fill levels of the fresh water, grey water and black water tanks. You will also operate the power to the fresh water pump and the water heater. These switches will illuminate while in the on position.

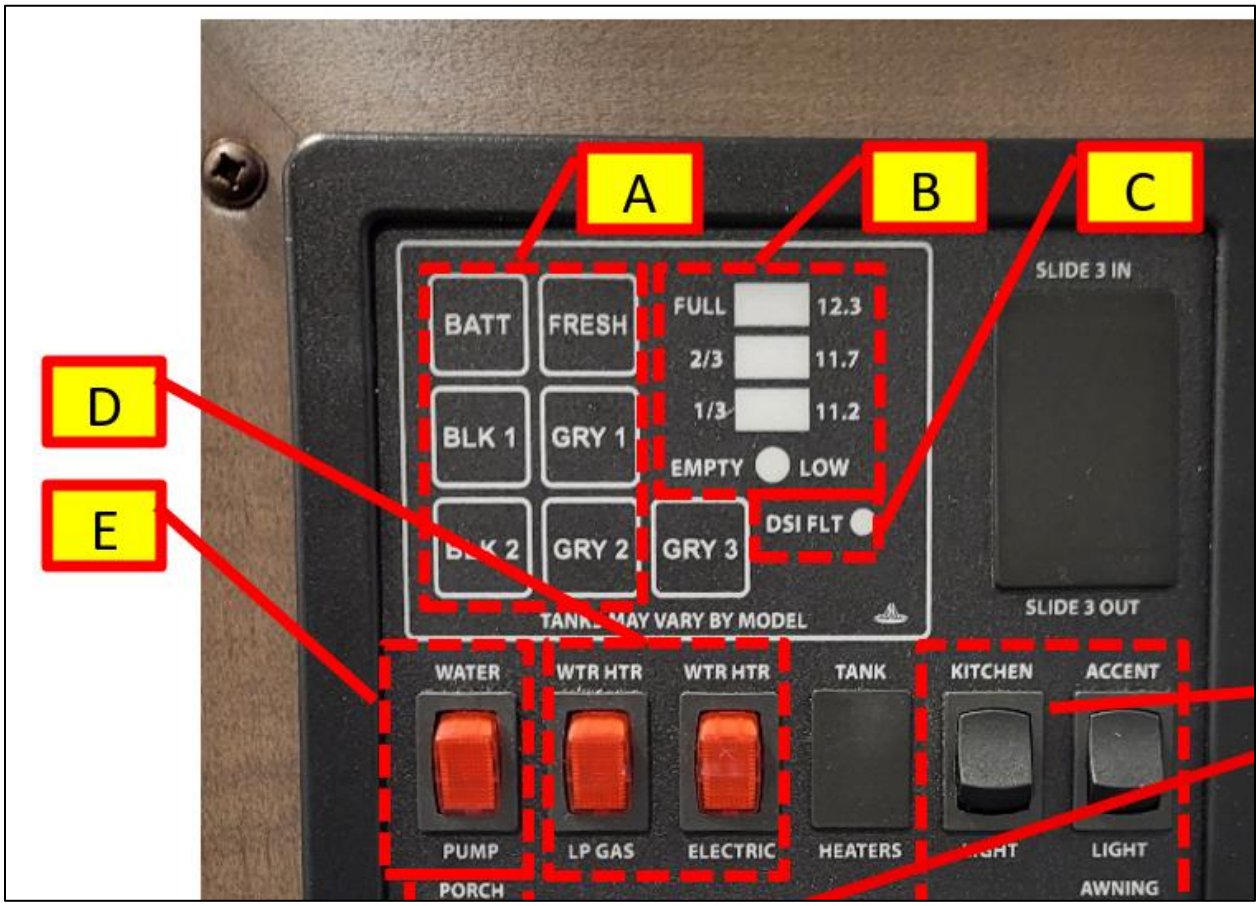


Figure 68. The upper portion of the monitor panel showing tank and water controls. This figure has the same indicators as Figure 39.

When an individual button is pressed (Figure 68A), the lights at the right of the switch (Figure 68B) illuminate to reveal the level of the selection pushed. For the battery level indicator, the voltage levels are shown.

	The panel is universal for several models. As such, it has available buttons to check up to 5 waste tanks. Your floor plan may have less. The number of waste tank pull handles will be the true indicator of the number and types of tanks on your trailer.

The water pump is operated with the water pump switch (Figure 68E) as well as the gas and electric options for the water heater (Figure 68D). The gas water heater switch enables propane operation of the water heater while the electric switch enables electric operation of the water heater. Both switches being on will allow for a quicker hot water recovery. The water heater can be operated in electric or gas only by turning one of the individual switches on.

Washer / Dryer

The Benchmark comes standard with a washer and dryer set. Beside the washer is a utility panel providing a Hot and Cold shutoff valve, as well as drain into the closest Grey tank. Please refer to the Alliance Academy for the appliance Owner's Manuals.

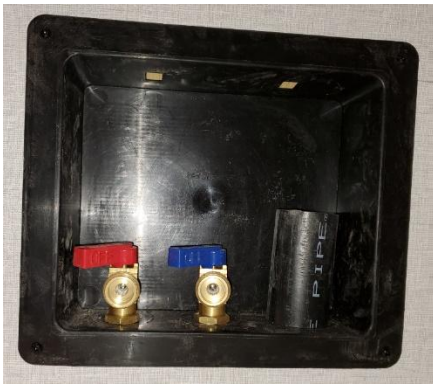


Figure 69. Washer connections and drain.

Dishwasher (if equipped) / Dishwasher Prep

Depending upon model, your Benchmark may come with a dishwasher. Manuals for your dishwasher can be found on Alliance Academy.

If not equipped, there is a prepared plumbing connection point and electrical plug underneath the sink. Please call your dealer or Alliance RV for additional information on how to install a dishwasher in your RV.

FURNITURE

You'll find a range of styles and sizes of furniture in your RV, below is some information on the different types of furniture you may see in your RV.

⚠WARNING

MOVING PARTS CAN PINCH, CRUSH OR CUT. KEEP CLEAR AND USE CAUTION.

Theatre Seating

A modular seating system that features electric controls and smoothly operating recliners which is assembled and installed by the factory for ease of use.

Every furniture component locks into place with each adjacent piece.

Figure 70. Modular components of the theater seating. At the right are details of the back connection, and module interlocking.

Sofa Seating

Two and three cushion sofas that fold out for additional sleeping.

To operate:

1. Remove the back cushions
2. Fold out the couch seat to expose the middle seat
3. Fold out the couch seat legs and set upright
4. Fold down the stationary back

5. User back cushions as headrest or pillows

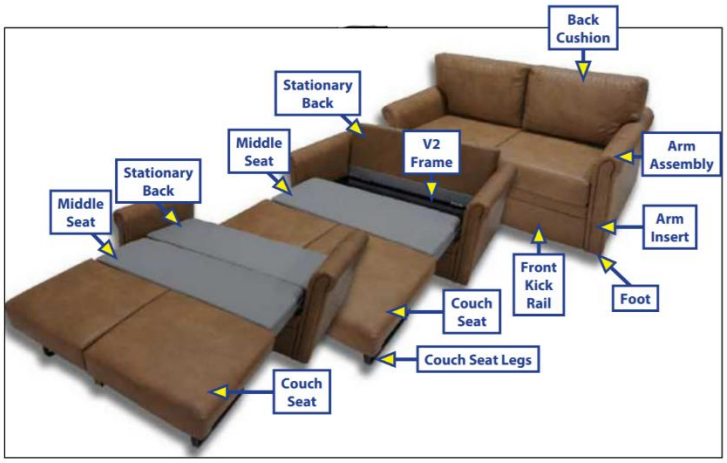


Figure 71. Operating the fold-out sofa.

A polyurethane fabric constructed and designed for all home furniture. Polyurethanes should be cleaned with a mild water based shampoo or soap. More stubborn stains can be cleaned with a mild, non-alcohol based cleaning fluid. Rinse with clean water afterward. For non-liquid stains such as mustard, remove any excess before cleaning. All stains and spills must be attended to promptly.

CARE & MAINTENANCE

An RV comes with a variety of surfaces that need to be cleaned and maintained both on the exterior and interior. Regular cleaning and maintenance of these different components is needed and will help keep the RV in the best possible condition both cosmetically and functionally. The rate of the breakdown and deterioration of the seals, sealants and gaskets on your RV is directly tied to the outside environment and the needed maintenance, cleaning and touch up of these crucial components may vary based on your specific experience. The Maintenance Schedule in this manual is based on minimum applicable intervals. This section will highlight some of the general items that need to be done not specifically covered elsewhere.

	WYKW: Should You Walk on Your Slide Roof?

	WYKW: Roof Seams and Air Bubbles

Roof Maintenance & Inspection

Keep your roof clean. Use Dicor roof cleaners (RP-RC320S spray or RP-RC160Cj concentrate) or standard products such as 409, Fantastik or mild detergents. Do NOT use harsh abrasives or products containing solvents. For stubborn spots, a rag dampened with mineral spirits is recommended. DO NOT SOAK (never apply mineral spirits directly to the roof.) Start by rinsing the roof membrane with clean water to remove any loose dirt or debris. Then, using a medium bristle brush along with a mild detergent / soap and a few gallons of water, scrub the entire roof and then rinse thoroughly, a rubber squeegee may be used to direct water off the roof.

NOTE: do not use abrasive pads or cleaning solutions that contain solvents.

A semi-annual inspection of the roof is suggested. Check the membrane for damage and check the lap sealant used at all termination areas (front, rear and side seams as well as roof attachments). The lap sealant has a limited life span, depending on the geographic region and conditions, and should be repair or replaced as needed. Use a self-leveling lap sealant on locations not near edges. Along edges and corners, use a non-self-leveling version to prevent the sealant from excessive spreading.

Washing & Waxing

When washing, start from the top and work your way down, try to stay out of direct sunlight. Often it is best to clean sidewalls after first cleaning the roof. Sidewalls and the front and rear skin or cap should be washed and waxed to protect and restore. Never take your RV through an automatic car wash and avoid using highly abrasive cleaning pads or high-pressure sprayers, the finish and decals/labels on your RV can be damaged by using such products. A soft bristled brush and a mild soap / detergent, if cleaned properly and frequently, will meet your needs. Normal automotive wax should be utilized when waxing your RV, we recommend waxing two to three times a year, at minimum.

	WYKW: How to Wash Your Alliance RV Walls or Roof

Harsh Environments

Exposure to salt can result in damage to exterior paints, finishes and other components, it is highly corrosive and should be cleaned off as frequently as possible. The more your RV is exposed to snow, rain, road salt, chemicals and saltwater, the more severe corrosion can be, therefore, a stricter cleaning and maintenance schedule may be needed.

Treating Rust

Periodically inspect the pin box, chassis, landing gear/leveling jack brackets, axles, wheels, and suspension components for spot rust.

If you find spot rust, use a wire brush to clean the spot. Wash off dust and allow to dry. Touch up the finish as needed with rustproof or rust-covering enamel paint as applicable. The more quickly you take care of this, the less damage it can cause and lead to bigger issues.

Exterior Seals

	WYKW: Inspecting Seals

Your RV is sealed all around to prevent water intrusion and damage to the RV. These seals and sealants (clear and colored) are crucial to your RV's protection from the outside environment. These seals and sealants should be inspected regularly and touched up and/or resealed as needed. Make sure to check the roof, slide-outs, the corner, termination and beltline trims and moldings on the exterior of the RV. For questions on required seals and sealants, please contact your dealer and Alliance RV.

Slide-out Seals

Inspection

Your slide-outs utilize wipe, cap and bulb seals to protect the room from the outside elements. Due to the nature of a slide-out room, these seals are not 100% watertight and should be checked regularly for any visual signs of damage and addressed immediately when found. Inspect the slide-out seals for proper contact as follows.

When slide-outs are closed: the top, forward, and rearward bulb seals should be approximately 50% compressed along their full length. If there are gaps or significant deviations, contact an RV repair center to have your slide closed position adjusted, or refer to the section Hydraulic Slide-outs: Advanced Maintenance.

When slide-outs are open- wiper seals: the forward and rear wiper seals should show approximately the same amount of deflection indicating the slide is centered in the opening. The top wiper seal should also show some deflection. All wiper seals should show an outward deflection. If any of these conditions are not present, contact an RV repair center to have them corrected appropriately.

When slide-outs are open- inside bulb seals: all three bulb seals (front, rear, and top) between the trim boards and interior wall should be in contact and compressed approximately 50%. If there are gaps or significant deviations, contact an rv repair center to have your slide open position adjusted, or refer to the section Hydraulic Slide-outs: Advanced Maintenance.

Conditioning

Spraying your slide-out seals with an appropriate spray for lubrication and conditioning will help keep the slide-out seals and gaskets malleable, flexible, in good working condition. Many commercial products are available and suitable for this purpose.

Interior

Keep your RV clean and well-kept during regular usage and always be sure to thoroughly clean after extended uses, long trips and before you store your RV. Sweep and mop floors as required, clean the kitchen and bathroom as you would in your own house. For appliances, sinks, countertops, toilets, showers and flooring, you'll want to use your regular household cleaners (always refer to the owner's manual of the individual component for additional information). Make sure that the RV is ventilated well when doing this, clean air is needed for your safety.

Strip your bedding down and clean as required, be sure to follow the care instructions on these soft goods. When wiping down cabinets, walls, ceilings and other surfaces, use a mild soap / detergent and warm water in order to not cause damage to these surfaces.

EXTENDED RECREATIONAL USE OF THE RV

In some cases you may find yourself in the RV for extended periods of time. Whether that be full time living, a long weekend or an extended stay, you may run into some challenges. We have put together some helpful tips for battling some of these challenges.

	WYKW: Cold Weather Camping Tips

Condensation & Mold

	WYKW: Controlling Moisture in Your RV

The normal living activities of even a few people in an RV can lead to rapid moisture saturation of the air inside the RV as well as accelerated wear and tear. This condensation, if left unaddressed, can lead to mold. A more aggressive maintenace schedule may need to be adopted. Below are some pointers to assist with some of the problems you may face while using the RV for extended periods of time.

- Use a dehumidifer.
- Use exhaust fans when showering and cooking.
- In warmer temperatures, use your air conditioner.
- Crack windows.
- Don't air dry clothes in the RV.
- Implement proper preventative maintenance and overall RV cleanliness.

⚠WARNING

CONDENSATION MAY CAUSE DAMPNESS, MILDEW AND MOLD. IF NOT ADDRESSED IMMEDIATELY, CAN RESULT IN DAMAGE AND POSSIBLY LEAD TO ADDITIONAL MOLD OR MILDEW ISSUES WHICH CAN BE HAZARDOUS TO YOUR HEALTH.

Exterior Plumbing

Alliance Benchmark RVs are equipped with a dedicated heat vent to drop air down into the underbelly. Depending on your needs, it may be necessary for you to take additional protection steps. Keeping your water running and the additional use of heat tape on pipes, hoses, fresh water and sewer lines will all assist in keeping your RV safe from damage during use in freezing temperatures. One may also consider adding a protective skirt around the base of the RV. There are many aftermarket providers of these systems that can be found online or contacting your local RV dealer or service center. If your RV will not be used in cold weather, ALWAYS have your RV winterized (covered in the plumbing section of this manual).

Formaldehyde

Formaldehyde is used in many products such as glues, fabrics, paint coatings, and even paper products. Formaldehyde is also released from many smoking, cooking, soaps and many other household products. While most of the formaldehyde used in products in construction is consumed during the manufacturing process, a very small amount remains. This leftover formaldehyde dissipates over time as it works its

way out of the product. Proper ventilation by way of the available vents, fans and air conditioning units in your RV is key.

If you have any additional questions, please do not hesitate to contact Alliance RV.

MAINTENANCE SCHEDULE

The following maintenance schedule will help keep your Alliance trailer operating at peak performance, and such maintenance is required to keep your warranty active.

For items listed as "Before Use": Most items are commonly quick inspections to assure a safe towing experience. It should be noted that some of these inspections require lengthy repair and/or special parts if the inspections should fail. As such, it is common for experienced RVers to perform these checks in days prior to expected travel.

Table 8. Maintenance Schedule.

MAINTENANCE REQUIRED	FREQUENCY						
	BEFORE USE	AFTER USE	MONTHLY	3 MONTHS	6 MONTHS	YEARLY / BEFORE STORAGE	AS REQUIRED
GENERAL EXTERIOR/SIDEWALL, INCLUDING SLIDEOUTS							
Inspect for Interior Leaks: Inspect for wet items or surfaces, or dried water stains. If witnessed, determine source and resolve.		X	X				
Inspect Exterior Seals/Sealants: Inspect for damage, cracks or voids in sealant used around items on the exterior walls, at corners, and the front and rear caps of the RV. If witnessed, repair or reseal as needed.		X		X			
Locks and Latches: Lubricate with silicone lubricant			X				X
Washing Exterior Walls, Slideouts, Chassis: Refer to the section Care & Maintenance: Washing & Waxing				X			X
Waxing Exterior Walls & Front Cap: Refer to the section Care & Maintenance: Washing & Waxing					X		
SLIDEOUTS							
Inspect All Slideout Seams: Inspect all T-molding joints, roof membrane seal along edges and T-molding, screws. Look for damaged sealant, eternabond tape, and loose or missing screws. Remove any damaged sealant or tape and clean, then replace.				X			
Inspect Slide Seals: Ensure the rubber is not cracked or torn, and for proper compression. Refer to the section Slide-out Seals: Inspection				X			

Condition Slide Seals: Refer to the section Slide-out Seals: Conditioning						X	
Electric Through-Floor Slideouts: Actuate each one. Ensure one full cycle of retraction and extension is completed. Note any unusual movements or behavior, perform slide seal inspections at each end of movement. Resolve any identified issues.			X				
Perform System Inspection and Maintenance of Electric Slide-Outs: Execute all procedures listed in the section Electric Slide-out Maintenance.						X	
Lubricate Gear Packs in the Electric Slide-outs: Refer to section Electric Slide-out Maintenance: Gear Pack Lubrication.						X	X
ROOF							
Inspect the PVC Membrane & Attachment Points/Seams: Refer to the section Roof Maintenance & Inspection				X			
Wash the Roof: Refer to the section Roof Maintenance & Inspection					X		
FRAME & UNDERBELLY							
Inspect the Frame & Underbelly: Check for damage, loose wires, loose brake lines/wires, and debris. Repair any damage to underbelly material, wires, or brake lines as needed.						X	X
Inspect Undercarriage For Chipped Paint & Rust: Refer to the section Care & Maintenance: Treating Rust					X		
CHASSIS/TOWING							
Inspect Tires & Check Pressure: Refer to the section Tire and Wheel Maintenance: Inspect Tires and Check Pressure	X		X				X
Check Wheel Lug Nut Torque: Refer to the section Tire and Wheel Maintenance: Wheel Nut Torque	X						
Verify Breakaway Switch Operation: Refer to the section Brake Actuator Maintenance: Breakaway Switch Operation				X			
Brake Inspection: To be performed by a qualified technician.						X	
Bearing Inspection and Grease Repacking: Every 12k miles OR one year, whichever comes first, have a qualified person perform this service.						X	
Tow Plug Inspection & Wire Lug Torque Check: Refer to the section Tow Plug Maintenance	X						

Leaf Spring Suspension System (if equipped)							
Inspect the Spring Hangers & Leaf Springs: Refer to the section Leaf Spring Suspension Maintenance: Spring Hanger and Leaf Spring Inspection	X						
Check Leaf Spring Bolt Torque: Refer to the section Leaf Spring Suspension Maintenance: Leaf Spring Bolt Torque	X						
Check Axle U-Bolt Torque: Refer to the section Leaf Spring Suspension Maintenance: Axle U-Bolt Torque	X						
Tongue Jack & Stabilization							
Inspect All Stabilizer Jacks: Retract stabilizer to ensure it's mounted securely to the frame. Ensure foot is securely attached to mechanism. Before retraction, apply a small amount of grease on the jack screw rod inside of jack nut. Before re-extending, apply grease on the jack screw rod outside of the jack nut.						X	
Clean Tongue Jack and Stabilizers: Remove road debris.							X
Electrical							
Test GFCI Outlet: Press the TEST button to activate the internal electrical testing function. The RESET button should pop out and the outlet should not be functional, nor will downstream outlets function. RESET the GFCI outlet. If there are problems, contact a qualified servicing dealer.				X			
Perform General Battery Maintenance: Refer to the section Battery Maintenance				X		X	
Inspect and Perform a Torque Check for your Power Center: Refer to the proper section for the Power Control Center (Progressive Dynamics or WFCO) installed in your trailer.						X	
Propane & Safety							
Inspect Propane System: Referring to the section Propane System Maintenance: Inspection (Owner), make sure all components visibly look secure and in good condition. Close both cylinders immediately and contact a qualified service provider to rectify any problem seen.				X			X
Professional Propane System Inspection: Have a certified technician or propane professional inspect the propane system for safe operation.						X	

Test Alarms / Detectors (Smoke, CO/LP): Activate the Test feature of each alarm to ensure proper operation and notification methods are functional.	X		X				
Check Fire Extinguisher Mounting and Charge: Make sure Fire Extinguisher is accessible, yet secure. Also verify the charge is still good using whatever method is printed on the label.			X				
Test Emergency Exit/Egress Windows: Open each Emergency Exit/Egress window and reclose. If any window will not open, contact an authorized service center.			X				
Water/Utility Systems							
Clean AC Filter: During periods of use, clean the inside filters as per the procedure listed for your Air Conditioner model.			X				
Perform AC Coil Cleaning: Using standard techniques, ensure both inside (evaporator) and outside (condenser) coils are cleaned.						X	
Inspect Furnace Exhaust and Air Return: Prior to and during times of use, periodically inspect these areas as per the section Suburban Furnace Maintenance: Inspection				X		X	
Inspect Water Heater Anode Rod: Refer to the section Water Heater Maintenance: Anode Rod Inspection					X	X	
Drain Fresh Water Tank: Use the large white pull handle and drain located below the fresh water tank.		X					
Empty and Flush (Black Tanks) Waste Tanks: For flushing the black tank(s) refer to the section Rinsing Holding Tanks / Tank Flush		X					
Inspect the Fresh Water System: At all points throughout the RV where fresh water lines can be inspected (below sinks or in cabinets, on the roof of storage areas, behind the nautilus panel) ensure no evidence of leaks exist while the fresh water system is pressurized. Repair any leaks found.			X				
Sanitize the Fresh Water System: Following standard sanitizing methods when using bleach, or following the instructions provided with commercially available sanitizing treatments, ensure the fresh water system is cleaned.						X	
OTHER							
Clean & Inspect Awning: Refer to the section Awning Maintenance: Cleaning & Inspection		X		X		X	

Check Seals & Lubricate Refrigerator Doors: If your refrigerator has a dual door with central flap attached to a door, open the other door and make sure the flap fully closes flat. Lubricate hinge points with silicone lubricant if needed. Also lubricate any latch rotation points. Using a fresh dollar bill, open a door and place bill where seal will close. Close door and attempt to pull bill. Resistance should be felt. Test all areas of the seals, several inches apart. If any point has no or very little resistance, replace seals as per manufacturer recommendation.				X			

VENDOR WARRANTY AND CONTACT INFORMATION

Below you will find a listed supplier, related warranty information and warranty / tech support contact information should you need it. Some of this information may change without notice. Alliance RV will make all efforts to keep this manual as up to date as possible. **This is a summary of the component manufacturer warranty only. For details on individual component warranties, see their warranty information.**

Table 9. Vendor contact information.

COMPONENT	BRAND	PHONE EMAIL WEBSITE	MANUFACTURER WARRANTY
Air Conditioner	Coleman	(423) 775-2131 rvpsupport@airxcel.com www.airxcel.com	2-Year Limited
Awnings	Lippert Components	(574) 537-8900 customerservice@lci1.com www.lci1.com	1-Year Limited
Axles, Brakes, Leaf Springs	Dexter Axle	(574) 295-7888 warranty@dexteraxle.com www.dexteraxle.com	1-Year Limited (Grease & Oil Seals) 2-Year Limited (Electric/Hydraulic Brake Actuators) 5-Year Warranty (Axles and Suspension System)
Chassis / Frame	Lippert Components	(574) 537-8900 customerservice@lci1.com www.lci1.com	1-Year Limited
Entry Steps	Lippert Components	(574) 537-8900 customerservice@lci1.com www.lci1.com	1-Year Limited
Fireplace	LaVanture	(800) 348-7625 service@alliancerv.com www.lavanture.com	1-Year Limited
Furnace	Suburban	(423) 775-2131 rvpsupport@airxcel.com www.airxcel.com	2-Year Limited
Furniture	Lippert Components	(574) 537-8900 customerservice@lci1.com www.lci1.com	1-Year Limited

Mattress	Lippert Components	(574) 537-8900 customerservice@lci1.com www.lci1.com	1-Year Limited
Microwave	Insignia	(877) 467-4289 www.insigniaproducts.com/email-us www.insigniaproducts.com	1-Year Limited
Microwave	Samsung	(800) 442-7717 Technicalsupport@riverparkinc.com www.riverparkinc.com	1-Year Limited
Microwave	Lusso	(574) 848-1118 warrantydept@collins-n-co.com https://www.collinssupport.com/	1-Year Limited
Oven / Cooktops	Insignia	(877) 467-4289 www.insigniaproducts.com/email-us www.insigniaproducts.com	1-Year Limited
Oven / Cooktops	Lusso	(574) 848-1118 warrantydept@collins-n-co.com https://www.collinssupport.com/	1-Year Limited
Oven / Cooktops	Greystone	(574) 971-4490 www.customerservice@wayinterglobal.com www.wayinterglobal.com	1-Year Limited
Power Center & Converter	WFCO	(574) 294-8997 technicalsupport@wfcoelectronics.com https://www.wfcotech.com/	2-Year Limited
Refrigerator	Norcold / Thetford	(800) 543-1219 info@thetford.com www.thetford.com	1-Year Limited
Roof Membrane	Dicor	(574) 264-2699 dmetzger@dicor.com www.dicor.com	15-Year Limited
Roof Vents / Fans	MaxxAir	(423) 775-2131 rvpsupport@airxcel.com www.airxcel.com	2-Year Limited

Slideout Systems (Electric)	Lippert Components	(574) 537-8900 customerservice@lci1.com www.lci1.com	1-Year Limited
Stereo (JBL)	Riverpark Inc	(800) 442-7717 Technicalsupport@riverparkinc.com www.riverparkinc.com	1-Year Limited
Tires & Wheels	Lionshead	(574) 533-6169 bscott@lionsheadtireandwheel.com www.lionsheadtireandwheel.com	1-Year Guarantee / 5-Year Limited
Toilet	Dometic	(800) 366-3242 techservice@dometic.com www.dometic.com	1-Year Limited
TV	LG	(800) 243-0000 www.lg.com/us/support/email-appointment www.lg.com	1-Year Limited
TV Antenna	Winegard	(800) 288-8094 www.winegard.com/support/contact-us www.winegard.com	2-Year Limited
Water Heater	Suburban	(423) 775-2131 rvpsupport@airxcel.com www.airxcel.com	2-Year Limited

EXPLORE OUR LINE-UP

FROM LUXURY FIFTH WHEELS TO LIGHTWEIGHT TRAVEL TRAILERS AND NOW INTRODUCING DESTINATION TRAILERS

At Alliance RV, our vision is to create a product driven by our customers, through their experience and input, and execute on those ideas at the highest level. Innovation and product development is best done in collaboration with the RVing community, and we are listening. Many of us here at Alliance RV have spent the majority of our careers in the RV industry, and we believe our RV owners and dealer partners will welcome an independent and truly different manufacturer that is transparent and dedicated to their customers.

DELTA | AVENUE | BENCHMARK | –VALOR– | PARADIGM

Product information is as accurate as possible as of the date of publication of this brochure. Alliance RV is commitment to continuous product improvement thus - floorplans, materials, components, features, measurements, specifications, options, etc. are subject to change at any time without notice or obligation. Certain conditions may require additional equipment. Advertising and marketing Photography may show optional equipment or props used for photography purposes only.

Alliance publishes approximate base weight of the trailer without optional equipment included. Optional equipment will impact the weight of the trailer. Please locate the weight sticker attached to the trailer you are considering for the most accurate trailer weight.

Tow Vehicle Caution: Retail owners of Alliance recreational vehicles are solely responsible for the selection and proper use of tow vehicles. All customers should consult with a motor vehicle manufacturer or their dealer concerning the purchase and use of suitable tow vehicles for Alliance products. Alliance disclaims any liability or damages suffered as a result of the selection, operation, use or misuse of a tow vehicle. Alliance's limited warranty does not cover damage to the recreational vehicle or the tow vehicle as a result of the selection of the tow vehicle.

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ALLIANCE RV

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